

Magnetic chokes for fluorescent lamps • Electronic ballasts for fluorescent lamps • luxCONTROL lighting control systems • Emergency lighting modules for fluorescent lamps • Control gear for high pressure discharge lamps • Safety isolating transformers for low voltage lamps • LED – LED-modules and control gear

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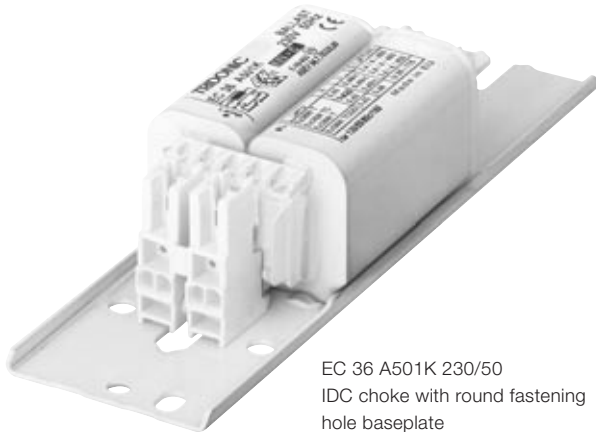
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Magnetic chokes for fluorescent lamps

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Magnetic chokes for fluorescent lamps



EC 36 A501K 230/50
IDC choke with round fastening
hole baseplate

A choke is required to run a fluorescent lamp. This is a current limiting device which works on the self inductance principle. The impedance of the choke is set to match the arc voltage of the lamp which ensures that the correct current is supplied. In some cases a choke can be used for more than one lamp but the lamp should never be used with any other choke than the one specifically designed for the job. Also any supply voltage or frequency variation will affect the optimum performance of the choke, and hence the lamp, so the type with the correct values should always be used.

Optimum performance

This is achieved by maintaining careful control of the main parameters.

Preheat current

This is supplied to the cathodes prior to the striking voltage, without the correct preheat current the cathodes would be progressively damaged resulting in short lamp life. If the current is too high this is also the case.

Strike voltage

In the case of a glow starter this is produced by the choke when the starter switch opens. The required voltage increases at high and low temperatures, and electronic starters may be required in abnormal temperature conditions.

For a fluorescent lamp to operate constantly the supply voltage must be at least twice the lamp voltage. If it is less, then an auto transformer is required to step up the voltage.

Lamp current

The tight tolerances used in manufacture ensure that the impedance is the correct value for the correct lamp current and hence lamp wattage and luminous flux.

Minimum power losses

An inefficient choke means high losses, which in turn leads to high temperatures. This means the lamp runs out of its optimum temperature range and, in some cases, other components in the luminaire, such as capacitors, will also run too hot and fail prematurely.

TridonicAtco have designed ballasts with minimal losses through the optimum use of windings within the bobbin, they have compact dimensions and use the highest quality materials in their manufacture.

The losses (lamp and choke) are rated in accordance with the choke-lamp circuit (EEI) classification.

Selection of the right choke

TridonicAtco offers ballasts in the following energy classes:

- standard (EEI = C)
- low loss (EEI = B2)
- super low loss (EEI = B1)

Each version has the same impedance and provides the same lamp current. The difference is that the losses, and temperature rise, are progressively less, which can be seen from the data.

There are two reasons to select lower loss chokes:

Energy consumption

A low loss choke typically consumes 30 % less power than a standard choke, and a super low loss uses 67 % less power than a standard choke.

Temperature rise

A typical standard choke will increase in temperature by 55 K (Kelvin) above its surroundings, a low loss choke 35–40 K and a super low loss choke 25 K.

When considering dimensions, TridonicAtco chokes have optimised dimensions to minimise losses but lower loss chokes do have increased dimensions.

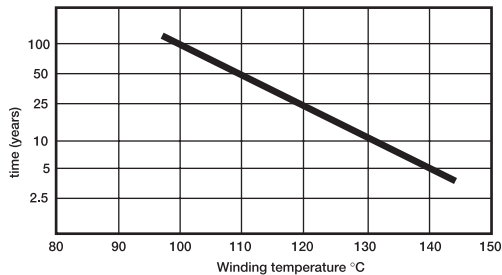
As the measured power consumption depends strongly on the method of measurement, differences up to 10 K are possible in the results.

Maximum service life

TridonicAtco chokes use high quality class H insulation materials which are designed for temperatures above 180°C, thus ensuring maximum service life.

Long years of research and development have gone into the choice and selection of the right insulation materials, and the heat resistant properties of TridonicAtco products are far superior to the mandatory requirements.

The graph shows the theoretical service life of a choke against winding temperature. Every 10°C over the maximum winding temperature of 130°C ($T_w = 130$) halves choke life. The expected length of life is based on 10 years continuous operation with a winding temperature of 130°C. The winding temperature is the ambient temperature plus ΔT or temperature rise, which is a function of choke power consumption.



Minimum stray fields

TridonicAtco chokes are designed to keep stray fields at a minimum, thus enabling them to be used near sensitive equipment.

National and international test marks

TridonicAtco chokes are approved by national and international test houses.

Consistent high quality

Certified to ISO 9001, the production process and equipments guarantee a consistent high quality standard. All finished goods are 100 % end of line tested and only the highest quality raw materials are used. Constant high quality is ensured by the use of fully automatic production.

Special features of TridonicAtco chokes:

- very short magnetic paths
- transverse lamination design with no stray field junctions
- voltage 230 V 50 Hz or 240 V 50 Hz (other voltages on request)
- compact windings
- low power consumption
- short heat paths
- maximum winding temperature $t_w = 130^\circ\text{C}$
- class H insulation
- fully automatic production with continuous tolerance test
- vacuum impregnation
- 100 % final testing, including continuity, short circuit, short to earth and operating values
- long service life
- tool free connection technology using IDC insulation piercing push/ cut terminals. Suitable for through wiring (other terminals on request)

Optimised delivery time

The delivery time has been optimised for each choke. The standard range (A) is available for delivery immediately and gives customers maximum flexibility. There is a delivery time of several weeks for the special range (B).

Lamp matrix

Which ballast for what lamp?

You can obtain the current lamp matrix

- via the Internet at www.tridonicatco.com – FAQ
- on request by e-mail: hotline.tec@tridonicatco.com

Magnetic chokes
Linear lamps

EC 4–16 W 230 V 50 Hz



Core stack length 27:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²

Core stack length 50:

- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

Packaging core stack length 27:

5 off, banded
2 200 pieces/pallet

Packaging core stack length 50:

5 off, banded
1 400 pieces/pallet

figure 1

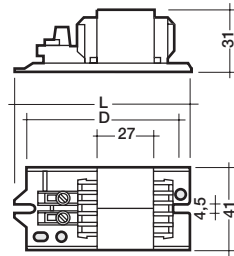
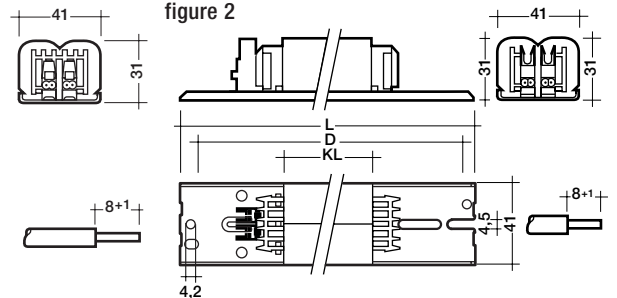


figure 2



Wiring:
page 28

Certified:
EN 60920/921

Lamp		Choke											P. F. Correction			Range	
watt- age W	length mm	dia- meter mm	type	article number	fig.	length L mm	core stack length KL mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A	series comp. capacitor $\mu\text{F} \pm 4\%$	
EEL = C																	
4	136	16	EC 4/8 A27 230/50	20296804	1	84,5	27	74–80	0,3	50	5,2	0,17	0,25	2	0,04	–	A
2x4	136	16	EC 4/8 A27 230/50	20296804	1	84,5	27	74–80	0,3	40	5,2	0,17	0,34	2	0,05	–	A
6	212	16	EC 4/8 A27 230/50	20296804	1	84,5	27	74–80	0,3	45	4,7	0,16	0,3	2	0,05	–	A
2x6	212	16	EC 4/8 A27 230/50	20296804	1	84,5	27	74–80	0,3	40	4,7	0,16	0,44	2	0,05	–	A
8	288	16	EC 4/8 A27 230/50	20296804	1	84,5	27	74–80	0,3	45	3,9	0,145	0,35	2	0,06	–	A
2x8	288	16	EC 13 A27 230/50	20563014	1	84,5	27	74–80	0,3	40	3,1	0,145	0,6	2	0,09	–	A
10	470	26	EC 13 A27 230/50	20563014	1	84,5	27	74–80	0,3	40	4,2	0,17	0,44	2	0,07	–	A
13	517	16	EC 13 A27 230/50	20563014	1	84,5	27	74–80	0,3	40	4	0,165	0,47	2	0,08	–	A
15	438	26	EC 15 A501K 230/50	22148748	2	151	50	110–144	0,5	50	EEI = C	0,31	0,32	4,5	0,12	–	A
2x15	438	26	EC 30 A501K 230/50	22148756	2	151	50	110–144	0,5	50	EEI = C	0,35②	0,45	4,5	0,18	–	A
16	720	26	EC 16 A27 230/50	20563020	1	84,5	27	74–80	0,3	45	5,2	0,2	0,49	2	0,09	–	A
EEL = B2																	
2x8	288	16	EC 13 C101K 230/50	20821676	1	84,5	27	74–80	0,29	25	3	0,145	–	2	0,09	–	A
10	470	26	EC 13 C101K 230/50	20821676	1	84,5	27	74–80	0,29	40	4	0,17	0,35	2	0,07	–	A
13	517	16	EC 13 C101K 230/50	20821676	1	84,5	27	74–80	0,29	35	3,8	0,165	0,45	2	0,08	–	A
15	438	26	EC 15 C501K 230/50	22148747	2	151	50	105–144	0,5	50	EEI = B2	0,31	0,33	4,5	0,12	–	A
2x15	438	26	EC 30 C501K 230/50	22148755	2	151	50	110–144	0,5	60	7,6	0,35②	0,45	4,5	0,18	–	A
EEL = B1																	
2x8	288	16	EC 13 B27 230/50	22116351	1	84,5	27	74–80	0,3	55	5,5	0,17②	0,55	2	0,09	–	A
2x8	288	16	EC 13 B501K 230/50	22148777	2	151	50	110–144	0,495	25	2,9	0,17	0,33	2	0,07	–	A
10	470	26	EC 13 B27 230/50	22116351	1	84,5	27	74–80	0,3	55	4,0	0,17	0,37	2	0,07	–	A
10	470	26	EC 13 B501K 230/50	22148777	2	151	50	110–144	0,495	25	2,9	0,17	0,33	2	0,07	–	A
13	517	16	EC 13 B27 230/50	22116351	1	84,5	27	74–80	0,3	55	3,8	0,165	0,46	2	0,08	–	A
13	517	16	EC 13 B501K 230/50	22148777	2	151	50	110–144	0,495	20	2,7	0,165	0,42	2	0,08	–	A
2x15	438	26	EC 30 B501K 230/50	22148754	2	151	54	110–144	0,55	60	7,4	0,35②	0,44	4,5	0,18	–	A
16	720	26	EC 16 B27 230/50	20821698	1	84,5	27	74–80	0,3	45	4,4	0,2	0,44	2	0,09	–	A

① mean value, measured at 25°C copper temperature and lamp current

② lamp current, measured in parallel connection

* $\cos \varphi > 0,9$

EC 4–16 W 240 V 50 Hz



Core stack length 27:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²

Core stack length 50:

- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

Packaging core stack length 27:

5 off, banded
2 200 pieces/pallet

Packaging core stack length 50:

5 off, banded
1 400 pieces/pallet

figure 1

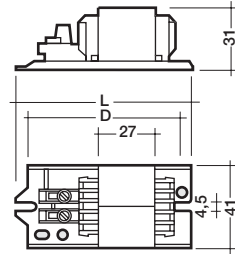
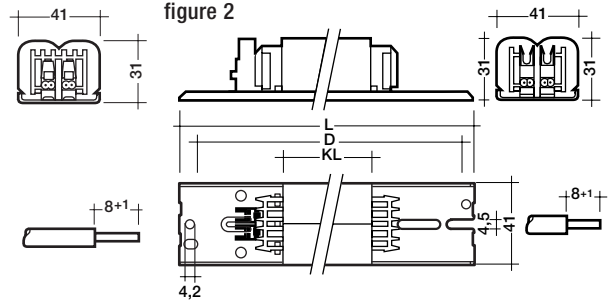


figure 2



Wiring:
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Lamp		Choke											P. F. Correction			Range	
watt- age W	length mm	dia- meter mm	type	article number	fig.	length L mm	core stack length KL mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A	series comp. capacitor $\mu\text{F} \pm 4\%$	
EEL = C																	
4	136	16	EC 4/8 A27 240/50	20294731	1	84,5	27	74–80	0,3	55	5,4	0,17	0,25	2	0,04	–	A
2x4	136	16	EC 4/8 A27 240/50	20294731	1	84,5	27	74–80	0,3	45	5,4	0,17	0,34	2	0,05	–	A
6	212	16	EC 4/8 A27 240/50	20294731	1	84,5	27	74–80	0,3	45	4,8	0,16	0,28	2	0,05	–	A
2x6	212	16	EC 4/8 A27 240/50	20294731	1	84,5	27	74–80	0,3	40	4,8	0,16	0,44	2	0,05	–	A
8	288	16	EC 4/8 A27 240/50	20294731	1	84,5	27	74–80	0,3	45	4	0,145	0,38	2	0,06	–	A
2x8	288	16	EC 13 A27 240/50	20294719	1	84,5	27	74–80	0,3	50	3,3	0,145	0,49	2	0,09	–	A
13	517	16	EC 13 A27 240/50	20294719	1	84,5	27	74–80	0,3	50	4,3	0,165	0,44	2	0,07	–	A
15	438	26	EC 15 A502K 240/50	22148764	2	151	50	110–144	0,5	60	8	0,31	0,32	4	0,12	–	A
2x15	438	26	EC 30 A502K 240/50	22148769	2	151	50	110–144	0,5	60	6,5	0,31②	0,49	4	0,17	–	A
16	720	26	EC 16 A27 240/50	20294652	1	84,5	27	74–80	0,3	55	5,5	0,2	0,46	2	0,09	–	A
EEL = B1																	
2x15	438	26	EC30 LB502K 240/50	22148768	2	191	90	150–184	0,865	30	5,4	0,31	0,44	4	0,15	–	A

① mean value, measured at 25°C copper temperature and lamp current

* $\cos \varphi > 0,9$

EC 18–42 W 230 V 50 Hz



- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

EC with reinforced insulation:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²
- non-resettable protection
- switch off temperature 150°C

Packaging core stack length 50 and 54:

5 off, banded
1 400 pieces/pallet

Packaging core stack length 90 and 100:

5 off, banded
1 000 pieces/pallet

Packaging EC with reinforced insulation:

32 off, banded
1 152 pieces/pallet

figure 1

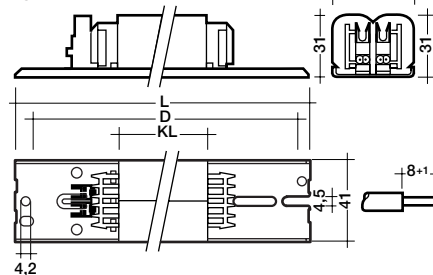
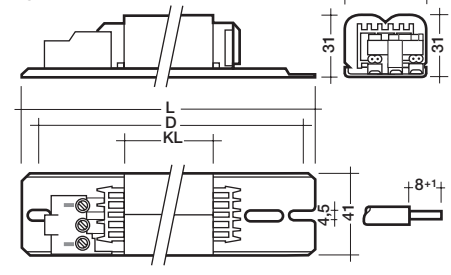


figure 2



Wiring:
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Lamp		Choke										P. F. Correction				Range	
watt- age W	length mm	dia- meter mm	type	article number	fig.	length L mm	core stack length KL mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A	series comp. capacitor $\mu\text{F} \pm 4\%$	
EEl = C																	
18	590	26	EC 18 A501K 230/50	22148441	1	151	50	110–144	0,5	60	EEl = C	0,37	0,35	4,5	0,13	2,7/480V	A
2x18	590	26	EC 36 A501K 230/50	22116285	1	151	50	110–144	0,5	50	EEl = C	0,41②	0,47	4,5	0,22	3,4/450V	A
$\phi 22$	$\phi 216$	28	EC 30 A501K 230/50	22148756	1	151	50	110–144	0,5	60	11,6	0,4	0,37	5	0,16	–	A
23	970	26	EC 18 A501K 230/50	22148441	1	151	50	110–144	0,5	50	8,4	0,29	0,45	3	0,14	2,4/450V	A
30	895	26	EC 30 A501K 230/50	22148756	1	151	50	110–144	0,5	65	EEl = C	0,365	0,47	4,5	0,17	–	A
$\phi 32$	$\phi 307$	30	EC 32 A501K 230/50	22148757	1	151	50	110–144	0,5	65	9,5	0,45	0,4	5	0,21	3,4/450V	A
33	470	26	EC 36-1 A501K 230/50	22148775	1	191	100	150–184	0,96	55	11,4	0,625	0,34	8	0,21	–	A
36	1200	26	EC 36 A501K 230/50	22116285	1	151	50	110–144	0,5	55	EEl = C	0,43	0,48	4,5	0,22	3,4/450V	A
38	1047	26	EC 36 A501K 230/50	22116285	1	151	50	110–144	0,5	55	EEl = C	0,43	0,49	4,5	0,23	3,4/450V	A
40 (36)	970	32 (26)	EC 36-1 A501K 230/50	22148775	1	191	100	150–184	0,96	50	9	0,55	0,37	6	0,23	4,5/450V	A
$\phi 40$	$\phi 409$	30	EC 36 A501K 230/50	22116285	1	151	50	110–144	0,5	55	13	0,415	0,5	4,5	0,24	3,4/450V	A
U40	607	38	EC 36 A501K 230/50	22116285	1	151	50	110–144	0,5	55	13,5	0,43	0,5	4,5	0,24	3,4/450V	A
42 (38)	1050	32 (26)	EC 36-1 A501K 230/50	22148775	1	191	100	150–184	0,96	50	9	0,55	0,45	6	0,24	4,3/450V	A
EEl = B2																	
18	590	26	EC 18 LC501K 230/50	22115859	1	151	54	110–144	0,55	55	EEl = B2	0,37②	0,32	4,5	0,13	2,7/480V	A
2x18	590	26	EC 36 LC501K 230/50	22115862	1	151	54	110–144	0,55	50	7,6	0,40	0,52	4,5	0,22	3,4/450V	A
23	970	26	EC 18 LC501K 230/50	22115859	1	151	54	110–144	0,55	45	6	0,29	0,43	3	0,14	2,4/450V	A
30	895	26	EC 30 C501K 230/50	22148755	1	151	50	110–144	0,5	60	7,6	0,365	0,47	4,5	0,17	–	A
36	1200	26	EC 36 LC501K 230/50	22115862	1	151	54	110–144	0,55	55	EEl = B2	0,43	0,46	4,5	0,22	3,4/450V	A
38	1047	26	EC 36 LC501K 230/50	22115862	1	151	54	110–144	0,55	50	EEl = B2	0,43	0,49	4,5	0,23	3,4/450V	A
with reinforced insulation and protection																	
18	590	26	EC 18 C201B 230/50	20887486	2	151	54	110–144	0,55	70	EEl = C	0,37	0,33	4,5	0,13	2,7/480V	B
23	970	26	EC 18 C201B 230/50	20887486	2	151	54	110–144	0,55	60	6,3	0,29	0,43	3	0,14	2,4/450V	B
36	1200	26	EC 36 C201B 230/50	20887492	2	151	60	110–144	0,6	60	EEl = B2	0,43	0,46	4,5	0,22	3,4/450V	B
38	1047	26	EC 36 C201B 230/50	20887492	2	151	60	110–144	0,6	60	EEl = B2	0,43	0,46	4,5	0,23	3,4/450V	B
EEl = B1																	
18	590	26	EC 18 B501K 230/50	22148749	1	191	90	150–184	0,85	35	EEl = B1	0,37	0,3	4,5	0,13	2,7/480V	A
2x18	590	26	EC 36 B501K 230/50	22148758	1	191	90	150–184	0,85	30	5,8	0,41②	0,45	4,5	0,22	3,4/450V	A
23	970	26	EC 18 B501K 230/50	22148749	1	191	90	150–184	0,85	30	5,3	0,29	0,4	3	0,14	2,4/450V	A
30	895	26	EC 30 B501K 230/50	22148754	1	151	54	110–144	0,55	45	EEl = B1	0,365	0,44	4,5	0,17	–	A
36	1200	26	EC 36 B501K 230/50	22148758	1	191	90	150–184	0,85	30	EEl = B1	0,43	0,43	4,5	0,22	3,4/450V	A
U40	607	38	EC 36 B501K 230/50	22148758	1	191	90	150–184	0,85	30	6	0,43	0,45	4,5	0,24	3,4/450V	A
$\phi 40$	409	30	EC 36 B501K 230/50	22148758	1	191	90	150–184	0,85	30	6	0,415	0,43	4,5	0,24	3,4/450V	A

① mean value, measured at 25°C copper temperature and lamp current; ② lamp current, measured in parallel connection; * $\cos \phi > 0,9$

EC 18–42 W 240 V 50 Hz



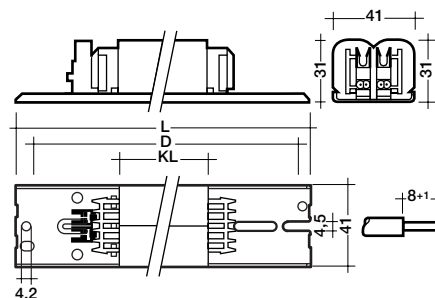
- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

Packaging core stack length 50 and 54:

5 off, banded
1 400 pieces/pallet

Packaging core stack length 90:

5 off, banded
1 000 pieces/pallet



Wiring:
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Lamp		Choke										P. F. Correction			Range	
watt- age W	length mm	dia- meter mm	type	article number	length Lmm	core stack length KL mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation capacitor $\mu\text{F}\pm 10\%$ 250V	* line current A	series comp. capacitor $\mu\text{F}\pm 4\%$	
EI = C																
18	590	26	EC 18 A502K 240/50	22115884	151	50	110–144	0,5	55	9,9	0,37	0,33	4	0,13	–	A
2x18	590	26	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	55	7,5	0,37	0,51	4	0,21	–	A
$\phi 22$	$\phi 216$	28	EC 30 A502K 240/50	22148769	151	50	110–144	0,5	60	10,6	0,4	0,34	4	0,16	–	A
23	970	26	EC 18 A502K 240/50	22115884	151	50	110–144	0,5	45	6,5	0,29	0,42	3,5	0,13	–	A
30	895	26	EC 30 A502K 240/50	22148769	151	50	110–144	0,5	60	8,9	0,365	0,47	4	0,17	–	A
$\phi 32$	$\phi 307$	30	EC 32 A502K 240/50	22148770	151	50	110–144	0,5	70	11,1	0,45	0,41	4	0,22	–	A
36	1200	26	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	60	9,5	0,43	0,46	4	0,22	–	A
38	1047	26	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	60	10	0,43	0,47	4	0,23	–	A
U40	670	30	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	60	10	0,43	0,49	4	0,23	–	A
$\phi 40$	$\phi 410$	26	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	60	10	0,43	0,5	4	0,23	–	A
$\phi 40$	409	30	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	60	10	0,43	0,5	4	0,23	–	A
EI = B2																
18	590	26	EC 18 LC502K 240/50	22148708	151	54	110–144	0,543	55	8,6	0,37	0,31	4	0,13	–	A
23	970	26	EC 18 LC502K 240/50	22148708	151	54	110–144	1,543	35	5,4	0,29	0,41	4	0,12	–	A
36	1200	26	EC 36 LC502K 240/50	22148709	151	54	110–144	0,548	55	8,7	0,430	0,45	4	0,2	–	A
38	1047	26	EC 36 LC502K 240/50	22148709	151	54	110–144	0,548	55	8,7	0,430	0,47	4	0,2	–	A
2x18	590	26	EC 36 LC502K 240/50	22148709	151	54	110–144	0,548	50	7,7	0,4②	0,49	4	0,1	–	A
40	1200	38	EC 36 LC502K 240/50	22148709	151	54	110–144	0,548	50	8,2	0,415	0,49	4	0,2	–	A
U40	607	38	EC 36 LC502K 240/50	22148709	151	54	110–144	0,548	55	8,7	0,430	0,49	4	0,2	–	A
EI = B1																
18	590	26	EC 18 B502K 240/50	22148765	191	90	150–184	0,85	30	8,5	0,37	0,29	4	0,12	–	A
2x18	590	26	EC 36 B502K 240/50	22148771	191	90	150–184	0,85	30	5,7	0,41②	0,45	4	0,19	–	A
20	590	38	EC 18 B502K 240/50	22148765	191	90	150–184	0,85	30	6,5	0,37	0,3	4	0,13	–	A
2x20	590	38	EC 36 B502K 240/50	22148771	191	90	150–184	0,85	30	5,7	0,41	0,47	4	0,2	–	A
22	216	28	EC 30 LB502K 240/50	22148768	191	90	150–184	0,865	35	6,4	0,4	0,28	5	0,12	–	A
23	970	38	EC 18 B502K 240/50	22148765	191	90	150–184	0,85	25	4,2	0,29	0,38	3,5	0,12	–	A
30	895	26	EC 30 LB502K 240/50	22148768	191	90	150–184	0,865	30	5,5	0,365	0,41	4	0,15	–	A
36	1200	26	EC 36 B502K 240/50	22148771	191	90	150–184	0,85	35	6,3	0,43	0,41	4	0,2	–	A
38	1047	26	EC 36 B502K 240/50	22148771	191	90	150–184	0,85	35	6,3	0,43	0,44	4	0,21	–	A
40	1200	38	EC 36 B502K 240/50	22148771	191	90	150–184	0,85	35	6,3	0,43	0,47	4	0,22	–	A
U40	607	38	EC 36 B502K 240/50	22148771	191	90	150–184	0,85	35	6,3	0,43	0,45	4	0,22	–	A
$\phi 40$	$\phi 409$	30	EC 36 B502K 240/50	22148771	191	90	150–184	0,85	30	5,8	0,415	0,46	4	0,22	–	A

① mean value, measured at 25°C copper temperature and lamp current; ② lamp current, measured in parallel connection; * $\cos \phi > 0,9$

EC 58–125 W 230 V 50 Hz



Core stack length 90 and 100:

- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

Core stack length 140:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²

EC with reinforced insulation:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²
- non-resettable protection
- switch off temperature 150°C

Packaging core stack length 90 and 100:

5 off, banded
1 000 pieces/pallet

Packaging core stack length 140:

5 off, banded
600 pieces/pallet

figure 1

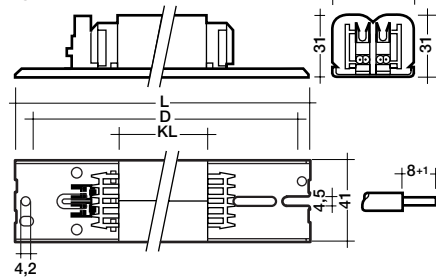
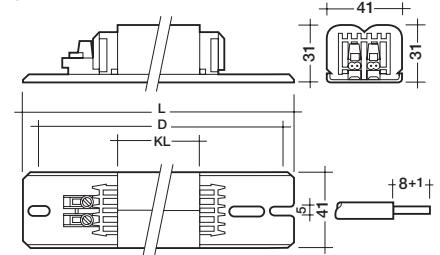


figure 2



Packaging

EC with reinforced insulation:

32 off, banded
1 152 pieces/pallet

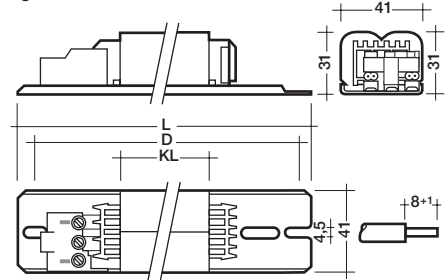
Wiring:

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figure 3



Lamp		Choke										P. F. Correction			Range		
watt-age	length	dia-meter	type	article number	fig.	length	core stack length	fixing centres	weight	ΔT	losses	nominal lamp current	λ	parallel compensation capacitor	* line current	series comp. capacitor	
W	mm	mm				L mm	KL mm	D mm	kg	K	W ①	current A		$\mu\text{F} \pm 10\% 250\text{V}$	current A	$\mu\text{F} \pm 4\%$	

EEI = C

58	1500	26	EC 58 A501K 230/50	22116279	1	191	90	150–184	0,85	50	EEI = C	0,67	0,48	7	0,32	5,3/450V	A
U65	765	38	EC 58 A501K 230/50	22116279	1	191	90	150–184	0,85	50	12	0,67	0,5	7	0,32	5,3/450V	A
125	2400	38	EC 125 A140 230/240/50	24076641	2	231	140	210–224	1,3	55	14,5	0,94	0,62c	–	–	7,6/440V	A

EEI = B2

58	1500	26	EC 58 C501K 230/50	22115907	1	191	90	150–184	0,85	50	EEI = B2	0,67	0,47	7	0,32	5,3/480V	A
70	1800	26	EC 70 C501K 230/50	22148762	1	191	90	150–184	0,877	45	11,7	0,7	0,52	7	0,37	–	A
75	188	38	EC 70 C501K 230/50	22148762	1	191	90	150–184	0,877	45	10,8	0,67	0,55	6	0,39	–	A
80	1500	38	EC 80/85 C140 230/50	24076758	2	231	140	210–224	1,3	45	13,4	0,87	0,46	8	0,46	–	A
85	1800	38	EC 80/85 C140 230/50	24076758	2	231	140	210–224	1,3	40	11,4	0,8	0,53	8	0,47	–	A

with reinforced insulation and protection

58	1500	26	EC 58 C201B 230/50	20887509	3	191	90	150–184	0,9	50	EEI = B2	0,67	0,47	7	0,32	5,3/480V	B
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EEI = B1

58	1500	26	EC 65 B140 230/50	24076546	2	231	140	210–224	1,3	30	EEI = B1	0,67	0,45	7	0,32	5,3/480V	A
U65	765	38	EC 65 B140 230/50	24076546	2	231	140	210–224	1,3	30	8,3	0,67	0,49	7	0,32	5,3/480V	A
70	1800	26	EC 70 B501K 230/50	22148760	1	191	100	150–184	0,97	40	EEI = B1	0,7	0,52	6	0,38	–	A
75	1800	38	EC 70 B501K 230/50	22148760	1	191	100	150–184	0,97	40	9,7	0,67	0,55	6	0,39	–	A

① mean value, measured at 25°C copper temperature and lamp current

② lamp current, measured in parallel connection

* $\cos \phi > 0,9$

EC 58–125 W 240 V 50 Hz



Core stack length 90 and 100:

- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

Core stack length 140:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²

Packaging core stack length 90 and 100:

5 off, banded
1 000 pieces/pallet

Packaging core stack length 140:

5 off, banded
600 pieces/pallet

figure 1

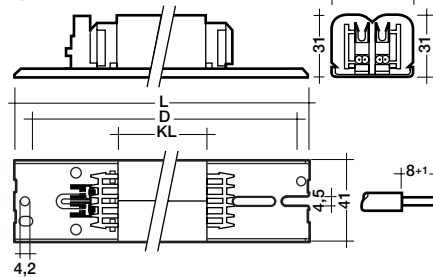
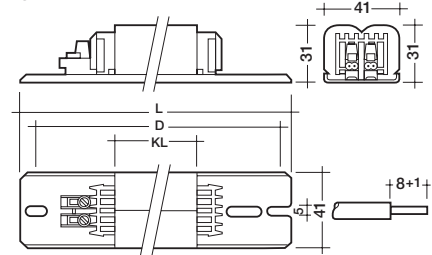


figure 2



Wiring:
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Lamp		Choke											P. F. Correction			Range	
watt- age W	length mm	dia- meter mm	type	article number	fig.	length L mm	core stack length KL mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A	series comp. capacitor $\mu\text{F} \pm 4\%$	
EEL = C																	
58	1500	26	EC 58 A502K 240/50	22115878	1	191	90	150–184	0,85	55	13,1	0,67	0,46	6	0,33	–	A
65	1500	38	EC 58 A502K 240/50	22115878	1	191	90	150–184	0,85	55	13,1	0,67	0,46	6	0,36	–	A
U65	765	38	EC 58 A502K 240/50	22115878	1	191	90	150–184	0,85	55	13,1	0,67	0,51	6	0,36	–	A
100	1800	38	EC 100 A140 240/50	24076635	2	231	140	210–224	1,3	60	16,4	0,98	0,51	10	0,5	–	A
100	2400	38	EC 100 A140 240/50	24076635	2	231	140	210–224	1,3	60	15,8	0,96	0,5	8,4	0,53	–	A
125	2400	38	EC 125 A140 230/240/50	24076641	2	231	140	210–224	1,3	55	14,5	0,94	0,60c	–	–	7,2/440V	A
EEL = B2																	
58	1500	26	EC 58 LC502K 240/50	22119165	1	191	100	150–184	0,958	45	13,1	0,67	0,46	7	0,3	–	A
U65	765	38	EC 58 LC502K 240/50	22119165	1	191	100	150–184	0,958	45	13,1	0,67	0,51	7	0,3	–	A
70	1800	26	EC 70 C502K 240/50	22148773	1	191	90	150–184	0,876	50	12,8	0,7	0,55	7	0,35	–	A
75	188	38	EC 70 C502K 240/50	22148773	1	191	90	150–184	0,876	45	11,8	0,67	0,51	6	0,38	–	A
EEL = B1																	
58	1500	26	EC 65 B140 240/50	24076571	2	231	140	210–224	1,3	30	9,2	0,67	0,44	6	0,33	–	A
65	1500	38	EC 65 B140 240/50	24076571	2	231	140	210–224	1,3	30	9,2	0,67	0,48	6	0,34	–	A
U65	765	38	EC 65 B140 240/50	24076571	2	231	140	210–224	1,3	30	9,2	0,67	0,48	6	0,34	–	A
70	1800	26	EC 70 B502K 240/50	22148772	1	191	100	150–184	0,97	45	12,4	0,7	0,5	6	0,36	–	A
75	1800	38	EC 70 B502K 240/50	22148772	1	191	100	150–184	0,97	45	11,4	0,67	0,56	6	0,38	–	A

① mean value, measured at 25°C copper temperature and lamp current

② lamp current, measured in parallel connection

* $\cos \varphi > 0,9$



Magnetic chokes
Compact lamps

EC 5–18 W 230 V 50 Hz



Core stack length 27:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²

Core stack length 50, 54 and 90:

- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

EC with reinforced insulation:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²
- non-resettable protection
- switch off temperature 150°C

Packaging core stack length 27:

5 off, banded
2 200 pieces/pallet

Packaging core stack length 50 and 54:

5 off, banded
1 400 pieces/pallet

figure 1

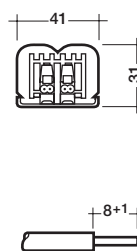
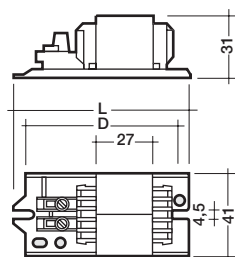
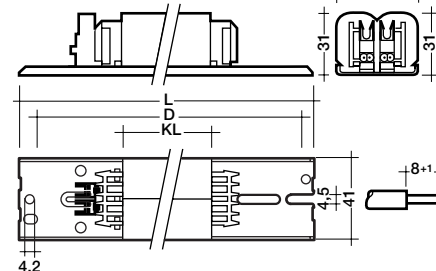


figure 2



Packaging

Core stack length 90:

5 off, banded
1 000 pieces/pallet

Packaging

EC with reinforced insulation:

32 off, banded
1 152 pieces/pallet

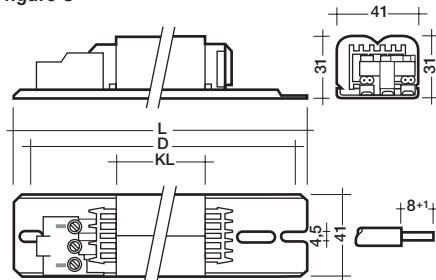
Wiring:

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figure 3



Lamp	Choke		article number	fig.	length L mm	core stack length KL mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	P. F. Correction			Range
	watt-age W	type											type	parallel compensation capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A	
EEI = C																
5	TC-S	EC 09 A27 230/50	20563005	1	84,5	27	74–80	0,3	50	5	0,18	0,28	2	0,05	–	A
7	TC-S	EC 09 A27 230/50	20563005	1	84,5	27	74–80	0,3	50	5	0,175	0,32	2	0,05	–	A
2x7	TC-S	EC 13 A27 230/50	20563014	1	84,5	27	74–80	0,3	40	4,2	0,17②	0,47	2	0,08	–	A
9	TC-S	EC 09 A27 230/50	20563005	1	84,5	27	74–80	0,3	50	4,5	0,17	0,36	2	0,06	–	A
2x9	TC-S	EC 13 A27 230/50	20563014	1	84,5	27	74–80	0,3	45	3,7	0,16②	0,58	1,5	0,08	–	A
10	TC-D	EC 13 A27 230/50	20563014	1	84,5	27	74–80	0,3	50	EEI = C	0,19	0,37	2	0,07	–	A
10	TC-DD	EC 13 A27 230/50	20563014	1	84,5	27	74–80	0,3	50	EEI = C	0,18	0,39	2	0,07	–	A
11	TC-S	EC 09 A27 230/50	20563005	1	84,5	27	74–80	0,3	40	3,7	0,155	0,47	2	0,07	–	A
13	TC-D	EC 13 A27 230/50	20563014	1	84,5	27	74–80	0,3	40	EEI = C	0,175	0,47	2	0,08	–	A
16	TC-DD	EC 16 A27 230/50	20563020	1	84,5	27	74–80	0,3	45	EEI = C	0,195	0,48	2	0,1	–	A
18	TC-D	EC 18 A27 230/50	20563036	1	84,5	27	74–80	0,3	55	EEI = C	0,22	0,49	2	0,11	–	A
18	TC-L	EC 18 A501K 230/50	22148441	2	151	50	110–144	0,55	55	EEI = C	0,37	0,32	4,5	0,13	2,7/480V	A
2x18	TC-L	EC 36 A501K 230/50	22116285	2	151	50	110–144	0,5	50	8,5	0,400②	0,48	4,5	0,2	3,4/450V	A
2x18	TC-L	EC 36 LA501K 230/50	22148440	2	151	54	110–144	0,55	45	8	0,4②	0,48	4,5	0,2	3,4/450V	A
EEI = B2																
10	TC-D	EC 13 B27 230/50	22116351	1	84,5	27	74–80	0,3	45	EEI = B2	0,19	0,33	2	0,06	–	A
18	TC-D	EC 18 TCD C101K 230/50	20887802	1	84,5	27	74–80	0,3	55	EEI = B2	0,22	0,49	2	0,11	–	A
18	TC-L	EC 18 LC501K 230/50	22115859	2	151	54	110–144	0,55	55	EEI = B2	0,37	0,33	4,5	0,13	2,7/480V	A
2x18	TC-L	EC 36 LC501K 230/50	22115862	2	151	54	110–144	0,55	50	7,6	0,4②	0,44	4,5	0,2	3,4/450V	A
with reinforced insulation and protection																
18	TC-L	EC 18 C201B 230/50	20887486	3	151	54	110–144	0,55	70	EEI = C	0,37	0,33	4,5	0,1	2,7/480V	B
EEI = B1																
5	TC-S	EC 09 B27 230/50	20821657	1	84,5	27	74–80	0,3	40	4,6	0,18	0,25	2	0,05	–	A
7	TC-S	EC 09 B27 230/50	20821657	1	84,5	27	74–80	0,3	40	4,4	0,18	0,3	2	0,05	–	A
2x7	TC-S	EC 13 B27 230/50	22116351	1	84,5	27	74–80	0,3	40	4,1	0,170②	0,45	2	0,07	–	A
9	TC-S	EC 09 B27 230/50	20821657	1	84,5	27	74–80	0,3	35	4,2	0,17	0,34	2	0,06	–	A
2x9	TC-S	EC 13 B27 230/50	22116351	1	84,5	27	74–80	0,3	35	4	0,160②	0,55	1,5	0,09	–	A
10	TC-DD	EC 13 B27 230/50	22116351	1	84,5	27	74–80	0,3	40	EEI = B1	0,18	0,38	2	0,06	–	A
11	TC-S	EC 09 B27 230/50	20821657	1	84,5	27	74–80	0,3	35	3,6	0,155	0,43	2	0,07	–	A
13	TC-D	EC 13 B27 230/50	22116351	1	84,5	27	74–80	0,3	40	EEI = B1	0,165	0,44	2	0,07	–	A
16	TC-DD	EC 16 B27 230/50	20821698	1	84,5	27	74–80	0,3	45	EEI = B1	0,195	0,45	2	0,1	–	A
18	TC-D	EC 18 B27 230/50	20821714	1	84,5	27	74–80	0,3	55	EEI = B1	0,22	0,47	2	0,11	–	A
18	TC-L	EC 18 B501K 230/50	22148749	2	191	90	150–184	0,85	40	EEI = B1	0,37	0,29	4,5	0,1	2,7/480V	A
2x18	TC-L	EC 36 B501K 230/50	22148758	2	191	90	150–184	0,85	30	5,2	0,4②	0,46	4,5	0,2	3,4/450V	A

① mean value, measured at 25°C copper temperature and lamp current; ② lamp current, measured in parallel connection; * $\cos \phi > 0,9$



EC 5–18 W 240 V 50 Hz



Core stack length 27:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²

Core stack length 50, 54 and 90:

- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

Packaging core stack length 27:

5 off, banded
2 200 pieces/pallet

Packaging core stack length 50 and 54:

5 off, banded
1 400 pieces/pallet

Packaging core stack length 90:

5 off, banded
1 000 pieces/pallet

figure 1

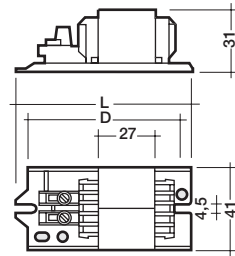
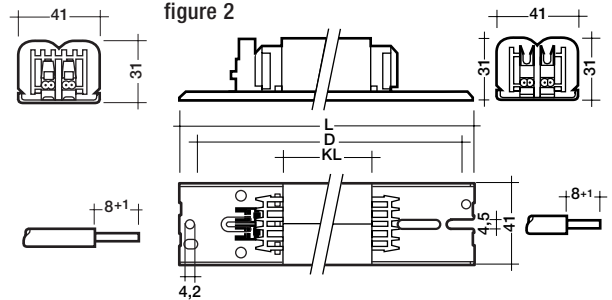


figure 2



Wiring:

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Certified:

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Lamp	Choke		article number	fig.	length L mm	core stack length KL mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	P. F. Correction			Range
	watt- age W	type											type	parallel compensation capacitor $\mu\text{F}\pm 10\%$ 250V	* line current A	
EEL = C																
5	TC-S	EC 09 A27 240/50	20294646	1	84,5	27	74–80	0,3	60	5,8	0,18	0,28	2	0,05	–	A
7	TC-S	EC 09 A27 240/50	20294646	1	84,5	27	74–80	0,3	55	5,4	0,175	0,31	2	0,05	–	A
2x7	TC-S	EC 13 A27 240/50	20294719	1	84,5	27	74–80	0,3	40	4,8	0,175	0,45	2	0,08	–	A
9	TC-S	EC 09 A27 240/50	20294646	1	84,5	27	74–80	0,3	50	5	0,17	0,36	2	0,06	–	A
2x9	TC-S	EC 13 A27 240/50	20294719	1	84,5	27	74–80	0,3	35	4,6	0,17	0,52	2	0,08	–	A
10	TC-D	EC 13 A27 240/50	20294719	1	84,5	27	74–80	0,3	50	5,5	0,19	0,34	2	0,07	–	A
10	TC-DD	EC 13 A27 240/50	20294719	1	84,5	27	74–80	0,3	45	4,9	0,18	0,36	2	0,06	–	A
11	TC-S	EC 09 A27 240/50	20294646	1	84,5	27	74–80	0,3	40	4,4	0,155	0,44	2	0,07	–	A
13	TC-D	EC 13 A27 240/50	20294719	1	84,5	27	74–80	0,3	40	4,8	0,175	0,45	2	0,08	–	A
16	TC-DD	EC 16 A27 240/50	20294652	1	84,5	27	74–80	0,3	50	5,3	0,195	0,46	2	0,09	–	A
18	TC-D	EC 18 A27 240/50	20305399	1	84,5	27	74–80	0,3	55	6,2	0,22	0,46	2	0,1	–	A
18	TC-L	EC 18 A502K 240/50	22115884	2	151	50	110–144	0,5	60	10,1	0,375	0,33	4	0,12	–	A
2x18	TC-L	EC 36 A502K 240/50	22115890	2	151	50	110–144	0,5	50	8,8	0,4②	0,49	4	0,2	–	A
EEL = B2																
2x18	TC-L	EC 36 LC502K 240/50	22148709	2	151	54	110–144	0,548	50	7,7	0,4②	0,49	4	0,21	–	A
EEL = B1																
5	TC-S	EC 09 B27 240/50	20821660	1	84,5	27	74–80	0,3	50	5,3	0,18	0,25	2	0,05	–	A
7	TC-S	EC 09 B27 240/50	20821660	1	84,5	27	74–80	0,3	45	5	0,175	0,29	2	0,05	–	A
2x7	TC-S	EC 13 B502K 240/50	22148763	2	151	50	110–144	0,5	30	3,4	0,175	0,41	2	0,07	–	A
9	TC-S	EC 09 B27 240/50	20821660	1	84,5	27	74–80	0,3	40	4,5	0,17	0,34	2	0,06	–	A
2x9	TC-S	EC 13 B502K 240/50	22148763	2	151	50	110–144	0,5	25	3,2	0,17	0,48	2	0,09	–	A
10	TC-D	EC 13 B502K 240/50	22148763	2	151	50	110–144	0,5	35	3,9	0,19	0,3	2	0,06	–	A
10	TC-DD	EC 13 B502K 240/50	22148763	2	151	50	110–144	0,5	30	3,5	0,18	0,34	2	0,06	–	A
11	TC-S	EC 09 B27 240/50	20821660	1	84,5	27	74–80	0,3	40	4	0,155	0,39	2	0,07	–	A
13	TC-D	EC 13 B502K 240/50	22148763	2	151	50	110–144	0,5	25	3,4	0,175	0,4	2	0,07	–	A
16	TC-DD	EC 16 B27 240/50	20821705	1	84,5	27	74–80	0,3	45	4,2	0,195	0,44	2	0,09	–	A
18	TC-D	EC 18 B27 240/50	20821720	1	84,5	27	74–80	0,3	60	5,4	0,22	0,44	2	0,1	–	A
18	TC-D	EC 18 TCD LB502K 240/50	22148766	2	151	50	110–144	0,5	35	4	0,22	0,41	2	0,08	–	A
18	TC-L	EC 18 B502K 240/50	22148765	2	191	90	150–184	0,85	30	6,7	0,375	0,29	4	0,1	–	A
2x18	TC-L	EC 36 B502K 240/50	22148771	2	191	90	150–184	0,85	30	5,5	0,4	0,44	4	0,18	–	A

① mean value, measured at 25°C copper temperature and lamp current

* $\cos \varphi > 0,9$


Magnetic chokes
Compact lamps
EC 21–38 W 230 V 50 Hz


- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

EC with reinforced insulation:

- $t_w = 130^\circ\text{C}$
- push terminal 0,5–1,5 mm²
- non-resettable protection
- switch off temperature 150°C

Packaging core stack length 50 and 54:

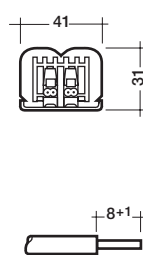
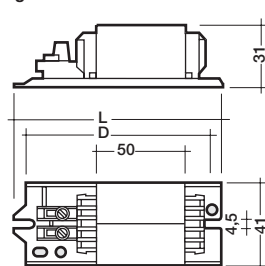
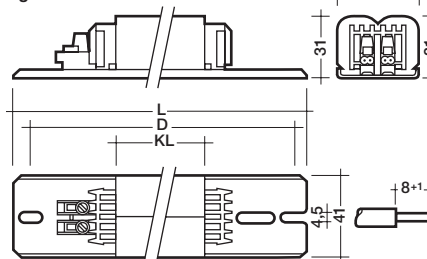
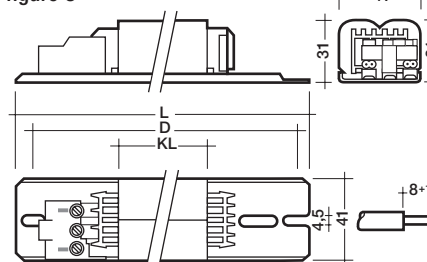
5 off, banded
1 400 pieces/pallet

Packaging core stack length 90:

5 off, banded
1 000 pieces/pallet

Packaging EC with reinforced insulation:

32 off, banded
1 152 pieces/pallet

figure 1

figure 2

figure 3


Wiring:
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Certified:
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Lamp	Choke	article number	fig.	length	core stack length	fixing centres	weight	ΔT	losses	nominal lamp current	λ	P. F. Correction			Range
												parallel compensation capacitor	* line current	series comp. capacitor	

EEI = C

24	TC-L	EC 18 A501K 230/50	22148441	2	151	50	110–144	0,55	50	EEI = C	0,345	0,42	3	0,14	2,5/450V	A
26	TC-D	EC 18 A501K 230/50	22148441	2	151	50	110–144	0,55	45	EEI = C	0,325	0,46	3	0,15	2,5/450V	A
28	TC-DD	EC 18 A501K 230/50	22148441	2	151	50	110–144	0,55	40	EEI = C	0,32	0,48	3	0,15	–	A
34	TC-L	EC 36 A501K 230/50	22116285	2	151	50	110–144	0,5	55	9,4	0,43	0,49	4,5	0,2	–	A
34	TC-L	EC 36 LA501K 230/50	22148440	2	151	54	110–144	0,55	55	9,2	0,43	0,47	4,5	0,2	–	A
36	TC-L	EC 36 A501K 230/50	22116285	2	151	50	110–144	0,5	55	EEI = C	0,43	0,49	4,5	0,22	3,4/450V	A
36	TC-L	EC 36 LA501K 230/50	22148440	2	151	54	110–144	0,55	55	EEI = C	0,43	0,49	4,5	0,22	3,4/450V	A
38	TC-DD	EC 36 A501K 230/50	22116285	2	151	50	110–144	0,5	55	EEI = C	0,43	0,48	4,5	0,23	–	A
38	TC-DD	EC 36 LA501K 230/50	22148440	2	151	54	110–144	0,55	55	EEI = C	0,43	0,43	4,5	0,23	–	A

EEI = B2

21	TC-DD	EC 21 C501K 230/50	22148753	2	151	50	110–144	0,5	35	EEI = B2	0,26	0,42	3	0,11	–	A
24	TC-L	EC 18 LC501K 230/50	22115859	2	151	54	110–144	0,55	50	EEI = B2	0,345	0,42	3	0,14	2,5/450V	A
26	TC-D	EC 18 LC501K 230/50	22115859	2	151	50	110–144	0,55	45	EEI = B2	0,325	0,45	3,5	0,15	2,5/450V	A
26	TC-D	EC 26 OC101K 230/50	22148858	1	110	50	97–105	0,53	50	EEI = B2	0,325	0,40	3	0,15	2,5/450V	B
28	TC-DD	EC 18 LC501K 230/50	22115859	2	151	54	110–144	0,55	45	EEI = B2	0,32	0,49	3	0,15	–	A
36	TC-L	EC 36 LC501K 230/50	22115862	2	151	54	110–144	0,55	55	EEI = B2	0,43	0,44	4,5	0,22	3,4/450V	A

with reinforced insulation and protection

24	TC-L	EC 18 C201B 230/50	20887486	3	151	54	110–144	0,55	60	EEI = B2	0,345	0,42	3	0,14	2,5/480V	B
26	TC-D	EC 18 C201B 230/50	20887486	3	151	54	110–144	0,55	60	EEI = B2	0,325	0,45	3	0,15	2,5/480V	B
28	TC-DD	EC 18 C201B 230/50	20887486	3	151	54	110–144	0,55	50	EEI = B1	0,32	0,49	3	0,15	–	B
36	TC-L	EC 36 C201B 230/50	20887492	3	151	60	110–144	0,6	60	EEI = C	0,43	0,46	4,5	0,22	3,4/450V	B
38	TC-DD	EC 36 C201B 230/50	20887492	3	151	60	110–144	0,6	60	EEI = B2	0,43	0,48	4,5	0,23	–	B

EEI = B1

21	TC-DD	EC 21 B501K 230/50	22148752	2	151	50	104–110	0,5	35	EEI = B1	0,26	0,42	3	0,11	–	A
24	TC-L	EC 18 B501K 230/50	22148749	2	191	90	150–184	0,85	30	EEI = B1	0,345	0,39	3	0,13	2,5/450V	A
26	TC-D	EC 18 B501K 230/50	22148749	2	191	90	150–184	0,85	30	EEI = B1	0,325	0,43	3	0,14	2,5/450V	A
28	TC-DD	EC 18 B501K 230/50	22148749	2	191	90	150–184	0,85	30	EEI = B1	0,32	0,46	3	0,15	–	A
36	TC-L	EC 36 B501K 230/50	22148758	2	191	90	150–184	0,85	35	EEI = B1	0,43	0,44	4,5	0,22	3,4/450V	A

① mean value, measured at 25°C copper temperature and lamp current; ② lamp current, measured in parallel connection; * $\cos \phi > 0,9$



EC 21–38 W 240 V 50 Hz



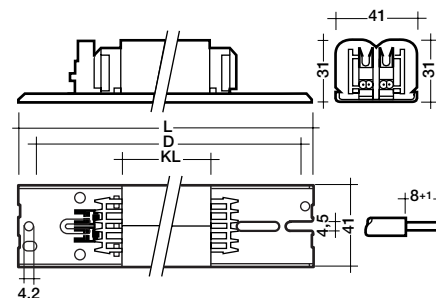
- $t_w = 130^\circ\text{C}$
- ConCut – IDC terminal 0,5–1,5 mm²
- optimised for automated wiring in luminaires
- authorized for BJB and ALF automatic wiring machines

Packaging core stack length 50 and 54:

5 off, banded
1 400 pieces/pallet

Packaging core stack length 90:

5 off, banded
1 000 pieces/pallet



Wiring:
page 28, 29

Certified:
EN 60920/921

Lamp	Choke											P. F. Correction			Range
	watt- age W	type	type	article number	length L mm	core stack length KL mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A	

EEI = C

24	TC-L	EC 18 A502K 240/50	22115884	151	50	110–144	0,5	50	8,7	0,345	0,42	3,5	0,14	–	A
26	TC-D	EC 18 A502K 240/50	22115884	151	50	110–144	0,5	45	7,6	0,325	0,44	3,5	0,14	–	A
28	TC-DD	EC 18 A502K 240/50	22115884	151	50	110–144	0,5	40	7,5	0,32	0,48	3,5	0,15	–	A
34	TC-L	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	55	9,8	0,43	0,45	4	0,19	–	A
36	TC-L	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	60	10	0,435	0,46	4	0,2	–	A
38	TC-DD	EC 36 A502K 240/50	22115890	151	50	110–144	0,5	60	9,8	0,43	0,48	4	0,2	–	A

EEI = B2

24	TC-L	EC 18 LC502K 240/50	22148708	151	54	110–144	0,543	50	7,5	0,345	0,40	3,5	0,14	–	A
26	TC-D	EC 18 LC502K 240/50	22148708	151	54	110–144	0,543	45	6,7	0,325	0,44	3,5	0,14	–	A
28	TC-DD	EC 18 LC502K 240/50	22148708	151	54	110–144	0,543	45	6,5	0,32	0,46	3,5	0,15	–	A
36	TC-L	EC 36 LC502K 240/50	22148709	151	54	110–144	0,548	55	8,9	0,435	0,47	4	0,2	–	A
38	TC-DD	EC 36 LC502K 240/50	22148709	151	54	110–144	0,548	55	8,7	0,43	0,47	4	0,2	–	A

EEI = B1

21	TC-DD	EC 21 B502K 240/50	22148767	151	50	110–144	0,5	35	5	0,26	0,41	3	0,11	–	A
24	TC-L	EC 018 B502K 240/50	22148765	191	90	150–184	0,85	30	5,8	0,345	0,38	3,5	0,13	–	A
26	TC-D	EC 018 B502K 240/50	22148765	191	90	150–184	0,85	30	5,1	0,325	0,4	3,5	0,13	–	A
28	TC-DD	EC 018 B502K 240/50	22148765	191	90	150–184	0,85	25	4,9	0,32	0,44	3,5	0,14	–	A
34	TC-L	EC 036 B502K 240/50	22148771	191	90	150–184	0,85	30	6,3	0,43	0,39	4	0,17	–	A
36	TC-L	EC 036 B502K 240/50	22148771	191	90	150–184	0,85	35	6,3	0,435	0,42	4	0,18	–	A
38	TC-DD	EC 036 B502K 240/50	22148771	191	90	150–184	0,85	30	6	0,43	0,42	4	0,19	–	A

① mean value, measured at 25°C copper temperature and lamp current

② lamp current, measured in parallel connection

* $\cos \varphi > 0,9$


LEC 5–13 W 230 V 50 Hz

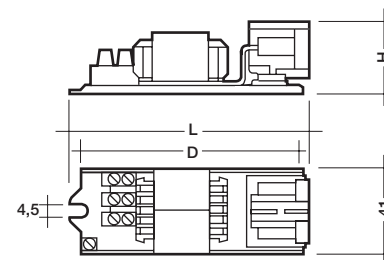

- $t_w = 130^\circ\text{C}$
- screw terminal

Packaging:
LEC 09

box of 42
1 344 pieces/pallet

LEC 13

box of 33
1 056 pieces/pallet



Wiring:
page 28, 29

Certified:
EN 60920/921

Lamp		Choke										P. F. Correction			Range	
watt- age W	type	type	article number	height H mm	length L mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation capacitor $\mu\text{F} \pm 10\% 250\text{V}$		* line current A	series comp. capacitor $\mu\text{F} \pm 4\%$	
EEI = C																
5	TC-S	LEC 09 A27 230V 50Hz	20295798	39	114	100–102	0,35	50	5,3	0,18	0,28	2	0,05	–		B
7	TC-S	LEC 09 A27 230V 50Hz	20295798	39	114	100–102	0,35	50	4,9	0,18	0,32	2	0,05	–		B
9	TC-S	LEC 09 A27 230V 50Hz	20295798	39	114	100–102	0,35	45	4,7	0,17	0,36	2	0,06	–		B
11	TC-S	LEC 09 A27 230V 50Hz	20295798	39	114	100–102	0,35	40	4,0	0,155	0,47	2	0,07	–		B
10	TC-D	LEC 13 A27 230V 50Hz	20565552	50	114	100–102	0,35	55	EEI = C	0,19	0,37	2	0,07	–		B
13	TC-D	LEC 13 A27 230V 50Hz	20565552	50	114	100–102	0,35	50	EEI = C	0,165	0,47	2	0,08	–		B

① mean value, measured at 25°C copper temperature and lamp current

* $\cos \varphi > 0,9$



TC-S

Luxfit
Compact lamps

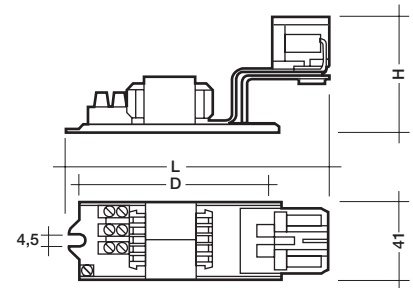
UEC 5–11 W 230 V 50 Hz and 240 V 50 Hz



- $t_w = 130^\circ\text{C}$
- screw terminal

Packaging:

box of 27
864 pieces/pallet



Wiring:
page 28, 29

Certified:
EN 60920/921

Lamp		Choke										P. F. Correction			Range	
watt- age W	type	type	article number	height H mm	length L mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation capacitor $\mu\text{F}\pm 10\%$ 250V		* line current A	series comp. capacitor $\mu\text{F}\pm 4\%$	
EEL = C, 230 V																
5	TC-S	UEC 09 A27 230V 50Hz	20295757	63	138	92-102	0,35	50	5,3	0,18	0,28	2	0,05	–		B
7	TC-S	UEC 09 A27 230V 50Hz	20295757	63	138	92-102	0,35	50	4,9	0,18	0,32	2	0,05	–		B
9	TC-S	UEC 09 A27 230V 50Hz	20295757	63	138	92-102	0,35	45	4,7	0,17	0,36	2	0,06	–		B
11	TC-S	UEC 09 A27 230V 50Hz	20295757	63	138	92-102	0,35	40	4	0,155	0,47	2	0,07	–		B
EEL = C, 240 V																
5	TC-S	UEC 09 A27 240V 50Hz	20295760	63	138	92-102	0,35	60	5,7	0,18	0,28	2	0,05	–		B
7	TC-S	UEC 09 A27 240V 50Hz	20295760	63	138	92-102	0,35	55	5,4	0,18	0,31	2	0,05	–		B
9	TC-S	UEC 09 A27 240V 50Hz	20295760	63	138	92-102	0,35	50	5	0,17	0,36	2	0,06	–		B
11	TC-S	UEC 09 A27 240V 50Hz	20295760	63	138	92-102	0,35	45	4,4	0,155	0,44	2	0,07	–		B

① mean value, measured at 25°C copper temperature and lamp current

* $\cos \varphi > 0,9$



UEC 10–26 W 230 V 50 Hz and 240 V 50 Hz



- $t_w = 130^\circ\text{C}$
- screw terminal

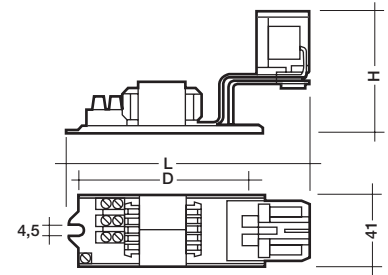
Packaging:

UEC 13 and 18

box of 24
768 pieces/pallet

UEC 26

box of 18
576 pieces/pallet



Wiring:

page 28, 29

Certified:

EN 60920/921

Lamp		Choke										P. F. Correction			Range
watt- age W	type	type	article number	height H mm	length L mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation		series comp.	
												capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A	capacitor $\mu\text{F} \pm 4\%$	

EEI = C, 230 V

10	TC-D	UEC 13 A27 230V 50Hz	20304705	75	138	92-102	0,35	55	EEI = C	0,19	0,37	2	0,07	–	B
13	TC-D	UEC 13 A27 230V 50Hz	20304705	75	138	92-102	0,35	50	EEI = C	0,165	0,47	2	0,08	–	B
18	TC-D	UEC 18 A27 230V 50Hz	20563591	75	138	92-102	0,35	55	EEI = C	0,22	0,44	2	0,11	–	B
26	TC-D	UEC 26 A50 230V 50Hz	20560920	75	151	130-144	0,55	45	EEI = C	0,315	0,47	3	0,14	–	B

EEI = C, 240 V

10	TC-D	UEC 13 A27 240V 50Hz	20304714	75	138	92-102	0,35	50	EEI = C	0,19	0,35	2	0,07	–	B
13	TC-D	UEC 13 A27 240V 50Hz	20304714	75	138	92-102	0,35	45	EEI = C	0,165	0,43	2	0,08	–	B
18	TC-D	UEC 18 A27 240V 50Hz	20562534	75	138	92-102	0,35	60	EEI = C	0,22	0,46	2	0,10	–	B

① mean value, measured at 25°C copper temperature and lamp current

* $\cos \varphi > 0,9$



UEC 16–28 W 230 V 50 Hz and 240 V 50 Hz



- $t_w = 130^\circ\text{C}$
- screw terminal

Packaging:**UEC 16**

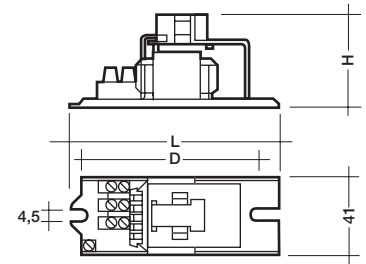
box of 33

1 056 pieces/pallet

UEC 28

box of 24

768 pieces/pallet

**Wiring:**

page 28, 29

Certified:

EN 60920/921

Lamp		Choke										P. F. Correction			Range
watt- age W	type	type	article number	height H mm	length L mm	fixing centres D mm	weight kg	ΔT K	losses W ①	nominal lamp current A	λ	parallel compensation		series comp.	
												capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A	capacitor $\mu\text{F} \pm 4\%$	
EEL = C, 230 V															
16	TC-DD	UEC 16 A27 230V 50Hz	20295776	50	110	92–102	0,35	45	EEL = C	0,195	0,48	2	0,1	–	B
28	TC-DD	UEC 28 A50 230V 50Hz ②	20566607	50	151	130–144	0,55	45	EEL = C	0,32	0,5	3	0,15	–	B
EEL = C, 240 V															
16	TC-DD	UEC 16 A27 240V 50Hz	20295782	50	110	92–102	0,35	50	EEL = C	0,195	0,46	2	0,1	–	B
28	TC-DD	UEC 28 A50 240V 50Hz	20300845	50	151	130–144	0,55	45	EEL = C	0,32	0,5	3,5	0,15	–	B

① mean value, measured at 25°C copper temperature and lamp current

② base for 4-pin lamp for connection to an external starter

* $\cos \varphi > 0,9$

TMDA 50–160 VA



- insulation class H
- nickel plated screw terminals for solid and flexible 0,75–2,5 mm² wire
- also suitable for the transformation of 110/220 V and 120/230 V

Packaging 50 VA:

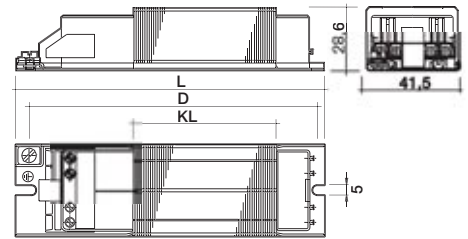
box of 25
50 boxes/pallet
1 250 pieces/pallet

Packaging 85 VA and 100 VA:

box of 20
40 boxes/pallet
800 pieces/pallet

Packaging 120 VA, 130 VA and 160 VA:

box of 20
25 boxes/pallet
500 pieces/pallet

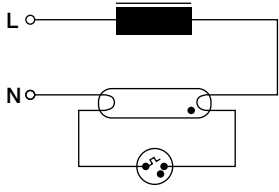


Wiring:
page 29

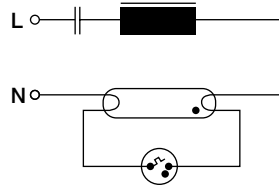
Certified:
EN 61558-2-13

lamp load VA	type	article number	primary voltage V	secondary voltage V	frequency Hz	UL/U0 %	primary current mA	secondary current mA	ambient temperature ta °C	length L mm	fixing centres D mm	weight kg
50	TMDA 50 B103K 127/240V	86453064	127	240	50/60	17	460	200	50	110	100	0,385
85	TMDA 85 B103K 127/240V	86453070	127	240	50/60	12,6	790	350	50	140	130	0,635
100	TMDA 100 B103K 127/240V	86453086	127	240	50/60	10,8	930	420	50	153	143	0,75
120	TMDA 120 B104K 115/240V	86453471	115	240	50/60	12,1	1250	500	50	175	165	0,93
130	TMDA 130 B103K 127/240V	86453487	127	240	50/60	10	1170	540	50	175	165	0,935
160	TMDA 160 B103K 127/240V	86453493	127	240	50/60	10	1480	660	50	205	195	1,185

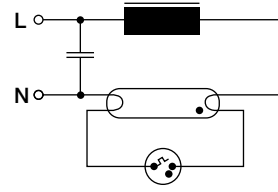
1. Linear lamps



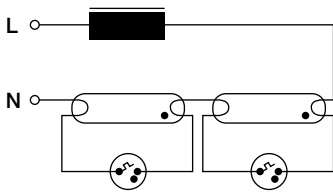
A) Single lamp uncompensated



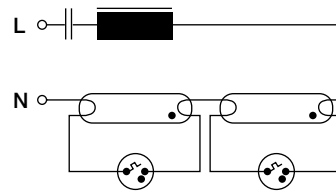
B) Single lamp series compensated



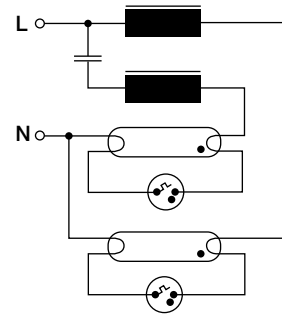
C) Single lamp parallel compensated



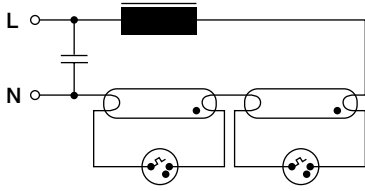
D) Twin series lamps uncompensated



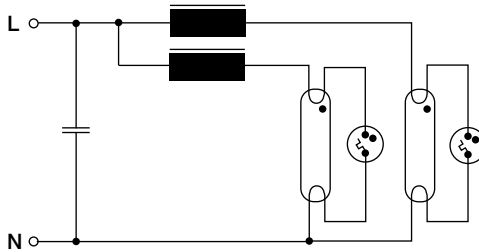
E) Twin series lamps series compensated



F) Twin lamp lead/lag

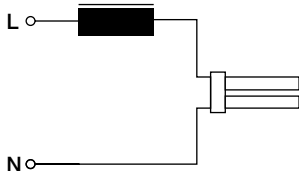


G) Twin series lamps parallel compensated

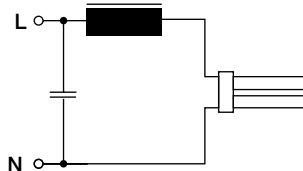


H) Twin lamp parallel compensated;
2 x value of parallel capacitor (single circuit)
2 x 18 W T8 = 8 μ F (250 V)

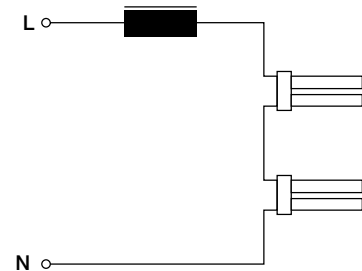
2. Compact lamps



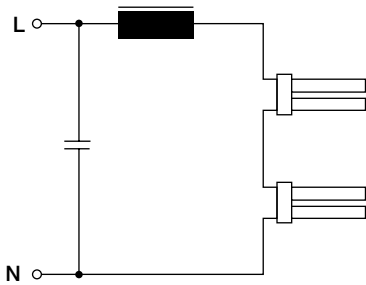
I) Single 2 pin lamp uncompensated



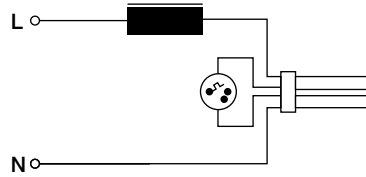
J) Single 2 pin lamp parallel compensated



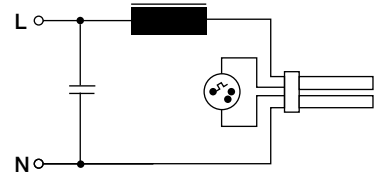
K) Twin series 2 pin lamps uncompensated



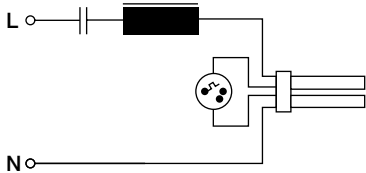
L) Twin series 2 pin lamps parallel compensated



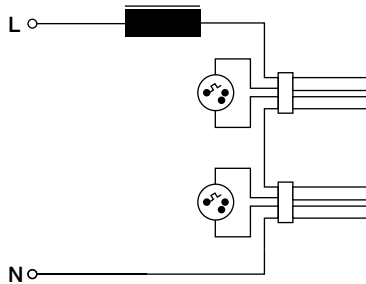
M) Single 4 pin lamp uncompensated



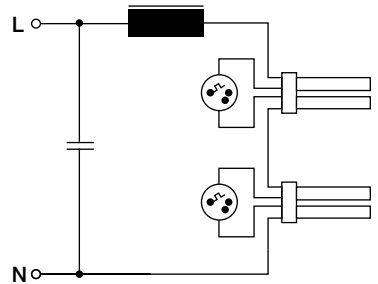
N) Single 4 pin lamp parallel compensated



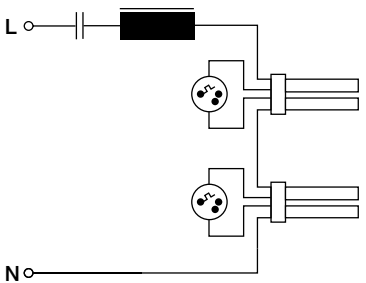
O) Single 4 pin lamp series compensated



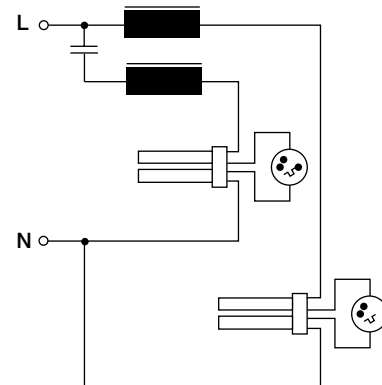
P) Twin series 4 pin lamps uncompensated



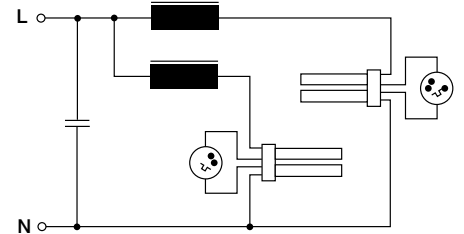
Q) Twin series 4 pin lamps parallel compensated



R) Twin series 4 pin lamps series compensated

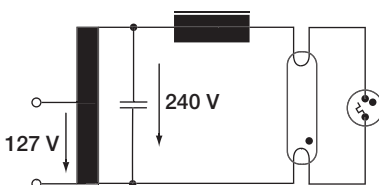


S) Twin 4 pin lamps lead/lag



T) Twin 4 pin lamps parallel compensated

3. Step-up transformer



U) Step-up transformer

Electronic ballasts for fluorescent lamps

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Introduction			33
T5 linear lamps	14–80 W	linear housing	36
T8 linear lamps	18–70 W	linear housing	38
TC-L compact lamps	18–55 W	linear housing	40
TC-L compact lamps	18–24 W	compact housing	41
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Technical details – IDC push/cut terminal			331
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Digital, electronic ballasts for fluorescent lamps

Electronic ballasts from TridonicAtco are characterised as being:

- economical
- easy to use
- reliable



PC 1x36 E011



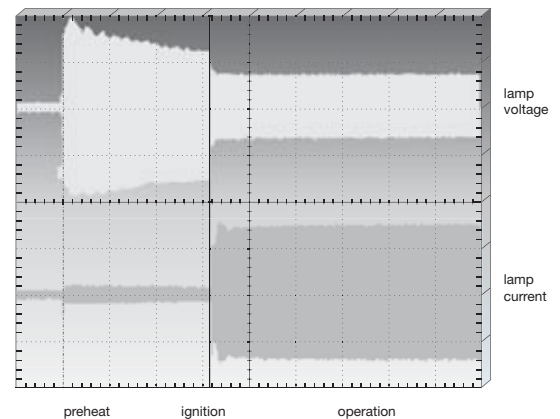
PC PRO 26/32/42 FSD b101

Fluorescent lamps cannot be connected directly to the power supply as they are unable to regulate power and would not strike. The ballast ensures that the lamp electrodes are preheated, suffice voltage is generated to strike the lamp and that the discharge current is controlled.

This function is achieved by both electromagnetic (conventional switchstart and low loss) and Electronic High frequency ballasts.

Electronic ballasts operate fluorescent lamps with high-frequency voltages and currents (40–100 kHz). The starting voltage is generated internally (no starter required) and the power factor is $> 0,95$ (no capacitor required for correcting the reactive power).

Electronic ballasts from TridonicAtco start fluorescent lamps with a defined warm start.



Lamp friendly flickerfree warmstart

After a specific period in which the lamp electrodes are pre-heated, the lamp is ignited using a preset ignition voltage. Warm starting the lamp protects the fluorescent lamp cathode and allows for frequent switching during the life of the lamp.

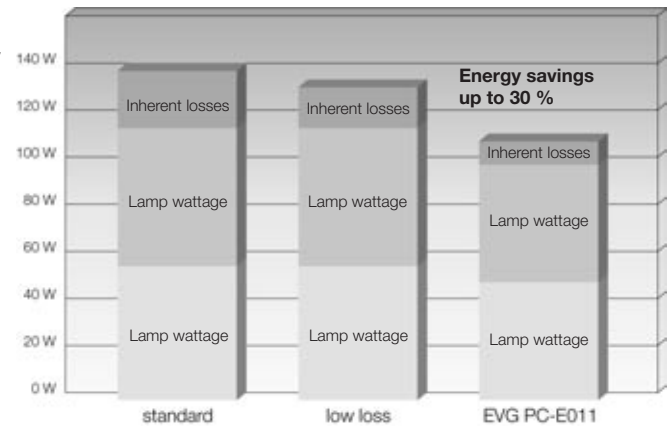
A high level of economy

Energy savings

Electronic ballasts operate fluorescent lamps in the high-frequency range (40–100 kHz). This increases the luminous flux of the lamp by approximately 10 % or put another way a 10 % reduction in lamp operating wattage will produce the same luminous flux.

Electronic ballasts have reduced power losses (< 10 % of lamp wattage). Electronic ballasts have a reduced level of self-heating (a lower lamp temperature increases the efficiency of the lamp).

Savings of up to 30 % can be achieved by using electronic high frequency ballasts when compared to a conventional switch start ballasts (diagram showing energy savings).



Example: Operation of a 2 x 58 W lamp

Longer service life of the lamp

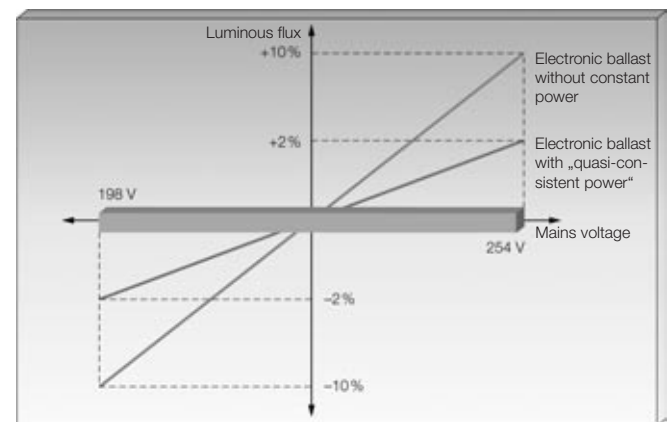
Electronic warm start ballasts increase the operating life of fluorescent lamps considerably when compared with a conventional switch start circuit. Thus the costs of replacing the lamp and the maintenance costs for the lighting installation are reduced (maintenance intervals for the lighting installation become longer).

Disconnection of faulty lamps

Electronic ballasts are able to identify faulty lamps and switch off the lamp. This avoids nuisance cycling of lamps at the end of their life and ensures no energy is wasted in repeated attempts to strike a faulty lamp. Once the lamp has been replaced, the lamp will start automatically.

Constant power

Electronic ballasts with constant power control guarantee optimum performance of the lamp regardless of fluctuations in mains voltage (198–254 V). This produces a constant luminous output and energy savings.



PC-E 011 consistent power output regardless of the mains voltage in the range 198 V to 254 V



Suitable for emergency lighting

Electronic ballasts can be operated with both AC and DC current. Therefore in cases where emergency lighting is required, there is no need to install a separate emergency lighting system (no additional investment costs).

Long service life

Electronic ballasts from TridonicAtco are designed for an average service life of 50 000 hours under reference conditions and with a failure probability of less than 10 %. This corresponds to an average failure rate of 0,2 % for every 1 000 hours of operation. This can only be achieved by using high-quality components, by configuring the circuit accordingly and by operating rigorous test programs.

High comfort

High Quality Lighting through high frequency operation

Electronic ballasts operate fluorescent lamps at a higher frequency (40–100 kHz) than mains power 50 Hz. The effects of this are all very positive: the gas discharge is more constant than with conventional ballasts which interrupt the lamp current at 50 Hz 100 times a second. The visible results of this constant gas discharge include:

- no cathode flickering (even at low temperatures)
- no stroboscopic effects (particularly important on rotating parts of machinery)

Overall improved visual comfort due to improved lighting quality.

Visual comfort and performance due to ASIC light management

High frequency ballasts from TridonicAtco are manufactured using the latest in ASIC technology and lamp management.

- The lamps start reliably without nuisance flickering or noise
- In the event of a fault, the lamp is switched off automatically without causing any further faults (flashing of faulty lamps)
- Safe shut down when the lamp comes to the end of its life

Disturbance free infrared

Electronic ballasts from TridonicAtco have an operating frequency of > 40 kHz and therefore do not interfere with IR remote control facilities (36 kHz).

Low weight

Compared with electromagnetic chokes electronic ballasts have a low weight.

Fast wiring

Electronic ballasts from TridonicAtco are fitted with Insulation displacement (IDC = Insulation Displacement Connection) terminals which allow for both automated and manual wiring (see page 331 for technical specifications).

Safety, reliability and standards

Safety and standards

Electronic ballasts from TridonicAtco comply with all European standards relating to safety, operation and EMC/immunity.

EN 55015	Interference suppression < 30 Mhz
EN 55022	Interference suppression > 30 Mhz
	Interference suppression < 1 GHz
EN 60925	Operation, direct current DC
EN 60929	Operation, alternating current AC
EN 61000-3-2	Harmonic suppression
EN 60928	General requirements and safety
(EN 61347-2-3)	alternating current AC
EN 60924	General requirements and safety
(EN 61347-2-4)	direct current DC
EN 61547	Immunity

can be used in emergency lighting installations in accordance with VDE 0108

ENEC tested



CE mark



TridonicAtco Quality Assurance

A full and comprehensive test program is carried out on 100 % of the goods produced by TridonicAtco in order to maintain the highest standards of reliability for all TridonicAtco devices.

All components undertake a strict thermal function test program based on all current standards and methods.

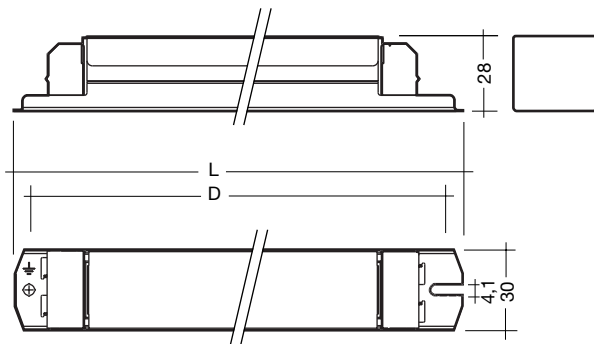
Lamp matrix

Which ballast for what lamp?

You can obtain the current lamp matrix

- via the Internet at www.tridonicatco.com – FAQ
- on request by e-mail: hotline.tec@tridonicatco.com

PC T5 PRO 14–80 W 220–240 V 50/60/0 Hz



- defined lamp warm start within 0,5 s
- cut off of filament heating (cut off technology)
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor $> 0,95$
- overvoltage protection 320 V AC, 1 h

- operating frequency ≥ 42 kHz
- suitable for automatic and manual wiring with insulation displacement connector (IDC)
- wide operating temperature range from -25°C to $+60^{\circ}\text{C}$ (50°C)
- suitable for use in emergency lighting installations in accordance with VDE 0108
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with ∇ or ∇ and ∇ in acc. with EN 60598/ VDE 0710 and VDE 0711

Packaging
(360 x 30 x 28 mm):
box of 25
28 boxes/pallet
700 pieces/pallet

Packaging PC 3/14 ...
(360 x 40 x 28 mm):
box of 20
30 boxes/pallet
600 pieces/pallet

Certified:
EN 55015
EN 55022
EN 60924
EN 60925
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance
with VDE 0108

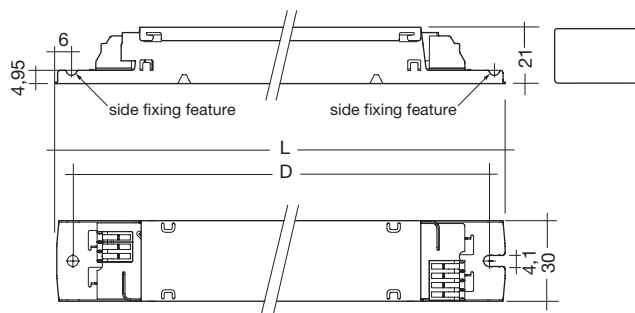
Wiring:
page 46 figure A, B, C, D

Lamp		Ballast										
watt- age W	length mm	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
14	549	PC 1/14 T5 PRO 220–240V 50/60/0Hz	22083839	360x30x28	350	0,27	16,5	13,5	0,08	0,97	70	-25 \rightarrow +60
2x14	549	PC 2/14 T5 PRO 220–240V 50/60/0Hz	22083845	360x30x28	350	0,29	32,5	27,5	0,15	0,97	75	-25 \rightarrow +60
3x14	549	PC 3/14 T5 PRO 220–240V 50/60/0Hz	22086614	360x40x28	340–350	0,36	49,0	3x14,0	0,22	0,96	65	-25 \rightarrow +50
4x14	549	PC 4/14 T5 PRO 220–240V 50/60/0Hz	22086620	360x40x28	340–350	0,36	63,0	4x14,0	0,28	0,96	70	-25 \rightarrow +50
21	849	PC 1/21 T5 PRO 220–240V 50/60/0Hz	22085135	360x30x28	350	0,27	25,0	20,5	0,10	0,97	70	-25 \rightarrow +60
2x21	849	PC 2/21 T5 PRO 220–240V 50/60/0Hz	22085141	360x30x28	350	0,29	46,0	41,5	0,21	0,97	75	-25 \rightarrow +60
28	1149	PC 1/28 T5 PRO 220–240V 50/60/0Hz	22085157	360x30x28	350	0,28	32,0	28,0	0,15	0,97	75	-25 \rightarrow +60
2x28	1149	PC 2/28 T5 PRO 220–240V 50/60/0Hz	22085160	360x30x28	350	0,35	62,5	55,0	0,29	0,97	80	-25 \rightarrow +60
35	1449	PC 1/35 T5 PRO 220–240V 50/60/0Hz	22083851	360x30x28	350	0,28	38,5	34,5	0,17	0,97	75	-25 \rightarrow +60
2x35	1449	PC 2/35 T5 PRO 220–240V 50/60/0Hz	22083864	360x30x28	350	0,35	77,5	69,5	0,35	0,97	80	-25 \rightarrow +60
24	549	PC 1/24 T5 PRO 220–240V 50/60/0Hz	22085176	360x30x28	350	0,27	25,5	22,5	0,12	0,97	75	-25 \rightarrow +60
2x24	549	PC 2/24 T5 PRO 220–240V 50/60/0Hz	22085182	360x30x28	350	0,29	50,5	45,0	0,23	0,97	75	-25 \rightarrow +60
39	849	PC 1/39 T5 PRO 220–240V 50/60/0Hz	22085198	360x30x28	350	0,28	41,5	38,0	0,19	0,97	75	-25 \rightarrow +60
2x39	849	PC 2/39 T5 PRO 220–240V 50/60/0Hz	22085208	360x30x28	350	0,30	83,5	75,5	0,38	0,97	80	-25 \rightarrow +60
49	1449	PC 1/49 T5 PRO 220–240V 50/60/0Hz	22085217	360x30x28	350	0,29	54,5	49,5	0,25	0,97	80	-25 \rightarrow +60
2x49	1449	PC 2/49 T5 PRO 220–240V 50/60/0Hz	22085223	360x30x28	350	0,36	108,0	97,0	0,49	0,97	80	-25 \rightarrow +60
54	1149	PC 1/54 T5 PRO 220–240V 50/60/0Hz	22083870	360x30x28	350	0,29	60,0	54,0	0,27	0,97	80	-25 \rightarrow +60
2x54	1149	PC 2/54 T5 PRO 220–240V 50/60/0Hz	22083886	360x30x28	350	0,36	117,5	107,5	0,53	0,97	80	-25 \rightarrow +50
80	1449	PC 1/80 T5 PRO 220–240V 50/60/0Hz *	22085239	360x30x28	350	0,30	86,0	80,0	0,39	0,97	80	-25 \rightarrow +60
14–35		PC 1/14-21-28-35 T5 PRO	22087665	360x30x28	350	0,28	16,5–38,5	13,5–34,5	0,08–0,17	0,93–0,97	70	-25 \rightarrow +60
2x14–35		PC 2/14-21-28-35 T5 PRO	22087671	360x30x28	350	0,36	32,5–77,5	27,5–69,5	0,14–0,34	0,95–0,99	75	-25 \rightarrow +60

With a DC supply L and N terminals are interchangeable.

* released for TC-L 80 W

PC T5 PRO LP 14–80 W 220–240 V 50/60/0 Hz



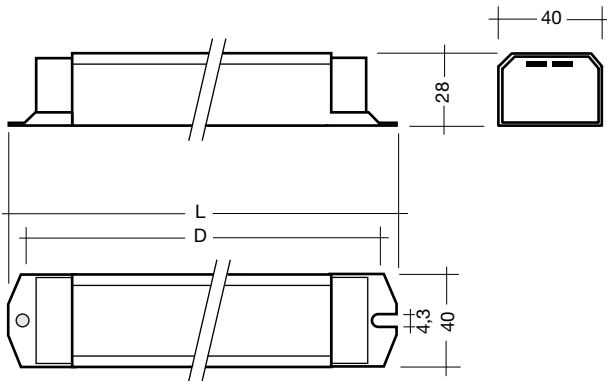
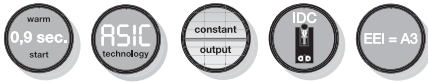
- defined lamp warm start within 1,5 s
- “smart heating technology” (SHT): filament heating is reduced automatically after lamp start. SHT supports optimum lamp operation (performance, lamp life)
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V, for ignition input voltage ≥ 198 V
- overvoltage protection 320 V AC, 1 h
- “intelligent voltage guard”: integrated overvoltage indication, integrated undervoltage protection
- operating frequency ≥ 40 kHz
- power factor $> 0,97$
- suitable for automatic and manual wiring with insulation displacement connector (IDC)
- wide operating temperature range from -25°C to $+50^{\circ}\text{C}$
- suitable for use in emergency lighting installations in accordance with VDE 0108
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with ∇/∇ or ∇/∇ and ∇/∇ in acc. with EN 60598/ VDE 0710 and VDE 0711
- protection class SK I and SK II
- IP 20

Certified:
EN 55015
EN 55022
EN 61347-2-4
EN 60925
EN 61347-2-3
EN 61347-2-3 C5e
EN 60929
EN 61000-3-2
EN 61547
in accordance
with VDE 0108

Lamp		Ballast											
watt- age W	length mm	type	article number	cross section mm	length L mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
14	549	PC 1/14-21-28-35 T5 PRO LP 220–240V 50/60/0Hz	22087725	21x30	280	270	0,20	17	13,7	76	0,97	70	-25 \rightarrow +50
2x14	549	PC 2/14-21-28-35 T5 PRO LP 220–240V 50/60/0Hz	22087731	21x30	360	350	0,26	33	27,4	148	0,97	80	-25 \rightarrow +50
3x14	549	PC 3/14 T5 PRO LP 220–240V 50/60/0Hz	in preparation	21x30	425	415				in preparation			-25 \rightarrow +50
4x14	549	PC 4/14 T5 PRO LP 220–240V 50/60/0Hz	in preparation	21x30	425	415				in preparation			-25 \rightarrow +50
21	849	PC 1/14-21-28-35 T5 PRO LP 220–240V 50/60/0Hz	22087725	21x30	280	270	0,20	24	20,7	108	0,97	70	-25 \rightarrow +50
2x21	849	PC 2/14-21-28-35 T5 PRO LP 220–240V 50/60/0Hz	22087731	21x30	360	350	0,26	47,5	41,4	213	0,97	80	-25 \rightarrow +50
24	549	PC 1/24 T5 PRO LP 220–240V 50/60/0Hz	22087891	21x30	280	270	0,20	25,9	22,5	119	0,97	70	-25 \rightarrow +50
2x24	549	PC 2/24 T5 PRO LP 220–240V 50/60/0Hz	22087939	21x30	360	350	0,26	49,6	45,0	223	0,97	70	-25 \rightarrow +50
28	1149	PC 1/14-21-28-35 T5 PRO LP 220–240V 50/60/0Hz	22087725	21x30	280	270	0,20	31,5	27,8	141	0,97	70	-25 \rightarrow +50
2x28	1149	PC 2/14-21-28-35 T5 PRO LP 220–240V 50/60/0Hz	22087731	21x30	360	350	0,26	63	55,6	282	0,97	80	-25 \rightarrow +50
35	1449	PC 1/14-21-28-35 T5 PRO LP 220–240V 50/60/0Hz	22087725	21x30	280	270	0,20	39	34,7	175	0,97	70	-25 \rightarrow +50
2x35	1449	PC 2/14-21-28-35 T5 PRO LP 220–240V 50/60/0Hz	22087731	21x30	360	350	0,26	77,5	69,4	347	0,97	80	-25 \rightarrow +50
39	849	PC 1/39 T5 PRO LP 220–240V 50/60/0Hz	22087908	21x30	280	270	0,20	42,6	38,0	189	0,98	70	-25 \rightarrow +50
2x39	849	PC 2/39 T5 PRO LP 220–240V 50/60/0Hz	22087630	21x30	360	350	0,26	82,5	76,0	379	0,98	75	-25 \rightarrow +50
49	1449	PC 1/49 T5 PRO LP 220–240V 50/60/0Hz	22087917	21x30	280	270	0,20	54,1	49,3	242	0,98	70	-25 \rightarrow +50
2x49	1449	PC 2/49 T5 PRO LP 220–240V 50/60/0Hz	22087646	21x30	360	350	0,26	107,5	98,6	474	0,98	80	-25 \rightarrow +50
54	1149	PC 1/54 T5 PRO LP 220–240V 50/60/0Hz	22087923	21x30	280	270	0,20	58,0	53,8	259	0,98	70	-25 \rightarrow +50
2x54	1149	PC 2/54 T5 PRO LP 220–240V 50/60/0Hz	22087541	21x30	360	350	0,26	117,9	107,6	533	0,98	80	-25 \rightarrow +50
80	1449	PC 1/80 T5 PRO LP 220–240V 50/60/0Hz	22087618	21x30	360	350	0,26	86,5	80,0	385	0,97	80	-25 \rightarrow +50
2x80	1449	PC 2/80 T5 PRO LP 220–240V 50/60/0Hz	in Vorbereitung	21x30	425	415				in preparation			-25 \rightarrow +50

With a DC supply L and N terminals are interchangeable.

PC-E 011 IDC 18–70 W 220–240 V 50/60/0 Hz



- defined lamp warm start within 0,9 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor $> 0,95$
- overvoltage protection 320 V AC, 1 h
- operating frequency ≥ 42 kHz

- suitable for automatic and manual wiring with insulation displacement connector (IDC)
- wide operating temperature range from -25°C to $+60^{\circ}\text{C}$ (50°C)
- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with ∇ or ∇ and ∇ in acc. with EN 60598/ VDE 0710 and VDE 0711
- VDE EMV

Packaging L 234:
box of 25
30 boxes/pallet
750 pieces/pallet

Packaging L 360:
box of 20
30 boxes/pallet
600 pieces/pallet

Wiring:
page 47 figure E, F, G
page 48 figure H, I, J

Certified:
EN 55015
EN 55022
EN 60924
EN 60925
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance
with VDE 0108

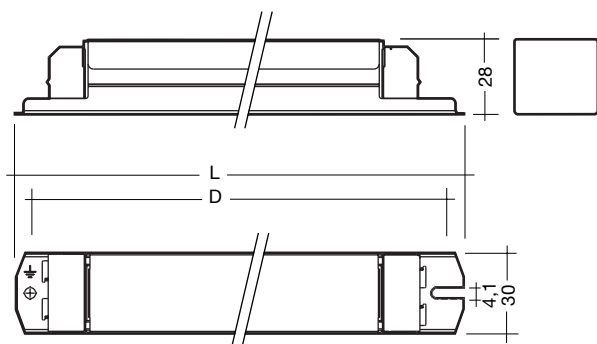
Lamp		Ballast										
wattage W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
18	590	PC 1x18 E011 IDC 220/240V 50/60/0Hz	22085113	234	220	0,28	20,5	16,5	0,09	0,95	80	-25 \rightarrow +60
2x18	590	PC 2x18 E011 IDC 220/240V 50/60/0Hz	22085129	234	220	0,28	38,5	2x16,5	0,17	0,95	80	-25 \rightarrow +60
3x18	590	PC 3x18 E011 IDC 220/240V 50/60/0Hz	22084399	234	220	0,28	57,0	3x16	0,26	0,95	90	-25 \rightarrow +60
4x18	590	PC 4x18 E011 IDC 220/240V 50/60/0Hz	22084402	360	340–350	0,36	72,0	4x16	0,33	0,95	80	-25 \rightarrow +60
30	900	PC 1x30 E011 IDC 220/240V 50/60/0Hz	22086960	234	220	0,28	30,0	25	0,14	0,95	75	-25 \rightarrow +60
2x30	900	PC 2x30 E011 IDC 220/240V 50/60/0Hz	22086976	234	220	0,28	56,0	2x25	0,26	0,95	85	-25 \rightarrow +60
36	1200	PC 1x36 E011 IDC 220/240V 50/60/0Hz	22083149	234	220	0,28	36,0	32	0,16	0,95	80	-25 \rightarrow +60
2x36	1200	PC 2x36 E011 IDC 220/240V 50/60/0Hz	22083155	234	220	0,28	72,0	2x32	0,32	0,95	85	-25 \rightarrow +60
3x36	1200	PC 3x36 E011 IDC 220/240V 50/60/0Hz	22084480	360	340–350	0,36	105,0	3x32	0,48	0,98	70	-25 \rightarrow +50
38	1050	PC 1x38 E011 IDC 220/240V 50/60/0Hz	22086191	234	220	0,28	37,0	33	0,17	0,95	80	-25 \rightarrow +60
2x38	1050	PC 2x38 E011 IDC 220/240V 50/60/0Hz	22086201	234	220	0,28	74,0	2x33	0,33	0,95	85	-25 \rightarrow +60
58	1500	PC 1x58 E011 IDC 220/240V 50/60/0Hz	22083168	234	220	0,28	56,5	50,5	0,25	0,98	85	-25 \rightarrow +60
2x58	1500	PC 2x58 E011 IDC 220/240V 50/60/0Hz	22083174	234	220	0,28	107,0	2x50	0,49	0,95	80	-25 \rightarrow +50
70	1800	PC 1x70 E011 IDC 220/240V 50/60/0Hz	22084503	234	220	0,28	72,0	61,0	0,32	0,98	70	-25 \rightarrow +50
2x70	1800	PC 2x70 E011 IDC 220/240V 50/60/0Hz	22084512	360	340–350	0,36	135,5	2x61,0	0,62	0,98	75	-25 \rightarrow +50

With a DC supply L and N terminals are interchangeable.

Line extension:

PC 4x36 GM001 (art. no. 89818848) please see datasheet.

PC T8 PRO sl 18–58 W 220–240 V 50/60/0 Hz



- defined lamp warm start within 0,9 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor $> 0,95$
- overvoltage protection 320 V AC, 1 h
- operating frequency ≥ 42 kHz

- suitable for automatic and manual wiring with insulation displacement connector (IDC)
- wide operating temperature range from -25°C to 50°C
- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with ∇F or ∇M and $\nabla M \nabla M$ in acc. with EN 60598/ VDE 0710 and VDE 0711

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

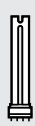
page 48, 49 figure K, L

Certified:

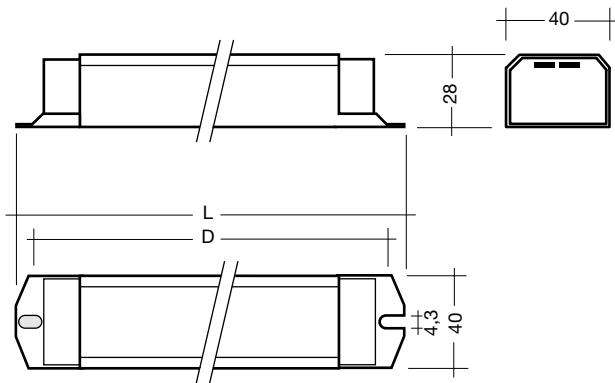
EN 55015
EN 55022
EN 60924
EN 60925
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance
with VDE 0108

Lamp		Ballast										
watt- age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
18	590	PC 1/18 T8 PRO sl 220–240V 50/60/0Hz	22085627	360	350	0,27	19,5	15,5	0,09	0,97	60	-25 \rightarrow +50
2x18	590	PC 2/18 T8 PRO sl 220–240V 50/60/0Hz	22085633	360	350	0,28	40,0	31,0	0,18	0,97	65	-25 \rightarrow +50
36	1200	PC 1/36 T8 PRO sl 220–240V 50/60/0Hz	22085649	360	350	0,28	38,0	31,5	0,17	0,97	65	-25 \rightarrow +50
2x36	1200	PC 2/36 T8 PRO sl 220–240V 50/60/0Hz	22085655	360	350	0,30	76,0	62,5	0,34	0,97	70	-25 \rightarrow +50
58	1500	PC 1/58 T8 PRO sl 220–240V 50/60/0Hz	22085668	360	350	0,28	57,5	50,0	0,27	0,97	65	-25 \rightarrow +50
2x58	1500	PC 2/58 T8 PRO sl 220–240V 50/60/0Hz	22085674	360	350	0,31	107	99,0	0,48	0,97	70	-25 \rightarrow +50

With a DC supply L and N terminals are interchangeable.



