

Electronic ballasts for fluorescent lamps

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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



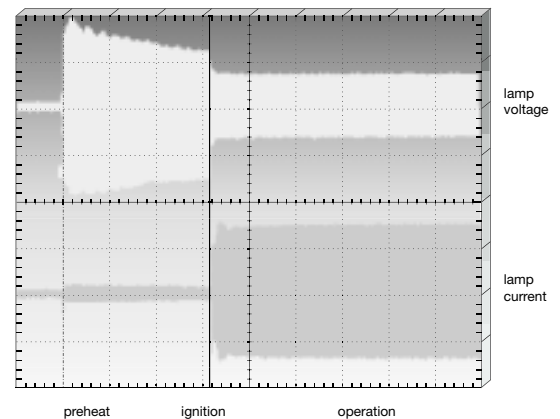
PC PRO 26/32/42 FSD b101

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.

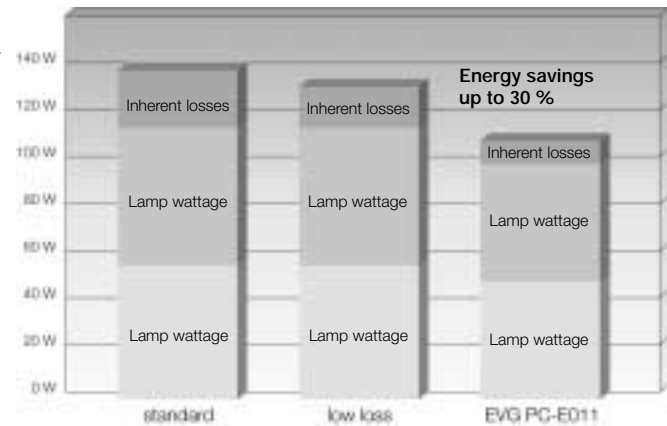
A high level of economy

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).

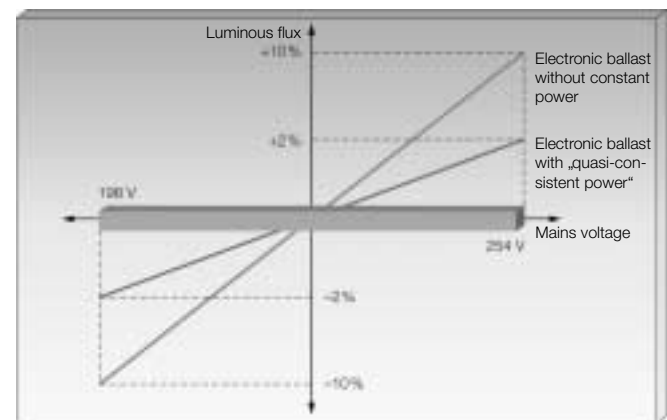
Constant power

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

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.



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 303 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.

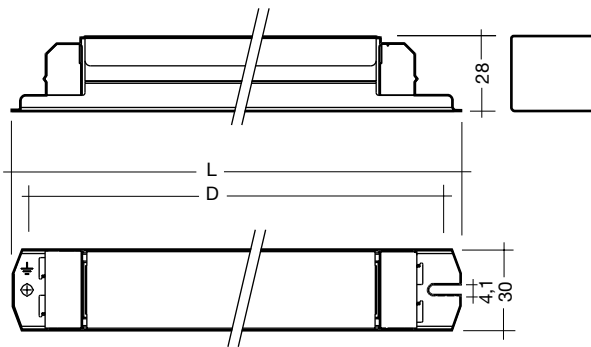
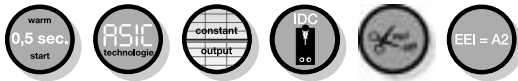
Lamp matrix

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@tridonic.co.at

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

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

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

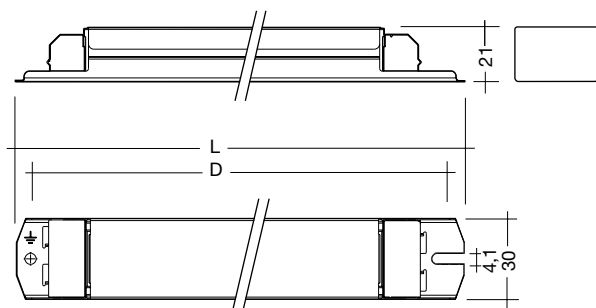
Wiring:
page 43 figure A, B, C, D

Lamp		Ballast										
watt- age W	length mm	type	article number	LxBxH 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							in preparation
2x14–35		PC 2/14-21-28-35 T5 PRO	22087671	360x30x28	350							in preparation