PC PRO TC-L IDC 18–55 W 220–240 V 50/60/0 Hz



- defined lamp warm start within 1,5 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor $> 0,95$
- overvoltage protection 320 V AC, 1 h
- operating frequency ≥ 42 kHz
- suitable for automatic and manual wiring with insulation displacement connector (IDC)

- wide operating temperature range from -25°C to $+60^{\circ}\text{C}$ (50°C)
- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with ∇ or ∇ and ∇ in acc. with EN 60598/ VDE 0710 and VDE 0711
- VDE EMV

Packaging L 234:

box of 25
30 boxes/pallet
750 pieces/pallet

Packaging L 360:

box of 20
30 boxes/pallet
600 pieces/pallet

Wiring:
page 49 figure M, N, O

Certified:

EN 55015
EN 55022
EN 60924
EN 60925
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance
with VDE 0108

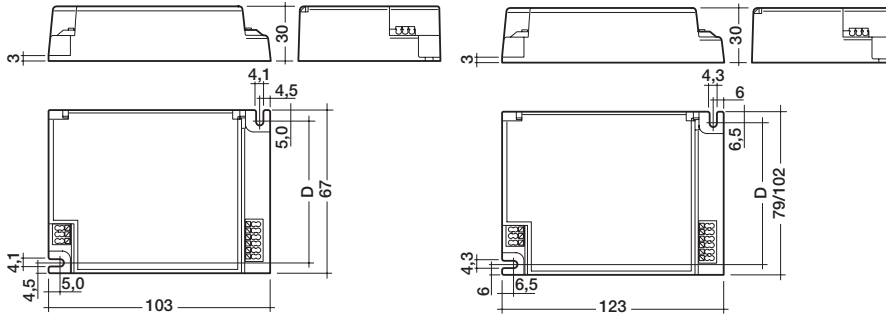
Lamp		Ballast										
wattage W	type	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
18/24	TC-L	PC PRO 18/24 FSD a101 IDC 220–240V 50/60/0Hz	22084617	234	220	0,28	20/27	16/22	0,09/0,12	0,95	75	-25 \rightarrow +60
2x18	TC-L	PC PRO 2x18 FSD a101 IDC 220–240V 50/60/0Hz	22084623	234	220	0,28	40	2x16	0,18	0,97	80	-25 \rightarrow +60
2x24	TC-L	PC PRO 2x24 FSD a101 IDC 220–240V 50/60/0Hz	22084639	234	220	0,28	57	2x22	0,22	0,97	80	-25 \rightarrow +60
36	TC-L	PC PRO 36 FSD a101 IDC 220–240V 50/60/0Hz	22085061	234	220	0,28	37,5	32,0	0,18	0,95	80	-25 \rightarrow +60
2x36	TC-L	PC PRO 2x36 FSD a101 IDC 220–240V 50/60/0Hz	22085077	234	220	0,28	76	2x32	0,34	0,96	80	-25 \rightarrow +60
40	TC-L	PC PRO 40 FSD a101 IDC 220–240V 50/60/0Hz	22085083	234	220	0,28	44	40,0	0,2	0,95	70	-25 \rightarrow +60
2x40	TC-L	PC PRO 2x40 FSD a101 IDC 220–240V 50/60/0Hz	22085099	234	220	0,28	87	2x40	0,38	0,95	75	-25 \rightarrow +60
55	TC-L	PC PRO 55 FSD a101 IDC 220–240V 50/60/0Hz	22085104	234	220	0,28	60	55,0	0,27	0,96	85	-25 \rightarrow +60
2x55	TC-L	PC PRO 2x55 FSD a101 IDC 220–240V 50/60/0Hz	22084496	360	340–350	0,36	120	2x55	0,53	0,97	75	-25 \rightarrow +50

With a DC supply L and N terminals are interchangeable.



Electronic compact ballasts
Compact lamps

PC PRO TC-L 18–24 W 220–240 V 50/60/0 Hz



- defined lamp warm start within 1,5 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor $> 0,95$
- overvoltage protection 320 V AC, 1 h
- operating frequency ≥ 42 kHz
- wide operating temperature range from -25°C to $+60^{\circ}\text{C}$

- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with ∇ or ∇ and ∇ in acc. with EN 60598/ VDE 0710 and VDE 0711
- VDE EMV

Accessories (page 50):

- mounting bracket L103 (art. no. 4635080)
- mounting bracket L123 (art. no. 4635096)

Packaging L 103:

- box of 15
- 50 boxes/pallet
- 750 pieces/pallet

Packaging L 123:

- box of 10
- 50 boxes/pallet
- 500 pieces/pallet

Wiring:

page 49 figure P, Q

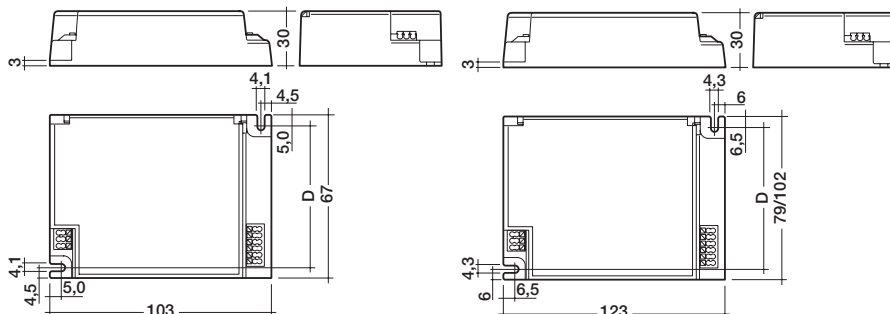
Certified:

- EN 55015
- EN 55022
- EN 60924
- EN 60925
- EN 60928
- EN 60929
- EN 61000-3-2
- EN 61547
- in accordance with VDE 0108

Lamp		Ballast											
watt- age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$	
18	TC-L	PC PRO 18/24 FSD b101	220–240V 50/60/0Hz	22083278	103x67x30	57,5	0,14	20	16	0,10	0,94	85	-25 \rightarrow +60
2x18	TC-L	PC PRO 2x18 FSD b101	220–240V 50/60/0Hz	22083284	123x79x30	66,5	0,17	40,5	2x18	0,19	0,96	80	-25 \rightarrow +60
24	TC-L	PC PRO 18/24 FSD b101	220–240V 50/60/0Hz	22083278	103x67x30	57,5	0,14	29	25	0,13	0,96	85	-25 \rightarrow +60
2x24	TC-L	PC PRO 2x24 FSD b101	220–240V 50/60/0Hz	22083290	123x79x30	66,5	0,17	57	2x25	0,25	0,96	85	-25 \rightarrow +60



PC PRO 5–70 W 220–240 V 50/60/0 Hz



- defined lamp warm start within 1,0 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor $> 0,95$
- overvoltage protection 320 V AC, 1 h
- operating frequency ≥ 42 kHz
- temperature range from -25°C to $+60^{\circ}\text{C}$

- suitable for use in emergency lighting installations in accordance with VDE 0108
- safe switch off of defective lamps
- automatic restart after lamp change
- for luminaires with ∇ or ∇ and ∇ in acc. with EN 60598/ VDE 0710 and VDE 0711
- VDE EMV

Accessories (page 50):

- mounting bracket L103 (art. no. 4635080)
- mounting bracket L123 (art. no. 4635096)

Packaging L 103:

- box of 15
- 50 boxes/pallet
- 750 pieces/pallet

Packaging L 123:

- box of 10
- 50 boxes/pallet
- 500 pieces/pallet

Wiring:
page 49 figure P, Q

Certified:

- EN 55015
- EN 55022
- EN 60924
- EN 60925
- EN 60928
- EN 60929
- EN 61000-3-2
- EN 61547
- in accordance with VDE 0108

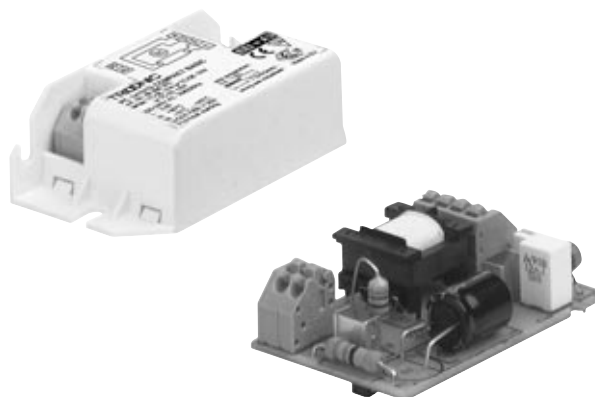
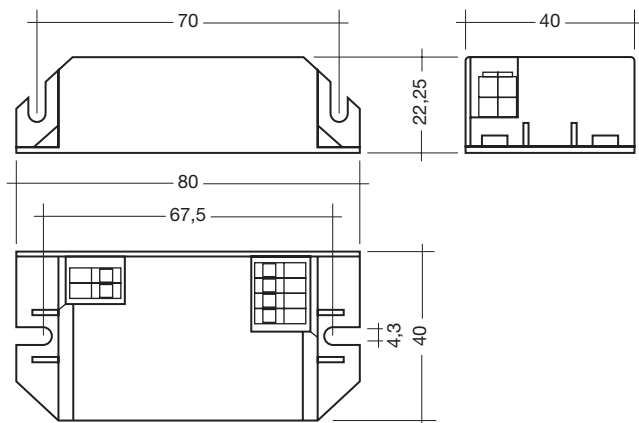
Lamp		Ballast										
wattage W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
5	TC-SEL	PC PRO 5/7 FSD b101	22083215	103x67x30	57,5	0,14	7,5	5	0,03–0,04	0,96	70	-25 → +60
2x5	TC-SEL	PC PRO 2x5/7 FSD b101	22083221	123x79x30	66,5	0,17	13	2x5	0,06–0,07	0,96	70	-25 → +60
7	TC-SEL	PC PRO 5/7 FSD b101	22083215	103x67x30	57,5	0,14	9	7	0,04–0,05	0,96	70	-25 → +60
2x7	TC-SEL	PC PRO 2x5/7 FSD b101	22083221	123x79x30	66,5	0,17	18	2x7,5	0,08–0,09	0,96	70	-25 → +60
9	TC-SEL	PC PRO 9/11 FSD b101	22082999	103x67x30	57,5	0,14	11	8,5	0,05–0,06	0,96	70	-25 → +60
2x9	TC-SEL	PC PRO 2x9/11 FSD b101	22083003	123x79x30	66,5	0,17	20	2x8,5	0,09–0,10	0,96	80	-25 → +60
11	TC-SEL	PC PRO 9/11 FSD b101	22082999	103x67x30	57,5	0,14	15,5	13	0,07–0,08	0,96	80	-25 → +60
2x11	TC-SEL	PC PRO 2x9/11 FSD b101	22083003	123x79x30	66,5	0,17	30	2x13	0,13–0,15	0,96	80	-25 → +60
10	TC-DEL	PC PRO 10/13 FSQ b101	22083237	103x67x30	57,5	0,14	12	9	0,05–0,06	0,96	75	-25 → +60
2x10	TC-DEL	PC PRO 2x10/13 FSQ b101	22083243	123x79x30	66,5	0,17	23	2x10	0,10–0,11	0,96	75	-25 → +60
13	TC-DEL	PC PRO 10/13 FSQ b101	22083237	103x67x30	57,5	0,14	16	13	0,07–0,08	0,96	75	-25 → +60
2x13	TC-DEL	PC PRO 2x10/13 FSQ b101	22083243	123x79x30	66,5	0,17	34	2x15	0,15–0,16	0,96	75	-25 → +60
18	TC-DEL	PC PRO 18 FSQ b101	22082606	103x67x30	57,5	0,14	20,5	18	0,09–0,10	0,96	80	-25 → +60
2x18	TC-DEL	PC PRO 2x18 FSQ b101	22082589	123x79x30	66,5	0,17	40	2x18	0,17–0,19	0,96	80	-25 → +60
26	TC-DEL	PC PRO 26/32/42 FSM b101	22082595	103x67x30	57,5	0,14	28,5	25	0,12–0,14	0,96	85	-25 → +60
2x26	TC-DEL	PC PRO 2x26 FSQ b101	22082573	123x79x30	66,5	0,17	56	2x25,7	0,24–0,26	0,96	85	-25 → +60
18	TC-TEL	PC PRO 18 FSQ b101	22082606	103x67x30	57,5	0,14	20,5	18	0,09–0,10	0,96	80	-25 → +60
2x18	TC-TEL	PC PRO 2x18 FSQ b101	22082589	123x79x30	66,5	0,17	40	2x18	0,17–0,19	0,96	80	-25 → +60
26	TC-TEL	PC PRO 26/32/42 FSM b101	22082595	103x67x30	57,5	0,14	28,5	25	0,12–0,14	0,96	85	-25 → +60
2x26	TC-TEL	PC PRO 2x26 FSQ b101	22082573	123x79x30	66,5	0,17	56	2x25,7	0,24–0,26	0,96	85	-25 → +60
32	TC-TEL	PC PRO 26/32/42 FSM b101	22082595	103x67x30	57,5	0,14	35	31,5	0,15–0,17	0,96	85	-25 → +60
42	TC-TEL	PC PRO 26/32/42 FSM b101	22082595	103x67x30	57,5	0,14	46	42,5	0,20–0,22	0,96	85	-25 → +60
2x32	TC-TEL	PC PRO 2x32/42 FSM b101	22082567	123x102x30	89,5	0,21	71	2x33	0,30–0,34	0,96	100	-25 → +60
2x42	TC-TEL	PC PRO 2x32/42 FSM b101	22082567	123x102x30	89,5	0,21	93,7	2x40,7	0,41–0,46	0,96	100	-25 → +60
57	TC-TEL	PC PRO 57/70 FSM b101	22087687	123x102x30	89,5	0,21	64	57,5	0,29	0,97	80	-25 → +60
70	TC-TEL	PC PRO 57/70 FSM b101	22087687	123x102x30	89,5	0,21	77	70	0,34	0,97	80	-25 → +60

With a DC supply L and N terminals are interchangeable. * also for 2x32 W TC-T



Electronic ballasts Compact lamps

PC COMPACT BASIC 7–18 W 220–240 V 50/60/0 Hz



- defined lamp warm start < 2 s
switching cycles > 10 000
- average service of 50 000 h at nominal rating conditions with a maximum failure rate of 10 %
- ENEC mark indicates lamp operation within lamp specification
- AC operation 198–254 V
- AC operation 154–250 V DC (lamp start 200–250 V DC)
- overvoltage protection 264 V AC, 360 h
- operating frequency \geq 42 kHz

- wide operating temperature range from -15°C to +45°C
- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- automatic end of lamp life shut off
- automatic restart after lamp change
- temperature protection ∇_{130} according to EN 61347-1-C.5e

Packaging:

box of 25
70 boxes/pallet
1 750 pieces/pallet

Wiring:

page 50 figure R

Certified:

EN 55015
EN 61347-2-4
EN 60925
EN 61347-2-3
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108
IEC 68-2-64 Fh
IEC 68-2-29 Eb
IEC 68-2-30

Square housing:

Lamp	Ballast											
watt- age W	type	type	article number	LxWxH mm	fixing centres D mm	weight g	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point °C	temperature range °C
7	TC-SEL	PC 1x7/9/10 COMPACT BASIC	89895974	80x40x22,25	70/67,5	35	8,3	6,2	0,056	0,65	75	-15 → +45
9	TC-SEL	PC 1x7/9/10 COMPACT BASIC	89895974	80x40x22,25	70/67,5	35	9,8	7,7	0,065	0,65	75	-15 → +45
11	TC-SEL	PC 1x11/13 COMPACT BASIC	89895975	80x40x22,25	70/67,5	35	14,1	11,8	0,096	0,65	80	-15 → +45
10	TC-DEL	PC 1x7/9/10 COMPACT BASIC	89895974	80x40x22,25	70/67,5	35	10,3	8,3	0,068	0,65	75	-15 → +45
13	TC-DEL	PC 1x11/13 COMPACT BASIC	89895975	80x40x22,25	70/67,5	35	14,7	12,7	0,098	0,65	80	-15 → +45
18	TC-DEL	PC 1x18 COMPACT BASIC	89899606	80x40x22,25	70/67,5	35	18,9	16,3	0,130	0,65	80	-15 → +45
13	TC-TEL	PC 1x11/13 COMPACT BASIC	89895975	80x40x22,25	70/67,5	35	14,7	12,7	0,098	0,65	80	-15 → +45
18	TC-TEL	PC 1x18 COMPACT BASIC	89899606	80x40x22,25	70/67,5	35	18,9	16,3	0,130	0,65	80	-15 → +45

ENEC approval also for T5 lamps.

For complete lamp matrix please see datasheet.

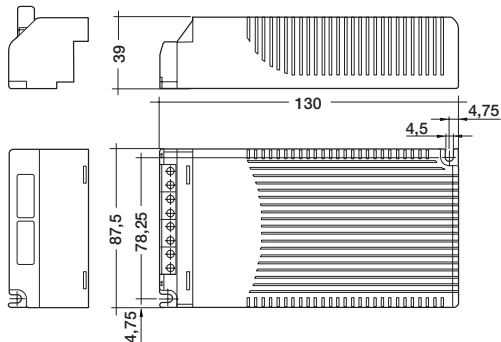
Square pcb:

Ballast			
type	article number	LxWxH mm	weight g
PC 1x7/9/10 COMPACT BASIC PCB	89899612	56x36,4x17	20
PC 1x11/13 COMPACT BASIC PCB	89899613	56x36,4x17	20
PC 1x18 COMPACT BASIC PCB	89899614	56x36,4x17	20

With a DC supply L and N terminals are interchangeable.



PC PRO 10–42 W 220–240 V 50/60/0 Hz, non dimmable



- Defined warm start within 1,0 s
- Constant light output independent of fluctuations in mains voltage
- AC operation 198–254 V
- DC operation 176–280 V; Battery voltage may drop briefly to 154 V; for ignition input voltage ≥ 198 V
- Power factor $> 0,93$
- Overvoltage protection 320 V AC for 1 hour
- Operating frequency ≥ 42 kHz
- Wide temperature range from -25°C to $+60^{\circ}\text{C}$
- Energy classification EEL = A3
- Use in emergency lighting according to VDE 0108 possible

- Safe switch off of defective lamps
- Automatic end of lamp life shut off
- Automatic re-start after lamp change
- For luminaires with ∇ marks according to EN 60598, VDE 0710 und VDE 0711
- Temperature protection ∇ acc. to EN 60928 B.5C
- Looping on primary side possible with double assignments of terminals
- 6 pole terminal block on secondary side
- Captive screw terminal
- Tool free assembly of the strain-relief
- $U_{\text{out}} = 250$ V 250
- Protection class 2

Packaging:

box of 10
40 cartons/pallet
400 pieces/pallet

strain relief enclosed in the carton for assembly

Wiring:

page 50 figure T, U

Certified:

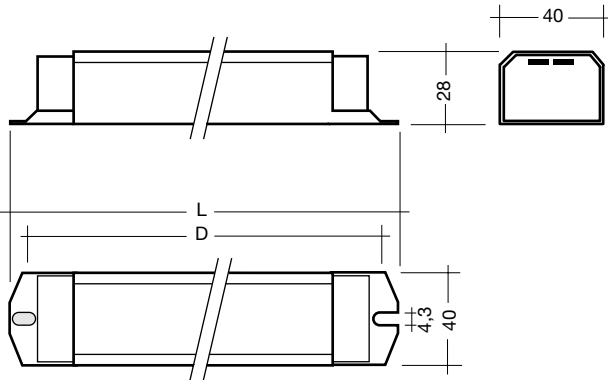
EN 60928
EN 60929
EN 60924
EN 60925
EN 61000-3-2
EN 61547
EN 55015
acc. VDE 0108

Lamp		Ballast											
wattage W	type	type	article number	LxWxH mm	fixing centres		weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
					L mm	W mm							
10	TC-DEL	PC PRO 10/13 FSQ b101 ZE 220–240V 50/60/0Hz	86456767	130x87,5x39	120–123	77–80	0,275	12	9	0,05–0,06	0,93	70	-25 \rightarrow +60
2x10	TC-DEL	PC PRO 2x10/13 FSQ b101 ZE 220–240V 50/60/0Hz	86456732	130x87,5x39	120–123	77–80	0,275	23	2x9	0,10–0,11	0,96	70	-25 \rightarrow +60
13	TC-DEL	PC PRO 10/13 FSQ b101 ZE 220–240V 50/60/0Hz	86456767	130x87,5x39	120–123	77–80	0,275	17	13	0,07–0,08	0,96	70	-25 \rightarrow +60
2x13	TC-DEL	PC PRO 2x10/13 FSQ b101 ZE 220–240V 50/60/0Hz	86456732	130x87,5x39	120–123	77–80	0,275	33	2x13	0,14–0,16	0,96	70	-25 \rightarrow +60
18	TC-DEL	PC PRO 18 FSQ b101 ZE 220–240V 50/60/0Hz	86456149	130x87,5x39	120–123	77–80	0,275	20,5	18	0,09–0,10	0,96	70	-25 \rightarrow +60
2x18	TC-DEL	PC PRO 2x18 FSQ b101 ZE 220–240V 50/60/0Hz	86456155	130x87,5x39	120–123	77–80	0,275	40	2x18	0,16–0,17	0,96	70	-25 \rightarrow +60
26	TC-DEL	PC PRO 26/32/42 FSM b101 ZE 220–240V 50/60/0Hz	86456168	130x87,5x39	120–123	77–80	0,275	28,5	25	0,12–0,14	0,96	70	-25 \rightarrow +60
2x26	TC-DEL	PC PRO 2x26/32 FSQ b101 ZE 220–240V 50/60/0Hz	86456174	130x87,5x39	120–123	77–80	0,275	56	2x25,7	0,24–0,26	0,96	70	-25 \rightarrow +60
18	TC-TEL	PC PRO 18 FSQ b101 ZE 220–240V 50/60/0Hz	86456149	130x87,5x39	120–123	77–80	0,275	20,5	18	0,09–0,10	0,96	70	-25 \rightarrow +60
2x18	TC-TEL	PC PRO 2x18 FSQ b101 ZE 220–240V 50/60/0Hz	86456155	130x87,5x39	120–123	77–80	0,275	40	2x18	0,16–0,17	0,96	70	-25 \rightarrow +60
26	TC-TEL	PC PRO 26/32/42 FSM b101 ZE 220–240V 50/60/0Hz	86456168	130x87,5x39	120–123	77–80	0,275	28,5	25	0,12–0,14	0,96	70	-25 \rightarrow +60
2x26	TC-TEL	PC PRO 2x26/32 FSQ b101 ZE 220–240V 50/60/0Hz	86456174	130x87,5x39	120–123	77–80	0,275	56	2x25,7	0,24–0,26	0,96	70	-25 \rightarrow +60
32	TC-TEL	PC PRO 26/32/42 FSM b101 ZE 220–240V 50/60/0Hz	86456168	130x87,5x39	120–123	77–80	0,275	35	31,5	0,15–0,17	0,96	70	-25 \rightarrow +60
2x32	TC-TEL	PC PRO 2x26/32 FSM b101 ZE 220–240V 50/60/0Hz	86456174	130x87,5x39	120–123	77–80	0,275	71	2x33	0,24–0,30	0,96	70	-25 \rightarrow +60
42	TC-TEL	PC PRO 26/32/42 FSM b101 ZE 220–240V 50/60/0Hz	86456168	130x87,5x39	120–123	77–80	0,275	46	42,5	0,12–0,20	0,96	70	-25 \rightarrow +60



Electronic ballasts
Compact lamps

PC DD PRO 28–55 W 220–240 V 50/60/0 Hz



- defined lamp warm start within 1,5 s
- constant light output independent of fluctuations in mains voltage (198–254 V)
- AC voltage range 198–254 V
- DC voltage range 154–250 V; (lamp start 200–250 V)
- power factor > 0,96
- overvoltage protection 320 V AC, 1 h
- operating frequency ≥ 42 kHz
- wide operating temperature range from -25°C to +60°C

- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic re-start after lamp change
- for luminaires with ∇F or ∇M and $\nabla M \nabla M$ in acc. with EN 60598/ VDE 0710 and VDE 0711
- temperature rated $\nabla 110$ in acc. with EN 61347-1-C.5e

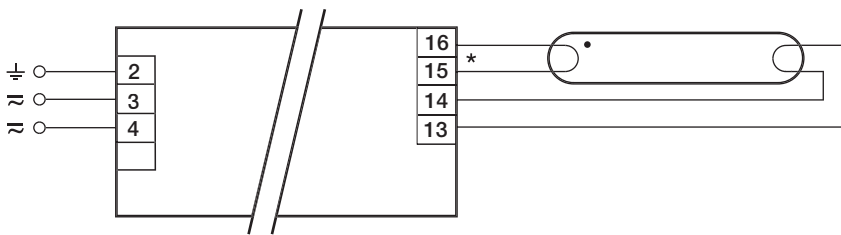
Packaging:
box of 20
50 boxes/pallet
1 000 pieces/pallet

Wiring:
page 50 figure S

Certified:
EN 55015
EN 61347-2-4
(EN 60924)
EN 60925
EN 61347-2-3
(EN 60928)
EN 60929
EN 61000-3-2
EN 61547
in accordance
with VDE 0108

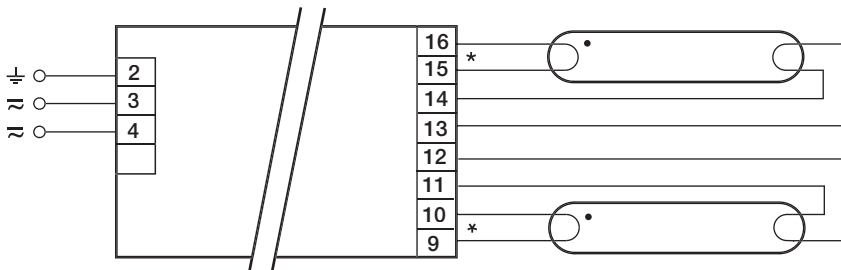
Lamp		Ballast										
watt- age W	type	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point °C	temperature range °C
28	202	PC 1x28 DD PRO	89895964	154	140	0,175	28,7	25,4	0,130	0,96	85	-25 → +60
38	202	PC 1x38 DD PRO	89895965	154	140	0,177	39,7	34,6	0,180	0,96	85	-25 → +60
55	202	PC 1x55 DD PRO	89895967	154	140	0,180	60,0	53,0	0,265	0,98	80	-25 → +60

With a DC supply L and N terminals are interchangeable.



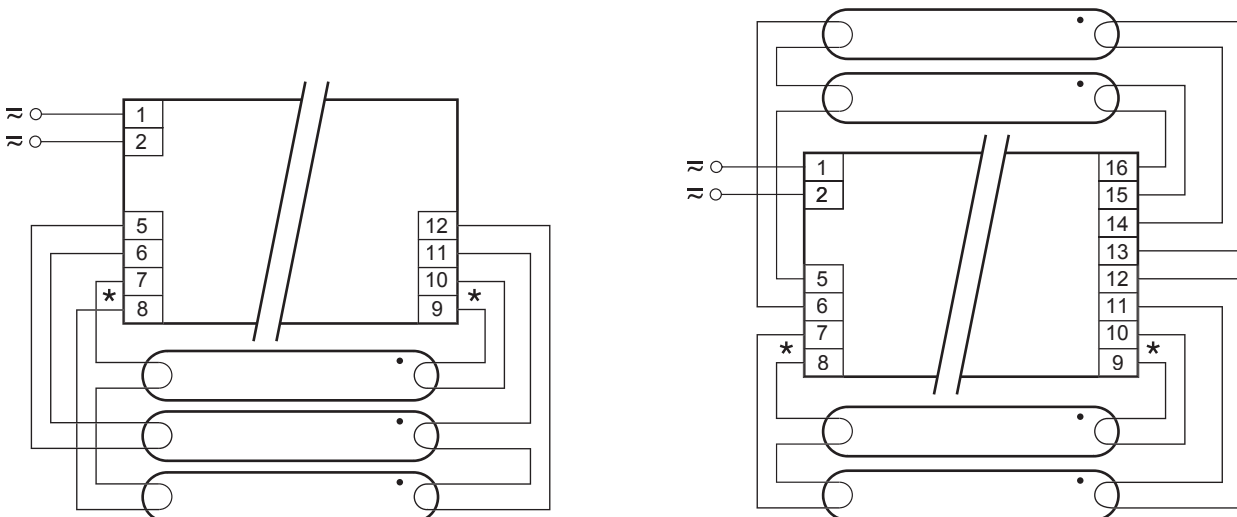
* leads (15,16) max. 1,0 m (< 150 pF)
leads (13,14) max. 2,0 m (< 300 pF)
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
SK II - luminaires: no earth required

A) PC T5 PRO 14–80 W



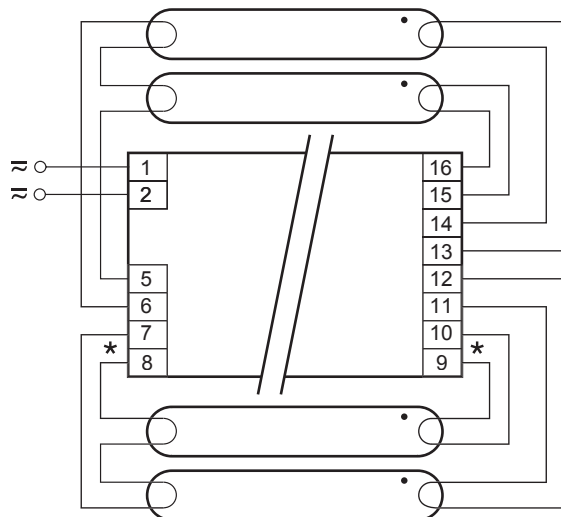
* leads (9,10,15,16) max. 1,0 m (< 150 pF)
leads (11,12,13,14) max. 2,0 m (< 300 pF)
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
SK II - luminaires: no earth required

B) PC T5 PRO 2 x 14–54 W



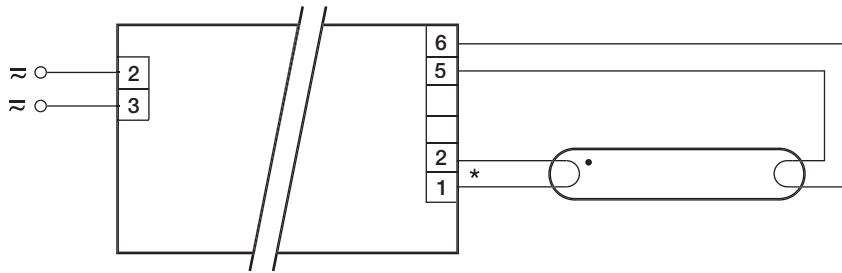
* leads (7,8,9,10) max.1,0 m (< 150 pF)
leads (5,6,11,12) max. 2,0 m (< 300 pF)
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
SK II - luminaires: no earth required

C) PC T5 PRO 3 x 14 W



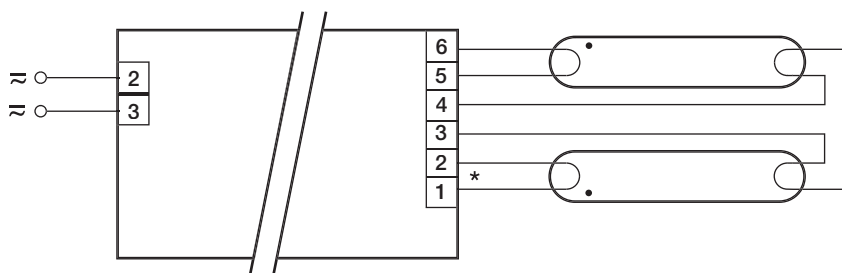
* leads (7,8,9,10) max. 1,0 m (< 150 pF)
leads (5,6,11,12,13,14,15,16) max. 2,0 m (< 300 pF)
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
SK II - luminaires: no earth required

D) PC T5 PRO 4 x 14 W



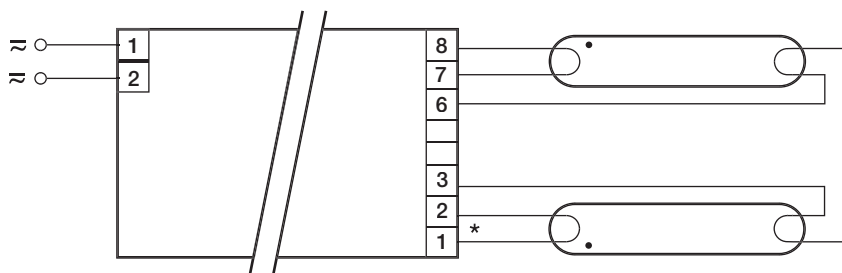
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (5,6) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

E) PC-E 011 IDC 18-70 W



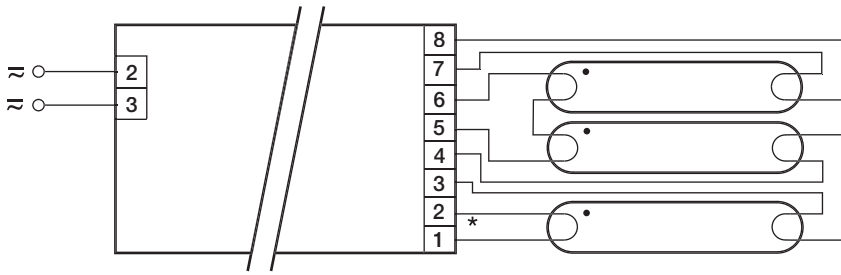
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

F) PC-E 011 IDC 2 x 18-58 W



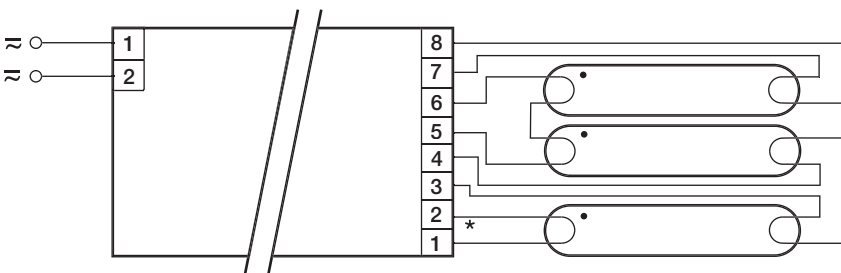
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,6,7,8) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

G) PC-E 011 IDC 2 x 70 W



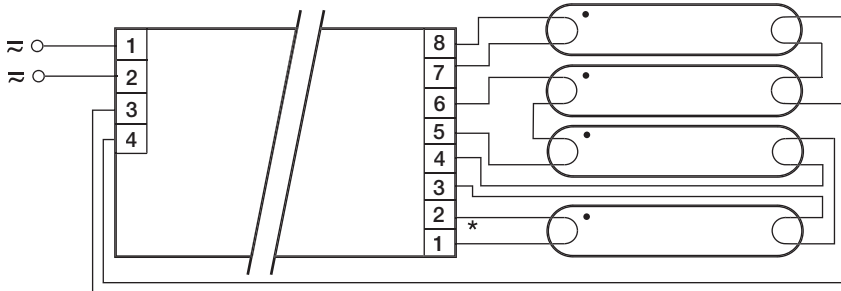
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

H) PC-E 011 IDC 3 x 18 W



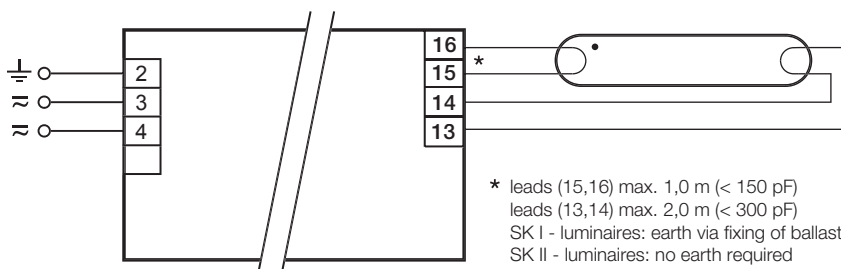
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

I) PC-E 011 IDC 3 x 36 W



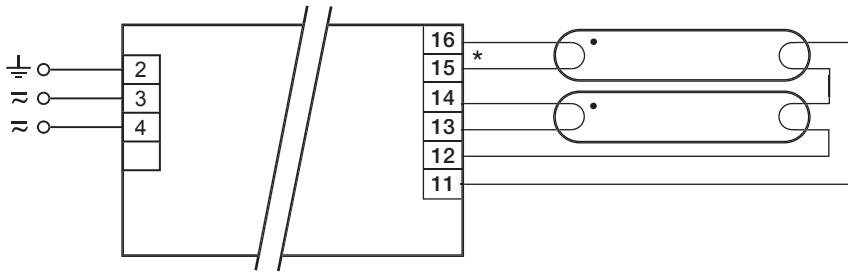
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

J) PC-E 011 IDC 4 x 18 W



- * leads (15,16) max. 1,0 m (< 150 pF)
- leads (13,14) max. 2,0 m (< 300 pF)
- SK I - luminaires: earth via fixing of ballast housing required (acc. to IEC598)
- SK II - luminaires: no earth required

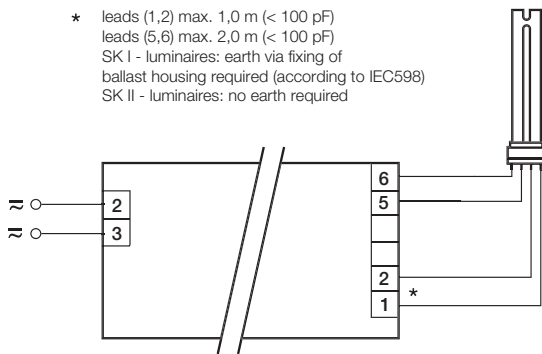
K) PC T8 PRO 18-58 W



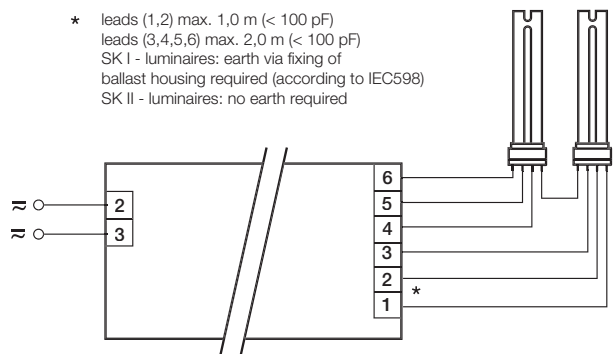
- * leads (15,16) max. 1,0 m (< 150 pF)
- leads (11,12,13,14) max. 2,0 m (< 300 pF)
- SK I - luminaires: earth via fixing of ballast housing required (acc. to IEC598)
- SK II - luminaires: no earth required

L) PC T8 PRO 2x18-58 W

- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (5,6) max. 2,0 m (< 100 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

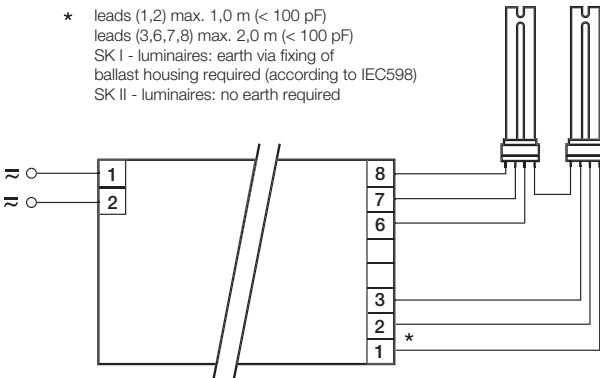


- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6) max. 2,0 m (< 100 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required



M) PC PRO a FSD 18-55 W

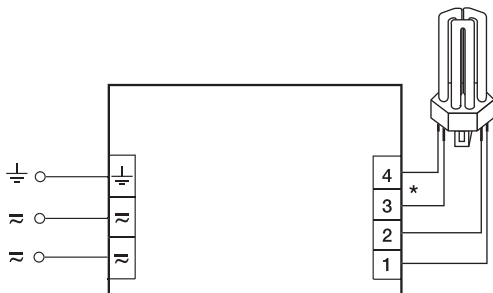
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,6,7,8) max. 2,0 m (< 100 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required



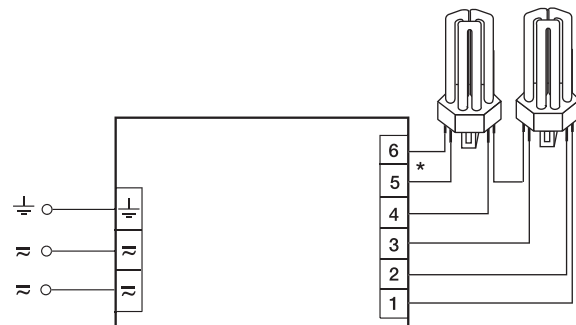
N) PC PRO a FSD 2 x 18-40 W

O) PC PRO a FSD 2x55 W

- * leads (3,4) max. 1,0 m (< 100 pF)
- leads (1,2) max. 2,0 m (< 100 pF)

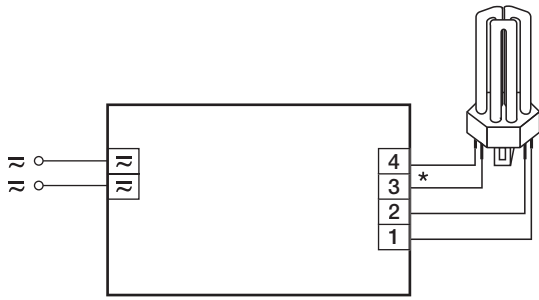


- * leads (5,6) max. 1,0 m (< 100 pF)
- leads (1,2,3,4) max. 2,0 m (< 100 pF)



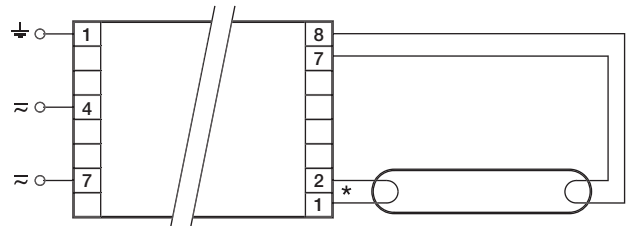
P) PC PRO b 5-70 W; PC PRO b FSD 18-24 W

Q) PC PRO b 2 x 5-42 W; PC PRO b FSD 2 x 18-24 W



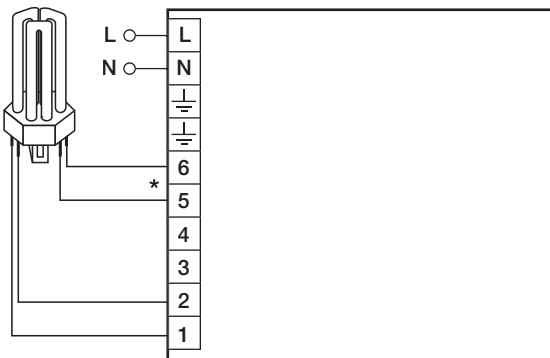
* leads (3,4) max. 0,5 m (< 60 pF)
leads (1,2) max. 1,0 m (< 120 pF)

R) PC BASIC 7-18 W



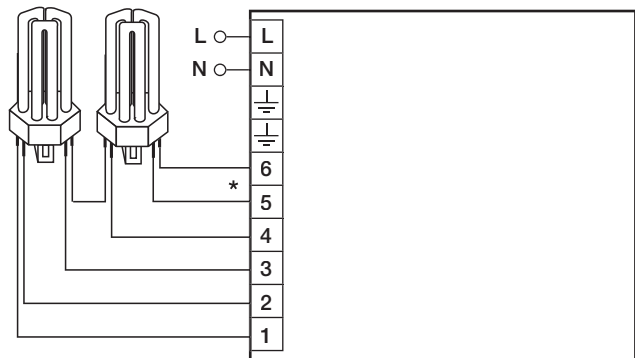
* leads (1,2) max. 1,0 m (< 100 pF)
leads (7,8) max. 2,0 m (< 200 pF)

S) PC DD PRO



* leads max. 1,0 m (< 100 pF)
straight-through wiring to luminaire housing possible
SK II luminaires

T) PC PRO ZE 10-42 W

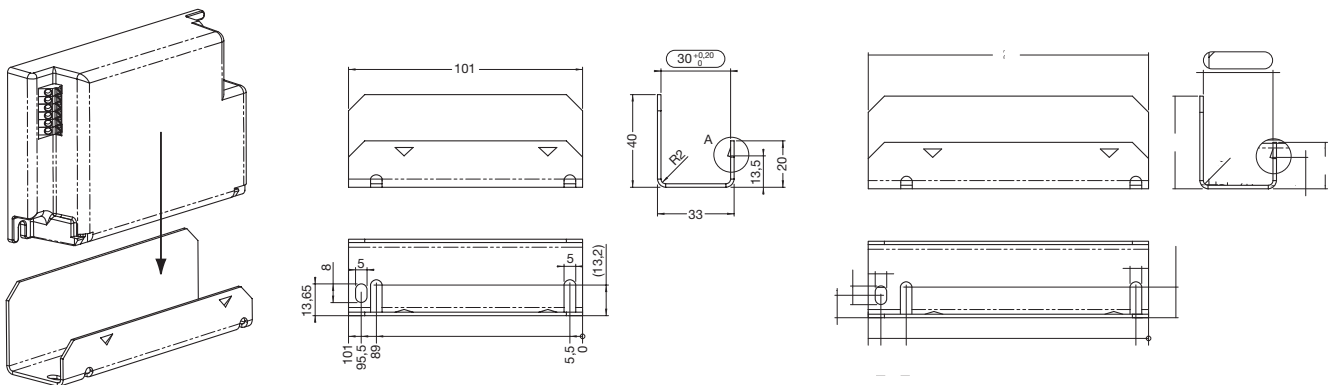


* leads max. 1,0 m (< 100 pF)
straight-through wiring to luminaire housing possible
SK II luminaires

U) PC PRO ZE 2x10-32 W

Accessories

Mounting bracket L103 (art. no. 4635080)
Mounting bracket L123 (art. no. 4635096)



Dimmable electronic ballasts for fluorescent lamps

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Digital, electronic ballasts for fluorescent lamps

Fluorescent lamps cannot be connected directly to the power supply as they are unable to regulate power and would not strike. The ballast ensures that the lamp electrodes are preheated, sufficient voltage is generated to strike the lamp and that the discharge current is controlled.

This function is achieved by both electromagnetic (conventional switchstart and low loss) and Electronic High frequency ballasts.

Electronic ballasts operate fluorescent lamps with high-frequency voltages and currents (40–100 kHz). The starting voltage is generated internally (no starter required) and the power factor is $> 0,95$ (no capacitor required for correcting the reactive power).

Electronic ballasts start fluorescent lamps in accordance with two different starting principles:

Warm-start

After a specific period in which the lamp electrodes are preheated, the lamp is ignited using a preset ignition voltage. Warm-starting the lamp protects the fluorescent lamp cathode and allows for frequent switching cycles during the life of the lamp.

Cold-start

The fluorescent lamp is started immediately ($< 0,2$ seconds) by directly applying the starting voltage. Cold-starting the lamp reduces the switching cycles of the lamp (2–3 cycles of operation per day).

TridonicAtco electronic ballasts are characterised as being:

- economical
- easy to use
- reliable

PCA 1x28 T5 ECO



PCA 1x40 T5c EXCEL one4all

A high level of economy

Energy savings

Electronic ballasts operate fluorescent lamps in the high-frequency range (40–100 kHz). This increases the luminous flux of the lamp by approximately 10 % or put another way a 10 % reduction in lamp operating wattage will produce the same luminous flux. Electronic ballasts have reduced power losses (< 10 % of lamp wattage). Electronic ballasts have a reduced level of self-heating (a lower lamp temperature increases the efficiency of the lamp).

Savings of up to 30 % can be achieved by using electronic high frequency ballasts when compared to a conventional switch start ballasts (diagram showing energy savings).

Longer service life of the lamp

Electronic warm start ballasts increase the operating life of fluorescent lamps considerably when compared with a conventional switch start circuit. Thus the costs of replacing the lamp and the maintenance costs for the lighting installation are reduced (maintenance intervals for the lighting installation become longer).

Disconnection of faulty lamps

Electronic ballasts are able to identify faulty lamps and switch off the lamp. This avoids nuisance cycling of lamps at the end of their life and ensures no energy is wasted in repeated attempts to strike a faulty lamp. Once the lamp has been replaced, the lamp will start automatically.

Constant Power

Electronic ballasts with constant power control guarantee optimum performance of the lamp regardless of fluctuations in mains voltage (198 V–254 V). This produces a constant luminous output and energy savings.

Suitable for emergency lighting

Electronic ballasts can be operated with both AC and DC current. Therefore in cases where emergency lighting is required, there is no need to install a separate emergency lighting system (no additional investment costs).

Long service life

Electronic ballasts from TridonicAtco are designed to have an average service life of 50 000 hours at their maximum permissible ambient temperature. This can only be achieved by using high-quality components, by configuring the circuit accordingly and by operating rigorous test programs.

Simple to use

High Quality Lighting through high frequency operation

Electronic ballasts operate fluorescent lamps at a higher frequency (40–100 kHz) than mains power 50 Hz. The effects of this are all very positive: the gas discharge is more constant than with conventional ballasts which interrupt the lamp current at 50 Hz 100 times a second. The visible results of this constant gas discharge include:

- no cathode flickering (even at low temperatures)
- no stroboscopic effects (particularly important on rotating parts of machinery)

Overall improved visual comfort due to improved lighting quality.

Visual comfort and performance due to ASIC light management

High frequency ballasts from TridonicAtco are manufactured using the latest in ASIC technology and lamp management.

- The lamps start reliably without nuisance flickering or noise
- In the event of a fault, the lamp is switched off automatically without causing any further faults (flashing of faulty lamps)
- Safe shut down when the lamp comes to the end of its life

General comfort

Electronic ballasts from TridonicAtco have an operating frequency of > 40 kHz and therefore do not interfere with IR remote control facilities (36 kHz).

Low weight

Compared with electromagnetic chokes electronic ballasts have low weight.

Fast wiring

Electronic ballasts from TridonicAtco are fitted with Insulation displacement (IDC) terminals which allow for both automated and manual wiring (see page 331 for technical specifications).

Safety, reliability and standards

Safety and standards

Electronic ballasts from TridonicAtco comply with all European standards relating to safety, operation and EMC/immunity.

EN 55015	Interference suppression < 30 Mhz
EN 55022	Interference suppression > 30 Mhz
	Interference suppression < 1 GHz
EN 60929	Operation, alternating current AC
EN 61000-3-2	Harmonic suppression
EN 60928	General requirements and safety, alternating current AC
(EN 61347-2-3)	Current AC
EN 61547	Immunity

can be used in emergency lighting installations in accordance with VDE 0108

ENEC tested



CE mark



TridonicAtco Quality Assurance

A full and comprehensive test program is carried out on 100 % of the goods produced by TridonicAtco in order to maintain the highest standards of reliability for all TridonicAtco devices.

All components undertake a strict Thermal function test program based on all current standards and methods.

Lamp matrix

Which ballast for what lamp?

You can obtain the current lamp matrix

- via the Internet at www.tridonicatco.com – FAQ
- on request by e-mail: hotline.tec@tridonicatco.com

PCA EXCEL one4all

The 4th generation of digital dimmable ballasts from TridonicAtco – PCA EXCEL one4all – combines four unique functions in a single device: Simple switch control using switch**DIM**, constant light control using **SMART**, the tried and tested flexible system using LUXMATE **DSI** or individually programmable solutions using **DALI**. PCA EXCEL one4all adapts flexibly and automatically to the relevant lighting management solution.

PCA EXCEL one4all ballasts offer excellent dimming performance over a range of 1% or 3 % to 100 %. In **DSI** and **DALI** mode, the ballasts can generate an error message in the event of lamp failure. New servicing concepts are possible as a result of the integration of this information in control networks. Various operating parameters can also be dynamically modified and stored in both digital operating modes. Thus the PCA EXCEL one4all guarantees extraordinary flexibility and the facility for expansion.

All the standardised functions such as individual programming (64 addresses), group programming (16 addresses), scenes (16 scene values), fade time and fade rate are, of course, available in the **DALI** operating mode.

The PCA EXCEL one4all communicates with the relevant control system via two terminals regardless of whether you are using the switch**DIM**, **DSI** or **DALI** system. The wiring is always the same, the device recognises the correct control signal automatically and makes the necessary intelligent adjustments.

PCA EXCEL one4all's are available for T5, T8 fluorescent lamps and TC-L, TC-SEL,TC-DEL, TC-TEL and TC-DD compact lamps.

PCA ECO

The new PCA ECO devices from TridonicAtco offer a cost-effective introduction to digital dimming technology. Solutions such as switch**DIM**, **SMART** constant lighting technology and LUXMATE **DSI**, all offer different levels of control interface with the ballast. A proven track record based on tried and tested technology.

As with the PCA EXCEL one4all ballast, the PCA ECO operates with a logarithmic dimming characteristic and offers a dimming range from a light level of 1 % or 3 % to 100 % for the T5 and compact ballasts or 10 % to 100 % for the T8 and TCL devices. Except for error signals and programmability, the PCA ECO offers all the digital **DSI** functions and benefits.

Thanks to simple wiring and compact housing, this versatile ballast is suitable for most application.

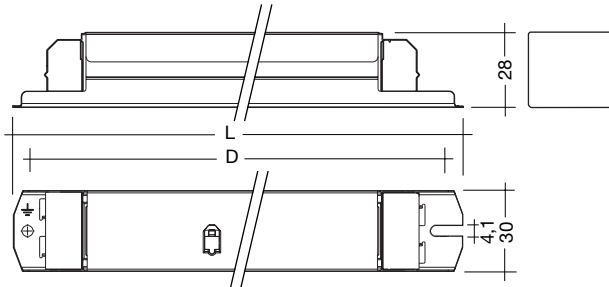
PCA ECO's are available for T5, T8 fluorescent lamps and TC-L, TC-SEL,TC-DEL, TC-TEL and TC-DD compact lamps.

	PCA EXCEL	PCA ECO
dimming range T5 high efficiency	1–100%	1–100%
dimming range T5 high output	3–100%	3–100%
dimming range T5 circline	3–100%	3–100%
dimming range T5 80 W, 3/14 W, 4/14 W	10–100%	10–100%
dimming range T8	1–100%	1–100%
dimming range T8 3/18 W, 4/18 W	10–100%	10–100%
dimming range compact lamps	3–100%	3–100%
plastic housing colour	blue	green
metal housing, SMART channel	blue	green
control signals	switch DIM , SMART , DSI , DALI	switch DIM , SMART , DSI
programmable parameters (DSI , DALI)	DALI , DSI	no
error feed back (DSI , DALI)	yes	no
switch DIM (dimming with push to make switches)	Memory*	Memory**

* The ballast starts at the last dimming level.

** The ballast starts at the last dimming level as long as the ballast is connected to the mains.

PCA T5 ECO 14–35 W 220–240 V 50/60/0 Hz



- dimming range from 1–100 %
- lamp start 1 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI) or switchDIM
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 81 figure A, B, C

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

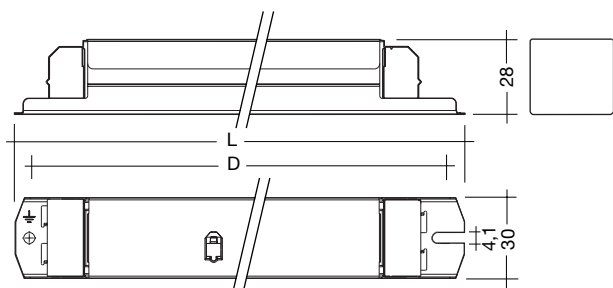
Lamp		Ballast										
wattage W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
14	549	PCA 1/14 T5 ECO 220/240V 50/60/0Hz	22084979	360	350	0,32	17,8	14	0,09	0,92	70	+10 → +60
2x14	549	PCA 2/14 T5 ECO 220/240V 50/60/0Hz	22084985	360	350	0,36	35,6	2x14	0,16	0,97	80	+10 → +60
21	849	PCA 1/21 T5 ECO 220/240V 50/60/0Hz	22084991	360	350	0,32	25,1	21	0,12	0,95	65	+10 → +60
2x21	849	PCA 2/21 T5 ECO 220/240V 50/60/0Hz	22085005	360	350	0,36	47,7	2x21	0,22	0,98	70	+10 → +60
28	1149	PCA 1/28 T5 ECO 220/240V 50/60/0Hz	22084771	360	350	0,32	32	28	0,15	0,96	70	+10 → +60
2x28	1149	PCA 2/28 T5 ECO 220/240V 50/60/0Hz	22084787	360	350	0,36	61	2x28	0,28	0,98	75	+10 → +60
35	1449	PCA 1/35 T5 ECO 220/240V 50/60/0Hz	22084793	360	350	0,32	38	34	0,17	0,97	75	+10 → +60
2x35	1449	PCA 2/35 T5 ECO 220/240V 50/60/0Hz	22084806	360	350	0,36	75	2x34	0,32	0,98	85	+10 → +60

* dimming to 1 % between 10°C to $t_{a \max}$

** valid at 100 % light output

Electronic ballasts for dimming to 1 %
Linear lamps, high efficiency

PCA T5 EXCEL one4all 14–35 W 220–240 V 50/60/0 Hz



- dimming range from 1–100 %
- lamp start at 1 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI), switchDIM or DALI (digital addressable lighting interface)
- error feed back and programmable features in both DALI and DSI mode
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 81 figure A, B, C

Certified:

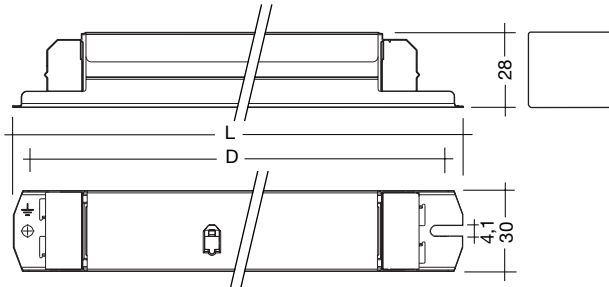
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
wattage W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
14	549	PCA 1/14 T5 EXCEL 220–240V 50/60/0Hz	22084884	360	350	0,32	17,8	14	0,09	0,92	70	+10 → +60
2x14	549	PCA 2/14 T5 EXCEL 220–240V 50/60/0Hz	22084890	360	350	0,36	35,6	2x14	0,16	0,97	80	+10 → +60
21	849	PCA 1/21 T5 EXCEL 220–240V 50/60/0Hz	22084907	360	350	0,32	25,1	21	0,12	0,95	65	+10 → +60
2x21	849	PCA 2/21 T5 EXCEL 220–240V 50/60/0Hz	22084916	360	350	0,36	47,7	2x21	0,22	0,98	70	+10 → +60
28	1149	PCA 1/28 T5 EXCEL 220–240V 50/60/0Hz	22084540	360	350	0,32	32	28	0,15	0,96	70	+10 → +60
2x28	1149	PCA 2/28 T5 EXCEL 220–240V 50/60/0Hz	22084556	360	350	0,36	61	2x28	0,28	0,98	75	+10 → +60
35	1449	PCA 1/35 T5 EXCEL 220–240V 50/60/0Hz	22084569	360	350	0,32	38	34	0,17	0,97	75	+10 → +60
2x35	1449	PCA 2/35 T5 EXCEL 220–240V 50/60/0Hz	22084575	360	350	0,36	75	2x34	0,32	0,98	85	+10 → +60

* dimming to 1 % between 10°C to t_a max

** valid at 100 % light output

PCA T5 ECO 24–80 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 % (10–100 % with 80 W)
- lamp start at 3 % (10 % with 80 W)
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (**DSI**) or switch**DIM**
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 81 figure A, B, C

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

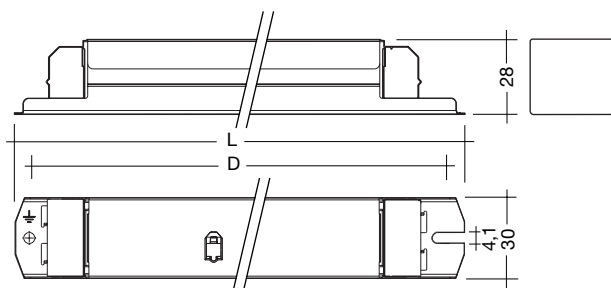
Lamp		Ballast										
wattage W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
24	549	PCA 1/24 T5 ECO 220–240V 50/60/0Hz	22085014	360	350	0,32	25,8	24	0,12	0,96	70	+10 → +60
2x24	549	PCA 2/24 T5 ECO 220–240V 50/60/0Hz	22085020	360	350	0,36	51,5	2x24	0,24	0,98	80	+10 → +60
39	849	PCA 1/39 T5 ECO 220–240V 50/60/0Hz	22085036	360	350	0,32	44,4	39	0,2	0,98	70	+10 → +60
2x39	849	PCA 2/39 T5 ECO 220–240V 50/60/0Hz	22085042	360	350	0,36	90,7	2x39	0,4	0,99	75	+10 → +50
54	1149	PCA 1/54 T5 ECO 220–240V 50/60/0Hz	22084815	360	350	0,32	60	52	0,23	0,98	80	+10 → +60
2x54	1149	PCA 2/54 T5 ECO 220–240V 50/60/0Hz	22084821	360	350	0,36	116	2x52	0,5	0,99	75	+10 → +50
80	1449	PCA 1/80 T5 ECO 220–240V 50/60/0Hz	22085058	360	350	0,32	89,5	80	0,36	0,98	75	+10 → +50

* dimming to 3 % (10 % with 80 W) between 10°C to ta max.

** valid at 100 % light output

Electronic ballasts for dimming to 3 %
Linear lamps, high output

PCA T5 EXCEL one4all 24–80 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 % (10–100 % with 80 W)
- lamp start at 3 % (10 % with 80 W)
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (**DSI**), switch**DIM** or **DALI** (digital addressable lighting interface)
- error feed back and programmable features in both **DALI** and **DSI** mode

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 81 figure A, B, C

Certified:

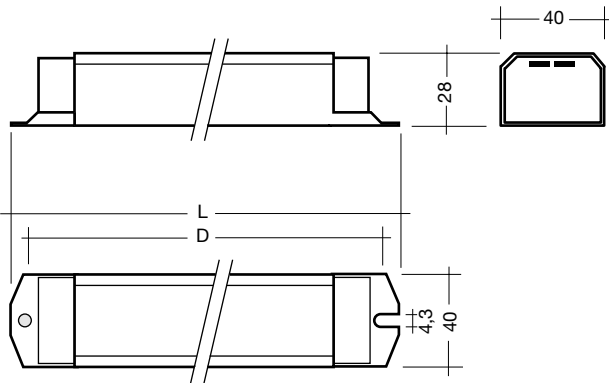
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt- age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
24	549	PCA 1/24 T5 EXCEL 220–240V 50/60/0Hz	22084922	360	350	0,32	25,8	24	0,12	0,96	70	+10 → +60
2x24	549	PCA 2/24 T5 EXCEL 220–240V 50/60/0Hz	22084938	360	350	0,36	51,5	2x24	0,24	0,98	80	+10 → +60
39	849	PCA 1/39 T5 EXCEL 220–240V 50/60/0Hz	22084944	360	350	0,32	44,4	39	0,20	0,98	70	+10 → +60
2x39	849	PCA 2/39 T5 EXCEL 220–240V 50/60/0Hz	22084950	360	350	0,36	90,7	2x39	0,40	0,99	75	+10 → +50
54	1149	PCA 1/54 T5 EXCEL 220–240V 50/60/0Hz	22084581	360	350	0,32	60	52	0,23	0,98	80	+10 → +60
2x54	1149	PCA 2/54 T5 EXCEL 220–240V 50/60/0Hz	22084597	360	350	0,36	116	2x52	0,50	0,99	75	+10 → +50
80	1449	PCA 1/80 T5 EXCEL 220–240V 50/60/0Hz	22084963	360	350	0,32	89,5	80	0,36	0,98	75	+10 → +50

* dimming to 3 % between 10°C to t_a max

** valid at 100 % light output

PCA 3/14 T5 ECO / 4/14 T5 ECO 220–240 V 50/60/0 Hz



- dimming range from 10–100 %
- lamp start at 10 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (**DSI**) or switch**DIM**
- integrated SMART interface
- fully electronic lamp management and digital communication with ASIC and μ C

- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 20
30 boxes/pallet
600 pieces/pallet

Wiring:

page 81 figure D, E, F

Certified:

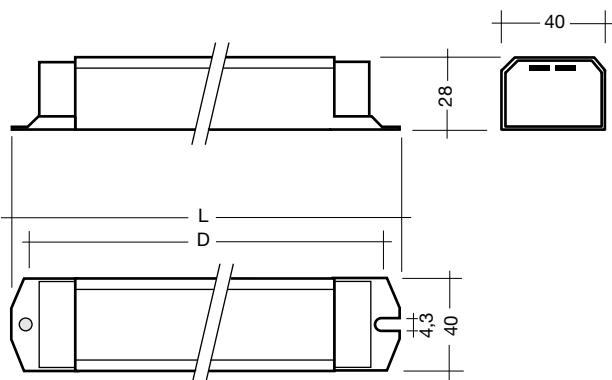
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt- age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
3x14	550	PCA 3/14 T5 ECO 220–240V 50/60/0Hz	22086661	360	340–350	0,38	51,6	3x14	0,23	0,98	80	+10 → +50
4x14	550	PCA 4/14 T5 ECO 220–240V 50/60/0Hz	22086683	360	340–350	0,40	66,5	4x14	0,32	0,98	80	+10 → +60

* dimming to 10 % between 10°C to t_a max.

** valid at 100 % light output

PCA 3/14 T5 EXCEL one4all / 4/14 T5 EXCEL one4all 220–240 V 50/60/0 Hz



- dimming range from 10–100 %
- lamp start at 10 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI), switchDIM or DALI (digital addressable lighting interface)
- error feed back and programmable features in both DALI and DSI mode

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 20
30 boxes/pallet
600 pieces/pallet

Wiring:

page 81 figure D, E, F

Certified:

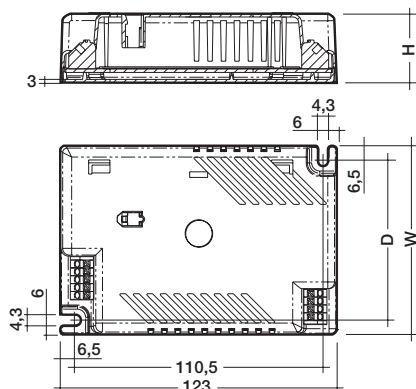
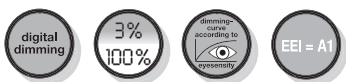
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt- age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W ***	current at 230V/50Hz A ***	λ at 230V/50Hz	tc point °C	temperature range * °C
3x14	550	PCA 3/14 T5 EXCEL 220–240V 50/60/0Hz	22086658	360	340–350	0,38	51,6	3x14	0,23	0,98	80	+10 → +50
4x14	550	PCA 4/14 T5 EXCEL 220–240V 50/60/0Hz	22086677	360	340–350	0,4	66,5	4x14	0,32	0,98	80	+10 → +60

* dimming to 10 % between 10°C to ta max.

** valid at 100 % light output

PCA T5c ECO 22–55 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI) or switchDIM
- integrated SMART interface
- fully electronic lamp management and digital communication with ASIC and μ C

- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 10
50 boxes/pallet
500 pieces/pallet

Wiring:

page 82 figure H, I

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt- age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W**	lamp power W**	current at 230V/50Hz A**	λ at 230V/50Hz	tc point °C	temperature range * °C
22	T5c	PCA 1/22 T5c ECO 220–240V 50/60/0Hz	22086897	123x79x31	66,5	0,22	26,1	1x22	0,12	0,96	70	+10 → +50
40	T5c	PCA 1/40 T5c ECO 220–240V 50/60/0Hz	22086913	123x79x31	66,5	0,22	45,5	1x40	0,2	0,98	75	+10 → +50
55	T5c	PCA 1/55 T5c ECO 220–240V 50/60/0Hz	22086935	123x79x31	66,5	0,22	61	1x55	0,24	0,98	85	+10 → +50

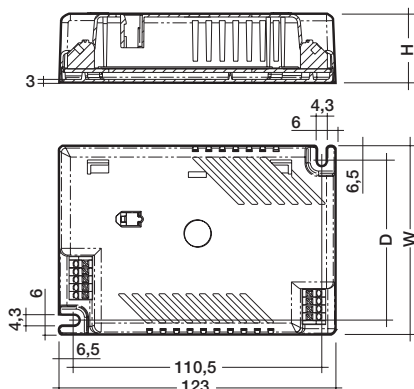
* dimming to 3 % between 10°C to t_a max.

** valid at 100 % light output



Electronic ballasts for dimming to 3 %
Linear lamps

PCA T5c EXCEL one4all 22–55 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI), switchDIM or DALI (digital addressable lighting interface)
- error feed back and programmable features in both DALI and DSI mode

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 10
50 boxes/pallet
500 pieces/pallet

Wiring:

page 82 figure H, I

Certified:

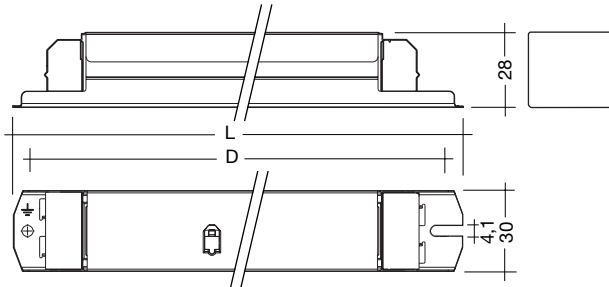
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt-age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
22	T5c	PCA 1/22 T5c EXCEL one4all 220–240V 50/60/0Hz	22086881	123x79x31	66,5	0,22	26,1	1x22	0,12	0,96	70	+10 → +50
40	T5c	PCA 1/40 T5c EXCEL one4all 220–240V 50/60/0Hz	22086904	123x79x31	66,5	0,22	45,5	1x40	0,2	0,98	75	+10 → +50
55	T5c	PCA 1/55 T5c EXCEL one4all 220–240V 50/60/0Hz	22086929	123x79x31	66,5	0,22	61	1x55	0,24	0,98	85	+10 → +50

* dimming to 3 % between 10°C to t_a max

** valid at 100 % light output

PCA ECO 18–58 W 220–240 V 50/60/0 Hz



- dimming range from 1–100 %
- lamp start at 1 %
- defined lamp warm start within 0,6 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI) or switchDIM
- integrated SMART interface
- fully electronic lamp management and digital communication with ASIC and μ C

- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:
box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:
page 81 figure A, B, C

Certified:
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

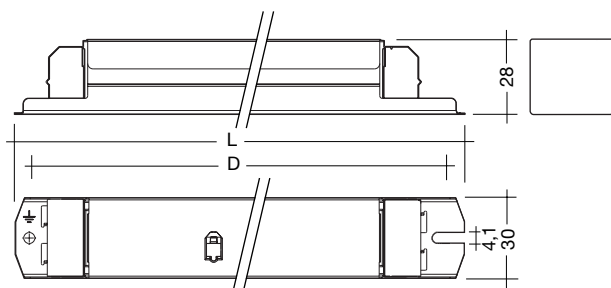
Lamp		Ballast										
watt-age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
18	590	PCA 1/18 ECO 220–240V 50/60/0Hz	22085406	360	350	0,32	20,8	16	0,1	0,93	65	-25 → +60
2x18	590	PCA 2/18 ECO 220–240V 50/60/0Hz	22085415	360	350	0,36	39,6	2x16	0,18	0,96	75	-25 → +60
30	900	PCA 1/30 ECO 220–240V 50/60/0Hz	22086116	360	350	0,32	30,1	25	0,135	0,96	80	-25 → +60
2x30	900	PCA 2/30 ECO 220–240V 50/60/0Hz	22086122	360	350	0,36	58	2x25	0,26	0,98	75	-25 → +60
36	1200	PCA 1/36 ECO 220–240V 50/60/0Hz	22085421	360	350	0,32	36,5	32	0,165	0,97	70	-25 → +60
2x36	1200	PCA 2/36 ECO 220–240V 50/60/0Hz	22085437	360	350	0,36	70,4	2x32	0,305	0,98	80	-25 → +60
58	1500	PCA 1/58 ECO 220–240V 50/60/0Hz	22085443	360	350	0,32	56	50	0,25	0,98	75	-25 → +60
2x58	1500	PCA 2/58 ECO 220–240V 50/60/0Hz	22084837	360	350	0,36	111	100	0,49	0,98	75	-25 → +50

* dimming to 1 % between 0°C to $t_{a \max}$.

** valid at 100 % light output

Electronic ballasts for dimming to 1 %
Linear lamps

PCA EXCEL one4all 18–58 W 220–240 V 50/60/0 Hz



- dimming range from 1–100 %
- lamp start at 1 %
- defined lamp warm start within 0,6 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI), switchDIM or DALI (digital addressable lighting interface)
- error feed back and programmable features in both DALI and DSI mode
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:
box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:
page 81 figure A, B, C

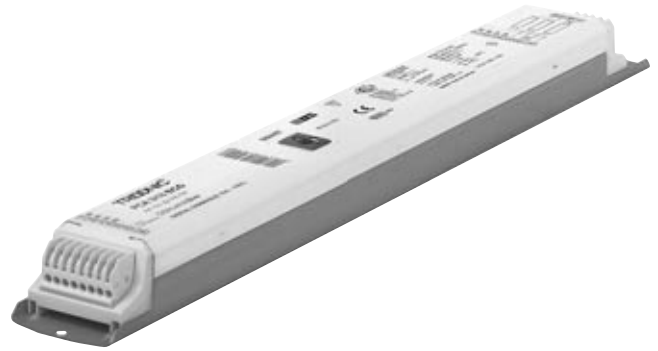
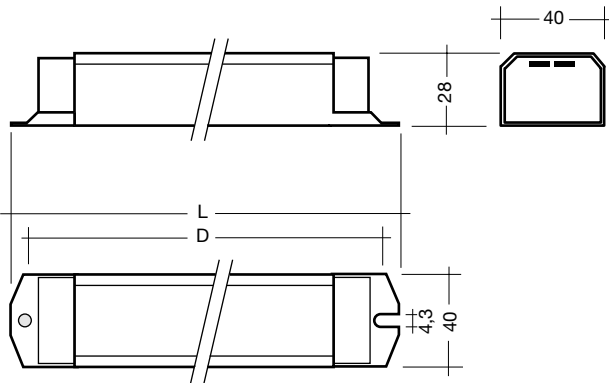
Certified:
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt-age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
18	590	PCA 1/18 EXCEL 220–240V 50/60/0Hz	22085245	360	350	0,32	20,8	16	0,1	0,93	65	-25 → +60
2x18	590	PCA 2/18 EXCEL 220–240V 50/60/0Hz	22085251	360	350	0,36	39,6	2x16	0,18	0,96	75	-25 → +60
30	900	PCA 1/30 EXCEL 220–240V 50/60/0Hz	22086092	360	350	0,32	30,1	25	0,135	0,96	80	-25 → +60
2x30	900	PCA 2/30 EXCEL 220–240V 50/60/0Hz	22086107	360	350	0,36	58	2x25	0,26	0,98	75	-25 → +60
36	1200	PCA 1/36 EXCEL 220–240V 50/60/0Hz	22085264	360	350	0,32	36,5	32	0,165	0,97	70	-25 → +60
2x36	1200	PCA 2/36 EXCEL 220–240V 50/60/0Hz	22085270	360	350	0,36	70,4	2x32	0,305	0,98	80	-25 → +60
58	1500	PCA 1/58 EXCEL 220–240V 50/60/0Hz	22085286	360	350	0,32	56	50	0,25	0,98	75	-25 → +60
2x58	1500	PCA 2/58 EXCEL 220–240V 50/60/0Hz	22084608	360	350	0,36	111	100	0,49	0,98	75	-25 → +50

* dimming to 1 % between 0°C to $t_{a \max}$.

** valid at 100 % light output

PCA 3/18 ECO / 4/18 ECO 220–240 V 50/60/0 Hz



- dimming range from 10–100 %
- lamp start at 10 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (**DSI**) or switch**DIM**
- integrated SMART interface
- fully electronic lamp management and digital communication with ASIC and μ C

- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 20
30 boxes/pallet
600 pieces/pallet

Wiring:

page 81 figure D, E, F

Certified:

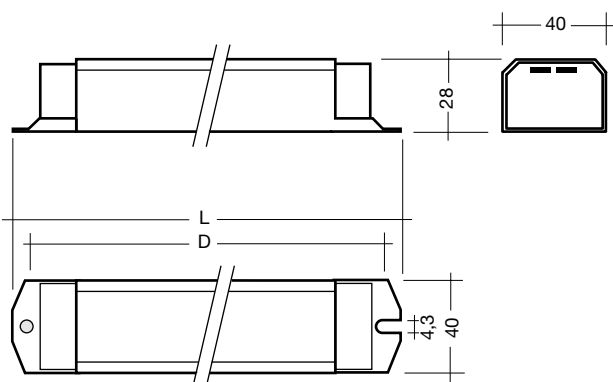
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt- age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
3x18	590	PCA 3/18 ECO 220–240V 50/60/0Hz	22086721	360	340–350	0,38	57,7	3x16	0,26	0,97	75	-25 → +50
4x18	590	PCA 4/18 ECO 220–240V 50/60/0Hz	22086706	360	340–350	0,4	77,5	4x16	0,34	0,99	80	-25 → +60

* dimming to 10 % between 0°C to t_a max

** valid at 100 % light output

PCA 3/18 EXCEL one4all / 4/18 EXCEL one4all 220–240 V 50/60/0 Hz



- dimming range from 10–100 %
- lamp start at 10 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (**DSI**), switch**DIM** or **DALI** (digital addressable lighting interface)
- error feed back and programmable features in both **DALI** and **DSI** mode
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 20
30 boxes/pallet
600 pieces/pallet

Wiring:

page 81 figure D, E, F

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

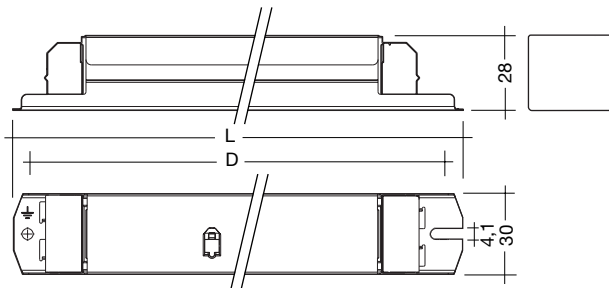
Lamp		Ballast										
watt-age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
3x18	590	PCA 3/18 EXCEL 220–240V 50/60/0Hz	22086715	360	340–350	0,38	57,7	3x16	0,26	0,97	75	-25 → +50
4x18	590	PCA 4/18 EXCEL 220–240V 50/60/0Hz	22086699	360	340–350	0,4	77,5	4x16	0,34	0,99	80	-25 → +60

* dimming to 10 % between 0°C to t_a max

** valid at 100 % light output



PCA TCL ECO 18–55 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 0,6 s with AC and DC (with 55 W and 2 x 55 W, 2 x 18 W in 1,5 s with AC)
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (**DSI**) or switch**DIM**
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 82 figure J, K, L

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt-age W	type	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
2x18	TC-L	PCA 2/18 TCL ECO 220–240V 50/60/0Hz	22086856	360	350	0,36	42	2x15	0,165	0,98	80	-25 → +60
2x24	TC-L	PCA 2/24 TCL ECO 220–240V 50/60/0Hz	22086875	360	350	0,36	52	2x22	0,228	0,99	90	-25 → +60
36	TC-L/TC-F	PCA 1/36 TCL ECO 220–240V 50/60/0Hz	22085507	360	350	0,32	37,5	32	0,165	0,97	75	-25 → +60
2x36	TC-L/TC-F	PCA 2/36 TCL ECO 220–240V 50/60/0Hz	22085516	360	350	0,36	74	2x32	0,325	0,99	85	-25 → +60
40	TC-L	PCA 1/40 TCL ECO 220–240V 50/60/0Hz	22085522	360	350	0,32	43	38	0,19	0,98	75	-25 → +60
2x40	TC-L	PCA 2/40 TCL ECO 220–240V 50/60/0Hz	22085538	360	350	0,36	87,9	2x38	0,38	0,99	75	-25 → +60
55	TC-L	PCA 1/55 TCL ECO 220–240V 50/60/0Hz	22085544	360	350	0,32	61,5	55	0,27	0,99	80	-25 → +60
2x55	TC-L	PCA 2/55 TCL ECO 220–240V 50/60/0Hz	22085550	360	350	0,36	117,3	2x55	0,49	0,99	90	-25 → +50

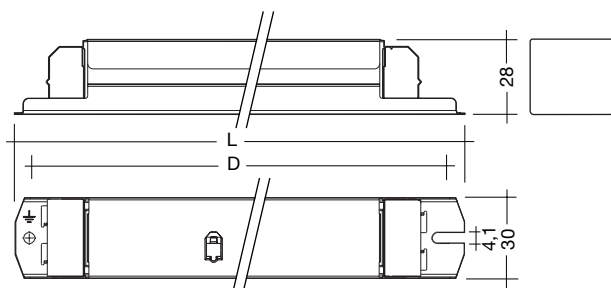
* dimming to 3 % between 10°C to t_a max

** valid at 100 % light output



Electronic ballasts for dimming to 3 % Compact lamps

PCA TCL EXCEL one4all 18–55 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 0,6 s with AC and DC (with 55 W and 2 x 55 W, 2 x 18 W in 1,5 s with AC)
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (**DSI**), switch**DIM** or **DALI** (digital addressable lighting interface)
- error feed back and programmable features in both **DALI** and **DSI** mode

- integrated SMART interface
- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 82 figure J, K, L

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

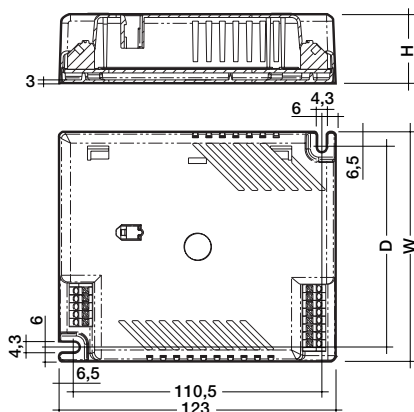
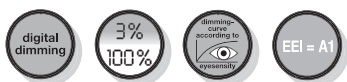
Lamp		Ballast										
wattage W	type	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
2x18	TC-L	PCA 2/18 TCL EXCEL 220–240V 50/60/0Hz	22086840	360	350	0,36	42	2x15	0,165	0,98	80	-25 → +60
2x24	TC-L	PCA 2/24 TCL EXCEL 220–240V 50/60/0Hz	22086869	360	350	0,36	52	2x22	0,228	0,99	90	-25 → +60
36	TC-L/TC-F	PCA 1/36 TCL EXCEL 220–240V 50/60/0Hz	22085346	360	350	0,32	37,5	32	0,165	0,97	75	-25 → +60
2x36	TC-L/TC-F	PCA 2/36 TCL EXCEL 220–240V 50/60/0Hz	22085352	360	350	0,36	74	2x32	0,325	0,99	85	-25 → +60
40	TC-L	PCA 1/40 TCL EXCEL 220–240V 50/60/0Hz	22085365	360	350	0,32	43	38	0,19	0,98	75	-25 → +60
2x40	TC-L	PCA 2/40 TCL EXCEL 220–240V 50/60/0Hz	22085371	360	350	0,36	87,9	2x38	0,38	0,99	75	-25 → +60
55	TC-L	PCA 1/55 TCL EXCEL 220–240V 50/60/0Hz	22085387	360	350	0,32	61,5	55	0,27	0,99	80	-25 → +60
2x55	TC-L	PCA 2/55 TCL EXCEL 220–240V 50/60/0Hz	22085393	360	350	0,36	117,3	2x55	0,49	0,99	90	-25 → +50

* dimming to 3 % between 10°C to t_a max

** valid at 100 % light output



PCA TCL ECO c 18–24 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 0,6 s AC and DC (2 x 18 W in 1,5 s with AC)
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI) or switchDIM
- integrated SMART interface
- fully electronic lamp management and digital communication with ASIC and μ C

- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:
box of 10
50 boxes/pallet
500 pieces/pallet

Wiring:
page 83 figure M, N, O

Certified:
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt- age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
18	TC-L/TC-F	PCA 1/18 TCL ECO c 220–240V 50/60/0Hz	22085462	123x79x31	66,5	0,22	21	15	0,09	0,95	80	-25 → +60
2x18	TC-L/TC-F	PCA 2/18 TCL ECO c 220–240V 50/60/0Hz	22085478	123x102x31	89,5	0,25	42	2x15	0,18	0,95	80	-25 → +60
24	TC-L/TC-F	PCA 1/24 TCL ECO c 220–240V 50/60/0Hz	22085484	123x79x31	66,5	0,22	27	22	0,12	0,96	80	-25 → +60
2x24	TC-L/TC-F	PCA 2/24 TCL ECO c 220–240V 50/60/0Hz	22085490	123x102x31	89,5	0,25	52	2x22	0,23	0,98	90	-25 → +60

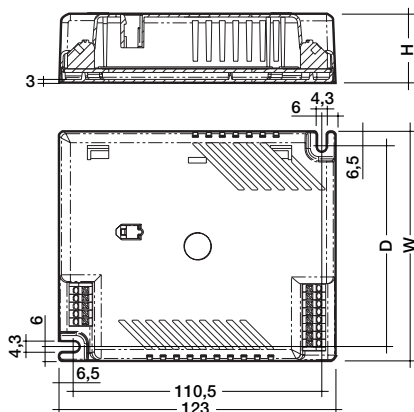
* dimming to 3 % between 10°C to ta max

** valid at 100 % light output



Electronic ballasts for dimming to 3 %
Compact lamps

PCA TCL EXCEL c one4all 18–24 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 0,6 s AC and DC (2 x 18 W in 1,5 s with AC)
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI), switchDIM or DALI (digital addressable lighting interface)
- error feed back and programmable features in both DALI and DSI mode
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 10
50 boxes/pallet
500 pieces/pallet

Wiring:

page 83 figure M, N, O

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

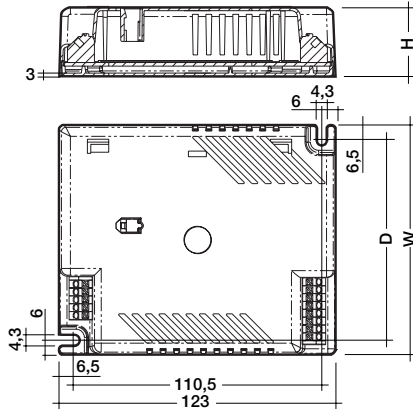
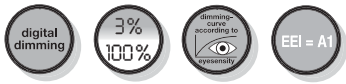
Lamp		Ballast										
watt- age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
18	TC-L/TC-F	PCA 1/18 TCL EXCEL c 220–240V 50/60/0Hz	22085309	123x79x31	66,5	0,22	21	15	0,09	0,95	80	-25 → +60
2x18	TC-L/TC-F	PCA 2/18 TCL EXCEL c 220–240V 50/60/0Hz	22085318	123x102x31	89,5	0,25	42	2x15	0,18	0,95	80	-25 → +60
24	TC-L/TC-F	PCA 1/24 TCL EXCEL c 220–240V 50/60/0Hz	22085324	123x79x31	66,5	0,22	27	22	0,12	0,96	80	-25 → +60
2x24	TC-L/TC-F	PCA 2/24 TCL EXCEL c 220–240V 50/60/0Hz	22085330	123x102x31	89,5	0,25	52	2x22	0,23	0,98	90	-25 → +60

* dimming to 3 % between 10°C to ta max

** valid at 100 % light output



PCA ECO 11–57 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 % (10–100 % at 57 W)
- lamp start at 3 % (10 % at 57 W)
- defined lamp warm start within 0,6 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI) or switchDIM
- integrated SMART interface
- fully electronic lamp management and digital communication with ASIC and μ C

- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 10
50 boxes/pallet
500 pieces/pallet

Wiring:

page 83 figure P, Q, R

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt-age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
11	TC-SEL	PCA 1/11/13 TCD ECO 220–240V 50/60/0Hz	22084878	123x79x31	66,5	0,22	15,4	11,4	0,068	0,95	75	-15 → +60
2x11	TC-SEL	PCA 2/11/13 TCD ECO 220–240V 50/60/0Hz	22084862	123x102x31	89,5	0,25	28	24	0,127	0,96	80	-15 → +60
13	TC-DEL	PCA 1/11/13 TCD ECO 220–240V 50/60/0Hz	22084878	123x79x31	66,5	0,22	16	12,7	0,069	0,95	75	-15 → +60
2x13	TC-DEL	PCA 2/11/13 TCD ECO 220–240V 50/60/0Hz	22084862	123x102x31	89,5	0,25	31	26	0,14	0,96	80	-15 → +60
18	TC-DEL	PCA 1/18 TCD ECO 220–240V 50/60/0Hz	22084859	123x79x31	66,5	0,22	20,5	17	0,10	0,92	75	-25 → +60
2x18	TC-DEL	PCA 2/18 TCD ECO 220–240V 50/60/0Hz	22084843	123x102x31	89,5	0,25	40	34	0,18	0,98	85	-25 → +60
26	TC-DEL	PCA 1/26 TCD ECO 220–240V 50/60/0Hz	22084765	123x79x31	66,5	0,22	28	24	0,13	0,97	85	-25 → +60
2x26	TC-DEL	PCA 2/26 TCD ECO 220–240V 50/60/0Hz	22084752	123x102x31	89,5	0,25	57,5	49,5	0,25	0,99	80	-25 → +50
18	TC-TEL	PCA 1/18 TCD ECO 220–240V 50/60/0Hz	22084859	123x79x31	66,5	0,22	20,5	17	0,1	0,92	75	-25 → +60
2x18	TC-TEL	PCA 2/18 TCD ECO 220–240V 50/60/0Hz	22084843	123x102x31	89,5	0,25	40	34	0,18	0,98	85	-25 → +60
26	TC-TEL	PCA 1/26 TCD ECO 220–240V 50/60/0Hz	22084765	123x79x31	66,5	0,22	28	24	0,13	0,97	85	-25 → +60
2x26	TC-TEL	PCA 2/26 TCD ECO 220–240V 50/60/0Hz	22084752	123x102x31	89,5	0,25	57,5	49,5	0,25	0,99	80	-25 → +50
32	TC-TEL	PCA 1/32/42 TCT ECO 220–240V 50/60/0Hz	22084746	123x79x31	66,5	0,22	36	32	0,16	0,97	80	-25 → +60
2x32	TC-TEL	PCA 2/32/42 TCT ECO 220–240V 50/60/0Hz	22084730	123x102x31	89,5	0,25	72	64	0,32	0,98	80	-25 → +50
42	TC-TEL	PCA 1/32/42 TCT ECO 220–240V 50/60/0Hz	22084746	123x79x31	66,5	0,22	48,5	43,5	0,22	0,99	80	-25 → +60
2x42	TC-TEL	PCA 2/32/42 TCT ECO 220–240V 50/60/0Hz	22084730	123x102x31	89,5	0,25	96,5	87	0,42	0,99	80	-25 → +50
57	TC-TEL	PCA 1/57 TCT ECO 220–240V 50/60/0Hz	22086957	123x79x31	66,5	0,22	66	57	0,29	0,99	85	-25 → +50

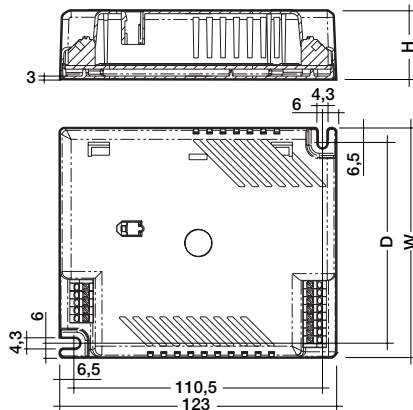
* dimming to 3 % (10 % with 57 W) between 0°C to ta max.

** valid at 100 % light output



Electronic ballasts for dimming to 3 %
Compact lamps

PCA EXCEL one4all 11–57 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 % (10–100 % with 57 W)
- lamp start at 3 % (10 % with 57 W)
- defined lamp warm start within 0,6 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI), switchDIM or DALI (digital addressable lighting interface)
- error feed back and programmable features in both DALI and DSI mode
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 10
50 boxes/pallet
500 pieces/pallet

Wiring:

page 83 figure P, Q, R

Certified:

EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

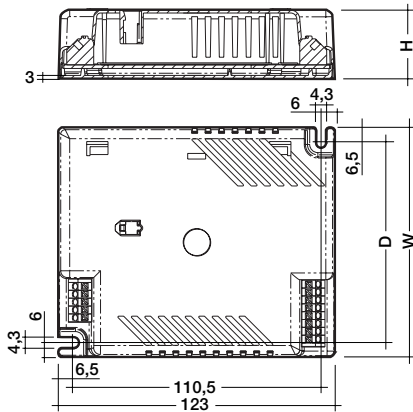
Lamp		Ballast										
watt-age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W **	lamp power W **	current at 230V/50Hz A **	λ at 230V/50Hz	tc point °C	temperature range * °C
11	TC-SEL	PCA 1/11/13 TCD EXCEL 220–240V 50/60/0Hz	22084724	123x79x31	66,5	0,22	15,4	11,4	0,068	0,95	75	-15 → +60
2x11	TC-SEL	PCA 2/11/13 TCD EXCEL 220–240V 50/60/0Hz	22084718	123x102x31	89,5	0,25	28	24	0,127	0,96	80	-15 → +60
13	TC-DEL	PCA 1/11/13 TCD EXCEL 220–240V 50/60/0Hz	22084724	123x79x31	66,5	0,22	16	12,7	0,069	0,95	75	-15 → +60
2x13	TC-DEL	PCA 2/11/13 TCD EXCEL 220–240V 50/60/0Hz	22084718	123x102x31	89,5	0,25	31	26	0,14	0,96	80	-15 → +60
18	TC-DEL	PCA 1/18 TCD EXCEL 220–240V 50/60/0Hz	22084709	123x79x31	66,5	0,22	20,5	17	0,1	0,92	75	-25 → +60
2x18	TC-DEL	PCA 2/18 TCD EXCEL 220–240V 50/60/0Hz	22084692	123x102x31	89,5	0,25	40	34	0,18	0,98	85	-25 → +60
26	TC-DEL	PCA 1/26 TCD EXCEL 220–240V 50/60/0Hz	22084686	123x79x31	66,5	0,22	28	24	0,13	0,97	85	-25 → +60
2x26	TC-DEL	PCA 2/26 TCD EXCEL 220–240V 50/60/0Hz	22084670	123x102x31	89,5	0,25	57,5	49,5	0,25	0,99	80	-25 → +50
18	TC-TEL	PCA 1/18 TCD EXCEL 220–240V 50/60/0Hz	22084709	123x79x31	66,5	0,22	20,5	17	0,1	0,92	75	-25 → +60
2x18	TC-TEL	PCA 2/18 TCD EXCEL 220–240V 50/60/0Hz	22084692	123x102x31	89,5	0,25	40	34	0,18	0,98	85	-25 → +60
26	TC-TEL	PCA 1/26 TCD EXCEL 220–240V 50/60/0Hz	22084686	123x79x31	66,5	0,22	28	24	0,13	0,97	85	-25 → +60
2x26	TC-TEL	PCA 2/26 TCD EXCEL 220–240V 50/60/0Hz	22084670	123x102x31	89,5	0,25	57,5	49,5	0,25	0,99	80	-25 → +50
32	TC-TEL	PCA 1/32/42 TCT EXCEL 220–240V 50/60/0Hz	22084664	123x79x31	66,5	0,22	36	32	0,16	0,97	80	-25 → +60
2x32	TC-TEL	PCA 2/32/42 TCT EXCEL 220–240V 50/60/0Hz	22084651	123x102x31	89,5	0,25	72	64	0,32	0,98	80	-25 → +50
42	TC-TEL	PCA 1/32/42 TCT EXCEL 220–240V 50/60/0Hz	22084664	123x79x31	66,5	0,22	48,5	43,5	0,22	0,99	80	-25 → +60
2x42	TC-TEL	PCA 2/32/42 TCT EXCEL 220–240V 50/60/0Hz	22084651	123x102x31	89,5	0,25	96,5	87	0,42	0,99	80	-25 → +50
57	TC-TEL	PCA 1/57 TCT EXCEL 220–240V 50/60/0Hz	22086941	123x79x31	66,5	0,22	66	57	0,29	0,99	85	-25 → +50

* dimming to 3 % (10 % with 57 W) between 0°C to ta max.

** valid at 100 % light output



PCA TC-DD ECO 55 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI) or switchDIM
- integrated SMART interface
- fully electronic lamp management and digital communication with ASIC and μ C

- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:
box of 10
50 boxes/pallet
500 pieces/pallet

Wiring:
page 82 figure G, I

Certified:
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast										
watt- age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W ***	lamp power W **	current at 230V/50Hz A ***	λ at 230V/50Hz	tc point °C	temperature range * °C
55	TC-DD	PCA 1/55 TC-DD ECO 220–240V 50/60/0Hz	22086642	123x102x31	89,5	0,22	59,6	1x55	0,26	0,98	85	-25 → +50

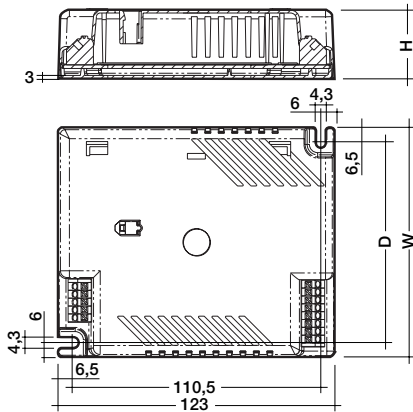
* dimming to 3 % between 10°C to t_a max

*** valid at 100 % light output



Electronic ballasts for dimming to 3 %
Compact lamps

PCA TC-DD EXCEL one4all 55 W 220–240 V 50/60/0 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 1,5 s with AC and 0,6 s with DC
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal (DSI), switchDIM or DALI (digital addressable lighting interface)
- error feed back and programmable features in both DALI and DSI mode
- integrated SMART interface

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- DC operation in emergency lighting installations to VDE 0108
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 10
50 boxes/pallet
500 pieces/pallet

Wiring:

page 82 figure G, I

Certified:

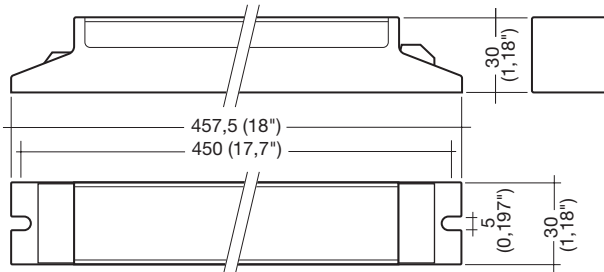
EN 55015
EN 55022
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Lamp		Ballast											
watt-age W	type	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W ***	lamp power W ***	current at 230V/50Hz A ***	λ at 230V/50Hz	tc point °C	temperature range * °C	
55	TC-DD	PCA 1/55 TC-DD EXCEL	220–240V 50/60/0Hz	22086636	123x102x31	89,5	0,22	59,6	1x55	0,26	0,98	85	-25 → +50

* dimming to 3 % between 10°C to t_a max

*** valid at 100 % light output

PCA T5HE EXCEL one4all 14–35 W 120–277 V 50/60 Hz



- dimming range from 1–100 %
- lamp start at 1 %
- defined lamp warm start within 1,5 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal **DSI**, **DALI** or switch**DIM**
- error feed back and programmable features in both **DALI** and **DSI** mode

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 84 figure S, T

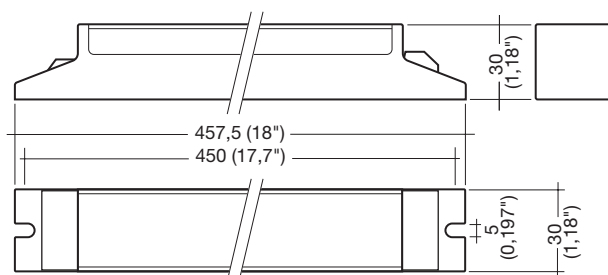
Certified:

- UL Listed #935
- ANSI C82.11 Ballast Standard
- FCC 47CFR Part 18 EMI/RFI
- ANSI C62.41 Category A

Ballast type	article number	Lamp		Technical data							
		no. of lamps	type	wattage W	voltage 50/60Hz	current A rms		circuit power		λ	temperature range °C / °F
						120V	277V	120V	277V		
PCA 1/14 T5HE EXCEL one4all	in preparation	1	T5 HE 14W / 21,6" / 549 mm	14	120–277	in preparation		in preparation		1	10–50 / 50–122
PCA 2/14 T5HE EXCEL one4all	in preparation	2	T5 HE 14W / 21,6" / 549 mm	14	120–277	in preparation		in preparation		1	10–50 / 50–122
PCA 1/28 T5HE EXCEL one4all	24033570	1	T5 HE 28W / 45,2" / 1149 mm	28	120–277	0,26 A	0,11 A	32 W	31 W	1	10–50 / 50–122
PCA 2/28 T5HE EXCEL one4all	24033713	2	T5 HE 28W / 45,2" / 1149 mm	28	120–277	0,53 A	0,22 A	64 W	61 W	1	10–50 / 50–122
PCA 1/35 T5HE EXCEL one4all	24033704	1	T5 HE 35W / 57,0" / 1449 mm	35	120–277	0,33 A	0,14 A	39 W	38 W	1	10–50 / 50–122
PCA 2/35 T5HE EXCEL one4all	24033586	2	T5 HE 35W / 57,0" / 1449 mm	35	120–277	0,65 A	0,27 A	78 W	76 W	1	10–50 / 50–122

Electronic ballasts for dimming to 1 %
Linear lamps, high output

PCA T5HO EXCEL one4all 54 W 120–277 V 50/60 Hz



- dimming range from 1–100 %
- lamp start at 1 %
- defined lamp warm start within 1,5 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal **DSI**, **DALI** or switch**DIM**
- error feed back and programmable features in both **DALI** and **DSI** mode

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

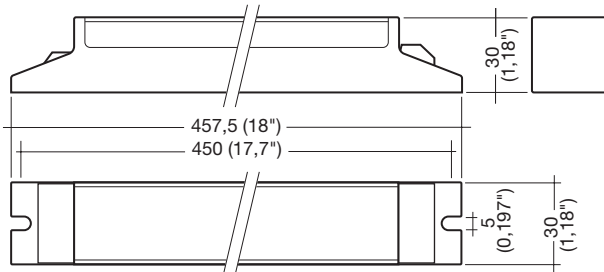
page 84 figure S, T

Certified:

- UL Listed #935
- ANSI C82.11 Ballast Standard
- FCC 47CFR Part 18 EMI/RFI
- ANSI C62.41 Category A

Ballast type	article number	Lamp		wattage W	Technical Data				λ	temperature range °C / °F	
		no. of lamps	type		voltage 50/60Hz	current A rms		circuit power			
PCA 1/54 T5HO EXCEL one4all	24033551	1	T5 HO 54W / 45,2" / 1149 mm	54	120–277	0,52 A	0,22 A	62 W	60 W	1	10–50 / 50–122
PCA 2/54 T5HO EXCEL one4all	24033564	2	T5 HO 54W / 45,2" / 1149 mm	54	120–277	1,05 A	0,44 A	126 W	121 W	1	10–50 / 50–122

PCA EXCEL one4all 32 W 120–277 V 50/60 Hz



- dimming range from 1–100 %
- lamp start at 1 %
- defined lamp warm start within 1 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal **DSI**, **DALI** or switch**DIM**
- error feed back and programmable features in both **DALI** and **DSI** mode

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 84 figure S, T

Certified:

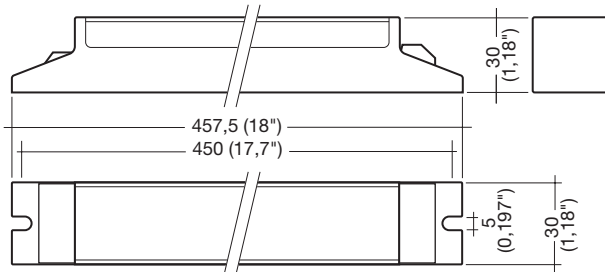
- UL Listed #935
- ANSI C82.11 Ballast Standard
- FCC 47CFR Part 18 EMI/RFI
- ANSI C62.41 Category A

Ballast type	article number	Lamp		wattage W	Technical data				λ	temperature range °C / °F	
		no. of lamps	type		voltage 50/60Hz	current A rms		circuit power			
PCA 1/32 T8 EXCEL one4all	24033592	1	T8 32W / 48", T8 32W Ubent	32	120–277	0,31 A	0,13 A	37 W	36 W	1	10–50 / 50–122
PCA 2/32 T8 EXCEL one4all	24033603	2	T8 32W / 48", T8 32W Ubent	32	120–277	0,61 A	0,26 A	73 W	70 W	1	10–50 / 50–122



Electronic ballasts for dimming to 3 %
Compact lamps

PCA BX EXCEL one4all 40 W 120–277 V 50/60 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 1 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal **DSI**, **DALI** or switch**DIM**
- error feed back and programmable features in both **DALI** and **DSI** mode

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
28 boxes/pallet
700 pieces/pallet

Wiring:

page 84 figure U, V

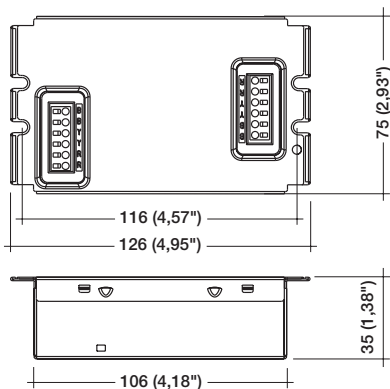
Certified:

- UL Listed #935
- ANSI C82.11 Ballast Standard
- FCC 47CFR Part 18 EMI/RFI
- ANSI C62.41 Category A

Ballast type	article number	Lamp		Technical data							
		no. of lamps	type	watt-age W	voltage 50/60Hz	current A rms		circuit power		λ	temperature range °C / °F
PCA 1/40 BX EXCEL one4all	24033889	1	TC-L	40	120–277	0,41 A	0,17 A	49 W	47 W	1	10–50 / 50–122
PCA 2/40 BX EXCEL one4all	24033895	2	TC-L	40	120–277	0,83 A	0,37 A	97 W	94 W	1	10–50 / 50–122



PCA CFL EXCEL one4all 11–42 W 120–277 V 50/60 Hz



- dimming range from 3–100 %
- lamp start at 3 %
- defined lamp warm start within 1 s
- switch via the mains or with digital control signal
- dimming which is comfortable to the eye
- disturbance free precise control with a digital signal **DSI**, switch**DIM** or **DALI**
- error feed back and programmable features in both **DALI** and **DSI** mode

- fully electronic lamp management and digital communication with ASIC and μ C
- constant light output independent of fluctuating supply voltage
- safe shutdown of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic restart after lamp replacement
- operating frequency ~40–100 kHz

Packaging:

box of 25
34 boxes/pallet
850 pieces/pallet

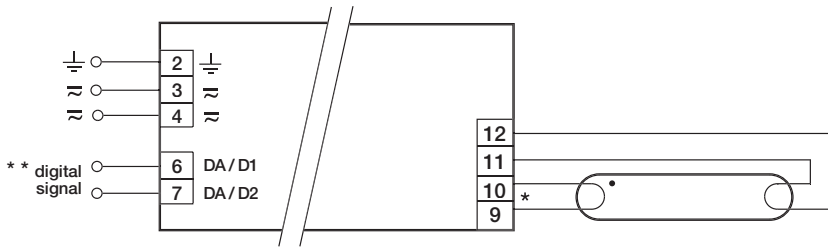
Wiring:

page 84 figure W, X

Certified:

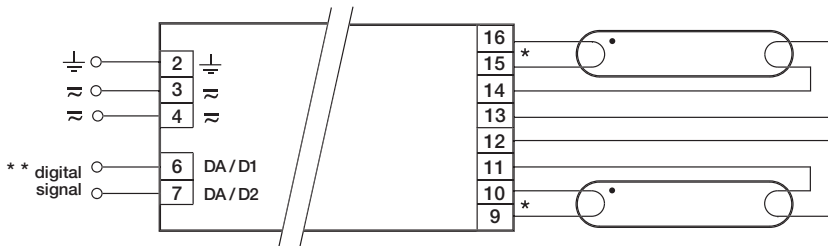
- UL Listed #935
- ANSI C82.11 Ballast Standard
- FCC 47CFR Part 18 EMI/RFI
- ANSI C62.41 Category A

Ballast type	article number	Lamp		Technical data							
		no. of lamps	type	wattage W	voltage 50/60Hz	current A rms		circuit power		λ	temperature range °C / °F
						120V	277V	120V	277V		
PCA 1/18 CFL EXCEL one4all	in preparation	1	TC-DEL	18	120–277	in preparation				>0,98	10–50 / 50–122
PCA 2/18 CFL EXCEL one4all	24033810	2	TC-DEL	18	120–277	0,35 A	0,15 A	41 W	40 W	>0,98	10–50 / 50–122
PCA 1/26 CFL EXCEL one4all	in preparation	1	TC-DEL	26	120–277	in preparation				>0,98	10–50 / 50–122
PCA 2/26 CFL EXCEL one4all	24033832	2	TC-DEL	26	120–277	0,48 A	0,21 A	58 W	56 W	>0,98	10–50 / 50–122
PCA 1/18 CFL EXCEL one4all	in preparation	1	TC-TEL	18	120–277	in preparation				>0,98	10–50 / 50–122
PCA 2/18 CFL EXCEL one4all	24033810	2	TC-TEL	18	120–277	0,35 A	0,15 A	41 W	40 W	>0,98	10–50 / 50–122
PCA 1/26 CFL EXCEL one4all	in preparation	1	TC-TEL	26	120–277	in preparation				>0,98	10–50 / 50–122
PCA 2/26 CFL EXCEL one4all	24033832	2	TC-TEL	26	120–277	0,48 A	0,21 A	58 W	56 W	>0,98	10–50 / 50–122
PCA 1/32/42 CFL EXCEL one4all	24033848	1	TC-TEL	32	120–277	0,31 A	0,18 A	37 W	36 W	>0,98	10–50 / 50–122
PCA 2/32/42 CFL EXCEL one4all	in preparation	2	TC-TEL	32	120–277	in preparation				>0,98	10–50 / 50–122
PCA 1/32/42 CFL EXCEL one4all	24033848	1	TC-TEL	42	120–277	0,44 A	0,19 A	53 W	52 W	>0,98	10–50 / 50–122
PCA 2/32/42 CFL EXCEL one4all	in preparation	2	TC-TEL	42	120–277	in preparation				>0,98	10–50 / 50–122

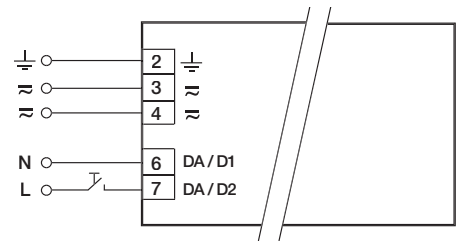


- * leads 9, 10 keep wires short, max. 1,0 m
- leads 11, 12 max. 2,0 m; ballast must be earthed
- ** DSI or DALI with EXCEL one4all
- DSI with ECO

A) PCA ECO / PCA EXCEL one4all with 1 lamp

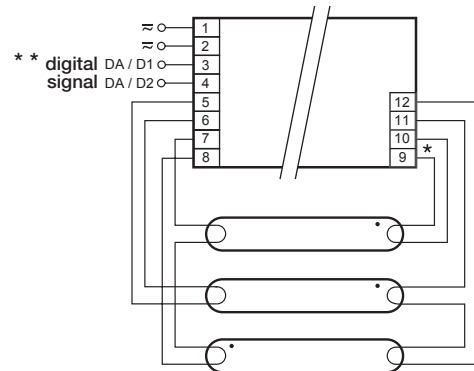


- * leads 9, 10, 15, 16 keep wires short, max. 1,0 m
- leads 11, 12, 13, 14 max. 2,0 m; ballast must be earthed
- ** DSI or DALI with EXCEL one4all
- DSI with ECO



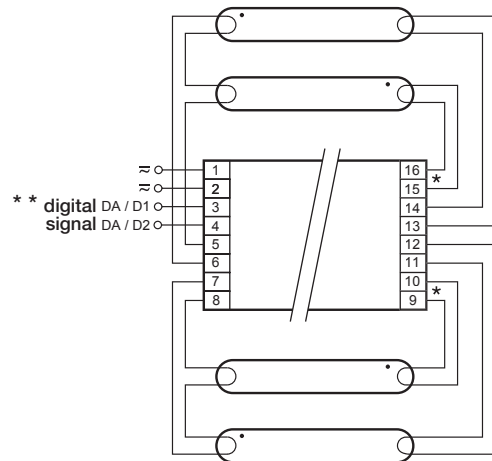
C) switchDIM PCA ECO / PCA EXCEL one4all

B) PCA ECO / PCA EXCEL one4all with 2 lamps



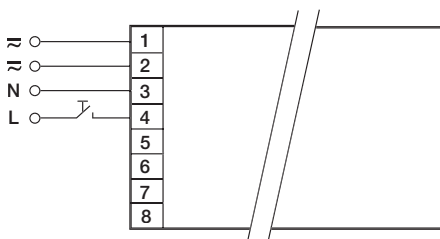
- * leads 9, 10 keep wires short, max. 1,0 m
- leads 5, 6, 7, 8, 11, 12 max. 2,0 m; ballast must be earthed
- ** DSI or DALI with EXCEL one4all
- DSI with ECO

D) PCA 3/14, 3/18 ECO / EXCEL one4all

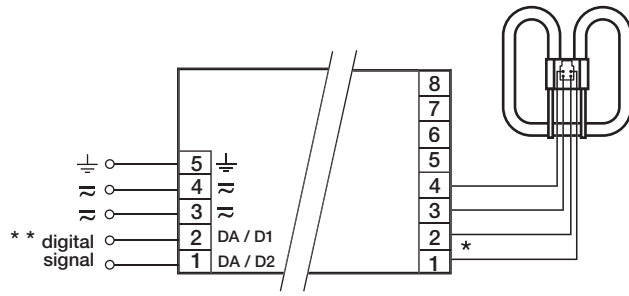


- * leads 9, 10, 15, 16 keep wires short, max. 1,0 m
- leads 5, 6, 7, 8, 11, 12, 13, 14 max. 2,0 m; ballast must be earthed
- ** DSI or DALI with EXCEL one4all
- DSI with ECO

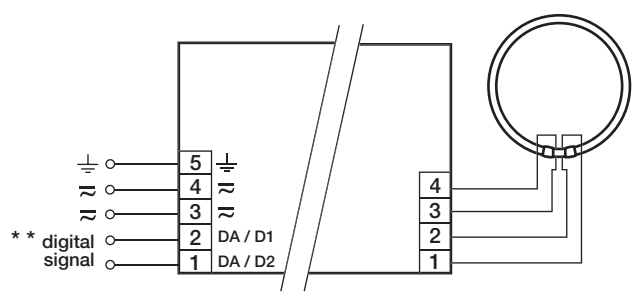
E) PCA 4/14, 4/18 ECO / EXCEL one4all



F) switchDIM PCA ECO / EXCEL one4all 3/14, 3/18, 4/14, 4/18



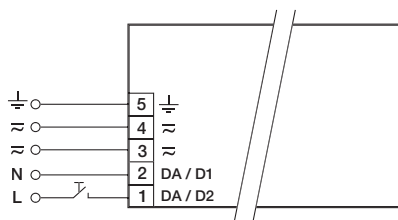
* leads 1, 2 keep wires short, max. 1,0 m
leads 3, 4 max. 2,0 m; ballast must be earthed
** DSI or DALI with EXCEL one4all
DSI with ECO



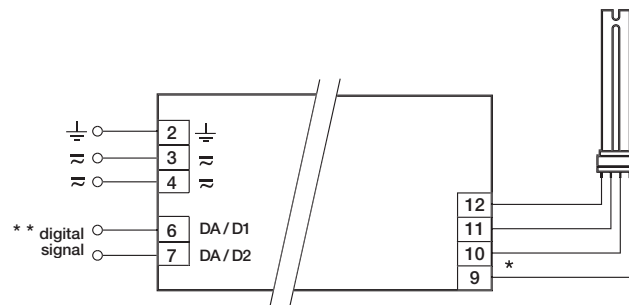
** DSI or DALI with EXCEL one4all
DSI with ECO

G) PCA TC-DD ECO / PCA TC-DD EXCEL one4all

H) PCA T5c ECO / PCA T5c EXCEL one4all

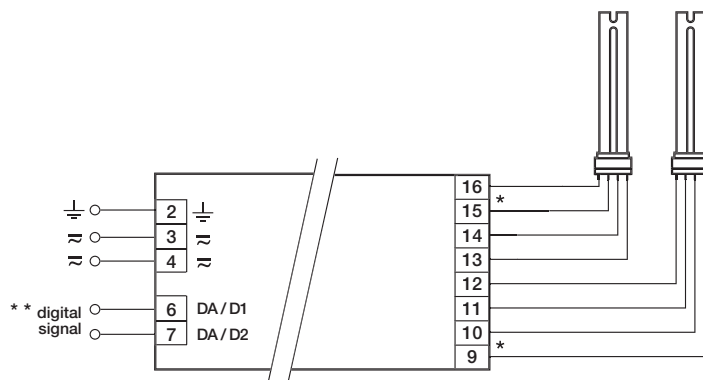


I) switchDIM PCA ECO / PCA EXCEL one4all



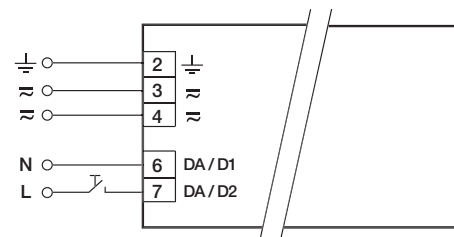
* leads 9, 10 keep wires short, max. 1,0 m
leads 11, 12 max. 2,0 m; ballast must be earthed
** DSI or DALI with EXCEL one4all
DSI with ECO

J) PCA TCL ECO / PCA TCL EXCEL one4all with 1 lamp

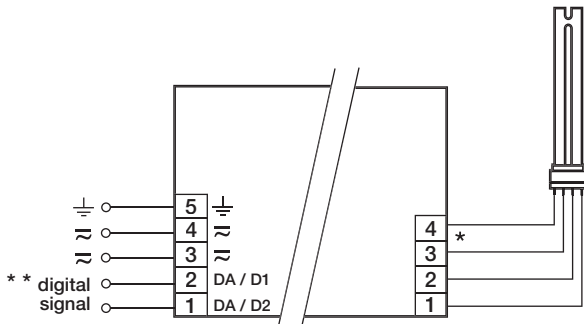


* leads 9, 10, 15, 16 keep wires short, max. 1,0 m
leads 11, 12, 13, 14 max. 2,0 m; ballast must be earthed
** DSI or DALI with EXCEL one4all
DSI with ECO

K) PCA TCL ECO / PCA TCL EXCEL one4all with 2 lamps

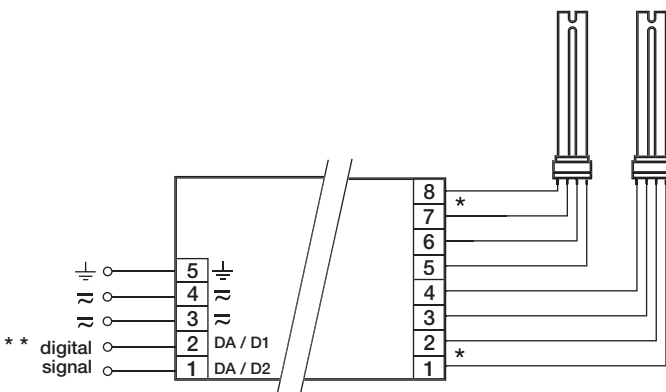


L) switchDIM PCA TCL ECO / PCA TCL EXCEL one4all



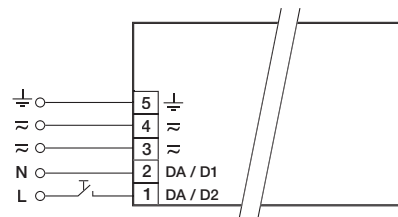
- * leads 3, 4 keep wires short, max. 1,0 m
leads 1, 2 max. 2,0 m; ballast must be earthed
- ** DSI or DALI with EXCEL one4all
DSI with ECO

M) PCA TCL ECO c / PCA TCL EXCEL c one4all with 2 lamps

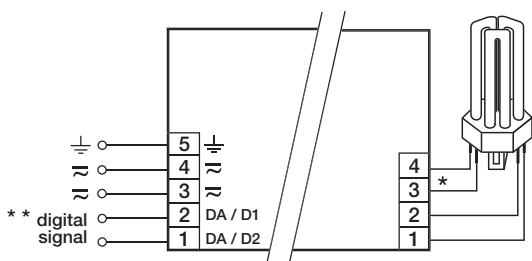


- * leads 1, 2, 7, 8 keep wires short, max. 1,0 m
leads 3, 4, 5, 6 max. 2,0 m; ballast must be earthed
- ** DSI or DALI with EXCEL one4all
DSI with ECO

N) PCA TCL ECO c / PCA TCL EXCEL c one4all with 2 lamps

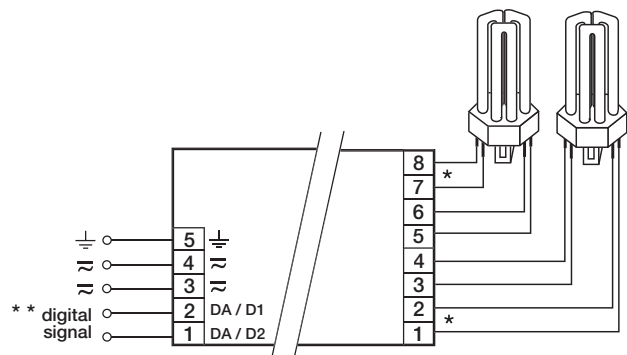


O) switchDIM PCA TCL ECO c / PCA TCL EXCEL c one4all



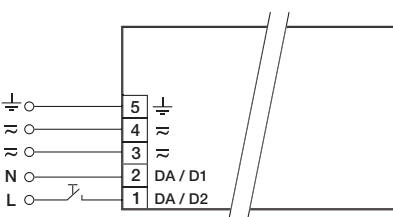
- * leads 3, 4 keep wires short, max. 1,0 m
leads 1, 2 max. 2,0 m; ballast must be earthed
- ** DSI or DALI with EXCEL one4all
DSI with ECO

P) PCA TC-D/TC-T ECO / PCA TC-D/TC-T EXCEL one4all

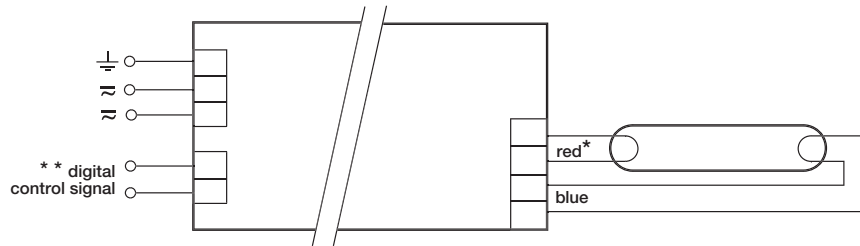


- * leads 1, 2, 7, 8 keep wires short, max. 1,0 m
leads 3, 4, 5, 6 max. 2,0 m; ballast must be earthed
- ** DSI or DALI with EXCEL one4all
DSI with ECO

Q) PCA TC-D/TC-T ECO / PCA TC-D/TC-T EXCEL one4all

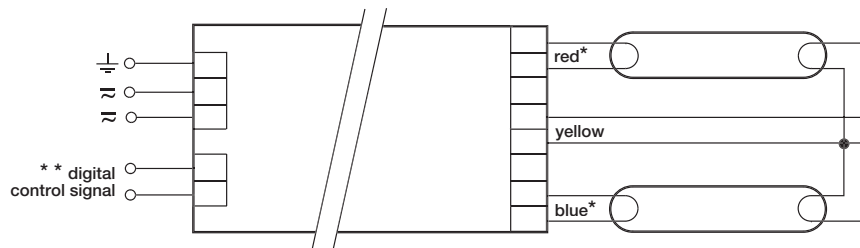


R) switchDIM PCA TC-D/TC-T ECO / PCA TC-D/TC-T EXCEL one4all



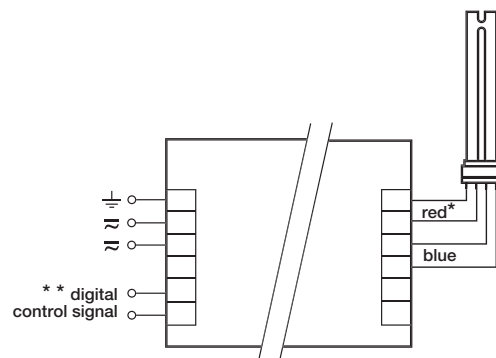
- * red leads max. 0,5 m / 2 ft
blue leads max. 1,5 m / 5 ft; earth via fixing of ballast housing required (according to IEC598)
- ** DSI or DALI with EXCEL one4all

S) PCA EXCEL one4all 120-277 V with 1 lamp



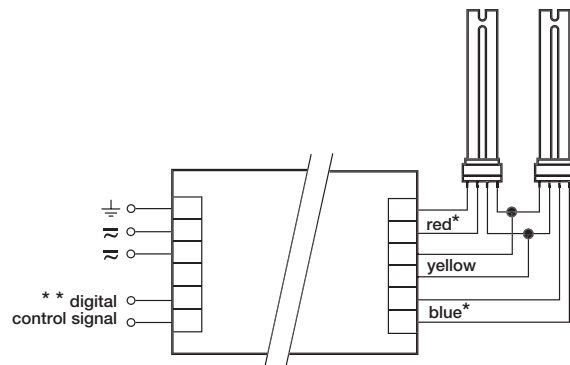
- * red and blue leads max. 1,0 m / 2 ft
yellow leads max. 2,0 m / 5 ft; earth via fixing of ballast housing required (according to IEC598)
- ** DSI or DALI with EXCEL one4all

T) PCA EXCEL one4all 120-277 V with 2 lamps



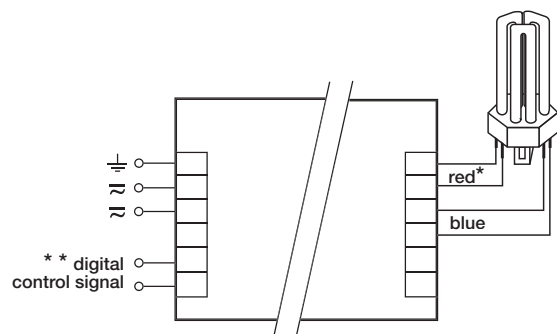
- * red leads max. 0,5 m / 2 ft
blue leads max. 1,5 m / 5 ft; earth via fixing of ballast housing required (according to IEC598)
- ** DSI or DALI with EXCEL one4all

U) PCA BX EXCEL one4all 120-277 V with 1 lamp



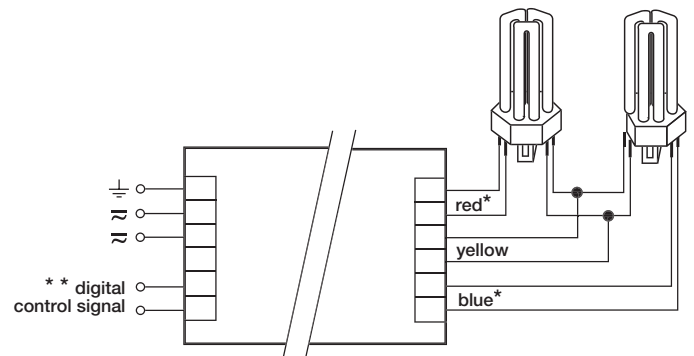
- * red and blue leads max. 0,5 m / 2 ft
yellow leads max. 1,5 m / 5 ft; earth via fixing of ballast housing required (according to IEC598)
- ** DSI or DALI with EXCEL one4all

V) PCA BX EXCEL one4all 120-277 V with 2 lamps



- * red leads max. 0,5 m / 2 ft
blue leads max. 1,5 m / 5 ft; earth via fixing of ballast housing required (according to IEC598)
- ** DSI or DALI with EXCEL one4all

W) PCA CFL EXCEL one4all 120-277 V with 1 lamp



- * red and blue leads max. 0,5 m / 2 ft
yellow leads max. 1,5 m / 5 ft; earth via fixing of ballast housing required (according to IEC598)
- ** DSI or DALI with EXCEL one4all

X) PCA CFL EXCEL one4all 120-277 V with 2 lamps

luxCONTROL Lighting Control Systems

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luxCONTROL Lighting Control Systems

Components for lighting solutions

luxCONTROL makes it possible for you to produce creative lighting solutions. With fully electronic digital control gear such as PCA ballasts and TEL transformers you can dim a range of lamps on demand.

By means of digital control devices like the DSI units and sensors individual installations can be realised. From simple control with push to make switches, to more complex control using building management systems luxCONTROL covers all demands. The digital technology concept guarantees maximum flexibility today and future security.

Perfect light quality

People receive about 80 % of all information via their eyes. Light gives us sight. Therefore the better the light is suited to a particular situation, the more precisely information can be gathered, and feeling and mood absorbed. With luxCONTROL different light sources can be dimmed digitally and therefore exactly.

luxCONTROL satisfies the requirements of optimal lighting level and adjusts for individual lighting needs. The digital ballasts and transformers utilise a logarithmic dimming curve, that is adjusted to the requirements of the human eye.

The human eye is very sensitive in the range of 0 to 10 %, where irregular or sudden changes are uncomfortable. The unique digital concept with the logarithmic curve provides a comfortable change between 0 and 100 %. Together with the precise digital control provided by the DSI and DALI units the fully electronic PCA ballasts and TEL transformers have the technological means to provide perfect lighting quality.

Digital technology

A specially developed ASIC (Application Specific Integrated Circuit) and modern power electronics together with **DSI** (Digital Serial Interface) and **DALI** (Digital Addressable Lighting Interface) units form the peak of lighting control.

Unlike the 1–10 V system which uses analogue signals the system uses digital 8bit code. In this way all the disadvantages of the older analogue system can be overcome and the new possibilities of lighting control can be revealed.

Simple installation despite higher functionality

Simple push to make switches can be used to switch, dim and even program lighting installations. With the flexible and open luxCONTROL system concept there are no limits: IR control, daylight linked control or integration into building management systems (EIB, LONWORKS) are only a few possibilities.

Energy savings

With the luxCONTROL system energy savings of up to 70 % are possible. Such high savings come from both the economical operation of the lamp and from linking of the PCA ballasts and TEL transformers with daylight sensors and presence detectors. By using high-quality parts, luxCONTROL components achieve an average service life of 50 000 hours with a failure probability of less than 10 %. This corresponds to an average failure rate of 0,2 % for every 1 000 hours of operation. In addition lamp life will be positively influenced by the use of the luxCONTROL system.

Long term tests show that through the use of optimised warm start of the lamp (pre-heating of the cathodes) the switching frequency of the lamp can be increased dramatically compared with cold start. The exact digital control of brightness and power means that operation in the dimmed mode has no negative influence on lamp life. The luxCONTROL units have comprehensive safety features.

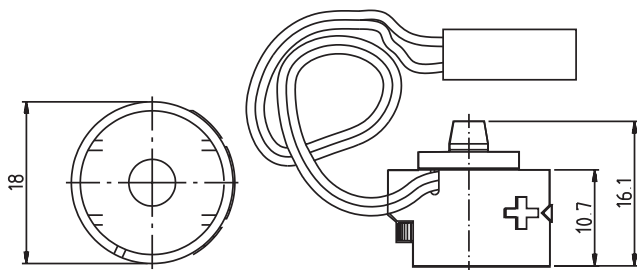
The PCA is constantly monitoring its own performance and the lamp, defective lamps will automatically be shut down and automatically restarted after lamp change. All luxCONTROL PCA ballasts and TEL transformers meet all relevant European norms for safety, performance, quality and EMC (including RFI, harmonics) and are certified by European test houses.

luxCONTROL product range

Type	Function		
PCA ballasts			
PCA ECO	Digital dimmable ballasts, DSI, SMART, switch DIM , fluorescent lamps T8, T5, T5c, TC-L/TC-DEL/TC-TEL, TC-DD		
PCA EXCEL one4all	Digital dimmable ballasts, DALI, DSI, SMART, switch DIM , fluorescent lamps T8, T5, T5c, TC-L/TC-DEL/TC-TEL, TC-DD		
Type	Article number	Function	Page
Steuermodule			
smartDIM			
SMART-LS II	86448347	SMART ambient light sensor	89
DSI SMART	24031280	multi-sensor DSI (light/PIR/IR)	90
SMART Controller Set key	86441922	infrared remote controller for DSI SMART	91
SMART Programmer	86447355	infrared programming unit for DSI SMART	91
smart DIM SM	86454517	sensor module for smart DIM sensor 1&2, push to make switch control	92
smart DIM sensor 1 + mirror	86454265	ambient light sensor, PIR sensor in 30 x 30 mm housing for inbuilding	93
smart DIM sensor 2	86454523	ambient light sensor, PIR sensor in Ø 45,6 mm housing for ceiling mounting	94
modularDIM			
modular DIM BASIC	86454539	module to control 3 groups with push to make switches, presence detectors, modularDIM power supply; DIN rail housing	95
modular DIM SC	86454545	scene module for independent control of 4 light scenes; DIN rail housing	96
modular DIM DM	86454564	modul for 3 channel DAYLIGHT control; DIN rail housing	97
sensor DAYLIGHT	86454586	daylight sensor	97
comfortDIM			
DALI PS	24033444	power supply for comfort DIM -systems for DIN rail	98
DALI PS1	24034323	power supply for comfort DIM -systems for remote mounting	99
DALI GC	24033450	module for controlling two DALI groups with push to make switches	100
DALI SC	24034263	module for controlling four DALI scenes with push to make switches	101
DALI TOUCHPANEL	24035465	module for independent control of DALI systems	102
DALI SCI	24033463	serial computer interface (RS232) for win DIM /DALI (comfort DIM)	103
DALI DSI	24034689	converter modul DALI to DSI signal	104
DALI RM	24034702	DALI relay module	105
winDIM			
win DIM Cable 10m	24031882	RS 232-cable	106
win DIM Cable 2/8m	24031637	RS 232 / RJ 12 flush box	106
DSI-VPC	86449877	amplifier for win DIM -cable	107
Gateways/Relay units			
DSI-A/D	20823263	control with a 1–10 V signal / ON/OFF with light switches	108
DSI-A/DS	86456111	control with a 1–10 V signal / ON/OFF with light switches	109
DSI-RK	86449304	DSI relay module (250 V 200 VA/500 W or 110 V DC 100 mA)	110

Light sensor for PCA ECO/PCA EXCEL
For building into luminaires

SMART LS II
Maintained illuminance



In combination with the PCA EXCEL and PCA ECO ballasts, the SMART-LS sensor offers a cost effective and easy to install maintained illuminance system. The sensor registers the available ambient light and maintains a pre-defined light level. Through the use of daylight it is possible to obtain savings of up to 30 % on energy, in addition to those associated with an electronic high frequency ballast.

Changes in daylight will be automatically adjusted by the SMART-LS sensor, thereby ensuring a constant illuminance. Setting of the SMART-LS sensor is simplicity itself as no special tools or accessories are required.

Once the SMART sensor has been installed the PCA EXCEL / PCA ECO ballasts can be switched ON / OFF by interrupting the mains or via the **DSI** signal. It is possible to adjust the light level of the ballast and create a temporary override situation through the use of switch **DIM**. However, it is not possible to override the SMART-LS through the **DSI** signal other than to switch the ballasts.

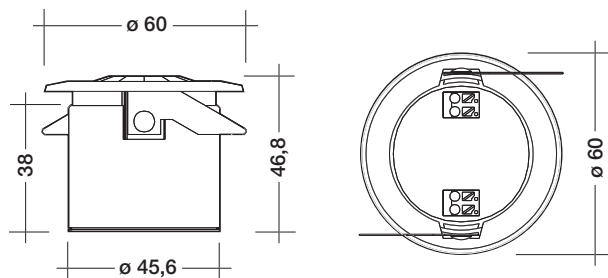
The SMART LS II ambient light sensor allows to control up to 50 DSI devices when combined with a DSI-A/D.

DSI-A/D article number: 20823263

Packaging:
box of 10

Wiring:
page 123
figure A1, A2, A3

description	article number	no. ballasts PCA EXCEL/ECO	max. lead length cm
SMART-LS II	86448347	1	50

DSI-SMART
Maintained illuminance/PIR sensor/control with infra-red

The DSI-SMART is a constant light system with integrated light measurement, presence detector and optional infra-red remote control (SMART Controller) for building into luminaires and remote mounting.

With the optional SMART Programmer the following operating parameters can be programmed:

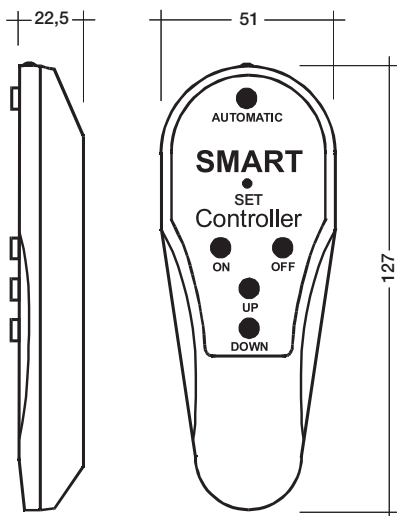
light level
time delay
P.I.R
bright-out
power up
start

Packaging:
single pack
box of 10

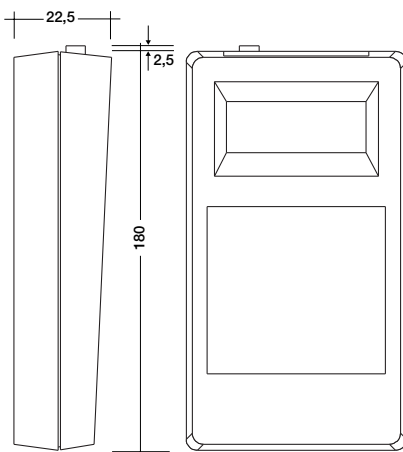
Wiring:
page 123 figure B

type			DSI-SMART	DSI-SMART 120 V
article number:			24031280	86452041
electrical supply:	voltage	V	220-240	120
	frequency	Hz	50/60	50/60
output:	digital DSI control signal	-	1	1
	signal	-	digital/serial	digital/serial
	voltage	V	12 ±10 %	12 ±10 %
	data rate	Bd	1 200	1 200
	max. number of	PCA/TEL/PHD	4	4
	max. cable length	m	250	250
temperature:	permitted ambient temperature	°C	0 → +60	0 → +60

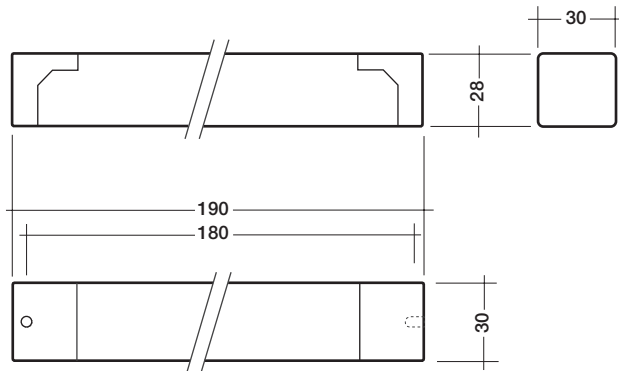
DSI-SMART infra-red remote control and infra-red programming unit



SMART Controller
infra-red remote controller
article number: 86451922



SMART Programmer
infra-red programming unit
article number: 86447355

smartDIM SM
Control with ambient light sensor/push to make switches/PIR sensor

Digital DSI sensor module for controlling 25 digital, electronic ballasts. By connecting a smartDIM sensor, the connected PCA/TEL/PHD devices can be switched automatically and the ambient lighting can be regulated via the control line.

In addition dimming is possible through the connection of a push to make switch which allows the light level to be regulated.

If no sensor is connected, standard single switches can be used for manual dimming and "ON/OFF" switching. Any number of switches can be connected in parallel to the smartDIM SM thus enabling operation from several points.

Terminal cover and strain relief enclosed.

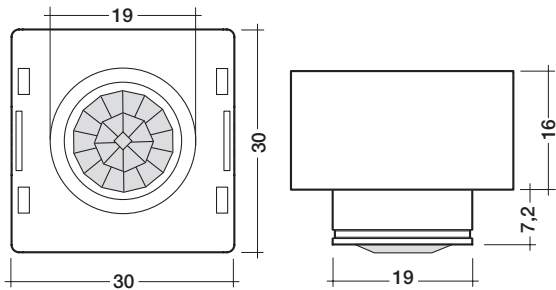
Packaging:
single pack
box of 10

Wiring:
page 132 figure S

type			smartDIM SM	smartDIM SM 120 V	
article number:			86454517	86454656	
electrical supply:	voltage	V	220–240	120	
	frequency	Hz	50/60	50/60	
	max. load	VA	2	2	
input:	push to make switches	–	single- / double-gang	single- / double-gang	
	push to make switches cable length	m / yd	100 / 109.36	100 / 109.36	
	smartDIM sensor 1	–	–	1-2 parallel (25 DSI devices)	1-2 parallel (25 DSI devices)
		–	–	3 parallel (15 DSI devices)	3 parallel (15 DSI devices)
		–	–	4 parallel (5 DSI devices)	4 parallel (5 DSI devices)
	smartDIM sensor 2	–	–	1 (25 DSI devices)	1 (25 DSI devices)
		–	–	2 parallel (10 DSI devices)	2 parallel (10 DSI devices)
max. sensor cable length	m / yd	10 / 10.936	10 / 10.936		
output:	digital DSI control signal	–	1	1	
	signal	–	digital/serial	digital/serial	
	voltage	V	12 ±10 %	12 ±10 %	
	data rate	Bd	1 200	1 200	
	max. number of	PCA/TEL/PHD	25	25	
	max. cable length	m / yd	100 / 110	100 / 110	
temperature:	permitted ambient temperature	°C	0 → +60	0 → +60	

Control module for PCA/TEL/PHD
For building into luminaires

smartDIM sensor 1
Ambient light sensor and PIR sensor



Ultracompact luminaire sensor for regulating ambient light and detecting movement. The settings for "PIR OFF ONLY" and "AUTOMATIC" operation can be selected via the smartDIM SM sensor module.

The maximum length of the sensor lead can be up to 10 m. More than one sensor head can be connected to a single smartDIM module (see table page 92).

The reflector which is available as an accessory enables selective expansion of the movement detector's range.

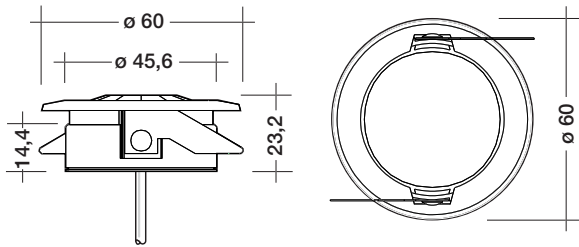
Packaging:
box of 50

Wiring:
page 132 figure S

type	smartDIM sensor 1
article number:	86454265

accessories	mirror
article number:	86454640



smartDIM sensor 2
Ambient light sensor and PIR sensor

Ultraflat ceiling sensor for regulating ambient light and detecting movement.

The settings for "PIR OFF ONLY" and "AUTOMATIC" operation can be selected via the smartDIM SM sensor module.

The maximum length of the sensor lead can be up to 10 m. More than one sensor head can be connected to a single smartDIM module (see table page 92).

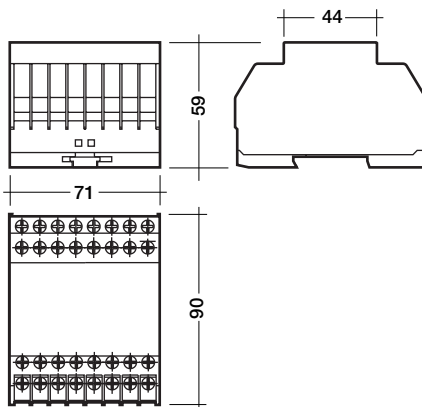
Packaging:
box of 10

Wiring:
page 132 figure S

type	smartDIM sensor 2
article number:	86454523

Control module for PCA/TEL/PHD
For DIN rail

modularDIM BASIC
Control module with 3 channels/single, twin push to make switches/
presence detector/modularDIM power supply



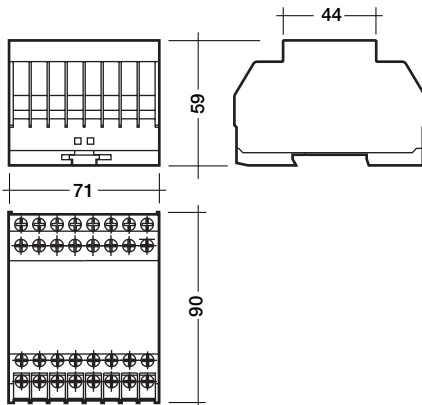
The modularDIM BASIC control module is the basis of the modularDIM product range. The three output channels can be controlled individually or together. Simple installation since no programming is required.

Parallel connection of several switches enables user-friendly dimming and "ON/OFF" switching from several points. The modularDIM BASIC contains the central power supply for all modularDIM components.

Packaging:
box of 10

Wiring:
page 133 figure V

type		modularDIM BASIC	
article number:		86454539	
electrical supply:	voltage	V	120-277
	frequency	Hz	50/60
	max. load	VA	< 10
input:	push to make switches	-	single/twin
	PIR sensor	-	3
	control line iX (intelligent extension)	-	1
output:	digital DSI control signal	-	1
	signal	-	digital/serial
	voltage	V	12 ±10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	100
	max. cable length	m	250
	iX (intelligent extension)	-	1
temperature:	permitted ambient temperature	°C	0 → +50

modularDIM SC
Scene module for independent control of 4 light scenes

Expansion module for modularDIM systems to control scenes. Enables the recall and programming of four light scenes via the modularDIM BASIC. The switch inputs are SELV and any push to make switches can be used.

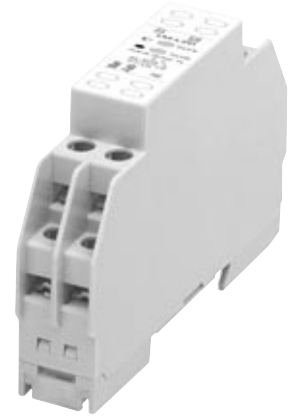
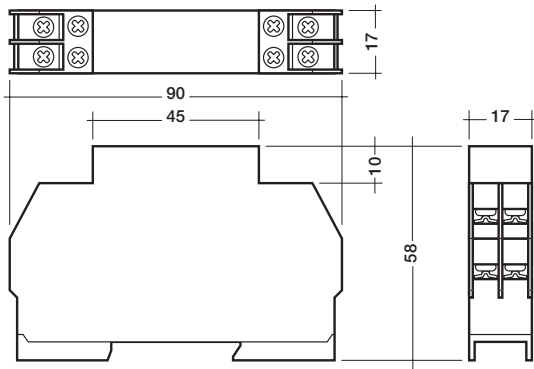
Packaging:
box of 10

Wiring:
page 133 figure V

type		modularDIM SC	
article number:			86454545
supply:	–	–	via iX (intelligent extension)
input:	4 push to make switches	–	single
output:	control line iX (intelligent extension)	–	1
temperature:	permitted ambient temperature	°C	0 → +50

Control module for PCA/TEL/PHD
For DIN rail

modularDIM DM
Control with daylight sensor/3 channels



Expansion module for daylight linked control of the modularDIM BASIC module. The daylight information will be passed on from the modularDIM DM to the basic module to control up to three application-specific luminaire groups. Simple programming of each independent luminaire groups.

Packaging:
box of 10

Wiring:
page 133 figure V

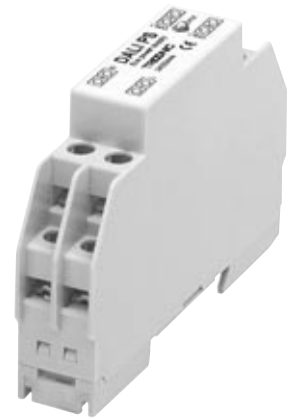
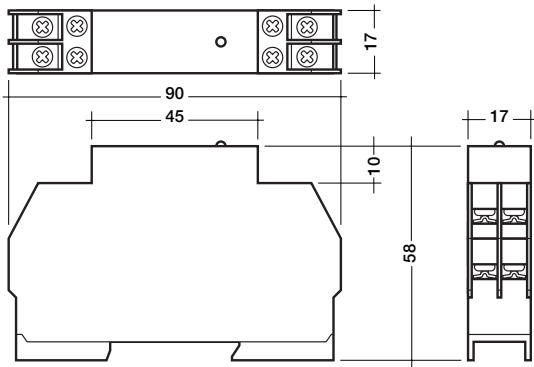
type		modularDIM DM	
article number:			86454564
supply:	–	–	via iX (intelligent extension)
input:	daylight sensor	–	1
	switch manual/automatic	–	1
output:	control line iX (intelligent extension)	–	1
temperature:	permitted ambient temperature	°C	0 → +50

accessories	sensor DAYLIGHT
article number:	86454586



The modularDIM system includes an attractive and solid ceiling mounted sensor for the detection of sky brightness. Its sensing aperture is aligned in the direction of the daylight.

Packaging:
box of 10

DALI PS
Power supply for comfortDIM systems (DALI protocol)

Central **DALI** power supply rated at 200 mA
(**DALI** standard allows max. 250 mA).

DALI ballast control interfaces normally sources 2 mA, with 64 individual addresses this will source 128 mA. The remaining 72 mA can be used to power other **DALI** controls without an internal power supply such as the **DALI** GC and **DALI** SC.

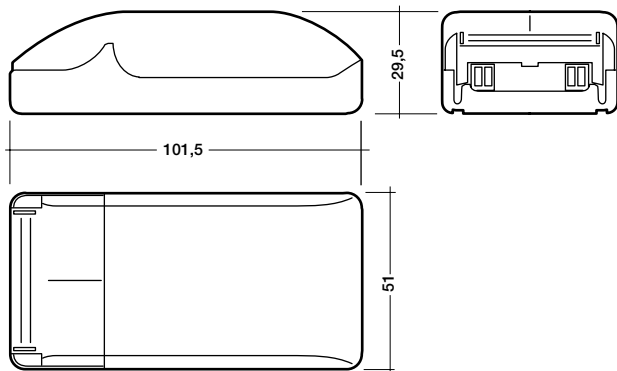
Packaging:
1 piece

Wiring:
page 130 figure K1, K2

type		DALI PS	
article number:		24033444	
electrical supply:	voltage	V	120-240
	frequency	Hz	50/60
	max. load	W	4
output:	-	-	DALI
	max. current	mA	200
temperature:	permitted ambient temperature	°C	0-50

DALI control modules for PCA EXCEL one4all/TEL/LED
For remote mounting

DALI PS1
Power supply for comfortDIM systems (DALI protocol)



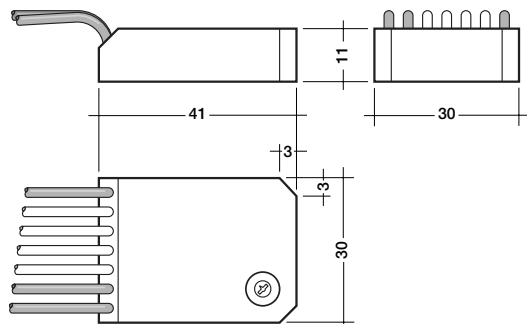
Central **DALI** power supply rated at 200 mA
(DALI standard allows max. 250 mA).

DALI ballast control interfaces normally sources 2 mA, with 64 individual addresses this will source 128 mA. The remaining 72 mA can be used to power other **DALI** controls without an internal power supply such as the **DALI GC** and **DALI SC**.

Packaging:
1 piece

Wiring:
page 130 figure L1, L2

type		DALI PS1	
article number:		24034323	
electrical supply:	voltage	V	220–240
	frequency	Hz	50/60
	max. load	W	4
output:	–	–	DALI
	max. current	mA	200
temperature:	permitted ambient temperature	°C	0–50

DALI GC
Module with two independent inputs to control two DALI groups

Ultra compact control module for dimming and switching of two **DALI** groups with conventional momentary switches.

Assigning of momentary switches to specific groups is done by selecting the group range via a turn switch on the back of the module.

Addressing of individual ballasts and assigning ballasts to **DALI** groups can be done from each DALI GC module by activating a simple "momentary switch" sequence. DALI GC modules allow multi master operation. Multiple control modules can be used on the same comfort**DIM** system.

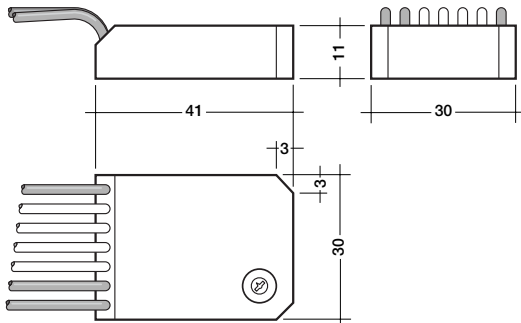
Packaging:
1 piece

Wiring:
page 131
figure M1, M2, M3

type		DALI GC	
article number:			24033450
supply:	–	–	via DALI signal line
current:	–	mA	6
input:	2 push to make switches	–	single/twin
output:	–	–	DALI
addresses:	groups	–	1–16/broadcast
temperature:	permitted ambient temperature	°C	0–50

**DALI control modules for PCA EXCEL one4all/TEL/LED
Concealed installation**

**DALI SC
Module to control four DALI scenes**



Ultra compact control module to set and recall lighting-scenes from **DALI** ballasts with conventional momentary switches.

Assigning of momentary switches to a specific scene is done by selecting the scene range via a turn switch on the back of the module.

Programming of lighting scenes can be done from each DALI SC module by activating a simple "momentary switch" sequence. DALI SC modules allow multi master operation. Multiple control modules can be used on the same comfort**DIM** system.

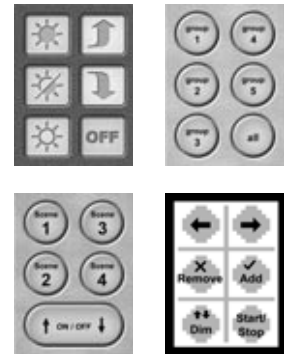
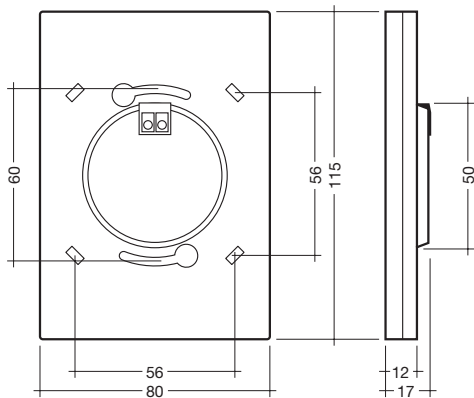
Packaging:
1 piece

Wiring:
page 131 figure M1, N

type		DALI SC	
article number:			24034263
supply:	–	–	via DALI signal line
current:	–	mA	6
input:	4 push to make switches	–	single
output:	–	–	DALI
Szenen:	–	–	1–16
temperature:	permitted ambient temperature	°C	0–50

DALI TOUCHPANEL

Module for independent control of DALI systems



Examples for possible control panels

The multi-functional touch panel has been designed to operate with DALI. A variety of Touch panel functions can be easily selected. The DALI TOUCHPANEL allows the user to control different luminaire groups as well as recalling pre-set light scenes. The DALI TOUCHPANEL shows its versatility in the design stage with a number of unique features that allow customisation of the touchpanel. Different coloured frames can be attached to suit the decor of the installation and the paper switch template can be customised to suit the needs of the user.

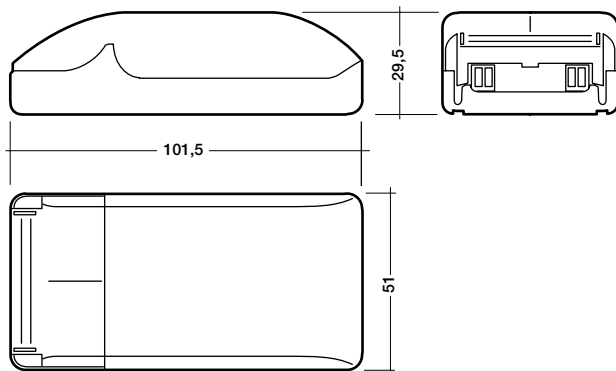
Commissioning of DALI installations can be undertaken from each DALI TOUCHPANEL. The different programming modes can be selected via an internal rotary switch. As with all other comfortDIM modules the DALI TOUCHPANEL allows multi master operation. That means several comfortDIM control modules can be used on the same DALI loop in parallel.

Packaging:
single pack

Wiring:
Page 131, figure M1
Page 132, figure U

type		DALI TOUCHPANEL	
article number:			24035465
supply:	–	–	via DALI signal line
current:	–	mA	6
output:	–	–	DALI
addresses:	groups	–	1–14/broadcast
	scenes	–	1–16
temperature:	permitted ambient temperature	°C	0–50

DALI SCI Serial computer interface (RS232) for winDIM/DALI (comfortDIM)



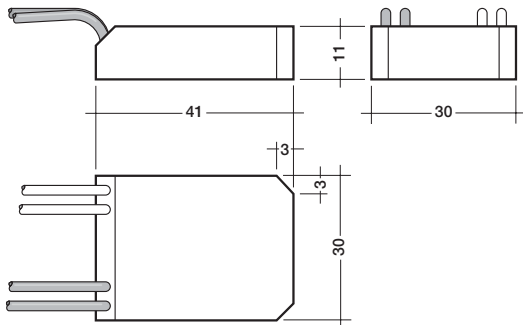
The interface module DALI SCI is used to connect Personal Computers with winDIM software directly to the DALI network.

The DALI SCI and winDIM software allow you to both address and program a wide range of sophisticated DALI functions, as well as providing a user-friendly interface.

Packaging:
single pack

Wiring:
page 131 figure M1, 0

type		DALI SCI	
article number:			24033463
supply:	–	–	via DALI signal line and RS232
current:	–	mA	6
input:	1	–	RS232 (Personal Computer)
output:	–	–	DALI
temperature:	permitted ambient temperature	°C	0–50

DALI DSI
Converter module to convert DALI commands into DSI signals

The converter module converts **DALI** commands into **DSI** signal so that all **DSI**-based operating devices presently available, such as PCA ECO ballasts, TEL transformers or PHD phase dimmers, can be integrated in **DALI** lighting control systems.

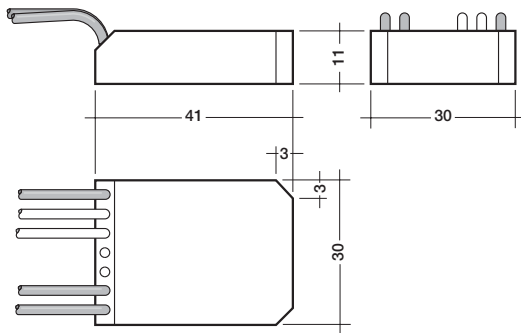
Packaging:
single pack

Wiring:
page 131 figure P

type		DALI DSI	
article number:			24034689
supply:	–	–	via DALI signal line
current:	–	mA	16
input:	–	–	DALI signal
output:	digital DSI control signal	–	1
	no. of ballasts	PCA/TEL/PHD	5
addresses:	groups	–	1–16
temperature:	permitted ambient temperature	°C	0–50

DALI control modules for PCA EXCEL one4all/TEL/LED
Concealed installation

DALI RM
Relay module with DALI input



Relay module with **DALI** input for switching various electrical loads on and off using **DALI** commands.

Packaging:
single pack

Wiring:
page 131 figure Q

type		DALI RM	
article number:			24034702
supply:	–	–	via DALI signal line
current:	–	mA	12
input:	–	–	DALI signal
output:	–	–	switching contact
	continuous current loading	A	4
	making current (max. 0,5 s)	A	30
	switching capacity (max.)	VA	1 500
	load switched (min.)	mW	500
	switching voltage (max.)	VAC	400
	contact resistance, groups	Ω	< 100
addresses:	groups	–	1–16
temperature:	permitted ambient temperature	$^{\circ}\text{C}$	0–50

winDIM cable PC connection cable for control with winDIM-software



The winDIM cable enables the direct control of a digital dimmable ballast by means of winDIM – PC-software.

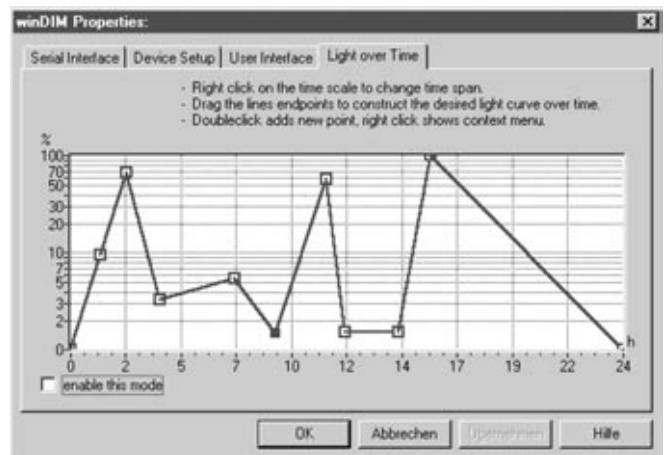
winDIM cable 10m – article number: 24031882



The connection is via a RS232-interface. Apart from the necessary level adjustment all winDIM cable provide a galvanic separation.

winDIM cable 2/8 m – article number: 24031637

winDIM Software

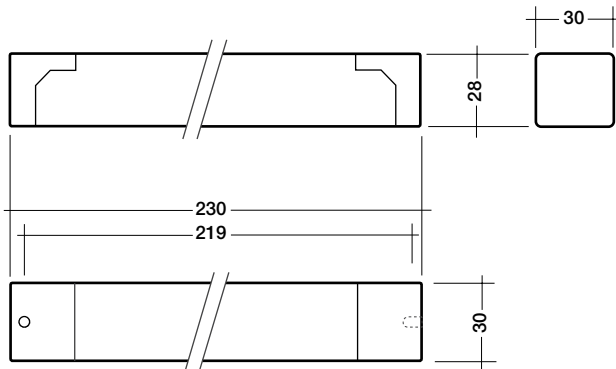


User friendly PC-software for the control of digital dimmable ballasts. winDIM supports up to 5 groups, 3 scenes and automatic light level sequences.

Download from www.tridonicatco.com for free.

Control module for PCA/TEL/PHD
For building into luminaires and remote mounting

DSI-VPC Amplifier for winDIM cable

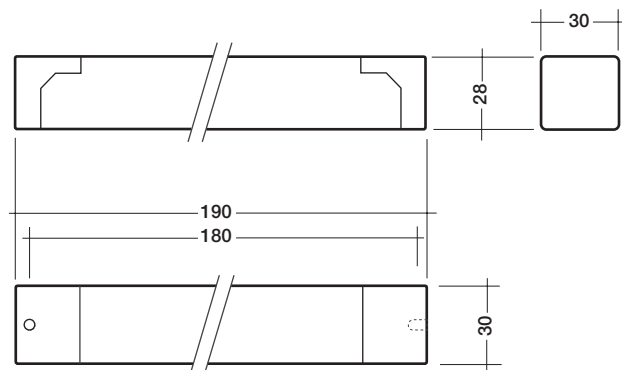


The DSI-VPC is an amplifier for the winDIM control signals and makes it possible to control up to 50 digital dimmable ballasts with one single PC.

Packaging:
single pack
box of 10

Terminal cover and strain relief enclosed.

type		DSI-VPC	
article number:		86449877	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	0,6
input:	DSI signal	–	RS232 DSI/winDIM
output:	digital DSI control signal	–	1
	signal	–	digital/serial
	voltage	V	12 ±10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	50
	max. cable length	m	250
temperature:	permitted ambient temperature	°C	-25 → +60

DSI-A/D
Control with a 1–10 V signal / ON/OFF with light switches

The DSI-A/D module converts an analogue 1–10 V signal into the digital DSI control signal. This enables PCA/TEL/PHD digital devices to be integrated in existing analogue control systems.

Operating devices connected can be adjusted for constant light by connecting a SMART LS II.

By connecting a SMART LS II the DSI-A/D can be used as a constant light control module.

Terminal cover and strain relief enclosed.

Packaging:
single pack
box of 10

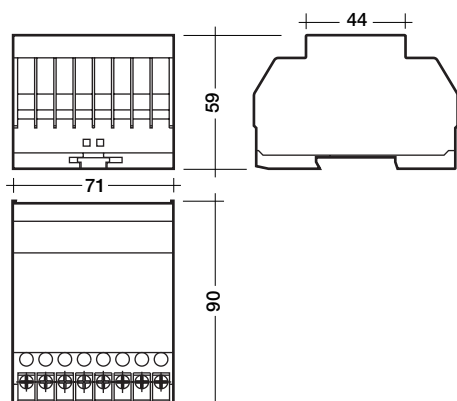
Wiring:
page 126 figure E1, E2

type		DSI-A/D	
article number:		86453957	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	4
input:	dimming	V	1–10
	dimming potentiometer (optional*)	kΩ	≥ 50 ≤ 100
	ON/OFF push to make switches (220–240 V)	–	1
	ambient light sensor	–	1
output:	digital DSI control signal	–	1
	signal	–	digital/serial
	voltage	V	12 ± 10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	50
	max. cable length	m	100
temperature:	permitted ambient temperature	°C	0 → +60

* potentiometer with logarithm characteristics, load ≥ 0,5 W, ≥ 60 ≤ 100 kW

Control module for PCA/TEL/PHD
For DIN rail

DSI-A/DS
Control with a 1–10 V signal / ON/OFF with light switches



The DSI-A/DS module translates the 1–10 V analogue signal into a DSI digital control signal. In this way PCA/TEL/PHD units can be integrated into existing analogue control systems.

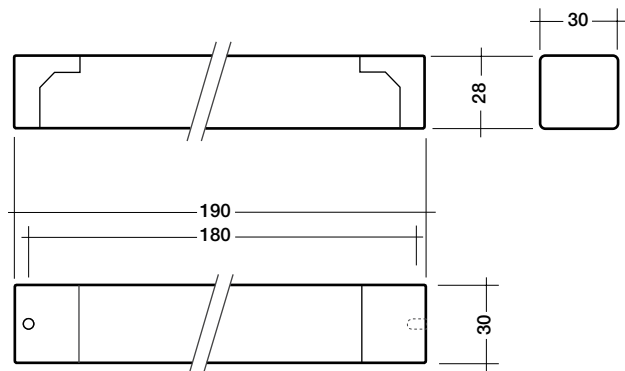
Packaging:
single packaged
box of 10

Wiring:
page 126 figure E1, E2

type		DSI-A/DS	
article number:		86456111	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	4
input:	dimming	V	1–10
	dimming potentiometer (optional*)	k Ω	$\geq 50 \leq 100$
	ON/OFF switches (220–240 V)	–	1
output:	digital DSI control signal	–	1
	signal	–	digital/seriell
	voltage	V	12 \pm 10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	100
	max. cable length	m	250
temperature:	permitted ambient temperature	$^{\circ}\text{C}$	0 \rightarrow +50

* potentiometer with logarithm characteristics, load $\geq 0,5$ W

DSI relay module for DSI installations

DSI-RK
DSI relay module (250 V 200 VA/500 W or 110 V DC 100 mA)


DSI-RK allows the switching of loads like e.g. GLS, magnetic transformers, magnetic chokes or electronic, non-dimmable ballasts in connection with a **DSI-** or **switchDIM** installation.

It is controlled via a **DSI**-interface or via a push-to-make-switch (**switchDIM**).

win**DIM**-software to set up parameters:

- RELAIS-ON: set switch on level
- RELAIS-OFF: set switch off level

Factory preset:

DSI ≥ 1 → ON
 DSI = 0 → OFF

Terminal cover and strain relief enclosed.

Packaging:

single pack
 box of 10

Wiring:

page 132 figure T1, T2

type		DSI-RK	
article number:		86449304	
voltage:		V	220–240
nominal frequency:		Hz	50/60
input:		–	DSI/switch DIM
switching capacity:	AC max. 250 V	VA/A	200/2
		W/A	500/2
	DC max. 110 V	VA/A	110/0,1
output:		–	potential free contact
ambient temperature range:		°C	0 → + 60

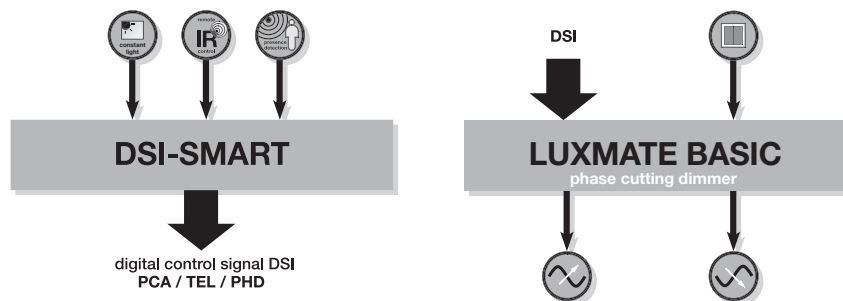
LUXMATE range

Type	Article number	Function	Page
Control modules			
LUXMATE BASIC			
PHD (to be discontinued)	20724776	DSI phase cutting dimmer 300 VA	113
PD-TD (to be discontinued)	20975509	phase cutting leading edge 1 KVA	114
PAD-TD (to be discontinued)	20975518	phase cutting 1 KVA	115
DSI-EIB	20827097	EIB interface for building into luminaires	116
DSI-EIBS	24030297	EIB interface for DIN rail	117
DSI-V	20975705	amplifier for DSI signals	119
LUXMATE BASIC IR			
DSI-IR	22114184	IR control interface	120
DSI-2IR	22114190	2 channels IR control interface	121
IREL	22114571	IR sensor for building into luminaires für DSI-IR / DSI-2IR	122
IREL	22114587	IR sensor for ceiling mounting DSI-IR / DSI-2IR	122
IRS	20975492	IR remote control for DSI-IR / DSI-2IR	122
LUXMATE DAYLIGHT			
FTT-TLS	22114530	LONWORKS daylight linking interface	118

Functional overview

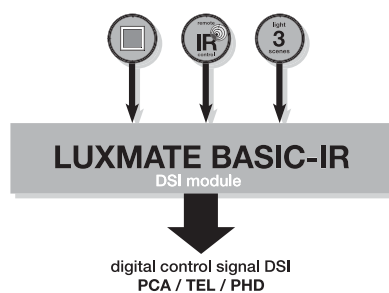
LUXMATE BASIC

Simple light control with standard push to make switches and presence detectors as well as digital operation in existing control systems.



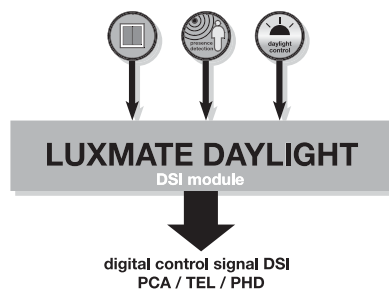
LUXMATE BASIC-IR

Convenient light control with multi-channel infrared hand controller and sensor.



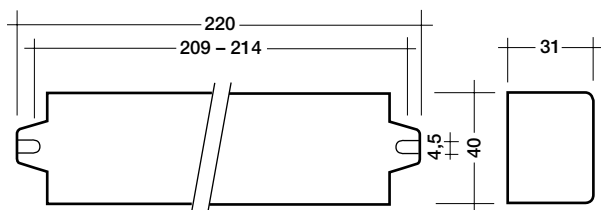
LUXMATE DAYLIGHT

User friendly, daylight linked control with presence detectors for maximum energy savings.



DSI phase cutting dimmer (rising edge) 300 VA
For building into luminaires

PHD 300 VA (to be discontinued)
Control via DSI signal



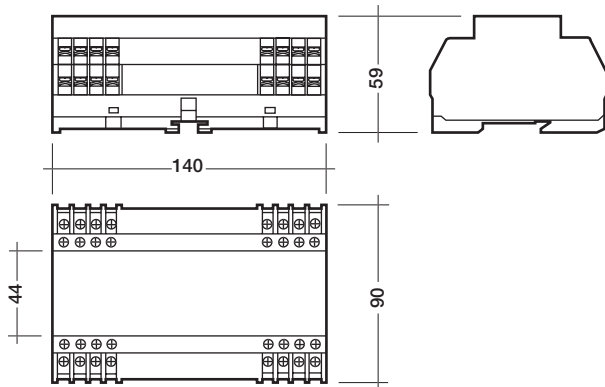
The phase cutting dimmer PHD module changes DSI commands so that the lamp receives the same supply as it would from a phase cutting dimmer.

The connected load may be in the range 30–300 VA / 40–300 VA (e.g. GLS and halogen lamps or magnetic transformers).

Packaging:
box of 10

Wiring:
page 132 figure R

type		PHD	
article number:		20724776	
electrical supply:	voltage	V	230
	frequency	Hz	50
	max. load	VA	1
input:	dimming	–	DSI signal
	max. cable length	m	50
output:	AC voltage	–	rising edge
	max. load (incl. losses transformer)	VA/W	30–300 / 40–300
temperature:	permitted ambient temperature	°C	0 → +60

PD-TD 1 000 VA (to be discontinued)
Control via DSI signal or push to make switches/pre-set function


The phase cutting dimmer PD-TD module changes **DSI** commands so that the lamp receives the same supply as it would from a phase cutting dimmer. The connected load may be in the range 30–1 000 VA (e.g. GLS and halogen lamps or magnetic transformers). As an option the PD-TD can be controlled with a push to make switch. Conventional single or twin switches provide dimming and on/off switching.

With the connection of an additional switch a pre-set dimming level can be programmed which can be recalled any time.

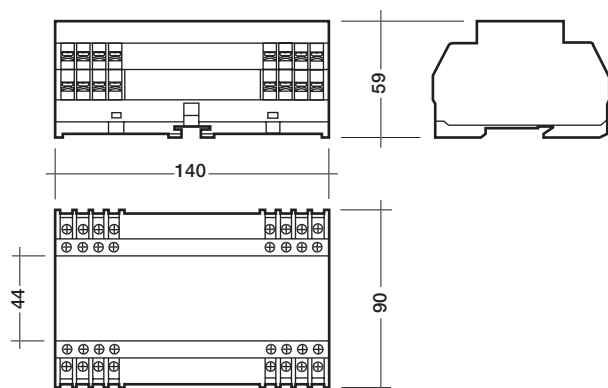
Packaging:
box of 10

Wiring:
page 124 figure C1, C2

type		PD-TD	
article number:		20975509	
electrical supply:	voltage	V	230/240
	frequency	Hz	50
	max. load	VA	3,5
input:	dimming	–	DSI signal
	push to make switches (stand alone)	–	single/twin
	push to make reset (stand alone)	–	single
output:	AC voltage	–	rising edge
	max. load (incl. losses transformer)	VA/W	30–1 000
temperature:	permitted ambient temperature	°C	5 → +40

DSI phase cutting dimmer (falling edge) 1 000 VA
For DIN rail

PAD-TD 1 000 VA (to be discontinued)
Control via DSI signal or push to make switches/pre-set function



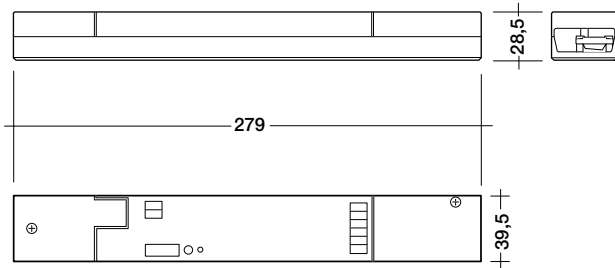
The phase cutting dimmer PAD-TD module changes **DSI** commands so that the lamp receives the same supply as it would from a phase cutting dimmer. The connected load may be in the range 30–1 000 VA (e.g. electronic transformers). As an option the PAD-TD can be controlled with a push to make switch. Conventional single or twin switches provide dimming and on/off switching.

With the connection of an additional switch a pre-set dimming level can be programmed which can be recalled any time.

Packaging:
box of 10

Wiring:
page 125 figure D1, D2

type		PAD-TD	
article number:		20975518	
electrical supply:	voltage	V	230/240
	frequency	Hz	50
	max. load	VA	4,4
input:	dimming	–	DSI signal
	push to make switches (stand alone)	–	single/twin
	push to make reset (stand alone)	–	single
output:	AC voltage	–	falling edge
	max. load (incl. losses transformer)	VA/W	30–1 000
temperature:	permitted ambient temperature	°C	5 → +40

DSI-EIB
Control via EIB signal

The DSI-EIB module allows the connection of LUXMATE PCA/TEL/PHD units to an EIB system (European Installation Bus). The translation of EIB signals into DSI signals allows the LUXMATE units to switch, to dim, to question status as well as send failure messages back via the EIB Bus.

Packaging:
single pack
box of 10

Wiring:
page 127 figure F

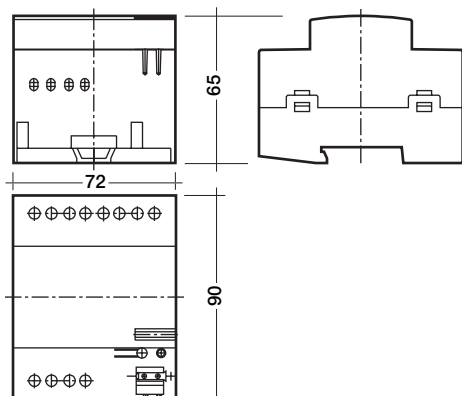
type		DSI-EIB	
article number:		20827097	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	2,6
input:	dimming/switching/reporting	–	EIB
output:	digital DSI control signal	–	1
	signal	–	digital/serial
	voltage	V	12 ±10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	100
	max. cable length	m	250
temperature:	permitted ambient temperature	°C	-5 → +45

EIBP – product data base for DSI EIB/DSI EIBS

Download from www.tridonicatco.com for free.

Control module for PCA/TEL/PHD
For DIN rail

DSI-EIBS Control via EIB signal



The DSI-EIBS module allows the connection of LUXMATE PCA/TEL/PHD units to an EIB system (European Installation Bus). The translation of EIB signals into DSI signals allows the LUXMATE units to switch, to dim, to question status as well as send failure messages back via the EIB Bus.

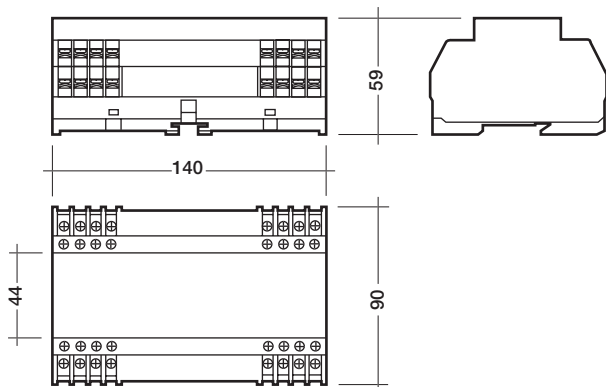
Packaging:
single pack
box of 10

Wiring:
page 127 figure F

type		DSI-EIBS	
article number:		24030297	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	2,6
input:	dimming/switching/reporting	–	EIB
output:	digital DSI control signal	–	1
	signal	–	digital/serial
	voltage	V	12 ±10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	100
	max. cable length	m	250
temperature:	permitted ambient temperature	°C	-5 → +45

EIBP – product data base for DSI EIB/DSI EIBS

Download from www.tridonicatco.com for free.

FTT-TLS
LON-daylight-control/3 channels

The FTT-TLS daylight control module allows the control of the artificial light in a LONWORKS network in conjunction with available daylight. The natural light can be recorded using a LUXMATE light sensor directly connected to the FTT-TLS or even a light sensor in the network.

3 luminaire groups can be continuously controlled between 1 and 100 % using a characteristic which can be programmed for each luminaire group.

Packaging:
box of 10

Wiring:
page 127 figure G1
page 128 figure G2

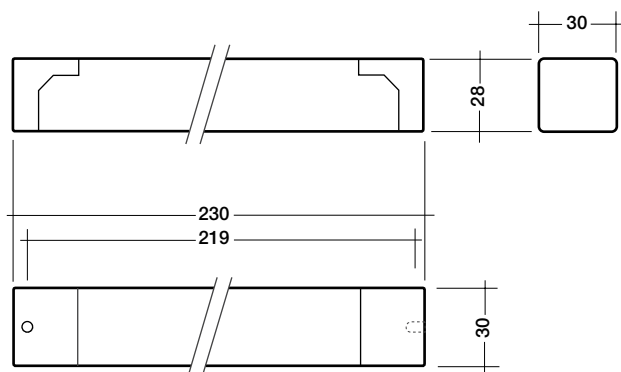
type		FTT-TLS	
article number:		22114530	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	< 10
input:	push to make switches	–	single/twin
	ON/OFF push to make switches	–	1
	switch man./auto	–	1
	LON-bus	–	FTT-10A
	daylight sensor	–	1
output:	digital DSI control signal	–	3
	signal	–	digital/serial
	voltage	V	12 ±10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	3 x 100
	max. cable length	m	250
temperature:	permitted ambient temperature	°C	0 → +50

Configuration-Software for FTT-TLS

Download from www.tridonicatco.com for free.

Control module for PCA/TEL/PHD
For building into luminaires and remote mounting

DSI-V Amplifier for DSI signal



The DSI-V is an amplifier for the DSI signals and makes it possible to connect a further 50 LUXMATE units to the control system after reaching the limit of the existing DSI modules.

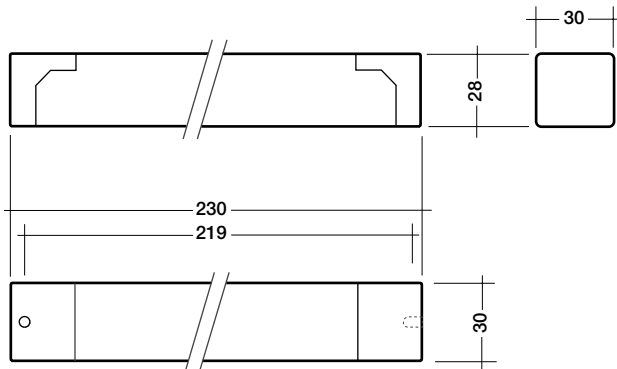
Terminal cover and strain relief enclosed.

Packaging:
single pack
box of 10

Wiring:
page 128 figure H

type		DSI-V	
article number:		20975705	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	0,6
input:	DSI signal *	–	DSI
output:	digital DSI control signal	–	1
	signal	–	digital/serial
	voltage	V	12 ±10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	50
	max. cable length	m	250
temperature:	permitted ambient temperature	°C	-25 → +60

* one DSI-V corresponds to the load of 2 PCA ballasts

DSI-IR
Control with infra-red/single push to make switches

The infra-red control module DSI-IR allows the control of up to 25 digital electronic ballasts PCA, phase cutting dimmers PHD and electronic transformers TEL via the infra-red remote control IRS.

Terminal cover and strain relief enclosed.

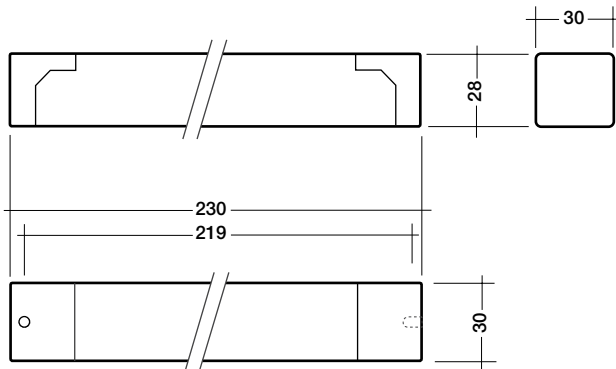
Packaging:
single pack
box of 10

Wiring:
page 129 figure I

type		DSI-IR	
article number:		22114184	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	1
input:	push to make switches	–	single
	infra-red receiver	–	1
output:	digital DSI control signal	–	1
	signal	–	digital/serial
	voltage	V	12 ±10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	25
	max. cable length	m	50
temperature:	permitted ambient temperature	°C	-25 → +60

Control module for PCA/TEL/PHD
For building into luminaires

DSI-2IR Control with infra-red/single push to make switches



The infra-red control module DSI-2IR allows the control of 2 luminaire groups with each up to 25 digital electronic ballasts PCA, phase cutting dimmers PHD and electronic transformers TEL via the infra-red remote control IRS.

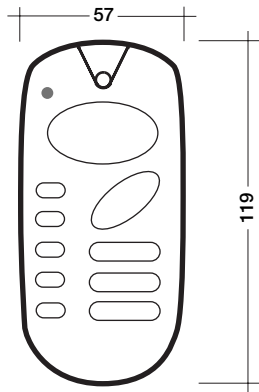
Terminal cover and strain relief enclosed.

Packaging:
single pack
box of 10

Wiring:
page 129 figure J

type		DSI-2IR	
article number:		22114190	
electrical supply:	voltage	V	230/240
	frequency	Hz	50/60
	max. load	VA	1
input:	push to make switches	–	2 x single
	infra-red receiver	–	1
output:	digital DSI control signal	–	2
	signal	–	digital/serial
	voltage	V	12 ±10 %
	data rate	Bd	1 200
	max. number of	PCA/TEL/PHD	25
	max. cable length	m	50
temperature:	permitted ambient temperature	°C	-25 → +60

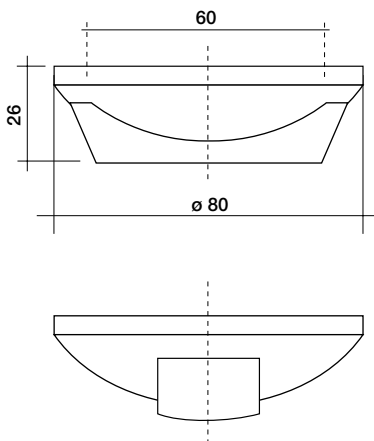
BASIC-IR
 Infra-red remote control and infra-red receiver



IRS

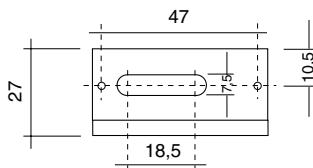
infra-red remote control IRS (all sizes in mm)
 article number: 20975492

The infra-red controller for the control of up to 5 differently addressed DSI-IR modules. There is the possibility to save and recall 3 different scene settings. The IRS infra-red controller is supplied with a wall mounted holder.



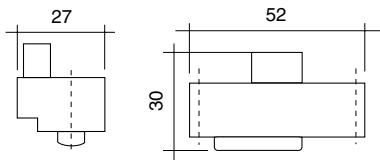
IRED

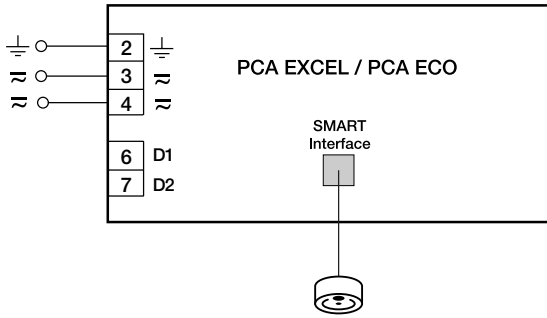
infra-red receiver for remote mounting
 (all sizes in mm)
 article number: 22114587



IREL

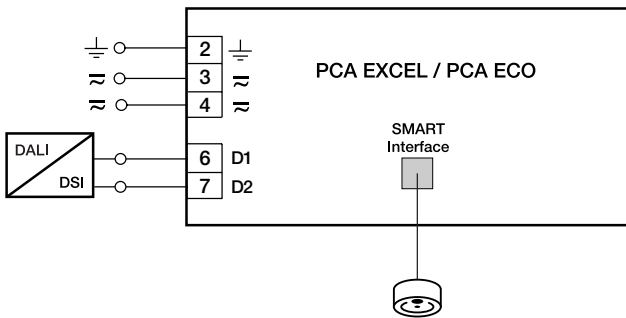
infra-red receiver for building into luminaires
 (all sizes in mm)
 article number: 22114571





ON/OFF by directly switching of the mains. The PCA EXCEL / PCA ECO ballast will start with a soft start switched via the mains or by the **DSI** signal. Once switched the sensor will automatically determine the light level and adjust the ballast to its pre-defined level.

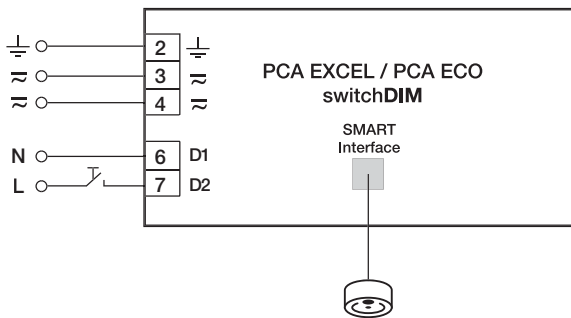
A1) SMART-LS II



ON/OFF through the **DSI** signal. If a **DSI** signal is sent which = 0, the ballast will switch off. If a signal is sent greater than ≥ 1 , the ballast switches on. Therefore it is possible to integrate luminaires with SMART-LS sensors into an existing installation. (The **DSI** signal cannot override the output of the SMART sensor).

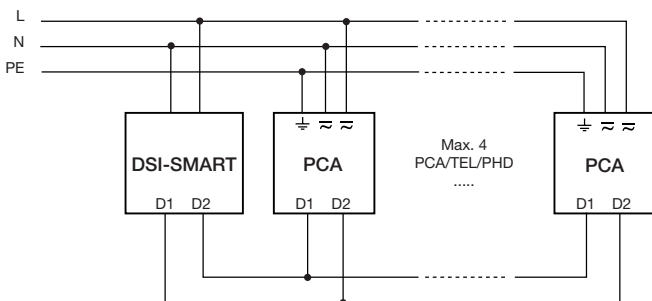
Power free switching and dimming via **DALI** digital signal. Centralised programming of light levels through the integration of SMART-LS using **DALI** commands „1,2,3,4,7,8“.

A2) SMART-LS II and DSI

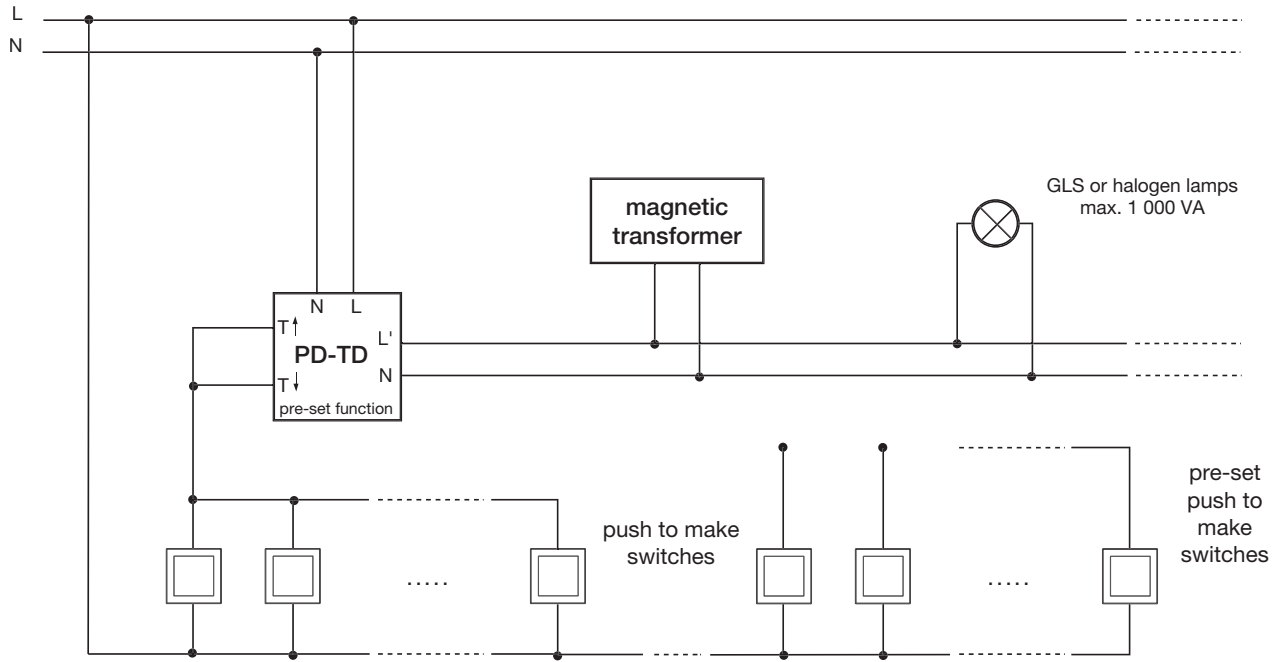


SMART-LS with switch**DIM**. Through switch**DIM** it is possible to both switch the ballast and to create a temporary override condition. A short push on a push to make switch will either switch on or off the ballast. If the switch is held down the ballast will either dim up or down, thereby creating a temporary lighting condition. The SMART sensor will continue to function but will use the new level as its reference. This temporary condition will be maintained until the ballast is switched off, at which time the ballast will revert back to the original SMART-LS settings.

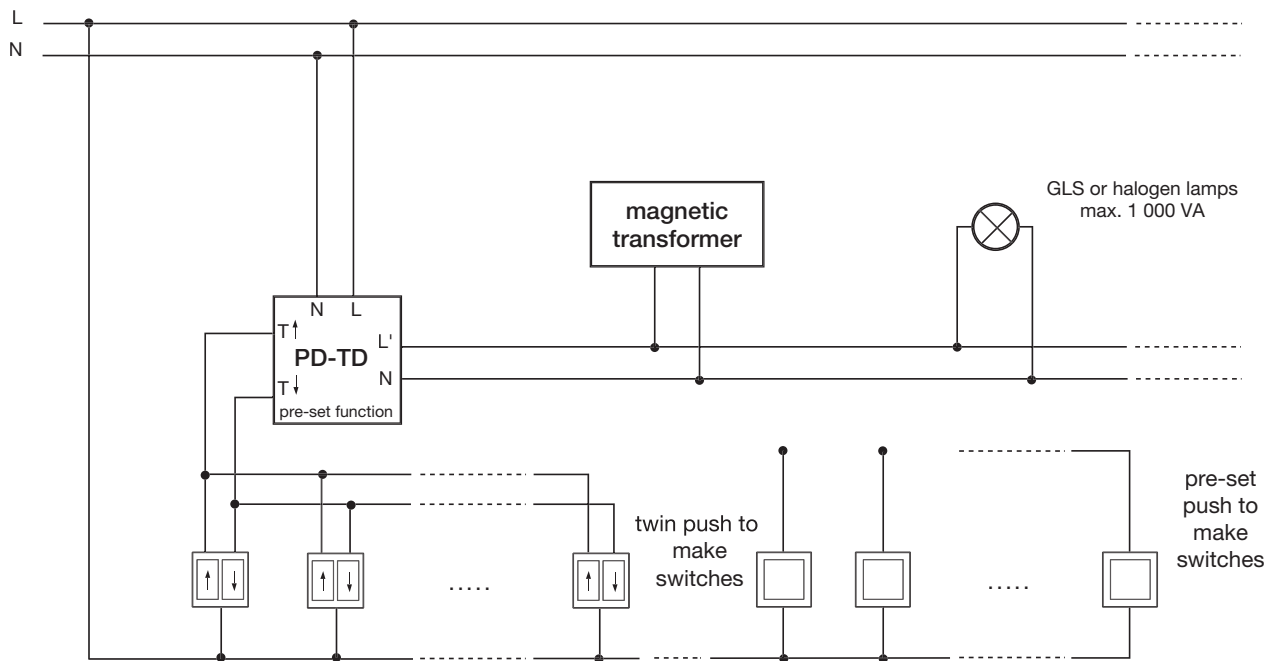
A3) SMART-LS II and switchDIM



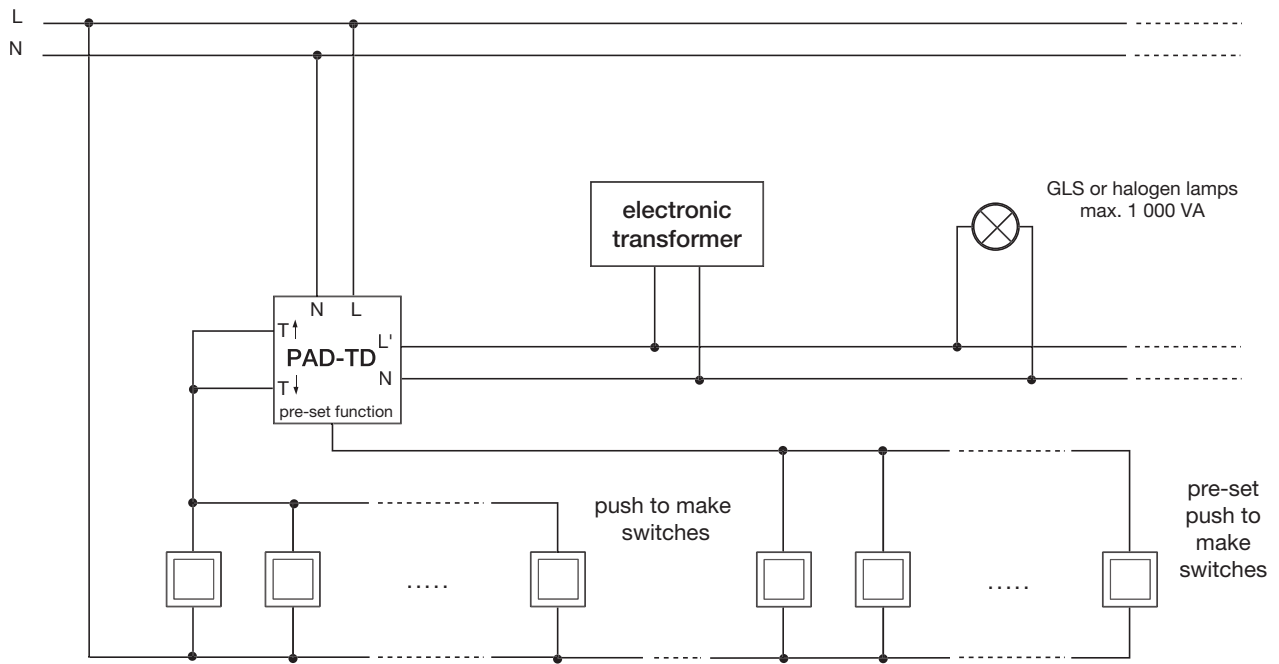
B) DSI-SMART



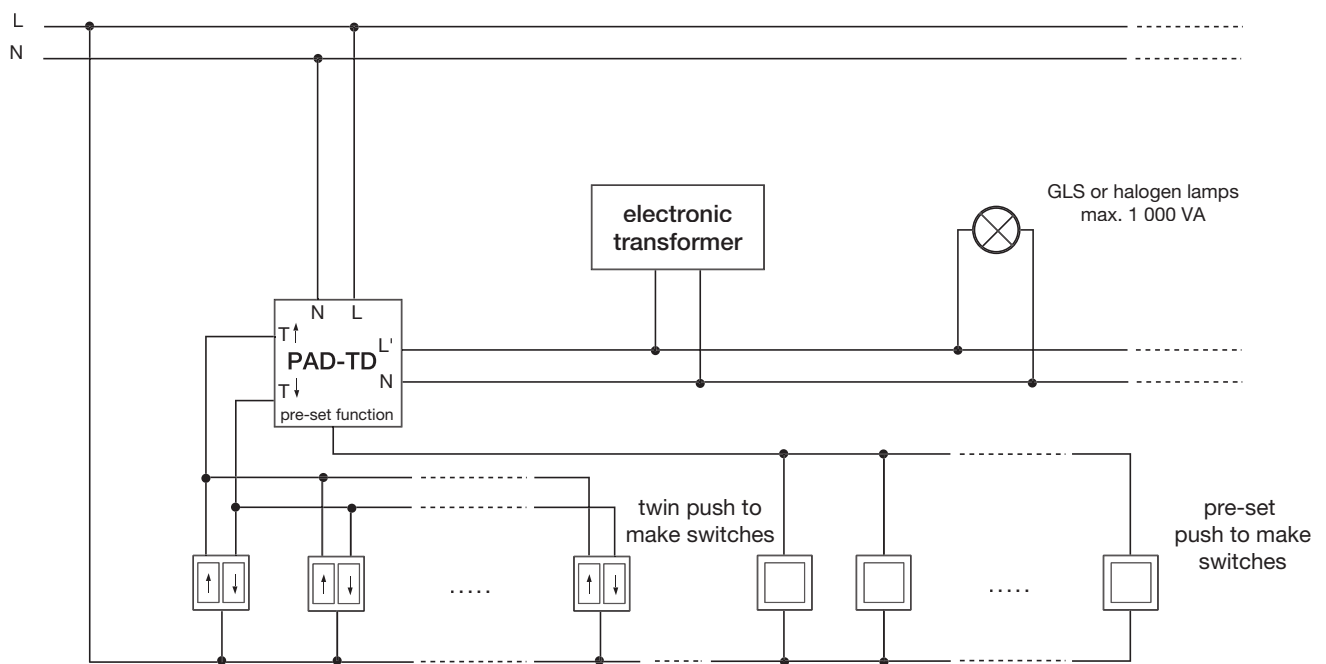
C1) PD-TD



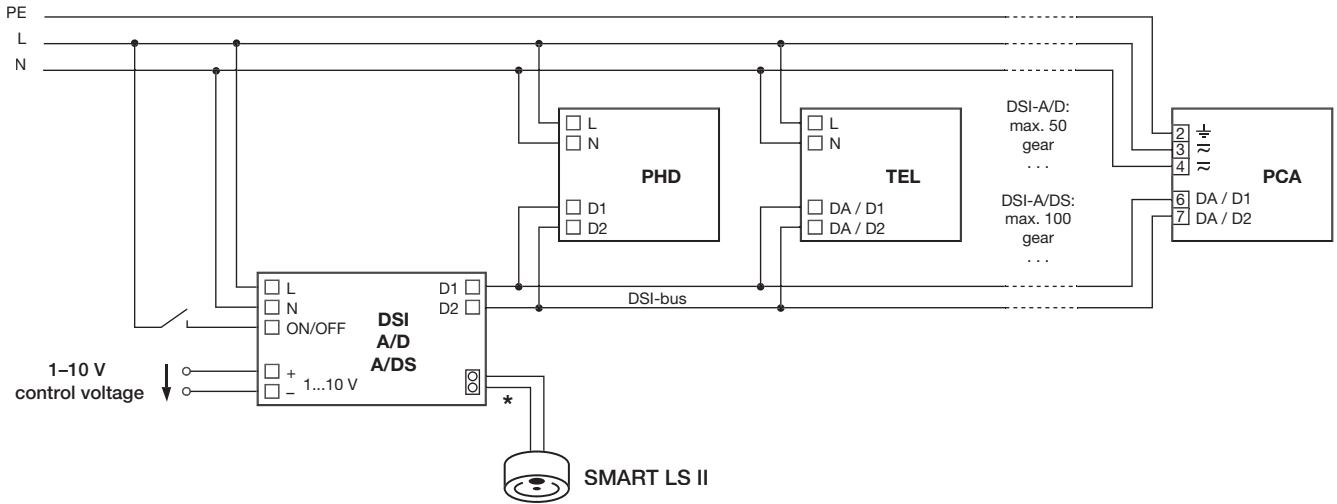
C2) PD-TD



D1) PAD-TD



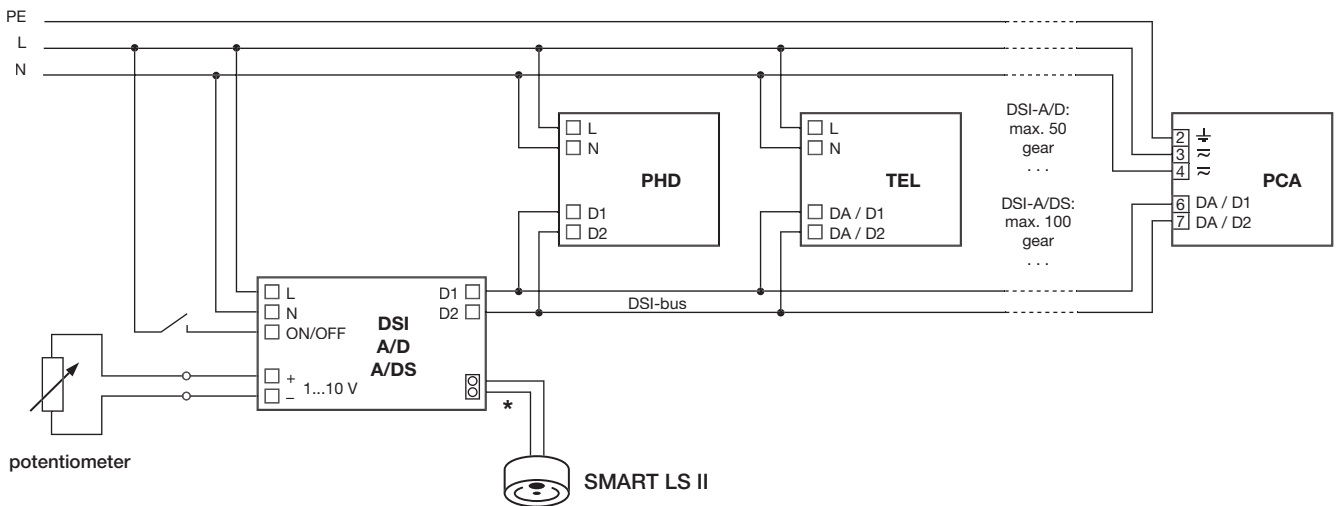
D2) PAD-TD



* optional connection, only possible with DSI-A/D

E1) DSI-AD / DSI-A/DS / DSI-A/D

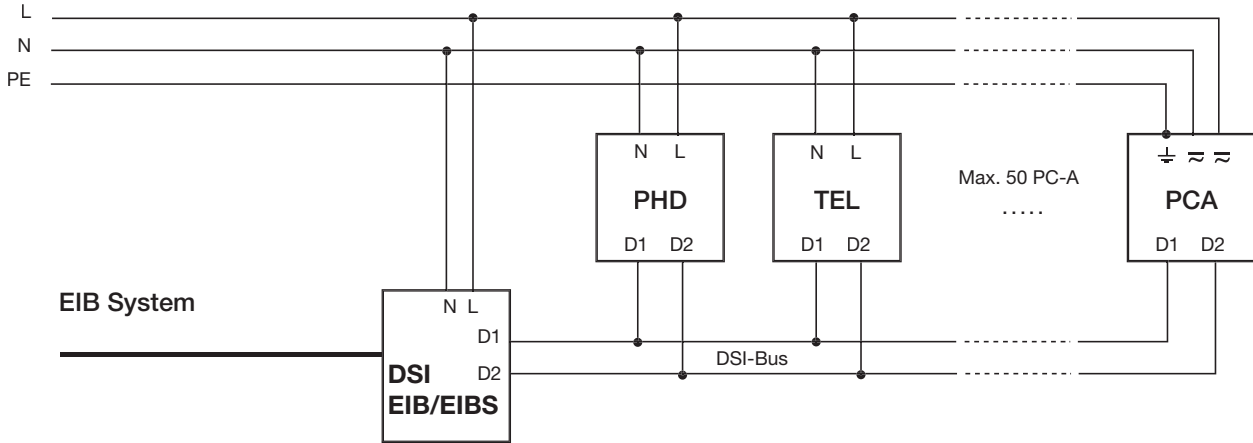
* SMART LS connection only possible with DSI-A/D



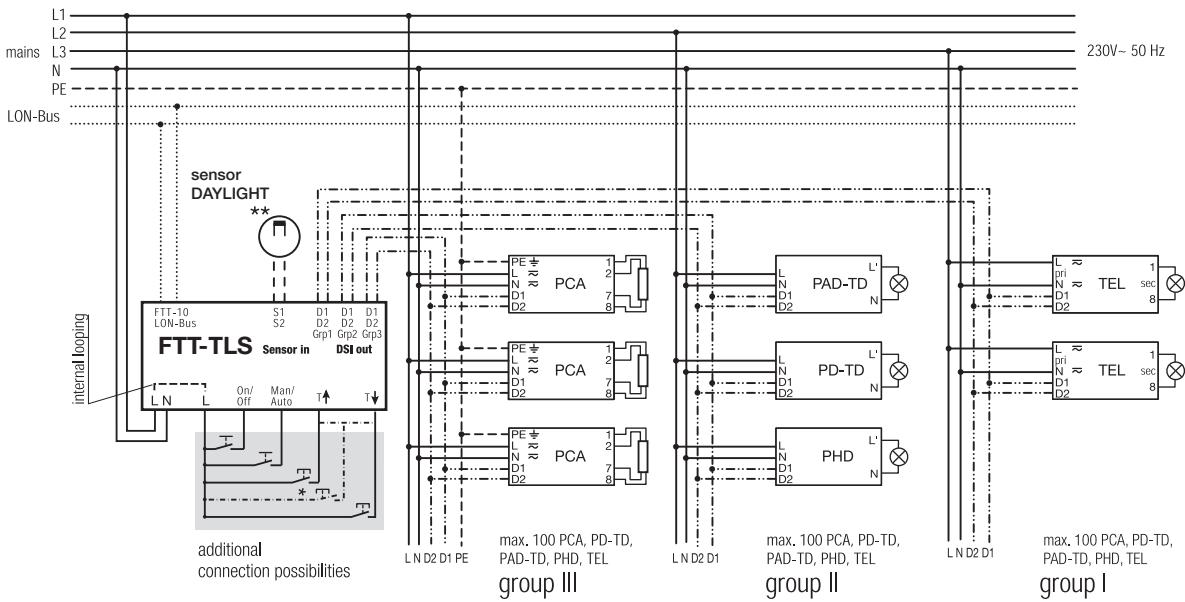
* optional connection, only possible with DSI-A/D

E2) DSI-AD / DSI-A/DS / DSI-A/D

* SMART LS connection only possible with DSI-A/D

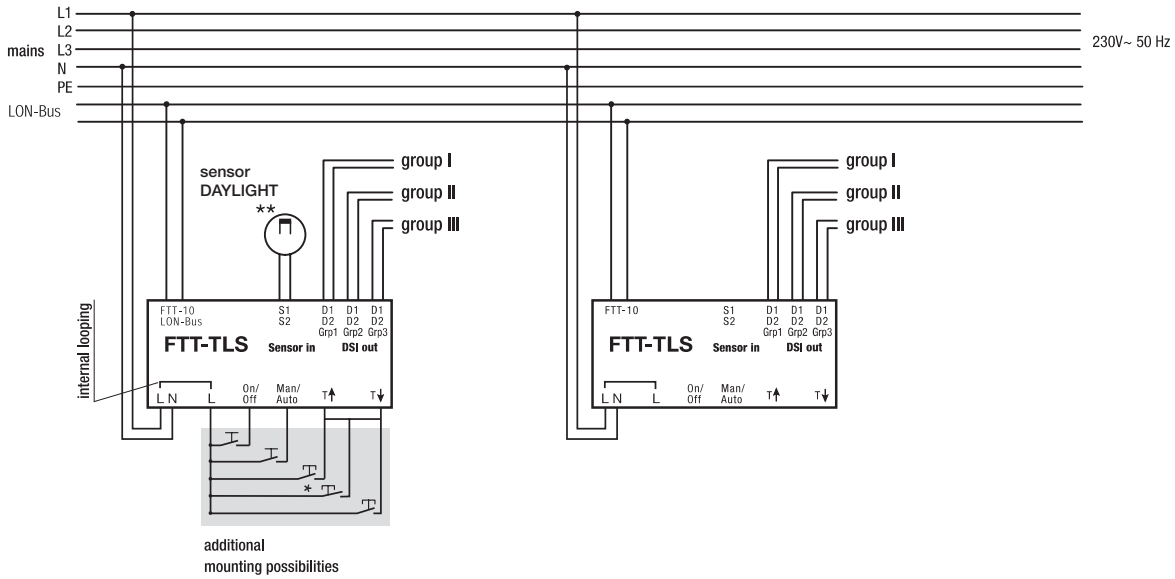


F) DSI-EIB/EIBS



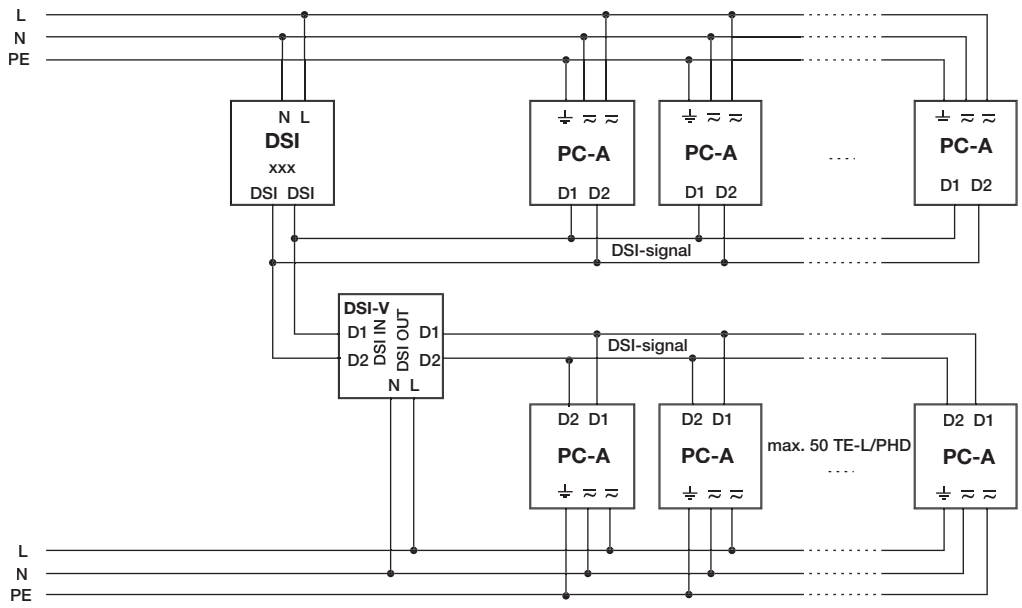
- * wiring with single push to make switches
- ** note: The sensor DAYLIGHT is to be installed with free view direction window. (consider mounting instruction!)