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



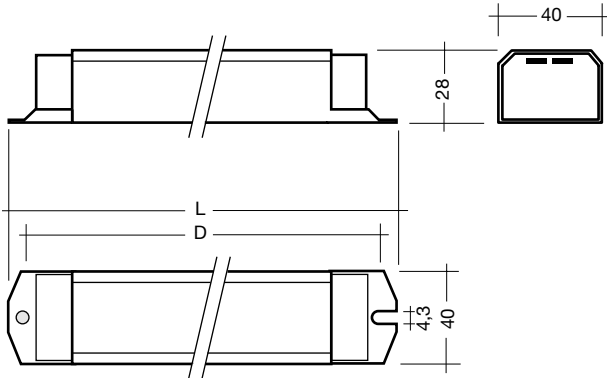
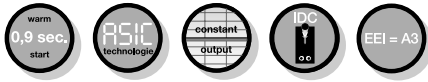
- defined lamp warm start within 1,5 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor > 0,95
- overvoltage protection 320 V AC, 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 $+50^{\circ}\text{C}$
- 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

Certified:
EN 55015
EN 55022
EN 61347-2-4
EN 60925
EN 61347-2-3
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 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
2x14	549	PC 2/14 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
3x14	549	PC 3/14 T5 PRO 220-240V 50/60/0Hz	in preparation	28x40	360	350				in preparation			-25 \rightarrow +50
4x14	549	PC 4/14 T5 PRO 220-240V 50/60/0Hz	in preparation	28x40	360	350				in preparation			-25 \rightarrow +50
21	849	PC 1/21 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
2x21	849	PC 2/21 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
28	1149	PC 1/28 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
2x28	1149	PC 2/28 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	360	350				in preparation			-25 \rightarrow +50
35	1449	PC 1/35 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
2x35	1449	PC 2/35 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	360	350				in preparation			-25 \rightarrow +50
24	549	PC 1/24 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
2x24	549	PC 2/24 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
39	849	PC 1/39 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
2x39	849	PC 2/39 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	360	350				in preparation			-25 \rightarrow +50
49	1449	PC 1/49 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
2x49	1449	PC 2/49 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	360	350				in preparation			-25 \rightarrow +50
54	1149	PC 1/54 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	280	270				in preparation			-25 \rightarrow +50
2x54	1149	PC 2/54 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	360	350				in preparation			-25 \rightarrow +50
80	1449	PC 1/80 T5 PRO 220-240V 50/60/0Hz	in preparation	21x30	360	350				in preparation			-25 \rightarrow +50
2x80	1449	PC 2/80 T5 PRO 220-240V 50/60/0Hz	in preparation	28x40	360	350				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 44 figure E, F, G
page 45 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

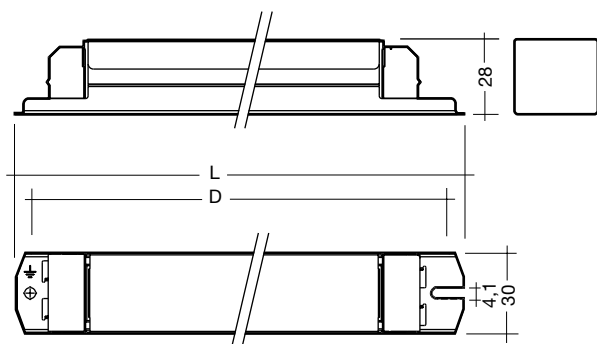
Lamp		Ballast										
watt- age W	length mm	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
18	590	PC 1x18 E011 IDC 220/240V 50/60/0Hz	22085113	234	220	0,28	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	80	-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 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 ∇ or ∇ and ∇ in acc. with EN 60598/ VDE 0710 and VDE 0711

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

Wiring:
page 45, 46 figure K, L

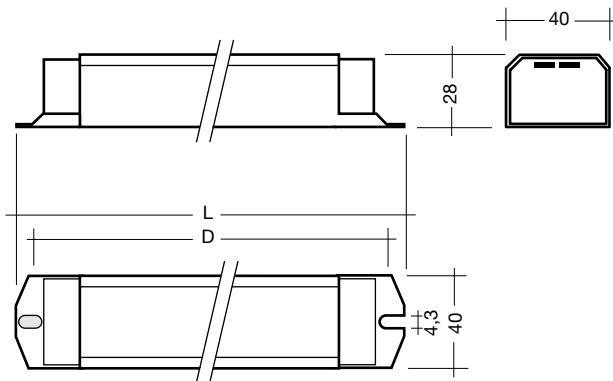
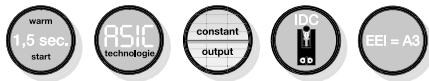
Certified:
EN 55015
EN 55022
EN 60924
EN 60925
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

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 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 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 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 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 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 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 46 figure M, N, O