G1) FTT-TLS

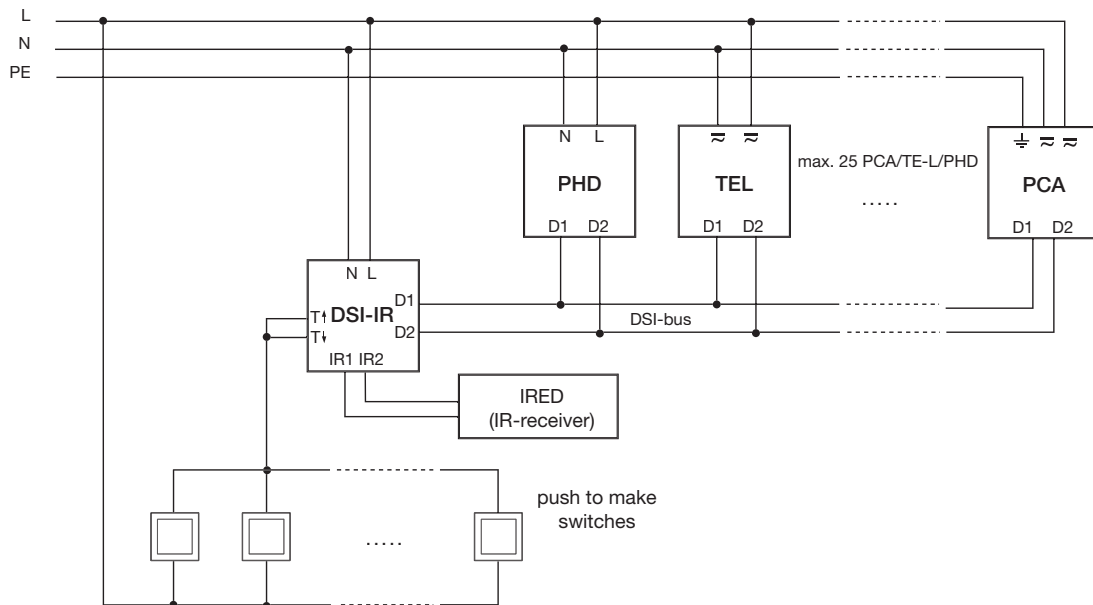


- * wiring with single push to make switches
- ** note: The sensor DAYLIGHT is to be installed with free view direction window. (consider mounting instruction!)

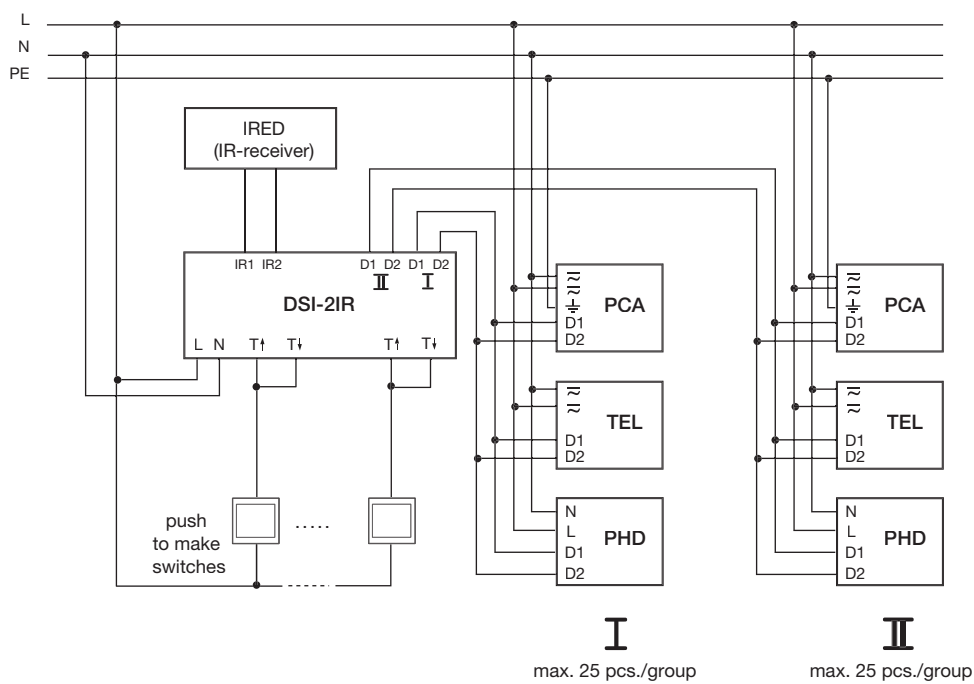
G2) FTT-TLS



H) DSI-V



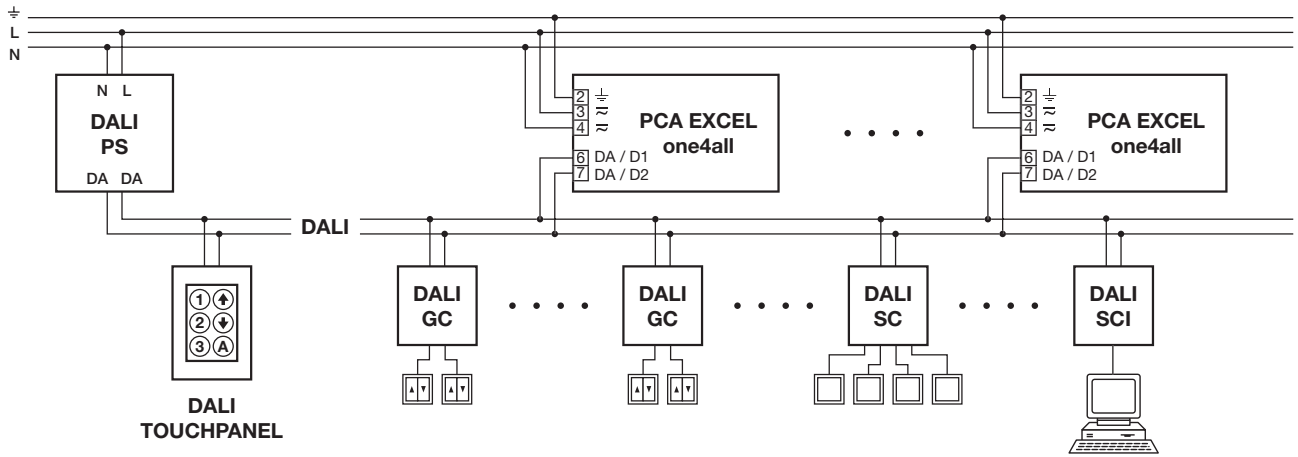
I) DSI-IR



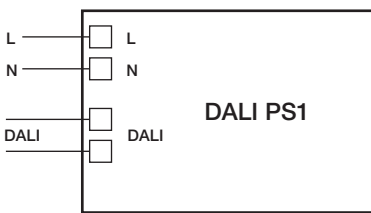
J) DSI-2IR



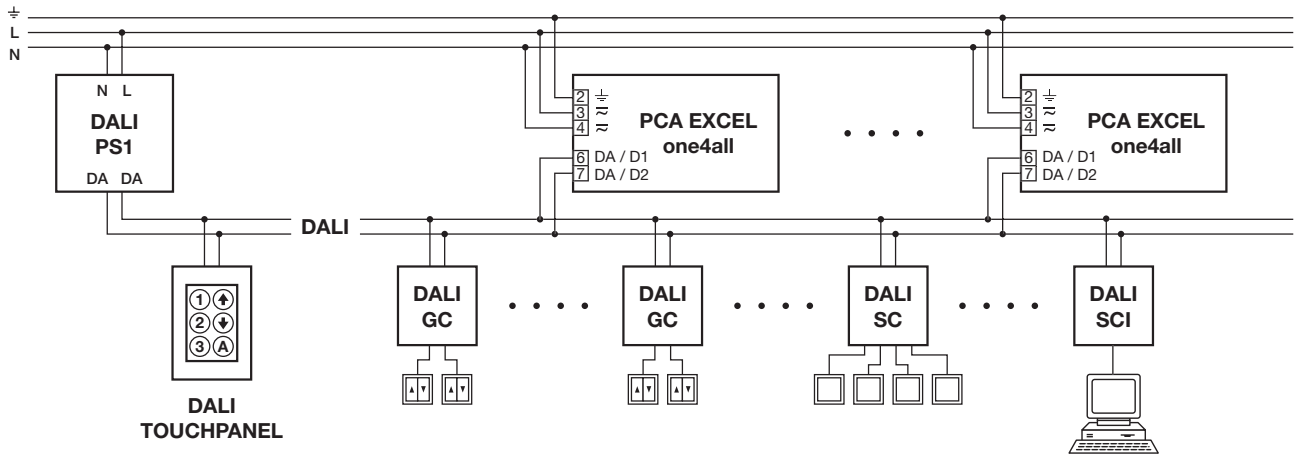
K1) DALI PS



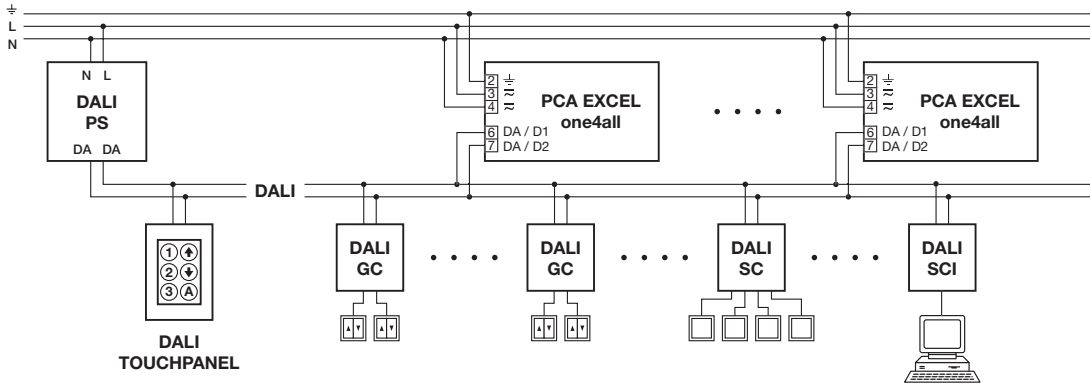
K2) DALI PS



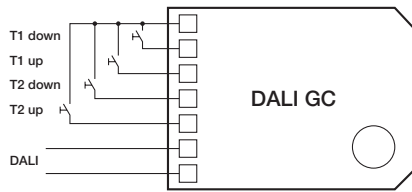
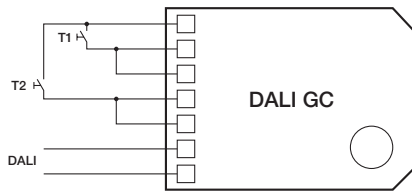
L1) DALI PS1



L2) DALI PS1

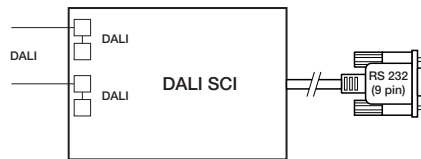
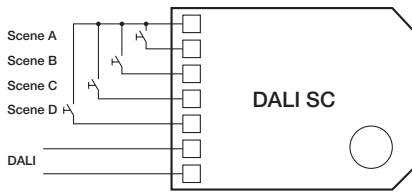


M1) DALI modules



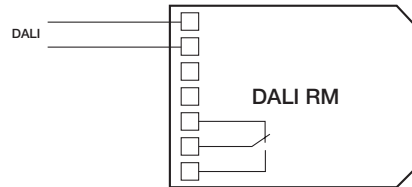
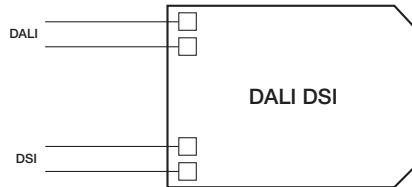
M2) DALI GC, single push to make switches

M3) DALI GC, double push to make switches



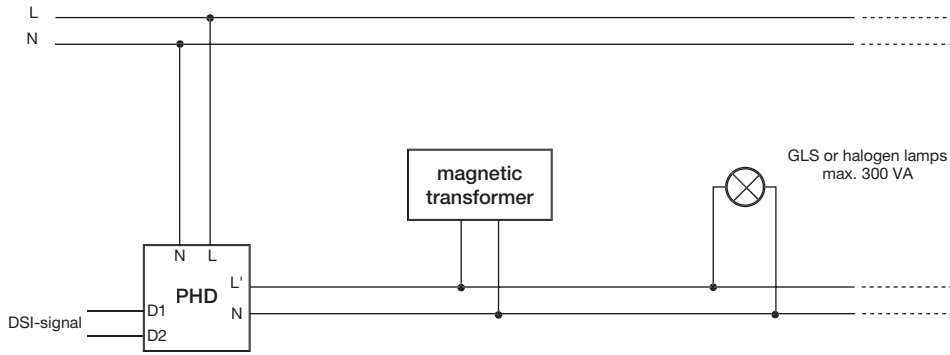
N) DALI SC

O) DALI SCI

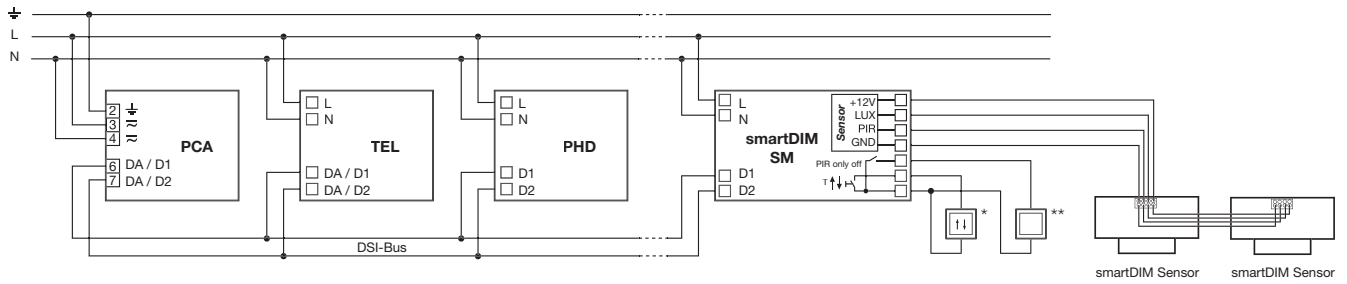


P) DALI DSI

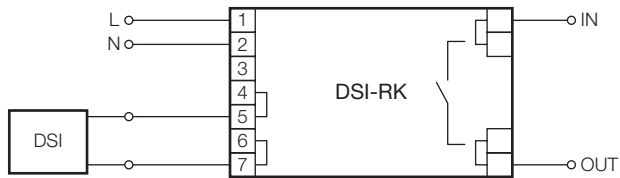
Q) DALI RM



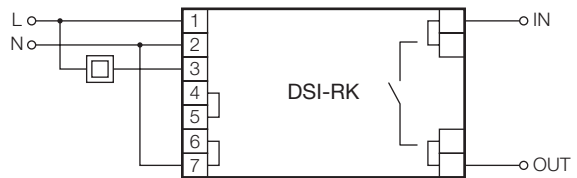
R) PHD



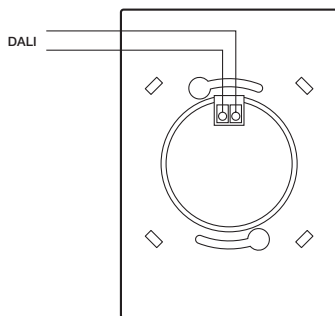
S) smartDIM SM



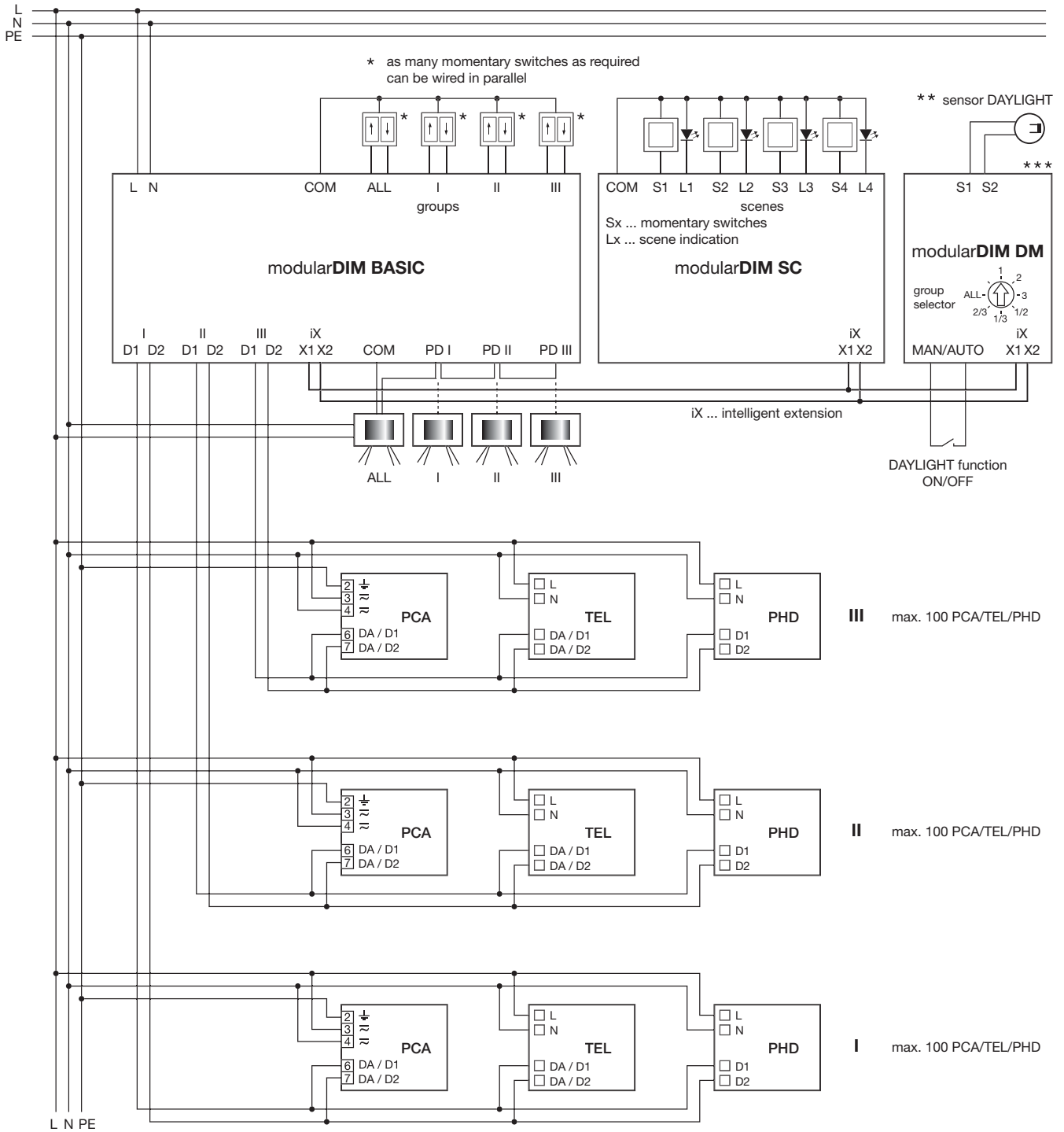
T1) DSI-RK (DSI)



T2) DSI-RK (switchDIM)



U) DALI TOUCHPANEL



** the light sensor "sensor DAYLIGHT" is to be installed with free view direction window (consider mounting instruction)
*** the daylight application can be extended by using up to 3 modularDIM DM

maximum wire lengths:

- DSI: max. 250 m
- momentary switch: max. 100 m
- scene indication: max. 100 m
- iX: max. 10 m
- sensor DAYLIGHT: max. 100 m
- DAYLIGHT function ON/OFF: max. 100 m

V) modularDIM

Emergency lighting modules for fluorescent lamps

Index

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PC COMBO 220–240 V 50/60 Hz	140
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EM SELFTTEST 220–240 V 50/60 Hz	144
EM PRO 220–240 V 50/60 Hz	146
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Circuit diagrams	149
Technical details – IDC push/cut terminal	331

Emergency lighting modules for fluorescent lamps



EM 36A BASIC

Possibilities for use

Emergency lighting power supply units from TridonicAtco are designed for use in self contained systems, i.e. the emergency lighting power supply unit and its associated battery pack are housed directly in the luminaire.

Self-contained systems offer the following benefits:

- low installation costs
- maintenance-free battery
- improved safety on account of redundancy
- retrofitting can be carried out at a later date
- can be split into various phases and circuits quite easily

Compatibility

Emergency lighting power supply units from TridonicAtco are designed using 5-pole technology: four relay poles are used to control the lamp connection while the fifth relay pole guarantees the delayed connection of the ballast to the mains when the power supply is restored.

This means that after emergency operation, the lamp will be reconnected to the ballast using 4 poles, and then, after a short time delay the mains supply will be connected to the ballast. This prevents possible malfunctions of the system and guarantees 100 % compatibility with all magnetic as well as all dimmable and non-dimmable electronic ballasts.

Operating modes

TridonicAtco emergency lighting power supply units can be used in either maintained or non-maintained systems. In the maintained mode the emergency lighting power supply unit is used in conjunction with the normal ballast or ballasts to ensure the availability of light during normal and emergency conditions. Non-maintained systems use only the emergency lighting power supply to provide lighting during situations when the mains supply fails.



Adequate lighting is required in areas that are accessible to the public. The same applies in those very rare cases when power failure occurs. It is at times like

these when emergency lighting demonstrates its power by providing a guaranteed level of lighting which enables the building to be evacuated safely and the marked escape routes to be identified.

TridonicAtco has used all the experience it has gained from producing ballasts, to develop emergency lighting power supply units that meet the requirements of modern lighting systems.

Checking emergency lighting installations

It is essential and a legal requirement that regular testing and recording is carried out on emergency lighting systems in order to confirm their readiness for use. Total system reliability is therefore of the utmost importance.

With the EM BASIC and PC COMBO emergency lighting power supply units, functional and operating tests can be carried out by either disconnecting the permanent mains or by using the optional test switch facility.

With the EM SELFTEST range, functional and emergency duration testing is carried out automatically at times of minimum risk.

The EM PRO professional range of products allows for self testing or testing and reporting via a DALI interface over a two wire bus.

User-friendly connection

Emergency lighting power supply units from TridonicAtco are fitted with the tried and tested insulation displacement connection (IDC). This means that luminaires can be wired either manually or by suitable robotic wiring systems (for technical specification see page 331).

Long service life

Emergency lighting power supply units from TridonicAtco are designed for an average service life of 50 000 hours under reference conditions and with a failure probability of less than 10 %. This corresponds to an average failure rate of 0,2 % for every 1 000 hours of operation.

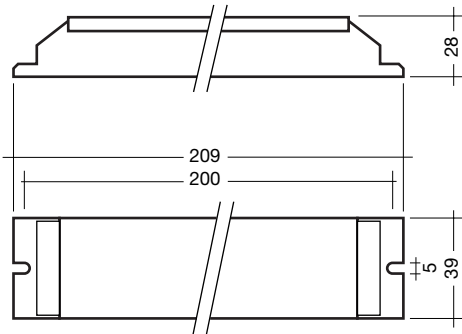
TridonicAtco Quality Assurance

Production processes and equipment are certified in accordance with ISO 9001 and therefore a consistently high standard of quality is guaranteed. All TridonicAtco emergency lighting power supply units are tested by carrying out a multi-stage test program on 100 % of the products manufactured.

Emergency lighting modules

T5, T8, TC-DD, TC-L linear and compact lamps

EM BASIC 230–240 V 50/60 Hz



- 5 pole technology: 4 pole changeover and a delayed action relay for switching the mains supply to ensure compatibility with the ballast
- 1 h or 3 h duration
- AC output optimised for TC-DD and TC-L lamps
- DC output optimised for T8 lamps
- cathode heating optimised for compact lamps
- small size (28 mm x 39 mm cross section)

- change-over relay with high current contacts
- IDC terminals
- emergency testing by isolating only the unswitched supply
- optional test switch
- deep discharge protection
- reverse battery polarity protected
- high temperature NiCd cells

Packaging EM BASIC:

box of 25
30 boxes/pallet
750 pieces/pallet

Packaging Accu-NiCd:

box of 25

Wiring:

page 149, 150 figure A-G

Packaging LED green:

25 pieces/bag
box of 200

Certified:

EN 55015
EN 60598-2-22
(allows compliance with luminaire standard)
EN 61000-3-2
EN 61347-2-7
EN 61547
in accordance with VDE 0108

Packaging test switch:

25 pieces/bag
box of 200

module – 3 h duration

type	article number	HT NiCd accu number of cells
EM 33A BASIC 230–240V 50/60 Hz	89818556	3
EM 33B BASIC 230–240V 50/60 Hz	89818655	3
EM 33C BASIC 230–240V 50/60 Hz	89800000	3
EM 34A BASIC 230–240V 50/60 Hz	89818557	4
EM 34B BASIC 230–240V 50/60 Hz	89818662	4
EM 35A BASIC 230–240V 50/60 Hz	89818581	5
EM 35B BASIC 230–240V 50/60 Hz	89818667	5
EM 35C BASIC 230–240V 50/60 Hz	89800001	5
EM 35D BASIC 230–240V 50/60 Hz	89899621	5
EM 36A BASIC 230–240V 50/60 Hz	89818654	6

module – 1 h duration

type	article number	HT NiCd accu number of cells
EM 13B BASIC 230–240V 50/60 Hz	89895971	3
EM 14B BASIC 230–240V 50/60 Hz	89899611	4

battery (high temperature)

	type	number of cells	article number
Accu-NiCd 3A	stick	1 x 3	89895960
Accu-NiCd 3B	side by side	3 x 1	89895976
Accu-NiCd 4A	stick	1 x 4	89895961
Accu-NiCd 4B	side by side	4 x 1	89895977
Accu-NiCd 4C	stick + stick	2 + 2	89895978
Accu-NiCd 5A	stick	1 x 5	89895973
Accu-NiCd 5B	stick + stick	2 + 3	89895962
Accu-NiCd 6A	stick + stick	3 + 3	89895963

type	article number	type	article number
LED EM green	89899605	test switch EM 2	89805277

Technical data modules:

rated mains supply voltage 230–240 V
mains frequency 50/60 Hz
mains change-over voltage in accordance with EN 60598-2-22
mains supply current 0,04 A
mains supply power 9 W
recharge period 24 h
ambient temperature range 0°C to +50°C
tc-point +75°C
ingress protection IP20
safety class I

Technical data batteries:

case temperature range (to ensure 4 years life) 0°C to +55°C
storage life (in temperate conditions) 4 years
battery voltage/cell 1,2 V
capacity 4 Ah

Emergency light output factors (BLF) in %:

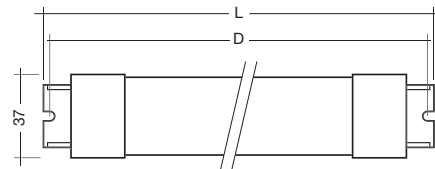
duration		3 hours									
battery		3 cells			4 cells		5 cells			6 cells	
emergency module		EM 33A BASIC	EM 33B BASIC	EM 33C BASIC	EM 34A BASIC	EM 34B BASIC	EM 35A BASIC	EM 35B BASIC	EM 35C BASIC	EM 35D BASIC	EM 36A BASIC
lamp											
TC-DD	10 W	27			30		39				46
	16 W	24			24		31				37
	21 W				20		25				30
	28 W				19		21				25
	38 W						15				18
	55 W										14
T5	4 W	25			30		37				44
	6 W	26			32		40				48
	8 W	27			32		40				48
	13 W	25			30		37				44
	14 W	16			21		32				
	21 W				21* (2)		21*(2)				
	24 W						19				
	28 W							14**			
T8	18 W		10			12	18	13			
	30 W		9			13	18	14			
	36 W		8			10	16	10			
	58 W					7		7			
	70 W							7			
TC-L	18 W	18			18		19				22
	24 W				17		20				24
	34 W					9**	19				22
	36 W					9**	20				24
	40 W					8**		10**			8*(2)
	55 W					5**		6**			6*(2)
TC-SEL	5 W			20							
	7 W			14							
	9 W			11							
	11 W			16							
TC-DEL	10 W			13							
	13 W			16							
	18 W							12			
	26 W							15			
TC-TEL	13 W			10					16		
	18 W								12		
	26 W								15		
	32 W									7	
	42 W										5

*(2) 2 hours only

** should only be used in maintained mode

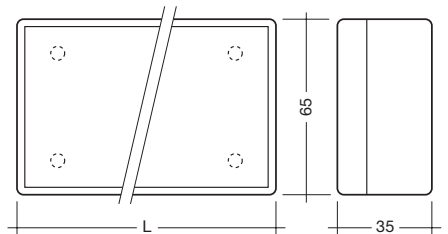
duration		1 hour	
Battery		3 cells	4 cells
Emergency module		EM 13B BASIC	EM 14B BASIC
T8	18 W	22	25
	36 W	16	19
	58 W		14

Accu (stick pack):



type	length	fixing centres	weight
	L mm	D mm	
Accu-NiCd 3A	218	201	400
Accu-NiCd 4A	275	263	530
Accu-NiCd 4C	151 + 151	139 + 139	530
Accu-NiCd 5A	338	323	660
Accu-NiCd 5B	151 + 218	139 + 201	660
Accu-NiCd 6A	218 + 218	201 + 201	790

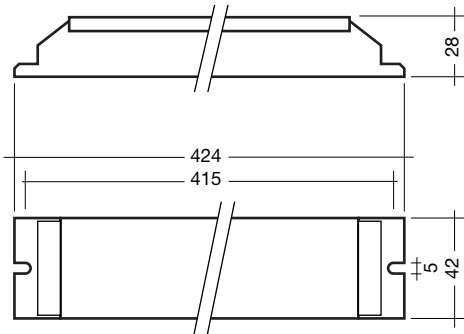
Accu (side by side pack):



type	length	fixing centres	weight
	L mm	D mm	
Accu-NiCd 3B	98	40 x 33	400
Accu-NiCd 4B	130	40 x 66	530



PC COMBO 220–240 V 50/60 Hz



- combined electronic ballast and emergency lighting module
- simplified wiring
- no compatibility issues
- 1 h or 3 h duration
- lamp warm start with electronic ballast operation
- combined push wire and IDC terminals
- for use with single, twin, triple and quad lamps
- emergency testing by isolating only the unswitched supply
- optional test switch

- deep discharge and reverse battery polarity protection
- high temperature NiCd cells

Packaging PC COMBO:

box of 25
28 boxes/pallet
700 pieces/pallet

Packaging LED green:

25 pieces/bag
box of 200

Packaging test switch:

25 pieces/bag
box of 200

Packaging Accu-NiCd:

box of 25

Wiring:
page 151 figure H-K

Certified:

EN 55015
EN 60929
EN 60598-2-22
(allows compliance with luminaire standard)
EN 61000-3-2
EN 61347-2-3
EN 61347-2-4
EN 61347-2-7
EN 61547
in accordance with VDE 0108

3 h duration

Lamp			Ballast										
type	watt- age W	length mm	type	article number	length mm	fixing centres mm	weight kg	circuit power W	lamp power W	current A	power factor (ca.)	temperature range °C	accu
T8	36	1200	PC 1x36/33 COMBO 220–240V 50/60 Hz	89805250	424	415	0,44	39	32	0,18	0,93	+0 → +50	Accu-NiCd 3A
T8	2x36	1200	PC 2x36/33 COMBO 220–240V 50/60 Hz	89805268	424	415	0,46	75	2x32	0,35	0,96	+0 → +50	Accu-NiCd 3A
T8	58	1500	PC 1x58/34 COMBO 220–240V 50/60 Hz	89805270	424	415	0,44	60	50	0,27	0,95	+0 → +50	Accu-NiCd 4A
T8	2x58	1500	PC 2x58/34 COMBO 220–240V 50/60 Hz	89805272	424	415	0,46	115	2x50	0,51	0,96	+0 → +50	Accu-NiCd 4A
T8	3x18	590	PC 3/4x18/33 COMBO 220–240V 50/60 Hz	89818236	424	415	0,45	60	3x16	0,27	0,97	+0 → +50	Accu-NiCd 3A
T8	4x18	590	PC 3/4x18/33 COMBO 220–240V 50/60 Hz	89818236	424	415	0,45	79	4x16	0,35	0,97	+0 → +50	Accu-NiCd 3A
T5	3x14	549	PC 3/4x14/33 T5 COMBO 220–240V 50/60 Hz	89800002	424	415	0,45	52	3x14	0,23	0,97	+0 → +50	Accu-NiCd 3A
T5	4x14	549	PC 3/4x14/33 T5 COMBO 220–240V 50/60 Hz	89800002	424	415	0,45	67	4x14	0,30	0,98	+0 → +50	Accu-NiCd 3A

1 h duration

Lamp			Ballast										
type	watt- age W	length mm	type	article number	length mm	fixing centres mm	weight kg	circuit power W	lamp power W	current A	power factor (ca.)	temperature range °C	accu
T8	3x18	590	PC 3/4x18/13 COMBO 220–240V 50/60 Hz	89818358	424	414	0,45	60	3x16	0,27	0,97	+0 → +50	Accu-NiCd 3A
T8	4x18	590	PC 3/4x18/13 COMBO 220–240V 50/60 Hz	89818358	424	414	0,45	79	4x16	0,35	0,97	+0 → +50	Accu-NiCd 3A
T5	3x14	549	PC 3/4x14/13 T5 COMBO 220–240V 50/60 Hz	89800003	424	415	0,45	52	3x14	0,23	0,97	+0 → +50	Accu-NiCd 3A
T5	4x14	549	PC 3/4x14/13 T5 COMBO 220–240V 50/60 Hz	89800003	424	415	0,45	67	4x14	0,30	0,98	+0 → +50	Accu-NiCd 3A

battery (high temperature)	type	number of cells	article number
Accu-NiCd 3A	stick	1 x 3	89895960
Accu-NiCd 4A	stick	1 x 4	89895961

type	article number	type	article number
LED EM green	89899605	test switch EM 2	89805277

Technical data PC COMBO:

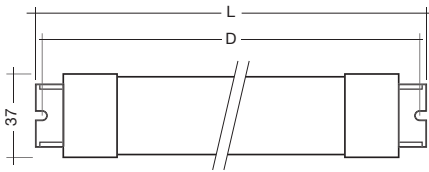
rated mains supply voltage	220–240 V
mains frequency	50/60 Hz
mains change-over voltage in accordance with EN 60598-2-22	
min. temperature of lamp start (normal operation)	-15°C
min. temperature of lamp start (emergency operation)	0°C
operating frequency	> 30 kHz
recharge period	24 h
tc-point	+70°C
ingress protection	IP20
safety class	I

Technical data batteries:

case temperature range (to ensure 4 years life)	0°C to +55°C
storage life (in temperate conditions)	4 years
battery voltage/cell	1,2 V
capacity	4 Ah

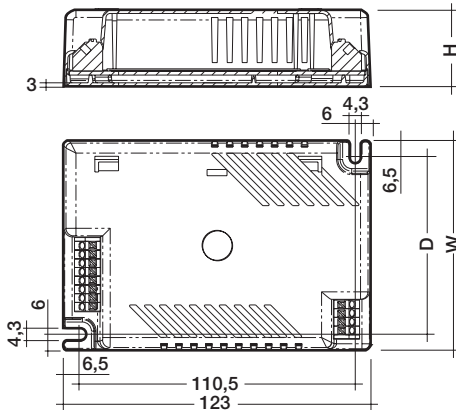
Emergency light output factors in %:

Ballast	BLF
PC 1x36/33 COMBO 220–240V 50/60 Hz	8
PC 2x36/33 COMBO 220–240V 50/60 Hz	8
PC 1x58/34 COMBO 220–240V 50/60 Hz	7
PC 2x58/34 COMBO 220–240V 50/60 Hz	7
PC 3/4x18/33 COMBO 220–240V 50/60 Hz	12
PC 3/4x18/13 COMBO 220–240V 50/60 Hz	20
PC 3/4x14/33 T5 COMBO 220–240V 50/60 Hz	34
PC 3/4x14/13 T5 COMBO 220–240V 50/60 Hz	34

Accu (stick pack):

type	length	fixing centres	weight
	L mm	D mm	g
Accu-NiCd 3A	218	201	400
Accu-NiCd 4A	275	263	530

PC CFL COMBO 220–240 V 50/60 Hz



- combined electronic ballast and emergency lighting module
- simplified wiring
- no compatibility issues
- 3 hours and 1 hour operation
- small size for easy integration
- pre-heat start in normal operation
- cathode heating during emergency operation
- AC operation of lamps
- high and standard BLF for 1 hour versions

- deep discharge protection
- regulated electronic charging circuit
- remote battery pack units

Packaging PC CFL COMBO:
Box of 25

Packaging LED:
25 pieces/bag

Packaging Accu-NiCd:
Box of 25

Packaging Pack-NiCd:
Box of 25

Wiring:
page 152 figure L-N

Certified:
EN 55015
EN 60525
EN 60929
EN 60598-2-22
(allows compliance with luminaire standard)
EN 61000-3-2
EN 61347-2-3
EN 61347-2-7
EN 61547

3 h duration

Lamp		Ballast													
type	watt- age W	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current A	power factor (ca.)	temperature range °C	emergency BLF	normal BLF	accu	
TC-DEL	10	PC 1x10/13-33 TC COMBO	89899648	123x79x31	66,5	0,15	16	10	0,08	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – D cells	
TC-DEL	2x10	PC 2x10/13-33 TC COMBO	89899649	123x102x31	89,5	0,22	27	2x10	0,13	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – D cells	
TC-DEL	13	PC 1x10/13-33 TC COMBO	89899648	123x79x31	66,5	0,15	19	13	0,09	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – D cells	
TC-DEL	2x13	PC 2x10/13-33 TC COMBO	89899649	123x102x31	89,5	0,22	33	2x13	0,16	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – D cells	
TC-DEL/TEL	18	PC 1x18-34 TC COMBO	89899650	123x79x31	66,5	0,15	24	18	0,11	0,92	+0 → +50	i. p.*	> 0,95	4xAccu-NiCd – D cells	
TC-DEL/TEL	2x18	PC 2x18-34 TC COMBO	89899651	123x102x31	89,5	0,22	44	2x18	0,21	0,92	+0 → +50	i. p.*	> 0,95	4xAccu-NiCd – D cells	
TC-DEL/TEL	26	PC 1x26/32/42-35 TC COMBO	89899641	123x79x31	66,5	0,15	32	26	0,15	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells	
TC-DEL/TEL	2x26	PC 2x26-35 TC COMBO	89899642	123x102x31	89,5	0,22	60	2x26	0,28	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells	
TC-TEL	32	PC 1x26/32/42-35 TC COMBO	89899641	123x79x31	66,5	0,15	38	32	0,18	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells	
TC-TEL	2x32	PC 2x32/42-35 TC COMBO	89899652	123x102x31	89,5	0,22	75	2x32	0,35	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells	
TC-TEL	42	PC 1x26/32/42-35 TC COMBO	89899641	123x79x31	66,5	0,15	50	42	0,24	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells	
TC-TEL	2x42	PC 2x32/42-35 TC COMBO	89899652	123x102x31	89,5	0,22	100	2x42	0,47	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells	
TC-TEL	57	PC 1x57-36 TC COMBO	89899653	123x102x31	89,5	0,22	60	57	0,28	0,92	+0 → +50	i. p.*	> 0,95	6xAccu-NiCd – D cells	
TC-DD	28	PC 1x28-34 DD COMBO	89899633	123x79x31	66,5	0,15	26	17	0,12	0,92	+0 → +50	0,12	0,75	4xAccu-NiCd – D cells	
TC-DD	28	PC 1x28-34 HO DD COMBO	89899654	123x79x31	66,5	0,15	34	25	0,16	0,92	+0 → +50	0,12	> 0,95	4xAccu-NiCd – D cells	
TC-DD	38	PC 1x38-34 DD COMBO	89899655	123x79x31	66,5	0,15	43	35	0,20	0,92	+0 → +50	i. p.*	> 0,95	4xAccu-NiCd – D cells	

* i. p. = in preparation

Technical data PC CFL COMBO:

rated mains supply voltage 220–240 V
mains frequency 50/60 Hz
mains change over voltage
in accordance with EN 60598-2-22
min. lamp starting temperature -15°C
(normal operation)
min. lamp starting temperature 0°C
(emergency operation)

recharge period 24 h
tc point +70°C
ingress protection IP20
safety class I

24 h
+70°C
IP20
I

Technical data batteries:

case temperature range (to ensure 4 years life) 0°C to +55°C
storage life (in temperate conditions) 4 years
battery voltage/cells 1,2 V
capacity D cells 4 Ah
capacity Cs cells 1,6 Ah

1 h duration high BLF "D" cells

Lamp		Ballast												
type	watt- age W	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current A	power factor (approx.)	temperature range °C	emergency BLF	normal BLF	accu
TC-DEL	10	PC 1x10/13-13 TC COMBO	89899656	123x79x31	66,5	0,15	16	10	0,08	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – D cells
TC-DEL	2x10	PC 2x10/13-13 TC COMBO	89899657	123x102x31	89,5	0,22	27	2x10	0,13	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – D cells
TC-DEL	13	PC 1x10/13-13 TC COMBO	89899656	123x79x31	66,5	0,15	19	13	0,09	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – D cells
TC-DEL	2x13	PC 2x10/13-13 TC COMBO	89899657	123x102x31	89,5	0,22	33	2x13	0,16	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – D cells
TC-DEL/TEL	18	PC 1x18-14 TC COMBO	89899658	123x79x31	66,5	0,15	24	18	0,11	0,92	+0 → +50	i. p.*	> 0,95	4xAccu-NiCd – D cells
TC-DEL/TEL	2x18	PC 2x18-14 TC COMBO	89899659	123x102x31	89,5	0,22	44	2x18	0,21	0,92	+0 → +50	i. p.*	> 0,95	4xAccu-NiCd – D cells
TC-DEL/TEL	26	PC 1x26/32/42-15 TC COMBO	89899660	123x79x31	66,5	0,15	32	26	0,15	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells
TC-DEL/TEL	2x26	PC 2x26-15 TC COMBO	89899661	123x102x31	89,5	0,22	60	2x26	0,28	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells
TC-TEL	32	PC 1x26/32/42-15 TC COMBO	89899660	123x79x31	66,5	0,15	38	32	0,18	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells
TC-TEL	2x32	PC 2x32/42-15 TC COMBO	89899662	123x102x31	89,5	0,22	75	2x32	0,35	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells
TC-TEL	42	PC 1x26/32/42-15 TC COMBO	89899660	123x79x31	66,5	0,15	50	42	0,24	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells
TC-TEL	2x42	PC 2x32/42-15 TC COMBO	89899662	123x102x31	89,5	0,22	100	2x42	0,47	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – D cells
TC-TEL	57	PC 1x57-16 TC COMBO	89899663	123x102x31	89,5	0,22	60	57	0,28	0,92	+0 → +50	i. p.*	> 0,95	6xAccu-NiCd – D cells

1 h duration standard BLF "Cs" cells

Lamp		Ballast												
type	watt- age W	type	article number	LxWxH mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current A	power factor (approx.)	temperature range °C	emergency BLF	normal BLF	accu
TC-DEL	10	PC 1x10/13-13C TC COMBO	89899664	123x79x31	66,5	0,15	15	10	0,07	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – Cs cells
TC-DEL	2x10	PC 2x10/13-13C TC COMBO	89899665	123x102x31	89,5	0,22	26	2x10	0,12	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – Cs cells
TC-DEL	10/13	PC 1x10/13-13C TC COMBO	89899664	123x79x31	66,5	0,15	18	13	0,09	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – Cs cells
TC-DEL	2x10/13	PC 2x10/13-13C TC COMBO	89899665	123x102x31	89,5	0,22	32	2x13	0,15	0,92	+0 → +50	i. p.*	> 0,95	3xAccu-NiCd – Cs cells
TC-DEL/TEL	18	PC 1x18-14C TC COMBO	89899666	123x79x31	66,5	0,15	23	18	0,11	0,92	+0 → +50	i. p.*	> 0,95	4xAccu-NiCd – Cs cells
TC-DEL/TEL	2x18	PC 2x18-14C TC COMBO	89899667	123x102x31	89,5	0,22	43	2x18	0,20	0,92	+0 → +50	i. p.*	> 0,95	4xAccu-NiCd – Cs cells
TC-DEL/TEL	26	PC 1x26/32/42-15C TC COMBO	89899668	123x79x31	66,5	0,15	31	26	0,15	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – Cs cells
TC-DEL/TEL	2x26	PC 2x26-15C TC COMBO	89899669	123x102x31	89,5	0,22	59	2x26	0,28	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – Cs cells
TC-TEL	32	PC 1x26/32/42-15C TC COMBO	89899668	123x79x31	66,5	0,15	37	32	0,17	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – Cs cells
TC-TEL	2x32	PC 2x32/42-15C TC COMBO	89899670	123x102x31	89,5	0,22	74	2x32	0,35	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – Cs cells
TC-TEL	42	PC 1x26/32/42-15C TC COMBO	89899668	123x79x31	66,5	0,15	49	42	0,23	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – Cs cells
TC-TEL	2x42	PC 2x32/42-15C TC COMBO	89899670	123x102x31	89,5	0,22	99	2x42	0,47	0,92	+0 → +50	i. p.*	> 0,95	5xAccu-NiCd – Cs cells
TC-TEL	57	PC 1x57-16C TC COMBO	89899671	123x102x31	89,5	0,22	59	57	0,28	0,92	+0 → +50	i. p.*	> 0,95	6xAccu-NiCd – Cs cells

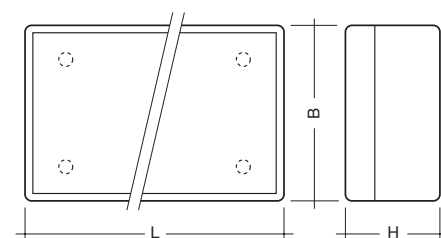
* i. p. = in preparation

Battery (high temperature)	type	number of cells	article number	LxBxH mm	weight g
Pack-NiCd 3D	Remote pack	3	89899672	in preparation	
Pack-NiCd 4D	Remote pack	4	89899673		
Pack-NiCd 5D	Remote pack	5	89899674		
Pack-NiCd 6D	Remote pack	6	89899675		
Pack-NiCd 3C	Remote pack	3	89899676		
Pack-NiCd 4C	Remote pack	4	89899677		
Pack-NiCd 5C	Remote pack	5	89899678		
Pack-NiCd 6C	Remote pack	6	89899679		

Other cell configurations available see page 148.

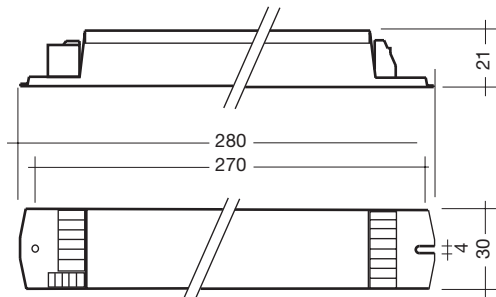
type	article number
LED EM green	89899605

Accu (pack-NiCd):



Emergency lighting modules with self test facility
Linear and compact lamps

EM SELFTEST 220–240 V 50/60 Hz



- self testing in accordance with pr IEC 62034
- "low profile" section (21 mm x 30 mm)
- 5 pole technology: 4 pole changeover and a delayed action relay for switching the mains supply to ensure compatibility with the ballast
- NiCd or NiMh battery options
- 10–15 hours accu recharge time
- 3 hours and 1 hour operation
- high and standard BLF for 1 hour versions
- bi-colour LED to indicate status
- AC operation of lamps
- cathode heating during emergency operation

- boost starting facility for all lamps
- rest mode facility
- adaptive mode for testing with minimum risk
- regulated electronic charging circuit
- deep discharge protection

Packaging

EM ... SELFTEST:
 box of 25

Packaging LED:

25 pieces/bag

Packaging Accu-NiCd:

box of 25

Certified:

- EN 55015
- EN 55022
- EN 601347-2-7
- EN 60925
- pr IEC 62034
- EN 61000-3-2
- EN 61547
- IEC 68-2-6
- IEC 68-2-29
- IEC 68-2-30

Packaging Accu-NiMh:

box of 25

Wiring:

see separate data sheet

EM ... SELFTEST 3 h duration D cells

type	article number	number of cells – Accu-NiCd
EM 34 NiCd D ST	89899680	4
EM 35 NiCd D ST	89899681	5
EM 36 NiCd D ST	89899682	6
		number of cells – Accu-NiMh
in preparation		
in preparation		
in preparation		

EM ... SELFTEST 1 h duration standard BLF Cs cells

type	article number	number of cells – Accu-NiCd
EM 14 NiCd C ST	89899683	4
EM 15 NiCd C ST	89899684	5
EM 16 NiCd C ST	89899685	6
		number of cells – Accu-NiMh
EM 14 NiMh C ST	89899689	4
EM 15 NiMh C ST	89899690	5
EM 16 NiMh C ST	89899691	6

EM ... SELFTEST 1 h duration high BLF D cells

type	article number	number of cells – Accu-NiCd
EM 14 NiCd D ST	89899686	4
EM 15 NiCd D ST	89899687	5
EM 16 NiCd D ST	89899688	6
		number of cells – Accu-NiMh
in preparation		
in preparation		
in preparation		

type	article number	type	article number
LED bi-colour	89899720	test switch EM 2	89805277

Technical data EM ... SELFTEST:

rated mains supply voltage	220–240 V
mains frequency	50/60 Hz
mains change over voltage	
in accordance with EN 60598-2-22	
min. lamp starting temperature (emergency mode)	0°C
recharge period	10–15 h
tc point	80°C
ingress protection	IP20
safety class	I

Technical data Accu-NiCd:

case temperature range to ensure 4 years life	0°C to +55°C
storage life in temperate conditions	4 years
battery voltage	1,2 V
capacity D cells	4 Ah
capacity Cs cells	1,6 Ah

Technical data Accu-NiMh:

case temperature range to ensure 4 years life	0°C to +55°C
storage life in temperate conditions	4 years
battery voltage	1,2 V
capacity Cs cells	2,0 Ah

Emergency light output factors (BLF) in %:

duration	3 hours and 1 hour standard BLF			1 hour high BLF		
	EM 34...D ST EM 14...C ST	EM 35...D ST EM 15...C ST	EM 36...D ST EM 16...C ST	EM 14...D ST	EM 15...D ST	EM 16...D ST
lamp						
TC-DD 10 W	•			•		
16 W	•			•		
21 W	•			•		
28 W	•			•		
38 W			•			•
55 W			•			•
T5 4 W	•			•		
6 W	•			•		
8 W	•		•			
13 W	•			•		
T5 FH 14 W	•		•			
21 W		•			•	
28 W			•			•
35 W			•			•
T5 FQ 24 W	•			•		
39 W			•			•
49 W			•			•
54 W			•			•
80 W			•			•
T5 C 22 W	•		•			
40 W			•			•
55 W			•			•
T8 15 W	•		•			
18 W	•		•			
30 W	•		•			
36 W	•		•			
38 W		•			•	
58 W		•			•	
70 W			•			•
TC-F 18 W	•		•			
24 W		•			•	
36 W		•			•	
TC-L 18 W	•		•			
24 W		•			•	
36 W		•			•	
40 W		•			•	
55 W			•			•
TC-SEL 5 W	•		•			
7 W	•		•			
9 W	•		•			
10 W	•		•			
11 W	•		•			
TC-DEL 10 W	•			•		
13 W	•			•		
18 W	•			•		
26 W	•			•		
TC-TEL 18 W	•		•			
26 W	•			•		
32 W		•			•	
42 W		•			•	
57 W			•			•

• BLF values in preparation

Accu-NiCd 4,0 Ah D cells	type	number of cells	article number
Accu-NiCd 4A	stick	4	89895961
Accu-NiCd 4B	side by side	4	89895977
Accu-NiCd 4C	stick + stick	4	89895978
Accu-NiCd 5A	stick	5	89895973
Accu-NiCd 5B	stick + stick	5	89895962
Accu-NiCd 6A	stick + stick	6	89895963

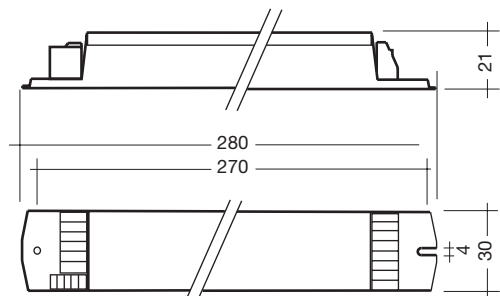
Accu-NiCd 1,6 Ah Cs cells	type	number of cells	article number
Accu-NiCd C 4A	stick	4	89899692
Accu-NiCd C 4B	side by side	4	89899693
Accu-NiCd C 4C	stick + stick	4	89899694
Accu-NiCd C 5A	stick	5	89899695
Accu-NiCd C 5B	side by side	5	89899696
Accu-NiCd C 5C	stick + stick	5	89899697
Accu-NiCd C 6A	stick	6	89899698
Accu-NiCd C 6C	stick + stick	6	89899699

Accu-NiCd 2,0 Ah Cs cells	type	number of cells	article number
Accu-NiMh C 4A	stick	4	89899700
Accu-NiMh C 4B	side by side	4	89899701
Accu-NiMh C 4C	stick + stick	4	89899702
Accu-NiMh C 5A	stick	5	89899703
Accu-NiMh C 5B	side by side	5	89899704
Accu-NiMh C 5C	stick + stick	5	89899705
Accu-NiMh C 6A	stick	6	89899706
Accu-NiMh C 6C	stick + stick	6	89899707

See page 148 for battery information.

Emergency lighting modules with DALI interface
Linear and compact lamps

EM PRO 220–240 V 50/60 Hz



- DALI interface for control and reporting
- "low profile" section (21 mm x 30 mm)
- 5 pole technology: 4 pole changeover and a delayed action relay for switching the mains supply to ensure compatibility with the ballast
- NiCd or NiMh battery options
- 10–15 hour accu recharge time
- high and standard BLF for 1 hour versions
- 3 hours and 1 hour operation
- AC operation of lamps
- cathode heating during emergency operation
- self testing option
- boost starting facility for all lamps

- rest mode facility
- adaptive mode for testing with minimum risk
- regulated electronic charging circuit
- deep discharge protection
- easy commissioning feature

Testing and reporting

- battery condition
 - charging status
 - lamp condition
 - emergency functional test
 - emergency duration test
- (see separate data sheet for full details)

Packaging EM PRO:

box of 25

Certified:

EN 55015
 EN 55022
 EN 601347-2-7
 EN 60925
 pr IEC 62034
 EN 61000-3-2
 EN 61547
 IEC 68-2-6
 IEC 68-2-29
 IEC 68-2-30

Packaging LED:

25 pieces/bag

Packaging Accu-NiCd:

box of 25

Packaging Accu-NiMh:

box of 26

Wiring:

see separate data sheet

Technical data EM PRO:

rated mains supply voltage 220–240 V
 mains frequency 50/60 Hz
 mains change over voltage
 in accordance with EN 60598-2-22
 min. lamp starting temperature
 (emergency mode) 0°C
 recharge period 10–15 h
 tc point 80 °C
 ingress protection IP20
 safety class I

Technical data Accu-NiCd:

case temperature range
 to ensure 4 years life 0°C to +55°C
 storage life in
 temperate conditions 4 years
 battery voltage 1,2 V
 capacity D cells 4 Ah
 capacity Cs cells 1,6 Ah

Technical data Accu-NiMh:

case temperature range
 to ensure 4 years life 0°C to +55°C
 storage life in
 temperate conditions 4 years
 battery voltage 1,2 V
 capacity Cs cells 2,0 Ah

EM ... PRO 3 h duration D cells

type	article number	number of cells – Accu-NiCd
EM 34 NiCd D PRO	89899708	4
EM 35 NiCd D PRO	89899709	5
EM 36 NiCd D PRO	89899710	6
		number of cells – Accu-NiMh
in preparation		
in preparation		
in preparation		

EM ... PRO 1 h duration Standard BLF Cs cells

type	article number	number of cells – Accu-NiCd
EM 14 NiCd C PRO	89899711	4
EM 15 NiCd C PRO	89899712	5
EM 16 NiCd C PRO	89899713	6
		number of cells – Accu-NiMh
EM 14 NiMh C PRO	89899717	4
EM 15 NiMh C PRO	89899718	5
EM 16 NiMh C PRO	89899719	6

EM ... PRO 1 h duration high BLF D cells

type	article number	number of cells – Accu-NiCd
EM 14 NiCd D PRO	89899714	4
EM 15 NiCd D PRO	89899715	5
EM 16 NiCd D PRO	89899716	6
		number of cells – Accu-NiMh
in preparation		
in preparation		
in preparation		

type	article number	type	article number
LED bi-colour	89899720	test switch EM 2	89805277

Emergency light output factors (BLF) in %:

duration		3 hours and 1 hour standard BLF			1 hour high BLF		
emergency module		EM 34...D PRO EM 14...C PRO	EM 35...D PRO EM 15...C PRO	EM 36...D PRO EM 16...C PRO	EM 14...C PRO	EM 15...C PRO	EM 16...C PRO
lamp							
TC-DD	10 W	•			•		
	16 W	•			•		
	21 W	•			•		
	28 W	•			•		
	38 W			•			•
	55 W			•			•
T5	4 W	•			•		
	6 W	•			•		
	8 W	•			•		
	13 W	•			•		
T5 FH	14 W	•			•		
	21 W		•			•	
	28 W			•			•
	35 W			•			•
T5 FQ	24 W	•			•		
	39 W			•			•
	49 W			•			•
	54 W			•			•
	80 W			•			•
T5 C	22 W	•			•		
	40 W			•			•
	55 W			•			•
T8	15 W	•			•		
	18 W	•			•		
	30 W	•			•		
	36 W	•			•		
	38 W		•			•	
	58 W		•			•	
	70 W			•			•
TC-F	18 W	•			•		
	24 W		•			•	
	36 W		•			•	
TC-L	18 W	•			•		
	24 W		•			•	
	36 W		•			•	
	40 W		•			•	
	55 W			•			•
TC-SEL	5 W	•			•		
	7 W	•			•		
	9 W	•			•		
	10 W	•			•		
	11 W	•			•		
TC-DEL	10 W	•			•		
	13 W	•			•		
	18 W	•			•		
	26 W	•			•		
TC-TEL	18 W	•			•		
	26 W	•			•		
	32 W		•			•	
	42 W		•			•	
	57 W			•			•

• BLF values in preparation

Accu-NiCd 4,0 Ah	type	number of cells	article number
D cells			
Accu-NiCd 4A	stick	4	89895961
Accu-NiCd 4B	side by side	4	89895977
Accu-NiCd 4C	stick + stick	4	89895978
Accu-NiCd 5A	stick	5	89895973
Accu-NiCd 5B	stick + stick	5	89895962
Accu-NiCd 6A	stick + stick	6	89895963

Accu-NiCd 1,6 Ah	type	number of cells	article number
Cs cells			
Accu-NiCd C 4A	stick	4	89899692
Accu-NiCd C 4B	side by side	4	89899693
Accu-NiCd C 4C	stick + stick	4	89899694
Accu-NiCd C 5A	stick	5	89899695
Accu-NiCd C 5B	side by side	5	89899696
Accu-NiCd C 5C	stick + stick	5	89899697
Accu-NiCd C 6A	stick	6	89899698
Accu-NiCd C 6C	stick + stick	6	89899699

Accu-NiCd 2,0 Ah	type	number of cells	article number
Cs cells			
Accu-NiMh C 4A	stick	4	89899700
Accu-NiMh C 4B	side by side	4	89899701
Accu-NiMh C 4C	stick + stick	4	89899702
Accu-NiMh C 5A	stick	5	89899703
Accu-NiMh C 5B	side by side	5	89899704
Accu-NiMh C 5C	stick + stick	5	89899705
Accu-NiMh C 6A	stick	6	89899706
Accu-NiMh C 6C	stick + stick	6	89899707

See page 148 for battery information.

Accu

figure 1
Accu (stick pack)

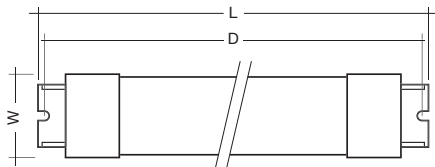


figure 2
Accu (stick plus stick pack)

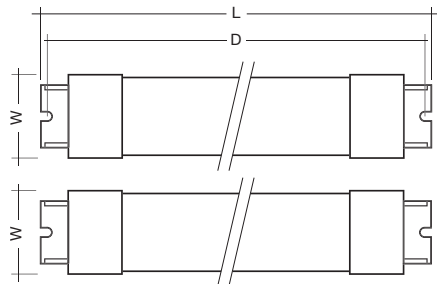
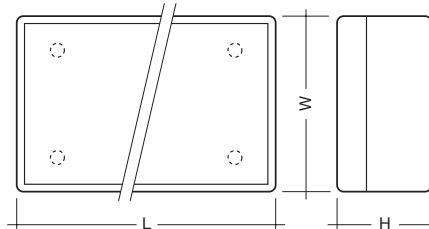


figure 3
Accu (side by side pack)



Accu-NiCd 4,0 Ah D cells	number of cells	article number	figure	L mm	D mm	W mm	H mm	weight g
Stick pack								
Accu-NiCd 3A	3	89895960	1	218	201	37		400
Accu-NiCd 4A	4	89895961	1	275	263	37		530
Accu-NiCd 5A	5	89895973	1	338	323	37		660
Stick plus stick pack								
Accu-NiCd 4C	4	89895978	2	151	139	37		530
Accu-NiCd 5B	5	89895962	2	151+218	139+201	37		660
Accu-NiCd 6A	6	89895963	2	218	201	37		790
Side by side pack								
Accu-NiCd 3B	3	89895976	3	98	40x33	65	35	400
Accu-NiCd 4B	4	89895977	3	130	40x66	65	35	530

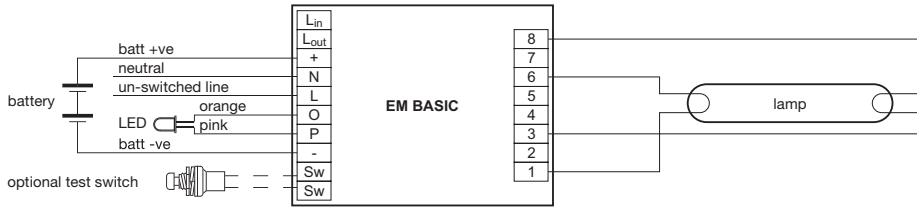
Packaging:
box of 25

Technical data Accu:
case temperature range to ensure 4 years life 0°C to +55°C
storage life in temperate conditions 4 years
battery voltage per cell 1,2 V
capacity:
Accu-NiCd D – 4,0 Ah
Accu-NiCd Cs – 1,6 Ah
Accu-NiMh Cs – 2,0 Ah

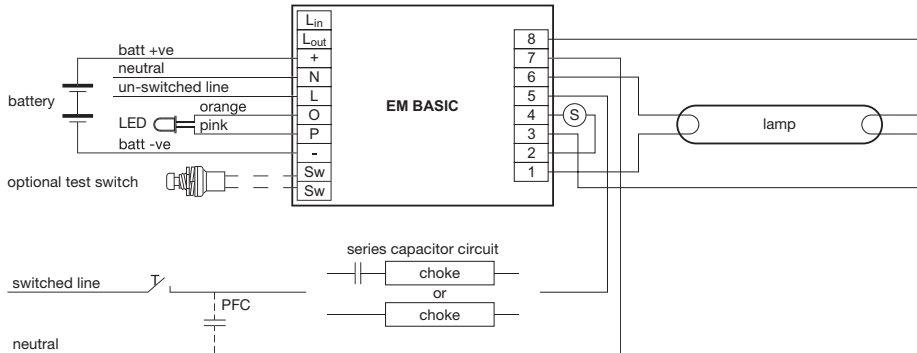
Accu-NiCd 1,6 Ah Cs cells	number of cells	article number	figure	L mm	D mm	W mm	H mm	weight g
Stick pack								
Accu-NiCd C 3A	3	89899728	1	159	145	26		150
Accu-NiCd C 4A	4	89899692	1	202	188	26		200
Accu-NiCd C 5A	5	89899695	1	245	231	26		250
Accu-NiCd C 6A	6	89899698	1	288	274	26		300
Stick plus stick pack								
Accu-NiCd C 4C	4	89899694	2	202	188	26		200
Accu NiCd C 5C	5	89899697	2	245	231	26		250
Accu-NiCd C 6C	6	89899699	2	288	274	26		300
Side by side pack								
Accu-NiCd C 3B	3	89899729	3	66			in preparation	
Accu-NiCd C 4B	4	89899693	3	88			in preparation	
Accu-NiCd C 5B	5	89899696	3	110			in preparation	

Accu-NiMh 2,0 Ah Cs cells	number of cells	article number	figure	L mm	D mm	W mm	H mm	weight g
Stick pack								
Accu-NiMh C 4A	4	89899700	1	202	188	26		232
Accu-NiMh C 5A	5	89899703	1	245	231	26		290
Accu-NiMh C 6A	6	89899706	1	288	274	26		348
Stick plus stick pack								
Accu-NiMh C 4C	4	89899702	2	202	188	52		232
Accu NiMh C 5C	5	89899705	2	245	231	52		290
Accu-NiMh C 6C	6	89899707	2	288	274	52		348
Side by side pack								
Accu-NiMh C 4B	4	89899701	3	88			in preparation	
Accu-NiMh C 5B	5	89899704	3	110			in preparation	

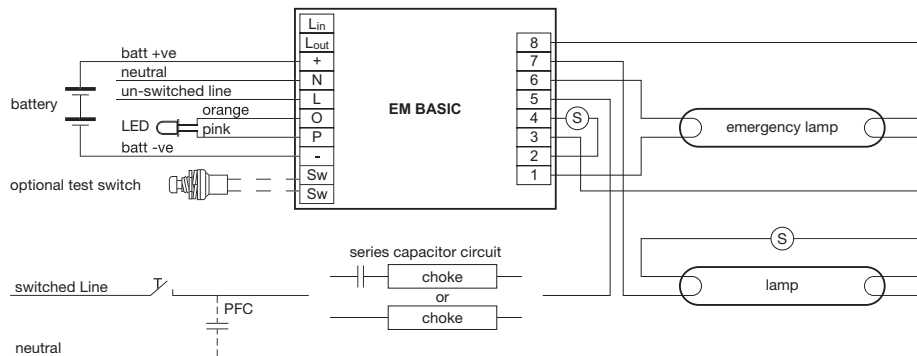
Circuit diagrams
Emergency lighting modules



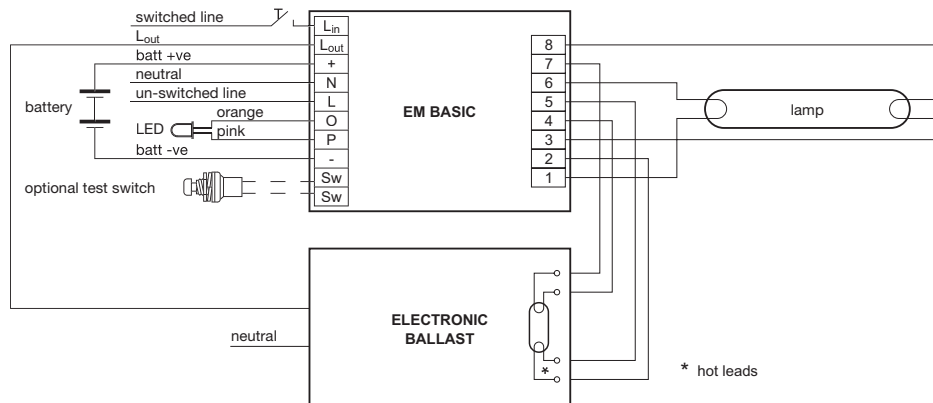
A) EM BASIC – non maintained



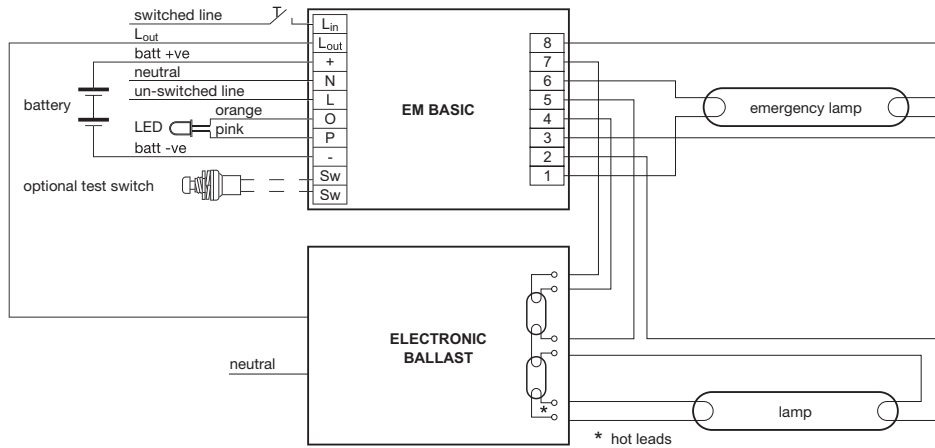
B) EM BASIC – single lamp switch start circuit with conventional control gear



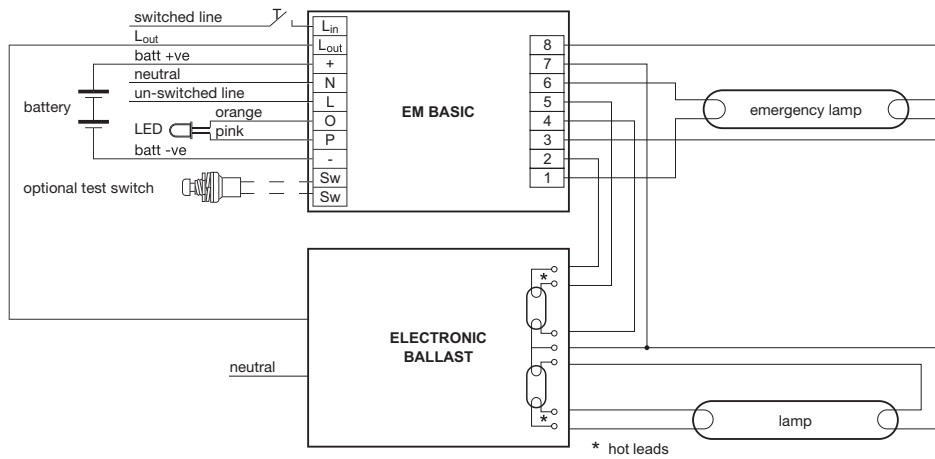
C) EM BASIC – twin series switch start circuit with conventional control gear



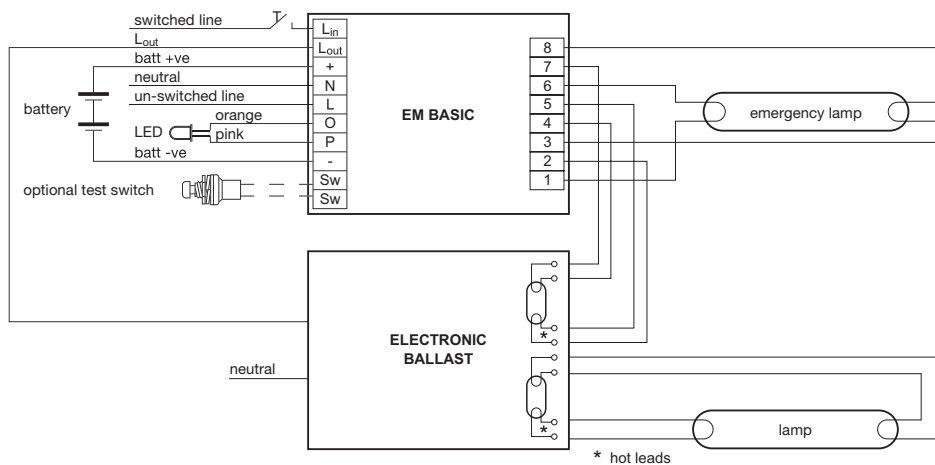
D) EM BASIC – single lamp high frequency electronic ballast



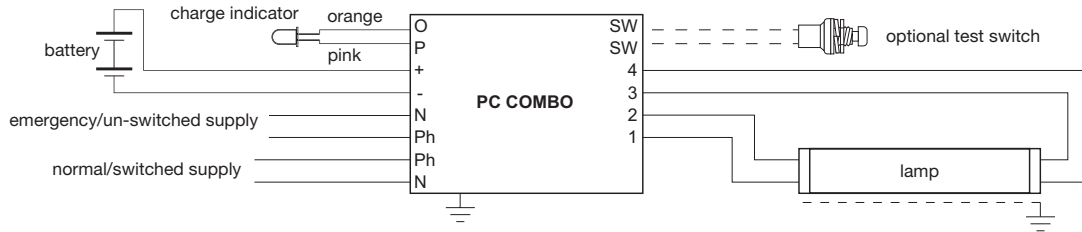
E) EM BASIC – twin lamp high frequency electronic ballast (6 lamp lead connections)



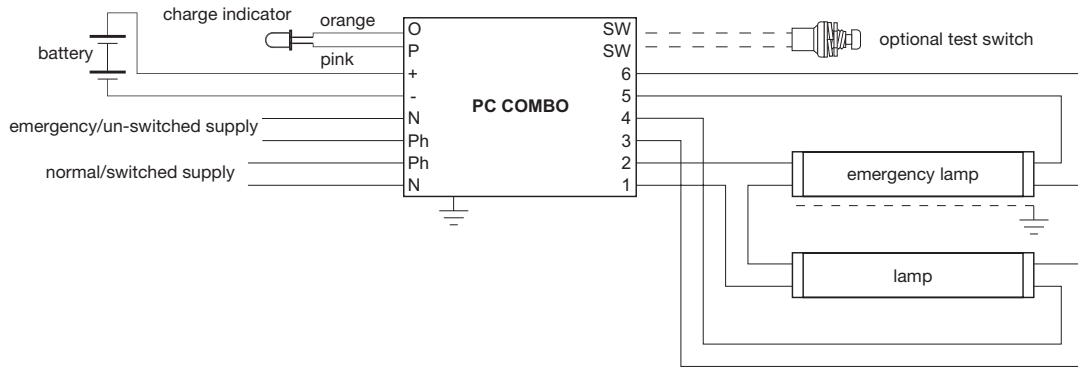
F) EM BASIC – twin lamp high frequency electronic ballast (7 lamp lead connections)



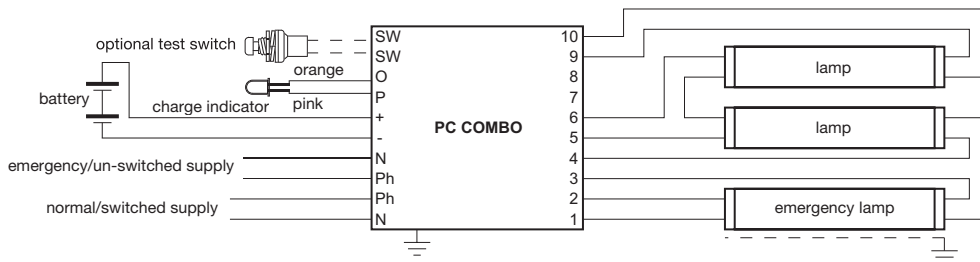
G) EM BASIC – twin lamp high frequency electronic ballast (8 lamp lead connections)



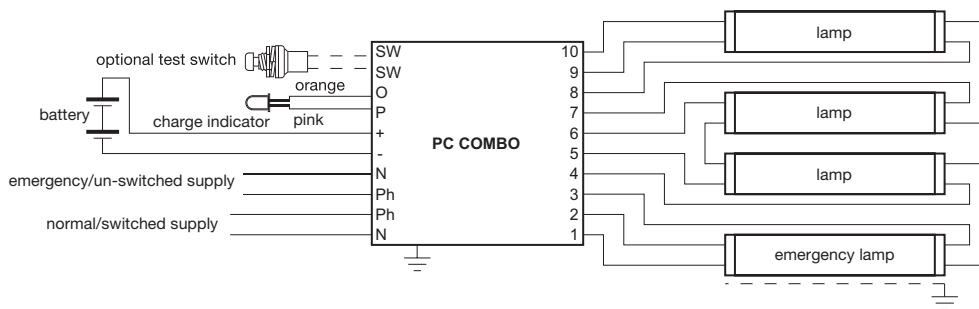
H) PC COMBO – single lamp combined units (PC 1x36/33 COMBO, PC 1x58/34 COMBO)



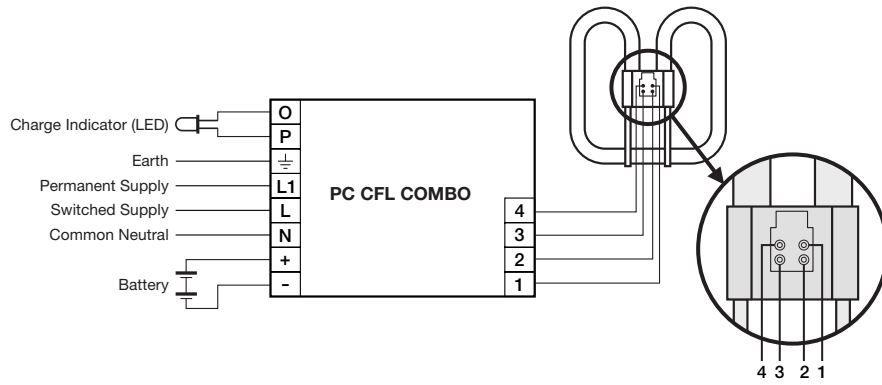
I) PC COMBO – twin lamp combined units (PC 2x36/33 COMBO, PC 2x58/34 COMBO)



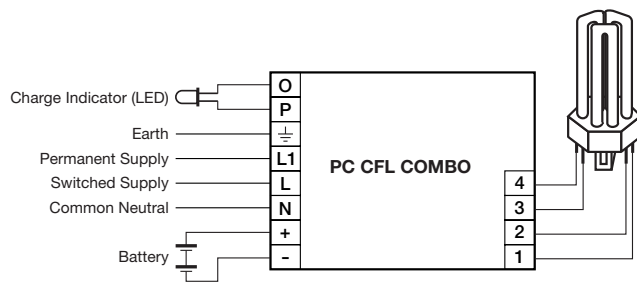
J) PC COMBO – multilamp combined units (PC 3/4x18/33 COMBO, PC 3/4x18/13 COMBO, PC 3/4x14/33 T5 COMBO, PC 3/4x14/13 T5 COMBO)



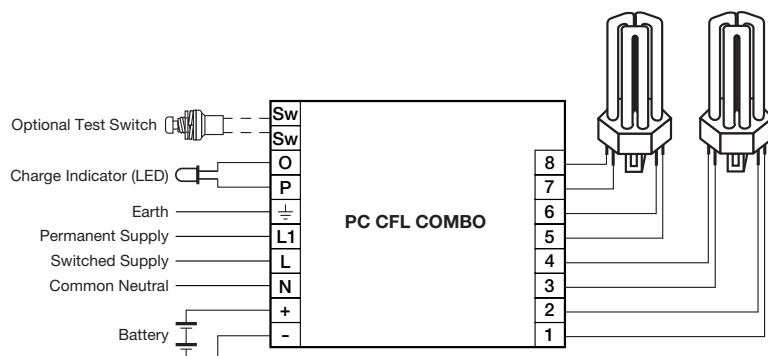
K) PC COMBO – multilamp combined units (PC 3/4x18/33 COMBO, PC 3/4x18/13 COMBO, PC 3/4x14/33 T5 COMBO, PC 3/4x14/13 T5 COMBO)



L) PC CFL COMBO– single TC-DD lamp



M) PC CFL COMBO– single TC-DE/TE lamp



N) PC CFL COMBO– twin TC-DE/TE lamps

Control gear for high pressure discharge lamps

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Introduction ignitors and accessories	158
Introduction remote gear boxes	162
Introduction electronic ballasts for high pressure discharge lamps	162
Magnetic chokes with power tapping for impulse ignitors	251–252
Impulse ignitors with pulse/break timer operation	253
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Blocking inductors ECF	255
Power switch ZRM U6L and ZRM U6L/T	256
Digital power switch ZRM U6M	257
Lamp reignition monitor LRM 500	257
Tilt switch	257
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	Magnetic chokes	Ignitors	Remote gear boxes	Electronic ballasts	
High pressure mercury lamps					
50 W	ECM / OMB 50	–	–	–	164
80 W	ECM / OMB 80	–	–	–	166
125 W	OMB 125	–	–	–	168
250 W	OGL / OMB 250	–	–	–	170
400 W	OFL / OGL / OMB 400	–	–	–	172
700 W and 1 000 W	OGL 700 and 1 000	–	–	–	174
High pressure sodium lamps					
35 W	ECIS / OMBIS 35	see matrix page 154	–	–	176–177
50 W	OMBS 50	see matrix page 154	–	–	179–180
70 W	ECIS / OMBIS 70	see matrix page 154	OM PAK 70	PCI 0070 ...	182–186
100 W	OMBIS / OMBS 100	see matrix page 154	OM PAK 100	PCI 0100	188–190
150 W	ECIS / OMBIS / OMBS 150	see matrix page 154	OM PAK 150	PCI 0150 ...	192–195
250 W	OMBIS / OFLIS / OGLIS 250	see matrix page 154	–	–	197–198
400 W	OGLS 400	see matrix page 154	–	–	200–201
600 W	OGLS 600	see matrix page 154	–	–	203–204
1 000 W	OGLIS 1 000	see matrix page 154	–	–	206–207
Metal halide lamps					
20 W	–	–	–	PCI 0020	209–210
35 W	ECIS / OMBIS 35	see matrix page 154	OM PAK 35	PCI 0035	212–217
70 W	ECIS / OMBIS 70	see matrix page 154	OM PAK 70	PCI 0070	219–224
100 W	OMBIS 100	see matrix page 154	OM PAK 100	PCI 0100	226–229
150 W	ECIS / OMBIS 150	see matrix page 154	OM PAK 150	PCI 0150	231–236
250 W	OMBIS / OFLIS / OGLIS 250	see matrix page 154	–	–	238–239
400 W	OGLI / OGLS 400	see matrix page 154	–	–	241–242
1 000 W	OGLIS 1 000	see matrix page 154	–	–	244–246
2 000–3 500 W	OGLI 2 000 / OGLI 1/2 3 500	see matrix page 154	–	–	248–249
SON SDW-T					
35–100 W	OM 35–100	–	–	–	250

Matrix of ignitors	Metal halide lamps											High pressure sodium lamps								
	wattage											wattage								
	35	70	100	150	250	400	1000	1800	2000	2500	3500	35	50	70	100	150	250	400	600	1000
	page	page	page	page	page	page	page	page	page	page	page	page	page	page	page	page	page	page	page	
Standard Ignitors																				
ZRM 2-ES/B		220		232							177	180	183							
ZRM 1,8-ES/B	213	220	227	232									183	189	193	198				
ZRM 4,5-ES/B					239	242							183	189	193	198	201			
ZRM 6-ES/B					239	242												201		
ZRM 8-ES/B																			204	
ZRM 12-B001							245		249										207	
ZRM 12-ES/B							•												•	
ZRM 12/400-ES/B								C	249											
ZRM 20-ES/B							•	B	•											
ZRM 20 B001								B	249											
ZRM 20/400 B001									•	•	•									
timeCONTROL Safety ignitors																				
ZRM 2-ES/TC											177	180	183							
ZRM 1,8-ES/TC	213	220	227	232										189	193					
ZRM 2,5-ES/TC					239											198				
ZRM 4,5-ES/TC					•	•							•	•	•	•	•			
ZRM 6-ES/TC						242												201		
pulseCONTROL Safety ignitors																				
ZRM 2-ES/D		220											183	189						
ZRM 2,5-ES/D	213	220		232									183	189	193	198				
ZRM 4,5-ES/D					•	•							•	•	•	•	•			
ZRM 8-ES/D					239	242												201	204	
ZRM 12-ES/D								245											207	
Impulse ignitors																				
ZRM 1000 A002					246A	246A	246A													
ZRM 1200/400 A001									249	249										
ZRM 2300 C201											253	253	253							
ZRM 4000 C201	253	253	253	253	253	253	253							253	253	253	253	253	253	
ZRM 4000 B101														254	254	254	254			

- A lamps with $U_z < 1\ 000\ V$
- B 230 V lamps with 17,3 A lamp current
- C 400 V-lamps with 10,5 A lamp current

Please find detailed information about lamp types and wattages at the pages referred in the table.

Magnetic chokes for high pressure discharge lamps

Chokes are required to operate high-pressure discharge lamps. Magnetic chokes work on the self-inductance principle and limit lamp current and lamp wattage with a high level of efficiency. The impedance of the choke is set to match the particular type of lamp which ensures that the correct lamp performance is achieved.

In some cases a choke can be used for more than one lamp. Supply voltage and supply frequency influence choke requirements and so the operating devices should be matched to the current supply voltage. It is possible to expand the scope of application by using chokes with several voltage tappings.

Optimum performance

Optimum performance is achieved by careful control of the main parameters. The tight tolerances used in manufacture ensure that the correct lamp current, the correct wattage and the expected luminous flux are achieved.

Minimum consumption

An inefficient choke means high losses and has a dramatic effect on the overall efficiency. The heat produced limits the possibilities for using the lamps.

Minimum stray field

TridonicAtco chokes are designed to keep the stray field to a minimum. This considerably reduces the noise generated near to magnetically sensitive parts as well as magnetic influences on sensitive parts.

National and international test marks

TridonicAtco chokes are approved by national and international test houses. Standard chokes for the European market are all ENEC-approved without exception.

Consistent high quality

Our Quality Assurance system, based on EN 29001, guarantees consistent high quality.

TridonicAtco's Quality Assurance department monitors all incoming materials, performs continuous production tests and 100 % of our finished products are comprehensively tested. Products ready for shipment are tested at random.

Optimised delivery time

The delivery time has been optimised for each gear. The standard range (A) is readily available thus allowing the customer maximum flexibility. The special range (B) has a delivery time of just a few weeks.

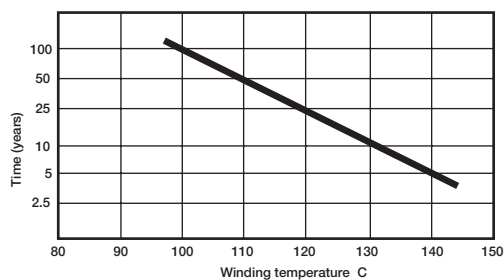
Maximum service life

Maximum service life is ensured by using class H insulation which is designed for temperatures above 180°C.

At TridonicAtco, more than 40 years of research, development and production have gone into choosing the right insulation to guarantee a long service life even at high operating temperatures.

The graph shows how much the theoretical service life of a choke depends on the winding temperature. Every 10°C over or under the temperature will double or halve the life of the device. The expected service life is 10 years of continuous operation with a winding temperature of 130°C ($t_w = 130$).

The winding temperature is the sum of ambient temperature plus the rise in the temperature of the choke which is a function of power consumption.



High-pressure mercury lamps

These lamps are used in a wide variety of applications.

Most types will strike quite easily down to -30°C using conventional control gear. A cooling down period of approximately 5 minutes is required before reignition is possible.

No ignitor is required for starting high-pressure mercury lamps. In order to achieve the performance values, 3 basic types of choke are offered and tapped versions which can be adjusted to various supply voltages are also available. With the aid of power tappings on the chokes, e.g. OMB 125/80, and the TridonicAtco power transfer switch, high-pressure mercury lamps can be dimmed in steps to 50 % of the standard output.

Metal halide lamps

Metal halide lamps are similar in construction to high-pressure mercury lamps but special additions to the gas composition have produced a much better colour rendering and better efficiency.

The good performance values of metal halide lamps make the lamp more difficult to start so that an ignitor is required. Metal halide lamps are extremely sensitive to variations in supply voltage; even slight increases in voltage can have an adverse effect on lamp life while greater undervoltage can visibly affect colour rendering. For this reason, TridonicAtco's standard range only includes chokes with several voltage tapings.

Experience with metal halide lamps has shown that in some cases, the so-called rectifier effect will come into effect at the end of life – the discharge lamp only operates in one direction and therefore functions as a rectifier. High DC current flows can then rise to up to three times the nominal current which causes the choke and ignitor to overheat. This safety risk has already been taken into account in the lighting standard. Since September 2002, it is prohibited to sell light fittings containing lamps with these characteristics. Further information on which particular lamps will be affected by this can be obtained from the lamp manufacturer or from TridonicAtco. By using a thermal cut-out in the choke, the temperature is permanently limited to a permissible maximum. This catalogue only lists chokes with thermal cut-out (marked TP or W).

High-pressure sodium lamps

Like metal halide lamps, high-pressure sodium lamps require high voltage for ignition which is normally produced by an ignitor although some lamps also have built-in ignitors. At present, the most common type of ignitor is the superimposed-pulse ignitor which does not use the choke to produce high voltages. However, if an impulse ignitor is used, the chokes are loaded with high voltage and must be capable of withstanding this. TridonicAtco chokes over 70 W are designed for use only with superimposed-pulse ignitors as standard.

High-pressure sodium lamps can also function as a rectifier at the end of life. For this reason, only chokes with thermal cut-out are again specified as chokes for these lamps within the standard TridonicAtco range.

White SON (SDW-T)

A high-pressure sodium lamp with outstanding colour rendering properties can be created by changing the gas mixture although luminous efficacy will be reduced. A hybrid device is required for operation – a conventional choke in conjunction with an electronic control package which keeps the colour temperature constant.

There is no evidence that these lamps function as rectifiers at the end of life and therefore a choke with thermal-cut is not required.

Chokes for high-pressure discharge lamps

All devices are available as clamping devices and without thermal cut-out. Data sheets are available on request.

EC series

Available up to 150 W. The EC series is recommended for use if a low cross-section (41 mm x 31 mm) is required, such as e.g. in tube systems.



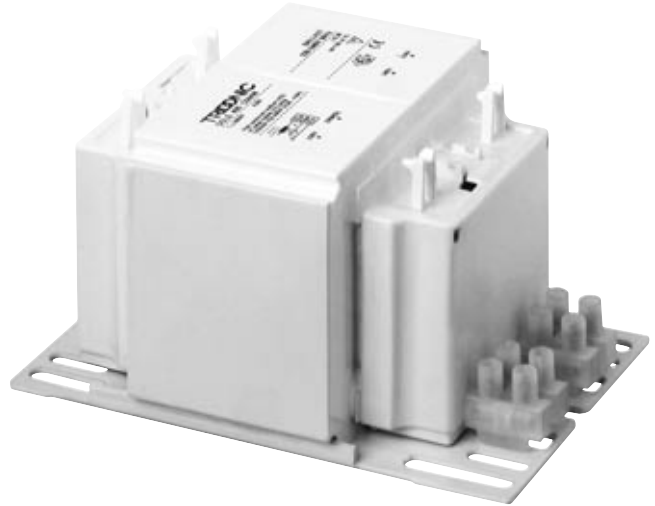
OM series

Available from 35 W to 400 W, this compact series of chokes has been optimised to produce an efficient package easily mounted in HID luminaires. Push-wire terminals allow fast assembly with high contact stability whilst also allowing installers to select the voltage tapping in the object safely.



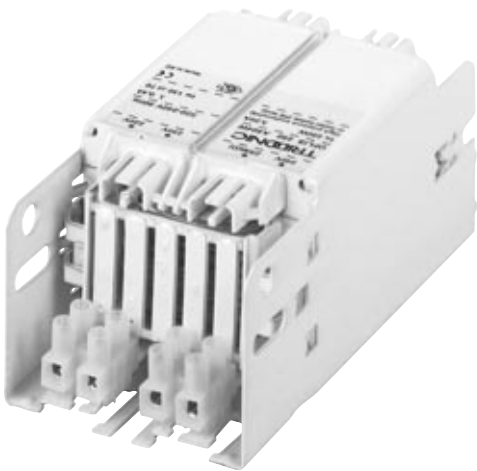
OG series

The OG series is designed to handle higher wattages from 250 W to 3 500 W. This range has been designed to offer high efficiency while keeping size down to a minimum.



OF series

The dimensions and materials used for this device have been optimally matched to the 250 W HI and HS and 400 W HM lamps.



Special features of TridonicAtco chokes:

- very short magnetic paths
- connection with pushwire terminals without the use of tools
- cross-laminated core and housing components with no stray field junctions
- low power consumption
- max. permissible winding temperature $t_w = 130$
- compact windings
- fully automatic production with accompanying production tolerance testing
- short heat paths
- class H insulation
- 100 % automatic final inspection
- vacuum impregnation
- four-stage testing: continuity, winding short circuit, short to earth, operating value
- long service life

Ignitors and accessories

Metal halide (HI) and high-pressure sodium lamps (HS) without built-in starters require an ignition voltage of between 800 V and 5 000 V to cold-start the lamp according to the type in each case. There are two types of ignitor systems; superimposed-pulse and impulse. TridonicAtco has specialised in the modern superimposed-pulse system.

Superimposed-pulse and pulse ignitors

The special feature of superimposed-pulse ignitors is that the starting voltage is produced without applying a high-voltage load to the ballast.

This comes in useful at the end of the service life of the lamp in particular when the ignitor keeps trying to start the defective lamp and when restarting hot lamps. In addition, superimposed-pulse technology ensures reproducible starting characteristics and is not dependent on the ballast used or affected by fluctuations in the supply voltage.

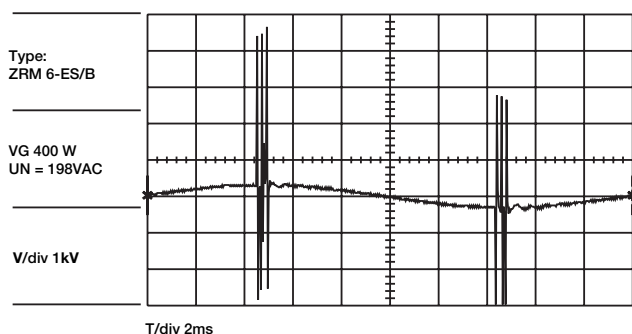
The pulse ignitors ZRM 4000 B101, ZRM 2300 C201 and ZRM 4000 C202 listed in this catalogue are fitted with a tripping device which reduces the load on the ballasts to a minimum.

Ignition characteristics

Reliable ignition depends on the following:

- number of ignition pulses
- height and width of the ignition pulse
- phase angle of the ignition pulse
- sufficient supply voltage

The ignition voltage is limited by the lamp cap, lamp holder and lamp specification.



In addition, with devices from the C201 range, attempts to restart hot or defective lamps are made during pulse control/interpulse operation as a result of which the load on the ballasts is reduced still further. The pulse ignitors specified above are operated using a special ballast. Suitable devices are listed in the catalogue under the heading of Pulse Igniters with the additional letters "P", "P1", "P2" etc. in the designation on the relevant lamp pages.

Ignitor range

TridonicAtco offers a suitable standard ignitor for all freely available high-pressure lamps from 35 to 3 500 W. An important factor when selecting an ignitor is the specification issued by the lamp manufacturer. An overview of the range of ignitors with their corresponding lamps is shown in the table on page 154.

Cable lengths for the lamp

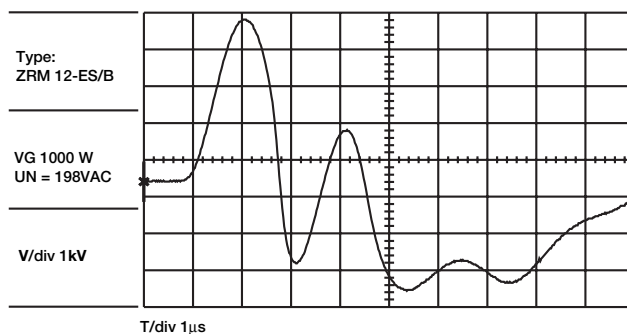
The height of the ignition pulse will decrease as a function of the length of the cable or the capacity of the cable from the ignitor to the lamp. It is always necessary to maintain the maximum values specified on the relevant ignitor data sheet in order to ensure reliable ignition of the lamp throughout its life.

Ignition voltage

The ignition voltage corresponds to the amplitude of each ignition pulse. Depending on the actual lamp and the ignitor connected to it, the ignition voltage is between 800 V and 5 000 V.

Ignition power

The power of an ignition pulse is proportional to the area under the curve of the ignition pulse. Increased power from TridonicAtco ignitors improves the re-ignition of hot lamps.



Switch-on/switch-off voltage

TridonicAtco ignitors guarantee reliable start-up even at 198 V supply voltage (switch-on voltage). Once the lamp has started, the ignitor must switch off immediately otherwise the lamp will be damaged. By using high specification components in conjunction with extended testing, the higher switch-off voltage of 185 V can be achieved.

Minimum temperature increase

The temperature increase in an ignitor is defined by the area of application and is therefore an essential criteria. TridonicAtco ignitors were designed for minimum temperature rise and, as a result, allow additional flexibility in luminaire design. One point which must be observed when using the ignitors is that the maximum permissible housing temperature (tc point) must not be exceeded. TridonicAtco ignitors mostly have tc point temperatures of 105°C.

Special characteristics of TridonicAtco ignitors:

- supply voltage range:
220 V -10 % to 240 V +10 %
380 V -10 % to 415 V +10 %
- supply frequency: 50/60 Hz
- safety according to EN 61347-2-1
- mode of operation according to EN 60927
- fully electronic and silent
- compact construction
- high reliability
- minimum consumption
- low temperature rise
- non-wearing and maintenance free
- increased ignition power
- approved, fully insulated, class 2 protection
- easy installation with cage screw terminals and single point fixing



PulseControl safety ignitors



In warehouses, public building or in the street, old high-pressure sodium and metal halide lamps with conventional ignitor technology often cause visual discomfort and electromagnetic interference. This can have a significant effect on the risk to safety.

The solution: PulseControl from TridonicAtco – the first digital ignitor in the world. More reliability, more ignition power, reduced restrike time and minimum interference through digital, precise management of all lamp types without annoying flashing.

PulseControl

- no annoying flashing
- no interference with:
 - radio or TV reception,
 - computer screens,
 - flight control systems
 - or alarm systems
- reduced maintenance costs
- reduces risk of lamp rectification



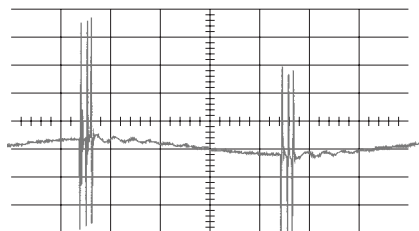
Precise lamp management through digital ASIC technology

The ASIC is at the heart of the patented switching circuit and digitally controls the ignition and automatic tripping logic functions. This technology enables us to fully meet the lamp manufacturers' specifications across the operating range.

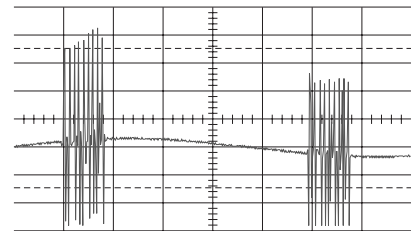
Re-strike time reduced by up to 50 %

Depending on the lamp wattage, 4–10 ignition pulses per half wave will be generated.

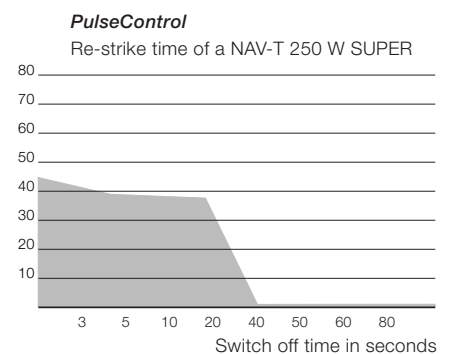
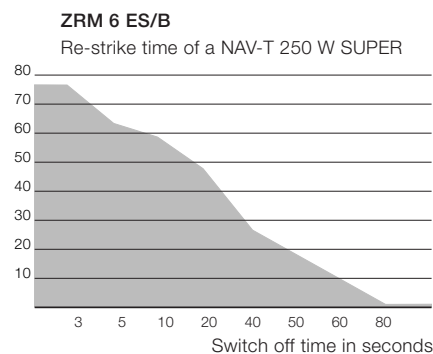
Ignition pulses ZRM 6 ES/B



Ignition pulses PulseControl



As a result of the increased ignition power and the pulse/break cycle, the re-strike time is reduced by up to **50 %**.

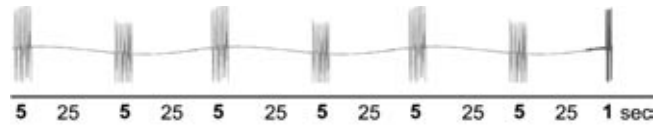


Interference reduced by up to 90 %

This 90 % reduction in interference time, e.g. only about 30 s instead of 300 s, is due to the reduced re-strike period and the pulse/break cycle which strikes for 5 seconds then pauses for 25 seconds.



Standard: 300 s



PulseControl in pulse/-break operation 31 seconds.

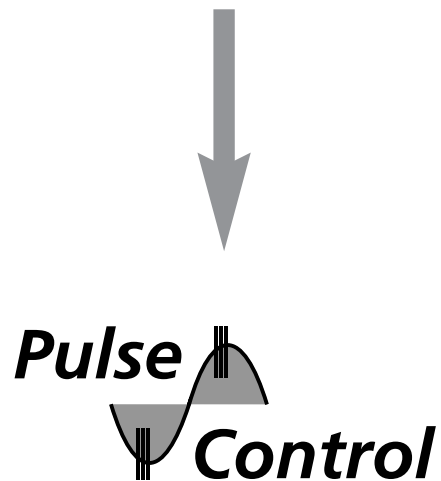
Reduction of product range by 75 %

Until now, "timer" solutions switched off the lamp after a fixed period of time but could not take into account re-strike times dependent on the luminaire temperature. In addition, an ignitor with separate timer period was required for each lamp type.

- T1 High pressure sodium lamps
- T5 High pressure sodium lamps Super/Plus
- T11 Metal halide lamps
- T22 Ceramic metal halide lamps



The ASIC in PulseControl does not consider the time of the re-strike period but the number of attempts made. Because of this, all lamps are switched off after 3 cycles regardless of luminaire or lamp type. **Therefore only one ignitor is required for all lamp types!**



Remote gear boxes for high-pressure discharge lamps

With remote gear boxes, the control gear, choke, ignitor and compensation capacitor are brought together in a compact housing. They are designed as independent operating devices with class 2 protection.

One of its outstanding qualities is that it is very easy to install. No tools are needed which saves a lot of time during on-site installation – quick and easy for definite savings.

All gear have thermal protection and are suitable for installation on a readily flammable base (F-marking). If you want to make an adjustment in line with the relevant supply voltage, it is possible to change the voltage tapping on the gear without using any tools. The gear are preset to their maximum voltage tapping before delivery.

The units listed in this catalogue are both with and without pre-wired cabling.

Data sheets on other designs for these remote gear boxes are available on request.



OMPAK 70 B533

Electronic ballasts for high pressure discharge lamps

Modern HID lamps can benefit more than any other type of lamp from the use of electronic ballasts. They are susceptible to supply voltage changes, both in terms of colour change and lamp life, and can also suffer inherent problems with run-up and hot restart times. Electronic ballasts can remove these problems and also improve the efficiency of the lamp itself. The colour temperature of the lamp can be maintained to much tighter tolerances using electronic ballasts.

Other arguments for using electronic ballasts include:

- flicker-free light
- controlled lamp voltage regardless of the supply voltage throughout the life of the lamp
- improved colour stability regardless of the supply voltage throughout the life of the lamp
- longer lamp life through square-wave operation and constant power control
- safety functions including protection against short circuit and overtemperature as well as automatic tripping of rectifying and old lamps
- faster run-up from cold, 50 % light output in half the time compared with conventional ballasts
- permissible supply voltage 198–264 V
- reduced volume and weight



PCI 0070 A001



50 W High pressure mercury lamps

Lamps				Ignitors	Magnetic chokes page 164	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A				
GE	H 50 ...	E 27	0,62	–	ECM 50; OMB 50	–	–
Iwasaki	HF 50 PD	E 27	0,62	–	ECM 50; OMB 50	–	–
Osram	HQL 50	E 27	0,62	–	ECM 50; OMB 50	–	–
Philips	HPL 50	E 27	0,62	–	ECM 50; OMB 50	–	–
Radium	HRL 50	E 27	0,62	–	ECM 50; OMB 50	–	–
Sylvania	HSL 50	E 27	0,62	–	ECM 50; OMB 50	–	–



ECM / OMB 50 W

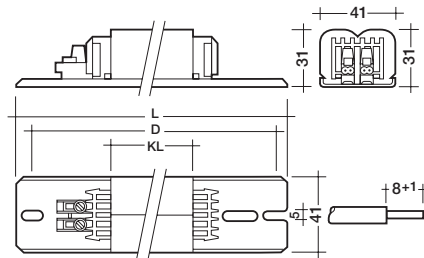


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
ECM	1	15	630
OMB	2	10	480

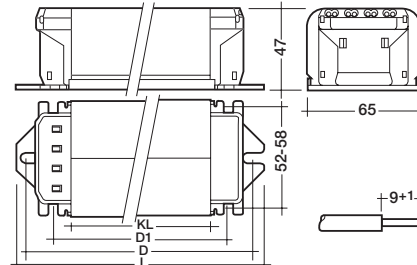
Certified:
EN 60922/923

figure 1



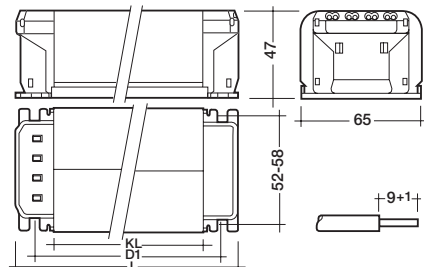
push terminal 0,5–1,5 mm²

figure 2



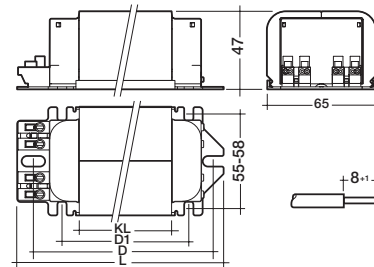
push terminal 0,75–2,5 mm²

figure 3



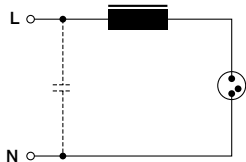
push terminal 0,75–2,5 mm²

figure 4



push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	fig.	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
ECM 50 A90 230 V 50 Hz	20569741	230	–	1	1	165	90	144–158	–	0,85	60	11,4	0,45	B
OMB 50 A103K 230–240 V 50 Hz	20569669	230/240	–	2	2	92	30	75–84	50,5	0,8	60	8,6	0,41	B
OMB 50 A153K 230–240 V 50 Hz	20824582	230/240	–	3	2	66	30	–	50,5	0,8	60	8,6	0,41	B
OMB 50 A604K 220–240 V 50 Hz	22148614	220/230/240	–	4	2	98	30	75–84	50,5	0,8	60	8,6	0,41	A
chokes with reinforced insulation														
OMB 50 A203W 230–240 V 50 Hz	20889662	230/240	yes	2	2	92	30	75–84	50,5	0,8	60	8,6	0,41	B
60 Hz chokes														
OMB 50 A106K 220–240 V 60 Hz	20574807	220/230/240	–	2	2	92	30	75–84	50,5	0,8	55	7,9	0,39	B



p.f. correction capacitor: 7,0 $\mu\text{F} \pm 10\%$ 250 V (5,0 μF at 60 Hz)
p.f. corrected line current: 0,27 A ($\lambda > 0,9$)



80 W High pressure mercury lamps

Lamps				Ignitors	Magnetic chokes page 166	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A				
GE	H 80 ...	E 27/B22	0,80	–	ECM 80; OMB 80	–	–
Iwasaki	HF 80 PD	E 27	0,80	–	ECM 80; OMB 80	–	–
Osram	HQL 80	E 27	0,80	–	ECM 80; OMB 80	–	–
Philips	HPL 80	E 27	0,80	–	ECM 80; OMB 80	–	–
Radium	HRL 80	E 27	0,80	–	ECM 80; OMB 80	–	–
Sylvania	HSL 80	E 27	0,80	–	ECM 80; OMB 80	–	–



ECM / OMB 80 W



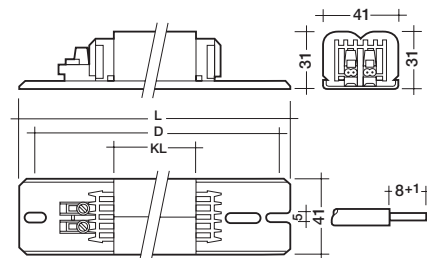
- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
ECM	1	5*	600
OMB	2	10	480

* bound

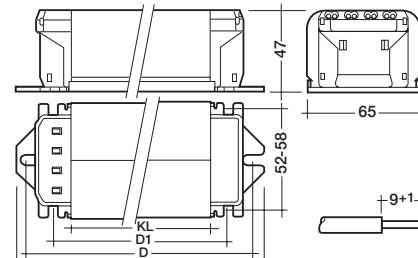
Certified:
EN 60922/923

figure 1



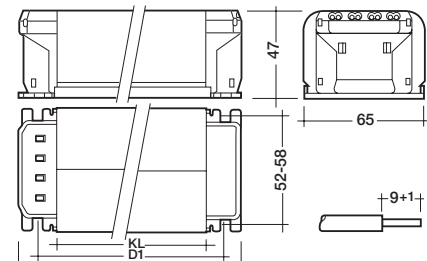
push terminal 0,5–1,5 mm²

figure 2



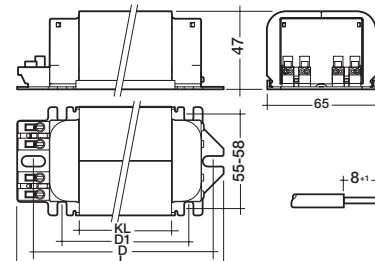
push terminal 0,75–2,5 mm²

figure 3



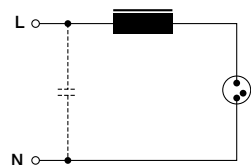
push terminal 0,75–2,5 mm²

figure 4

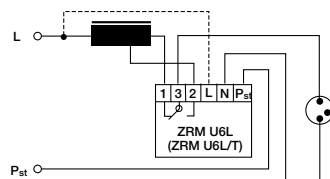


push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	fig.	packaging code	length L mm	core stack length KL mm	fixing centres mm D D1	weight kg	ΔT K	losses W	λ	range
standard chokes													
ECM 80 A140 230 V 50 Hz	24076777	230	–	1	1	231	140	210–224 –	1,3	50	13,1	0,51	B
OMB 80 A103K 230–240 V 50 Hz	20571079	230/240	–	2	2	92	30	75–84 50,5	0,8	75	11,3	0,48	B
OMB 80 A153K 230–240 V 50 Hz	20824609	230/240	–	3	2	66	30	– 50,5	0,8	75	11,3	0,48	B
OMB 80 A604K 220–240 V 50 Hz	22148594	220/230/240	–	4	2	98	30	75–84 50,5	0,8	75	11,3	0,48	A
chokes with power tapping													
OMB 80/50 A103K 230–240 V 50 Hz	20574609	230/240	–	2	2	97	35	80–89 55,5	0,9	70/50	11,6/8,8	0,49/0,41	B
OMB 80/50 A153K 230/240 V 50 Hz	20824624	230/240	–	3	2	71	35	– 55,5	0,9	70/50	11,6/8,8	0,49/0,41	B
OMB 80/50 A603K 230–240 V 50 Hz	22148595	230/240	–	4	2	103	35	80–89 55,5	0,9	70/50	11,6/8,8	0,49/0,41	A
chokes with reinforced insulation													
OMB 80 A203W 230–250 V 50 Hz	20889678	230/240/250	yes	2	2	92	30	75–84 50,5	0,8	75	11,3	0,48	B
OMB 80/50 A203W 230/240 V 50 Hz	20889716	230/240	yes	2	2	97	35	80–89 55,5	0,9	70/50	11,6/8,8	0,46/0,4	B
60 Hz chokes													
OMB 80 A106K 220–240 V 60 Hz	20574671	220/230/240	–	2	2	92	30	75–84 50,5	0,8	65	10,5	0,45	B



p.f. correction capacitor: $8,0 \mu\text{F} \pm 10\% 250 \text{ V}$
($6,0 \mu\text{F}$ at 60 Hz)
p.f. corrected line current: $0,43 \text{ A}$ ($\lambda > 0,9$)



power tapping



125 W High pressure mercury lamps

Lamps				Ignitors	Magnetic chokes page 168	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A				
GE	H 125 ...	E 27/B22	1,15	–	OMB 125	–	–
Iwasaki	HF 125 PD	E 27/40	1,15	–	OMB 125	–	–
Osram	HQL 125	E 27	1,15	–	OMB 125	–	–
Philips	HPL 125	E 27/40	1,15	–	OMB 125	–	–
Radium	HRL 125	E 27	1,15	–	OMB 125	–	–
Sylvania	HSL 125	E 40	1,15	–	OMB 125	–	–



OMB 125 W

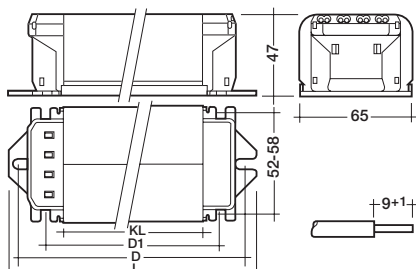


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging: Code Box Pallet
OMB 1 10 480

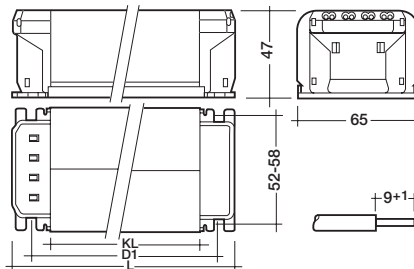
Certified:
EN 60922/923

figure 1



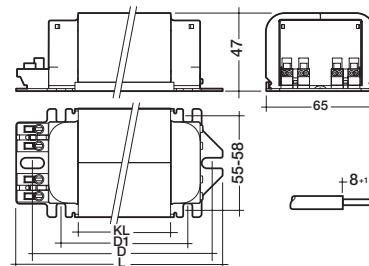
push terminal 0,75–2,5 mm²

figure 2



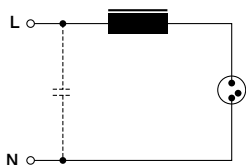
push terminal 0,75–2,5 mm²

figure 3

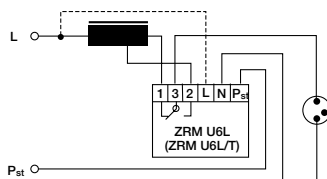


push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	fig.	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W		λ	range
								D	D1						
standard chokes															
OMB 125 A103K 230–240 V 50 Hz	20570762	230/240	–	1	1	107	45	90–99	65,5	1,2	65	12,4	0,52	B	
OMB 125 A153K 230–240 V 50 Hz	20824646	230/240	–	2	1	81	45	–	65,5	1,2	65	12,4	0,52	B	
OMB 125 A604K 220–240 V 50 Hz	22148596	220/230/240	–	3	1	113	45	90–99	65,5	1,2	65	12,4	0,52	A	
chokes with power tapping															
OMB 125/80 A103K 230–240 V 50 Hz	20574618	230/240	–	1	1	117	55	100–109	75,5	1,4	70/50	14,2/8,9	0,52/0,48	B	
OMB 125/80 Z603K 230/240 V 50 Hz	22148861	230/240	–	3	1	113	45	90–99	65,5	1,14	85/60	17,5/10,4	0,57/0,50	A	
OMB 125/80 A603K 230–240 V 50 Hz	22148597	230/240	–	3	1	123	55	100–109	75,5	1,4	70/50	14,2/8,9	0,52/0,48	B	
chokes with reinforced insulation															
OMB 125 A203W 230–250 V 50 Hz	20889684	230/240/250	yes	1	1	107	45	90–99	65,5	1,2	65	12,4	0,52	B	
OMB 125/80 A253W 230/240 V 50 Hz	22148438	230/240	yes	2	1	91	55	–	75,5	1,33	70/50	14,2/8,9	0,52/0,48	B	
60 Hz chokes															
OMB 125 A106K 220–240 V 60 Hz	20574665	220/230/240	–	1	1	107	45	90–99	65,5	1,2	60	11,5	0,48	B	



p.f. correction capacitor: 10,0 $\mu\text{F} \pm 10\%$ 250 V
(9,0 μF at 60 Hz)
p.f. corrected line current: 0,63 A ($\lambda > 0,9$)



power tapping



250 W High pressure mercury lamps

Lamps				Ignitors	Magnetic chokes page 170	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A				
GE	H 250 ...	E 40	2,15	–	OGL 250; OMB 250	–	–
Iwasaki	HF 250 PD	E 40	2,15	–	OGL 250; OMB 250	–	–
Osram	HQL 250	E 40	2,15	–	OGL 250; OMB 250	–	–
Philips	HPL 250	E 40	2,15	–	OGL 250; OMB 250	–	–
Radium	HRL 250	E 40	2,15	–	OGL 250; OMB 250	–	–
Sylvania	HSL 250	E 40	2,15	–	OGL 250; OMB 250	–	–



OGL / OMB 250 W

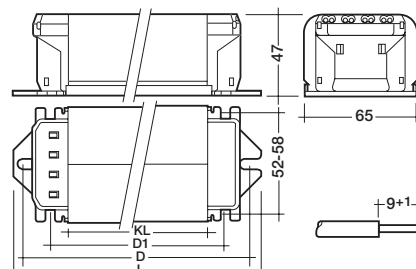


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OMB	1	10	480
OMB	2	10	240
OGL	3	6	216

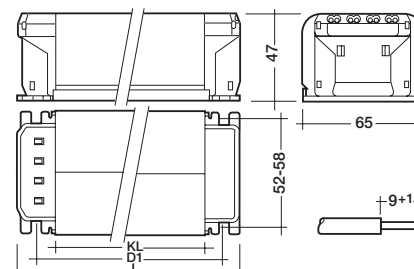
Certified:
EN 60922/923

figure 1



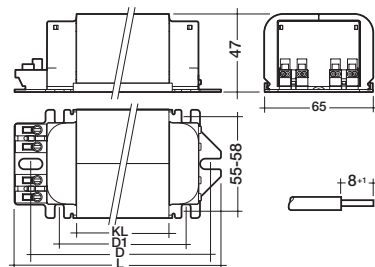
push terminal 0,75–2,5 mm²

figure 2



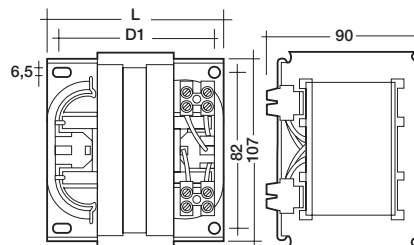
push terminal 0,75–2,5 mm²

figure 3



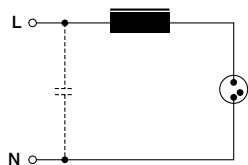
push terminal 0,5–1,5 mm²

figure 4

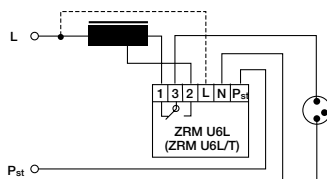


screw terminal 1,5–4 mm²

type	article number	voltage	thermal protection	fig.	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OMB 250 A103K 230–240 V 50 Hz	20570778	230/240	–	1	1	147	85	130–139	105,5	2	70	22,1	0,55	B
OMB 250 A153K 230–240 V 50 Hz	20824693	230/240	–	2	1	121	85	–	105,5	2	70	22,1	0,55	B
OMB 250 A604K 220–240 V 50 Hz	22148598	220/230/240	–	3	1	153	85	130–139	105,5	2	70	22,1	0,55	A
OGL 250W 30 220–240 V 50 Hz	20296024	220/230/240	–	4	3	84	30	–	70	2,4	65	18,6	0,55	B
chokes with power tapping														
OMB 250/125 A103K 230–240 V 50 Hz	20820409	230/240	–	1	2	167	105	150–159	125,5	2,4	70/35	24,1/14,6	0,54/0,51	B
OMB 250/125 A603K 230–240 V 50 Hz	22148599	230/240	–	3	2	173	105	150–159	125,5	2,4	70/35	24,1/14,6	0,54/0,51	B
chokes with reinforced insulation														
OMB 250 A203W 230–240 V 50 Hz	20889690	230/240	yes	1	1	147	85	130–139	105,5	2	70	22,1	0,55	B
OGL 250 C204W 220–240 V 50 Hz	20887079	220/230/240	yes	4	3	84	30	–	70	2,4	65	18,6	0,55	B
OMB 250/125 A253W 230/240 V 50 Hz	22148428	230/240	yes	2	2	141	105	–	25,5	2,4	70/35	24,6/11,1	0,54/0,51	B
60 Hz chokes														
OMB 250 A106K 220–240 V 60 Hz	22148647	220/230/240	–	1	1	147	85	130–139	105,5	2	65	21,4	0,52	B



p.f. correction capacitor: 18,0 $\mu\text{F} \pm 10\%$ 250 V
(16,0 μF at 60 Hz)
p.f. corrected line current: 1,25 A ($\lambda > 0,9$)



power tapping



400 W High pressure mercury lamps

Lamps		lamp holder	nominal current A	Ignitors	Magnetic chokes page 172	Remote gear boxes	Electronic ballasts
manufacturer	description						
GE	H 400 ...	E 40	3,25	–	OMB 400; OGL 400; OFL 400	–	–
Iwasaki	HF 400 PD	E 40	3,25	–	OMB 400; OGL 400; OFL 400	–	–
Osram	HQL 400	E 40	3,25	–	OMB 400; OGL 400; OFL 400	–	–
Philips	HPL 400	E 40	3,25	–	OMB 400; OGL 400; OFL 400	–	–
Radium	HRL 400	E 40	3,25	–	OMB 400; OGL 400; OFL 400	–	–
Sylvania	HSL 400	E 40	3,25	–	OMB 400; OGL 400; OFL 400	–	–



OFL / OGL / OMB 400 W



- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OMB	1	6	240
OMB	2	10	240
OGL	4	5	180
OGL	3	6	216
OFL	5	6	66

Certified:
EN 60922/923

figure 1

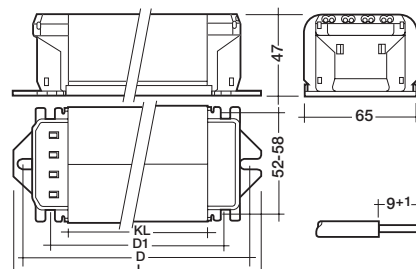
push terminal 0,75–2,5 mm²

figure 2

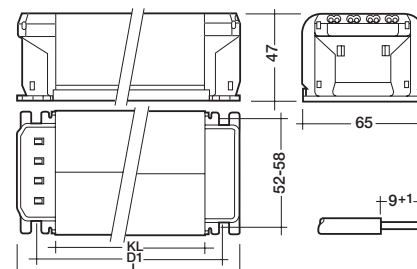
push terminal 0,75–2,5 mm²

figure 3

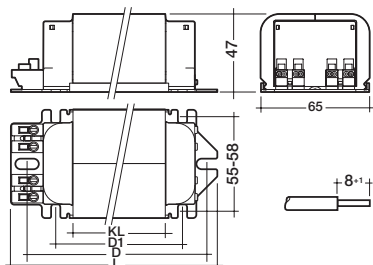
push terminal 0,5–1,5 mm²

figure 4

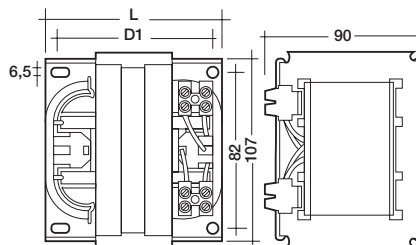
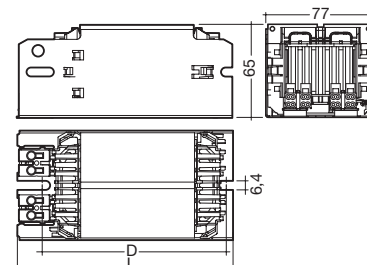
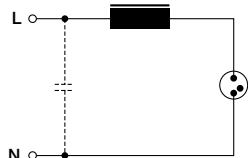
screw terminal 1,5–4 mm²

figure 5

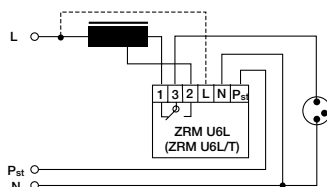
screw terminal 0,5–2,5 mm²

type	article number	voltage	thermal protection	fig.	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OMB 400 A103K 230–240 V 50 Hz	20821326	230/240	–	1	1	212	150	195–204	170,5	3,4	70	29	0,57	B
OMB 400 A153K 230–240 V 50 Hz	20824731	230/240	–	2	1	186	150	–	170,5	3,4	70	29	0,57	B
OMB 400 A604K 220–240 V 50 Hz	22148615	220/230/240	–	3	2	188	120	165–174	140,5	2,8	75	35,4	0,56	A
OGL 400W 40 220–240 V 50 Hz	20296030	220/230/240	–	4	3	94	40	–	80	3,1	75	30,5	0,55	B
OFL 400 A504K 220–240 V 50 Hz	22158547	220/230/240	–	5	5	152	81	122–146	–	3,15	70	25,9	0,57	B
chokes with power tapping														
OGL 400/250W 50 230–240 V 50 Hz	20820302	230/240	–	4	4	104	50	–	90	3,7	70/40	29/15,2	0,54/0,51	B
chokes with reinforced insulation														
OMB 400 A203W 230–240 V 50 Hz	20889707	230/240	yes	1	1	212	150	195–204	170,5	3,4	70	29	0,57	B
OGL 400 C204W 220–240 V 50 Hz	20887546	220/230/240	yes	4	3	94	40	–	80	3,1	75	30,5	0,55	B
60 Hz chokes														
OMB 400 A107K 220–240 V 60 Hz	20888680	220/230/240	–	1	1	212	150	195–204	170,5	3,4	65	25,4	0,57	B



p.f. correction capacitor: 25,0 $\mu\text{F} \pm 10\%$ 250 V
(22,0 μF at 60 Hz)

p.f. corrected line current: 2,0 A ($\lambda > 0,9$)



power tapping



700 W and 1 000 W High pressure mercury lamps

Lamps				Ignitors	Magnetic chokes page 174	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A				
GE	H 700 ...	E 40	5,4	–	OGL 700	–	–
	H 1000 ...	E 40	7,5	–	OGL 1000	–	–
Iwasaki	HF 700 PD	E 40	5,4	–	OGL 700	–	–
	HF 1000 PD	E 40	7,5	–	OGL 1000	–	–
Osram	HQL 700	E 40	5,4	–	OGL 700	–	–
	HQL 1000	E 40	7,5	–	OGL 1000	–	–
Philips	HPL 700	E 40	5,4	–	OGL 700	–	–
	HPL 1000	E 40	7,5	–	OGL 1000	–	–
Radium	HRL 700	E 40	5,4	–	OGL 700	–	–
	HRL 1000	E 40	7,5	–	OGL 1000	–	–
	HRLV 1000	E 40	7,5	–	OGL 1000	–	–
Sylvania	HSL 700	E 40	5,4	–	OGL 700	–	–
	HSL 1000	E 40	7,5	–	OGL 1000	–	–



OGL 700 W and 1 000 W



- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OGL	1	3	108
OGL	2	2	72

Certified:
EN 60922/923

figure 1

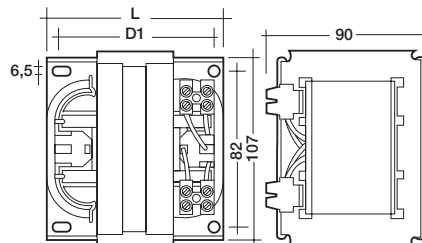
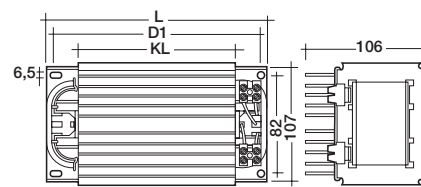
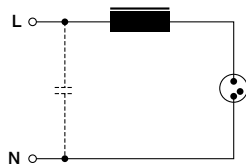
push terminal 1,5–4 mm²

figure 2

push terminal 1,0–6 mm²

type	article number	voltage	thermal protection	fig	pack aging code	length L mm	core stack length KL mm	fixing centres mm D1	weight kg	ΔT K	losses W	λ	range
standard chokes 700 W													
OGL 700W 80 220–240 V 50 Hz	20294541	220/230/240	–	1	1	134	80	120	5,4	60	28	0,59	A
standard chokes 1 000 W													
OGL 1000W 120 220–240 V 50 Hz	20295043	220/230/240	–	2	2	174	120	160	7,7	70	37	0,61	A
chokes with reinforced insulation 700 W													
OGL 700 C204W 220–240 V 50 Hz	20887552	220/230/240	yes	1	1	134	80	120	5,4	60	28	0,59	B
chokes with reinforced insulation 1 000 W													
OGL 1000 C204W 220–240 V 50 Hz	20887565	220/230/240	yes	2	2	174	120	160	7,7	70	37	0,61	B



p.f. correction capacitor 700 W: $40,0 \mu\text{F} \pm 10\%$ 250 V
($35,0 \mu\text{F}$ at 60 Hz)

p.f. corrected line current: 3,6 A ($\lambda > 0,9$)

p.f. correction capacitor 1 000 W: $60,0 \mu\text{F} \pm 10\%$ 250 V
($45,0 \mu\text{F}$ at 60 Hz)

p.f. corrected line current: 4,6 A ($\lambda > 0,9$)



35 W High pressure sodium lamps

Lamps				Ignitors	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 177	page 176		
Philips	SDW-T 35 W	PG 12-1	0,48	–	control gear see page 250	–	–
Sylvania	SHP-TS 35 W	E 27	0,53	ZRM 2-ES/B; ZRM 2-ES/TC	ECIS 35; OMBIS 35	–	–



ECIS / OMBIS 35 W

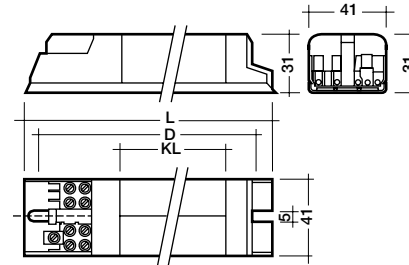


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
ECIS	1	15	630
OMBIS	2	10	480

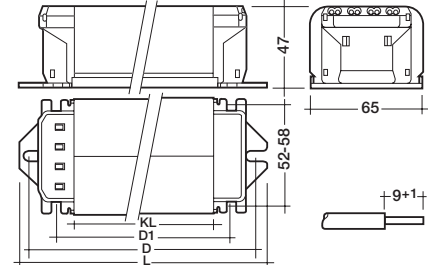
Certified:
EN 60922/923

figure 1



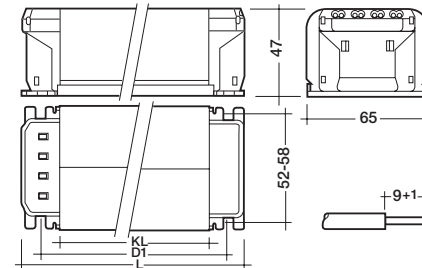
screw terminal 0,75–1,5 mm²

figure 2



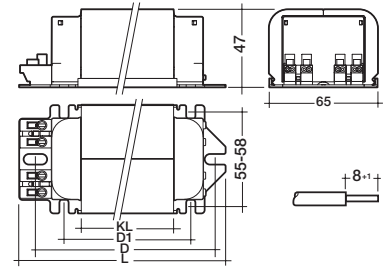
push terminal 0,75–2,5 mm²

figure 3



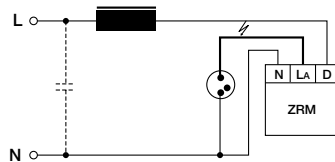
push terminal 0,75–2,5 mm²

figure 4



push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
ECIS 35 C90 230–250 V 50 Hz TP	20566187	230/240/250	yes	1	1	165	90	144–158	–	0,85	55	12,0	0,40	B
OMBIS 35 B103W 230–250 V 50 Hz	20569782	230/240/250	yes	2	2	97	35	80–89	55,5	0,9	50	7,5	0,36	B
OMBIS 35 B153W 230–250 V 50 Hz	20824173	230/240/250	yes	3	2	71	35	–	55,5	0,9	50	7,5	0,36	B
OMBIS 35 A604W 220–240 V 50 Hz	22148862	220/230/240	yes	4	2	98	30	75–84	50,5	0,85	60	7,7	0,34	A
chokes with reinforced insulation														
OMBIS 35 A203W 230–250 V 50 Hz	22115664	230/240/250	yes	2	2	92	30	75–84	50,5	0,80	60	8,0	0,37	B
60 Hz chokes														
OMBIS 35 A156W 220–240 V 60 Hz	20880630	220/230/240	yes	3	2	66	30	–	50,5	0,80	45	7,1	0,34	B



p.f. correction capacitor: 6,0 $\mu\text{F} \pm 10\%$ 250 V
(5,0 μF at 60 Hz)
p.f. corrected line current: 0,22 A ($\lambda > 0,9$)



Ignitors

Superimposed pulse ignitors

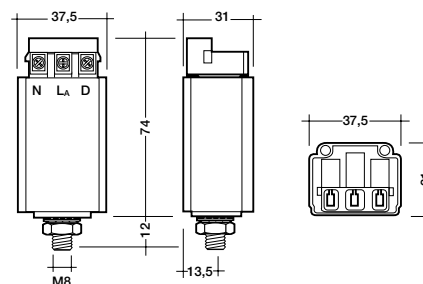


Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926



type		ZRM 2-ES/B	ZRM 2-ES/TC
article number		20572212	22087838
line voltage	V	198–264	198–264
mains frequency	Hz	50–60	50–60
ignition voltage	kVs	1,8–2,3	1,8–2,3
max. permissible lamp current IB	A	2,0	2,0
ignition current	mA	70	~ 70
wattage HS	W	–	35–70
temperature rise at IB = 0,54 A (35 W)	K	~ 1,0	–
IB = 1,0 A (70 W)	K	~ 3,0	~ 5,0
losses at IB = 0,54 A (35 W)	W	~ 0,1	–
IB = 1,0 A (70 W)	W	~ 0,3	~ 0,5
impulse width at UZ min. -10 %	µs	–	≥ 1,0
impulse width at 2 700 V	µs	> 1,0	–
number of impulses per halfwave		3–4	3–5
distance between impulses	ms	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90	60–90
		240–270	240–270
switch off/on voltage	V	160–198	160–198
maximum load capacitance	pF	20–100	20–350
maximum distance from lamp	m	4	4
maximum housing temperature	°C	105	105
minimum operating temperature	°C	-30	-30
weight	kg	0,13	0,11
re-set function	sec.	–	82



50 W High pressure sodium lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 180	page 179		
GE	LU 50/90	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–
	LU 50/90...I	E 27	0,76	–	OMBS 50	–	–
Iwasaki	NH 50 F/HV/I	E 27	0,76	–	OMBS 50	–	–
	NHT 50/I	E 27	0,76	–	OMBS 50	–	–
	NH 50 /HV/...	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–
	NHT 50 SDX	E 27	0,60	ZRM 1,8-ES/B 100	OMTA T 35/T40 + OMB SDX 50... *	–	–
Osram	NAV E 50	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–
	NAV T 50	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–
Philips	SDW-T 50 W	PG 12-1	0,78	–	OMB 50 W-SDW-T + Philips CSLS 50 **	–	–
	SON 50 W-I	E 27	0,76	–	OMBS 50	–	–
	SON 50 W-E	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–
	SON-T...50 W	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–
Radium	RNP-E 50 W/I	E 27	0,76	–	OMBS 50	–	–
	RNP-E 50 W	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–
Sylvania	SHP - 50 W...I	E 27	0,76	–	OMBS 50	–	–
	SHP-S 50 W...	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–
	SHP-TS 50 W	E 27	0,76	ZRM 2-ES/B; ZRM 2-ES/TC	OMBS 50	–	–

* data sheet for control gear available on request

** for chokes, see page 250



Magnetic chokes
High pressure sodium lamps

OMBS 50 W

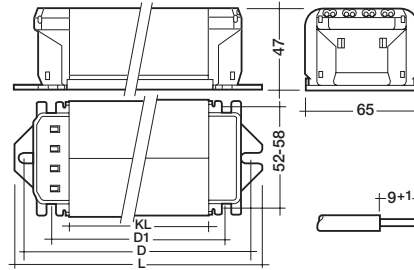


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging: Code Box Pallet
OMBS 1 10 480

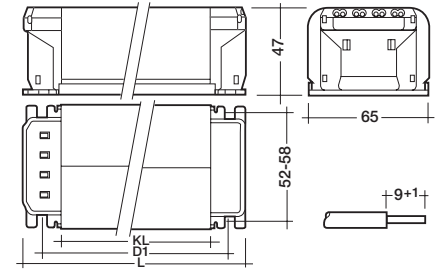
Certified:
EN 60922/923

figure 1



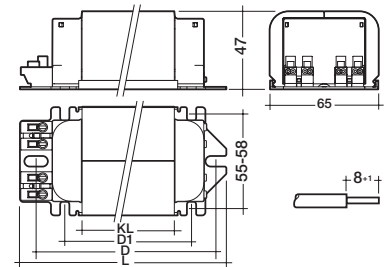
push terminal 0,75–2,5 mm²

figure 2



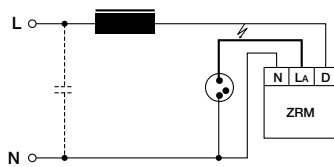
push terminal 0,75–2,5 mm²

figure 3

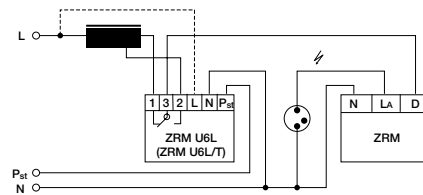


push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OMBS 50 A103W 230–250 V 50 Hz	20575586	230/240/250	yes	1	1	97	35	80–89	55,5	0,9	70	11,7	0,35	B
OMBS 50 A153W 230–250 V 50 Hz	20824951	230/240/250	yes	2	1	71	35	–	55,5	0,9	70	11,7	0,35	B
OMBS 50 A604W 220–240 V 50 Hz	22148616	220/230/240	yes	3	1	103	35	80–89	55,5	0,9	70	11,7	0,35	A
chokes with reinforced insulation														
OMBS 50 A203W 230–250 V 50 Hz	20889615	230/240/250	yes	1	1	97	35	80–89	55,5	0,9	70	11,7	0,35	B
OMBS 50/35 A253W 230/240V 50Hz	20884996	230/240	yes	2	1	81	45	–	65,5	1,15	65/35	11,2/6,9	0,37/0,37	B



p.f. correction capacitor: $10,0 \mu\text{F} \pm 10\% 250 \text{ V}$
p.f. corrected line current: $0,30 \text{ A} (\lambda > 0,9)$



power tapping



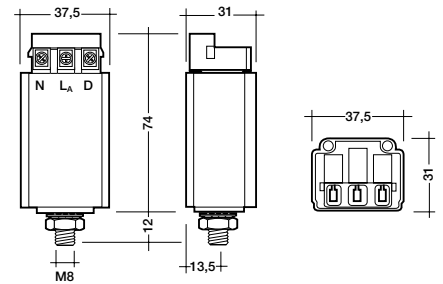
Superimposed pulse ignitors

**Packaging:**

box of 50
1 200 pieces/pallet

Certified:

EN 60926



type		ZRM 2-ES/B	ZRM 2-ES/TC
article number		20572212	22087838
line voltage	V	198–264	198–264
mains frequency	Hz	50–60	50–60
ignition voltage	kVs	1,8–2,3	1,8–2,3
max. permissible lamp current IB	A	2,0	2,0
ignition current	mA	70	~ 70
wattage HS	W	–	35–70
temperature rise at IB = 0,54 A (35 W)	K	~ 1,0	–
IB = 1,0 A (70 W)	K	~ 3,0	~ 5,0
losses at IB = 0,54 A (35 W)	W	~ 0,1	–
IB = 1,0 A (70 W)	W	~ 0,3	~ 0,5
impulse width at UZ min. -10 %	µs	–	≥ 1,0
impulse width at 2 700 V	µs	> 1,0	–
number of impulses per halfwave		3–4	3–5
distance between impulses	ms	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90	60–90
		240–270	240–270
switch off/on voltage	V	160–198	160–198
maximum load capacitance	pF	20–100	20–350
maximum distance from lamp	m	4	4
maximum housing temperature	°C	105	105
minimum operating temperature	°C	-30	-30
weight	kg	0,13	0,11
re-set function	sec.	–	82



70 W High pressure sodium lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 183	page 182	page 221	page 184–186
BLV	NAH - E 70	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
	NAH - TR 70	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
GE	LU 70/RFL	E 27	1,0	–	ECIS 70; OMBIS 70	–	–
	LU 70/90...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
Iwasaki	NH 70 F/HV/I	E 27	1,0	–	ECIS 70; OMBIS 70	–	–
	NHT 70/I	E 27	1,0	–	ECIS 70; OMBIS 70	–	–
	NH 70 .HV/...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
Osram	NAV E 70 I	E 27	1,0	–	ECIS 70; OMBIS 70	–	–
	NAV E 70...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
	NAV T 70...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
	NAV TS 70...	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
Philips	SON 70 W-I	E 27	1,0	–	ECIS 70; OMBIS 70	–	–
	SON 70 W...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
	SON-T 70 W...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
Radium	RNP-E 70 W/I	E 27	1,0	–	ECIS 70; OMBIS 70	–	–
	RNP-E 70 W	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
	RNP-T 70 W	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
	RNP-TS 70 W	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	ECIS 70; OMBIS 70	–	–
Sylvania	SHP 70 W...I	E 27	1,0	–	ECIS 70; OMBIS 70	–	–
	SHP 70 W...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
	SHP-T 70 W...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM
	SHP-TS 70 W...	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/TC	ECIS 70; OMBIS 70	–	PCS 0070; PCS 0070 stepDIM



ECIS / OMBIS 70 W

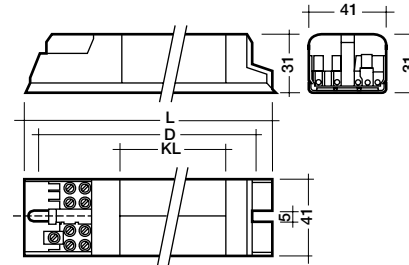


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
ECIS	1	15	630
OMBIS	2	10	480

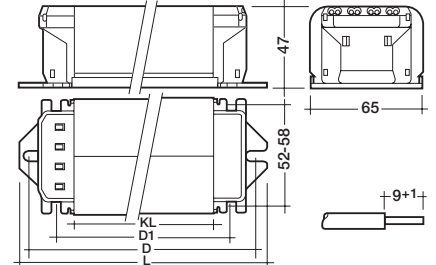
Certified:
EN 60922/923

figure 1



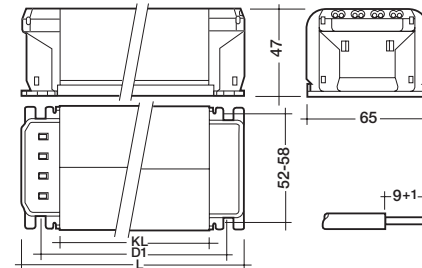
screw terminal 0,75–1,5 mm²

figure 2



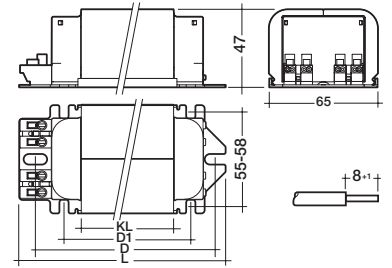
push terminal 0,75–2,5 mm²

figure 3



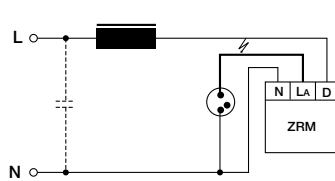
push terminal 0,75–2,5 mm²

figure 4

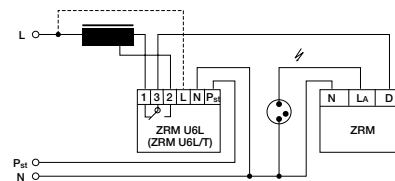


push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
ECIS 70 A140 230–250 V 50 Hz TP	20566335	230/240/250	yes	1	1	215	140	194–208	–	1,3	75	21	0,35	B
OMBIS 70 A103W 230–250 V 50 Hz	20568074	230/240/250	yes	2	2	107	45	90–99	65,5	1,2	70	12,1	0,37	B
OMBIS 70 A153W 230–250 V 50 Hz	20824220	230/240/250	yes	3	2	81	45	–	65,5	1,2	70	12,1	0,37	B
OMBIS 70 A604W 220–240 V 50 Hz	22148601	220/230/240	yes	4	2	113	45	90–99	65,5	1,2	70	12,1	0,37	A
chokes with reduced temperature rise														
OMBIS 70 B103W 230–250 V 50 Hz	20575741	230/240/250	yes	2	2	117	55	100–109	75,5	1,4	65	12,4	0,37	B
OMBIS 70 B604W 220–240 V 50 Hz	22148602	220/230/240	yes	4	2	123	55	100–109	75,5	1,4	65	12,4	0,37	B
chokes with power tapping														
OMBS 70/50 A103W 230–240 V 50 Hz	20885000	230/240	yes	2	2	117	55	100–109	75,5	1,4	65/40	13,8/9,4	0,35	B
OMBS 70/50 Z603W 230/240 V 50 Hz	22158510	230/240	yes	4	2	113	45	90–99	65,5	1,17	70/50	14,0/9,5	0,38/0,34	B
chokes with reinforced insulation														
OMBIS 70 A203W 230–250 V 50 Hz	20889621	230/240/250	yes	2	2	107	45	90–99	65,5	1,2	70	12,1	0,37	B
OMBS 70/50 A203W 230/240 V 50 Hz	20885025	230/240	yes	2	2	117	55	100–109	75,5	1,4	65/45	13,8/9,4	0,34/0,33	B
60 Hz chokes														
OMBIS 70 A106W 220–240 V 60 Hz	20574788	220/230/240	yes	2	2	107	45	90–99	65,5	1,2	60	11,8	0,38	B



p.f. correction capacitor: 12,0 $\mu\text{F} \pm 10\%$ 250 V
(10,0 μF at 60 Hz)
p.f. corrected line current: 0,43 A ($\lambda > 0,9$)



power tapping



Ignitors

Digital safety ignitors and superimposed pulse ignitors

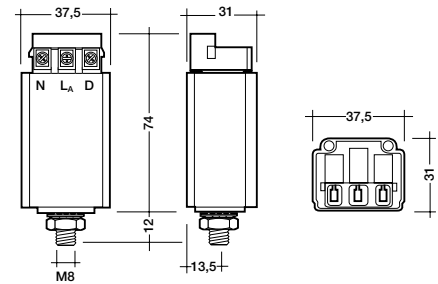



Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926



type		Digital safety ignitors with switch off function		Pulse  Control	Digital safety ignitors with switch off function	Superimposed pulse ignitors		
		ZRM 2-ES/D	ZRM 2,5-ES/D			ZRM 2-ES/TC	ZRM 1,8-ES/B	ZRM 2-ES/B
article number		22082233	22082249		22087838	20571565	20572212	22082554
line voltage	V	198–264	198–264		198–264	198–264	198–264	198–264
mains frequency	Hz	50 oder 60	50 oder 60		50–60	50–60	50–60	50–60
ignition voltage	kVs	1,8–2,5	4,0–5,0		1,8–2,5	4,0–5,0	1,8–2,3	4,0–5,0
max. permissible lamp current IB	A	2,0	3,0		2,0	2,0	2,0	4,6
ignition current	mA	–	–		~ 70	120	70	120
wattage HS	W	70	100–250		35–70	100–150	35–70	100–400
wattage HI	W	–	35–250		–	35–150	–	35–400
temperature rise at IB = 0,54 A (35 W)	K	–	–		–	–	~ 1,0	–
IB = 1,0 A (70 W)	K	3,0	2,8		~ 5,0	~ 5,0	~ 3,0	1,0
IB = 1,8 A (150 W)	K	–	7,1		–	~ 20,0	–	5,0
IB = 3,0 A (250 W)	K	–	19,8		–	–	–	14,0
IB = 4,6 A (400 W)	K	–	–		–	–	–	27,0
losses at IB = 0,54 A (35 W)	W	–	–		–	–	~ 0,1	–
IB = 1,0 A (70 W)	W	0,200	0,200		~ 0,5	~ 0,5	~ 0,3	0,1
IB = 1,8 A (150 W)	W	–	0,676		–	~ 1,5	–	0,5
IB = 3,0 A (250 W)	W	–	2,016		–	–	–	1,0
IB = 4,6 A (400 W)	W	–	–		–	–	–	2,5
impulse width at UZ min. -10%	µs	3,0	2,4		≥ 1,0	–	–	–
impulse width at 2 700 V	µs	–	–		–	~ 1,0	> 1,0	~ 1,0
number of impulses per halfwave		4–10	4–10		3–5	3	3–4	3
distance between impulses	ms	< 0,3	< 0,3		< 0,3	< 0,3	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90 240–270	60–90 240–270		60–90 240–270	60–90 240–270	60–90 240–270	60–90 240–270
switch on voltage	V	< 198	< 198		–	–	–	–
switch off/on voltage	V	–	–		185–198	185–198	160–198	185–198
switch off of ignition		digital	digital		digital	–	–	–
maximum load capacitance	pF	20–750	20–100		20–350	20–100	20–200	20–100
maximum distance from lamp	m	10	1,5		4	1,5	4	1,5
maximum housing temperature tc	°C	105	105		105	105	105	105
minimum operating temperature	°C	-30	-30		-30	-30	-30	-30
weight	kg	0,11	0,11		0,11	0,13	0,13	0,13
re-set function	sec.	> 0,5	> 0,5		< 0,5	–	–	–

* ignitor recommended for external applications

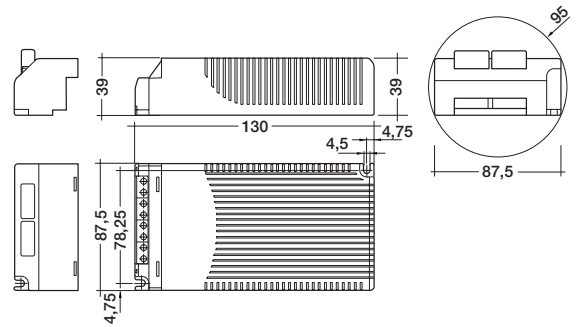


powerCONTROL PCS 0070



The digital components in powerCONTROL control the power circuit and ignition. powerCONTROL is suitable for high pressure sodium lamps with ignition voltage of 1,8–2,5 kV. The basic circuit elements are patented.

- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switches off when the lamp is missing or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 2 kV (*PulseControl* technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals for 2,5 mm² or 2x1,5 mm²
- can be used in movable lamps with plugs (discharge voltage < 34 V after 1 s)
- accessories are terminal cover and strain relief: **ZE 002** article number 86448230

**Packaging:**

box of 10
60 boxes/pallet
600 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCS 0070 A001
article number		86455786
lamp wattage	W	72
circuit wattage at ta = 25 °C	W	79,5
mains voltage	V	220–240
AC voltage range	V	198–254
DC voltage range	V	153–320
current	A	0,36
mains frequency	Hz	0/50/60
power factor	λ	0,97
operation frequency	Hz	125
ignition voltage	kV	2
max. distance from lamp	m	3
max. ambient temperature ta	°C	50
min. ambient temperature ta	°C	-25
max. housing temperature tc	°C	80
fixing centres – length	mm	120–123
fixing centres – width	mm	77–80
length incl. ZE 002	mm	156
dimensions length x width x height	mm	130x87,5x39
weight	g	330



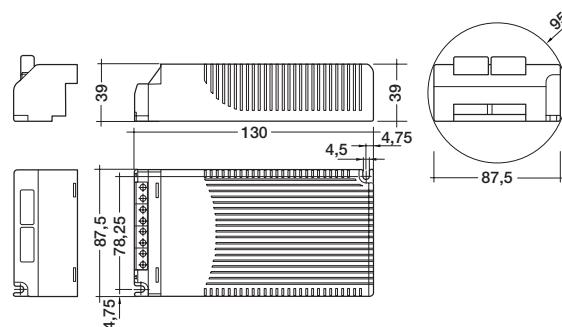
Digital, electronic ballasts High pressure sodium lamps

powerCONTROL PCS 0070 stepDIM



The digital components in powerCONTROL control the power circuit and ignition. powerCONTROL is suitable for high pressure sodium lamps with ignition voltage of 1,8–2,5 kV. The basic circuit elements are patented.

- dimmable to 50 % of maximum light output in two steps (50 % / 100 %)
- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switches off when the lamp is missing or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 2 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals for 2,5 mm² or 2x1,5 mm²
- can be used in movable lamps with plugs (discharge voltage < 34 V after 1 s)
- accessories are terminal cover and strain relief: **ZE 002** article number 86448230



Packaging:

box of 10
60 boxes/pallet
600 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

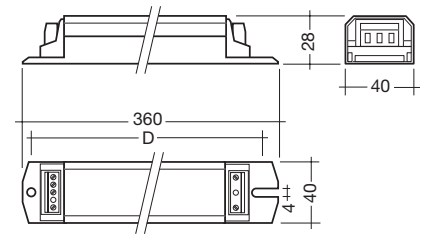
type		PCS 0070 A001 stepDIM
article number		86457093
lamp wattage	W	in preparation
circuit wattage at ta = 25 °C	W	
mains voltage	V	
AC voltage range	V	
DC voltage range	V	
current	A	
mains frequency	Hz	
power factor	λ	
operation frequency	Hz	
ignition voltage	kV	
max. distance from lamp	m	
max. ambient temperature ta	°C	
min. ambient temperature ta	°C	
max. housing temperature tc	°C	
fixing centres – length	mm	120–123
fixing centres – width	mm	77–80
length incl. ZE 002	mm	156
dimensions length x width x height	mm	130x87,5x39
weight	g	330



powerCONTROL PCS 0070



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- metal housing, IP 20
- screw terminals for 0,5–2,5 mm²
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)

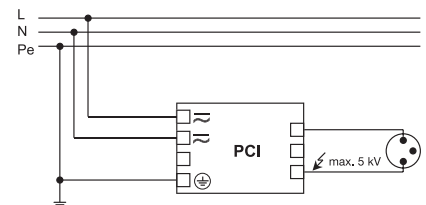
**Packaging:**

box of 10
60 boxes/pallet
600 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCS 0070 A201
article number		86455792
lamp wattage	W	72
circuit wattage	W	79,5
mains voltage	V	220–240
AC voltage range	V	198–254
DC voltage range	V	153–320
current	A	0,36
mains frequency	Hz	0/50/60
power factor	λ	0,97
operation frequency	Hz	125
ignition voltage	kV	2
max. distance from lamp	m	2
max. ambient temperature t_a	°C	45
min. ambient temperature t_a	°C	-25
max. housing temperature t_c	°C	80
fixing centres – length	mm	220
dimensions length x width x height	mm	234x40x28
weight	g	330



PCI without lamp reignition monitor



100 W High pressure sodium lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 189	page 188	page 190	page 229
GE	LU 100...	E 40/E 27	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	–
	TCF 100	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	–
Iwasaki	NH 100 F/HV/I	E 40	1,2	–	OMBIS 100	–	–
	NHT 100/I	E 40	1,2	–	OMBIS 100	–	–
	NH 100 F	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	–
	NHT 100	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	–
	NHT 100 SDX	E 27	1,2	ZRM 1,8-ES/B 200	OMTA T 30... + OMB-SDX 100... *	–	–
Osram	NAV E 100	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	PCI 0100
	NAV T 100	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	PCI 0100
Philips	SDW-T 100 W	PG 12-1	1,35	–	OMB 100W SDW + Philips CSLS 100 **	–	–
	SON...100 W	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	–
	SON-T...100 W	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	–
Sylvania	SHP-S 100 W	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	–
	SHP-TS 100 W	E 40	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC;; ZRM 2,5-ES/D; ZRM 4,5-ES/B	OMBIS 100	OMPAK 100	–

* data sheet for control gear available on request

** for chokes, see page 250



OMBIS / OMBS 100 W



- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging: Code Box Pallet
OMBIS 1 10 480

Certified:
EN 60922/923

figure 1

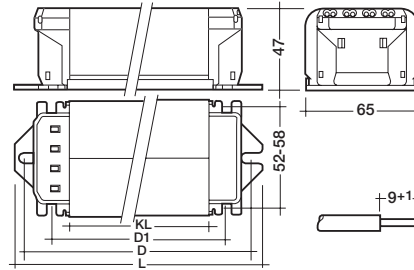
push terminal 0,75–2,5 mm²

figure 2

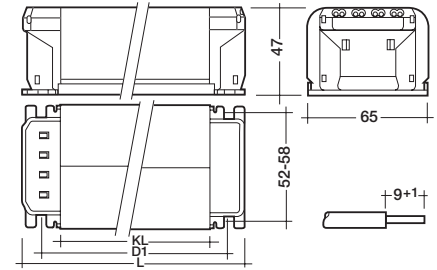
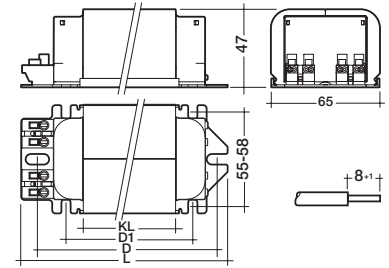
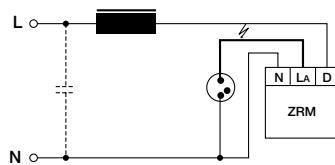
push terminal 0,75–2,5 mm²

figure 3

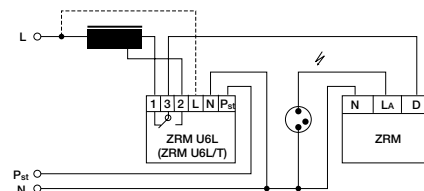
push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OMBIS 100 A103W 230–250 V 50 Hz	20568891	230/240/250	yes	1	1	117	55	100–109	5,5	1,4	65	13,7	0,4	B
OMBIS 100 A604W 220–240 V 50 Hz	22148604	220/230/240	yes	3	1	123	55	100–109	75,5	1,4	65	13,7	0,4	A
chokes with power tapping														
OMBS 100/70 A103W 230–240 V 50 Hz	20885053	230/240	yes	1	1	127	65	110–119	85,5	1,6	65/55	13,7/10,7	0,4/0,33	B
OMBS 100/70 A153W 230–240 V 50 Hz	20885066	230/240	yes	2	1	101	65	–	85,5	1,6	65/55	13,7/10,7	0,4/0,33	B
OMBS 100/70 A603W 230–240 V 50 Hz	22148605	230/240	yes	3	1	133	65	110–119	85,5	1,6	65/55	13,7/10,7	0,4/0,33	A
chokes with reinforced insulation														
OMBIS 100 A203W 230–250 V 50 Hz	20889637	230/240/250	yes	1	1	117	55	100–109	75,5	1,4	65	13,7	0,53	B
OMBS 100/70 A203W 230/240 V 50 Hz	20885072	230/240	yes	1	1	127	65	110–119	85,5	1,6	65/55	13,7/10,7	0,4/0,33	B
60 Hz chokes														
OMBIS 100 A106W 220–240 V 60 Hz	20574794	220/230/240	yes	1	1	117	55	100–109	75,5	1,4	60	12,6	0,39	B



p.f. correction capacitor: 12,0 $\mu\text{F} \pm 10\%$ 250 V
(10,0 μF at 60 Hz)

p.f. corrected line current: 0,55 A ($\lambda > 0,9$)



power tapping



Ignitors

Digital safety ignitors and superimposed pulse ignitors

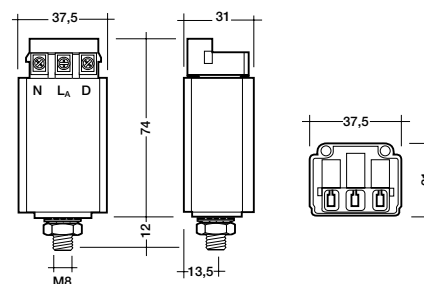



Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926



type		Digital safety ignitors with switch off function ZRM 2,5-ES/D	Pulse  Control Digital safety ignitors with switch off function ZRM 1,8-ES/TC	Superimposed pulse ignitors	
				ZRM 1,8-ES/B	ZRM 4,5-ES/B *
article number		22082249	22087822	20571565	22082554
line voltage	V	198–264	198–264	198–264	198–264
mains frequency	Hz	50 oder 60	50–60	50–60	50–60
ignition voltage	kVs	4,0–5,0	4,0–5,0	4,0–5,0	4,0–5,0
max. permissible lamp current IB	A	3,0	1,8	2,0	4,6
ignition current	mA	–	~ 120	120	120
wattage HS	W	100–250	100–150 **	100–150	100–400
wattage HI	W	35–250	35–150	35–150	35–400
temperature rise at IB = 1,0 A (70 W)	K	2,8	~ 8,0	~ 5,0	1,0
IB = 1,8 A (150 W)	K	7,1	~ 19,0	~ 20,0	5,0
IB = 3,0 A (250 W)	K	19,8	–	–	14,0
IB = 4,6 A (400 W)	K	–	–	–	27,0
losses at IB = 1,0 A (70 W)	W	0,200	~ 0,7	~ 0,5	0,1
IB = 1,8 A (150 W)	W	0,676	~ 1,7	~ 1,5	0,5
IB = 3,0 A (250 W)	W	2,016	–	–	1,0
IB = 4,6 A (400 W)	W	–	–	–	2,5
impulse width at UZ min. -10%	µs	2,4	≥ 1	–	–
impulse width at 2 700 V	µs	–	–	~ 1,0	~ 1,0
number of impulses per halfwave		4–10	3	3	3
distance between impulses	ms	< 0,3	< 0,3	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90	60–90	60–90	60–90
		240–270	240–270	240–270	240–270
switch on voltage	V	< 198	–	–	–
switch off/on voltage	V	–	185–198	185–198	185–198
switch off of ignition		digital	digital	–	–
maximum load capacitance	pF	20–100	20–350	20–100	20–200
maximum distance from lamp	m	1,5	4	1,5	1,5
maximum housing temperature tc	°C	105	105	105	105
minimum operating temperature	°C	-30	-30	-30	-30
weight	kg	0,11	0,11	0,13	0,13
re-set function	sec.	> 0,5	> 0,5	–	–

* ignitor recommended for external applications

** released for HST-DE 70 W



OM PAK 100 W 230/240 V, 230–250 V 50 Hz



- temperature protected, low loss choke out of the OM range
- digital safety ignitor *PulseControl* for a reduced strike and re-strike time of the lamp (M B113 with standard ignitor)
- digital controlled switch off function of defect lamps (M B113 with standard ignitor)
- exceptional low noise operation
- useable also with high ambient temperatures (ta)
- marked with F-mark for mounting on normal flammable materials
- tool free connection of cables
- voltage adapting for 230 V, 240 V and 250 V supply
- various fixing possibilities

OM PAK 100 M B533 (cable version)

- halogen free 3 core lamp lead
- total lead length including socket 1 200 mm/1 020 mm exterior
- with pre-assembled ST-18 socket

figure 1

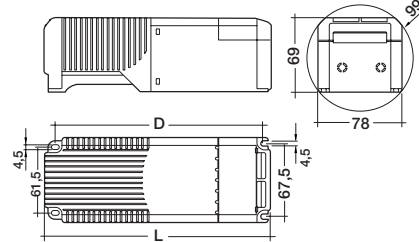
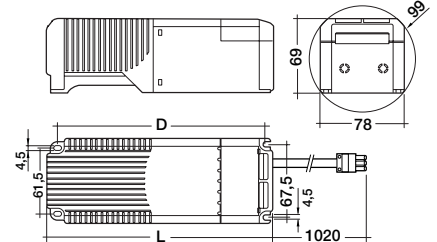


figure 2



Packaging:
OM PAK 100 M B133
OM PAK 100 M B113
box of 1
108 pieces/pallet

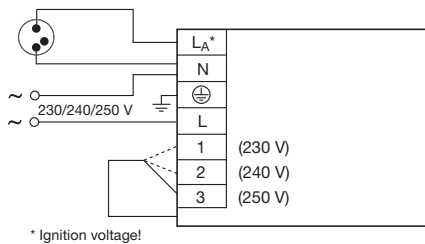
Certified:
EN 60922/923

OM PAK 100 M B533
box of 1
75 pieces/pallet

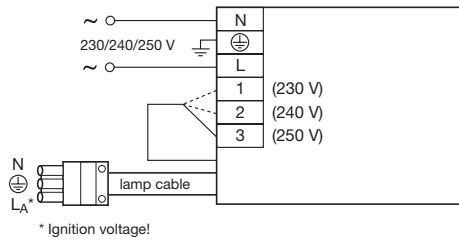
type	article number	voltage V	length L mm	fixing centres D mm	weight kg	ta °C	losses W ①	nominal lamp current A	ignitor ②	line current A	figure	circuit diagram
OM PAK 100 M B133 230/240 V 50 Hz	22115623	230/240	260	243,5	2,3	55	16,6	1,2	ZRM 2,5-ES/D	0,54	1	A
OM PAK 100 M B113 230/240 V 50 Hz	22115617	230/240	260	243,5	2,3	55	16,6	1,2	ZRM 1,8-ES/B	0,54	1	A
OM PAK 100 M B533 230–250 V 50 Hz	22116543	230/240/250	260	243,5	2,3	55	16,6	1,2	ZRM 2,5-ES/D	0,54	2	B

① mean value measured at 25°C tc point temperature and 240 V or 250 V main supply

② included in the gear box



A) OM PAK



B) OM PAK with lamp cable



150 W High pressure sodium lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 193	page 192	page 228	
BLV	NAH-T 150	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	HST-DE 150	Fc 2	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	HST-DE 150	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
GE	LU 150	E 40, E 27	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	TCF 150	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
Iwasaki	NH 150 F/HV/I	E 40	1,8	–	2x ECIS 1/2 150; OMBIS 150	–	–
	NHT 150 /I	E 40	1,8	–	2x ECIS 1/2 150; OMBIS 150	–	–
	NH 150... (100 V/1,8 A)	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	NHT 150... (100 V/1,8 A)	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	NHT 150 SDX	E 27	1,8	ZRM 6-ES/B 200	OMTA T 30 + OMB-SDX 150 **	–	–
Osram	NAV E 150	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	NAV T 150	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	NAV TS 150...	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
Philips	SON...150 W	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	SON-T...150 W	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
Radium	RNP-E 150...	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	RNT-T 150...	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	RNT-TS	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
Sylvania	SHP-S 150 W...	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	SHP-T 150 W...	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*
	SHP-TS 150 W...	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D; ZRM 4,5-ES/B	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	*

* in preparation

** data sheet for control gear available on request



ECIS / OMBIS / OMBS 150 W

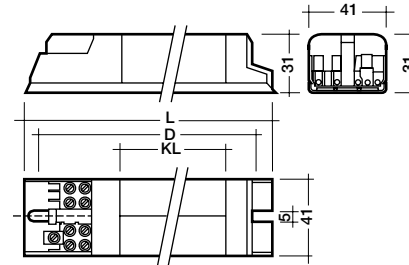


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
ECIS	1	15	630
OMBIS	2	10	480
OMBIS	3	10	240

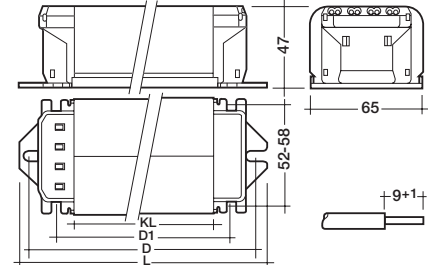
Certified:
EN 60922/923

figure 1



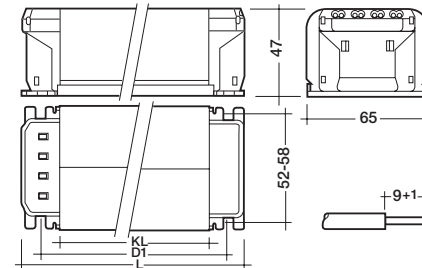
screw terminal 0,75–1,5 mm²

figure 2



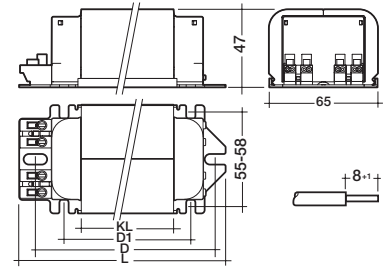
push terminal 0,75–2,5 mm²

figure 3



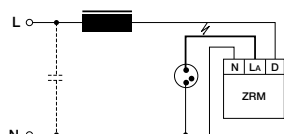
push terminal 0,75–2,5 mm²

figure 4

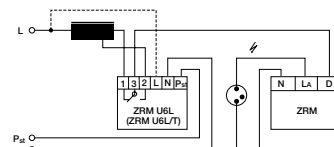


push terminal 0,5–1,5 mm²

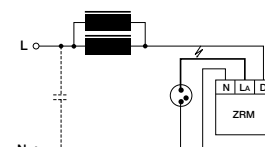
type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
ECIS 150 1/2 C140 230–250 V 50 Hz TP	20566329	230/240/250	yes	1	1	215	140	194–208	–	1,3	65	25,0	0,43	B
OMBIS 150 A103W 230–250 V 50 Hz	20568879	230/240/250	yes	2	2	137	75	120–129	95,5	1,9	85	19,5	0,42	B
OMBIS 150 A153W 230–250 V 50 Hz	20880440	230/240/250	yes	3	2	111	75	–	95,5	1,9	85	19,5	0,42	B
OMBIS 150 A604W 220–240 V 50 Hz	22148606	220/230/240	yes	4	2	143	75	120–129	95,5	1,9	85	19,5	0,42	A
chokes with reduced temperature rise														
OMBIS 150 B103W 230–250 V 50 Hz	20568863	230/240/250	yes	2	2	147	85	130–139	105,5	2,0	70	18,3	0,41	B
OMBIS 150 B153W 230–250 V 50 Hz	20824469	230/240/250	yes	3	2	121	85	–	105,5	2,0	70	18,3	0,41	B
OMBIS 150 B604W 220–240 V 50 Hz	22148607	220/230/240	yes	4	2	153	85	130–139	105,5	2,0	70	18,3	0,41	A
chokes with power tapping														
OMBS 150/100 A103W 230/240 V 50 Hz	20885094	230/240	yes	2	3	167	105	150–159	125,5	2,4	70/45	21,6/12,2	0,41/0,39	B
OMBS 150/100 A603W 230/240 V 50 Hz	22148608	230/240	yes	4	3	173	105	150–159	125,5	2,4	70/45	21,6/12,2	0,41/0,39	A
chokes with reinforced insulation														
OMBIS 150 B253W 230–250 V 50Hz	20881402	230/240/250	yes	3	2	121	85	–	105,5	2,0	70	18,3	0,41	B
OMBS 150/100 A203W 230/240 V 50 Hz	20885118	230/240	yes	2	3	167	105	150–159	125,5	2,4	70/45	21,6/12,2	0,41/0,39	B
60 Hz chokes														
OMBIS 150 A106W 220–240 V 60 Hz	20571288	220/230/240	yes	2	2	137	75	120–129	95,5	1,9	70	18,4	0,41	B



p.f. correction capacitor: 20,0 $\mu\text{F} \pm 10\%$ 250 V
(16,0 μF at 60 Hz)
p.f. corrected line current: 0,80 A ($\lambda > 0,9$)



power tapping



ECIS 150 1/2 in parallel



Ignitors

Digital safety ignitor and superimposed pulse ignitors

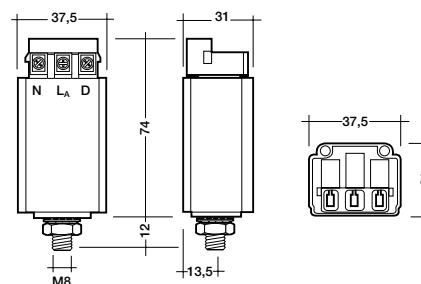



Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926



type		Digital safety ignitors with switch off function	Pulse  Control	Digital safety ignitors with switch off function	Superimposed pulse ignitor	
		ZRM 2,5-ES/D		ZRM 1,8-ES/TC	ZRM 1,8-ES/B	ZRM 4,5-ES/B *
article number		22082249		22087822	20571565	22082554
line voltage	V	198–264		198–264	198–264	198–264
mains frequency	Hz	50 oder 60		50–60	50–60	50–60
ignition voltage	kVs	4,0–5,0		4,0–5,0	4,0–5,0	4,0–5,0
max. permissible lamp current IB	A	3,0		1,8	2,0	4,6
ignition current	mA	–		~ 120	120	120
wattage HS	W	100–250		100–150 **	100–150	100–400
wattage HI	W	35–250		35–150	35–150	35–400
temperature rise at IB = 1,0 A (70 W)	K	2,8		~ 8,0	~ 5,0	1,0
IB = 1,8 A (150 W)	K	7,1		~ 19,0	~ 20,0	5,0
IB = 3,0 A (250 W)	K	19,8		–	–	14,0
IB = 4,6 A (400 W)	K	–		–	–	27,0
losses at IB = 1,0 A (70 W)	W	0,200		~ 0,7	~ 0,5	0,1
IB = 1,8 A (150 W)	W	0,676		~ 1,7	~ 1,5	0,5
IB = 3,0 A (250 W)	W	2,016		–	–	1,0
IB = 4,6 A (400 W)	W	–		–	–	2,5
impulse width at UZ min. -10%	µs	2,4		≥ 1	–	–
impulse width at 2 700 V	µs	–		–	~ 1,0	~ 1,0
number of impulses per halfwave		4–10		3	3	3
distance between impulses	ms	< 0,3		< 0,3	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90		60–90	60–90	60–90
		240–270		240–270	240–270	240–270
switch on voltage	V	< 198		–	–	–
switch off/on voltage	V	–		185–198	185–198	185–198
switch off of ignition		digital		digital	–	–
maximum load capacitance	pF	20–100		20–350	20–100	20–200
maximum distance from lamp	m	1,5		4	1,5	1,5
maximum housing temperature tc	°C	105		105	105	105
minimum operating temperature	°C	-30		-30	-30	-30
weight	kg	0,11		0,11	0,13	0,13
re-set function	sec.	> 0,5		> 0,5	–	–

* ignitor recommended for external applications

** released for HST-DE 70 W



OM PAK 150 W 230/240 V, 230–250 V 50 Hz



- temperature protected, low loss choke out of the OM range
- digital safety ignitor *PulseControl* for a reduced strike and re-strike time of the lamp (M B113 and M B513 with standard ignitor)
- digital controlled switch off function of defect lamps (M B113 and M B513 with standard ignitor)
- exceptional low noise operation
- useable also with high ambient temperatures (ta)
- marked with F-mark for mounting on normal flammable materials
- tool free connection of cables
- voltage adapting for 230 V, 240 V and 250 V supply
- various fixing possibilities

figure 1

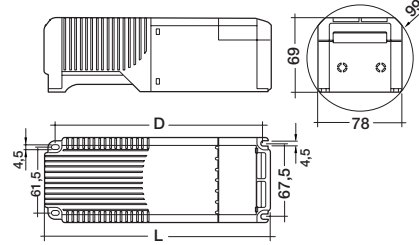
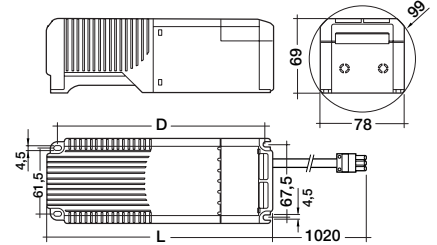


figure 2



OM PAK 100 M B533 and M B513 (cable version)

- halogen free 3 core lamp lead
- total lead length including socket 1 200 mm/1 020 mm exterior
- with pre-assembled ST-18 socket

Packaging:
OM PAK 150 M B133
OM PAK 150 M B113
box of 1
108 pieces/pallet

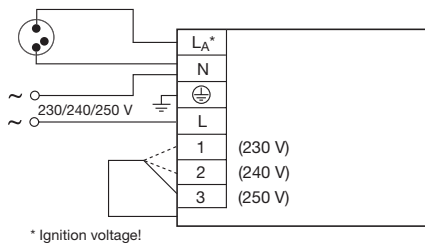
Certified:
EN 60922/923

OM PAK 150 M B533
OM PAK 150 M B513
box of 1
108 pieces/pallet

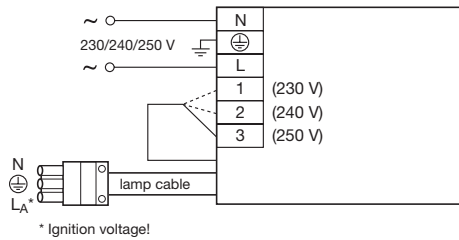
type	article number	voltage V	length L mm	fixing centres D mm	weight kg	ta °C	losses W ①	nominal lamp current A	ignitor ②	line current A	figure	circuit diagram
OM PAK 150 M B133 230/240 V 50 Hz	22115645	230/240	260	243,5	3,0	50	24,0	1,8	ZRM 2,5-ES/D	0,76	1	A
OM PAK 150 M B113 230/240 V 50 Hz	22115639	230/240	260	243,5	3,0	50	24,0	1,8	ZRM 1,8-ES/B	0,76	1	A
OM PAK 150 M B533 230–250 V 50 Hz	22116559	230/240/250	260	243,5	3,0	50	23,2	1,8	ZRM 2,5-ES/D	0,76	2	B
OM PAK 150 M B513 230–250 V 50 Hz	22116562	230/240/250	260	243,5	3,0	50	23,2	1,8	ZRM 1,8-ES/B	0,76	2	B

① mean value measured at 25°C to point temperature and 240 V or 250 V main supply

② included in the gear box



A) OM PAK



B) OM PAK with lamp cable



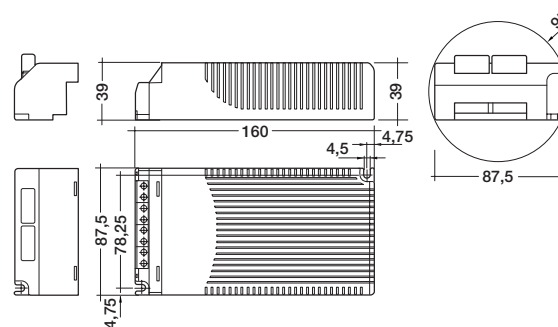
Digital, electronic ballasts High pressure sodium lamps

powerCONTROL PCS 0150 stepDIM



The digital components in powerCONTROL control the power circuit and ignition. powerCONTROL is suitable for high pressure sodium lamps with ignition voltage of 1,8–2,5 kV. The basic circuit elements are patented

- dimmable to 50 % of maximum light output in two steps (50 % / 100 %)
- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switches off when the lamp is missing or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 2 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals for 2,5 mm² or 2x1,5 mm²
- can be used in movable lamps with plugs (discharge voltage < 34 V after 1 s)
- accessories are terminal cover and strain relief: **ZE 002** article number 86448230



Packaging:

box of 10
60 boxes/pallet
600 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCS 0150 A001 stepDIM
article number		86457094
lamp wattage	W	in preparation
circuit wattage at ta = 25 °C	W	
mains voltage	V	
AC voltage range	V	
DC voltage range	V	
current	A	
mains frequency	Hz	
power factor	λ	
operation frequency	Hz	
ignition voltage	kV	
max. distance from lamp	m	
max. ambient temperature ta	°C	
min. ambient temperature ta	°C	
max. housing temperature tc	°C	
fixing centres – length	mm	150–153
fixing centres – width	mm	77–80
dimensions length x width x height	mm	160x87,5x39
weight	g	560



250 W High pressure sodium lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 198	page 197		
BLV	NAH-T 250	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC ; ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	HST-DE 250	Fc 2	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	HST-DE 250	Rx7s	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
GE	LU 250.../40	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	LU 250/TD	Rx7s	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
Iwasaki	NHT 250/I	E 40	3,0	–	OMBIS 250; OGLIS 250	–	–
	NH 250 F/I	E 40	3,0	–	OMBIS 250; OGLIS 250	–	–
	NH 250...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	NHT 250 ...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
Osram	NAV E 250...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	NAV T 250...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	NAV TS 250 ...	Fc 2	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
Philips	SON...250 W	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	SON-T 250 W	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
Radium	RNP-E 250...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	RNP-T 250...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
Sylvania	SHP 250 W...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	SHP-T 250 W...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	SHP-TS 250 W...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	SHP-S 250 W...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–
	SHP 250 W...	E 40	3,0	ZRM 2,5-ES/B; ZRM 2,5-ES/D; ZRM 2,5-ES/TC , ZRM 4,5-ES/B *	OMBIS 250; OGLIS 250	–	–

* igniters recommended for external applications



Magnetic chokes
High pressure sodium lamps

OMBIS / OFLIS / OGLIS 250 W

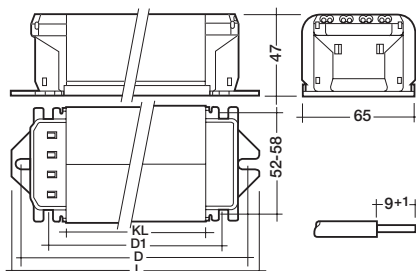


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OMBIS	2	10	480
OMBIS	7	10	240
OMBIS	1	6	240
OFLIS	3	6	240
OGLIS	4	6	216
OGLIS	6	4	144
OGLIS	5	2	84

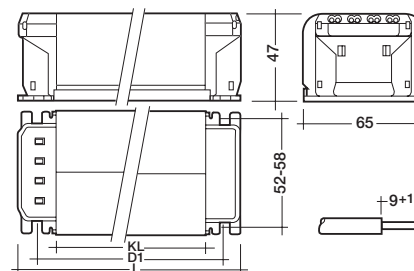
Certified:
EN 60922/923

figure 1



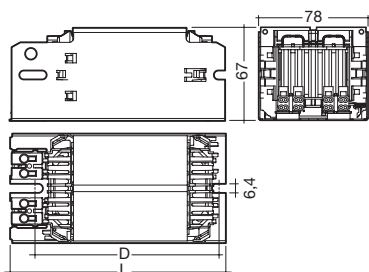
push terminal 0,75–2,5 mm²

figure 2



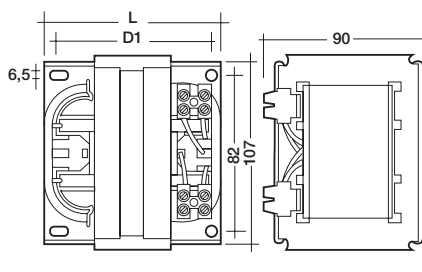
push terminal 0,75–2,5 mm²

figure 3



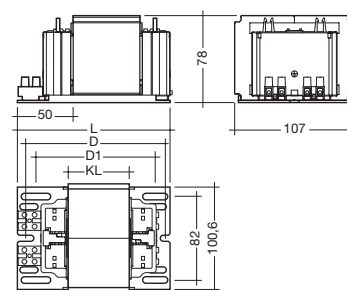
screw terminal 0,5–2,5 mm²

figure 4



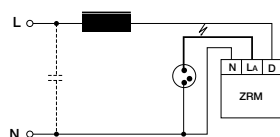
screw terminal 1,5–4 mm²

figure 5



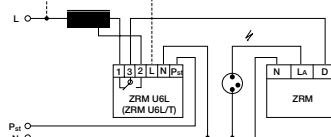
push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OMBIS 250 A103W 230–250 V 50 Hz	20570248	230/240/250	yes	1	1	212	150	195–204	170,5	3,5	75	34,2	0,40	B
OMBIS 250 A153W 230–250 V 50 Hz	20824891	230/240/250	yes	2	1	186	150	–	170,5	3,5	75	34,2	0,40	B
chokes with reduced temperature rise														
OMBIS 250 1/2 B103W 230–250 V 50 Hz *	20575656	230/240/250	yes	1	2	147	85	130–139	105,5	2,0	70	18,3	0,40	B
OFLIS 250 A504W 220–240 V 50 Hz	22158563	220/230/240	yes	3	3	152	80	122–146	–	3,1	70	27,6	0,39	B
OGLIS 250W 40 230–250 V 50 Hz TP	20562752	230/240/250	yes	4	4	94	40	–	80	3,1	70	25,5	0,39	A
OGLIS 250 C044W 220–240 V 50 Hz	89121836	220/230/240	yes	5	5	130	40	110,5–124	76,5–118	3,1	70	25,5	0,39	B
chokes with power tapping														
OGLS 250/150W 60 230–240 V 50 Hz	20574315	230/240	–	4	6	114	60	–	100	4,5	65/45	19,1	0,37/0,41	B
OGLS 250/150 C043W 230/240 V 50 Hz	89121864	230/240	yes	5	5	150	60	130,5–144	96,5–138	4,5	65/45	19,1	0,37/0,41	B
chokes with reinforced insulation														
OMBIS 250 A203W 230–250 V 50 Hz	20889659	230/240/250	yes	1	1	212	150	190–204	170,5	3,5	75	34,2	0,40	B
OGLIS 250 C203W 230–250 V 50 Hz	20886993	230/240/250	yes	4	4	94	40	–	80	3,1	70	25,5	0,39	B
60 Hz chokes														
OMBIS 250 A106W 220–240 V 60 Hz	20574693	220/230/240	yes	1	7	182	120	165–174	140,5	2,7	75	33,8	0,39	B

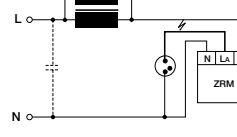


p.f. correction capacitor: 32,0 $\mu\text{F} \pm 10\%$ 250 V
(25,0 μF at 60 Hz)

p.f. corrected line current: 1,35 A ($\lambda > 0,9$)



power tapping



* two chokes in parallel are required to operate a 250 W lamp



Digital safety ignitors and superimposed pulse ignitors

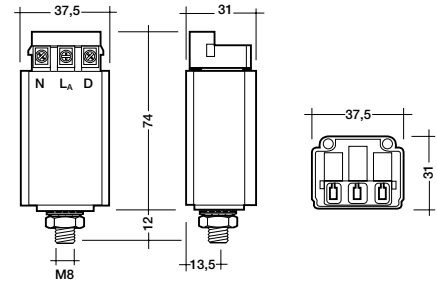



Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926



type		Digital safety ignitors with switch off function	Pulse  Control	Digital safety ignitors with switch off function	Superimposed pulse ignitors	
		ZRM 2,5-ES/D		ZRM 2,5-ES/TC	ZRM 1,8-ES/B	ZRM 4,5-ES/B *
article number		22082249		22087844	20571565	22082554
line voltage	V	198–264		198–264	198–264	198–264
mains frequency	Hz	50 oder 60		50–60	50–60	50–60
ignition voltage	kVs	4,0–5,0		4,0–5,0	4,0–5,0	4,0–5,0
max. permissible lamp current IB	A	3,0		3,0	2,0	4,6
ignition current	mA	–		~ 120	120	120
wattage HS	W	100–250		100–250 **	100–150	100–400
wattage HI	W	35–250		35–250	35–150	35–400
temperature rise at IB = 1,0 A (70 W)	K	2,8		~ 6,0	~ 5,0	1,0
IB = 1,8 A (150 W)	K	7,1		~ 11,0	~ 20,0	5,0
IB = 3,0 A (250 W)	K	19,8		~ 26,0	–	14,0
IB = 4,6 A (400 W)	K	–		–	–	27,0
losses at IB = 1,0 A (70 W)	W	0,200		~ 0,6	~ 0,5	0,1
IB = 1,8 A (150 W)	W	0,676		~ 1,1	~ 1,5	0,5
IB = 3,0 A (250 W)	W	2,016		~ 2,6	–	1,0
IB = 4,6 A (400 W)	W	–		–	–	2,5
impulse width at UZ min. -10%	µs	2,4		≥ 1	–	–
impulse width at 2 700 V	µs	–		–	~ 1,0	~ 1,0
number of impulses per halfwave		4–10		3	3	3
distance between impulses	ms	< 0,3		< 0,3	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90		60–90	60–90	60–90
		240–270		240–270	240–270	240–270
switch on voltage	V	< 198		–	–	–
switch off/on voltage	V	–		185–198	185–198	185–198
switch off of ignition		digital		digital	–	–
maximum load capacitance	pF	20–100		20–100	20–100	20–200
maximum distance from lamp	m	1,5		1,5	1,5	1,5
maximum housing temperature tc	°C	105		105	105	105
minimum operating temperature	°C	-30		-30	-30	-30
weight	kg	0,11		0,11	0,13	0,13
re-set function	sec.	> 0,5		> 0,5	–	–

* ignitor recommended for external applications

** released for HST-DE 70 W



400 W High pressure sodium lamps

Lamps		lamp holder	nominal current A	Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description			page 201	page 200		
BLV	NAH-T 400	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	HST-DE 400	Fc 2	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	HST-DE 400	Rx7s	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
GE	LU 400.../40	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	LU 400.../TD	Rx7s	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
Iwasaki	NH 400 F/I	E 40	4,6	–	OGLS 400	–	–
	NHT 400/I	E 40	4,6	–	OGLS 400	–	–
	NH 400...	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	NHT 400...	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
Osram	NAV E 400...	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	NAV T 400...	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	NAV TS 400...	Fc 2	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
Philips	SON...400 W	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	SON-T...400 W	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
Radium	RNP-E 400 W	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	RNP-T 400 W	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
Sylvania	SHP 400 W...	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	SHP-T 400 W...	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–
	SHP-TS 400 W...	E 40	4,6	ZRM 4,5-ES/B *; ZRM 6-ES/B; ZRM 6-ES/TC ; ZRM 8-ES/D	OGLS 400	–	–

* igniters recommended for external applications



OGLS 400 W

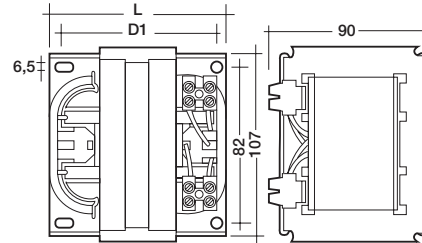


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OGLS	1	4	144
OGLS	3	3	108
OGLS	2	2	84
OGLS	4	1	84

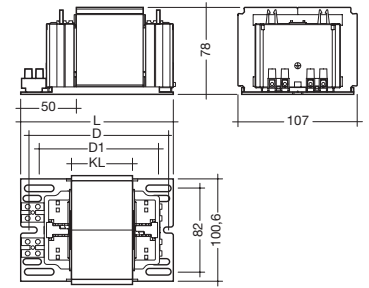
Certified:
EN 60922/923

figure 1



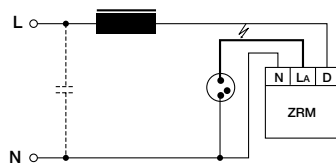
screw terminal 1,5–4 mm²

figure 2

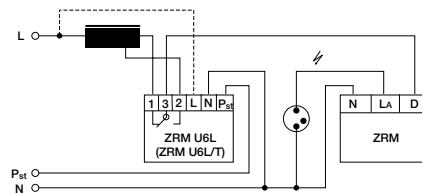


screw terminal 1,5–4 mm²

type	article number	voltage	thermal protection	fig.	pack-aging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OGLS 400W 60 220–240 V 50 Hz TP	20820138	220/230/240	yes	1	1	114	60	–	100	4,2	75	34	0,37	B
OGLS 400 C044W 220–240 V 50 Hz	89121840	220/230/240	yes	2	2	150	60	96,5–138	130,5–144	4,2	75	34	0,4	A
chokes with power tapping														
OGLS 400/250W 80 230–240 V 50 Hz	20574321	230/240	–	1	3	134	80	–	120	5,4	65/45	31,9/19,1	0,38/0,36	B
OGLS 400/250W C043W 230–240 V 50 Hz	89121865	230/240	yes	2	4	170	80	116,5–158	150,5–164	5,4	65/45	31,9/19,1	0,38/0,36	B
chokes with reinforced insulation														
OGLS 400 C203W 230–250 V 50 Hz	20887007	230/240/250	yes	1	1	114	60	–	100	4,2	75	34	0,37	B
60 Hz chokes														
OGLS 400W 60 220–240 V 60 Hz	20565518	220/230/240	–	1	1	114	60	–	100	4,2	60	30,4	0,42	B



p.f. correction capacitor: 45,0 $\mu\text{F} \pm 10\%$ 250 V
(40,0 μF at 60 Hz)
p.f. corrected line current: 2,10 A ($\lambda > 0,9$)



power tapping



Ignitors

Digital safety ignitors and superimposed pulse ignitors



Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926

figure 1

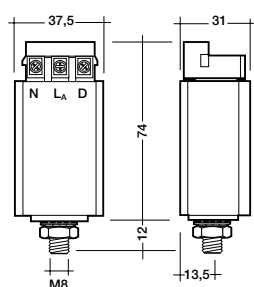
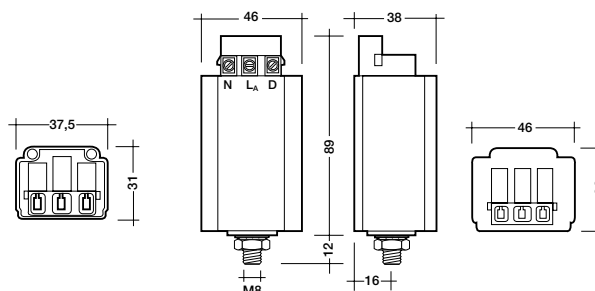


figure 2



type		Digital safety ignitors with switch off function		Superimposed pulse ignitors	
		ZRM 8-ES/D	ZRM 6-ES/TC	ZRM 4,5-ES/B *	ZRM 6-ES/B
article number		22082255	22087863	22082554	20298765
line voltage	V	198–264	198–264	198–264	198–264
mains frequency	Hz	50 oder 60	50–60	50–60	50–60
ignition voltage	kVs	4,0–5,0	4,0–5,0	4,0–5,0	4,0–5,0
max. permissible lamp current I _B	A	6,2	4,6	4,6	5,0
ignition current	mA	–	~ 120	120	120
wattage HS	W	100–600	100–400 **	100–400	100–400
wattage HI	W	35–400	35–400	35–400	35–400
temperature rise at I _B = 1,0 A (70 W)	K	–	~ 4	1,0	~ 1,0
I _B = 1,8 A (150 W)	K	3,7	~ 7	5,0	~ 4,0
I _B = 3,0 A (250 W)	K	9,6	~ 14	14,0	~ 11,0
I _B = 4,6 A (400 W)	K	21,1	~ 28	27,0	~ 21,0
I _B = 6,2 A (600 W)	K	37,8	–	–	–
losses at I _B = 1,0 A (70 W)	W	0,102	~ 0,5	0,1	~ 0,1
I _B = 1,8 A (150 W)	W	0,330	~ 0,8	0,5	~ 0,5
I _B = 3,0 A (250 W)	W	1,000	~ 1,2	1,0	~ 1,0
I _B = 4,6 A (400 W)	W	–	~ 3,4	2,5	~ 2,5
I _B = 6,2 A (600 W)	W	4,700	–	–	–
impulse width at U _Z min. -10%	µs	3,0	≥ 1	–	–
impulse width at 2 700 V	µs	–	–	~ 1,0	~ 1,0
number of impulses per halfwave		4–10	3	3	3
distance between impulses	ms	< 0,3	< 0,3	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90 240–270	60–90 240–270	60–90 240–270	60–90 240–270
switch on voltage	V	< 198	–	–	–
switch off/on voltage	V	–	185–198	185–198	185–198
switch off of ignition		digital	digital	–	–
maximum load capacitance	pF	20–100	20–100	20–100	20–100
maximum distance from lamp	m	1,5	1,5	1,5	1,5
maximum housing temperature t _c	°C	105	105	105	105
minimum operating temperature	°C	-30	-30	-30	-30
weight	kg	0,26	0,26	0,13	0,26
re-set function	sec.	> 0,5	> 0,5	–	–
figure		2	2	1	2

* ignitor recommended for external applications

** released for HST-DE 70 W



600 W High pressure sodium lamps

Lamps				Ignitors page 204	Magnetic chokes page 203	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A				
BLV	NAH-T 600	E 40	6,2	ZRM 8-ES/B; ZRM 8-ES/D	OGLS 600	–	–
GE	LU 600.../40	E 40	6,2	ZRM 8-ES/B; ZRM 8-ES/D	OGLS 600	–	–
Osram	NAV-T 600	E 40	6,2	ZRM 8-ES/B; ZRM 8-ES/D	OGLS 600	–	–
Philips	SON-T 600 W Plus	E 40	6,2	ZRM 8-ES/B; ZRM 8-ES/D	OGLS 600	–	–
Radium	RNP-T 600 W	E 40	6,2	ZRM 8-ES/B; ZRM 8-ES/D	OGLS 600	–	–
Sylvania	SHP-TS 600 W	E 40	6,2	ZRM 8-ES/B; ZRM 8-ES/D	OGLS 600	–	–



Magnetic chokes
High pressure sodium lamps

OGLS 600 W

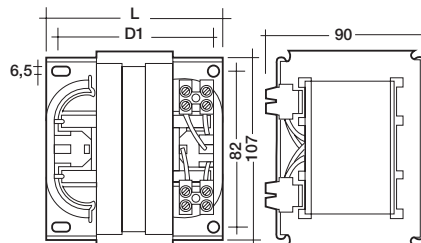


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OGLS	1	3	108
OGLS	2	1	84

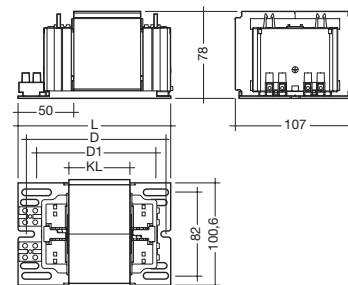
Certified:
EN 60922/923

figure 1



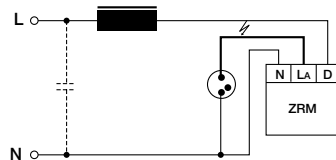
screw terminal 1,5–4 mm²

figure 2



push terminal 1,5–4 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OGLS 600 B044W 220–240V 50Hz	89121969	220/230/240	yes	2	2	180	90	160,5–174	126,5–168	6,2	80/70	37,0	0,44/0,47	A
chokes with reduced temperature rise														
OGLS 600W 100 220–240 V 50 Hz TP	20882197	220/230/240	yes	1	1	154	100	–	140	6,7	65	35,0	0,43	B
OGLS 600W C044W 220–240 V 50 Hz	89121842	220/230/240	yes	2	2	190	100	170,5–184	136,5–178	6,7	65	35,0	0,43	B
chokes with reinforced insulation														
OGLS 600 C203W 230–250 V 50 Hz	20887115	230/240/250	yes	1	1	154	100	–	140	6,7	65	35,0	0,43	B
60 Hz chokes														
OGLS 600W 80 220–240 V 60 Hz	20821091	220/230/240	–	1	1	134	80	–	120	5,4	60	34,3	0,42	B



p.f. correction capacitor: 60,0 $\mu\text{F} \pm 10\%$ 250 V
(60,0 μF at 60 Hz)

p.f. corrected line current: 3,10 A ($\lambda > 0,9$)



Digital safety ignitors and superimposed pulse ignitors

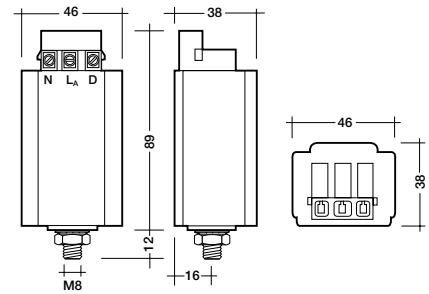


Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926

Digital safety ignitors
with switch off function

Superimposed pulse ignitors

type		ZRM 8-ES/D	ZRM 8-ES/B
article number		22082255	20573584
line voltage	V	198–264	198–264
mains frequency	Hz	50 or 60	50–60
ignition voltage	kVs	4,0–5,0	4,0–5,0
max. permissible lamp current IB	A	6,2	6,2
ignition current	mA	–	~ 100
wattage HS	W	100–600	600
wattage HI	W	35–400	–
temperature rise at IB = 1,8 A (150 W)	K	3,7	–
IB = 3,0 A (250 W)	K	9,6	–
IB = 4,6 A (400 W)	K	21,1	–
IB = 6,2 A (600 W)	K	37,8	~ 39
losses at IB = 1,0 A (70 W)	W	0,102	–
IB = 1,8 A (150 W)	W	0,330	–
IB = 3,0 A (250 W)	W	1,000	–
IB = 4,6 A (400 W)	W	2,500	–
IB = 6,2 A (600 W)	W	4,700	~ 4,7
impulse width at UZ min. -10%	µs	3,0	–
impulse width at 2 700 V	µs	–	~ 1,0
number of impulses per halfwave		4–10	3
distance between impulses	ms	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90	60–90
		240–270	240–270
switch on voltage	V	< 198	–
switch off/on voltage	V	–	185–198
switch off of ignition		digital	–
maximum load capacitance	pF	20–100	20–50
maximum distance from lamp	m	1,5	0,8
maximum housing temperature tc	°C	105	105
minimum operating temperature	°C	-30	-30
weight	kg	0,26	0,27
re-set function	sec.	> 0,5	–



1 000 W High pressure sodium lamps

Lamps				Ignitors	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 207	page 206		
GE	LU 1 000...	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
Iwasaki	NHT 1 000 I	E 40	10,3	–	OGLIS 1000	–	–
	NHT 1 000 F/I	E 40	10,3	–	OGLIS 1000	–	–
	NH 1 000	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
	NHT 1 000	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
Osram	NAV E 1 000	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
	NAV T 1 000	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
Philips	SON 1 000 W	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
Radium	RNP-E 1 000 W	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
	RNP-T 1 000 W	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
Sylvania	SHP-T 1 000 W...	E 40	10,3	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–



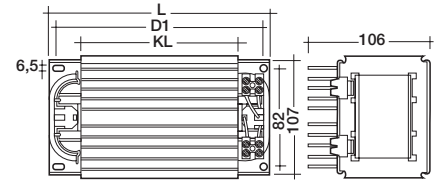
OGLIS 1 000 W



- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

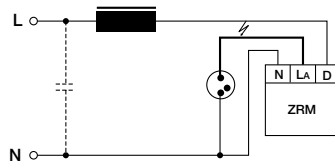
Packaging:	Code	Box	Pallet
OGLIS	1	2	72

Certified:
EN 60922/923



push terminal 1,0–6 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OGLIS 1000 C024W 220–240 V 50 Hz	22148490	220/230/240	yes	–	1	194	140	–	180	9,0	75	72	0,45	A
chokes with reinforced insulation														
OGLIS 1000 C203W 230–250 V 50 Hz	20887571	230/240/250	yes	–	1	234	180	–	220	11,6	75	54	0,43	B
60 Hz chokes														
OGLIS 1000W 140 220–240 V 60 Hz	20880891	220/230/240	–	–	1	194	140	–	180	9,0	70	70	0,43	B



p.f. correction capacitor: 100,0 $\mu\text{F} \pm 10\%$ 250 V
(80,0 μF at 60 Hz)
p.f. corrected line current: 5,10 A ($\lambda > 0,9$)



Ignitors

Digital safety ignitors and superimposed pulse ignitors



Packaging:

ZRM 12-ES/D

box of 50
1 200 pieces/pallet

ZRM 12 B001

box of 20
960 pieces/pallet

Certified:

EN 60926
EN 60927

figure 1

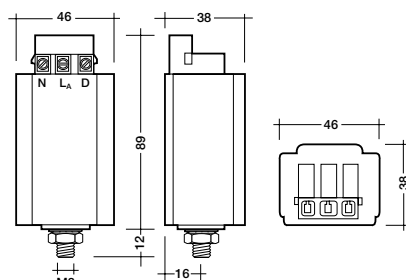
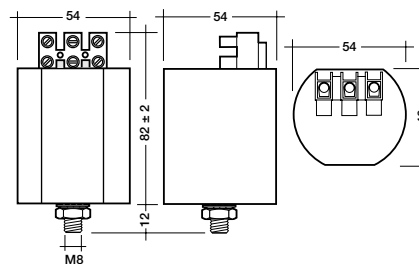


figure 2

Digital safety ignitors
with switch off function

Superimposed pulse ignitors

type		ZRM 12-ES/D	ZRM 12 B001
article number		22082268	24031920
line voltage	V	198–264	198–264
mains frequency	Hz	50 or 60	50–60
ignition voltage	kVs	4,0–5,0	3,0–5,0
max. permissible lamp current IB	A	10,3	12,0
ignition current	mA	–	120
wattage HS	W	100–1 000	600–1 000
wattage HI	W	35–1 000	1 000
temperature rise at			
IB = 1,8 A (150 W)	K	1,5	–
IB = 3,0 A (250 W)	K	3,8	–
IB = 4,6 A (400 W)	K	8,0	–
IB = 6,2 A (600 W)	K	13,7	~ 14,0
IB = 9,5 A (1 000 W)	K	31,4	~ 32,0
IB = 10,3 A (1 000 W)	K	35,4	~ 40,0
losses at			
IB = 1,8 A (150 W)	W	0,150	–
IB = 3,0 A (250 W)	W	0,404	–
IB = 4,6 A (400 W)	W	0,970	–
IB = 6,2 A (600 W)	W	1,820	~ 2,1
IB = 9,5 A (1 000 W)	W	4,467	~ 4,7
IB = 10,3 A (1 000 W)	W	5,697	~ 5,9
impulse width at UZ min. -10%	µs	2,6	–
impulse width at 3 000 V	µs	–	> 1,0
number of impulses per halfwave		4–10	2–3
distance between impulses	ms	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90	60–90
		240–270	240–270
switch on voltage	V	< 198	–
switch off/on voltage	V	–	185–198
switch off of ignition		digital	–
maximum load capacitance	pF	20–100	20–200
maximum distance from lamp	m	1,5	4
maximum housing temperature tc	°C	105	100
minimum operating temperature	°C	-30	-30
weight	kg	0,26	0,35
re-set function	sec.	> 0,5	–
figure		1	2



20 W Metal halide lamps

Lamps				Ignitors	Magnetic chokes	Remote gear boxes	Electronic ballasts page 209–210
manufacturer	description	lamp holder	nominal current A				
GE	CMH 20...	G 8.5	0,23	–	–	–	PCI 0020

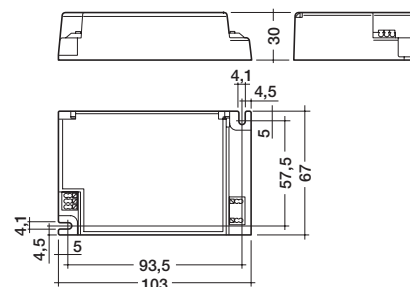


Digital electronic ballasts
Metal halide lamps

powerCONTROL PCI 0020



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **30 %**
- electromagnetic interference during ignition reduced by up to **90 %**
- overtemperature cut off
- polycarbonate one-piece housing, white, IP 20
- spring terminals for 1,5 mm²
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- for building into luminaires



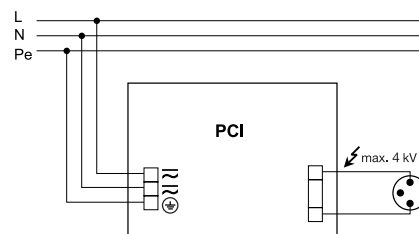
Packaging:

box of 15
50 boxes/pallet
750 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCI 0020 A101
article number		86451963
lamp wattage	W	20
circuit wattage at $t_a = 25^\circ\text{C}$	W	23,8
mains voltage	V	220–240
AC voltage range	V	198–254
DC voltage range	V	153–320
current	A	0,10
mains frequency	Hz	0/50/60
power factor	λ	0,95
operating frequency	Hz	125
ignition voltage	kV	3
max. distance from lamp	m	0,5
max. ambient temperature t_a	$^\circ\text{C}$	60
min. ambient temperature t_a	$^\circ\text{C}$	-25
max. housing temperature t_c	$^\circ\text{C}$	85
weight	g	195

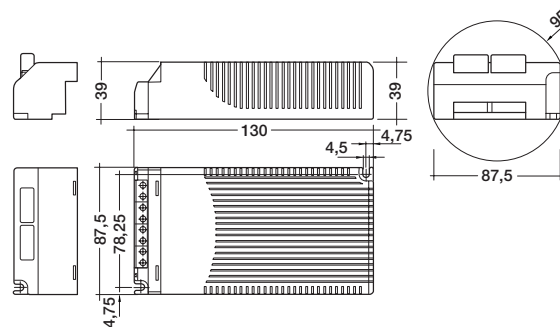




powerCONTROL PCI 0020



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals for 2,5 mm² oder 2x1,5 mm²
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- accessories are terminal cover and strain relief: **ZE 002** article number 86448230

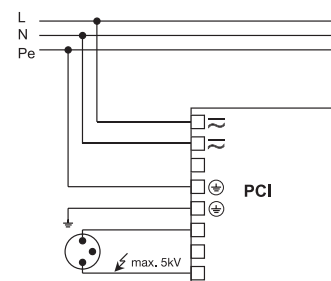
**Packaging:**

box of 10
60 boxes/pallet
600 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCI 0020 A001
article number		86457083
lamp wattage	W	20
circuit wattage at ta = 25°C	W	23,8
mains voltage	V	220–240
AC voltage range	V	198–254
DC voltage range	V	153–320
current	A	0,10
mains frequency	Hz	0/50/60
power factor	λ	0,95
operation frequency	Hz	125
ignition voltage	kV	3
max. distance from lamp	m	0,5
max. ambient temperature ta	°C	60
min. ambient temperature ta	°C	-25
max. housing temperature tc	°C	85
fixing centres – length	mm	120–123
fixing centres – width	mm	77–80
dimensions length x width x height	mm	130x87,5x39
weight	g	195





35 W Metal halide lamps

Lamps				Ignitors	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 213	page 212	page 214	page 215–217
Osram	HCI-T 35...	G 12	0,53	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	ECIS 35; OMBIS 35	OM PAK 35	PCI 0035
Philips	CDM-R 35 W	E 27	0,53	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	ECIS 35; OMBIS 35	OM PAK 35	PCI 0035
	CDM-T 35 W	G 12	0,53	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	ECIS 35; OMBIS 35	OM PAK 35	PCI 0035
	CDM-TC 35 W	G8,5	0,53	–	–	–	PCI 0035
Radium	RCI-T 35	G 12	0,53	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	ECIS 35; OMBIS 35	OM PAK 35	PCI 0035
Venture	HIE 35/x/x	E 27	0,53	ZRM 2,5-ES/D	ECIS 35; OMBIS 35	OM PAK 35	PCI 0035
GE	CMH 35/T	G12	0,5	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	ECIS 35; OMBIS 35	OM PAK 35	PCI 0035
	CMH 35/TC	G8,5	0,5	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	ECIS 35; OMBIS 35	OM PAK 35	PCI 0035
	CMH 35/PAR	E27	0,5	ZRM 2,5-ES/D	ECIS 35; OMBIS 35	OM PAK 35	PCI 0035



ECIS / OMBIS 35 W

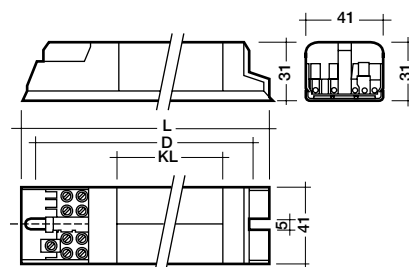


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
ECIS	1	15	630
OMBIS	2	10	480

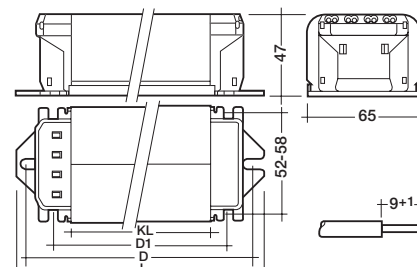
Certified:
EN 60922/923

figure 1



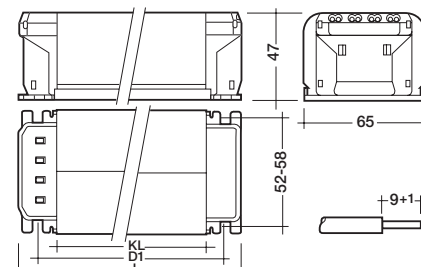
screw terminal 0,75–1,5 mm²

figure 2



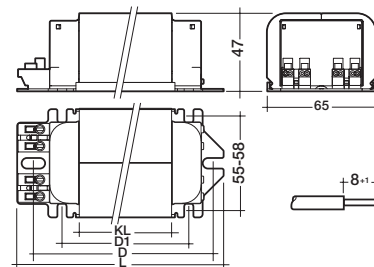
push terminal 0,75–2,5 mm²

figure 3



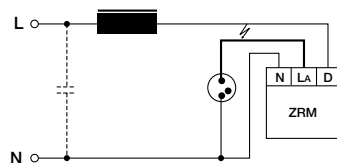
push terminal 0,75–2,5 mm²

figure 4



push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
ECIS 35 C90 230–250 V 50 Hz TP	20566187	230/240/250	yes	1	1	165	90	144–158	–	0,85	55	12,0	0,40	B
OMBIS 35 B103W 230–250 V 50 Hz	20569782	230/240/250	yes	2	2	97	35	80–89	55,5	0,9	50	7,5	0,36	B
OMBIS 35 B153W 230–250 V 50 Hz	20824173	230/240/250	yes	3	2	71	35	–	55,5	0,9	50	7,5	0,36	B
OMBIS 35 A604W 220–240 V 50 Hz	22148862	220/230/240	yes	4	2	98	30	75-84	50,5	0,85	60	7,7	0,34	A
chokes with reinforced insulation														
OMBIS 35 A203W 230–250 V 50 Hz	22115664	230/240/250	yes	2	2	92	30	75–84	50,5	0,80	60	8,0	0,37	B
60 Hz chokes														
OMBIS 35 A156W 220–240 V 60 Hz	20880630	220/230/240	yes	3	2	66	30	–	50,5	0,80	45	7,1	0,34	B



p.f. correction capacitor: 6,0 $\mu\text{F} \pm 10\%$ 250 V
(5,0 μF at 60 Hz)
p.f. corrected line current: 0,22 A ($\lambda > 0,9$)



Digital safety ignitors and superimposed pulse ignitors



Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926

figure 1

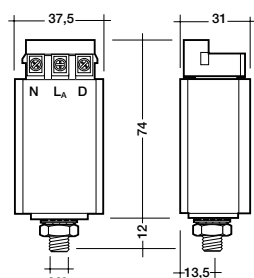
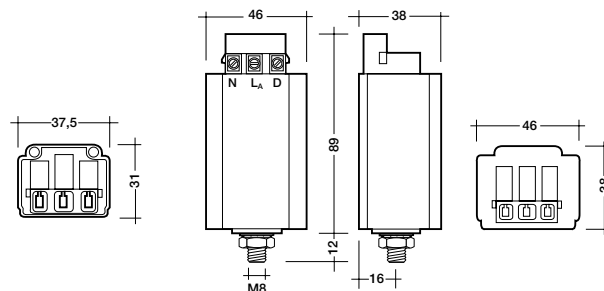


figure 2



type		Digital safety ignitors with switch off function	Pulse Control	Digital safety ignitors with switch off function	Superimposed pulse ignitors
		ZRM 2,5-ES/D		ZRM 1,8-ES/TC	ZRM 1,8-ES/B
article number		22082249		22087822	20571565
line voltage	V	198–264		198–264	198–264
mains frequency	Hz	50 oder 60		50–60	50–60
ignition voltage	kVs	4,0–5,0		4,0–5,0	4,0–5,0
max. permissible lamp current IB	A	3,0		1,8	2,0
ignition current	mA	–		~ 120	120
wattage HS	W	100–250		100–150 *	100–150
wattage HI	W	35–250		35–150	35–150
temperature rise at IB = 1,0 A (70 W)	K	2,8		~ 8,0	~ 5,0
IB = 1,1 A (100 W)	K	–		~ 19,0	–
IB = 1,8 A (150 W)	K	7,1		–	~ 20,0
IB = 3,0 A (250 W)	K	19,8		–	–
losses at IB = 1,0 A (70 W)	W	0,200		~ 0,7	~ 0,5
IB = 1,1 A (100 W)	W	–		~ 1,7	–
IB = 1,8 A (150 W)	W	0,676		–	~ 1,5
IB = 3,0 A (250 W)	W	2,016		–	–
impulse width at UZ min. -10%	µs	2,4		≥ 1	–
impulse width at 2 700 V	µs	–		–	~ 1,0
number of impulses per halfwave		4–10		3	3
distance between impulses	ms	< 0,3		< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90		60–90	60–90
		240–270		240–270	240–270
switch on voltage	V	< 198		–	–
switch off/on voltage	V	–		185–198	185–198
switch off of ignition		digital		digital	–
maximum load capacitance	pF	20–100		20–100	20–100
maximum distance from lamp	m	1,5		1,5	1,5
maximum housing temperature tc	°C	105		105	105
minimum operating temperature	°C	-30		-30	-30
weight	kg	0,11		0,11	0,13
re-set function	sec.	> 0,5		> 0,5	–

* released for HST-DE 70 W



OM PAK 35 W 230/240 V, 230–250 V 50 Hz



- temperature protected, low loss choke out of the OM range
- digital safety ignitor *PulseControl* for a reduced strike and re-strike time of the lamp (M B113 and M B513 with standard ignitor)
- digital controlled switch off function of defect lamps (M B113 and M B513 with standard ignitor)
- exceptional low noise operation
- useable also with high ambient temperatures (ta)
- marked with F-mark for mounting on normal flammable materials
- tool free connection of cables
- voltage adapting for 230 V, 240 V and 250 V supply
- various fixing possibilities

figure 1

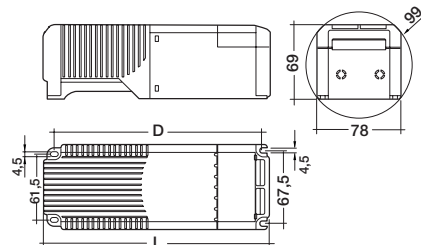
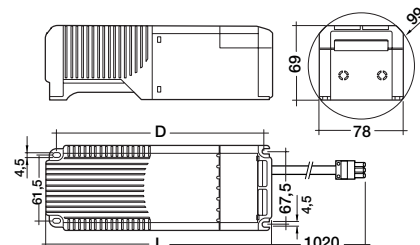


figure 2



OM PAK 100 M B533 and M B513 (cable version)

- halogen free 3 core lamp lead
- total lead length including socket 1 200 mm/1 020 mm exterior
- with pre-assembled ST-18 socket

Packaging:
OM PAK 35 M B133
OM PAK 35 M B113
box of 1
135 pieces/pallet

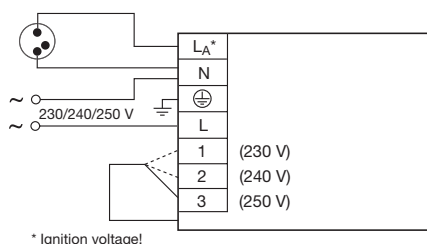
Certified:
EN 60922/923

OM PAK 35 M B533
OM PAK 35 M B513
box of 1
84 pieces/pallet

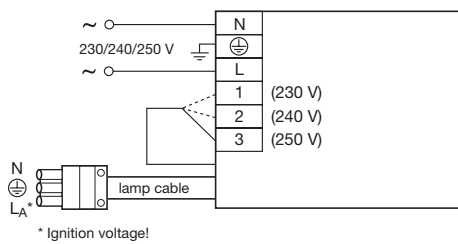
type	article number	voltage V	fig.	length L mm	fixing centres D mm	weight kg	ta °C	losses W ①	nominal lamp current A	ignitor ②	line current A	λ	circuit diagram
OM PAK 35 M B133 230/240 V 50 Hz	20889876	230/240	1	210	193,5	1,4	65	8,6	0,53	ZRM 2,5-ES/D	0,22	0,95	A
OM PAK 35 M B113 230/240 V 50 Hz	22116414	230/240	1	210	193,5	1,4	65	8,6	0,53	ZRM 1,8-ES/B	0,22	0,95	A
OM PAK 35 M B533 230–250 V 50 Hz	22116506	230/240/250	2	210	193,5	1,4	65	8,6	0,53	ZRM 2,5-ES/D	0,22	0,95	B
OM PAK 35 M B513 230–250 V 50 Hz	22116515	230/240/250	2	210	193,5	1,4	65	8,6	0,53	ZRM 1,8-ES/B	0,22	0,95	B

① mean value measured at 25°C tc point temperature and 240 V or 250 V main supply

② included in the gear box



A) OM PAK



B) OM PAK with lamp cable

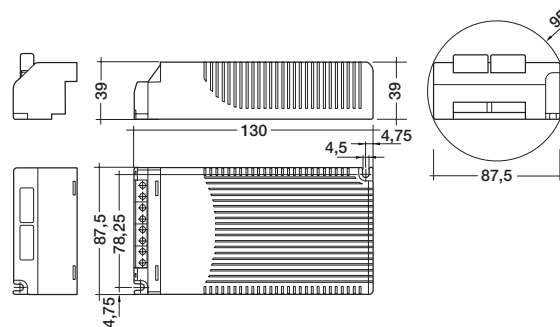


Digital electronic ballasts
Metal halide lamps

powerCONTROL PCI 0035



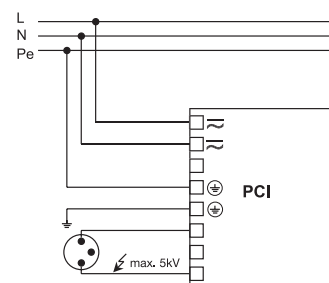
- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals 2,5 mm² or 2x1,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- accessoires are terminal cover and strain relief **ZE 002** art. no. 86448230



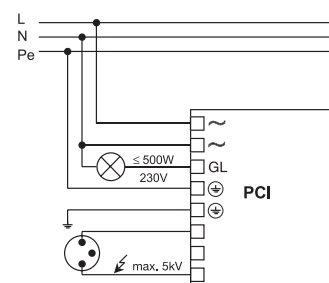
Packaging:
box of 10
60 boxes/pallet
600 pieces/pallet

Certified:
EN 55015
EN 61000-3-2
EN 61547

type		PCI 0035 A001	PCI 0035 A002
article number		86448199	86448209
lamp wattage	W	39	39
circuit wattage	W	44,5	44,5
mains voltage	V	220–240	220–240
AC voltage range	V	198–254	198–254
DC voltage range	V	153–320	–
current	A	0,20	0,20
mains frequency	Hz	0/50/60	50/60
power factor	λ	0,97	0,97
operating frequency	Hz	125	125
ignition voltage	kV	4	4
max. distance from lamp	m	5	5
max. ambient temperature ta	°C	60	60
min. ambient temperature ta	°C	-25	-25
max. housing temperature tc	°C	85	85
lamp reignition monitor		no	yes
max. incandescent lamp max.	W	–	500
fixing centres - length	mm	120–123	120–123
fixing centres - width	mm	77–80	77–80
dimensions length x width x height	mm	130x87,5x39	130x87,5x39
circuit diagram		A	B
weight	g	330	340



A) PCI without lamp reignition monitor



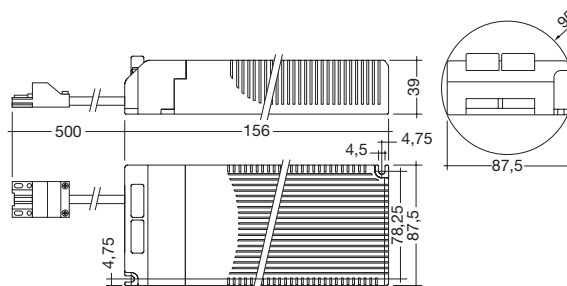
B) PCI with lamp reignition monitor



powerCONTROL PCI 0035



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals 2,5 mm² or 2x1,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- halogen free lamp lead with ST18 socket

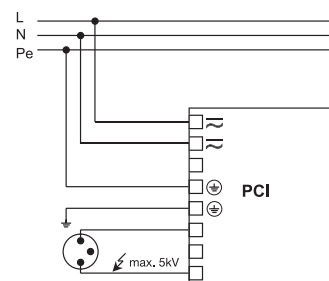
**Packaging:**

single pack
box of 12
24 boxes/pallet
288 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCI 0035 A501
article number		86452442
lamp wattage	W	39
circuit wattage	W	44,5
mains voltage	V	220–240
AC voltage range	V	198–254
DC voltage range	V	153–320
current	A	0,20
mains frequency	Hz	0/50/60
power factor	λ	0,97
operating frequency	Hz	125
ignition voltage	kV	4
lamp lead length	m	0,5
max. distance from lamp	m	5
max. ambient temperature t_a	°C	60
min. ambient temperature t_a	°C	-25
max. housing temperature t_c	°C	85
fixing centres - length	mm	146–149
fixing centres - width	mm	77–80
dimensions length x width x height	mm	156x87,5x39
weight	g	500



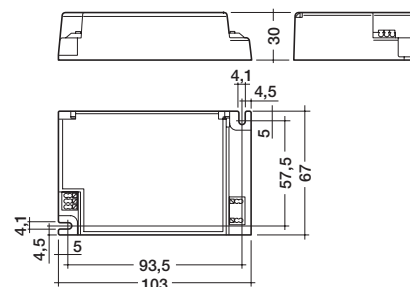


Digital electronic ballasts
Metal halide lamps

powerCONTROL PCI 0035



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **30 %**
- electromagnetic interference during ignition reduced by up to **90 %**
- overtemperature cut off
- polycarbonate one-piece housing, white, IP 20
- spring terminals for 1,5 mm²
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- for building into luminaires



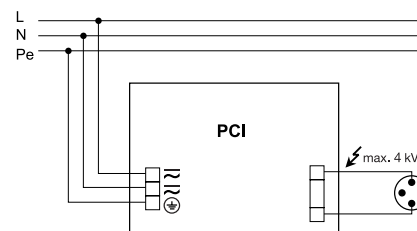
Packaging:

box of 15
50 boxes/pallet
750 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCI 0035 A101
article number		86450939
lamp wattage	W	39
circuit wattage	W	44,5
mains voltage	V	220–240
AC voltage range	V	198–254
DC voltage range	V	153–320
current	A	0,20
mains frequency	Hz	0/50/60
power factor	λ	0,97
operating frequency	Hz	125
ignition voltage	kV	3
max. distance from lamp	m	0,5
max. ambient temperature t_a	°C	45
min. ambient temperature t_a	°C	-25
max. housing temperature t_c	°C	80
dimensions length x width x height	mm	103x67x30
weight	g	195





70 W Metal halide lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 220	page 219	page 221	page 222–224
BLV	HIE... 70...	Rx7s, E 27, G 12	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
GE	ARC 70...	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	CMH 70 T ..	G 12	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	CMH 70 TD ...	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
Iwasaki	MT 70 Color arc	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D	ECIS 70; OMBIS 70	–	–
Osram	HQI-T 70...	G 12	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	HCI-T 70	G 12	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	HQI-TS 70...	RX 7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	HCI-TS 70	RX 7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	HQI-E 70...	E 27	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
Philips	MHN-T 70 W	PG 12-2	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	MHN-TD 70 W	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	MHW-TD 70 W	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	CDM-TT 70 W	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D	ECIS 70; OMBIS 70	–	–
	CDM-R 70 W	E 27	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	CDM-ET 70 W	E 27	1,0	ZRM 2-ES/B; ZRM 2-ES/D	ECIS 70; OMBIS 70	–	–
	CDM-T 70 W	G 12	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	CDM-TD 70 W	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	CDM-TC 70W	G 8,5	1,0	–	–	–	PCI 0070
Radium	HRI-T 70...	G 12	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	RCI-T 70	G 12	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	HRI-TS 70...	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	RCI-TS 70	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	HRI-E 70 W...	E 27	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
Sylvania	HSI-MP 75 W	E 27	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	–	–
	HSI-T 70 W	G 12	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
	HSI-TD 70 W	Rx7s	1,0	ZRM 1,8-ES/B; ZRM 2,5-ES/D	ECIS 70; OMBIS 70	OM PAK 70	PCI 0070
Venture	HIE 70/x/x	E 27	1,0	ZRM 2,5-ES/D	ECIS 70; OMBIS 70	–	–



**Magnetic chokes
Metal halide lamps**

ECIS / OMBIS 70 W

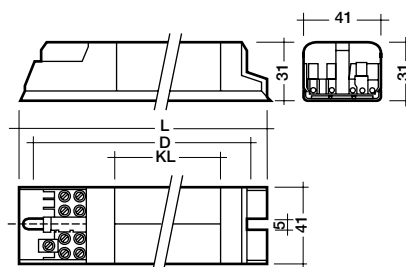


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
ECIS	1	15	630
OMBIS	2	10	480

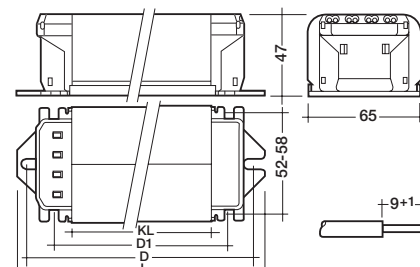
Certified:
EN 60922/923

figure 1



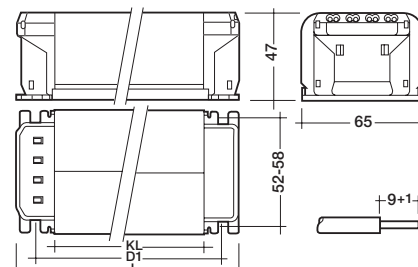
screw terminal 0,75–1,5 mm²

figure 2



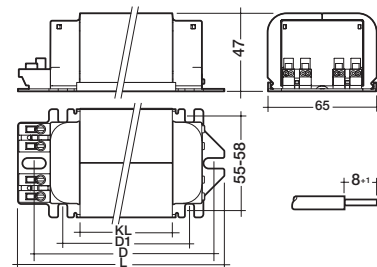
push terminal 0,75–2,5 mm²

figure 3



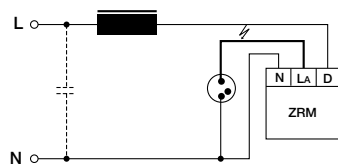
push terminal 0,75–2,5 mm²

figure 4



push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W		λ	range
								D	D1			K	W		
standard chokes															
ECIS 70 A140 230–250 V 50 Hz TP	20566335	230/240/250	yes	1	1	215	140	194–208	–	1,3	75	21	0,35	B	
OMBIS 70 A103W 230–250 V 50 Hz	20568074	230/240/250	yes	2	2	107	45	90–99	65,5	1,2	70	12,1	0,37	B	
OMBIS 70 A153W 230–250 V 50 Hz	20824220	230/240/250	yes	3	2	81	45	–	65,5	1,2	70	12,1	0,37	B	
OMBIS 70 A604W 220–240 V 50 Hz	22148601	220/230/240	yes	4	2	113	45	90–99	65,5	1,2	70	12,1	0,37	A	
chokes with reduced temperature rise															
OMBIS 70 B103W 230–250 V 50 Hz	20575741	230/240/250	yes	2	2	117	55	100–109	75,5	1,4	65	12,4	0,37	B	
OMBIS 70 B604W 220–240 V 50 Hz	22118873	220/230/240	yes	4	2	123	55	100–109	75,5	1,4	65	12,4	0,37	B	
chokes with very low temperature rise															
OMBIS 70 C103W 230–250 V 50 Hz	20820295	230/240/250	yes	2	2	127	65	110–119	85,5	1,6	55	12,2	0,37	B	
OMBIS 70 C153W 230–250 V 50 Hz	20824343	230/240/250	yes	3	2	101	65	–	85,5	1,6	55	12,2	0,37	B	
OMBIS 70 C604W 220–240 V 50 Hz	22148618	220/230/240	yes	4	2	133	65	110–119	85,5	1,6	55	12,2	0,37	B	
chokes with reinforced insulation															
OMBIS 70 A253W 230–250 V 5 Hz	20881032	230/240/250	yes	3	2	81	45	–	65,5	1,15	70	12,1	0,37	B	
60 Hz chokes															
OMBIS 70 A106W 220–240 V 60 Hz	20574788	220/230/240	yes	2	2	107	45	90–99	65,5	1,2	60	11,8	0,38	B	



p.f. correction capacitor: 12,0 $\mu\text{F} \pm 10\%$ 250 V
(10,0 μF at 60 Hz)
p.f. corrected line current: 0,43 A ($\lambda > 0,9$)



Digital safety ignitors and superimposed pulse ignitors

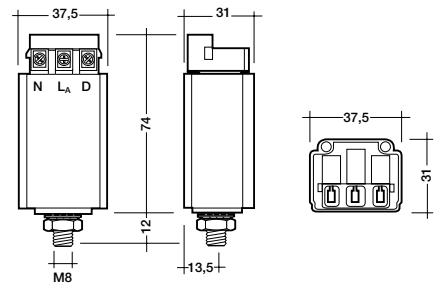


Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926



type		Digital safety ignitors with switch off function		Pulse Control	Digital safety ignitors with switch off function		Superimposed pulse ignitors	
		ZRM 2-ES/D	ZRM 2,5-ES/D		ZRM 1,8-ES/TC	ZRM 1,8-ES/B	ZRM 2-ES/B	
article number		22082233	22082249		22087822	20571565	20572212	
line voltage	V	198–264	198–264		198–264	198–264	198–264	
mains frequency	Hz	50 oder 60	50 oder 60		50–60	50–60	50–60	
ignition voltage	kVs	1,8–2,5	4,0–5,0		4,0–5,0	4,0–5,0	1,8–2,3	
max. permissible lamp current IB	A	2,0	3,0		1,8	2,0	2,0	
ignition current	mA	–	–		~ 120	120	70	
wattage HS	W	70	100–250		100–150 *	100–150	35–70	
wattage HI	W	–	35–250		35–150	35–150	–	
temperature rise at IB = 0,54 A (35 W)	K	–	–		–	–	~ 1,0	
IB = 1,0 A (70 W)	K	3,0	2,8		~ 8,0	~ 5,0	~ 3,0	
IB = 1,1 A (100 W)	K	–	–		~ 19,0	–	–	
IB = 1,8 A (150 W)	K	–	7,1		–	~ 20,0	–	
IB = 3,0 A (250 W)	K	–	19,8		–	–	–	
losses at IB = 0,54 A (35 W)	W	–	–		–	–	~ 0,1	
IB = 1,0 A (70 W)	W	0,200	0,200		~ 0,7	~ 0,5	~ 0,3	
IB = 1,1 A (100 W)	W	–	–		~ 1,7	–	–	
IB = 1,8 A (150 W)	W	–	0,676		–	~ 1,5	–	
IB = 3,0 A (250 W)	W	–	2,016		–	–	–	
impulse width at UZ min. -10%	µs	3,0	2,4		≥ 1	–	–	
impulse width at 2 700 V	µs	–	–		–	~ 1,0	> 1,0	
number of impulses per halfwave		4–10	4–10		3	3	3–4	
distance between impulses	ms	< 0,3	< 0,3		< 0,3	< 0,3	< 0,3	
phase displacement of ignition impulses	°el	60–90	60–90		60–90	60–90	60–90	
		240–270	240–270		240–270	240–270	240–270	
switch on voltage	V	< 198	< 198		–	–	–	
switch off/on voltage	V	–	–		185–198	185–198	160–198	
switch off of ignition		digital	digital		digital	–	–	
maximum load capacitance	pF	20–750	20–100		20–100	20–100	20–200	
maximum distance from lamp	m	10	1,5		1,5	1,5	4	
maximum housing temperature tc	°C	105	105		105	105	105	
minimum operating temperature	°C	-30	-30		-30	-30	-30	
weight	kg	0,11	0,11		0,11	0,13	0,13	
re-set function	sec.	> 0,5	> 0,5		> 0,5	–	–	



OM PAK 70 W 230/240 V, 230–250 V 50 Hz



- temperature protected, low loss choke out of the OM range
- digital safety ignitor *PulseControl* for a reduced strike and re-strike time of the lamp (M B113 and M B513 with standard ignitor)
- digital controlled switch off function of defect lamps (M B513 and M B513 with standard ignitor)
- exceptional low noise operation
- useable also with high ambient temperatures (ta)
- marked with F-mark for mounting on normal flammable materials
- tool free connection of cables
- voltage adapting for 230 V, 240 V and 250 V supply
- various fixing possibilities

figure 1

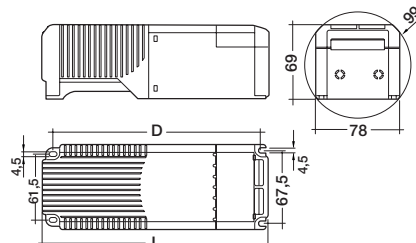
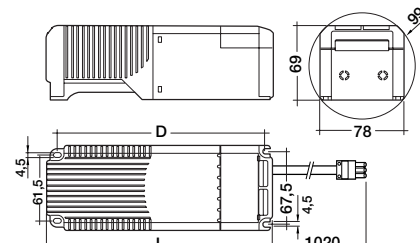


figure 2



OM PAK 100 M B533 and M B513 (cable version)

- halogen free 3 core lamp lead
- total lead length including socket 1 200 mm/1 020 mm exterior
- with pre-assembled ST-18 socket

Packaging:
OM PAK 70 M B133
OM PAK 70 M B113
box of 1
135 pieces/pallet

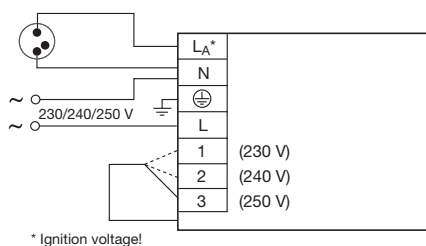
Certified:
EN 60922/923

OM PAK 70 M B533
OM PAK 70 M B513
box of 1
84 pieces/pallet

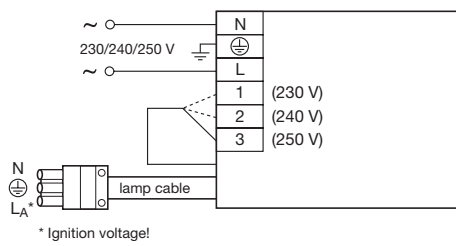
type	article number	voltage V	fig.	length L mm	fixing centres D mm	weight kg	ta °C	losses W ①	nominal lamp current A	ignitor ②	line current A	λ	circuit diagram
OM PAK 70 M B133 230/240 V 50 Hz	22115608	230/240	1	210	193,5	1,8	55	15,7	1,0	ZRM 2,5-ES/D	0,43	0,95	A
OM PAK 70 M B113 230/240 V 50 Hz	20889779	230/240	1	210	193,5	1,8	55	15,7	1,0	ZRM 1,8-ES/B	0,43	0,95	A
OM PAK 70 M B533 230–250 V 50 Hz	22116521	230/240/250	2	210	193,5	1,8	55	15,7	1,0	ZRM 2,5-ES/D	0,38	0,95	B
OM PAK 70 M B513 230–250 V 50 Hz	22116537	230/240/250	2	210	193,5	1,8	55	15,7	1,0	ZRM 1,8-ES/B	0,38	0,95	B

① mean value measured at 25°C tc point temperature and 240 V or 250 V main supply

② included in the gear box



A) OM PAK



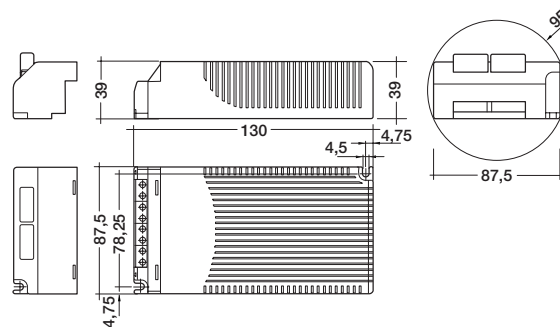
B) OM PAK with lamp cable



powerCONTROL PCI 0070



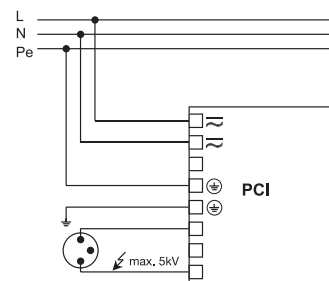
- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals 2,5 mm² or 2x1,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- accessoires are terminal cover and strain relief: **ZE 002** art. no. 86448230



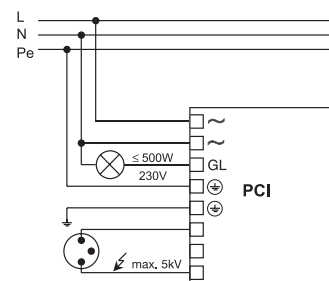
Packaging:
box of 10
60 boxes/pallet
600 pieces/pallet

Certified:
EN 55015
EN 61000-3-2
EN 61547

type		PCI 0070 A001	PCI 0070 A002
article number		86448183	86448059
lamp wattage	W	72	72
circuit wattage	W	79,5	79,5
mains voltage	V	220–240	220–240
AC voltage range	V	198–254	198–254
DC voltage range	V	153–320	–
current	A	0,36	0,36
mains frequency	Hz	0/50/60	50/60
power factor	λ	0,97	0,97
operating frequency	Hz	125	125
ignition voltage	kV	4	4
max. distance from lamp	m	5	5
max. ambient temperature ta	°C	50	50
min. ambient temperature ta	°C	-25	-25
max. housing temperature tc	°C	85	85
lamp reignition monitor		no	yes
max. incandescent lamp max.	W	–	500
fixing centres - length	mm	120–123	120–123
fixing centres - width	mm	77–80	77–80
dimensions length x width x height	mm	130x87,5x39	130x87,5x39
circuit diagram		A	B
weight	g	330	340



A) PCI without lamp reignition monitor



B) PCI with lamp reignition monitor

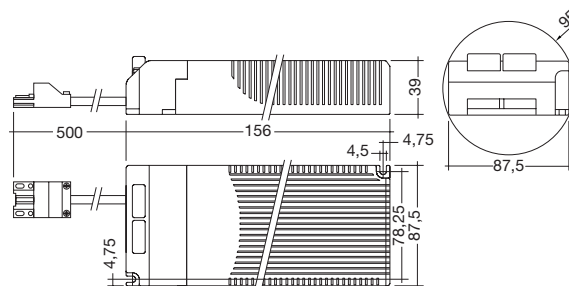


Digital electronic ballasts with lamp lead Metal halide lamps

powerCONTROL PCI 0070



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals 2,5 mm² or 2x1,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- halogen free lamp lead with ST18 socket



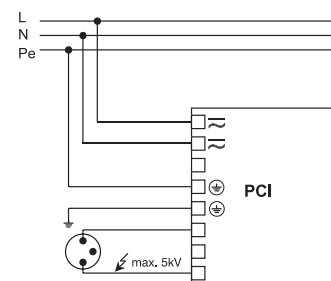
Packaging:

single pack
box of 12
24 boxes/pallet
288 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCI 0070 A501
article number		86452458
lamp wattage	W	72
circuit wattage	W	79,5
mains voltage	V	220–240
AC voltage range	V	198–254
DC voltage range	V	153–320
current	A	0,36
mains frequency	Hz	0/50/60
power factor	λ	0,97
operating frequency	Hz	125
ignition voltage	kV	4
lamp lead length	m	0,5
max. distance from lamp	m	5
max. ambient temperature t_a	°C	50
min. ambient temperature t_a	°C	-25
max. housing temperature t_c	°C	85
fixing centres - length	mm	146–149
fixing centres - width	mm	77–80
dimensions length x width x height	mm	156x87,5x39
weight	g	500

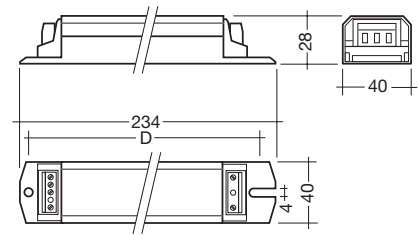




powerCONTROL PCI 0070



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- metal housing, IP 20
- screw terminals 0,5–2,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)



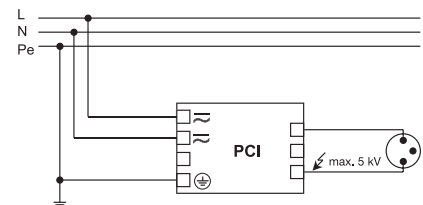
Packaging:

box of 10
60 boxes/pallet
600 pieces/pallet

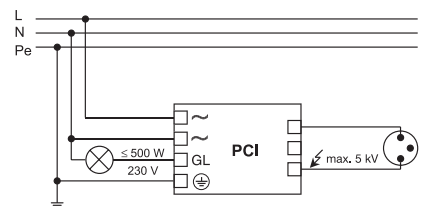
Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCI 0070 A201	PCI 0070 A202
article number		86454810	86454801
lamp wattage	W	72	72
circuit wattage	W	80	80
mains voltage	V	220–240	220–240
AC voltage range	V	198–254	198–254
DC voltage range	V	153–320	–
current	A	0,35	0,35
mains frequency	Hz	0/50/60	50/60
power factor	λ	0,97	0,97
operating frequency	Hz	125	125
ignition voltage	kV	4	4
max. distance from lamp	m	3	3
max. ambient temperature ta	°C	45	45
min. ambient temperature ta	°C	-25	-25
max. housing temperature tc	°C	80	80
max. incandescent lamp max.	W	–	500
fixing centres - length	mm	220	220
dimensions length x width x height	mm	234x40x28	234x40x28
circuit diagram		A	B
weight	g	327	334



A) PCI without lamp reignition monitor



B) PCI with lamp reignition monitor



100 W Metal halide lamps

Lamps				Ignitors	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 227	page 226	page 228	page 229
BLV	MHR 100	plug	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC	OMBIS 100	–	–
	HIE 100	E27	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC	OMBIS 100	–	–
GE	MXR 100	E 27	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC	OMBIS 100	–	PCI 0100
Osram	HQI-E 100...	E 27	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC	OMBIS 100	–	PCI 0100
Radium	HRI-E 100 W...	E 27	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC	OMBIS 100	OM PAK 100	PCI 0100
Sylvania	HSI-MP 100...	E 27	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC	OMBIS 100	–	–
	HSI-TD 100...	Rx7s	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC	OMBIS 100	OM PAK 100	PCI 0100
Venture	HIE 100/x/x	E 27	1,2	ZRM 1,8-ES/B; ZRM 1,8-ES/TC	OMBIS 100	–	–



OMBIS 100 W

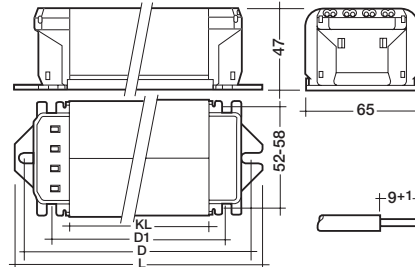


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OMBIS	1	10	480

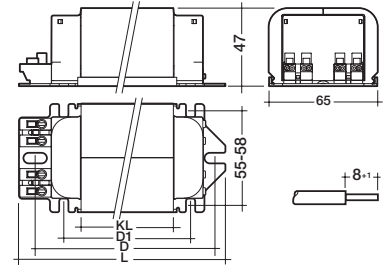
Certified:
EN 60922/923

figure 1



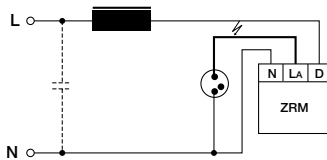
push terminal 0,75–2,5 mm²

figure 2



push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OMBIS 100 A103W 230–250 V 50 Hz	20568891	230/240/250	yes	1	1	117	55	100–109	75,5	1,4	65	13,7	0,4	B
OMBIS 100 A604W 220–240 V 50 Hz	22148604	220/230/240	yes	2	1	123	55	100–109	75,5	1,4	65	13,7	0,4	A
chokes with very low temperature rise														
OMBIS 100 C103W 230–250 V 50 Hz	20570572	230/240/250	yes	1	1	137	75	120–129	95,5	1,8	60	13,9	1,2	B
chokes with reinforced insulation														
OMBIS 100 A203W 230–250 V 50 Hz	20889637	230/240/250	yes	1	1	117	55	100–109	75,5	1,4	65	13,7	0,53	B
60 Hz chokes														
OMBIS 100 A106W 220–240 V 60 Hz	20574794	220/230/240	yes	1	1	117	55	100–109	75,5	1,4	60	12,6	0,39	B



p.f. correction capacitor: 12,0 $\mu\text{F} \pm 10\%$ 250 V

(10,0 μF at 60 Hz)

p.f. corrected line current: 0,55 A ($\lambda > 0,9$)



Ignitors

Digital safety ignitors and superimposed pulse ignitors

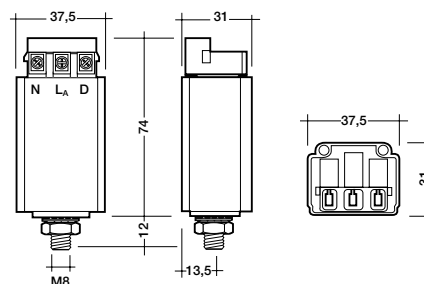


Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926
EN 60927



type		Digital safety ignitors with switch off function	Superimposed pulse ignitors
		ZRM 1,8-ES/TC	ZRM 1,8-ES/B
article number		22087822	20571565
line voltage	V	198–264	198–264
mains frequency	Hz	50–60	50–60
ignition voltage	kVs	4,0–5,0	4,0–5,0
max. permissible lamp current IB	A	1,8	2,0
ignition current	mA	~ 120	120
wattage HS	W	100–150 *	–
wattage HI	W	35–150	–
temperature rise at IB = 1,0 A (70 W)	K	~ 8,0	~ 5,0
IB = 1,1 A (100 W)	K	~ 19,0	–
IB = 1,8 A (150 W)	K	–	~ 20,0
losses at IB = 1,0 A (70 W)	W	~ 0,7	~ 0,5
IB = 1,1 A (100 W)	W	~ 1,7	–
IB = 1,8 A (150 W)	W	–	~ 1,5
impulse width at UZ min. -10 %	W	≥ 1	–
impulse width at 2 700 V	µs	–	~ 1,0
number of impulses per halfwave		3	3
distance between impulses	ms	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90 240–270	60–90 240–270
switch off/on voltage	V	185–198	185–198
maximum load capacitance	pF	20–100	20–100
maximum distance from lamp	m	1,5	1,5
maximum housing temperature tc	°C	105	105
minimum operating temperature	°C	-30	-30
weight	kg	0,11	0,13

* released for HST-DE 70 W



OM PAK 100 W 230/240 V, 230–250 V 50 Hz



- temperature protected, low loss choke out of the OM range
- digital safety ignitor *PulseControl* for a reduced strike and re-strike time of the lamp (M B113 with standard ignitor)
- digital controlled switch off function of defect lamps (M B113 with standard ignitor)
- exceptional low noise operation
- useable also with high ambient temperatures (ta)
- marked with F-mark for mounting on normal flammable materials
- tool free connection of cables
- voltage adapting for 230 V, 240 V and 250 V supply
- various fixing possibilities

OM PAK 100 M B533 (cable version)

- halogen free 3 core lamp lead
- total lead length including socket 1 200 mm/1 020 mm exterior
- with pre-assembled ST-18 socket

figure 1

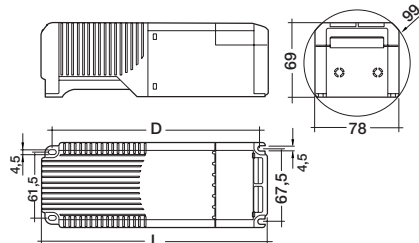
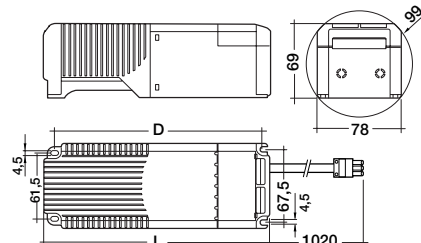


figure 2



Packaging:
OM PAK 100 M B133
OM PAK 100 M B113
box of 1
108 pieces/pallet

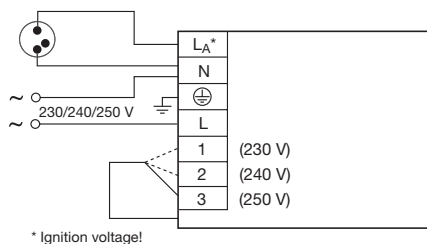
Certified:
EN 60922/923

OM PAK 100 M B533
box of 1
75 pieces/pallet

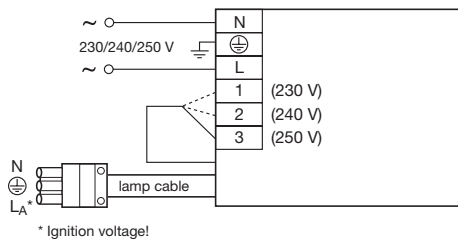
type	article number	voltage V	length L mm	fixing centres D mm	weight kg	ta °C	losses W ①	nominal lamp current A	ignitor ②	line current A	figure	circuit diagram
OM PAK 100 M B133 230/240 V 50 Hz	22115623	230/240	260	243,5	2,3	55	16,6	1,2	ZRM 2,5-ES/D	0,54	1	A
OM PAK 100 M B113 230/240 V 50 Hz	22115617	230/240	260	243,5	2,3	55	16,6	1,2	ZRM 1,8-ES/B	0,54	1	A
OM PAK 100 M B533 230–250 V 50 Hz	22116543	230/240/250	260	243,5	2,3	55	16,6	1,2	ZRM 2,5-ES/D	0,54	2	B

① mean value measured at 25°C tc point temperature and 240 V or 250 V main supply

② included in the gear box



A) OM PAK



B) OM PAK with lamp cable

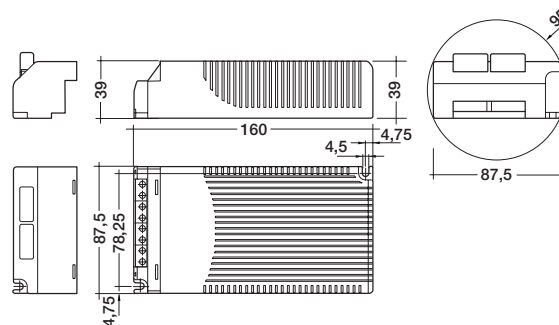


Digital electronic ballasts
Metal halide lamps

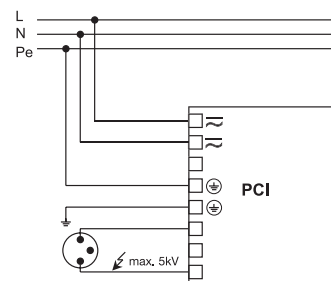
powerCONTROL PCI 0100



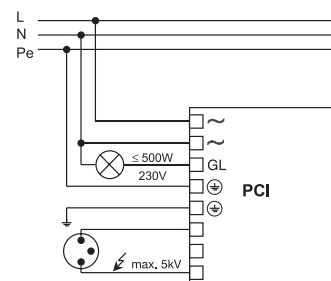
- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals 2,5 mm² or 2x1,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- accessoires are terminal cover and strain relief: **ZE 002** art. no. 86448230



type		PCI 0100 A001	PCI 0100 A002
article number		86453897	86453881
lamp wattage	W	99	99
circuit wattage	W	110	110
mains voltage	V	220–240	220–240
AC voltage range	V	198–254	198–254
DC voltage range	V	153–320	–
current	A	0,6	0,6
mains frequency	Hz	0/50/60	50/60
power factor	λ	0,97	0,97
operating frequency	Hz	125	125
ignition voltage	kV	4	4
max. distance from lamp	m	3	3
max. ambient temperature ta	°C	50	50
min. ambient temperature ta	°C	-25	-25
max. housing temperature tc	°C	80	80
lamp reignition monitor		no	yes
max. incandescent lamp max.	W	–	500
fixing centres - length	mm	150–153	150–153
fixing centres - width	mm	77–80	77–80
dimensions length x width x height	mm	160x87,5x39	160x87,5x39
circuit diagram		A	B
weight	g	469	477



A) PCI without lamp reignition monitor



B) PCI with lamp reignition monitor



150 W Metal halide lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 232	page 231	page 233	page 234–236
BLV	MHR 150	plug	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
GE	ARC 150...	G 12; Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
Iwasaki	MT 150 Color arc	E 27	1,8	ZRM 2-ES/B; ZRM 2-ES/D	2x ECIS 1/2 150; OMBIS 150	–	–
Osram	HQI-T 150 ...	G 12	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HCI-T 150 ...	G 12	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HQI-TS 150 ...	Rx7s 24	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HCI-TS 150 ...	Rx7s 24	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HQI-E 150 ...	E 27	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HTI 150 W	plug	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HQI-R 150...	plug	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
Philips	CDM-T150	G 12	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	CDM-TD 150	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	CDM-TT	E 40	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	MHN-T 150	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	MHW-TD 150	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	MHN-TD 150 W	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
Radium	HRI-T 150...	G 12	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	RCI-T 150...	G 12	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC;; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HRI-TS 150...	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	RCI-TS 150...	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HRI-E 150...	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
Sylvania	HSI-TD 150 W...	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
	HSI-T 150 W...	G 12	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	OM PAK 150	PCI 0150
Venture	HIE150/x/x	Rx7s	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	–	–
	HIE 150/x/x	E 27	1,8	ZRM 1,8-ES/B; ZRM 1,8-ES/TC; ZRM 2,5-ES/D	2x ECIS 1/2 150; OMBIS 150	–	–



**Magnetic chokes
Metal halide lamps**

ECIS / OMBIS 150 W

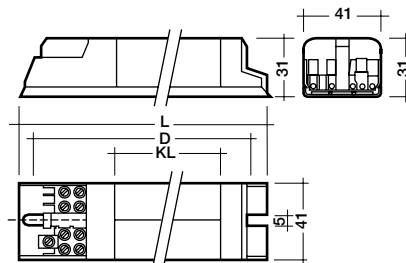


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
ECIS	1	15	630
OMBIS	2	10	480
OMBIS	3	10	240

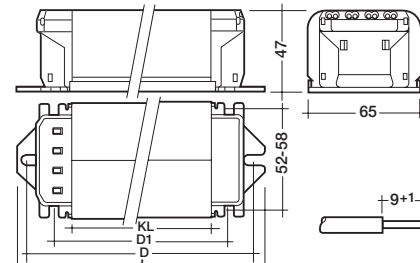
Certified:
EN 60922/923

figure 1



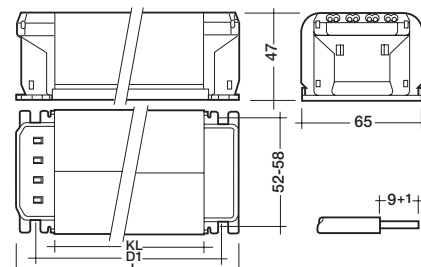
screw terminal 0,75–1,5 mm²

figure 2



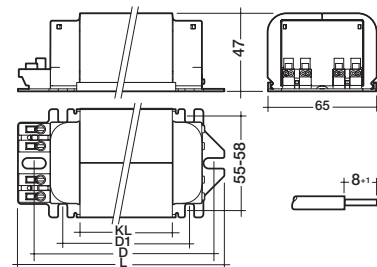
push terminal 0,75–2,5 mm²

figure 3



push terminal 0,75–2,5 mm²

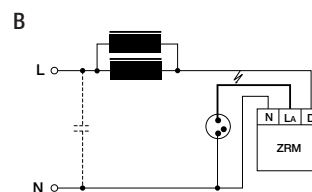
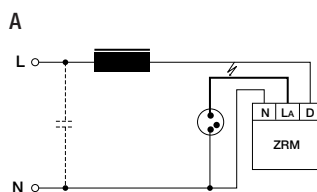
figure 4



push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	figure	packaging code	length L mm	core stack length KL mm	fixing centres mm D D1	weight kg	ΔT K	losses W	λ	range	
standard chokes														
ECIS 150 1/2 C140 230–250 V 50 Hz TP *	20566329	230/240/250	yes	1	1	215	140	194–208	–	1,3	65	25,0	0,43	B
OMBIS 150 A103W 230–250 V 50 Hz	20568879	230/240/250	yes	2	2	137	75	120–129	95,5	1,9	85	19,5	0,42	B
OMBIS 150 A153W 230–250 V 50 Hz	20880440	230/240/250	yes	3	2	111	75	–	95,5	1,9	85	19,5	0,42	B
OMBIS 150 A604W 220–240 V 50 Hz	22148606	220/230/240	yes	4	2	143	75	120–129	95,5	1,9	85	19,5	0,42	A
chokes with reduced temperature rise														
OMBIS 150 B103W 230–250 V 50 Hz	20568863	230/240/250	yes	2	2	147	85	130–139	105,5	2,0	70	18,3	0,41	B
OMBIS 150 B153W 230–250 V 50 Hz	20824469	230/240/250	yes	3	2	121	85	–	105,5	2,0	70	18,3	0,41	B
OMBIS 150 B604W 220–240 V 50 Hz	22148607	220/230/240	yes	4	2	153	85	130–139	105,5	2,0	70	18,3	0,41	A
chokes with very low temperature rise														
OMBIS 150 C103W 230–250 V 50 Hz	20570519	230/240/250	yes	2	3	167	105	150–159	125,5	2,4	65	18,9	0,40	B
OMBIS 150 C153W 230–250 V 50 Hz	20824504	230/240/250	yes	3	3	141	105	–	125,5	2,4	65	18,9	0,40	B
chokes with reinforced insulation														
OMBIS 150 B253W 230–250 V 50 Hz	20881402	230/240/250	yes	3	2	121	85	–	105,5	2,00	70	18,3	0,41	B
60 Hz chokes														
OMBIS 150 A106W 220–240 V 60 Hz	20571288	220/230/240	yes	2	2	137	75	120–129	95,5	1,9	70	18,4	0,41	B

* 2 chokes connected in parallel are required to operate a 150 W lamp. See wiring diagram B



p.f. correction capacitor: 20,0 $\mu\text{F} \pm 10\%$ 250 V
(16,0 μF at 60 Hz)
p.f. corrected line current: 0,80 A ($\lambda > 0,9$)



Digital safety ignitors and superimposed pulse ignitors

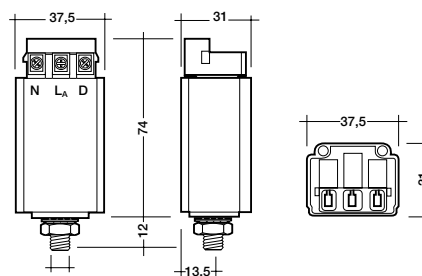



Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926



type		Digital safety ignitors with switch off function	Pulse  Control	Digital safety ignitors with switch off function	Superimposed pulse ignitor	
		ZRM 2,5-ES/D		ZRM 1,8-ES/TC	ZRM 1,8-ES/B	ZRM 2-ES/B
article number		22082249		22087822	20571565	20572212
line voltage	V	198–264		198–264	198–264	198–264
mains frequency	Hz	50 oder 60		50–60	50–60	50–60
ignition voltage	kVs	4,0–5,0		4,0–5,0	4,0–5,0	1,8–2,3
max. permissible lamp current IB	A	3,0		1,8	2,0	2,0
ignition current	mA	–		~ 120	120	70
wattage HS	W	100–250		100–150 *	100–150	35–70
wattage HI	W	35–250		35–150	35–150	–
temperature rise at IB = 1,0 A (70 W)	K	2,8		~ 8,0	~ 5,0	~ 5,0
IB = 1,8 A (150 W)	K	7,1		~ 19,0	~ 20,0	–
IB = 3,0 A (250 W)	K	19,8		–	–	–
losses at IB = 1,0 A (70 W)	W	0,200		~ 0,7	~ 0,5	~ 0,5
IB = 1,8 A (150 W)	W	0,676		~ 1,7	~ 1,5	–
IB = 3,0 A (250 W)	W	2,016		–	–	–
impulse width at UZ min. -10%	µs	2,4		≥ 1	–	–
impulse width at 2 700 V	µs	–		–	~ 1,0	> 1,0
number of impulses per halfwave		4–10		3	3	3–4
distance between impulses	ms	< 0,3		< 0,3	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90 240–270		60–90 240–270	60–90 240–270	60–90 240–270
switch on voltage	V	< 198		–	–	–
switch off/on voltage	V	–		185–198	185–198	160–198
switch off of ignition		digital		digital	–	–
maximum load capacitance	pF	20–100		20–350	20–100	20–200
maximum distance from lamp	m	1,5		4	1,5	4
maximum housing temperature tc	°C	105		105	105	105
minimum operating temperature	°C	-30		-30	-30	-30
weight	kg	0,11		0,11	0,13	0,13
re-set function	sec.	> 0,5		> 0,5	–	–

* released for HST-DE 70 W



OM PAK 150 W 230/240 V, 230–250 V 50 Hz



- temperature protected, low loss choke out of the OM range
- digital safety ignitor *PulseControl* for a reduced strike and re-strike time of the lamp (M B113 and M B513 with standard ignitor)
- digital controlled switch off function of defect lamps (M B133 and M B533 with standard ignitor)
- exceptional low noise operation
- useable also with high ambient temperatures (ta)
- marked with F-mark for mounting on normal flammable materials
- tool free connection of cables
- voltage adapting for 230 V, 240 V and 250 V supply
- various fixing possibilities

figure 1

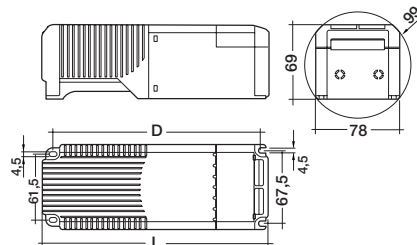
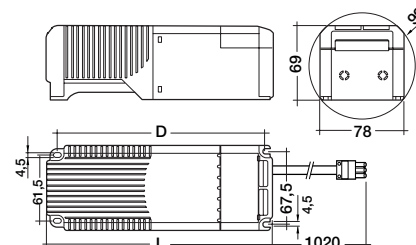


figure 2



OM PAK 100 M B533 and M B513 (cable version)

- halogen free 3 core lamp lead
- total lead length including socket 1 200 mm/1 020 mm exterior
- with pre-assembled ST-18 socket

Packaging:
OM PAK 150 M B133
OM PAK 150 M B113
box of 1
108 pieces/pallet

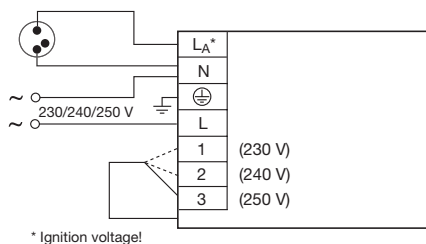
Certified:
EN 60922/923

**OM PAK 150 M B533
OM PAK 150 M B513**
box of 1
108 pieces/pallet

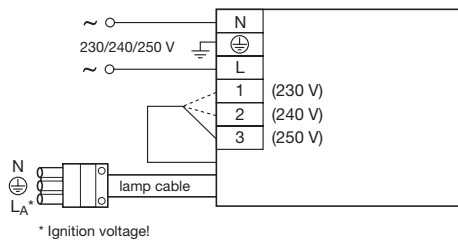
type	article number	voltage V	length L mm	fixing centres D mm	weight kg	ta °C	losses W ①	nominal lamp current A	ignitor ②	line current A	figure	circuit diagram
OM PAK 150 M B133 230/240 V 50 Hz	22115645	230/240	260	243,5	3,0	50	24,0	1,8	ZRM 2,5-ES/D	0,76	1	A
OM PAK 150 M B113 230/240 V 50 Hz	22115639	230/240	260	243,5	3,0	50	24,0	1,8	ZRM 1,8-ES/B	0,76	1	A
OM PAK 150 M B533 230–250 V 50 Hz	22116559	230/240/250	260	243,5	3,0	50	23,2	1,8	ZRM 2,5-ES/D	0,76	2	B
OM PAK 150 M B513 230–250 V 50 Hz	22116562	230/240/250	260	243,5	3,0	50	23,2	1,8	ZRM 1,8-ES/B	0,76	2	B

① mean value measured at 25°C to point temperature and 240 V or 250 V main supply

② included in the gear box



A) OM PAK



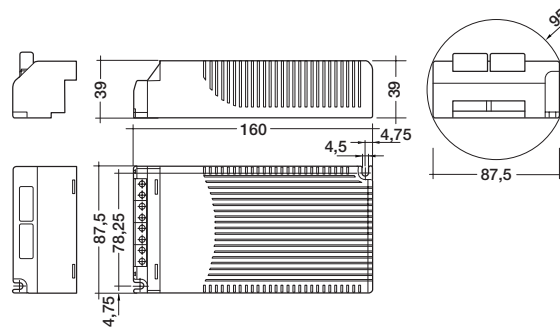
B) OM PAK with lamp cable



powerCONTROL PCI 0150



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals 2,5 mm² or 2x1,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- accessoires are terminal cover and strain relief: **ZE 002** art. no. 86448230

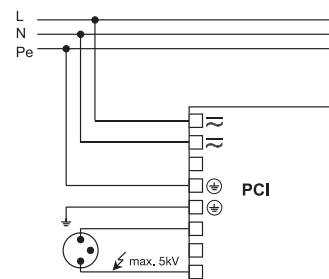
**Packaging:**

box of 10
60 boxes/pallet
600 pieces/pallet

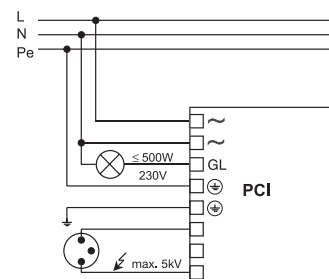
Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCI 0150 A001	PCI 0150 A002
article number		86448218	86448224
lamp wattage	W	147	147
circuit wattage	W	162	162
mains voltage	V	220–240	220–240
AC voltage range	V	198–254	198–254
DC voltage range	V	153–320	–
current	A	0,70	0,70
mains frequency	Hz	0/50/60	50/60
power factor	λ	0,97	0,97
operating frequency	Hz	125	125
ignition voltage	kV	4	4
max. distance from lamp	m	5	5
max. ambient temperature t_a	°C	50	50
min. ambient temperature t_a	°C	-25	-25
max. housing temperature t_c	°C	85	85
lamp reignition monitor		no	yes
max. incandescent lamp max.	W	–	500
fixing centres - length	mm	150–153	150–153
fixing centres - width	mm	77–80	77–80
dimensions length x width x height	mm	160x87,5x39	160x87,5x39
wiring diagram		A	B
weight	g	560	570



A) PCI without lamp reignition monitor



B) PCI with lamp reignition monitor

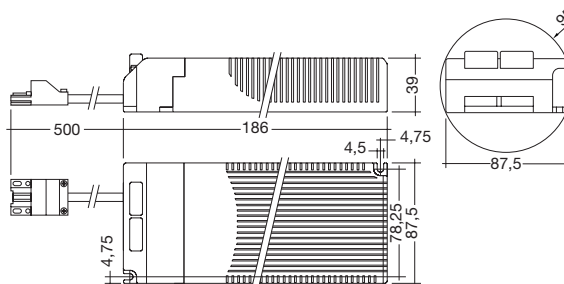


Digital electronic ballasts with lamp lead
Metal halide lamps

powerCONTROL PCI 0150



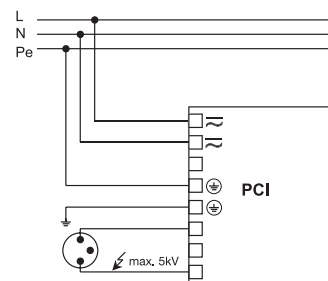
- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- one-piece housing in black polyamide, IP 20
- screw terminals 2,5 mm² or 2x1,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)
- halogen free lamp lead with ST18 socket



Packaging:
single pack
box of 12
24 boxes/pallet
288 pieces/pallet

Certified:
EN 55015
EN 61000-3-2
EN 61547

type		PCI 0150 A501
article number		86452461
lamp wattage	W	147
circuit wattage	W	162
mains voltage	V	220–240
AC voltage range	V	198–254
DC voltage range	V	153–320
current	A	0,70
mains frequency	Hz	0/50/60
power factor	λ	0,97
operating frequency	Hz	125
ignition voltage	kV	4
lamp lead length	m	0,5
max. distance from lamp	m	5
max. ambient temperature ta	°C	50
min. ambient temperature ta	°C	-25
max. housing temperature tc	°C	85
fixing centres - length	mm	176–179
fixing centres - width	mm	77–80
dimensions length x width x height	mm	186x87,5x39
weight	g	710



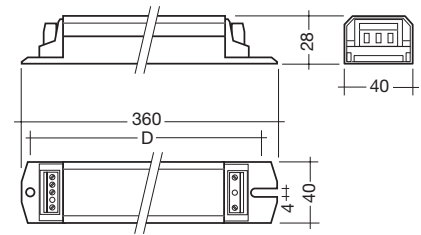
PCI without lamp reignition monitor



powerCONTROL PCI 0150



- flicker free light
- stable colour through constant light output
- lamp life increased up to **50 %**
- power consumption reduced by **10–20 %**
- light weight
- no acoustic resonance
- switch off when the lamp is old or faulty
- increased ignition energy thanks to pulse packages and ignition voltage of 4 kV (**PulseControl** technology)
- re-strike time reduced by up to **50 %**
- electromagnetic interference during ignition reduced by up to **95 %**
- overtemperature cut off
- metal housing, IP 20
- screw terminals 0,5–2,5 mm²
- double terminal for through wiring the earth connection
- can be used in movable luminaires with plugs (discharge voltage < 34 V after 1 s)

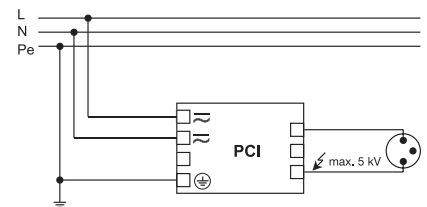
**Packaging:**

single pack
box of 10
100 boxes/pallet
1 000 pieces/pallet

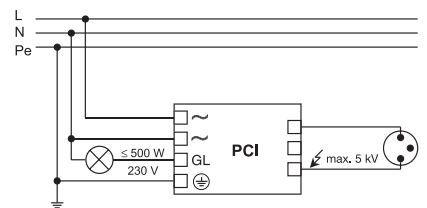
Certified:

EN 55015
EN 61000-3-2
EN 61547

type		PCI 0150 A201	PCI 0150 A202
article number		86451257	86451260
lamp wattage	W	147	147
circuit wattage	W	162	162
mains voltage	V	220–240	220–240
AC voltage range	V	198–254	198–254
DC voltage range	V	153–320	–
current	A	0,7	0,7
mains frequency	Hz	0/50/60	50/60
power factor	λ	0,97	0,97
operating frequency	Hz	140	140
ignition voltage	kV	4	4
max. distance from lamp	m	3	3
max. ambient temperature t_a	°C	45	45
min. ambient temperature t_a	°C	-25	-25
max. housing temperature t_c	°C	80	80
max. incandescent lamp max.	W	–	500
fixing centres - length	mm	340–350	340–350
dimensions length x width x height	mm	360x40x28	360x40x28
wiring diagram		A	B
weight	g	559	566



A) PCI without lamp reignition monitor



B) PCI with lamp reignition monitor



250 W Metal halide lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 239	page 238		
BLV	HIT 250...	Fc 2; E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
GE	ARC 250...	Fc 2; E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
Iwasaki	MT 250	E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMB 250 *	–	–
	MT 250 Color arc	E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
Osram	HQI-E 250W/N/SI	E 40	2,15	ZRM 1 000 A002 **	OMB 250 *	–	–
	HQI-E 250...	E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
	HQI-T 250W/N/SI	E 40	2,15	ZRM 1 000 A002 **	OMB 250 *	–	–
	HQI-T 250...	E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
	HQI-TS 250...	Fc 2	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
	HCI-E 250 ...	E40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
Philips	HPI-T 250 W	E 40	2,15	ZRM 1 000 A002 **	OMB 250 *	–	–
	HPI-T 250 W	E 40/45	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMB 250; OGL 250	–	–
	MHN-TD 250 W	Fc 2	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
Radium	HRI-E 250 W/D	E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
	HRI-T 250 W/D	E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
	HRI-TS 250...	Fc 2	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
Sylvania	HSI-TD 250 ...	Fc 2	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
	HSI-T 250 W/4K	E 40	2,15	ZRM 1 000 A002 **	OMB 250 *	–	–
	HSI-T 250 W ...	E 40	3,0	ZRM 2,5-ES/TC; ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 8-ES/D	OMBIS 250; OFLIS 250; OGLIS 250	–	–
Venture	HIE 250/x/x/EURO/x	E 40	2,15	ZRM 1 000 A002 **	OMB 250 *	–	–
	HIE 250/x/x	E 40	3,0	ZRM 6-ES/B	OMB 250 *	–	–

* choke see page 170

** ignitor see page 246



OMBIS / OFLIS / OGLIS 250 W

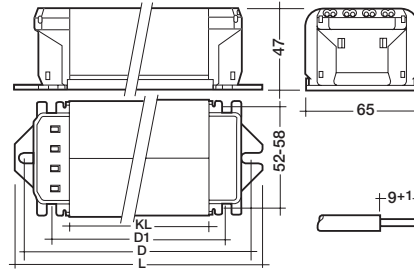


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OMBIS	2	10	480
OMBIS	1	6	240
OFLIS	3	6	240
OGLIS	4	6	216
OGLIS	6	4	144
OGLIS	5	2	84

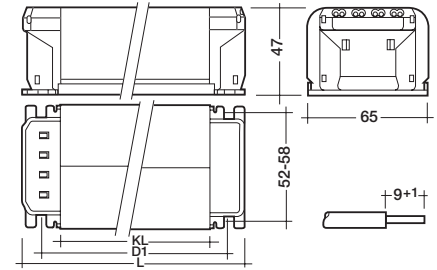
Certified:
EN 60922/923

figure 1



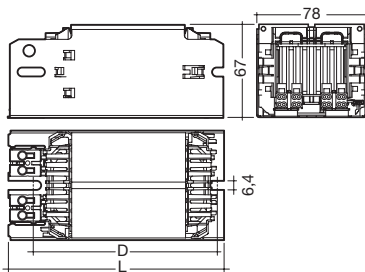
push terminal 0,75–2,5 mm²

figure 2



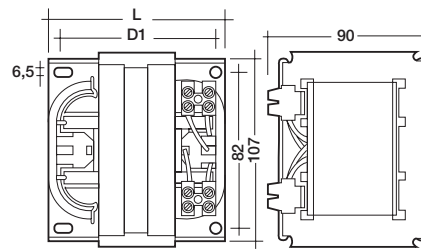
push terminal 0,75–2,5 mm²

figure 3



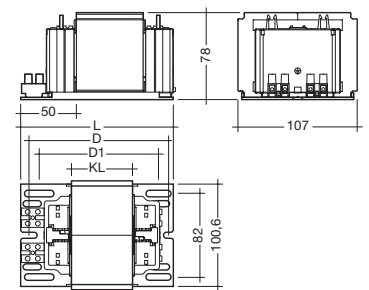
screw terminal 0,5–2,5 mm²

figure 4



screw terminal 1,5–4 mm²

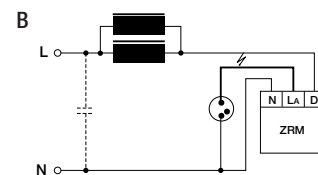
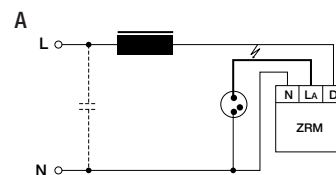
figure 5



push terminal 0,5–1,5 mm²

type	article number	voltage	thermal protection	fig.	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OMBIS 250 A103W 230–250 V 50 Hz	20570248	230/240/250	yes	1	1	212	150	195–204	170,5	3,5	75	34,2	0,40	B
OMBIS 250 A153W 230–250 V 50 Hz	20824891	230/240/250	yes	2	1	186	150	–	170,5	3,5	75	34,2	0,40	B
chokes with reduced temperature rise														
OMBIS 250 1/2 B103W 230–250 V 50 Hz *	20575656	230/240/250	yes	1	2	147	85	130–139	105,5	2,0	70	18,3	0,40	B
OFLIS 250 A504W 220–240 V 50 Hz	22158563	220/230/240	yes	3	3	152	80	122–146	–	3,1	70	27,6	0,39	B
OGLIS 250W 40 230–250 V 50 Hz TP	20562752	230/240/250	yes	4	4	94	40	–	80	3,1	70	25,5	0,39	A
OGLIS 250 C044W 220–240 V 50 Hz	89121836	220/230/240	yes	5	5	130	40	110,5–124	76,5–118	3,1	70	25,5	0,39	B
chokes with reinforced insulation														
OMBIS 250 A203W 230–250 V 50 Hz	20889659	230/240/250	yes	1	1	212	150	190–204	170,5	3,5	75	34,2	0,40	B
OGLIS 250 C203W 230–250 V 50 Hz	20886993	230/240/250	yes	4	4	94	40	–	80	3,1	70	25,5	0,39	B
60 Hz chokes														
OMBIS 250 A106W 220–240 V 60 Hz	20574693	220/230/240	yes	1	1	182	120	165–174	140,5	2,7	75	33,8	0,39	B

* 2 chokes connected in parallel are required to operate a 250 W lamp. See wiring diagram B



p.f. correction capacitor: $32,0 \mu\text{F} \pm 10\%$ 250 V
($25,0 \mu\text{F}$ at 60 Hz)
p.f. corrected line current: 1,35 A ($\lambda > 0,9$)



Ignitors

Digital safety ignitors and superimposed pulse ignitors



Packaging:

box of 50
1 200 pieces/pallet

Certified:

EN 60926
EN 60927

figure 1

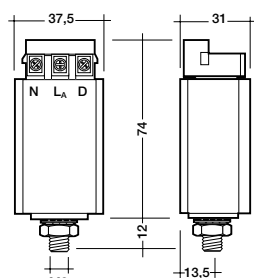
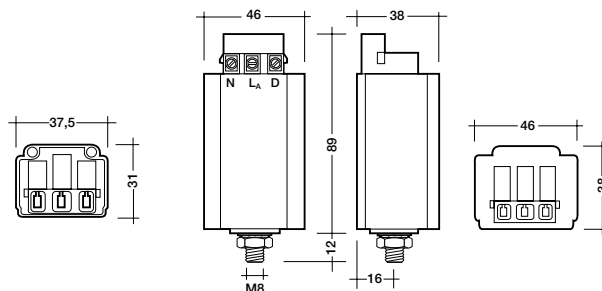


figure 2



type		Digital safety ignitors with switch off function		Superimposed pulse ignitors	
		ZRM 8-ES/D	ZRM 2,5-ES/TC	ZRM 4,5-ES/B *	ZRM 6-ES/B
article number		22082255	22087844	22082554	20298765
line voltage	V	198–264	198–264	198–264	198–264
mains frequency	Hz	50 oder 60	50–60	50–60	50–60
ignition voltage	kVs	4,0–5,0	4,0–5,0	4,0–5,0	4,0–5,0
max. permissible lamp current IB	A	6,2	3,0	4,6	5,0
ignition current	mA	–	~ 120	120	120
wattage HS	W	100–600	100–250 **	100–400	100–400
wattage HI	W	35–400	35–250	35–400	35–400
temperature rise at IB = 1,0 A (70 W)	K	–	~ 6,0	1,0	~ 1,0
IB = 1,8 A (150 W)	K	3,7	~ 11,0	5,0	~ 4,0
IB = 3,0 A (250 W)	K	9,6	~ 26,0	14,0	~ 11,0
IB = 4,6 A (400 W)	K	21,1	–	27,0	~ 21,0
IB = 6,2 A (600 W)	K	37,8	–	–	–
losses at IB = 1,0 A (70 W)	W	0,102	~ 0,6	0,1	~ 0,1
IB = 1,8 A (150 W)	W	0,330	~ 1,1	0,5	~ 0,5
IB = 3,0 A (250 W)	W	1,000	~ 2,6	1,0	~ 1,0
IB = 4,6 A (400 W)	W	–	–	2,5	~ 2,5
IB = 6,2 A (600 W)	W	4,700	–	–	–
impulse width at UZ min. -10%	µs	3,0	≥ 1	–	–
impulse width at 2 700 V	µs	–	–	~ 1,0	> 1,0
number of impulses per halfwave		4–10	3	3	3
distance between impulses	ms	< 0,3	< 0,3	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90 240–270	60–90 240–270	60–90 240–270	60–90 240–270
switch on voltage	V	< 198	–	–	–
switch off/on voltage	V	–	185–198	185–198	185–198
switch off of ignition		digital	digital	–	–
maximum load capacitance	pF	20–100	20–100	20–200	20–200
maximum distance from lamp	m	1,5	1,5	1,5	1,5
maximum housing temperature tc	°C	105	105	105	105
minimum operating temperature	°C	-30	-30	-30	-30
weight	kg	0,26	0,11	0,13	0,26
re-set function	sec.	> 0,5	> 0,5	–	–
figure		2	1	1	2

* ignitor recommended for external applications

** released for HST-DE 70 W



400 W Metal halide lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 242	page 241		
BLV	HIT 400...	E 40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
GE	ARC 400/D	E 40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
	KRC 400...	E 40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
Iwasaki	MT 400	E 40	3,25	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGL 400	-	-
Osram	HQI-E 400W/N/SI	E 40	3,25	ZRM 1 000 A002 **	OFL 400; OMB 400; OGL 400 *	-	-
	HQI-E 400...	E 40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
	HQI-T 400/N/SI	E 40	3,25	ZRM 1 000 A002 **	OFL 400; OMB 400; OGL 400 *	-	-
	HQI-T 400...	E 40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
	HQI-TS 400...	Fc 2	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
	HQI-BT 400	E40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
Philips	HPI 400 W	E 40	3,25	ZRM 1 000 A002 **	OFL 400; OMB 400; OGL 400 *	-	-
	HPI 400 W BU	E 40	3,25	ZRM 1 000 A002 **	OFL 400; OMB 400; OGL 400 *	-	-
	HPI 400...	E 40	3,5	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLI 400	-	-
	HPI 400 W BUS...	E 40	3,5	-	OGLI 400	-	-
	HPI-T 400	E 40	3,25	ZRM 1 000 A002 **	OFL 400; OMB 400; OGL 400 *	-	-
	HPI-T 400 W	E 40/45	3,5	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLI 400	-	-
Radium	HRI-E 400...	E 40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
	HRI-BT 400...	E 40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
	HRI-TS 400...	Fc 2	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-
Sylvania	HSI-T 400W/4K	E 40	3,25	ZRM 1 000 A002 **	OFL 400; OMB 400; OGL 400 *	-	-
	HSI-T 400/...	E 40	3,5	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLI 400	-	-
Venture	HIE 400W/x/x/EURO/x	E 40	3,25	ZRM 1 000 A002 **	OFL 400; OMB 400; OGL 400 *	-	-
	HIE 400/x/x	E 40	3,5	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLI 400	-	-
	HIE 400/x	E 40	4,6	ZRM 4,5-ES/B; ZRM 6-ES/B; ZRM 6-ES/TC; ZRM 8-ES/D	OGLS 400	-	-

* choke see page 172

** ignitor see page 246



**Magnetic chokes
Metal halide lamps**

OGLI / OGLS 400 W

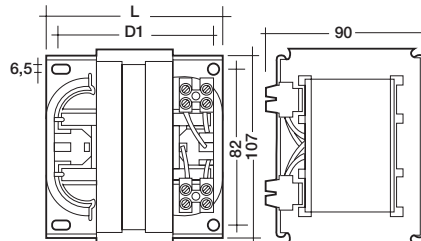


- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

Packaging:	Code	Box	Pallet
OGLI	1	5	180
OGLS	2	4	144
OGLI / OGLS	3	2	84

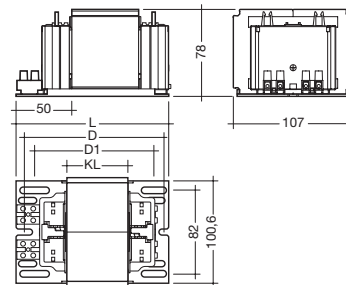
Certified:
EN 60922/923

figure 1



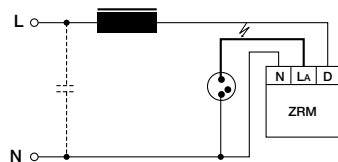
screw terminal 1,5–4 mm²

figure 2



screw terminal 1,5–4 mm²

type	article number	voltage	thermal protection	fig.	packaging code	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OGLI 400W 50 230–250 V 50 Hz TP	20562765	230/240/250	yes	1	1	104	50	–	90	3,5	65	25	0,46	B
OGLS 400W 60 220–240 V 50 Hz TP	20820138	220/230/240	yes	1	2	114	60	–	100	4,5	70	30	0,41	B
OGLI 400 C044W 220–240 V 50 Hz	89121838	220/230/240	yes	2	3	140	50	120,5–134	86,5–128	3,5	65	25	0,46	A
OGLS 400 C044W 220–240 V 50 Hz	89121840	220/230/240	yes	2	3	150	60	130,5–144	96,5–138	4,5	70	30	0,41	B
chokes with reinforced insulation														
OGLI 400W C203W 230–250 V 50 Hz	20887451	230/240/250	yes	1	1	104	50	–	90	3,5	65	23,8	0,53	B
OGLS 400 C203W 230–250 V 50 Hz	20887007	230/240/250	yes	1	2	114	60	–	100	4,2	75	34	0,37	B
60 Hz chokes														
OGLS 400W 60 220–240 V 60 Hz	20565518	220/230/240	–	1	2	114	60	–	100	4,2	60	30,4	0,42	B



p.f. correction capacitor: 45,0 $\mu\text{F} \pm 10\%$ 250 V
(40,0 μF at 60 Hz)
p.f. corrected line current: 2,10 A ($\lambda > 0,9$)



Digital safety ignitors and superimposed pulse ignitors



Packaging:
 box of 50
 1 200 pieces/pallet

Certified:
 EN 60926
 EN 60927

figure 1

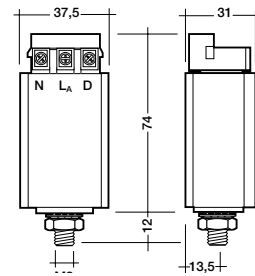
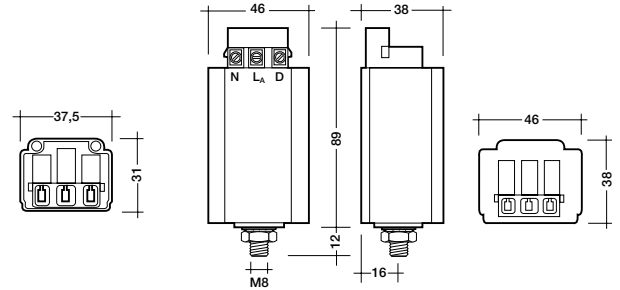


figure 2



type		Digital safety ignitors with switch off function	Pulse Control	Digital safety ignitors with switch off function	Superimposed pulse ignitors	
		ZRM 8-ES/D		ZRM 6-ES/TC	ZRM 4,5-ES/B *	ZRM 6-ES/B
article number		22082255		22087863	22082554	20298765
line voltage	V	198–264		198–264	198–264	198–264
mains frequency	Hz	50 oder 60		50–60	50–60	50–60
ignition voltage	kVs	4,0–5,0		4,0–5,0	4,0–5,0	4,0–5,0
max. permissible lamp current IB	A	6,2		4,6	4,6	5,0
ignition current	mA	–		~ 120	120	120
wattage HS	W	100–600		100–400 **	100–400	100–400
wattage HI	W	35–400		35–400	35–400	35–400
temperature rise at IB = 1,0 A (70 W)	K	–		~ 4,0	1,0	~ 1,0
IB = 1,8 A (150 W)	K	3,7		~ 7,0	5,0	~ 4,0
IB = 3,0 A (250 W)	K	9,6		~ 14,0	14,0	~ 11,0
IB = 4,6 A (400 W)	K	21,1		~ 28,0	27,0	~ 21,0
IB = 6,2 A (600 W)	K	37,8		–	–	–
losses at IB = 1,0 A (70 W)	W	0,102		~ 0,5	0,1	~ 0,1
IB = 1,8 A (150 W)	W	0,330		~ 0,8	0,5	~ 0,5
IB = 3,0 A (250 W)	W	1,000		~ 1,2	1,0	~ 1,0
IB = 4,6 A (400 W)	W	–		~ 3,4	2,5	~ 2,5
IB = 6,2 A (600 W)	W	4,700		–	–	–
impulse width at UZ min. -10%	µs	3,0		≥ 1	–	–
impulse width at 2 700 V	µs	–		–	~ 1,0	> 1,0
number of impulses per halfwave		4–10		3	3	3
distance between impulses	ms	< 0,3		< 0,3	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90		60–90	60–90	60–90
		240–270		240–270	240–270	240–270
switch on voltage	V	< 198		–	–	–
switch off/on voltage	V	–		185–198	185–198	185–198
switch off of ignition		digital		digital	–	–
maximum load capacitance	pF	20–100		20–100	20–200	20–200
maximum distance from lamp	m	1,5		1,5	1,5	1,5
maximum housing temperature tc	°C	105		105	105	105
minimum operating temperature	°C	-30		-30	-30	-30
weight	kg	0,26		0,26	0,13	0,26
re-set function	sec.	> 0,5		> 0,5	–	–
figure		2		2	1	2

* ignitor recommended for external applications

** released for HST-DE 70 W



1 000 W Metal halide lamps

Lamps				Ignitors	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 245	page 244		
BLV	HIT 1 000	E 40	9,5	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
Iwasaki	MT 1 000...	E 40	8,25	ZRM 12 B001; ZRM 12-ES/D	OGL 1 000 */OGLIS 1000	–	–
Osram	HQI-E 1 000...	E 40	9,5	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
	HQI-T 1 000...	E 40	9,5	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
Philips	HPI-T 1 000 W	E 40/45	8,25	ZRM 1000 A002 **	OGLIS 1000	–	–
	HPI-T 1 000 W	E 40/45	8,25	ZRM 1000 A002 **	OGLIS 1000	–	–
Radium	HRI-T 1 000...	E 40	9,5	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
	HRI-TS 1 000/D	Fc 2	9,5	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
	HRI-TS 1 000 W/D/S	cable	9,5	ZRM 12 B001; ZRM 12-ES/D	OGLIS 1000	–	–
Sylvania	HSI-T 1 000 W...	E 40	8,25	ZRM 12 B001; ZRM 1000	OGL 1 000 */OGLIS 1000	–	–
	HSI-T 1 000 W/4K	E 40	8,25	ZRM 1000 A002 **	OGL 1 000 */OGLIS 1000	–	–

* choke see page 174

** ignitor see page 246



OGLIS 1 000 W



- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 155°C

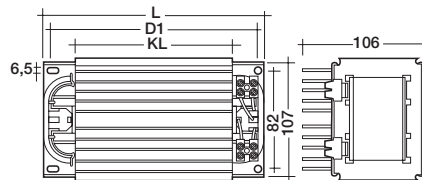
Packaging:

box of 2
36 boxes/pallet
72 pieces/pallet

Certified:

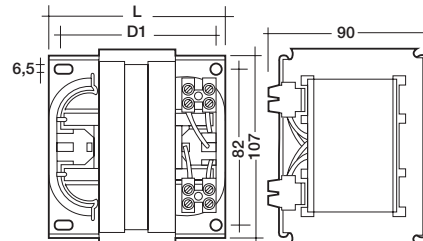
EN 60922/923

figure 1



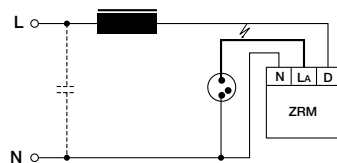
screw terminal 1,0–6 mm²

figure 2



screw terminal 1,0–6 mm²

type	article number	voltage	thermal protection	figure	length L mm	core stack length KL mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
							D	D1					
Standard Vorschaltgeräte													
OGLIS 1000 A024W 220–240 V 50 Hz	22148490	220/230/240	yes	1	194	140	–	180	9,0	65	72	0,45	A
Vorschaltgeräte mit verstärkter Isolierung													
OGLIS 1000 C203W 230–250 V 50 Hz	20887571	230/240/250	yes	2	234	180	–	220	11,6	60	51	0,43	B
60 Hz Vorschaltgeräte													
OGLIS 1000W 140 220–240 V 60 Hz	20880891	220/230/240	–	1	194	140	–	180	9,0	60	70	0,43	B



p.f. correction capacitor: 85,0 $\mu\text{F} \pm 10\%$ 250 V

(70,0 μF at 60 Hz)

p.f. corrected line current: 5,10 A ($\lambda > 0,9$)



Digital safety ignitors and superimposed pulse ignitors



Packaging:

ZRM 12-ES/D

box of 50
1 200 pieces/pallet

ZRM 12 B001

box of 20
960 pieces/pallet

Certified:

EN 60926
EN 60927

figure 1

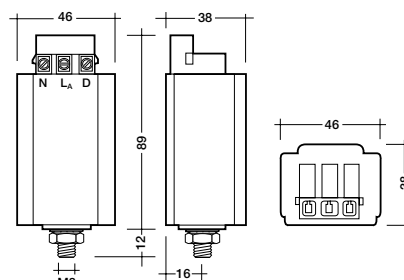
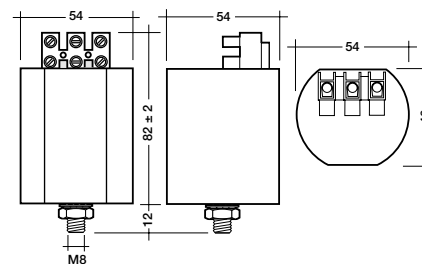


figure 2

Digital safety ignitors
with switch off function

Superimposed pulse ignitors

type		ZRM 12-ES/D	ZRM 12 B001
article number		22082268	24031920
line voltage	V	198–264	198–264
mains frequency	Hz	50 or 60	50–60
ignition voltage	kVs	4,0–5,0	3,0–5,0
max. permissible lamp current IB	A	10,3	12,0
ignition current	mA	–	120
wattage HS	W	100–1 000	600–1 000
wattage HI	W	35–1 000	1 000
temperature rise at			
IB = 1,8 A (150 W)	K	1,5	–
IB = 3,0 A (250 W)	K	3,8	–
IB = 4,6 A (400 W)	K	8,0	–
IB = 6,2 A (600 W)	K	13,7	~ 14,0
IB = 9,5 A (1 000 W)	K	31,4	~ 32,0
IB = 10,3 A (1 000 W)	K	35,4	~ 40,0
losses at			
IB = 1,8 A (150 W)	W	0,150	–
IB = 3,0 A (250 W)	W	0,404	–
IB = 4,6 A (400 W)	W	0,970	–
IB = 6,2 A (600 W)	W	1,820	~ 2,1
IB = 9,5 A (1 000 W)	W	4,467	~ 4,7
IB = 10,3 A (1 000 W)	W	5,697	~ 5,9
impulse width at UZ min. -10%	µs	2,6	–
impulse width at 3 000 V	µs	–	> 1,0
number of impulses per halfwave		4–10	2–3
distance between impulses	ms	< 0,3	< 0,3
phase displacement of ignition impulses	°el	60–90	60–90
		240–270	240–270
switch on voltage	V	< 198	–
switch off/on voltage	V	–	185–198
switch off of ignition		digital	–
maximum load capacitance	pF	20–100	20–200
maximum distance from lamp	m	1,5	4
maximum housing temperature tc	°C	105	100
minimum operating temperature	°C	-30	-30
weight	kg	0,26	0,35
re-set function	sec.	> 0,5	–
figure		1	2



Impulse ignitors for HI-lamps up to max. 1 000 V ignition voltage

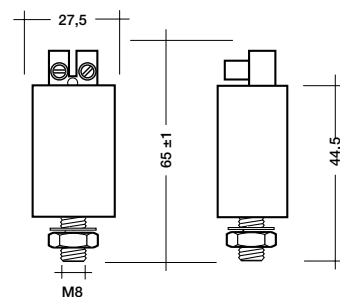


Packaging:

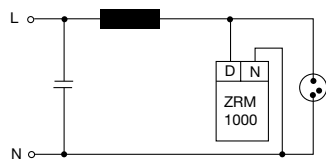
box of 50
2 400 pieces/pallet

Certified:

EN 60926



type		ZRM 1000 A002
article number		24032939
line voltage	V	198–264
mains frequency	Hz	50–60
ignition voltage	kVs	0,65–0,90
temperature rise during ignition	K	8,0
losses during ignition	W	1,6
impulse width at 560 V	µs	420–460
number of impulses per halfwave		1
phase displacement of ignition impulses	°el	60–90
switch off/on voltage	V	175–190
maximum load capacitance	pF	20–10 000
maximum distance from lamp	m	100
maximum housing temperature t_c	°C	90
minimum operating temperature	°C	-30
weight	kg	0,06





2 000–3 500 W Metal halide lamps

Lamps				Igniters	Magnetic chokes	Remote gear boxes	Electronic ballasts
manufacturer	description	lamp holder	nominal current A	page 249	page 248		
GE	MBIL 2 000 W	special	10,3	–	OGLI 2000 W180	–	–
Iwasaki	MT 2 000 B-BH-L	E 40	8,8	ZRM 1 200/400 A001	OGLI 2000 W160	–	–
Osram	HQI-T 2 000/D	E 40	10,3	ZRM 12/400 B001	OGLI 2000 W180	–	–
	HQI-T 2 000/D/I	E 40	10,3	–	OGLI 2000 W180	–	–
	HQI-T 2 000/N	E 40	8,8	–	OGLI 2000 W160	–	–
	HQI-T 2 000/N/230V	E 40	8,8	ZRM 20 B001	2xOGL 1000...parallel	–	–
	HQI-T 2000/N/E/SUPER	E 40	8,8	ZRM 12/400 B001	OGLI 2000 W180	–	–
	HQI-T 2000/N/SN/SUPER	E 40	8,8	ZRM 1 200/400 A001	OGLI 2000 W160	–	–
	HQI-TS 2 000/DS	cable	11,3	ZRM 12/400 B001	OGLI 2000 W180	–	–
	HQI-T 3 500/D	E 40	18,0	ZRM 20/400 B001	2xOGLI 1/2 3500...parallel	–	–
Philips	HPI-T 2 000W/230V	E 40/45	16,5	ZRM 20 B001	2xOGL 1000...parallel	–	–
	HPI-T 2 000W/380V	E 40/45	8,8	ZRM 12/400 B001	OGLI 2000 W160	–	–
	MHN-TD 2 000 W	cable	9,6	ZRM 12/400 B001	OGLI 2000 W180	–	–
	MHT-TD 2 000 W	cable	9,6	ZRM 12/400 B001	OGLI 2000 W180	–	–
Radium	HRI-T 2 000/D	E 40	10,3	ZRM 12/400 B001	OGLI 2000 W180	–	–
	HRI-T 2 000/D/I	E 40	10,3	–	OGLI 2000 W180	–	–
	HRI-T 2 000/NSC/400	E 40	8,8	ZRM 12/400 B001	OGLI 2000 W160	–	–
	HRI-T 2 000/N	E 40	8,8	–	OGLI 2000 W160	–	–
	HRI-TS 2 000/D	E 40	10,3	ZRM 12/400 B001	OGLI 2000 W180	–	–
	HRI-TS 2 000/DS	cable	11,3	ZRM 12/400 B001	OGLI 2000 W180	–	–
	HRI-T 3 500/D	E 40	18,0	ZRM 20/400 B001	2xOGLI 1/2 3500...parallel	–	–
	HRI-TS 3 500/D	E 40	18,0	ZRM 20/400 B001	2xOGLI 1/2 3500...parallel	–	–
Sylvania	HSI-T 2 000W/380V	E 40	10,3	ZRM 12/400 B001	OGLI 2000 W180	–	–



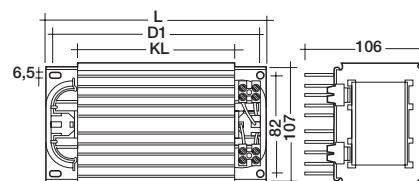
OGLI 2 000 W und 3 500 W



• $t_w = 130^\circ\text{C}$

Packaging:	Code	Box	Pallet
OGLI	1	2	72

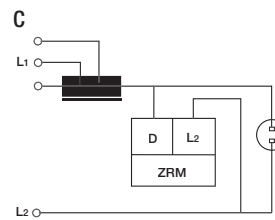
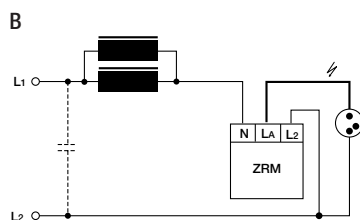
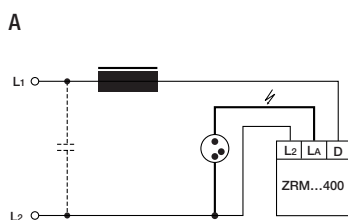
Certified:
EN 60922/923



screw terminal 1,0–6 mm²

type	article number	voltage	thermal protection	figure	packaging code	core stack length KL mm	length L mm	fixing centres mm		weight kg	ΔT K	losses W	λ	range
								D	D1					
standard chokes														
OGLI 2000W 160 380–415 V 50 Hz	20295037	380/400/415	–	–	1	160	214	–	200	8	70	75	0,59	B
OGLI 2000W 180 380–415 V 50 Hz	20566616	380/400/415	–	–	1	180	234	–	220	11,6	80	100	0,51	B
OGLI 2000W 210 380–420 V 50 Hz	20882285	380/400/420	–	–	1	210	268	–	254	13,1	90	105	0,56	A
OGLI 1/2 3500W 180 380–415 V 50 Hz *	20560659	380/400/415	–	–	1	180	234	–	220	11,6	65	150	0,51	B
60 Hz chokes														
OGLI 2000W 180 380–415 V 60 Hz	20563406	380/400/415	–	–	1	180	234	–	220	11,6	70	86	0,53	B

* 2 chokes connected in parallel are required to operate a 3 500 W lamp. See wiring diagram B



p.f. correction capacitor OGLI 2000 W 160: 37,0 $\mu\text{F} \pm 10\%$ 450 V (32,0 μF at 60 Hz)

p.f. corrected line current: 6,0 A ($\lambda > 0,9$)

p.f. correction capacitor OGLI 2000 W 180 and 210: 60,0 $\mu\text{F} \pm 10\%$ 450 V (45,0 μF at 60 Hz)

p.f. corrected line current: 6,0 A ($\lambda > 0,9$)

p.f. correction capacitor OGLI 1/2 3500 W: 100,0 $\mu\text{F} \pm 10\%$ 450 V

p.f. corrected line current: 10,5 A ($\lambda > 0,9$)



Ignitors

Superimposed and pulse ignitors



Packaging:

ZRM 12 B001; ZRM 12/400 B001

box of 20

960 pieces/pallet

ZRM 20 B001; ZRM 20/400 B001

box of 15

720 pieces/pallet

ZRM 1200/400 A001

box of 50

1 200 pieces/pallet

Certified:

EN 60926

EN 60927

Certified ZRM 1200/400 A001:

EN 60926

figure 1

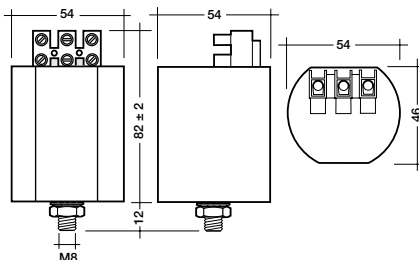


figure 2

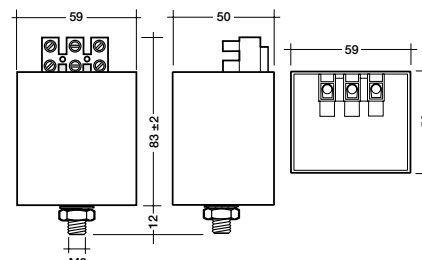
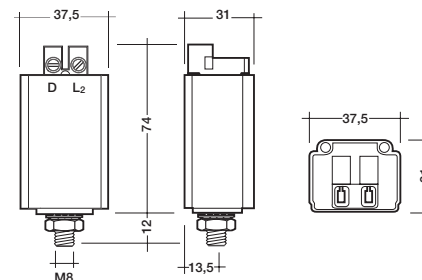
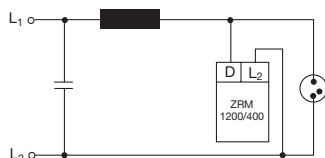


figure 3



type		ZRM 12 B001	ZRM 12/400 B001	ZRM 20 B001	ZRM 20/400 B001	ZRM 1200/400 A001
article number		24031920	24031936	24031942	24031958	89121941
line voltage	V	198–264	342–490	198–264	342–490	376–440
mains frequency	Hz	50–60	50–60	50–60	50–60	50–60
ignition voltage	kVs	3,5–5,0	4,0–5,0	3,5–5,0	4,0–5,0	1,0–1,4
max. permissible lamp current IB	A	12,0	12,0	20,0	20,0	–
ignition current	mA	120	120	120	120	–
temperature rise during ignition	K	–	–	–	–	35,0
temperature rise at IB = 6,2 A (600 W)	K	~ 14,0	–	–	–	–
IB = 9,5 A (1 000 W)	K	~ 32,0	–	~ 12,0	–	–
IB = 10,3 A (2 000 W)	K	~ 40,0	~ 40,0	–	~ 14,0	–
IB = 16,2 A (2 000 W)	K	–	–	~ 35,0	–	–
IB = 18,0 A (3 500 W)	K	–	–	–	~ 43,0	–
losses during ignition	W	–	–	–	–	3,8
losses at IB = 6,2 A (600 W)	W	~ 2,1	–	–	–	–
IB = 9,5 A (1 000 W)	W	~ 4,7	–	~ 2,5	–	–
IB = 10,3 A (2 000 W)	W	~ 5,9	~ 5,9	–	~ 2,9	–
IB = 16,2 A (2 000 W)	W	–	–	~ 7,4	–	–
IB = 18,0 A (3 500 W)	W	–	–	–	~ 9,3	–
impulse width at 900 V	µs	–	–	–	–	400–450
impulse width at 3 000 V	µs	> 1,0	> 1,0	> 1,0	> 1,0	–
number of impulses per halfwave		2–3	2–3	2–3	2–3	1
distance between impulses	ms	< 0,3	< 0,3	< 0,3	< 0,3	–
phase displacement of ignition impulses	°el	60–90	60–90	60–90	60–90	60–90
		240–270	240–270	240–270	240–270	–
switch off/on voltage	V	185–198	340–342	160–198	340–342	340–365
maximum load capacitance	pF	20–200	20–200	20–200	20–200	20–10 000
maximum distance from lamp	m	4	4	4	4	100
maximum housing temperature tc	°C	100	100	100	100	100
minimum operating temperature	°C	-30	-30	-30	-30	-30
weight	kg	0,35	0,35	0,48	0,48	0,17
figure		1	1	2	2	3



ZRM 1200/400 A001



OM 35–100 W 220–250 V 50 Hz



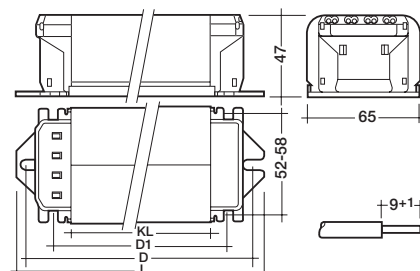
- $t_w = 130^\circ\text{C}$
- resetting thermal protector
- switch off temperature 150°C

Packaging:

box of 10
48 boxes/pallet
480 pieces/pallet

Certified:

EN 60922/923

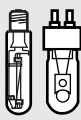
push terminal 0,75–2,5 mm²

Lamp	Choke	article number	voltage	length	KL	fixing centres	weight	ΔT	losses	nominal lamp current	λ	P. F. Correction	
												parallel comp. capacitor	range
35	OMB SDW 35 B153W 220-250 V 50 Hz ②	20823181	220/230 240/250	71	35	– ② 55	0,90	50	6,2	0,48	0,36	6,0	B
50	OMB SDW 50 B103W 220-250 V 50 Hz	20574343	220/230 240/250	102	50	85–94 60	1,00	65	9,5	0,78	0,33	8,0	B
50	OMB SDW 50 B153W 220-250 V 50 Hz ②	20881229	220/230 240/250	76	50	– ② 60	1,00	65	9,5	0,78	0,33	8,0	B
100	OMB SDW 100 B103W 220-250 V 50 Hz	20574359	220/230 240/250	137	75	120–129 95	1,70	55	12,7	1,35	0,36	14,0	B
100	OMB SDW 100 B153W 220-250 V 50 Hz ②	20823207	220/230 240/250	111	75	– ② 95	1,70	55	12,7	1,35	0,36	14,0	B

① mean value, measured at 25°C copper temperature

② short base plate without central fixing

Use with Philips control unit.



Magnetic chokes with power tapping for impulse ignitors ZRM 2300 and ZRM 4000
High pressure sodium lamps and metal halide lamps

OM 35–150 W 230/240 V 50 Hz P



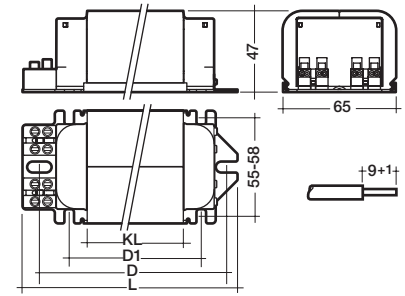
- $t_w = 130^\circ\text{C}$
- screw terminal 0,5–2,5 mm²
- resetting thermal protector

Packaging:

box of 10
48 boxes/pallet
480 pieces/pallet

Certified:

EN 60922/923

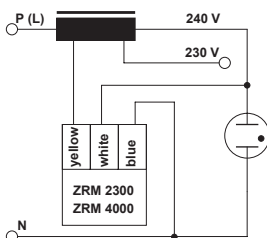


push terminal 0,75–2,5 mm²

Lamp type	wattage W	Choke type	article number	voltage V	length L mm	core stack length KL mm	fixing centres		weight kg	ΔT K	losses W ①	nominal lamp current A	λ	P. F. Correction		range
							D mm	D1						parallel	* line	
														capacitor $\mu\text{F} \pm 10\% 250\text{V}$	current A	
HI	35	OMBIS 35 PB503W 230/240V 50Hz	22148609	230/240	103	35	80–89	55,5	0,9	50	7,5	0,53	0,36	6	0,22	B
HS	50	OMBS 50 PA503W 230/240V 50Hz	22148632	230/240	103	35	80–89	55,5	0,9	70	11,7	0,76	0,35	10	0,3	B
HI	70	OMBI 70 PA503W 230/240V 50Hz	22148610	230/240	113	45	90–99	65,5	1,2	70	13,1	1	0,37	12	0,43	B
HS	70	OMBS 70 PA503W 230/240V 50Hz	22148611	230/240	113	45	90–99	65,5	1,2	70	13,1	1	0,37	12	0,43	B
HI/HS	100	OMBIS 100 PA503W 230/240V 50Hz	22148612	230/240	123	55	100–109	75,5	1,4	65	13,7	1,2	0,4	12	0,55	B
HI/HS	150	OMBIS 150 PB503W 230/240V 50Hz	22148613	230/240	153	85	130–139	105,5	2	70	18,3	1,8	0,41	20	0,8	B

① mean value, measured at 25°C copper temperature

* $\lambda > 0,9$





OFL/OGL 150-1 000 W 230/240 V 50 Hz P

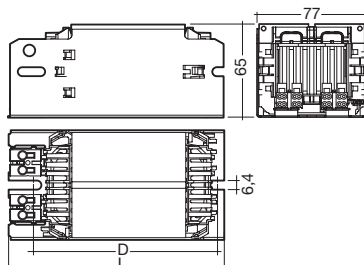


- $t_w = 130^\circ\text{C}$
- screw terminal OFL 0,5-2,5 mm²
- screw terminal OGL 1,5-4 mm²
- resetting thermal protector

Packaging:	Code	Box	Pallet
OFLIS	1	6	66
OGLI/OGLS	2	2	168
OGLS	3	1	84
OGLIS	4	2	72

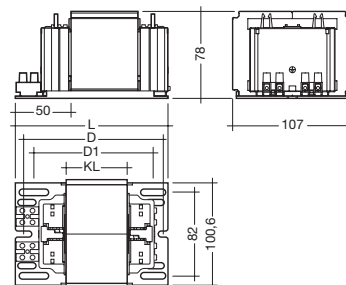
Certified:
EN 60922/923

figure 1



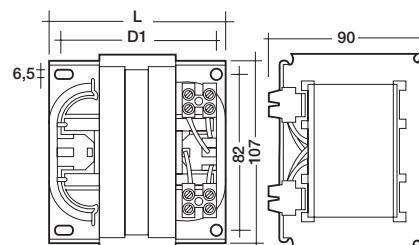
screw terminal 0,5-2,5 mm²

figure 2



screw terminal 1,5-4 mm²

figure 3

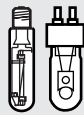


screw terminal 1,5-4 mm²

Lamp		Choke											P. F. Correction		range		
type	watt- age W	type	article number	pack- aging code	fig.	length L mm	KL mm	fixing centres D mm D1 mm		weight kg	ΔT K	losses W $\text{\textcircled{D}}$	nominal lamp current A	λ		parallel capacitor $\mu\text{F} \pm 10\% 250\text{V}$	* line current A
HI/HS	150	OFLIS 150 PA503W 230/240V 50Hz	22158548	1	1	117	46	87-111	-	1,9	70	20,3	1,8	0,40		20	0,80
HI/HS	250	OFLIS 250 PA503W 230/240V 50Hz	22148679	1	1	152	81	122-146	-	3,1	70	27,6	3,0	0,38	32	1,35	B
HI	400	OGLI 400 PC043W 230/240V 50Hz	89121866	2	2	140	50	120,5-134	86,5-128	3,5	65	25	3,5	0,46	35	1,90	B
HS	400	OGLS 400 PC043W 230/240V 50Hz	89121867	2	2	150	60	130,5-144	96,5-138	4,5	70	30	4,6	0,41	45	2,10	B
HS	600	OGLS 600 PC043W 230/240V 50Hz	89121868	3	2	190	100	170,5-184	136,5-178	6,7	65	35	6,2	0,43	60	3,10	B
HI/HS	1000	OGLIS 1000 PC023W 230/240V 50Hz	22148485	4	3	234	180	-	220	11,6	60	51	9,5	0,43	100	5,10	B

$\text{\textcircled{D}}$ Mittelwert gemessen bei 25°C Kupfertemperatur

* $\lambda > 0,9$

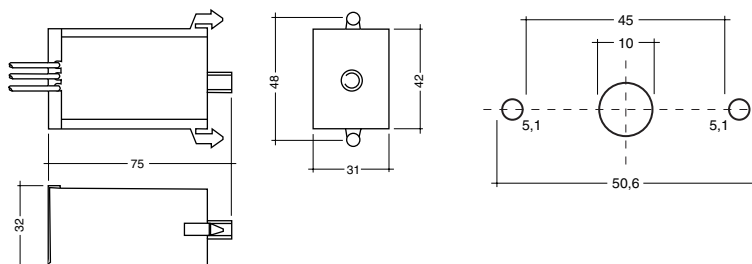


Impulse ignitors with pulse/break timer operation
Only for use with TridonicAtco chokes of the P class

ZRM 2300 C201 and ZRM 4000 C201



- stud or snap fixing
- connection with flexible wires 3 x 0,75 mm²
- cable length 340/340/340 mm
- safety class IP20
- lamps ZRM 2300 C201:
HS 50-70 W
- lamps ZRM 4000 C201:
HS 100-1 000 W
HI 35-1 000 W



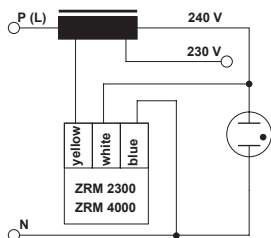
Ignition cycles:

ON cycle: 16 sec.
 OFF cycle: 112 sec.
 time out: 15 min.

Certified:

EN 60926

type		ZRM 2300 C201	ZRM 4000 C201
article number		89810640	89810826
line voltage	V	198-254	198-254
mains frequency	Hz	50	50
ignition voltage	kV	2,3	4,5
number of impulses per halfwave		1	1
phase displacement of ignition impulses	°el	60-90 / 240-270	60-90 / 240-270
switch off/on voltage	V	160-198	160-198
impulse width at 90 % ignition voltage	µs	2	2
timer	min.	15	15
maximum load capacitance	pF	1 300	1 300
maximum housing temperature t _c	°C	80	80
minimum operating temperature	°C	-40	-40



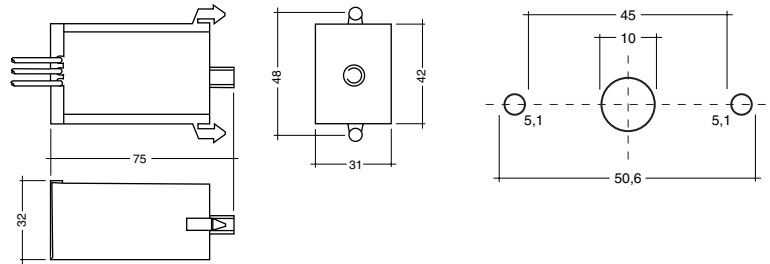


ZRM 4000 B101

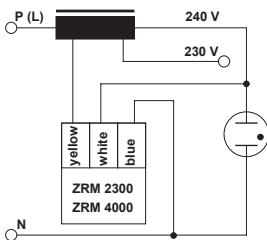


- stud or snap fixing
- connection with flexible wires 3 x 0,75 mm²
- cable length 340/340/340 mm
- lamp: HS 100–400 W

Certified:
EN 60926



type		ZRM 4000 B101
article number		89810824
line voltage	V	198–254
mains frequency	Hz	50
ignition voltage	kV	4,5
number of impulses per halfwave		1
phase displacement of ignition impulses	°el	60–90 / 240–270
switch off/on voltage	V	160–198
impulse width at 90 % ignition voltage	µs	2
timer	min.	1–10
maximum load capacitance	pF	1 300
maximum housing temperature t _c	°C	80
minimum operating temperature	°C	-40



Blocking inductors ECF 230/240 V 50 Hz



In circuits with mains signalling, filter chokes must be incorporated before the parallel power factor correction capacitors. The correct type to use depends on the capacitor rating and the control frequency.

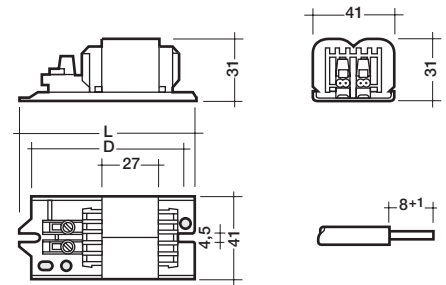
Packaging:

ECF A27

box of 55
1 980 pieces/pallet

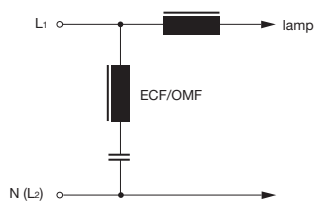
ECF A50

box of 36
1 296 pieces/pallet

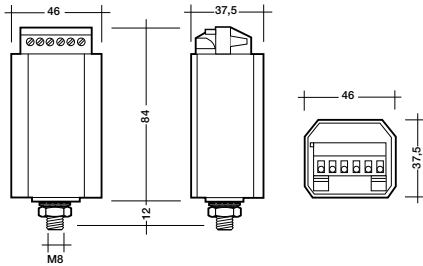


capacitor $\mu\text{F} \pm 10\%$	type	article number	length L mm	fixing centres D mm	range
6	ECF 6/485 A27 230/240V 50Hz	20566426	84,5	77	B
8	ECF 8/485 A27 230/240V 50Hz	20560466	84,5	77	B
10	ECF 10/485 A27 230/240V 50Hz	20560494	84,5	77	B
12	ECF 12/485 A27 230/240V 50Hz	20566527	84,5	77	B
20	ECF 20/485 A27 230/240V 50Hz	20566549	84,5	77	B
25	ECF 25/485 A27 230/240V 50Hz	20825183	84,5	77	B
32	ECF 32/485 A27 230/240V 50Hz	20825199	84,5	77	B
45	ECF 45/485 A50 230/240V 50Hz	20820349	110	100–104	B
60	ECF 60/485 A50 230/240V 50Hz	20566568	151	130–144	B

Important: Voltage at capacitor increases in connection with blocking inductors by 5 %.



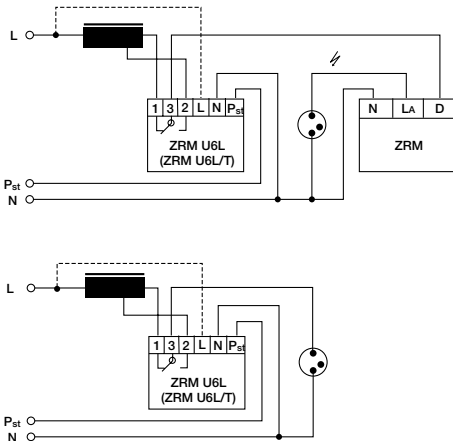
Power switch ZRM U6L and ZRM U6L/T



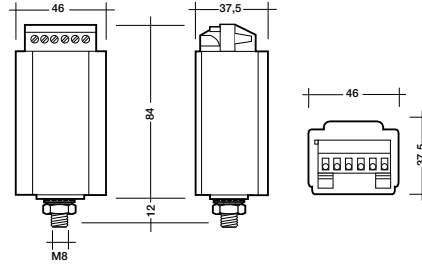
Reduces the light output of MBF and SON lamps by switching between chokes tapping, thus saving energy without reducing lamp life. Lamp manufacturers recommend that the lamp should always be started at 100 %. The ZRM U6L/T Power switch achieves this and after 330 seconds to the preset light level.

- control voltage: 220–240 V 50/60 Hz
- nominal contact voltage: 250 V
- nominal contact current: 6 A/cos φ = 0,5
- max. case temperature: 80°C
- class 2
- switch over time 330 seconds for type ZRM U6L/T

article number ZRM U6L: 20823041
 article number ZRM U6L/T: 20823057



ZRM U6M Digital power switch without control wires for HID lamps



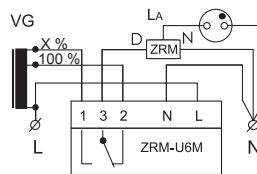
The ZRM U6M automatically calculates midnight based on the switch on time in the evening and the switch off time in the morning 3 Hours before midnight the ZRM U6M switches to the lower level and 4 hours after midnight back to 100 %. The ZRM U6M needs no servicing or complicated controls.

- for switching impedance with tapped chokes or supplementary impedances
- digital switch over relay with short time bridging allowing the changeover to a lower lighting level
- integrated delay before switch over after start at 100 %

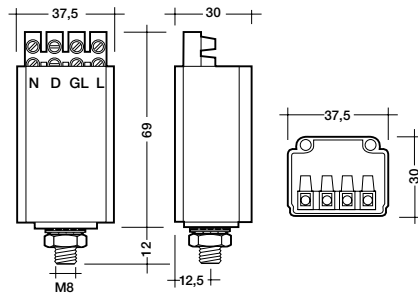
Lamps:

High pressure sodium lamps 35–400 W
 High pressure mercury lamps 50–400 W

type	ZRM U6M A001	
article number		22082722
voltage	V	220–240
frequency	Hz	50
max. case temperature tc	°C	80
time delay	sec.	600
positive switching logic	h	7

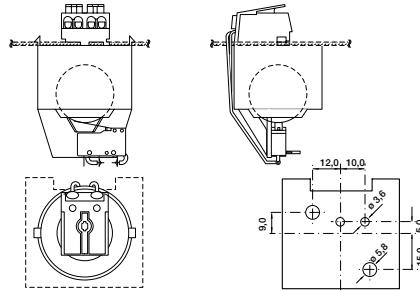


Lamp reignition monitor LRM 500



type		LRM 500
article number		20825867
line voltage	V	198–264
frequency	Hz	50–60
maximum choke voltage UD	V	800
maximum HID lamp wattage	W	1 000
auxiliary lamp wattage	W	5–500
maximum switched load	VA	200
temperature rise at UN = 230 V	K	~ 12,0
UN = 240 V	K	~ 15,0
losses at UN = 230 V	K	~ 1,3
UN = 240 V	K	~ 1,6
RFI rating		N
min. operating temperature	°C	-30
max. tc-temperature	°C	90
average light output at switch off	%	> 80

Tilt switch

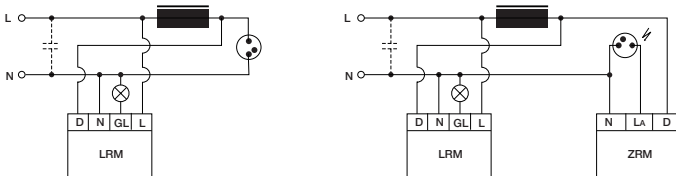


Mounting to be defined by the installer.

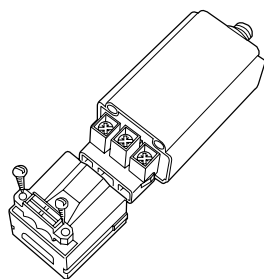
EN 60598 states that if a luminaire falls over at 6° from the vertical and has a temperature above 175°C then it must be fitted with a safety device.

The tilt switch NS 002 fulfills these requirements. No mercury is used in this product.

type		Tilt switch NS002
article number		20826882
max. voltage	V	250
max. current	A	3,0/cos φ = 0,5
max. housing temperature tc	°C	85°C
mounting position		vertical, stud down



Terminal covers with strain relief ZE 001



Suitable for ignitors 35–400 W and converters 80/50, 125/70, 125/100

article number: 20572171

Safety isolating transformers for low voltage lamps

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Magnetic safety isolating transformers for low voltage lamps

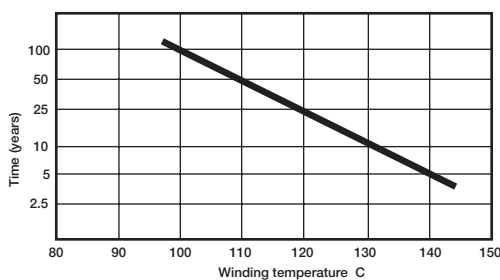


TMDD

Low voltage lamps need transformers to reduce mains voltage to a value specified by the lamp manufacturers. The standard supply voltage for low voltage lighting is generally 12 V, although 24 V and 6 V are also used. The standard range of transformers produce 12 V, but other voltages are available on request.

Optimum lamp operation

TridonicAtco transformers are designed to ensure optimum operation in terms of luminous flux and lamp life, both of which are strongly dependent on supply voltage variation.



Long life

Because of their long hours of use, low voltage transformers have to be designed and built to a high specification, which involves the use of high quality heat resistant materials. Class H insulation materials ensure long service life, which according to EN 61558 allows a maximum winding temperature of 165°C measured at 6 % over voltage. At a winding temperature of 130°C, 10 years life can be expected theoretically.

All TridonicAtco wound transformers can be used in dimming circuits in conjunction with a phase cutting dimmer, which should be suitable for use with inductive loads. To ensure a symmetrical voltage supply to the transformers, falling edge dimmers must be used which are suitable for inductive loads.

Fusing

Transformers must be protected on the primary side, either by an anti-surge fuse of the correct value, or a built-in current sensitive fuse (see individual specifications).

Secondary fusing protects against overloading and short circuit on the low voltage side. In multi lamp installations it also ensures only one lamp goes out, rather than all those connected to the transformer. Fuses must be of the correct value mentioned on the transformer and be anti-surge types.

Thermal protection

Thermal protection is required to limit the temperature rise in the event of a fault developing. The thermal cut-outs used in Tridonic transformers are of the current sensitive type and, therefore, a primary fuse is no longer necessary. Therefore no additional fuse on primary side is required for the W-type (current sensitive mains resetting thermal protection or thermal protection with fuse). For the U-type (thermal protector) a primary fuse is recommended. For the thermal cut-out to reset the power must be turned off for a short period of time. If a transformer is selected without a thermal cut-out, a primary fuse must be fitted.

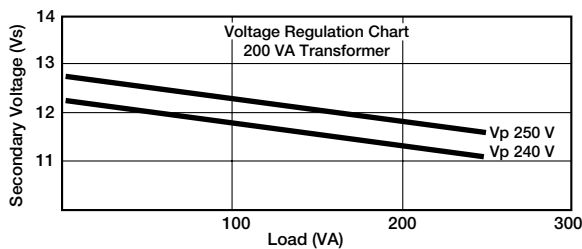
Connection on the secondary side

The current on the low voltage side is up to 20 times higher than the primary. Connections must be tight and connectors must be able to withstand the current, naturally the terminals of the transformer have been developed to carry the high currents but connections used elsewhere on the secondary side must be chosen carefully.

Similarly, the wiring on the secondary side must be of the correct cross section and maximum lengths must not be exceeded, otherwise excessive voltage drop will reduce lumen output and effect colour rendition. When more than one lamp is connected to a transformer the lead lengths should be the same.

Voltage regulation

Secondary voltage changes with load. A transformer must always be loaded to its nominal rating to produce the correct secondary voltage. Similarly, failed lamps must be replaced quickly if the remaining lamps are not to have excessive voltage. The VL/V0 figures gives the degree regulation, for example 90 % means that the no load voltage is 11 % higher than the voltage under full load. It follows, therefore, that 50 % load will cause 5,5 % overvoltage and 5 % overvoltage halves lamp life. The voltage regulation chart gives an example for a 200 VA transformer.



Magnetic transformers for building into luminaires in 3 designs

TMDC The TMD is the ideal solution whenever you are looking for a transformer with a narrow cross-section (28,6 mm x 41,5 mm), e.g. in tubetrack systems. The power ranges from 20 VA to 105 VA.


TMB This uses a larger cross section (65 mm x 47 mm) but a shorter length. Due to the high efficiency of this type of transformer it can be used in higher than normal ambient temperature. Available 20 VA to 300 VA.

TMC (OGT) This is reserved for the larger types where multilamp installations are normal and the terminals are designed for this purpose. Available 250 VA to 500 VA.

The main features of TridonicAtco transformers are:

- safety transformer according to EN 61558
- high efficiency
- low UL /U0
- compact dimensions
- excellent load/weight ratio
- screw terminals
- spring terminals
- insulation class H
- max. permissible winding temperature 140°C (according to EN 61558)
- good thermal conduction hence lower winding temperatures
- low temperature rise
- vacuum impregnated

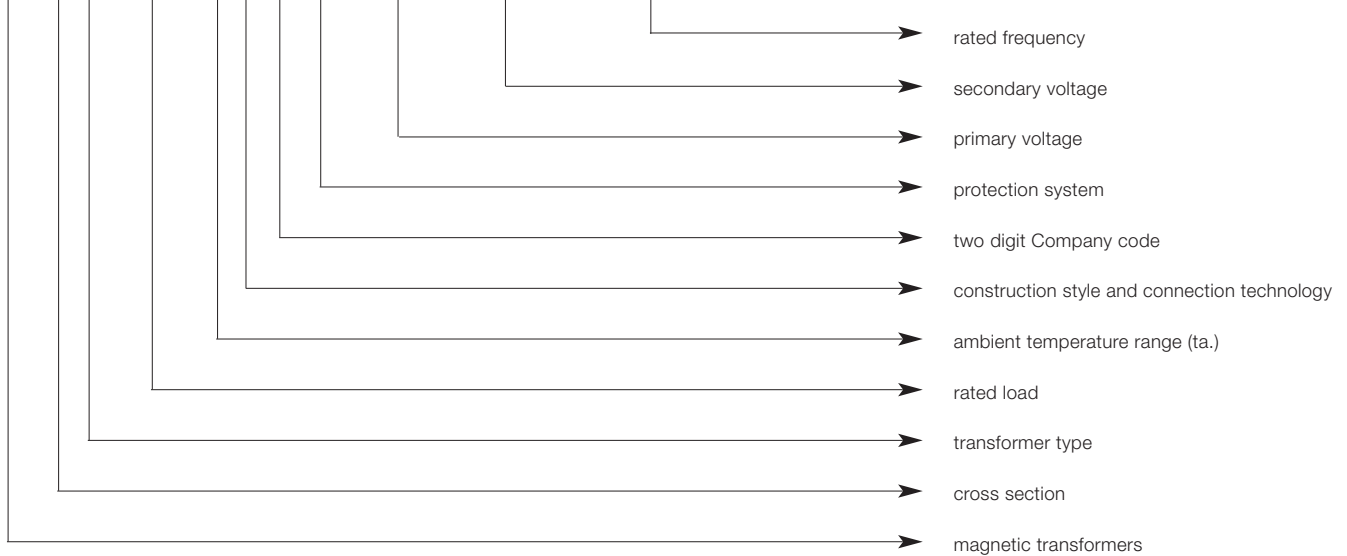
Magnetic transformers for mounting in 2 designs

TMDD Housed versions of the Lovotec and TMD transformers which also meet  requirements are to be used for mounting applications. These transformers are especially suitable for installation in false ceilings due to their narrow cross-section.

OMT transformers are used where several lamps are connected to a single transformer, e.g. cable or track systems. Available 150 VA to 300 VA.

Type model designation transformers

TMAB 50 B001K 230/11,5V 50/60Hz



Key to types – magnetic transformers

Cross section

A = (31 mm x 41 mm)
 B = (47 mm x 65 mm)
 C = (90 mm x 107 mm)
 D = (28,6 mm x 41,5 mm)

Transformatorotypen

A = basic isolation (Class 1), in-built, step up and step down auto-transformers
 B = basic isolation (Class 1), in-built safety isolating transformers with direct connection to the mains
 C = basic isolation (Class 1), in-built safety isolating transformers with direct connection to the mains
 D = protective isolation (Class 2), safety isolating transformers for remote mounting
 E = protective isolation (Class 2), safety isolating transformers for inbuilding

Rated load

xxx in VA

Ambient temperature range (max. ambient temperature ta.)

A = temperature rise 70–100 °C, insulation class B
 B = temperature rise 70–100 °C, insulation class H

Construction style and connection technology

0 = screw terminal (VSKL)
 1 = push terminal
 2 = screw terminal with terminal block
 3 = spring terminal
 5 = spring terminal und screw terminal
 6 = screw terminal with terminal block and strain relief
 7 = screw terminal with strain relief in single housing

Two digit Company code

00 = continuing

Protection system

I = programmable current monitor with microprocessor
 K = without protection
 S = fuse on primary side
 U = thermal protector
 W = current sensitive mains resetting thermal protection

Primary voltage (Standard)

230 V or 240 V

Secondary voltage (Standard)

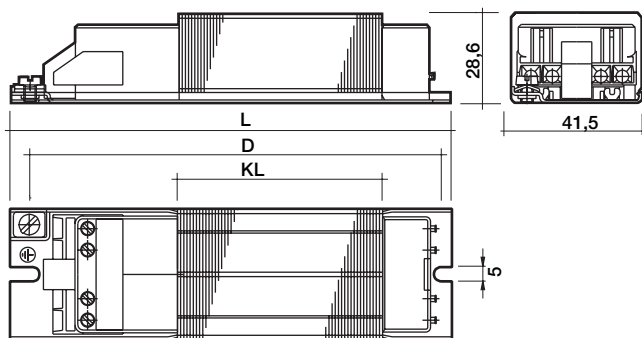
11,5 V

Rated frequency (Standard)

50/60 Hz



TMDC 20–105 VA 230/11,5 V and 240/11,5 V



- insulation class H
- nickel plated screw terminals for solid and flexible 0,75–2,5 mm² wire

Packaging:
TMDC 20
 box of 25
 41 boxes/pallet
 1 025 pieces/pallet

TMDC 40
 box of 20
 40 boxes/pallet
 800 pieces/pallet

TMDC 50
 box of 20
 48 boxes/pallet
 960 pieces/pallet

TMDC 60, 70
 box of 20
 30 boxes/pallet
 600 pieces/pallet

TMDC 80
 box of 10
 50 boxes/pallet
 500 pieces/pallet

TMDC 105
 box of 10
 60 boxes/pallet
 600 pieces/pallet

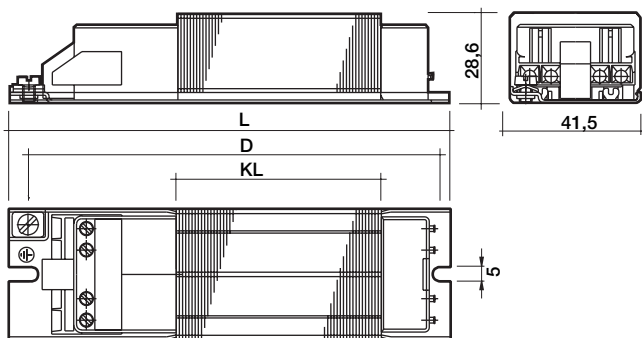
Wiring:
 page 275 figure B

Certified:
 EN 61558

lamp load VA	type	article number	nominal lamp power range VA	length L mm	fixing centres D mm	core stack length KL mm	weight kg	UL/UO %	losses W	primary current mA	ambient temperature ta °C
TMDC 230/11,5V 50/60Hz											
20	TMDC 20 B001K 230/11,5V 50/60Hz	86452112	15–20	110	100	35	0,4	82	6,4	120	80
40	TMDC 40 B001K 230/11,5V 50/60Hz	86452134	25–40	140	130	65	0,65	86	10	220	80
50	TMDC 50 B001K 230/11,5V 50/60Hz	86451534	30–50	153	143	78	0,75	86	12	280	80
60	TMDC 60 B001K 230/11,5V 50/60Hz	86451575	35–60	175	165	100	0,92	84	15	320	80
70	TMDC 70 B001K 230/11,5V 50/60Hz	86452169	40–70	195	185	110	1,1	88	20	410	80
80	TMDC 80 B001K 230/11,5V 50/60Hz	86452181	45–80	205	195	130	1,2	87	20	420	80
105	TMDC 105 B001K 230/11,5V 50/60Hz	86451540	50–105	240	230	165	1,5	87	25	495	80
TMDC 240/11,5 V 50/60Hz											
50	TMDC 50 B002K 240/11,5V 50/60Hz	86448407	30–50	153	143	78	0,75	84	14	330	80
105	TMDC 105 B002K 240/11,5V 50/60Hz	86451581	50–105	240	230	165	1,5	84	20	470	80



TMDC 20–105 VA 230/11,5 V and 240/11,5 V



- insulation class H
- nickel plated screw terminals for solid and flexible 0,75–2,5 mm² wire
- reversible protection against short circuit, overload and over temperature

Packaging:
TMDC 20
 box of 25
 41 boxes/pallet
 1 025 pieces/pallet

TMDC 40, 50
 box of 20
 40 boxes/pallet
 800 pieces/pallet

TMDC 60, 70
 box of 20
 30 boxes/pallet
 600 pieces/pallet

TMDC 80, 105 B002W
 box of 10
 50 boxes/pallet
 500 pieces/pallet

TMDC 105 B001 W
 box of 10
 40 boxes/pallet
 400 pieces/pallet

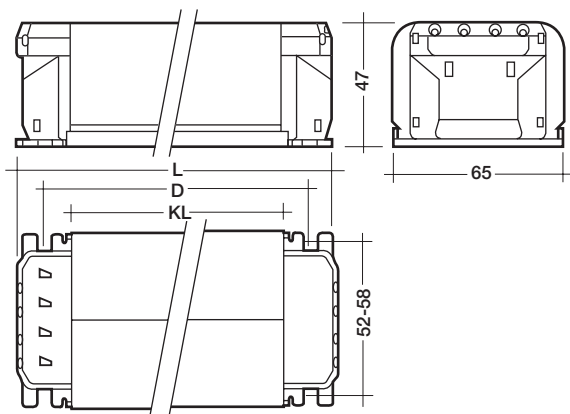
Wiring:
 page 275 figure A

Certified:
 EN 61558

lamp load VA	type	article number	switch off temperature °C	length L mm	fixing centres D mm	core stack length KL mm	weight kg	UL/UO %	losses W	primary current mA	ambient temperature ta °C
TMDC 230/11,5V 50/60Hz											
20	TMDC 20 B001W 230/11,5V 50/60Hz	24031030	165	110	100	35	0,40	82	6,4	120	80
40	TMDC 40 B001W 230/11,5V 50/60Hz	24031046	165	140	130	65	0,65	86	10,0	220	80
50	TMDC 50 B001W 230/11,5V 50/60Hz	24031052	165	153	143	78	0,75	86	12,0	280	80
60	TMDC 60 B001W 230/11,5V 50/60Hz	24031065	165	175	165	100	0,92	84	15,0	320	80
70	TMDC 70 B001W 230/11,5V 50/60Hz	24031071	165	195	185	110	1,10	88	20,0	410	80
80	TMDC 80 B001W 230/11,5V 50/60Hz	24031087	165	205	195	130	1,20	87	20,0	420	80
105	TMDC 105 B001W 230/11,5V 50/60Hz	24031093	165	240	230	165	1,50	87	25,0	495	80
TMDC 240/11,5 V 50/60Hz											
50	TMDC 50 B002W 240/11,5V 50/60Hz	24031108	165	153	143	78	0,75	84	14,0	330	80
105	TMDC 105 B002W 240/11,5V 50/60Hz	24031117	165	240	230	165	1,50	84	20,0	470	80



TMBB 20–105 VA 230/11,5 V and 240/11,5 V



- insulation class H
- primary/secondary spring terminals for solid 0,50–1,5 mm² and flexible 0,75–1,5 mm² wire, for flexible wires with wire end ferrules with a diameter of max. 1,6 mm

Packaging:
box of 10
48 boxes/pallet
480 pieces/pallet

Certified:
EN 61558

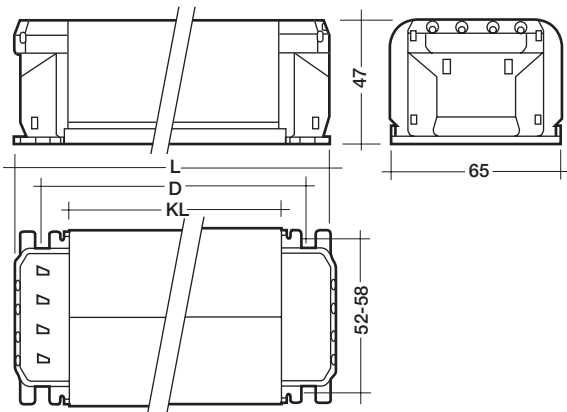
Wiring:
page 275 figure B

lamp load VA	type	article number	nominal lamp power range VA	length L mm	fixing centres D mm	core stack length KL mm	weight kg	UL/UO %	losses W	primary current mA	max. permitted ambient temperature	recommended primary fuse mA/T ①
TMBB 230/11,5V 50/60Hz												
20	TMBB 20 B351K 230/11,5V 50/60Hz	20887178	15–20	51	35,5	15	0,51	82	4,8	104	110°C	125
35	TMBB 35 B351K 230/11,5V 50/60Hz	20887184	30–35	56	40,5	20	0,61	84	6,8	178	100°C	250
50/40	TMBB 50 B351K 230/11,5V 50/60Hz	20887190	40–50	66	50,5	30	0,80	89	7,5	245	100°C	315
70/60/50	TMBB 70 B351K 230/11,5V 50/60Hz	20887200	50–70	76	60,5	40	1,02	89	10,1	332	100°C	400
80/70/60	TMBB 80 B351K 230/11,5V 50/60Hz	20887219	60–80	81	65,5	45	1,14	88	11,3	375	90°C	500
105/100/80	TMBB 105 B351K 230/11,5V 50/60Hz	20887225	80–105	91	75,5	55	1,34	88	15,3	505	80°C	630
TMBB 240/11,5V 50/60 Hz												
20	TMBB 20 B352K 240/11,5V 50/60Hz	20887231	15–20	51	35,5	15	0,51	82	4,6	102	110°C	125
35	TMBB 35 B352K 240/11,5V 50/60Hz	20887247	30–35	56	40,5	20	0,60	83	6,7	168	100°C	250
50/40	TMBB 50 B352K 240/11,5V 50/60Hz	20887253	40–50	66	50,5	30	0,81	89	7,0	230	100°C	315
70/60/50	TMBB 70 B352K 240/11,5V 50/60Hz	20887266	50–70	76	60,5	40	1,02	89	10,1	316	100°C	400
80/70/60	TMBB 80 B352K 240/11,5V 50/60Hz	20887272	60–80	81	65,5	45	1,12	88	12,3	357	90°C	500
105/100/80	TMBB 105 B352K 240/11,5V 50/60Hz	20887288	80–105	91	75,5	55	1,35	87	15,5	472	80°C	630

① anti-surge fuse to IEC 127



TMBB 20–105 VA 230/11,5 V and 240/11,5 V



- insulation class H
- primary/secondary spring terminals for solid 0,50–1,5 mm² and flexible 0,75–1,5 mm² wire, for flexible wires with wire end ferrules with a diameter of max. 1,6 mm
- reversible protection against short circuit, overload and over temperature

Packaging:
box of 10
48 boxes/pallet
480 pieces/pallet

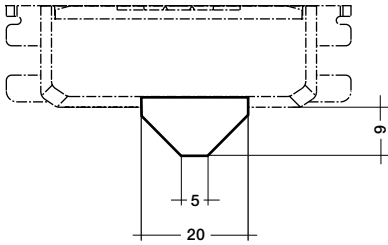
Certified:
EN 61558

Wiring:
page 275 figure A

lamp load VA	type	article number	switch off temperature °C	length L mm	fixing centres D mm	core stack length KL mm	weight kg	UL/UO %	losses W	primary current mA	max. permitted ambient temperature
TMBB 230/11,5V 50/60Hz											
20	TMBB 20 B351W 230/11,5V 50/60Hz	20886012	160	51	35,5	15	0,51	82	4,8	104	100°C
35	TMBB 35 B351W 230/11,5V 50/60Hz	20886034	160	56	40,5	20	0,61	84	6,8	178	95°C
50/40	TMBB 50 B351W 230/11,5V 50/60Hz	20886237	160	66	50,5	30	0,8	89	7,5	245	100°C
70/60/50	TMBB 70 B351W 230/11,5V 50/60Hz	20886892	160	76	60,5	40	1,02	89	10,1	332	100°C
80/70/60	TMBB 80 B351W 230/11,5V 50/60Hz	20886075	160	81	65,5	45	1,14	88	11,3	375	90°C
105/100/80	TMBB 105 B351W 230/11,5V 50/60Hz	20886081	160	91	75,5	55	1,34	88	15,3	505	80°C
TMBB 240/11,5V 50/60 Hz											
20	TMBB 20 B352W 240/11,5V 50/60Hz	20886102	160	51	35,5	15	0,51	82	4,6	102	100°C
35	TMBB 35 B352W 240/11,5V 50/60Hz	20886127	160	56	40,5	20	0,6	83	6,7	168	95°C
50/40	TMBB 50 B352W 240/11,5V 50/60Hz	20886155	160	66	50,5	30	0,81	89	7	230	100°C
70/60/50	TMBB 70 B352W 240/11,5V 50/60Hz	20886174	160	76	60,5	40	1,02	89	10,1	316	95°C
80/70/60	TMBB 80 B352W 240/11,5V 50/60Hz	20886196	160	81	65,5	45	1,12	88	12,3	357	90°C
105/100/80	TMBB 105 B352W 240/11,5V 50/60Hz	20886215	160	91	75,5	55	1,35	87	15,5	472	80°C



Separation piece between primary and secondary winding connections

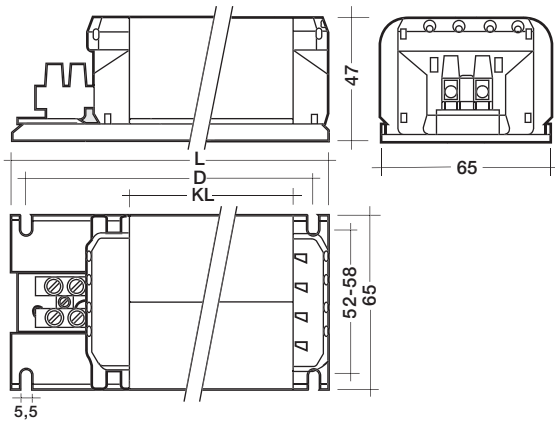


Separation piece to increase the safety distance between primary and secondary winding terminals. Only necessary if outer lines without mains terminals are connected directly to the transformer. Very easy to fit by snapping onto the winding cover. No tools needed.

article number: 00057193



TMBC 150–300 VA 230/11,5 V and 240/11,5 V



- insulation class H
- primary spring terminals for solid 0,5–1,5 mm² and for flexible 0,75–1,5 mm² wire, for flexible wires with wire end ferrules with a diameter of max. 1,6 mm
- secondary side screw terminals
150 VA 2,5–6 mm²
210 VA 4–10 mm²
300 VA 4–10 mm²

Packaging:
TMBC 150 B551K,
TMBC 210
box of 10
24 boxes/pallet
240 pieces/pallet

TMBC 300
box of 6
40 boxes/pallet
240 pieces/pallet

Wiring:
page 275 figure B

Certified:
EN 61558

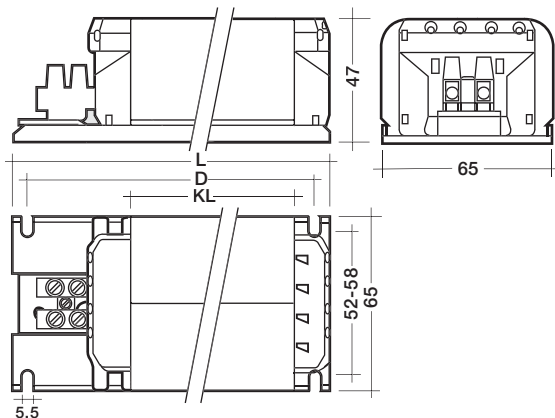
TMBC 150 B552K
box of 10
48 boxes/pallet
480 pieces/pallet

lamp load VA	type	article number	nominal lamp power range VA	length L mm	fixing centres D mm	core stack length KL mm	weight kg	UL/UO %	losses W	primary current mA	max. permitted ambient temperature	recommended primary fuse mA/T ①
TMBC 230/11,5V 50/60Hz												
150	TMBC 150 B551K 230/11,5V 50/60Hz	20885805	100–150	154	138,5	85	1,98	91	16,7	703	90°C	1000
210	TMBC 210 B551K 230/11,5V 50/60Hz	20885792	140–210	170	154,5	105	2,43	91	23,5	962	80°C	1250
300	TMBC 300 B551K 230/11,5V 50/60Hz	20885786	200–300	220	204,5	150	3,39	93	29	1415	80°C	2000
TMBC 240/11,5V 50/60Hz												
150	TMBC 150 B552K 240/11,5V 50/60Hz	20887162	100–150	154	138,5	85	2	92	17,7	665	90°C	1000
210	TMBC 210 B552K 240/11,5V 50/60Hz	20886886	140–210	170	154,5	105	2,45	91	24,8	939	80°C	1250
300	TMBC 300 B552K 240/11,5V 50/60Hz	20885990	200–300	220	204,5	150	3,38	93	28,4	1358	80°C	2000

① anti-surge fuse to IEC 127



TMBC 150–300 VA 230/11,5 V and 240/11,5 V



- insulation class H
- primary spring terminals for solid 0,5–1,5 mm² and for flexible 0,75–1,5 mm² wire, for flexible wires with wire end ferrules with a diameter of max. 1,6 mm
- secondary side screw terminals
150 VA 2,5–6 mm²
210 VA 4–10 mm²
300 VA 4–10 mm²

Packaging:
TMBC 150
box of 10
48 boxes/pallet
480 pieces/pallet

TMBC 210
box of 10
24 boxes/pallet
240 pieces/pallet

TMBC 300
box of 6
40 boxes/pallet
240 pieces/pallet

Wiring:
TMBC 300
page 275 figure C

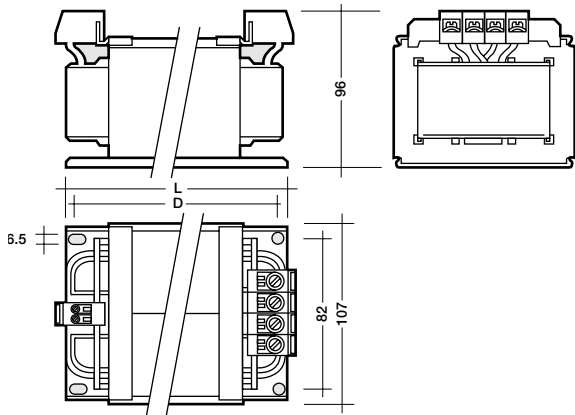
all other:
page 275 figure A

Certified:
EN 61558

lamp load VA	type	article number	switch off temperature °C	nominal lamp power range VA	length L mm	fixing centres D mm	core stack length KL mm	weight kg	UL/UO %	losses W	primary current mA	max. permitted ambient temperature	recommended primary fuse mA/T
TMBC 230/11,5V 50/60Hz													
150	TMBC 150 B551W 230/11,5V 50/60Hz	20886262	160	100–150	154	138,5	85	1,98	91	16,7	703	90°C	–
210	TMBC 210 B551W 230/11,5V 50/60Hz	20886259	160	140–210	170	154,5	105	2,43	91	23,5	962	80°C	–
150	TMBC 150 B551U 230/11,5V 50/60Hz	22148504	155	100–150	154	138,5	85	1,98	91	16,7	703	90°C	1000
210	TMBC 210 B551U 230/11,5V 50/60Hz	22148505	155	140–210	170	154,5	105	2,43	91	23,5	962	80°C	1250
300	TMBC 300 B551U 230/11,5V 50/60Hz	22115692	155	200–300	220	204,5	150	3,39	93	29	1415	80°C	2000
TMBC 240/11,5V 50/60Hz													
150	TMBC 150 B552W 240/11,5V 50/60Hz	20886278	160	100–150	154	138,5	85	2	92	17,7	665	90°C	–
210	TMBC 210 B552W 240/11,5V 50/60Hz	20886284	160	140–210	170	154,5	105	2,45	91	24,8	939	80°C	–
300	TMBC 300 B552U 240/11,5V 50/60Hz	22115709	155	200–300	220	204,5	150	3,4	93	28,4	1358	80°C	2000



OGT 250–500 VA 230/12 V and 245/12 V



- insulation class H

Packaging:
OGT 40, 50
box of 4
36 boxes/pallet
144 pieces/pallet

Wiring:
OGT
page 275 figure B
OGT TP
page 275 figure C

Certified:
EN 61558

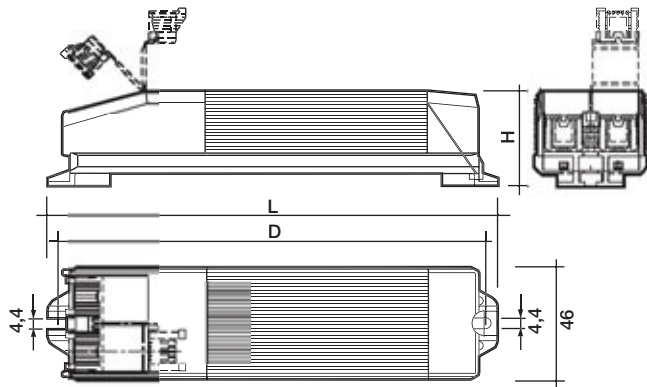
OGT 80
box of 3
36 boxes/pallet
108 pieces/pallet

lamp load VA	type	article number	switch off temperature °C	length L mm	fixing centres D mm	weight kg	UL/U0 %	losses W	primary current mA	recommended primary fuse mA/T ①
OGT 230/12/12V										
250	OGT T40 230/12/12V	20296249	–	94	80	3,1	92	22,0	1170	1400
250	OGT T40 230/12/12V TP	20561812	150	94	80	3,1	92	22,0	1170	1400
300	OGT T50 230/12/12V	20305468	–	104	90	3,7	94	22,5	1400	1600
300	OGT T50 230/12/12V TP	20561834	150	104	90	3,7	94	22,5	1400	1600
500	OGT T80 230/12/12V	20296255	–	134	120	5,4	94	38,2	2330	2500
500	OGT T80 230/12/12V TP	20561869	150	134	120	5,4	94	38,2	2330	2500
OGT 240/12/12V										
250	OGT T40 240/12/12V	20301951	–	94	80	3,1	92	21,0	1040	1400
250	OGT T40 240/12/12V TP	20561828	150	94	80	3,1	92	21,0	1040	1400
300	OGT T50 240/12/12V	20305455	–	104	90	3,7	94	22,0	1360	1600
300	OGT T50 240/12/12V TP	20561840	150	104	90	3,7	94	22,0	1360	1600
500	OGT T80 240/12/12V	20301964	–	134	120	5,4	94	34,5	2220	2500
500	OGT T80 240/12/12V TP	20561875	150	134	120	5,4	94	33,5	2220	2500

① anti-surge fuse to IEC 127



TMDD 20–105 VA 230/11,5 V and 240/11,5 V



- insulation class B
- nickel plated screw terminals for solid and flexible 0,75–2,5 mm² wire
- reversible protection against short circuit, overload and over temperature
- divided strain relief for primary and secondary leads

Packaging:
TMDD 40, 50, 60
 box of 10
 48 boxes/pallet
 480 pieces/pallet

Certified:
 EN 61558

TMDD 80, 105/100
 box of 10
 40 boxes/pallet
 400 pieces/pallet

Wiring:
 page 275 figure A

lamp load VA	type	article number	switch off temperature ① °C	length L mm	fixing centres D mm	height H mm	weight kg	UL/UO %	losses W	primary current mA	ambient temperature ta °C	housing temperature max. °C
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TMDD 230/11,5V 50/60Hz

20/40	TMDD 40 A601W 230/11,5V 50/60Hz	24030638	120	182	172	39	0,78	88	10,0	230	30	80
50	TMDD 50 A701W 230/11,5V 50/60Hz	24030644	120	182	172	41,4	0,80	87	12,0	270	35	80
60	TMDD 60 A601W 230/11,5V 50/60Hz	24030650	120	202	192	39	1,04	88	13,0	310	30	80
80	TMDD 80 A601W 230/11,5V 50/60Hz	24030663	120	257	247	39	1,52	89	18,0	420	35	80
105/100	TMDD 105 A601W 230/11,5V 50/60Hz	24030679	120	272	262	39	1,65	87	22,0	510	25	80

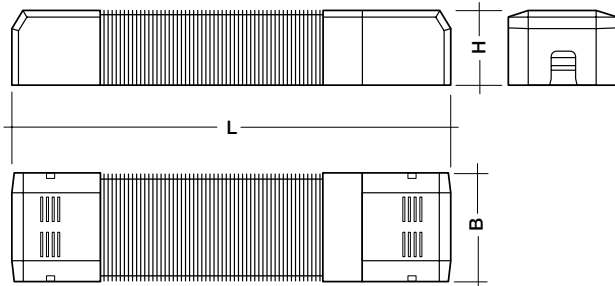
TMDD 240/11,5 V 50/60Hz

20/40	TMDD 40 A602W 240/11,5V 50/60Hz	24010148	120	182	172	39	0,78	88	10,0	235	30	80
50	TMDD 50 A602W 240/11,5V 50/60Hz	24010236	120	182	172	39	0,86	87	12,0	265	30	80
60	TMDD 60 A602W 240/11,5V 50/60Hz	24011979	120	202	192	39	1,04	88	13,0	315	30	80
80	TMDD 80 A602W 240/11,5V 50/60Hz	24010132	120	257	247	39	1,52	89	18,0	425	30	80
105/100	TMDD 105 A602W 240/11,5V 50/60Hz	24010220	120	272	262	39	1,65	87	22,0	515	25	80

① protection



OMT 70–300 VA 230–240/12 V



- insulation class F
- primary fuse and thermal protection
- primary side double spring terminals for looping 0,75–2,5 mm²
- secondary screw terminal up to 10 mm²

Packaging:
OMT 150
 box of 1
 138 boxes/pallet
 138 pieces/pallet

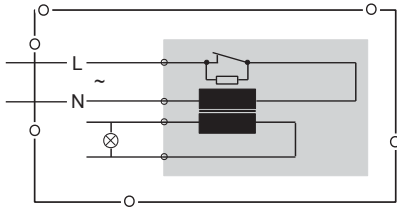
OMT 300
 box of 1
 102 boxes/pallet
 102 pieces/pallet

Certified:
 EN 61558

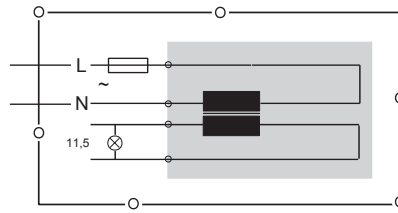
OMT 210
 box of 1
 126 boxes/pallet
 126 pieces/pallet

Wiring:
 page 275 figure D

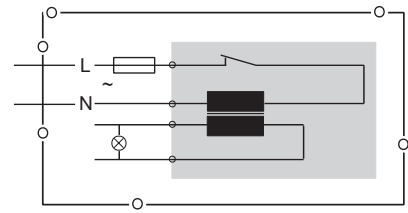
type		OMT 150 A222W 230–240/12 V 150 VA	OMT 210 A222W 230–240/12 V 210 VA	OMT 300 A222W 230–240/12 V 300 VA
article number		20882035	20882041	20882057
nominal input voltage	V (AC)	230–240	230–240	230–240
nominal current (230–240 V)	A	0,71–0,75	0,99–1,03	1,36–1,44
nominal frequency	Hz	50/60	50/60	50/60
secondary voltage 230/240 V	V	11,4–11,9	11,4–11,9	11,4–11,9
lamp power range 230 V	W	70–150	100–210	150–300
lamp power range 240 V	W	140–150	200–210	250–300
efficiency at full load	%	88	91	90
power factor at full load		0,93–0,94	0,92–0,93	0,96
anti-surge fuse	mA T	1000	1250	2000
ambient temperature ta	°C	-20 bis +35	-20 bis +35	-20 bis +35
max. housing temperature	°C	80	80	80
dimming		symmetric leading edge phase cutting dimmer		
dimensions L x B x H	mm	233 x 77,2 x 65,5	267 x 77,2 x 65,5	322 x 77,2 x 65,5
fixing centres	mm	190–210 x 63	223–243 x 63	280–300 x 63
integral thermal protection		–	–	–
weight	kg	2,4	3,1	4,2



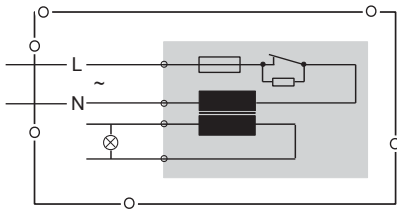
A) Transformer with current sensitive thermal cut-out



B) Transformer without internal protection – must have external protection



C) Transformer with internal protection – must have external protection against short circuit



D) Transformer with internal protection and built-in fuse against short circuit

Electronic safety isolating transformers for low voltage lamps



TE-DC

Universal performance for halogen lighting

TE transformers are TridonicAtco's universal solution for all installations. A combination of optimum performance in electronics and intelligent processor technology provides high levels of safety, convenience and reliability in the operation of modern halogen lamps.

Proved safety

TridonicAtco electronic isolating transformers have been tested in accordance with the relevant European standards. Safety is paramount. TE transformers are isolating transformers that conform to EN 61046, IEC 1046 and VDE 0712.24.

Optimum lamp operation

Electronic transformers operate the lamp in the high frequency range (30–40 kHz). The use of modern electronic technology guarantees optimum lamp operation. The life of the lamps can be extended considerably by limiting the starting current, soft starting and a constant secondary voltage, independent of the load throughout the entire output range. A unique circuit design in the higher output ranges 150 VA and 210 VA provides additional secondary voltage stabilisation throughout the entire primary voltage range from 207 V to 264 V.

Dimming

TE Transformers can be controlled by virtually any dimming signal. The transformer is selected to suit the appropriate dimming option. Whether digital, general phase control, phase cutting, switchDIM or analogue 1–10 V. A flexibility that offers considerable savings in both operation and installation costs.

Protection

TE transformers are protected against overload, overheating and short circuit. If a short circuit occurs on the secondary side, the transformer will switch off within a few milliseconds. It will be ready for operation again automatically after the short circuit has been rectified. The precise structure of the circuit guarantees protection against short circuits on the secondary side for all specified lengths of wiring.

The electronic overload protection system automatically reduces the output in the event of an overload condition, thus protecting the electronic transformer. If the overload is removed from the output, the electronic transformer automatically re-adjusts to the rated output.

An automatic reduction in output power and thus protection of the electronic transformer also takes place if the casing or ambient temperatures are exceeded. Re-adjustment to the rated output also takes place automatically.

Immunity

A transient mains voltage surge may occur when inductive loads (e.g. motors or conventional chokes) are switched off. TE electronic transformers are protected against voltage surges and spurious pulses of any polarity with random phase position superimposed on the supply voltage, in accordance with EN 61547.

Emission

The limits for emission as per EN 61000-3-2 are maintained by high-quality filter circuits.

RFI-Protection

The sophisticated filtering system of electronic transformers TE ensures compliance with EN 55015 and VDE 0875-151.

Harmonics

Harmonics from non-linear loads cause distortions in the mains supply. The special circuit design fulfils the requirements of EN 61000-3-2.

Electromagnetic compatibility

The requirements of the EMS Directive 89/336/EEC are fulfilled by observance of the standards for emission and immunity.

Quality assurance

Our EN 29001/ISO 9001 quality assurance system guarantees a constant product quality standard. Constant process controls, modern test facilities, 100 % final testing, burn-in, accelerated lifetime tests such as HASS (High Accelerated Stress Screening) and HTL (High Temperature Life), life tests and thermal shock tests also ensure consistently high quality.

Service life

The use of high quality electronic components, some of which are manufactured exclusively for TridonicAtco, and excellent circuit design, enables service life of over 50 000 operating hours to be achieved.

Technical features and advantages:

- safety isolating transformer with maximum output of 20–300 VA, available in 5 versions
- safety conforming to EN 61347-2-2, IEC 61347-2-2
- electro magnetic compatibility 89/336/EWG
- RFI protection conforming to EN 55015 and VDE 0875-151
- immunity conforming to EN 61547
- emission and harmonics conforming to EN 61000-3-2
- performance requirements according to EN 61047, IEC 1047 and VDE 0712.25
- increased lamp life with softstart
- minimum inrush current
- secondary voltage independent of load
- output voltage is independent of input voltage with all digital transformers
- protection against short circuit with automatic restart
- protection against high temperature with automatic restart
- suitable for DC with all digital transformers



ASIC technology

The ASIC (Application Specific Integrated Circuit) is the core of the patented circuit which ensures optimised, low-loss control of the power output. At the same time it regulates all protection and monitoring functions as well as voltage stabilisation.



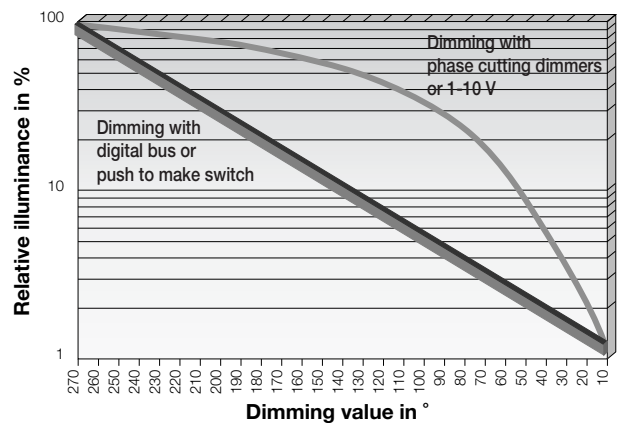
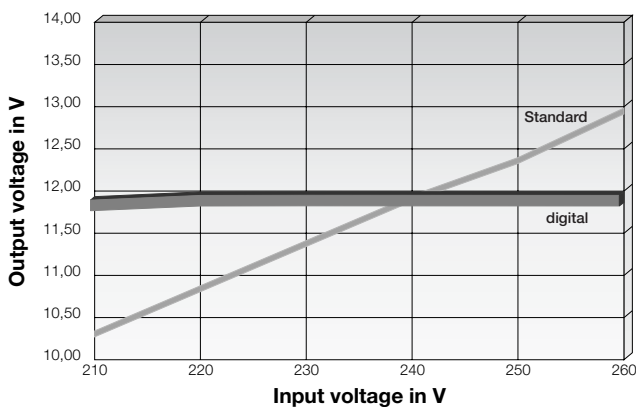
Optimal lighting comfort – matched to the human eye

The eye is most sensitive in the range up to 10 % light output, irregular changes in the illuminance level are perceived as unpleasant. The control characteristics of an electronic transformer controlled by a micro-processor are compared with a conventional phase-cutting dimmer and 1–10 V systems in the adjacent graph. The dimming curve is linear over the whole control range, controlling the lighting level in a way matched to the requirements of the human eye.



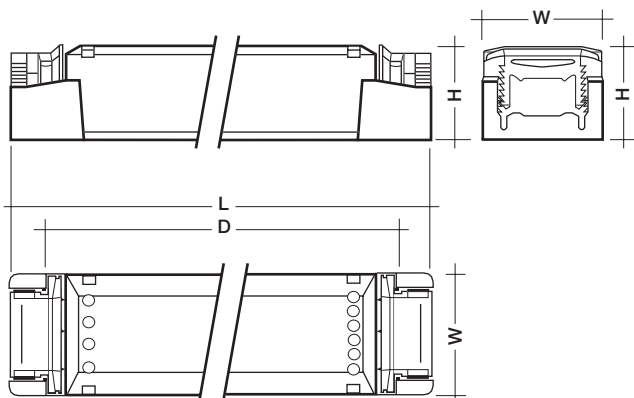
Maximum light and service life

The service life of low-voltage halogen lamps is very much dependent on the voltage. If there is 6 % over-voltage, then the lamp life is reduced by 50 %. If the voltage is low the luminous flux is considerably reduced. TridonicAtco provides the solution for TE-L/T/U/SA models by stabilising the output voltage.





TE-S 20–105 VA 230–245 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- protection class 2
- for remote mounting
- looping on primary side possible
- 6 or 8 pole terminal block on secondary side

- individually packed with installation instructions
- integrated strain-relief and terminal cover
- tool free assembly of the strain-relief (70/105 VA)
- constant output voltage (70/105 VA)
- DC operation possible, for use in emergency installations according to VDE 108

Packaging 70/105 VA:

box of 20
40 boxes/pallet
800 pieces/pallet

150 VA:

box of 10
60 boxes/pallet
600 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

Wiring:

page 292 figure 1A

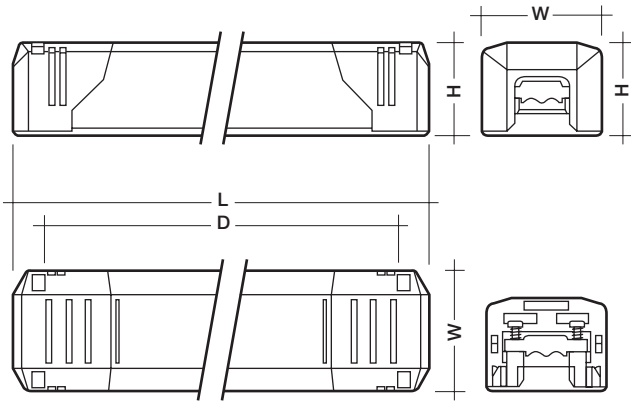
type		TE-S 0070 S001 ① 230/12 V 70 VA	TE 0105 S001 ① 230–240/12 V 105 VA	TE-S 1150 230/12 V 150 VA
article number		22082659	22082643	20828950
primary voltage	VAC	230–240	230–240	230
primary voltage	VDC	220–240	220–240	220–240
input current at 230V/50Hz	A	0,33	0,48	0,69
frequency	Hz	0/50/60	0/50/60	0/50/60
secondary voltage	V	11,9 ②	11,9 ②	11,7
lamp wattage	VA	20–70	35–105	50–150
efficiency	%	> 94	> 94	> 94
power factor	λ	> 0,95	> 0,95	> 0,95
frequency of output	kHz	33	33	35
power circuit		digital	digital	standard
ambient temperature ta	°C	-20 to +60	-20 to +50	0 to +50
rated max. temperature tc	°C	95	95	95
softstart		yes	yes	yes
dimming		falling edge dimmer	falling edge dimmer	falling edge dimmer
dimensions LxWxH	mm	167x42x31	167x42x31	207x46x40
fixing centres D	mm	143–148	143–148	170–174
weight	kg	0,17	0,17	0,29
secondary terminal		6-pole, screw terminal	6-pole, screw terminal	8-pole, spring terminal

① with ASIC technology

② constant output voltage



TE-SA 20–210 VA 230–245 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- protection class 2
- for remote mounting
- looping on primary side possible
- 8 pole terminal block on secondary side

- spring terminal
- individually packed with installation instructions
- integrated strain-relief and terminal cover
- tool free assembly of the strain-relief
- constant output voltage
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:

box of 10
60 boxes/pallet
600 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

Wiring:

page 292 figure 1B

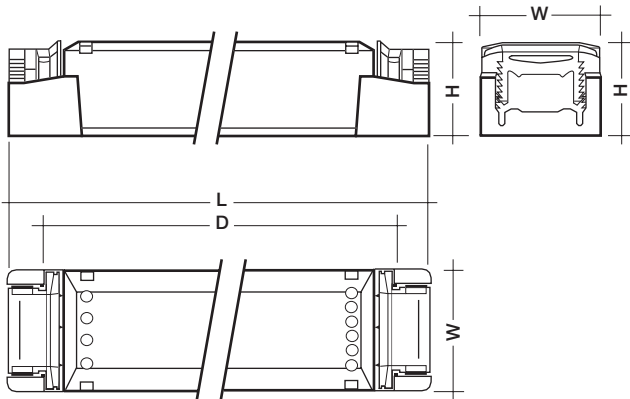
type		TE-SA 0150 230–245/12 V 150 VA	TE-SA 0210 230–245/12 V 210 VA
article number		20826296	20826303
primary voltage	VAC	230–240	230–240
primary voltage	VDC	220–240	220–240
input current at 230V/50Hz	A	0,69	0,97
frequency	Hz	0/50/60	0/50/60
secondary voltage	V	11,9 ①	11,9 ①
lamp wattage	VA	20–150	20–210
power reduction at DC	%	70	70
efficiency	%	> 95	> 95
power factor	λ	> 0,99	> 0,99
frequency of output	kHz	35	35
digital power circuit		yes	yes
ambient temperature t_a	°C	0 to +50	0 to +50
rated max. temperature t_c	°C	85	85
softstart		yes	yes
dimming		phase cutting leading and falling edge dimmer ②	phase cutting leading and falling edge dimmer ②
dimensions LxWxH	mm	207x46x40	207x46x40
fixing centres D	mm	170–174	170–174
weight	kg	0,29	0,38
secondary terminal		8-pole	8-pole

① output voltage independent of input voltage in the range 207–264 VAC

② see circuit diagrams



TE-L 001 20–105 VA 230–240/12 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- protection class 2
- for remote mounting
- looping on primary side possible with double assignments of terminals possible
- 6 pole terminal block on secondary side

- captive screw terminals
- individually packed with installation instructions
- tool free assembly of the strain-relief and terminal cover
- constant output voltage
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:

box of 20
40 boxes/pallet
800 pieces/pallet

Wiring:

page 292 figure 2C

Certified:

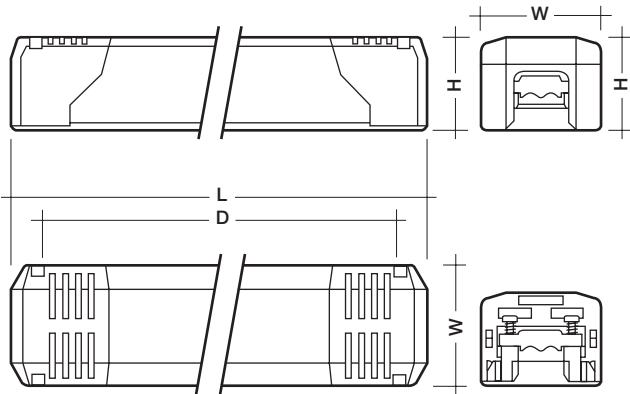
EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

type		TE 0070 L001 230–240/12V 70 VA	TE 0105 L001 230–240/12V 105 VA
article number		22082678	22082662
primary voltage	VAC	230–240	230–240
primary voltage	VDC	220–240	220–240
input current at 230V/50Hz	A	0,33	0,46
frequency	Hz	0/50/60	0/50/60
secondary voltage	V	11,9 ①	11,9 ①
lamp wattage	VA	20–70	35–105
power reduction at DC	%	70	70
efficiency	%	> 94	> 94
power factor	λ	> 0,95	> 0,95
frequency of output	kHz	33	33
digital power circuit		yes	yes
ambient temperature ta	°C	-20 to +60	-20 to +50
rated max. temperature tc	°C	95	95
softstart		yes	yes
dimming		DSI signal	DSI signal
dimensions LxWxH	mm	167x42x31	167x42x31
fixing centres D	mm	143–148	143–148
weight	kg	0,17	0,17
secondary terminal		6-pole	6-pole

① output voltage independent of input voltage in the range 210–254 V



TE-L 20–210 VA 230–245 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- protection class 2
- for remote mounting
- looping on primary side possible

- 8 pole terminal block on secondary side
- individually packed with installation instructions
- integrated strain-relief and terminal cover
- constant output voltage
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:
box of 10
60 boxes/pallet
600 pieces/pallet

Wiring:
page 292 figure 2C

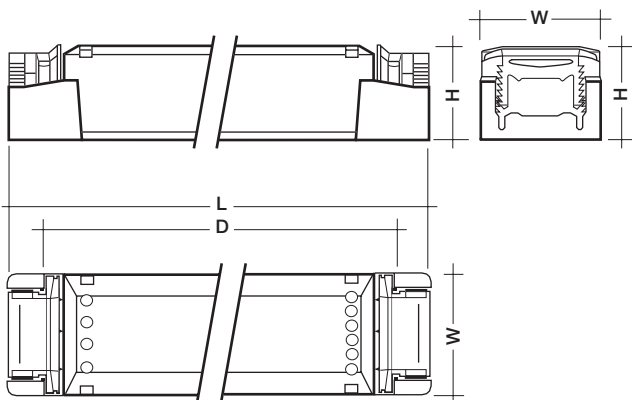
Certified:
EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

type		TE-L 0150 230–245/12 V 150 VA	TE-L 0210 230–245/12 V 210 VA
article number		20826312	20826328
primary voltage	VAC	230–245	230–245
primary voltage	VDC	220–240	220–240
input current at 230V/50Hz	A	0,69	0,97
frequency	Hz	0/50/60	0/50/60
secondary voltage	V	11,9 ①	11,9 ①
lamp wattage	VA	20–150	20–210
power reduction at DC	%	70	70
efficiency	%	> 95	> 95
power factor	λ	> 0,99	> 0,99
frequency of output	kHz	35	35
digital power circuit		yes	yes
ambient temperature ta	°C	0 to +50	0 to +50
rated max. temperature tc	°C	85	85
softstart		yes	yes
dimming		DSI signal	DSI signal
dimensions LxWxH	mm	207x46x40	207x46x40
fixing centres D	mm	170–174	170–174
weight	kg	0,29	0,38
secondary terminal		8-pole, spring terminal	8-pole, spring terminal

① output voltage independent of input voltage in the range 207–264 VAC



switchDIM TE-T 001 20–105 VA 230/240/12 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- protection class 2
- for remote mounting
- looping on primary side possible with double assignments of terminals possible

- 6 pole terminal block on secondary side
- captive screw terminals
- individually packed with installation instructions
- tool free assembly of the strain-relief and terminal cover
- constant output voltage

Packaging:
box of 20
40 boxes/pallet
800 pieces/pallet

Certified:
EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

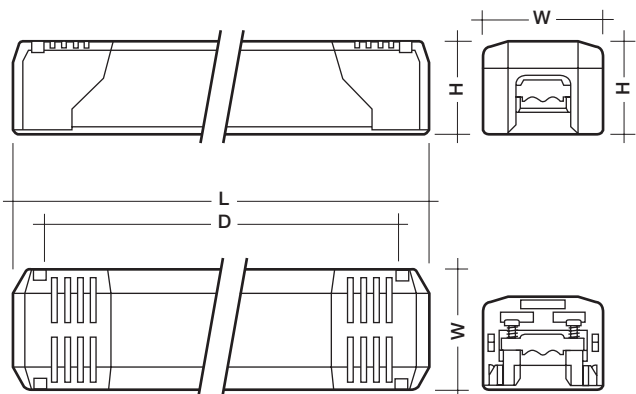
Wiring:
page 292 figure 3D, 3E

type		TE 0070 T001 230–240/12 V 70 VA	TE 0105 T001 230–240/12 V 105 VA
article number		22082690	22082684
primary voltage	VAC	230–240	230–240
input current at 230V/50Hz	A	0,33	0,46
frequency	Hz	0/50/60	0/50/60
secondary voltage	V	11,9 ①	11,9 ①
lamp wattage	VA	20–70	35–105
efficiency	%	> 94	> 94
power factor	λ	> 0,95	> 0,95
frequency of output	kHz	33	33
digital power circuit		yes	yes
ambient temperature ta	°C	-20 to +60	-20 to +50
rated max. temperature tc	°C	95	95
softstart		yes	yes
dimming		single or double push to make switches	single or double push to make switches
dimensions LxWxH	mm	167x42x31	167x42x31
fixing centres D	mm	143–148	143–148
weight	kg	0,17	0,17
secondary terminal		6-pole	6-pole

① output voltage independent of input voltage in the range 210–254 V



switchDIM TE-T 20–210 VA 230–245/12 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- protection class 2
- for remote mounting
- looping on primary side possible with double assignments of terminals possible

- 8 pole terminal block on secondary side
- spring terminal
- individually packed with installation instructions
- integrated strain-relief and terminal cover
- constant output voltage
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:

box of 10
60 boxes/pallet
600 pieces/pallet

Wiring:

page 293 figure 3F, 3G

Certified:

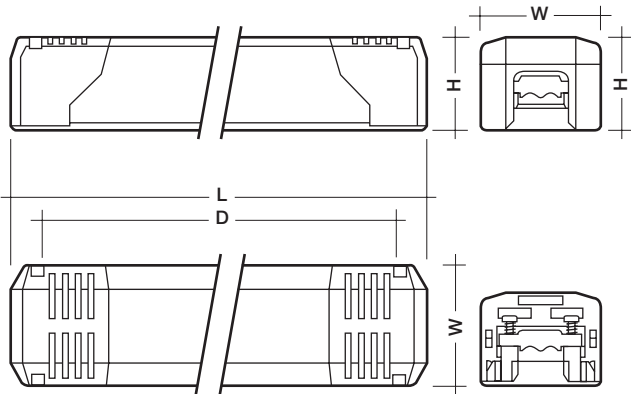
EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

type		TE-T 0150 230–245/12 V 150 VA	TE-T 0210 230–245/12 V 210 VA
article number		20826334	20826340
primary voltage	VAC	230–245	230–245
primary voltage	VDC	220–240	220–240
input current at 230V/50Hz	A	0,69	0,97
frequency	Hz	0/50/60	0/50/60
secondary voltage	V	11,9 ①	11,9 ①
lamp wattage	VA	20–150	20–210
power reduction at DC	%	70	70
efficiency	%	> 95	> 95
power factor	λ	> 0,99	> 0,99
frequency of output	kHz	35	35
digital power circuit		yes	yes
ambient temperature ta	°C	0 to +50	0 to +50
rated max. temperature tc	°C	85	85
softstart		yes	yes
dimming		single or double push to make switches	single or double push to make switches
dimensions LxWxH	mm	207x46x40	207x46x40
fixing centres D	mm	170–174	170–174
weight	kg	0,29	0,38
secondary terminal		8-pole	8-pole

① output voltage independent of input voltage in the range 207–264 VAC



TE-U 20–210 VA 230–245/12 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- protection class 2
- for remote mounting
- looping on primary side possible

- 8 pole terminal block on secondary side
- spring terminal
- individually packed with installation instructions
- integrated strain-relief and terminal cover
- constant output voltage
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:
box of 10
60 boxes/pallet
600 pieces/pallet

Wiring:
page 293 figure 4H, 4I

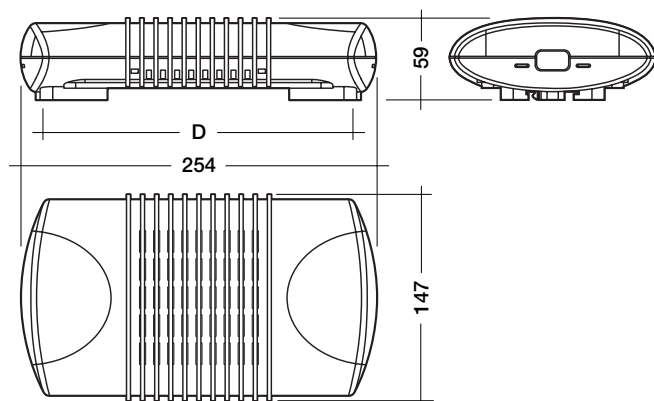
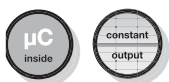
Certified:
EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

type	TE-U 0150 230–245/12 V 150 VA		TE-U 0210 230–245/12 V 210 VA	
article number		20826356		20826369
primary voltage	VAC	230–245		230–245
primary voltage	VDC	220–240		220–240
input current at 230V/50Hz	A	0,69		0,97
frequency	Hz	0/50/60		0/50/60
secondary voltage	V	11,9 ①		11,9 ①
lamp wattage	VA	20–150		20–210
power reduction at DC	%	70		70
efficiency	%	> 95		> 95
power factor	λ	> 0,99		> 0,99
frequency of output	kHz	35		35
digital power circuit		yes		yes
ambient temperature <i>t</i> _a	°C	0 to +50		0 to +50
rated max. temperature <i>t</i> _c	°C	85		85
softstart		yes		yes
dimming		1–10 V control system		1–10 V control system
dimensions LxWxH	mm	207x46x40		207x46x40
fixing centres D	mm	170–174		170–174
weight	kg	0,29		0,38
secondary terminal		8-pole		8-pole

① output voltage independent of input voltage in the range 207–264 VAC



TE-DC 300 VA 230–240 V 0/50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- protection class 2
- for remote mounting
- double assignments of terminals possible
- individually packed with installation instructions

- integrated strain-relief and terminal cover
- tool free assembly of the strain-relief
- constant output voltage
- DC operation possible, for use in emergency installations according to VDE 108
- suitable for cable lengths up to 20 m
- very low noise level, also during dimming

Packaging:
box of 10
12 boxes/pallet
120 pieces/pallet

Wiring:
page 293 figure 5J

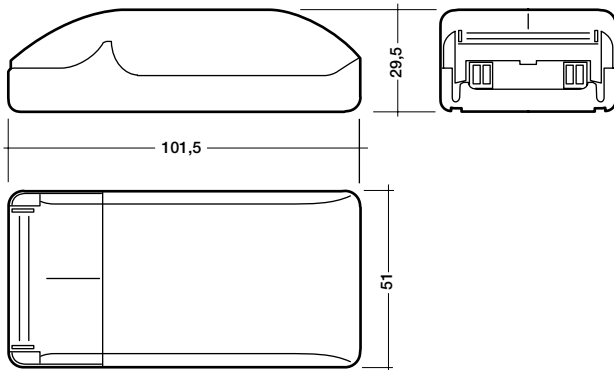
Certified:
EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

type		TE-DC 0300 F001 300 VA	TE-DC 0300 F101 300 VA	TE-DC 0300 D101 300 VA
article number		86454741	86454757	22086163
primary voltage	VAC	230–240	230–240	230–240
primary voltage	VDC	230–240	230–240	230–240
input current at 230V/50Hz	A	1,4	1,4	1,4
frequency	Hz	0/50/60	0/50/60	0/50/60
secondary voltage	V	11,9 ①	11,9 ①	11,9 ①
lamp wattage	VA	100–300	100–300	200–300
power reduction at DC	%	70	70	70
efficiency	%	> 90	> 90	> 90
power factor	λ	> 0,99	> 0,99	> 0,99
power circuit		digital	digital	digital
ambient temperature ta	°C	-20 to +35	-20 to +35	-20 to +35
rated max. temperature tc	°C	100	100	100
thermal protection		nein	yes	yes
softstart		yes	yes	yes
dimming		no dimming (fixed output)	no dimming (fixed output)	DSI, DALI, single push to make switches
dimensions LxWxH	mm	254x147x59	254x147x59	254x147x59
fixing centres D	mm	218–226	218–226	218–226
weight	kg	0,8	0,8	0,8
secondary terminal		2-pole, screw terminal	2-pole, screw terminal	2-pole, screw terminal

① constant output voltage



TE-C 101 20–105 VA 230–240/11,5 V 50/60 Hz speedy



- short-circuit switch-off with automatic restart
- protection against overheating and overload, with automatic reset
- compact dimensions
- with DC operation, the protective disconnection facility is off
- polycarbonate housing dark blue/white
- large terminal compartment

- cage clamp terminals for solid and flexible wires
- double assignments of terminals possible
- secondary double terminals
- tool free assembly of the strain-relief and terminal cover
- protection class 2
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:
box of 20
50 boxes/pallet
1 000 pieces/pallet

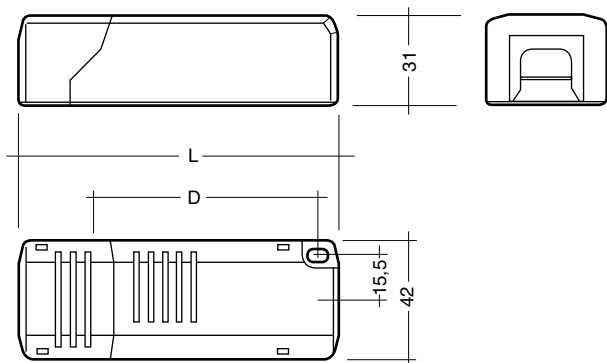
Wiring:
page 293 figure 6L

Certified:
EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

type		TE-0050 C101 230-240/11,5 V 50 VA	TE-0070 C101 230-240/11,5 V 70 VA	TE-0105 C101 230-240/11,5 V 105 VA
article number		24034855	24034868	24034874
primary voltage	VAC	230–240	230–240	230–240
primary voltage	VDC	220–240	220–240	220–240
input current at 230V/50Hz	A	0,215	0,30	0,45
frequency	Hz	0/50/60	0/50/60	0/50/60
secondary voltage at 230 V	V	11,5	11,5	11,5
secondary voltage at 240 V	V	11,7	11,7	11,7
lamp wattage	VA	20–50	20–70	35–105
power factor	λ	> 0,95	> 0,95	> 0,95
frequency of output	kHz	60	55	40
ambient temperature t_a	°C	-20 to +50	-20 to +50	-20 to +45
rated max. temperature t_c	°C	85	85	85
softstart (time)	s	< 1	< 1	< 1
dimming		leading and falling edge phase cutting dimmer	leading and falling edge phase cutting dimmer	leading and falling edge phase cutting dimmer
dimensions LxWxH	mm	101,5x51x29,5	101,5x51x29,5	101,5x51x29,5
weight	kg	0,105	0,108	0,12
secondary terminal		4-pole	4-pole	4-pole



TE-ECO 20–105 VA 230–240 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- with DC operation, the protective disconnection facility is off
- protection class 2
- screw terminal
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:

box of 20
48 boxes/pallet
960 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

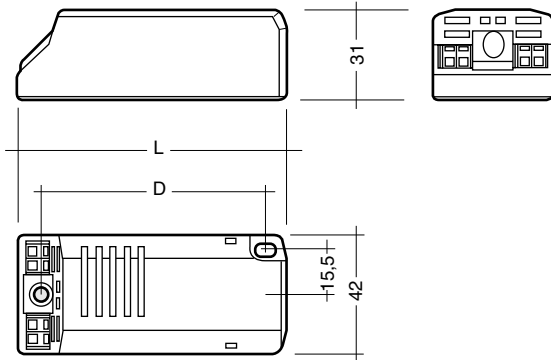
Wiring:

page 293 figure 6L

type	TE-ECO 0070		TE-ECO 0105	
		230–240/11,5 V 70 VA		230–240/11,5 V 105 VA
article number		22081980		22081996
primary voltage	VAC	230–240		230–240
primary voltage	VDC	220–240		220–240
input current at 230V/50Hz	A	0,32		0,48
frequency	Hz	0/50/60		0/50/60
secondary voltage at 230 V	V	11,25		11,25
secondary voltage at 240 V	V	11,75		11,75
lamp wattage	VA	20–70		35–105
power reduction at DC	%	> 70		> 70
efficiency	%	> 94		> 94
power factor	λ	> 0,95		> 0,95
frequency of output	kHz	35		35
ambient temperature ta	°C	0 to +50		0 to +45
rated max. temperature tc	°C	95		85
softstart		yes		yes
dimming		falling edge dimmer		falling edge dimmer
dimensions LxWxH	mm	120x42x31		120x42x31
fixing centres D	mm	86–88		86–88
weight	kg	0,13		0,15



TE-NE 20–105 VA 230–240 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- with DC operation, the protective disconnection facility is off
- protection class 2
- screw terminal
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:

box of 20
42 boxes/pallet
840 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

Wiring:

page 293 figure 6L

type	TE-NE 1070		TE-NE 1105	
		230–240/12 V 70 VA		230–240/12 V 105 VA
article number		22082145		22082139
primary voltage	VAC	230–240		230–240
primary voltage	VDC	220–240		220–240
input current at 230V/50Hz	A	0,32		0,48
frequency	Hz	0/50/60		0/50/60
secondary voltage (at 230 V)	V	11,25		11,25
lamp wattage	VA	20–70		35–105
power reduction at DC	%	< 70		< 70
efficiency	%	> 94		> 94
power factor	λ	> 0,95		> 0,95
frequency of output	kHz	35		35
ambient temperature t_a	°C	0 to +65		0 to +55
max. housing temperature t_c	°C	95		95
softstart		yes		yes
dimming		falling edge dimmer		falling edge dimmer
dimensions LxWxH	mm	102x42x31		102x42x31
fixing centres D	mm	86–88		86–88
weight	kg	0,13		0,15



TE-A 20–70 VA 230–240 V 50/60 Hz



- short-circuit switch-off with automatic restart
- protection against overheating and overload, through regulation of output power with automatic reset
- with DC operation, the protective disconnection facility is off
- DC operation possible, for use in emergency installations according to VDE 108

Packaging:

box of 72
24 boxes/pallet
1 728 pieces/pallet

Certified:

EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61047
EN 61547

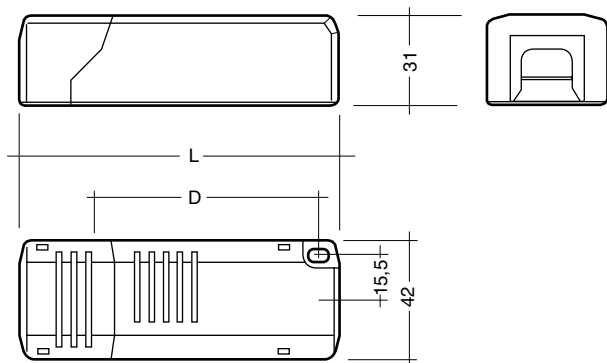
Wiring:

page 293 figure 6L

type		TE-A 102 70VA
article number		22082123
primary voltage	VAC	230–240
primary voltage	VDC	220–240
input current at 230V/50Hz	A	0,32
frequency	Hz	0/50/60
secondary voltage at 230 V	V	11,25
lamp wattage	VA	20–70
power reduction at DC	%	< 70
efficiency	%	> 94
power factor	λ	> 0,95
frequency of output	kHz	35
max. temperature of the transistor	°C	120
softstart		yes
dimming		falling edge dimmer
weight	kg	0,13
dimensions LxWxH		71x50x29
connections		spring terminal



TE-GLM 230–245 V 50/60 Hz



- equivalent to a load of 25 W

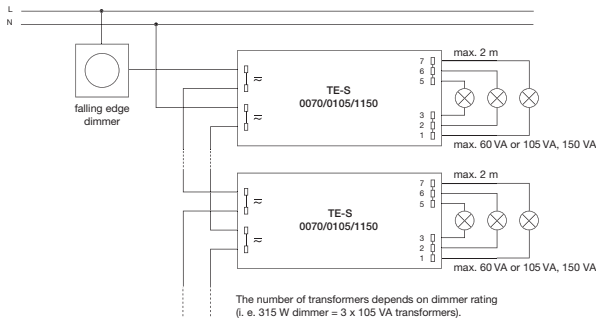
Packaging:
 box of 20
 48 boxes/pallet
 960 pieces/pallet

Wiring:
 page 292 figure 1B

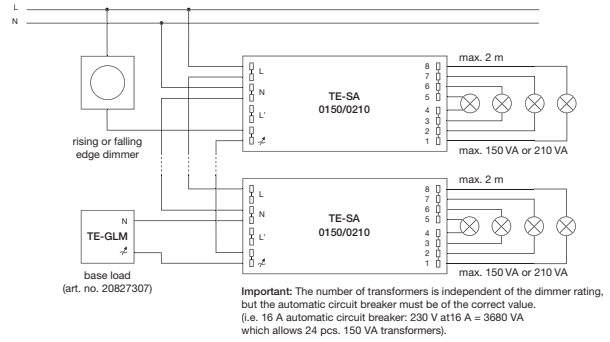
type		TE-GLM
article number		20827307
primary voltage	VAC	230–245
input current at 230V/50Hz	mA	15–18
frequency	Hz	50/60
ambient temperature t_a	°C	-25 to +50
rated max. temperature t_c	°C	85
power factor	λ	0,99
dimensions LxWxH	mm	120x42x31
fixing centres D	mm	86–88
weight	kg	0,07

e.g. for TE-SA

1. TE-S/SA

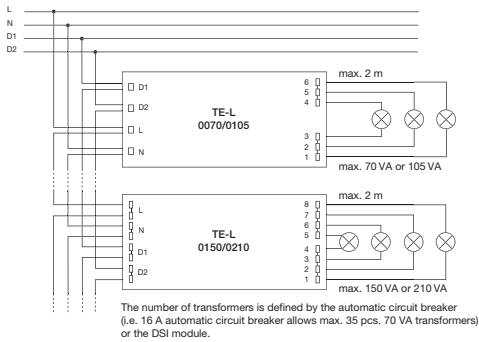


A) Circuit diagram for 20–70 VA, 35–105 VA and 50–150 VA



B) Circuit diagram for 20–150 VA and 20–210 VA

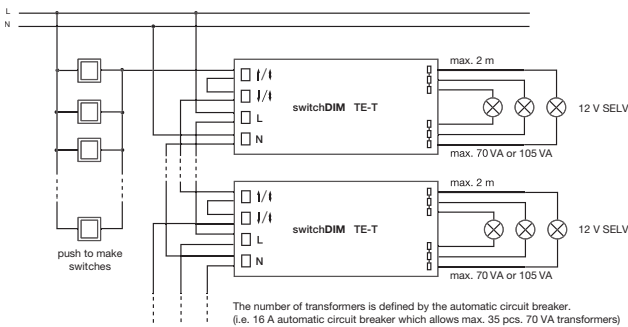
2. TE-L



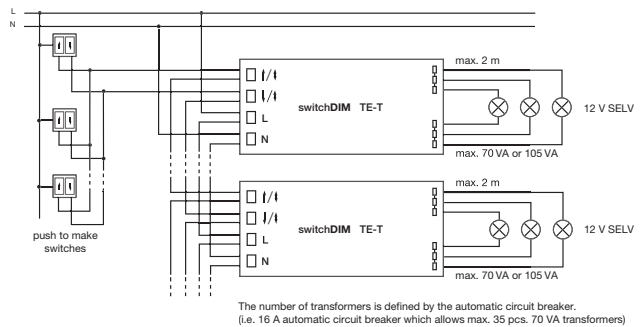
C) TE 0070 L001, TE 0105 L001, TE-L 0150 and TE-L 0210

Special circuit diagrams see section
“luxCONTROL Lighting Control System”.

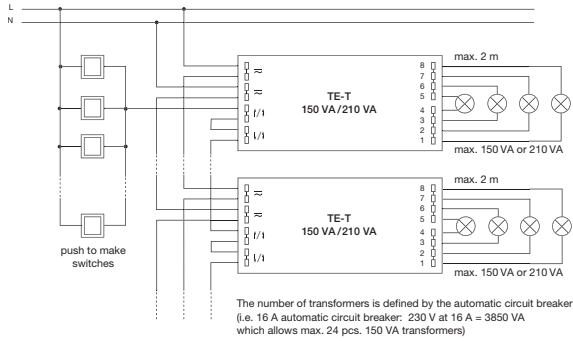
3. switchDIM TE-T



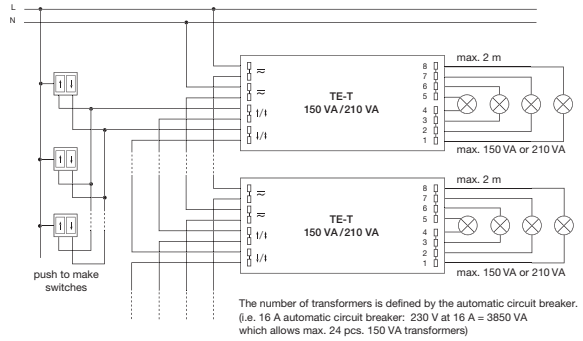
D) switchDIM TE-T – control with a single switch



E) switchDIM TE-T – control with double switches

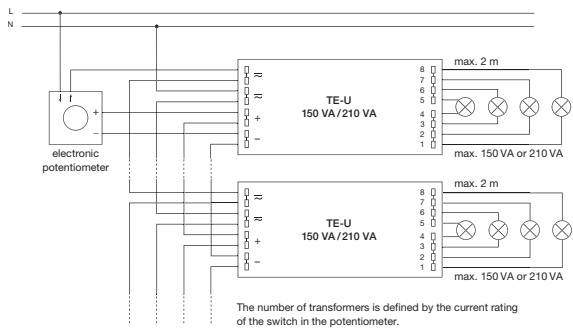


F) TE-T – control with a single switch

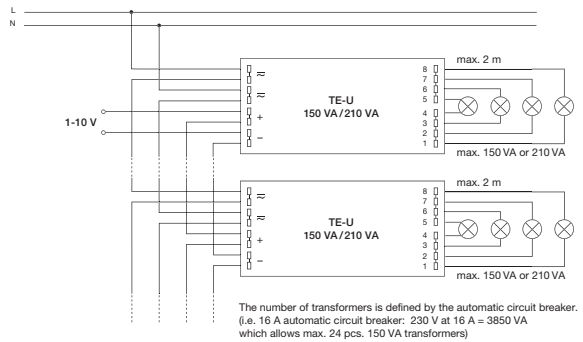


G) TE-T – control with double switches

4. TE-U

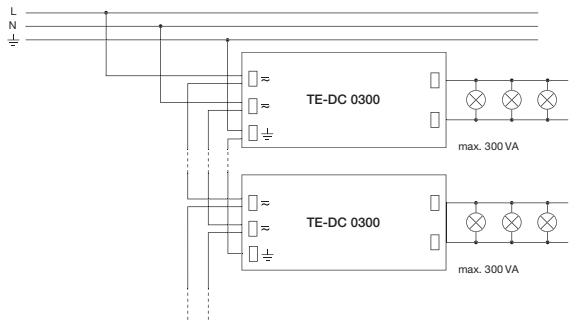


H) TE-U – control by electronic potentiometer

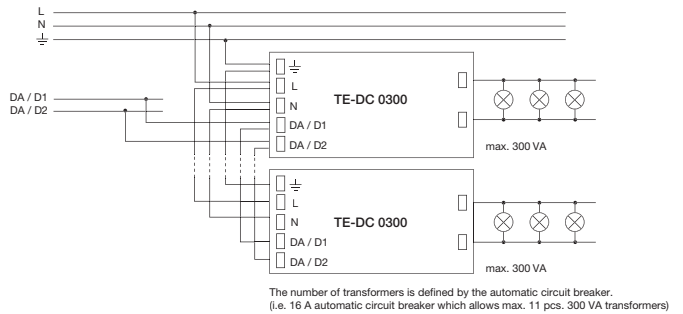


I) TE-U – control by external 1-10 V signal

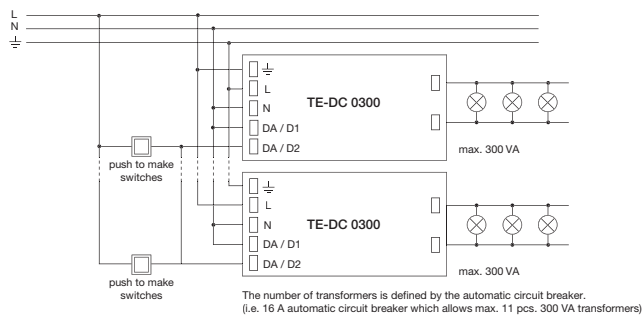
5. TE-DC



J) Circuit diagram for TE-DC FX01 for 300 VA

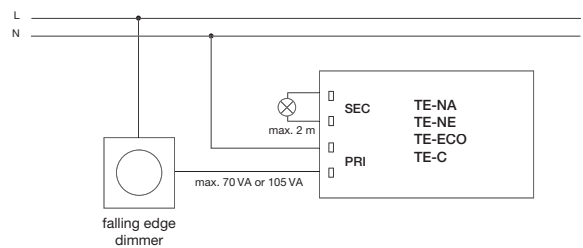


K) Circuit diagram DALI/DSI for TE-DC DX01 for 300 VA



L) Circuit diagram switchDIM for TE-DC DX01 for 300 VA

6. TE-C/TE-ECO//TE-NE



M) TE-C/TE-ECO/TE-NE with falling edge dimmer

LED

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LED

Light emitting diodes (LED's) have over the years established themselves, wherever low power levels were required, for example in traffic signalling technology. The properties of "semi-conductor light" have made a major break through in this particular style of lighting. Traffic lights operate more economically with LED's when compared with incandescent lamp technology and this has already been widely accepted as a viable alternative in both cost and performance. Thanks, amongst other things, to their instantaneous switching properties red LED's have become accepted as the third braking light in modern cars, which is also distinguished by its complete freedom from maintenance. New developments have resulted in higher luminous power and also an expansion of the colour spectrum. The use of LED's in lighting technology is therefore within reach.

Future LED applications are based not only on the economical production of light in the smallest of spaces, but also, on properties which are directly associated with the light production of a diode.

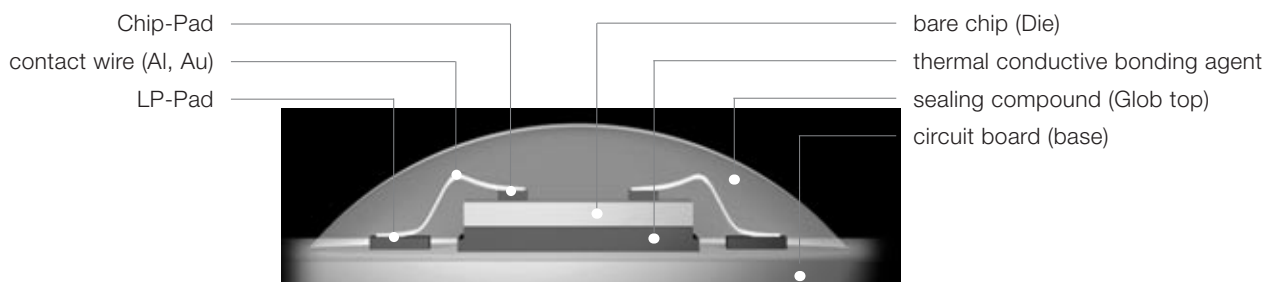
The full potential of light emitting diodes will be realised in the near future with the advent of white light variants with higher luminous power. Wide-ranging use of LED's in lighting technology can therefore be expected.

In addition to their use as emergency and safety lighting, there are numerous possibilities behind these innovative light sources. They have already established themselves in advertising as display panels, illuminated signs or information systems.

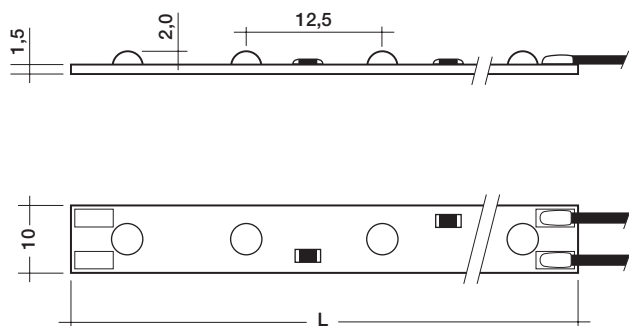
The advantages of powerLED at a glance:

- long service life and no maintenance
- no mercury
- small light spots – flexible design
- dimming
- no UV or IR radiation
- safety extra-low voltage
- vibration-proof
- flat light sources
- range of colours

COB – chip on board – is a new and unique area of competence from TridonicAtco which gives the LED a whole series of new advantages. With COB, the raw chip is mounted directly on a printed circuit board. The chip connectors and circuit board are then connected with a gold wire. Excellent heat dissipation properties have been achieved thanks to the use of special circuit board materials. This means a longer service life, higher luminous efficiency, more light from fewer LEDs and more light from smaller surfaces.



LED P 103/104



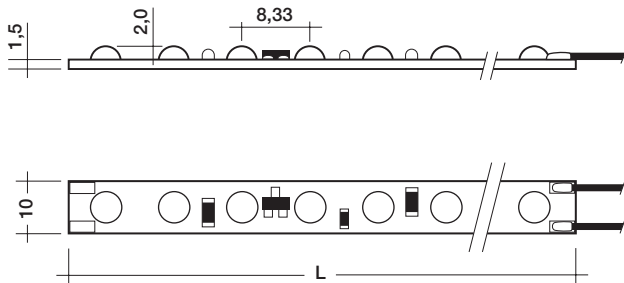
- LED strip modules for accentuating lines and edges as well as for edge lighting
- high-power LED in COB technology
- white: 4 000 K, ± 500 K
- constant current source to stabilise the LED power on the printed circuit board
- broad 140° light distribution for uniform illumination
- fixing: double sided adhesive tape
- connection method: 200 mm cable
 - + white
 - black

LED										
type	article number	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta °C ①	dimensions LxW mm	packing unit
LED P 103 R 8V	89600048	red	619–629	0,96	12,9	8	75	30	75x10	20
LED P 103 A 8V	89600049	amber	584–594	0,96	9,8	8	75	30	75x10	20
LED P 103 G 8V	89600050	green	530–540	0,96	12,0	8	75	30	75x10	20
LED P 103 B 8V	89600044	blue	465–475	0,96	2,9	8	75	30	75x10	20
LED P 103 W 8V	89600045	white 4 000 K	–	0,96	7,8	8	75	30	75x10	20
LED P 104 R 8V	89600051	red	619–629	1,92	25,8	8	75	30	150x10	20
LED P 104 A 8V	89600052	amber	584–594	1,92	19,6	8	75	30	150x10	20
LED P 104 G 8V	89600053	green	530–540	1,96	24,0	8	75	30	150x10	20
LED P 104 B 8V	89600046	blue	465–475	1,96	5,8	8	75	30	150x10	20
LED P 104 W 8V	89600047	white 4 000 K	–	1,96	15,6	8	75	30	150x10	20

all values $\pm 15\%$ at $t_a = 25^\circ\text{C}$

① Values without cooling. Through thermal contact the ambient temperature can be increased.

LED P 105–108



- LED strip modules for illumination as well as for edge lighting
- high-power LED in COB technology
- white: 3 000 K, ± 300 K
4 000 K, ± 500 K
6 500 K daylight (DL), ± 500 K
- white > 20 lm/W
- constant current source to stabilise the LED power on the printed circuit board
- 140° light distribution
- fixing: double sided adhesive tape
- connection method: 200 mm cable
+ white
- black

LED

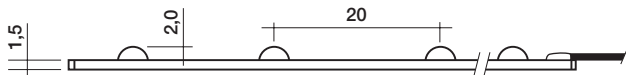
type	article number	colour	colour temperature K	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C $\text{\textcircled{O}}$	dimensions LxW mm	packing unit
LED P 105 W warm	89600168	white	3 000	0,96	12,9	24	85	30	50x10	20
LED P 105 W neutral	89600166	white	4 000	0,96	16,6	24	85	30	50x10	20
LED P 105 W daylight	89600167	white	6 500	0,96	18,5	24	85	30	50x10	20
LED P 106 W warm	89600171	white	3 000	1,92	25,8	24	85	30	100x10	20
LED P 106 W neutral	89600169	white	4 000	1,92	33,2	24	85	30	100x10	20
LED P 106 W daylight	89600170	white	6 500	1,92	37,0	24	85	30	100x10	20
LED P 107 W warm	89600174	white	3 000	2,88	38,7	24	85	30	150x10	20
LED P 107 W neutral	89600172	white	4 000	2,88	49,8	24	85	30	150x10	20
LED P 107 W daylight	89600173	white	6 500	2,88	55,4	24	85	30	150x10	20
LED P 108 W warm	89600177	white	3 000	3,84	51,6	24	85	30	200x10	20
LED P 108 W neutral	89600175	white	4 000	3,84	66,4	24	85	30	200x10	20
LED P 108 W daylight	89600176	white	6 500	3,84	73,9	24	85	30	200x10	20

all values $\pm 15\%$ at ta = 25 °C

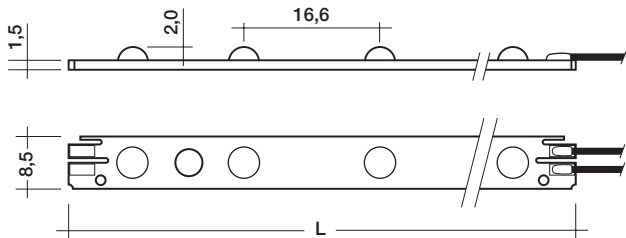
$\text{\textcircled{O}}$ Values without cooling. Through thermal contact the ambient temperature can be increased.

LED P 110/111
LED P 520/521

LED P 110



LED P 111



- LED strip modules for accentuating lines and edges as well as for edge lighting
- high-power LED in COB technology
- white: 4 000 K, ±500 K
6 500 K daylight (DL), ±500 K
- constant current source to stabilise the LED power on the printed circuit board
- broad 140° light distribution for uniform illumination
- fixing: double sided adhesive tape
- connection method: 200 mm cable
+ white
- black

LED P 110/111



LED										
type	article number	colour	wavelength	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions LxW mm	packing unit
LED P 110 R 24V	89600124	red	619–629	1,56	21,6	24	75	50	200x8,5	20
LED P 110 A 24V	89600125	amber	584–594	1,56	16,4	24	75	50	200x8,5	20
LED P 111 G 24V	89600127	green	530–540	1,92	24,1	24	75	40	200x8,5	20
LED P 111 B 24V	89600126	blue	465–475	1,92	5,8	24	75	40	200x8,5	20
LED P 111 W 24V	89600128	white 4 000 K	–	1,92	15,5	24	75	40	200x8,5	20
LED P 111 W 24V DL	89600129	white DL 6 500 K	–	1,92	17,3	24	75	40	200x8,5	20

all values ±15 % at ta = 25 °C

LED P 520/521



Light chain with 5 strip modules

Type	article number	colour	wavelength	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions LxW mm	packing unit
LED P 520 R 24V	89600191	red	619–629	7,8	108,0	24	75	50	1150x8,5	5
LED P 520 A 24V	89600192	amber	584–594	7,8	82,0	24	75	50	1150x8,5	5
LED P 521 G 24V	89600194	green	530–540	9,6	120,5	24	75	40	1150x8,5	5
LED P 521 B 24V	89600193	blue	465–475	9,6	29,0	24	75	40	1150x8,5	5
LED P 521 W 24V	89600195	white 4 000 K	–	9,6	77,5	24	75	40	1150x8,5	5
LED P 521 W 24V DL	89600196	white DL 6 500 K	–	9,6	86,4	24	75	40	1150x8,5	5

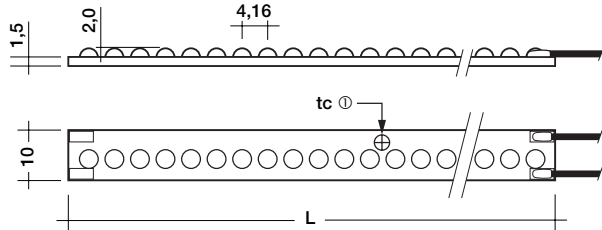
all values ±15 % at ta = 25 °C

LED P 115–119

red/amber



blue/green/white



- LED strip modules for illumination as well as for edge lighting
- high-power LED in COB technology
- white: 3 000 K, ±300 K
4 000 K, ±500 K
6 500 K daylight (DL), ±500 K
- white > 20 lm/W
- constant current source to stabilise the LED power on the printed circuit board
- 140° light distribution
- fixing: double sided adhesive tape pre-mounted
- connection method: 200 mm cable
+ white
- black

Cooling area in cm²

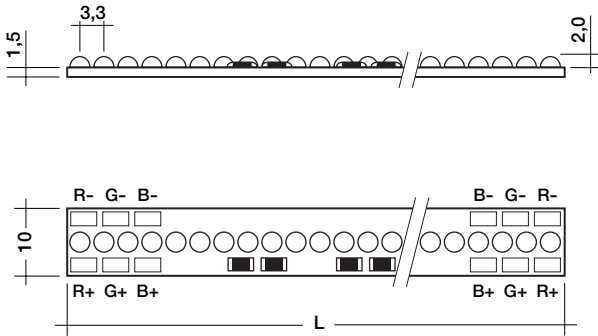
type	ta 30 °C	ta 45 °C
LED P 115	15	21
LED P 116	42	58
LED P 117	63	87
LED P 118	84	116
LED P 119	21	29

LED

type	article number	colour	colour temperature wavelength	power W	luminous flux lm	voltage V DC	tc point °C	dimensions LxW mm	packing unit
LED P 115 R	89600142	red	619–629 nm	1,44	21,6	24	85	50x10	20
LED P 115 A	89600143	amber	584–594 nm	1,44	16,4	24	85	50x10	20
LED P 115 G	89600145	green	530–540 nm	1,44	21,9	24	85	50x10	20
LED P 115 B	89600144	blue	465–475 nm	1,44	5,9	24	85	50x10	20
LED P 115 W neutral	89600146	white	4 000 K	1,44	28,3	24	85	50x10	20
LED P 115 W daylight	89600147	white	6 500 K	1,44	33,3	24	85	50x10	20
LED P 119 W warm	89600182	white	3 000 K	1,92	25,8	24	85	50x10	20
LED P 119 W neutral	89600181	white	4 000 K	1,92	33,2	24	85	50x10	20
LED P 119 W daylight	89600183	white	6 500 K	1,92	37,0	24	85	50x10	20
LED P 116 W neutral	89600152	white	4 000 K	3,84	66,5	24	85	100x10	20
LED P 116 W daylight	89600153	white	6 500 K	3,84	73,9	24	85	100x10	20
LED P 117 W neutral	89600158	white	4 000 K	5,76	99,7	24	85	150x10	20
LED P 117 W daylight	89600159	white	6 500 K	5,76	110,9	24	85	150x10	20
LED P 118 W neutral	89600164	white	4 000 K	7,68	133,0	24	85	200x10	20
LED P 118 W daylight	89600165	white	6 500 K	7,68	147,8	24	85	200x10	20

all values ±15 % at ta = 25 °C

LED D 110/111



- LED strip modules for accentuating lines and edges as well as for edge lighting through RGB colour mixing
- high-power LED in COB technology
- RGB can be controlled separately
- 140° light distribution
- fixing: double sided adhesive tape pre-mounted
- cooling required ① ②
- connection method: 200 mm cable
 - + white
 - black

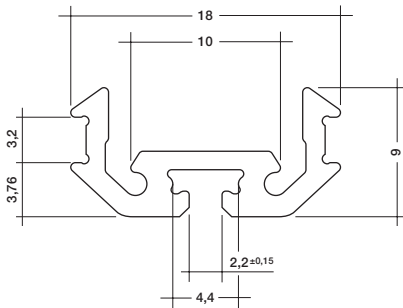
LED									
type	article number	colour	wavelength nm	luminous flux lm	power W	voltage V DC	tc point °C	dimensions LxW mm	packing unit
LED D 110 RGB 24V	89600112	red	619-629	9,3	2,4	24	85	98x10	20
		green	530-540	3,2					
		blue	470-475	11,8					
LED D 111 RGB 24V	89600111	red	619-629	18,6	4,8	24	85	196x10	20
		green	530-540	6,4					
		blue	470-475	23,6					

all values ±15 % at ta = 25 °C

① required cooling area for a single module LED D 110
 ta 30 °C = 41 cm² – heat sink = 12 K/W
 ta 45 °C = 82 cm² – heat sink = 7 K/W
 values for aluminium, thickness > 1 mm

② required cooling area for a single module LED D 111
 ta 30 °C = 72 cm² – heat sink = 6 K/W
 ta 45 °C = 144 cm² – heat sink = 3 K/W
 values for aluminium, thickness > 1 mm

LED Z 200



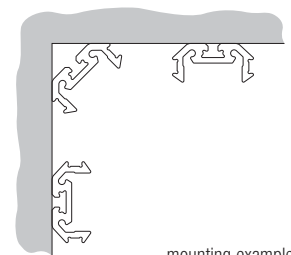
- mounting and cooling track for powerLED module chains and stripes with a maximum width of 12 mm
- compact profile 9x18 mm (HxW)
- snap in mechanism for plastic cover
- flexible mounting
- aluminium extrusion, anodised nature

powerLED mounting and cooling profile

type	article number	material	colour	dimensions HxWxL mm	weight kg
LED Z 200 mounting and cooling profile	24035531	aluminium extrusion	anodised nature	9x18x2000	0,322

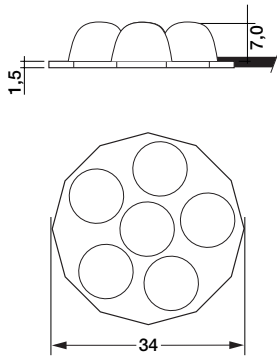
Plastic covers suitable for LED Z 200 are available from:

Stegherr
 Kunststofftechnik GmbH
 Dieselstraße 4
 D-89343 Jettingen – Scheppach
 Germany
 Tel. +49 8225 9682-0
 Fax +49 8225 9682-20
 www.stegherr.com

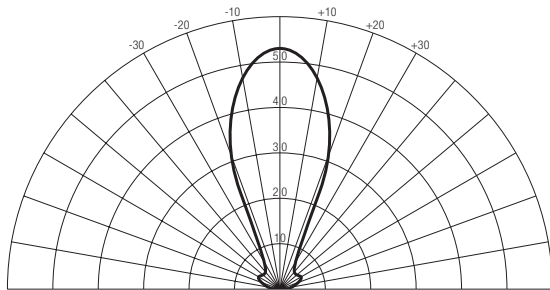


mounting examples

LED P 205



- LED high intensity light source for task lighting, recesses and furniture
- high-power LED in COB technology
- white: 4 000 K, ±500 K
6 500 K daylight (DL), ±500 K
- constant current source to stabilise the LED power on the printed circuit board
- lens 42 °
- fixing: adhesive tape pre-mounted
- cooling required ☉
- connection method: 200 mm cable
 - + white
 - black



Light distribution curve

LED									
type	article number	colour	power W	central luminous intensity cd	luminous flux lm	voltage V DC	tc point °C	diameter d mm	packing unit
LED P 205 W 24V	89600084	white 4 000 K	4,8	53	36	24	85	34	20
LED P 205 W 24V DL	89600113	white DL 6 500 K	4,8	53	40	24	85	34	20

all values ±15 % at ta = 25 °C

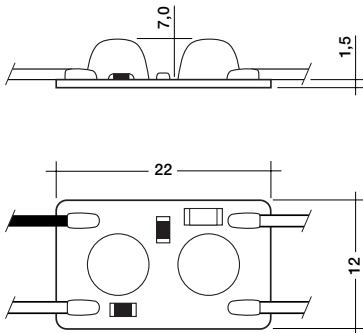
☉ required cooling area

ta 30 °C = 50 cm² – heat sink = 10 K/W

ta 40 °C = 65 cm² – heat sink = 8 K/W

values for Aluminium, thickness > 1 mm

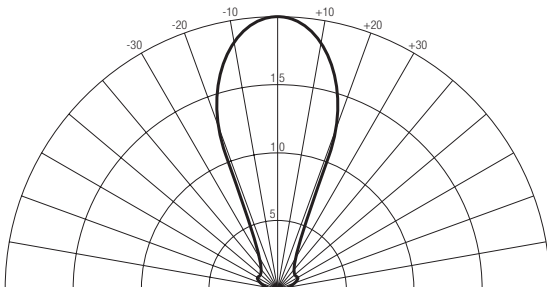
LED P 505



single module



- LED high intensity light source for tasklamps, recesses and furniture
- high-power LED in COB technology
- 6 modules soldered together
- flexible
- white: 4 000 K, ± 500 K
- 6 500 K daylight (DL), ± 500 K
- constant current source to stabilise the LED power on the printed circuit board
- lens 42 °
- fixing: adhesive tape pre-mounted
- cooling required ☉
- connection method: 200 mm cable
 - + white
 - black



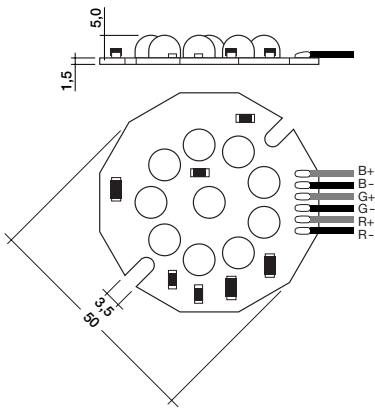
Light distribution curve single module

LED type	article number	colour	power spot chain W	central luminous intensity single module cd	luminous flux single module lm	voltage V DC	tc point °C	dimensions mm	packing unit
LED P 505 W 8 V	89600085	white 4 000 K	9,6	20	15.6	8	85	310x12	5
LED P 505 W 8 V DL	89600116	white DL 6 500 K	9,6	20	17.2	8	85	310x12	5

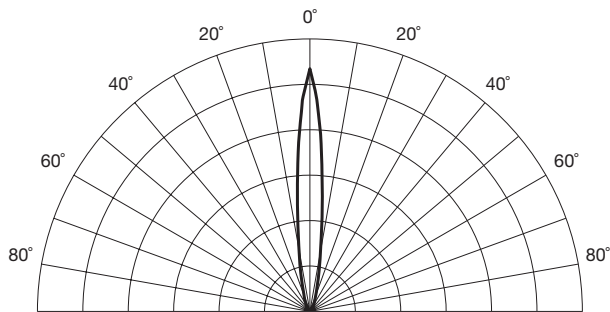
all values $\pm 15\%$ at $t_a = 25^\circ\text{C}$

- ☉ required cooling area for a single module
- $t_a 30^\circ\text{C} = 17\text{ cm}^2$ - heat sink = 30 K/W
 - $t_a 40^\circ\text{C} = 22\text{ cm}^2$ - heat sink = 24 K/W
- values for aluminium, thickness > 1 mm

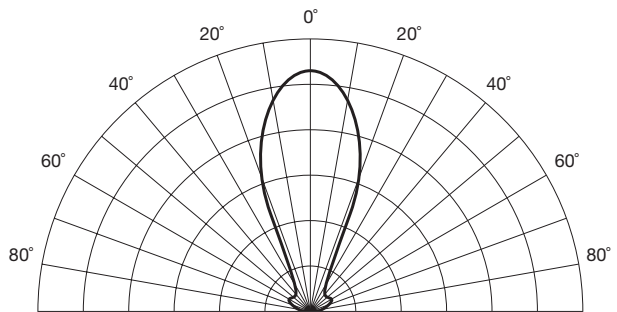
LED D 205



- RGB spot for accentuating and spotlight
- high-power LED in COB technology
- RGB can be controlled separately
- lenses 10°, 42°
- fixing: adhesive tape pre-mounted
- cooling required ①
- connection method: 200 mm cable
- + white
- black



Light distribution curve LED D 205, 10° lens



Light distribution curve LED D 205, 42° lens

LED type	article number	colour	wavelength nm	luminous flux lm	power W	voltage V DC	tc point °C	diameter d mm	packing unit
LED D 205 RGB 12V 10°	89600190	red	619-629	10	7,8	12	85	50	20
		green	530-540	29					
		blue	475-480	9					
LED D 205 RGB 12V 42°	89600117	red	619-629	26	7,8	12	85	50	20
		green	530-540	37					
		blue	475-480	14					

all values ±15 % at ta = 25 °C

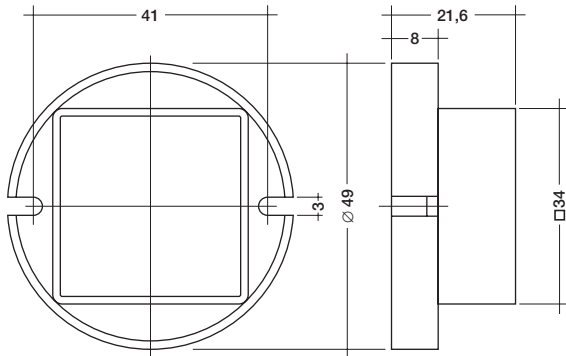
① required cooling area with full power

ta 30 °C = 80 cm² - heat sink = 6 K/W

ta 40 °C = 104 cm² - heat sink = 5 K/W

values for aluminium, thickness > 1 mm

LED P008 230 VAC



- LED modules with integrated power supply for accentuating areas as well as for signs and orientation luminaires
- 230 V mains supply
- high-power LED in COB technology
- white: 4 000 K, ± 500 K
- integrated constant current source to stabilise the LED power
- broad 140° light distribution for uniform illumination
- protection rating IP 65
- potted
- PC-housing
- easy mounting
- low overall height

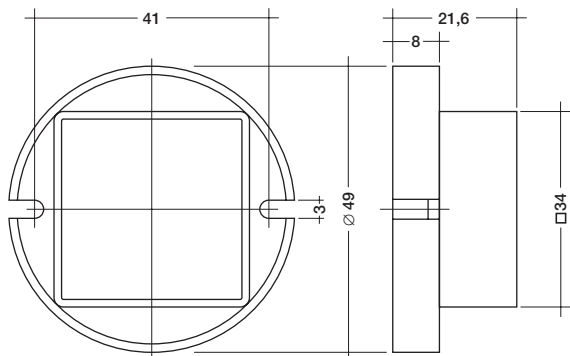
Packaging:
box of 40

Designed according to:
EN 55015
EN 55022
EN 61000-3-2
EN 61547

type		LED P008 R 230 VAC	LED P008 A 230 VAC	LED P008 G 230 VAC	LED P008 B 230 VAC	LED P008 W 230 VAC
article number		86456040	86456056	86456034	86456028	86456012
colour		red	amber	green	blue	white 4 000 K
wavelength	nm	619–629	584–594	530–540	465–475	–
primary voltage	VAC	230	230	230	230	230
primary voltage range	VAC	207–253	207–253	207–253	207–253	207–253
input current at 230V/50Hz	A	0,07	0,07	0,05	0,05	0,05
input power	W	1	1	1	1	1
frequency	Hz	50/60	50/60	50/60	50/60	50/60
luminous flux	lm	11	8,2	11	2,9	7,8
ambient temperature t_a	°C	-25 to +45	-25 to +45	-25 to +45	-25 to +45	-25 to +45
max. case temperature t_c	°C	70	70	70	70	70
weight	kg	0,05	0,05	0,05	0,05	0,05
dimensions DxH	mm	49x22	49x22	49x22	49x22	49x22
fixing centres	mm	41	41	41	41	41
protection rating	–	IP 20	IP 20	IP 20	IP 20	IP 20

all values ± 15 % at $t_a = 25$ °C

LED P009 230 VAC



- LED modules with integrated power supply for accentuating areas as well as for signs and orientation luminaires
- 230 V mains supply
- high-power LED in COB technology
- white: 4 000 K, ±500 K
- integrated constant current source to stabilise the LED power

- broad 140° light distribution for uniform illumination
- protection rating IP 65
- potted
- PC-housing
- easy mounting
- low overall height

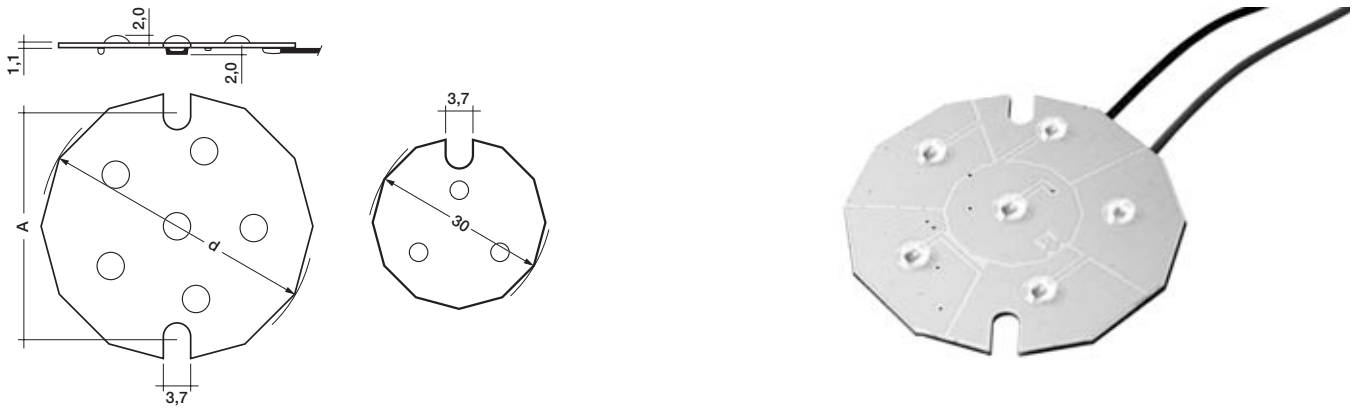
Packaging:
box of 40

Designed according to:
EN 55015
EN 55022
EN 61000-3-2
EN 61547

type		LED P009 R 230 VAC	LED P009 A 230 VAC	LED P009 G 230 VAC	LED P009 B 230 VAC	LED P009 W 230 VAC
article number		86456600	86456599	86456577	86456583	86456561
colour		red	amber	green	blue	white 4 000 K
wavelength	nm	619–629	584–594	520–540	470–475	–
primary voltage	VAC	230	230	230	230	230
primary voltage range	VAC	207–253	207–253	207–253	207–253	207–253
input current at 230V/50Hz	A	0,07	0,07	0,05	0,05	0,05
input power	W	2	2	2	2	2
frequency	Hz	50/60	50/60	50/60	50/60	50/60
luminous flux	lm	21,6	16,4	30,0	5,3	19,0
ambient temperature ta	°C	-25 to +45	-25 to +45	-25 to +45	-25 to +45	-25 to +45
max, case temperature tc	°C	70	70	70	70	70
weight	kg	0,05	0,05	0,05	0,05	0,05
dimensions DxH	mm	49x22	49x22	49x22	49x22	49x22
fixing centres	mm	41	41	41	41	41
protection rating	–	IP 20	IP 20	IP 20	IP 20	IP 20

all values ±15 % at ta = 25 °C

LED P 001/002/003

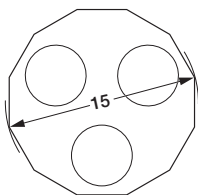
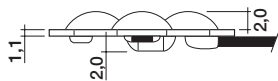


- LED modules for accentuating areas as well as illuminated signs and orientation lighting
- high-power LED in COB technology
- white: 4 000 K, ±500 K
- constant current source to stabilise the LED power on the printed circuit board
- broad 140° light distribution for uniform illumination
- fixing: M3 plastic screw
- connection method: 200 mm cable
 - + white
 - black

LED												
type	article number	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	diameter d mm	fixing distance A mm	packing unit	
LED P 001 R 24V	89600015	red	619-629	1,68	25,0	24	70	45	65	55-59	20	
LED P 001 A 24V	89600016	amber	584-594	1,68	19,0	24	70	45	65	55-59	20	
LED P 001 G 24V	89600017	green	530-540	1,68	24,0	24	70	45	65	55-59	20	
LED P 001 B 24V	89600018	blue	465-475	1,68	5,8	24	70	45	65	55-59	20	
LED P 001 W 24V	89600019	white	-	1,68	16,0	24	70	45	65	55-59	20	
LED P 002 R 12V	89600062	red	619-629	0,72	13,0	12	70	45	50	41-44	20	
LED P 002 A 12V	89600063	amber	584-594	0,72	8,2	12	70	45	50	41-44	20	
LED P 002 G 12V	89600060	green	530-540	0,96	12,0	12	70	45	50	41-44	20	
LED P 002 B 12V	89600059	blue	465-475	0,96	3,0	12	70	45	50	41-44	20	
LED P 002 W 12V	89600061	white	-	0,96	7,8	12	70	45	50	41-44	20	
LED P 003 R 8V	89600025	red	619-629	0,56	7,6	8	70	45	30	-	20	
LED P 003 A 8V	89600026	amber	584-594	0,56	5,7	8	70	45	30	-	20	
LED P 003 G 8V	89600027	green	530-540	0,56	8,0	8	70	45	30	-	20	
LED P 003 B 8V	89600028	blue	465-475	0,56	1,9	8	70	45	30	-	20	
LED P 003 W 8V	89600029	white	-	0,56	5,2	8	70	45	30	-	20	

all values ±15 % at ta = 25 °C

LED P 006

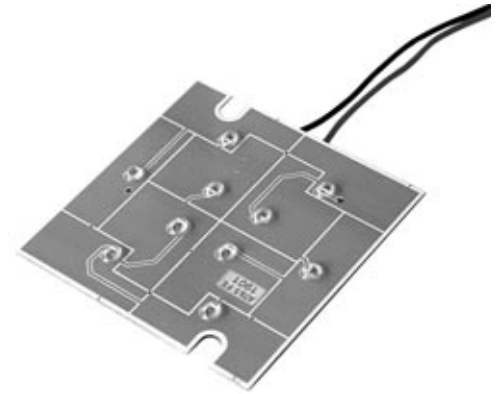
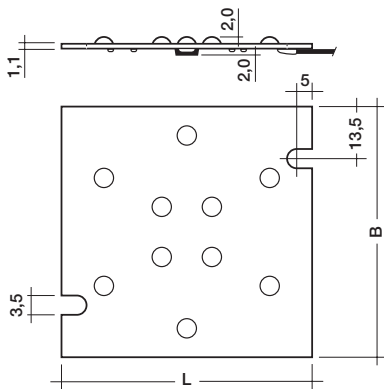


- LED modules for light points and orientation lighting
- high-power LED in COB technology
- white: 4 000 K, ±500 K
6 500 K daylight (DL), ±500 K
- constant current source to stabilise the LED power on the printed circuit board
- broad 140° light distribution for uniform illumination
- fixing: double sided adhesive tape
- connection method: 200 mm cable
 - + white
 - black

LED										
type	article number	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	diameter d mm	packing unit
LED P 006 R 8V	89600064	red	619–629	0,32	4,0	8	70	40	15	20
LED P 006 A 8V	89600065	amber	584–594	0,32	3,0	8	70	40	15	20
LED P 006 G 12V	89600066	green	530–540	0,30	4,0	12	70	40	15	20
LED P 006 B 12V	89600067	blue	465–475	0,30	1,0	12	70	40	15	20
LED P 006 W 12V	89600068	white	–	0,30	3,8	12	70	40	15	20
LED P 006 W 12V DL	89600114	white DL	–	0,30	4,3	12	70	40	15	20

all values ±15 % at ta = 25 °C

LED P 201



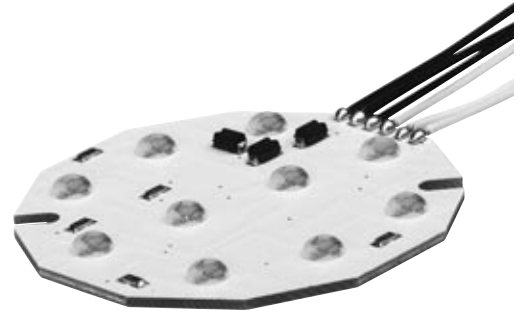
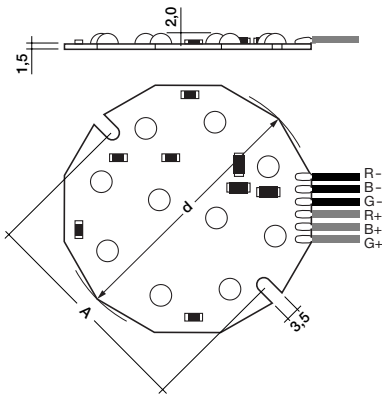
- LED modules for accentuating areas as well as illuminated signs and orientation lighting
- high-power LED in COB technology
- white: 4 000 K, ± 500 K
- constant current source to stabilise the LED power on the printed circuit board
- broad 140° light distribution for uniform illumination
- fixing: M3 plastic screw
- connection method: 200 mm cable with wire end ferrules
 - + white
 - black

LED

type	article number	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions LxB mm	packing unit
LED P 201 R 24V	89600010	red	619–629	1,92	25,0	24	70	45	65x65	20
LED P 201 A 24V	89600011	amber	584–594	1,92	19,0	24	70	45	65x65	20
LED P 201 G 24V	89600012	green	530–540	1,92	24,1	24	70	45	65x65	20
LED P 201 B 24V	89600013	blue	465–475	1,92	5,9	24	70	45	65x65	20
LED P 201 W 24V	89600014	white	–	1,92	15,5	24	70	45	65x65	20

all values ± 15 % at $t_a = 25$ °C

LED D 001



- LED modules for accentuating areas as well as illuminated signs and orientation lighting
- high-power LED in COB technology
- RGB can be controlled separately
- 140° light distribution for uniform illumination
- fixing: M3 plastic screw
- cooling required ☉
- connection method: 200 mm cable
 - + white
 - black

LED									
type	article number	colour	wavelength nm	luminous flux lm	power W	voltage V DC	tc point °C	diameter d mm	packing unit
LED D 001 RGB 24V	89600115	red	619-629	23,6	4.3	24	85	65	20
		green	530-540	18,3					
		blue	470-475	3,2					

all values ±15 % at ta = 25 °C

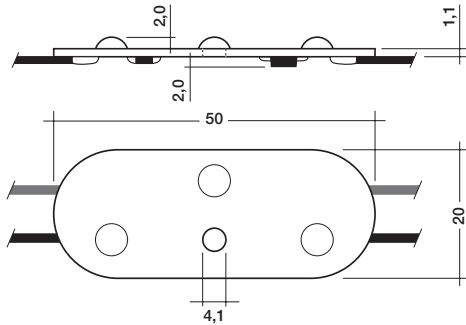
☉ required cooling area for LED D 001

ta 30 °C = 72 cm² - heat sink = 7 K/W

ta 45 °C = 144 cm² - heat sink = 3.5 K/W

values for aluminium, thickness > 1 mm

LED P 501



Dimensions single module



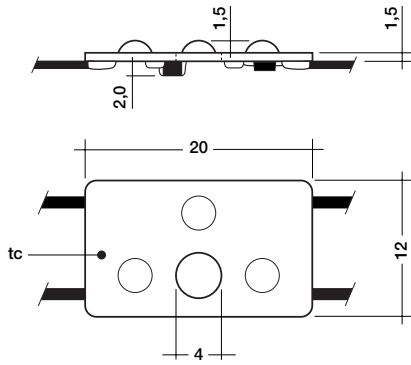
- LED light chain for accentuating lines and edges as well as backlighting of signs and letters in lighting advertising
- high-power LED in COB technology
- white: 4 000 K, ± 500 K
6 500 K daylight (DL), ± 500 K
- constant current source to stabilise the LED power on the printed circuit board
- 10 modules soldered together
- flexible
- coated with protective varnish for applications where condensation occurs
- broad 140° light distribution
- for uniform illumination: minimum distance to the cover 30–40 mm
- fixing: M4 plastic screw or double sided adhesive tape ≥ 2 mm thick
- connection method: cable 200 mm, both sides
 - + white
 - black

LED

type	article number light chain	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions light chain LxB mm	packing unit pieces/carton
LED P 501 R 8V	89600039	red	619–629	5,6	64,8	8	75	50	500–780 x 20	5
LED P 501 A 8V	89600040	amber	584–594	5,6	49,2	8	75	50	500–780 x 20	5
LED P 501 G 12V	89600041	green	530–540	4,8	60,3	12	75	50	500–780 x 20	5
LED P 501 B 12V	89600042	blue	465–475	4,8	14,7	12	75	50	500–780 x 20	5
LED P 501 W 12V	89600043	white 4 000 K	–	4,8	38,8	12	75	50	500–780 x 20	5
LED P 501 W 12V DL	89600096	white DL 6 500 K	–	4,8	43,2	12	75	50	500–780 x 20	5

all values ± 15 % at ta = 25 °C

LED P 502



Dimensions single module



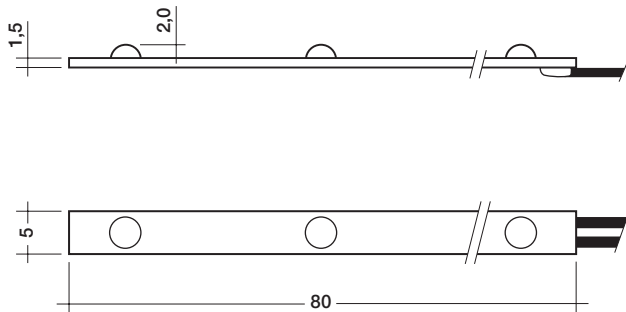
- LED mini chain for accentuating lines and edges as well as backlighting of signs and letters in lighting advertising
- small modules for narrow letters, tight corners or small signs
- to be combined with light chain LED P 501
- high-power LED in COB technology
- white: 4 000 K, ± 500 K
6 500 K daylight (DL), ± 500 K
- constant current source to stabilise the LED power on the printed circuit board
- 10 modules soldered together
- flexible
- coated with protective varnish for applications where condensation occurs
- broad 140° light distribution
- for uniform illumination: minimum distance to the cover 20–30 mm
- fixing: M4 plastic screw or double sided adhesive tape ≥ 2 mm thick
- connection method: cable 200 mm, both sides
 - + white
 - black

LED

type	article number mini chain	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions mini chain LxB mm	packing unit pieces/carton
LED P 502 R 8V	89600086	red	619–629	3,2	40	8	75	50	250–520 x 12	5
LED P 502 A 8V	89600087	amber	584–594	3,2	30	8	75	50	250–520 x 12	5
LED P 502 G 12V	89600089	green	530–540	2,4	40	12	75	50	250–520 x 12	5
LED P 502 B 12V	89600088	blue	465–475	2,4	10	12	75	50	250–520 x 12	5
LED P 502 W 12V	89600090	white 4 000 K	–	2,4	38	12	75	50	250–520 x 12	5
LED P 502 W 12V DL	89600097	white DL 6 500 K	–	2,4	43	12	75	50	250–520 x 12	5

all values ± 15 % at ta = 25 °C

LED P 504



Dimensions single module

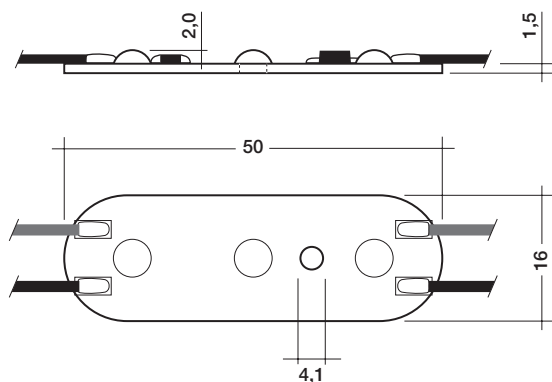


- ultra slim LED light chain for accentuating lines and edges as well as backlighting of signs and letters in lighting advertising
- high-power LED in COB technology
- available in various colours: red, amber, green, blue, white: 4 000 K, ± 500 K and 6 500 K daylight (DL), ± 500 K
- constant current source to stabilise the LED power on the printed circuit board
- 20 modules soldered together
- flexible
- coated with protective varnish for applications where condensation occurs
- broad 140° light distribution
- for uniform illumination: minimum distance to the cover > 40 mm
- fixing: double sided adhesive tape ≥ 2 mm thick
- connection method: cable 200 mm, both sides
 - + white
 - black

LED										
type	article number light chain	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions light chain LxW mm	packing unit pieces/carton
LED P 504 R 8V	89600130	red	619–629	6,4	80	8	75	45	2 075 x 5	5
LED P 504 A 8V	89600131	amber	584–594	6,4	60	8	75	45	2 075 x 5	5
LED P 504 G 12V	89600133	green	510–540	6,0	80	12	75	45	2 075 x 5	5
LED P 504 B 12V	89600132	blue	460–465	6,0	20	12	75	45	2 075 x 5	5
LED P 504 W 12V	89600134	white 4 000 K	–	6,0	76	12	75	45	2 075 x 5	5
LED P 504 W 12V DL	89600135	white DL 6 500 K	–	6,0	86	12	75	45	2 075 x 5	5

all values ± 15 % at $t_a = 25$ °C

LED P 511



Dimensions single module

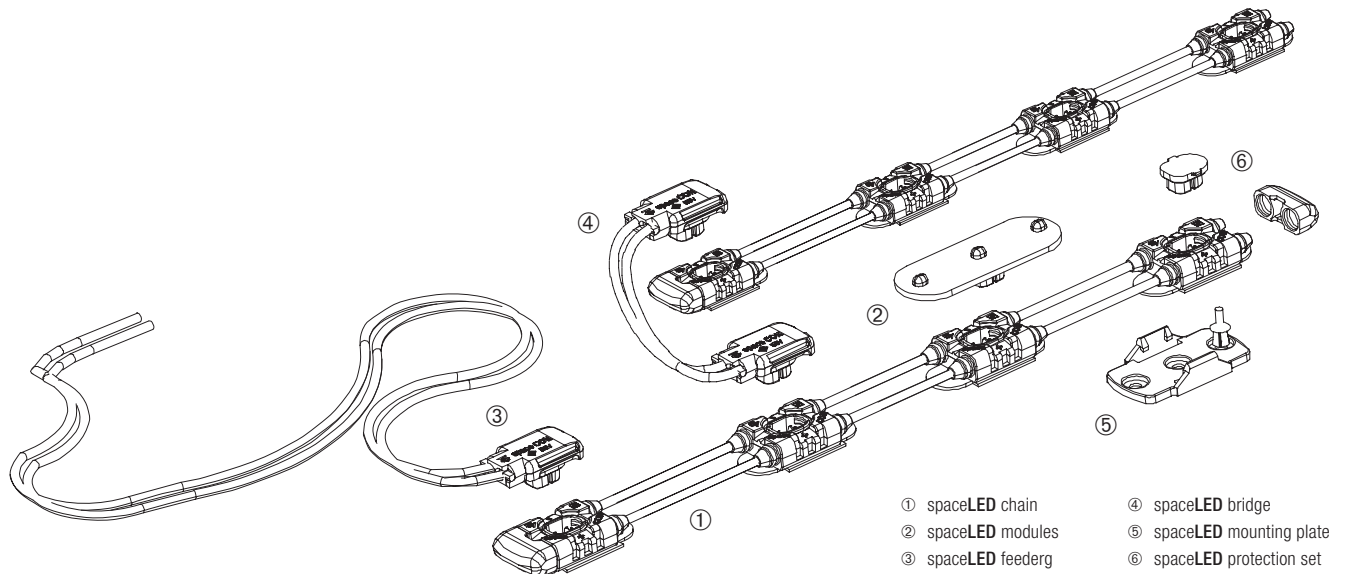


- LED light chain for accentuating lines and edges as well as backlighting of signs and letters in lighting advertising
- high-power LED in COB technology
- white: 4 000 K, ±500 K
6 500 K daylight (DL), ±500 K
- constant current source to stabilise the LED power on the printed circuit board
- 30 modules soldered together, arbitrary module separation possible
- flexible
- coated with protective varnish for applications where condensation occurs
- broad 140° light distribution
- for uniform illumination: minimum distance to the cover 50–60 mm
- fixing: M4 plastic screw or double sided adhesive tape
- connection method: cable 200 mm, both sides
 - + white
 - black

LED										
type	article number light chain	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions light chain LxB mm	packing unit pieces/carton
LED P 511 R 8V	89600136	red	619–629	14,4	195,0	8	75	45	3 000 x 16	5
LED P 511 A 8V	89600137	amber	584–594	14,4	150,0	8	75	45	3 000 x 16	5
LED P 511 G 12V	89600139	green	510–540	14,4	180,0	12	75	45	3 000 x 16	5
LED P 511 B 12V	89600138	blue	460–465	14,4	25,2	12	75	45	3 000 x 16	5
LED P 511 W 12V	89600140	white 4 000 K	–	14,4	90,7	12	75	45	3 000 x 16	5
LED P 511 W 12V DL	89600141	white DL 6 500 K	–	14,4	100,8	12	75	45	3 000 x 16	5

all values ±15 % at ta = 25 °C

spaceLED system overview



spaceLED features

- maximum stability and reliability
- protection rating IP54 for contacts
- maximum current load 6 A
- flexibility
- tool-free assembly
- easy replacement of spaceLED modules by plug and play

spaceLED system data

Max. current	6 A
Max. voltage	42 VAC / 60 VDC (SELV)
system wattage	360 VA max.
wire cross section	2x0,5 mm ²
protection rating	IP54
ambient temperature	-20 to +55 °C
materials	protection set PE LD all other plastic parts PBT wiring insulation PVC inserts tinned copper

LED P 601 – 3 COB module

LED P 602 – 6 COB module

- high-power LED in COB technology
- white: 4 000 K, ± 500 K
6 500 K daylight (DL), ± 500 K
- constant current source to stabilise the LED power on the printed circuit board
- broad 140° light distribution for uniform illumination
- pluggable



LED P 601

LED P 602

LED P 601

spaceLED – 3 COB module

type	article number	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions LxW mm	packing unit
LED P 601 R 8V	89600099	red	619–629	0,48	6,5	8	75	55	46x16	50
LED P 601 A 8V	89600100	amber	584–594	0,48	5,0	8	75	55	46x16	50
LED P 601 G 12V	89600101	green	530–540	0,48	9,2	12	75	55	46x16	50
LED P 601 B 12V	89600102	blue	465–470	0,48	1,4	12	75	55	46x16	50
LED P 601 W 12V	89600103	white 4 000 K	–	0,48	4,9	12	75	55	46x16	50
LED P 601 W 12V DL	89600109	white DL 6 500 K	–	0,48	5,4	12	75	55	46x16	50

all values ± 15 % at $t_a = 25$ °C

LED P 602

spaceLED – 6 COB module

type	article number	colour	wavelength nm	power W	luminous flux lm	voltage V DC	tc point °C	ta max. °C	dimensions LxW mm	packing unit
LED P 602 R 8V	89600104	red	619–629	0,96	13,0	8	75	55	100x16	50
LED P 602 A 8V	89600105	amber	584–594	0,96	10,0	8	75	55	100x16	50
LED P 602 G 12V	89600106	green	530–540	0,96	18,4	12	75	55	100x16	50
LED P 602 B 12V	89600107	blue	465–470	0,96	2,7	12	75	55	100x16	50
LED P 602 W 12V	89600108	white 4 000 K	–	0,96	9,3	12	75	55	100x16	50
LED P 602 W 12V DL	89600110	white DL 6 500 K	–	0,96	10,8	12	75	55	100x16	50

all values ± 15 % at $t_a = 25$ °C

spaceLED system accessories

LED Z 101 / Z 112 / Z 121 / Z 161 / Z 131



LED Z101
spaceLED chain 10 m
pre-mounted with double
sided adhesive tape



LED Z 112
spaceLED feeder 1 m
flexible feed line 1 m length



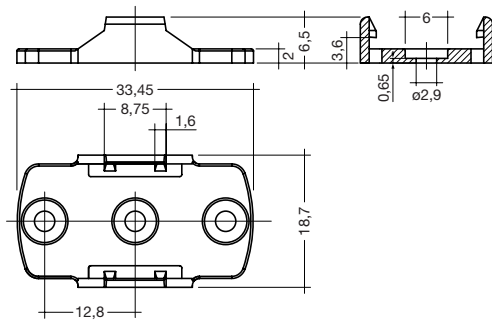
LED Z 121
spaceLED bridge 0.1 m
for connecting two lengths
of cable



LED Z 161
spaceLED mounting plate
available as an option



LED Z 131
spaceLED protection set
ensure continuous protection
against moisture

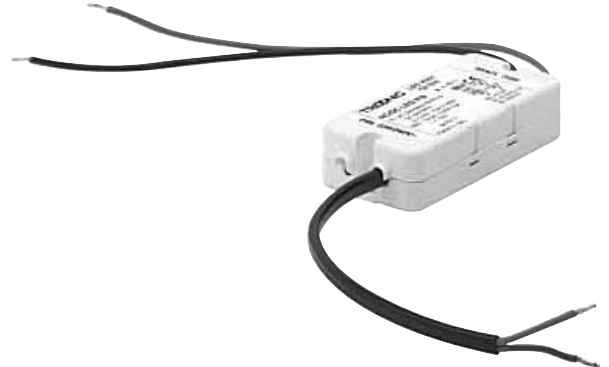
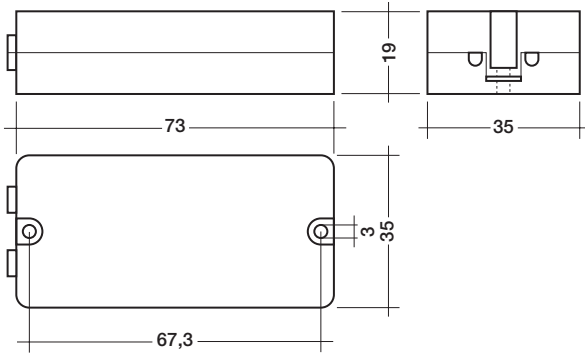


Dimensions LED Z 161

LED Z

type	article number	description	packing unit
LED Z 101	88711762	spaceLED chain, 10 m, 92 sockets including protection set spaceLED Z 131	1
LED Z 112	88712073	spaceLED feeder, 1 m	5
LED Z 121	88712119	spaceLED bridge, 0,1 m	5
LED Z 161	88712147	spaceLED mounting plate, available as an option	100
LED Z 131	88712067	spaceLED protection set	1

LED K001 8/12/24 V



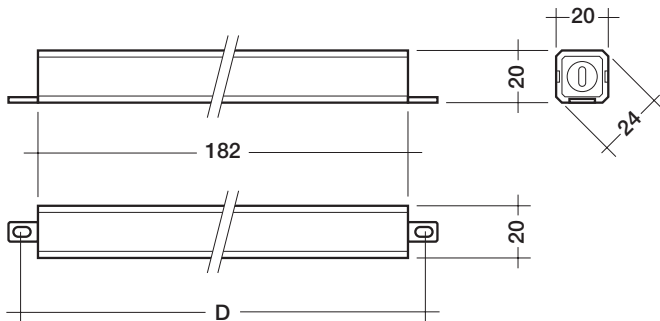
- short-circuit switch-off with automatic restart
- protection against overheating and overload by mains output power reduction
- protection class 2
- compact dimensions
- connection cable with wire end ferrules
- secondary: red +
black -
- length: approx. 200 mm
- polycarbonate housing white

Packaging:
box of 40

Designed according to:
EN 61046
EN 61047

type		LED 0007 K001 8 V	LED 0010 K001 12 V	LED 0010 K001 24 V
article number		86453107	86453116	86453122
primary voltage	V	220–240	220–240	220–240
primary voltage range	VAC	198–254	198–254	198–254
primary voltage range	VDC	176–280	176–280	176–280
input current at 230V/50Hz	mA	70	85	85
frequency	Hz	0/50/60	0/50/60	0/50/60
efficiency	%	> 60	> 60	> 60
secondary voltage	V	8	12	24
output power	W	1–7	1–10	1–10
ambient temperature t_a	°C	-25 to +50	-25 to +50	-25 to +50
max. case temperature t_c	°C	85	85	85
weight	g	50	50	50
dimensions LxWxH	mm	73x35x19	73x35x19	73x35x19
fixing centres	mm	67,3	67,3	67,3

LED 0010 K301 8/12/24V



- short-circuit switch off with automatic restart
- constant output voltage
- protection class 2
- over temperature protection with power reduction
- protection rating IP65
- connection cable with end ferrules
secondary: red +
 black -
- length: approx. 150 mm
- compact slimline housing

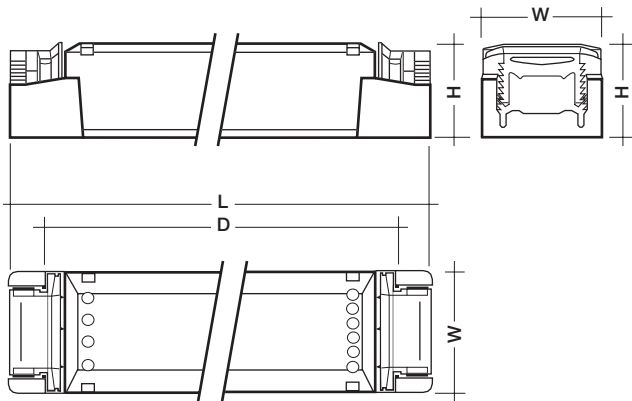
Packaging:
box of 30

Designed according to:
EN 55015
EN 61000-3-2
EN 61547
EN 61558-2-17

type		LED 0010 K301 8V	LED 0010 K301 12V	LED 0010 K301 24V
article number		86456196	86456206	86456215
primary voltage	VAC	230/240	230/240	230/240
primary voltage range	VAC	200-254	200-254	200-254
primary voltage range	VDC	200-240 (160 ①)	200-240 (160 ①)	200-240 (160 ①)
input current at 230V/50Hz	A	0,085	0,085	0,085
frequency	Hz	0/50/60	0/50/60	0/50/60
efficiency	%	> 80	> 80	> 80
secondary voltage	VDC	8	12	24
output power	W	1-10	1-10	1-10
ambient temperature ta	°C	-25 to +50	-25 to +50	-25 to +50
max. case temperature tc	°C	85	85	85
weight	g	50	50	50
dimensions LxWxH	mm	182x20x20	182x20x20	182x20x20
fixing centres D	mm	198	198	198

① after power up with higher voltage, the device will work with a reduced voltage as specified above.

LED 0025 K201 24V



- short-circuit switch off with automatic restart
- protection class 2
- constant output voltage
- suitable for DC supply
- 6 pole terminal block on secondary side
- captive screw terminals
- tool free assembly of strain relief and terminal cover

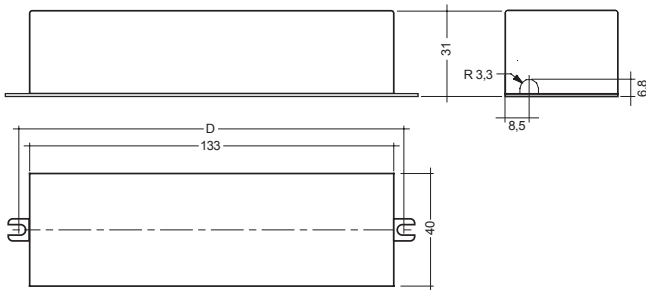
Packaging:
box of 20

Designed according to:
EN 61558-2-17
EN 61547
EN 55015
EN 55022
EN 61000-3-2

type		LED 0025 K201 24V
article number		86453418
primary voltage	VAC	230
primary voltage range	VAC	198–254
primary voltage range	VDC	200–240 (160 ①)
input current at 230V/50Hz	A	0,13
frequency	Hz	0/50/60
efficiency	%	> 82
secondary voltage	VDC	24
output power	W	25
ambient temperature ta	°C	-25 to +45
max. case temperature tc	°C	70
weight	kg	0,15
dimensions LxWxH	mm	167x42x31
fixing centres D	mm	143–148

① after power up with higher voltage, the device will work with a reduced voltage as specified above.

LED 0025 K220 8/12/24V



- wide supply voltage range 90–300 V
- protection class 2
- constant output voltage
- over load protection with power reduction
- over temperature protection with power reduction
- short-circuit switch-off with automatic restart
- protection rating IP54

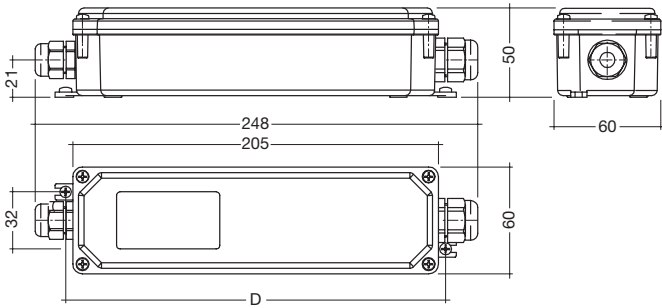
- connection cable with wire end ferrules
secondary: red +
 black –
length: approx. 500 mm
- metal housing – potted
- U: approved

Packaging:
box of 20

Designed according to:
EN 55015
EN 55022
EN 61000-3-2
EN 61547
EN 61558-2-17

type		LED 0025 K220 8V	LED 0025 K220 12V	LED 0025 K220 24V
article number		86455943	86455990	86456003
primary voltage	VAC	100/230/277	100/230/277	100/230/277
primary voltage range	VAC	90–300	90–300	90–300
primary voltage range	VDC	110–300	110–300	110–300
input current at 230V/50Hz	A	0,12	0,12	0,12
frequency	Hz	0/50/60	0/50/60	0/50/60
efficiency	%	> 80	> 80	> 82
secondary voltage	VDC	8	12	24
output power	W	25	25	25
ambient temperature ta	°C	-25 to +50	-25 to +50	-25 to +50
max. case temperature tc	°C	90	90	90
weight	g	300	300	300
dimensions LxWxH	mm	133x40x31	133x40x31	133x40x31
fixing centres D	mm	140–145	140–145	140–145

LED 0070 K230 8/12/24V

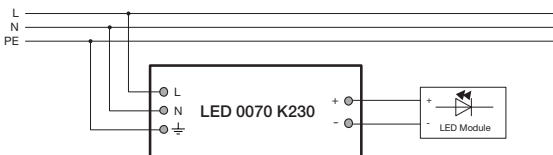


- short-circuit switch off with automatic restart
- constant output voltage
- protection class 2
- over temperature protection with power reduction
- protection rating IP67
- connection cable with end ferrules
 primary: cable 3 x 1 mm² (flexible)
 secondary: cable 2 x 1,5 mm² (flexible)
 length: approx. 0,5 m

Packaging:
box of 5

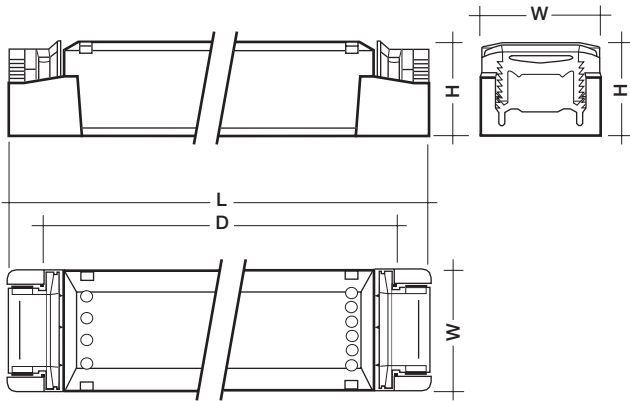
Designed according to:
EN 55015
EN 61000-3-2
EN 61347-2-2
EN 61547

type		LED 0070 K230 8V	LED 0070 K230 12V	LED 0070 K230 24V
article number		86456221	86456237	86456243
primary voltage	VAC	230–240	230–240	230–240
primary voltage range	VAC	200–254	200–254	200–254
input current at 230V/50Hz	A	0,35	0,35	0,35
frequency	Hz	50/60	50/60	50/60
efficiency	%	> 0,87	> 0,87	> 0,87
secondary voltage	VDC	8	12	24
output power	W	70	70	70
ambient temperature ta	°C	-40 to +45	-40 to +45	-40 to +45
rated max. temperature tc	°C	90	85	80
weight	kg	0,5	0,5	0,5
dimensions LxWxH	mm	248x60x50	248x60x50	248x60x50
fixing centres D	mm	213	213	213



Functional earth has to be connected due to EMC requirements.

LED 0025 K210 24V one4all

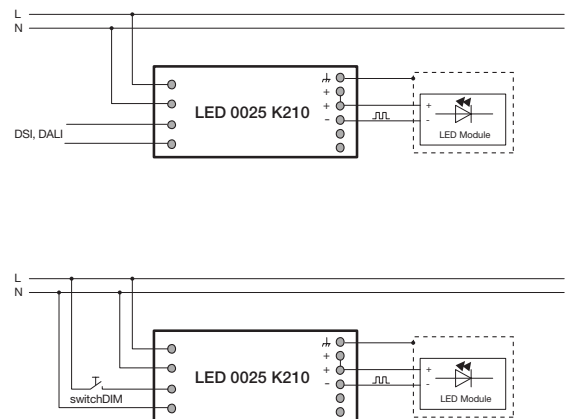


- short-circuit switch off with automatic restart
- overtemperature protection
- protection class 2
- suitable for DC supply
- 6 pole terminal block on secondary side
- captive screw terminals
- tool free assembly of strain relief and terminal cover
- DSI, DALI and switchDIM input
- PWM output signal

Packaging:
box of 20

Designed according to:
EN 55015
EN 55022
EN 61000-3-2
EN 61547
EN 61558-2-17

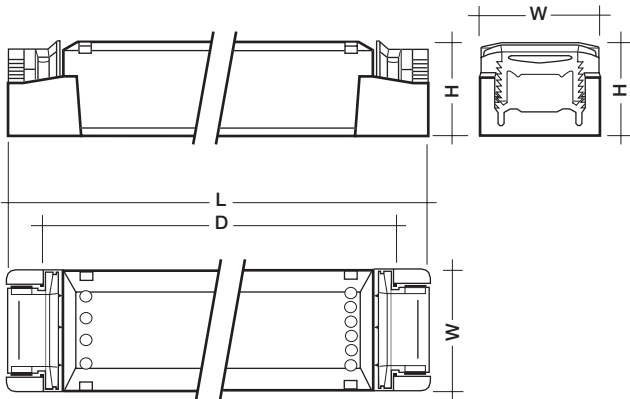
Type	LED 0025 K210 24V one4all	
article number		86455937
primary voltage	VAC	230
primary voltage range	VAC	198–254
primary voltage range	VDC	200–240 (160 ①)
input current at 230V/50Hz	A	0,13
frequency	Hz	0/50/60
efficiency	%	> 82
secondary voltage	VDC	24
output power	W	25
dimming signal	–	DSI, DALI, switchDIM
ambient temperature ta	°C	-25 to +45
max. case temperature tc	°C	70
weight	kg	0,15
dimensions LxWxH	mm	167x42x31
fixing centres D	mm	143–148



① after power up with higher voltage, the device will work with a reduced voltage as specified above.



LED 0025 K211 24V

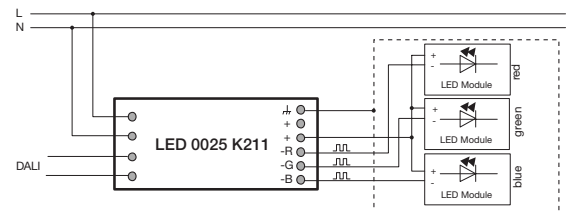


- short-circuit switch off with automatic restart
- overtemperature protection
- protection class 2
- suitable for DC supply
- 6 pole terminal block on secondary side
- captive screw terminals
- tool free assembly of strain relief and terminal cover
- DALI input digital control
- 3 addressable output channels
- integrated sequencer for stand alone operation
- PWM output signal

Packaging:
box of 20

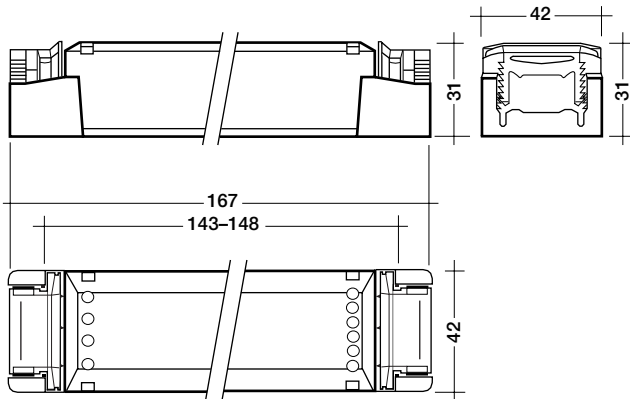
Designed according to:
EN 55015
EN 55022
EN 61000-3-2
EN 61547
EN 61558-2-17

Type		LED 0025 K211 24V
article number		86455066
primary voltage	VAC	230
primary voltage range	VAC	198–254
primary voltage range	VDC	200–240 (160 ①)
input current at 230V/50Hz	A	0,13
frequency	Hz	0/50/60
efficiency	%	> 82
secondary voltage	VDC	24
output power	W	3x8
dimming signal	–	DALI
ambient temperature ta	°C	-25 to +45
max. case temperature tc	°C	70
weight	kg	0,15
dimensions LxWxH	mm	167x42x31
fixing centres D	mm	143–148



① after power up with higher voltage, the device will work with a reduced voltage as specified above.

LED C 002



The 3-channel PWM sequencer is part of the LED controls product range and enables the dynamic colour change of RGB LED modules using pulse width modulation.

PWM, with a frequency of approximately 200 Hz, is generated on each channel by a default characteristic flow line and modulated to the 12–24 V DC input voltage. The 1–10 V control input provides the 10 V control voltage required itself and is therefore also perfectly suited to use with a passive potentiometer (100 K Ω lin.).

The common + terminal allows an integrated protection against fast transients, overvoltage and reversed polarity connection.

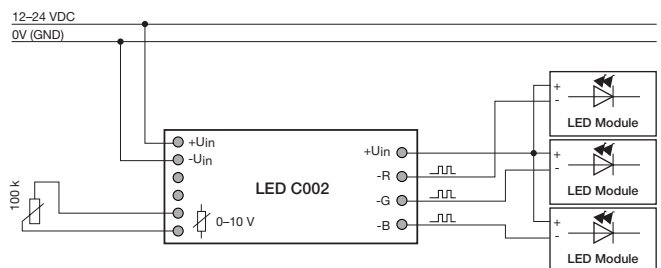
- for 12-24 V DC LED modules
- single-colour or RGB modules
- max. current per channel 2 A
- short-circuit cut-off
- 6-pole screw terminal, secondary
- 4-pole screw terminal, primary
- integrated cable grip and terminal cover

- cable grip can be fitted quickly without the use of a tool
- packing unit: 10 pieces

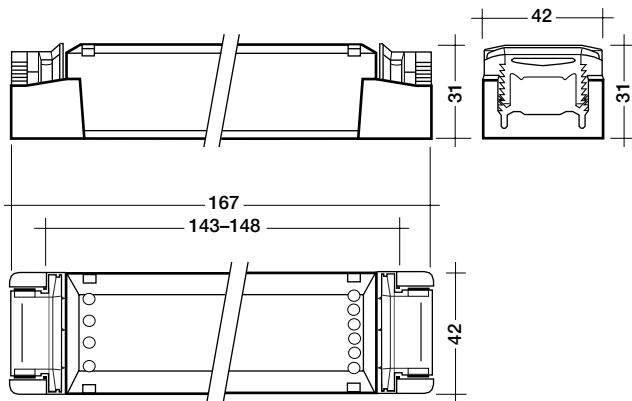
Functions of the control input:

- < 1.2 V starting threshold
- 1,2–9,8 V sequence speed 15 sec–15 min
- > 9,8 V holding the current colour

Type		LED C 002	
article number			86454968
mains supply	rated voltage	V DC	12–24
	max. current	A	6
inputs	analogue	V	1–10
	potentiometer	k Ω	100, linear
outputs	+ pole	–	–
	– pole red	A	2
	– pole green	A	2
	– pole blue	A	2
	voltage	V DC	12–24
temperature	permissible ambient temperature	$^{\circ}$ C	0–50



LED C 001



The 1–10 V, 3-channel PWM booster is part of the LED controls product range and makes it possible to dim LED modules using pulse width modulation.

PWM, with a frequency of approximately 350 Hz, is generated from a 1–10 V control voltage and modulated to the 12–24 V DC voltage applied. There are three separate dimming circuits for each device. Their control inputs themselves provide the 10 V control voltage required and so they are perfectly suited to use with a passive potentiometer (100 K Ω lin.).

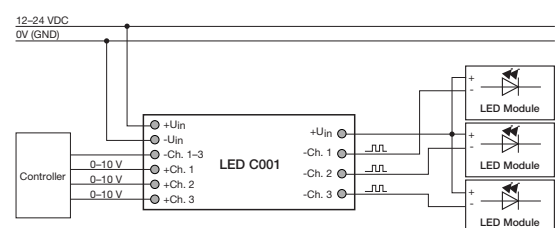
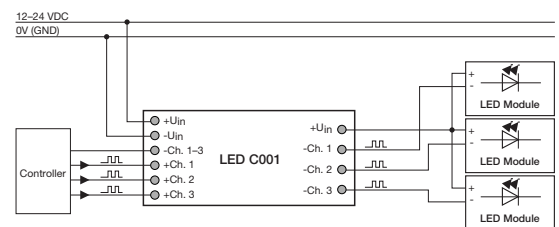
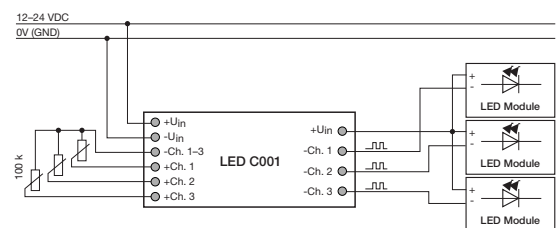
Alternatively, the control inputs can receive a generated PWM signal. The device then takes on the function of a power booster and level transformer.

The common + terminal allows an integrated protection against fast transients, overvoltage and reversed polarity connection.

- for 12–24 V DC LED modules
- single colour or RGB modules
- max. current per channel 2 A
- short-circuit cut-off

- 6-pole screw terminal, secondary
- 4-pole screw terminal, primary
- integrated cable grip and terminal cover
- cable grip can be fitted quickly without the use of a tool
- packing unit: 10 pieces

Type		LED C 001	
article number:		86454974	
mains supply:	rated voltage	V DC	12–24
	max. current	A	6
inputs:	analogue	V	1–10
	potentiometer	k Ω	100, linear
	external PWM signal	–	–
outputs:	+ pole	–	–
	– pole red	A	2
	– pole green	A	2
	– pole blue	A	2
temperature:	voltage	V DC	12–24
	permissible ambient temperature	$^{\circ}$ C	0–50



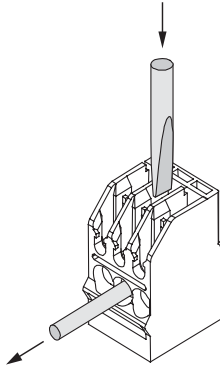
Technical information

Index

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IDC push/cut terminal	331
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Why IDC terminals?

- fast manual and automatic wiring
- clear sight for accurate positioning
- 4,1 mm round fastening hole for precise wiring of the ballast in the luminaire with automated wiring



Terminal data

Plug-in contact:

- suitable for rigid single-wire conductors, 0,5–1,5 mm²
- stripping length 7,5–8,5 mm
- wire removal tool, screwdriver, blade, 2,5 x 0,4 mm

Insulation piercing contact:

- suitable for automatic wiring of rigid-wire conductors, 0,5 mm²
- the conductor can only be loosened with force

Important!

Manually fastening the wire in this insulation piercing contact manually is not recommended!

The type of cable to be selected should be taken from the information provided by the wiring robot manufacturer.

Technical details
Table showing an overview of the Energy Classification System for ballasts from CELMA

lamp type	lamp wattage		Ilcos Code	EEI-Class						
	50 Hz	HF		A1	A2	A3	B1	B2	C	D
T5	4	3,4	FD-4-E-G5-16/150	≤ 3,5W	≤ 6W	≤ 7W	≤ 8W	≤ 10W	≤ 12W	>12W
T5	6	5,1	FD-6-E-G5-16/225	≤ 4W	≤ 7W	≤ 8W	≤ 9W	≤ 11W	≤ 13W	>13W
T5	8	6,7	FD-8-E-G5-16/300	≤ 5W	≤ 9W	≤ 10W	≤ 11W	≤ 13W	≤ 15W	>15W
T5	13	11,8	FD-13-E-G5-16/525	≤ 8W	≤ 15W	≤ 16W	≤ 17W	≤ 19W	≤ 21W	> 21W
T5	14	14,0	FDH-14-G5-L/H-16/550	≤ 9,5W	≤ 17W	≤ 19W	–	–	–	–
T5	21	20,6	FDH-21-G5-L/H-16/850	≤ 13W	≤ 24W	≤ 26W	–	–	–	–
T5	24	22,5	FDH-24-G5-L/H-16/550	≤ 14W	≤ 26W	≤ 28W	–	–	–	–
T5	28	27,9	FDH-28-G5-L/H-16/1150	≤ 17W	≤ 32W	≤ 34W	–	–	–	–
T5	35	35,5	FDH-35-G5-L/H-16/1450	≤ 21W	≤ 39W	≤ 42W	–	–	–	–
T5	39	38	FDH-39-G5-L/H-16/850	≤ 23W	≤ 43W	≤ 46W	–	–	–	–
T5	49	49,2	FDH-49-G5-L/H-16/1450	≤ 29W	≤ 55W	≤ 58W	–	–	–	–
T5	54	54,1	FDH-54-G5-L/H-16/1150	≤ 31,5W	≤ 60W	≤ 63W	–	–	–	–
T5	80	79,8	FDH-80-G5-L/H-16/1150	≤ 47,5W	≤ 88W	≤ 92W	–	–	–	–
T5 circline	22	22	FCH-22-L/P-2GX13-16	≤ 14W	≤ 26W	≤ 28W	–	–	–	–
T5 circline	40	40	FCH-40-L/P-2GX13-16	≤ 24W	≤ 45W	≤ 48W	–	–	–	–
T5 circline	55	55	FCH-55-L/P-2GX13-16	≤ 32,5W	≤ 61W	≤ 65W	–	–	–	–

lamp type	lamp wattage		Ilcos Code	EEI-Class						
	50 Hz	HF		A1	A2	A3	B1	B2	C	D
T8	15	13,5	FD-15-E-G13-26/450	≤ 9W	≤ 16W	≤ 18W	≤ 21W	≤ 23W	≤ 25W	> 25W
T8	18	16	FD-18-E-G13-26/600	≤ 10,5W	≤ 19W	≤ 21W	≤ 24W	≤ 26W	≤ 28W	> 28W
T8	30	24	FD-30-E-G13-26/895	≤ 16,5W	≤ 31W	≤ 33W	≤ 36W	≤ 38W	≤ 40W	> 40W
T8	36	32	FD-36-E-G13-26/1200	≤ 19W	≤ 36W	≤ 38W	≤ 41W	≤ 43W	≤ 45W	> 45W
T8	38	32	FD-38-E-G13-26/1047	≤ 20W	≤ 38W	≤ 40W	≤ 43W	≤ 45W	≤ 47W	> 47W
T8	58	50	FD-58-E-G13-26/1500	≤ 29,5W	≤ 55W	≤ 59W	≤ 64W	≤ 67W	≤ 70W	> 70W
T8	70	60	FD-70E--G13-26/1800	≤ 36W	≤ 68W	≤ 72W	≤ 77W	≤ 80W	≤ 83W	> 83W
T8 circline	22	19	FC-22-E-G10q-29	≤ 12W	≤ 22W	≤ 24W	≤ 28W	≤ 30W	≤ 32W	> 32W
T8 circline	32	30	FC-32-E-G10q-29	≤ 18,5W	≤ 35W	≤ 37W	≤ 38W	≤ 40W	≤ 42W	> 42W
T8 circline	40	32	FC-40-E-G10q-29	≤ 19,5W	≤ 37W	≤ 39W	≤ 46W	≤ 48W	≤ 50W	> 50W

lamp type	lamp wattage		Ilcos Code	EEI-Class						
	50 Hz	HF		A1	A2	A3	B1	B2	C	D
TC-S	5	5	FSD-5-E-2G7	≤ 4W	≤ 7W	≤ 8W	≤ 9W	≤ 11W	≤ 13W	> 13W
TC-S	7	6,5	FSD-7-E-2G7	≤ 5W	≤ 9W	≤ 10W	≤ 11W	≤ 13W	≤ 15W	> 15W
TC-S	9	8	FSD-9-E-2G7	≤ 6W	≤ 11W	≤ 12W	≤ 13W	≤ 15W	≤ 17W	> 17W
TC-S	11	11	FSD-11-E-2G7	≤ 7,5W	≤ 14W	≤ 15W	≤ 15W	≤ 17W	≤ 19W	> 19W

lamp type	lamp wattage		Ilcos Code	EEI-Class						
	50 Hz	HF		A1	A2	A3	B1	B2	C	D
TC-L	18	16	FSD-18-E-2G11	≤ 10,5W	≤ 19W	≤ 21W	≤ 24W	≤ 26W	≤ 28W	> 28W
TC-L	24	22	FSD-24-E-2G11	≤ 13,5W	≤ 25W	≤ 27W	≤ 30W	≤ 32W	≤ 34W	> 34W
TC-L	36	32	FSD-36-E-2G11	≤ 19W	≤ 36W	≤ 38W	≤ 41W	≤ 43W	≤ 45W	> 45W
TC-L	40	40	FSDH-40-L/P-2G11	≤ 23W	≤ 44W	≤ 46W	–	–	–	–
TC-L	55	55	FSDH-55-L/P-2G11	≤ 31,5W	≤ 59W	≤ 63W	–	–	–	–

lamp type	lamp wattage		Ilcos Code	EEI-Class						
	50 Hz	HF		A1	A2	A3	B1	B2	C	D
TC-F	18	16	FSS-18-E-2G10	≤ 10,5W	≤ 19W	≤ 21W	≤ 24W	≤ 26W	≤ 28W	> 28W
TC-F	24	22	FSS-24-E-2G10	≤ 13,5W	≤ 25W	≤ 27W	≤ 30W	≤ 32W	≤ 34W	> 34W
TC-F	36	32	FSS-36-E-2G10	≤ 19W	≤ 36W	≤ 38W	≤ 41W	≤ 43W	≤ 45W	> 45W

Note: The values as given in class A1 refer to the maximum total input power at a dimming level 25 %; i.e. 50 % of the class A3 of the same lamp.

Technical details

Table showing an overview of the Energy Classification System for ballasts from CELMA

lamp type	lamp wattage		Ilcos Code	EEI-Class						
	50 Hz	HF		A1	A2	A3	B1	B2	C	D
TC-D, TC-DEL	10	9,5	F5Q-10-E-G24q=1	≤ 6,5W	≤ 11W	≤ 13W	≤ 14W	≤ 16W	≤ 18W	> 18W
TC-D, TC-DEL	13	12,5	F5Q-13-E-G24q=1	≤ 8W	≤ 14W	≤ 16W	≤ 17W	≤ 19W	≤ 21W	> 21W
TC-D, TC-DEL	18	16,5	F5Q-18-E-G24q=2	≤ 10,5W	≤ 19W	≤ 21W	≤ 24W	≤ 26W	≤ 28W	> 28W
TC-D, TC-DEL	26	24	F5Q-26-E-G24q=3	≤ 14,5W	≤ 27W	≤ 29W	≤ 32W	≤ 34W	≤ 36W	> 36W

lamp type	lamp wattage		Ilcos Code	EEI-Class						
	50 Hz	HF		A1	A2	A3	B1	B2	C	D
TC-T, TC-TEL	18	16,5	F5M-18-I-GX24d-2	≤ 10,5W	≤ 19W	≤ 21W	≤ 24W	≤ 26W	≤ 28W	> 28W
TC-T, TC-TEL	26	24	F5M-26-I-GX24d-3	≤ 14,5W	≤ 27W	≤ 29W	≤ 32W	≤ 34W	≤ 36W	> 36W
TC-T, TC-TEL	32	32	F5MH-32-L/P-GX24q=4	≤ 19,5W	≤ 36W	≤ 39W	-	-	-	-
TC-T, TC-TEL	42	43	F5MH-42-L/P-GX24q=4	≤ 25W	≤ 47W	≤ 50W	-	-	-	-

lamp type	lamp wattage		Ilcos Code	EEI-Class						
	50 Hz	HF		A1	A2	A3	B1	B2	C	D
TC-DD, TC-DDE	10	9	F5S-10-E-GR 10q	≤ 6,5W	≤ 11W	≤ 13W	≤ 14W	≤ 16W	≤ 18W	> 18W
TC-DD, TC-DDE	16	14	F5S-16-I-GR8	≤ 8,5W	≤ 17W	≤ 19W	≤ 21W	≤ 23W	≤ 25W	> 25W
TC-DD, TC-DDE	21	19	F5S-21-E-GR 10q	≤ 12W	≤ 22W	≤ 24W	≤ 27W	≤ 29W	≤ 31W	> 31W
TC-DD, TC-DDE	28	25	F5S-28-I-GR8	≤ 15,5W	≤ 29W	≤ 31W	≤ 34W	≤ 36W	≤ 38W	> 38W
TC-DD, TC-DDE	38	34	F5S-38-E-GR 10q	≤ 20W	≤ 38W	≤ 40W	≤ 43W	≤ 45W	≤ 47W	> 47W
TC-DD, TC-DDE	55	55	F5S-55-E-GR 10q-3	≤ 31,5W	≤ 59W	≤ 63W	-	-	-	-

Note: The values as given in class A1 refer to the maximum total input power at a dimming level 25 %; i.e. 50 % of the class A3 of the same lamp.

A Guarantee represents Security.



3-year base-guarantee on all electronic components.

Functionality and reliability are two of the hallmarks of all TridonicAtco products. Which is precisely the reason that our technology is in high demand around the world and is used in millions of lighting systems.

Our commitment to quality.

Electronic components by TridonicAtco are an integral part of any lighting installation. We stand by our commitment to this quality by offering a 3 year base guarantee.

... ensures peace of mind.

The guarantee is valid for all electronic components made by TridonicAtco (Ballasts for low and high pressure discharge lamps, electronic transformers, ignitors, emergency lighting products and LED converter). The Base guarantee gives peace of mind that you have selected reliable and long lasting quality products.

A convincing argument.

Our long-term guarantee is valid for all electronic components – no questions asked! Which means you can rest assured that you're working with reliable, top-quality products. Because TridonicAtco is renowned worldwide for innovation and state-of-the-art technology.



5-year long-term guarantee with the registration of the lighting system.

While our research and development activities keep abreast of the cutting edge in technology, reliability and a sense of responsibility remain integral parts of our services to customers. That's why we offer a 5-year guarantee on our electronic components. All you have to do is register your lighting system with us and use lamps that conform with the relevant standards, regardless of the manufacturer.

... for better performance.

The 5-year guarantee begins upon registration of the equipment. To register, you can use the enclosed registration form, or download the form from our website at www.tridonicatco.com. It is valid for all lamps with IEC-conformity, regardless of manufacturer. Our long-term guarantee reflects the faith we have in the outstanding quality of our products.

... and reliability for years to come!

TridonicAtco products are designed to meet the demands of the most stringent of test criteria in use today around the world. Multi-level quality control systems and rigorous end of line production testing ensure 100 % functionality, a guarantee to our customers of high reliability. Reliability and a sense of responsibility are an integral part of our customer service.

We stand by this commitment to quality by offering a comprehensive range of guarantee services:

1. BASE-GUARANTEE

TridonicAtco provide a 3-year "base" guarantee on all electronic components. This Guarantee is valid from the date of installation/operation.

2. LONG-TERM GUARANTEE

Upon registration of the ballasts/TridonicAtco device and provided IEC compliant lamps are utilised, the guarantee can be extended by a further 2 years to a total of 5 years. To extend the the guarantee, please fill in the registration form on

page 335 (which you can also find at www.tridonicatco.com) and forward it to the TridonicAtco sales office in your country within 30 days of installation/operation. A full list of addresses can be found on page 336 and at our website www.tridonicatco.com

3. GUARANTEE SERVICES

The guarantee applies to all electronic components made by TridonicAtco, which are operated in accordance with the product and operational specifications. In the event of a defect, TridonicAtco shall repair or replace the component free of charge, or provide a voucher for components which

have failed within the guarantee period due to a verified materials or manufacturing defect. Legally-mandated guarantee claims are not affected by this guarantee and remain in effect independently thereof. The TridonicAtco office in the respective country shall be responsible for handling guarantee claims. TridonicAtco reserves to right to decide whether a guarantee claim is justified or not. For this reason, the defective component must be returned to the country office for analysis of the defect. In guarantee claims involving the long-term guarantee, please also enclose a copy of the registration form.

Guarantee registration form

Please use this form to register your TridonicAtco electronic equipment for the 5-year comprehensive guarantee.

COMPANY/FACILITY

Contact person

Address

Postal code/City

Tel/Fax E-Mail

LUMINAIRES

Manufacturer Manufacturer

Luminaire type Luminaire type

Luminaire type Luminaire type

Luminaire type Luminaire type

CONTROL GEAR

Type pcs

Type pcs

Type pcs

Type pcs

Type pcs

Days of operation per year Hours of operation per day Switching cycles per day

Date of starting operation

Name

Signature Date

Please complete this form and forward it to the TridonicAtco sales office in your country within 30 days of installation/operation (a full list of addresses can be found on page or at our website www.tridonicatco.com) or fax it to +43 5572 395-94079.

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Test marks, Standards and Symbols



TridonicAtco products comply with the requirements of EC Directives 89/336/EEC (EMC Directive) and 73/23/EEC (Low-Voltage Directive) and are entitled to bear the CE mark. EC declarations of conformity can be requested

- via the Internet at www.tridonicatco.com – FAQ
- by sending an enquiry by e-mail to: hotline.tec@tridonicatco.com



The ENEC mark (European Norms Electrical Certification) is a European mark of conformity and confirms that the device on which the symbol is shown complies with all the requirements of the ENEC scheme. TridonicAtco test certificates can be requested

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Symbol for Class II



The device is suitable for mounting on standard flammable surfaces. Standard flammable surfaces include building materials such as wood and wood-based materials more than 2 mm thick.




The device is suitable to be installed in or attached to furniture whose behaviour in fire corresponds to standard flammable building materials within the context of DIN 4102 Part 1. The materials can be laminated, veneered or varnished.



The device is suitable for installing on or in furniture which is made from materials with unknown flammability properties.



Symbol for temperature declared, thermally protected control gear.

Gear from TridonicAtco contain devices to prevent overheating. For example,  corresponds to temperature protection of 100°C across the whole surface of the ballast. This means that if the device is operated under reference conditions (mains voltage, ambient temperature, etc.), no temperature higher than 100 °C can occur within the housing either during normal operation or in the event of a fault. The current values for the individual types are specified on the housing.



VDE mark



Symbol for independent lamp control gear. The gear can be mounted separately outside a luminaire.




Short circuit proof safety isolating transformer.




Non-short-circuit-proof safety isolating transformer.


EN 55015; CISPR 15	Radio disturbances < 30 Mhz
EN 55022; CISPR 22	Radio disturbances > 30 Mhz
EN 60598-2-22;	
IEC 60598-2-22	Particular requirements for luminaires for emergency lighting
EN 60920 (EN 61347-2-8);	
IEC 60920 (IEC 61347-2-8)	Ballasts for tubular fluorescent lamps – general and safety requirements
EN 60921; IEC 60921	Ballasts for tubular fluorescent lamps – performance requirements
EN 60922 (EN 61347-2-9);	
IEC 60922 (IEC 61347-2-9)	Ballasts for discharge lamps – general and safety requirements
EN 60923; IEC 60923	Ballasts for discharge lamps – performance requirements
EN 60924; IEC 60924	
(EN 61347-2-4; EN 61347-2-7);	DC supplied electronic ballasts for tubular fluorescent lamps –
(IEC 61347-2-4; IEC 61347-2-7)	general and safety requirements
EN 60925; IEC 60925	DC supplied electronic ballasts for tubular fluorescent lamps – performance requirements
EN 60926 (EN 61347-2-1);	
IEC 60926 (IEC 61347-2-1)	Starting devices – general and safety requirements
EN 60927; IEC 60927	Starting devices – performance requirements
EN 60928 (EN 61347-2-3);	
IEC 60928 (IEC 61347-2-3)	AC supplied electronic ballasts for tubular fluorescent lamps –
EN 60929; IEC 60929	general and safety requirements
EN 61000-3-2; IEC 61000-3-2	AC supplied electronic ballasts for tubular fluorescent lamps – performance requirements
EN 61046 (EN 61347-2-2);	
IEC 61046 (IEC 61347-2-2)	Harmonic current emissions
EN 61047; IEC 61047	DC or AC supplied electronic step-down converters for filament lamps –
	general and safety requirements
EN 61347-2-1; IEC 61347-2-1	DC or AC supplied electronic step-down converters for filament lamps –
EN 61347-2-2; IEC 61347-2-2	performance requirements
	Particular requirements for starting devices
EN 61347-2-3; IEC 61347-2-3	Particular requirements for DC or AC supplied electronic step-down converters
EN 61347-2-4; IEC 61347-2-4	for filament lamps
EN 61347-2-7; IEC 61347-2-7	Particular requirements for AC supplied electronic ballasts for fluorescent lamps
EN 61347-2-8; IEC 61347-2-8	Particular requirements for DC supplied electronic ballasts for general lighting
EN 61347-2-9; IEC 61347-2-9	Particular requirements for DC supplied electronic ballasts for emergency lighting
EN 61547; IEC 61547	Particular requirements for ballasts for discharge lamps
EN 61558; IEC 61558	EMC immunity requirements
acc. VDE 0108	Safety of power transformers
IEC 68-2-64	Suitable for emergency lighting installations
IEC 68-2-29	Environmental testing – test Fh: Vibration, broad-band random (digital control)
IEC 68-2-30	Basic environmental testing procedures – test Eb: Bump
UL 935	Basic environmental testing procedures – test Db: Damp heat, cyclic (12+12-hour cycle)
ANSI C62.41 Category A	Fluorescent-Lamp Ballasts
ANSI C82.11	Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits
	High-Frequency Fluorescent-Lamp Ballast

Pictograms


- 


Lamp friendly warmstart within 0,5 s




Disturbance free precise control with a digital signal (**DSI** or **DALI**)
- 


Lamp friendly warmstart within 0,9 s




Dimming range from 1–100 %
- 


Lamp friendly warmstart within 1,5 s




Dimming range from 3–100 %
- 


Application **S**pecific **I**ntegrated **C**ircuit




Dimming range from 10–100 %
- 


Constant light output independent of fluctuations in mains voltage




Eye sensitive optimized logarithmic dimming curve
- 


IDC (Insulation **D**eformation **C**onnection) terminal for fast manual and automated wiring




Return error signals and programmable operation parameters with **DALI** and **DSI** mode
- 


Cathode heating cut-off




One device with four different control options: **DALI**, **DSI**, switch**DIM**, **SMART**
- 


CELMA energy class EEI = A1




DALI standard compatible dimmable device (Digital Addressable Lighting Interface)
- 


CELMA energy class EEI = A2




Interface module to integrate DSI devices into EIB systems
- 


CELMA energy class EEI = A3




Interface module to integrate DSI devices into LON systems
- 


CELMA energy class EEI = B1




Gear for the voltage range of 120 V and 277 V, 50/60 Hz
- 

CELMA energy class EEI = B2



Irreversible thermal fuse
- 

CELMA energy class EEI = C



Reversible, current-sensitive, self-holding thermal fuse, resets after supply reset

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