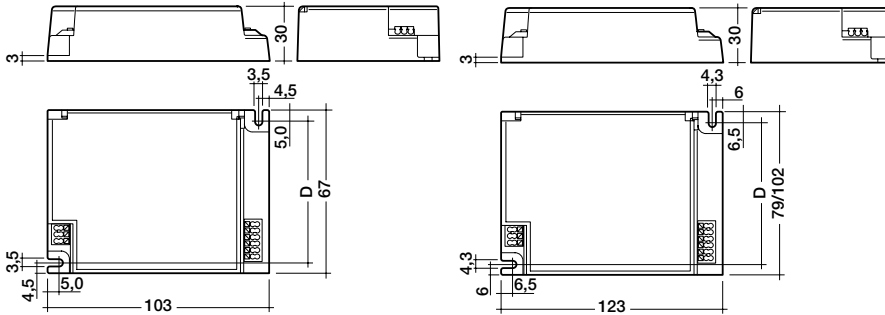
Certified:
EN 55015
EN 55022
EN 60924
EN 60925
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance
with VDE 0108

Lamp		Ballast										
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 $^{\circ}\text{C}$	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.



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 47):

- 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

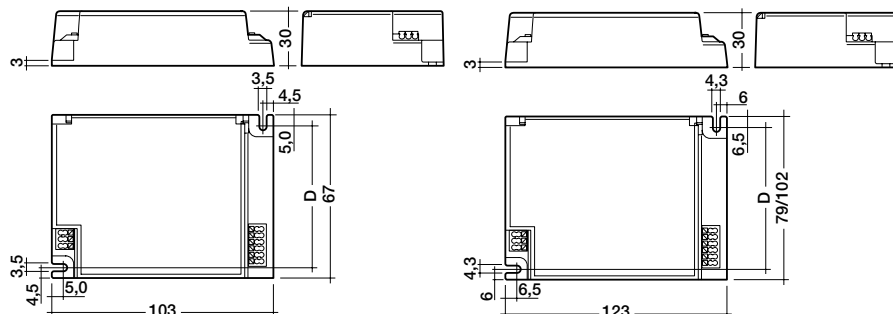
Wiring:
page 46 figure P, Q

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	LxBxH 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	22083278	103x67x30	57,5	0,14	20	16	0,10	0,94	85	-25 \rightarrow +60
2x18	TC-L	PC PRO 2x18 FSD b101	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	22083278	103x67x30	57,5	0,14	29	25	0,13	0,96	85	-25 \rightarrow +60
2x24	TC-L	PC PRO 2x24 FSD b101	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 ≥ 4 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 47):

- 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 46 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

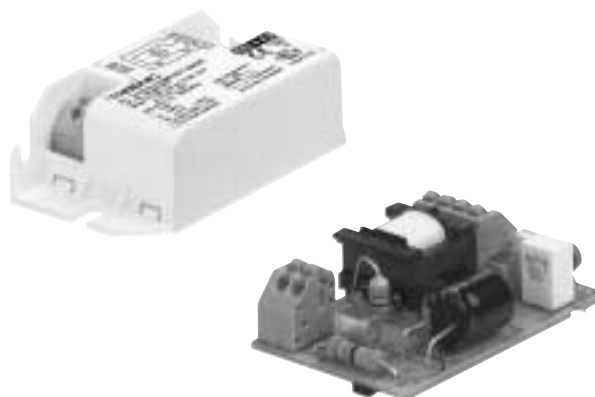
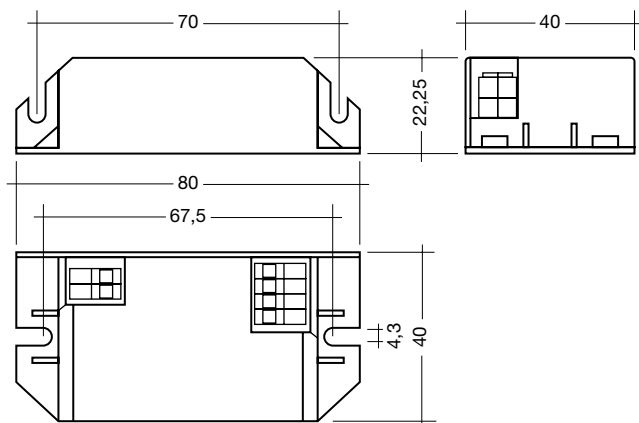
Lamp		Ballast										
watt- age W	type	type	article number	LxBxH mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point $^{\circ}\text{C}$	temperature range $^{\circ}\text{C}$
5	TC-SEL	PC PRO 5/7 FSD b101 220–240V 50/60/0Hz	22083215	103x67x30	57,5	0,14	7,5	5	0,03–0,04	0,96	70	-25 → +60
2x5	TC-SEL	PC PRO 2x5/7 FSD b101 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	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 220–240V 50/60/0Hz	22082567	123x102x30	89,5	0,21	100	2x46	0,41–0,46	0,96	100	-25 → +60
57/70	TC-TEL	PC PRO 57/70 FSM b101 220–240V 50/60/0Hz	22087687	123x102x30								in preparation

With a DC supply L and N terminals are interchangeable.



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 ≥ 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 ∇ according to EN 61347-1-C.5e

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

Wiring:
page 47 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	LxBxH 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.

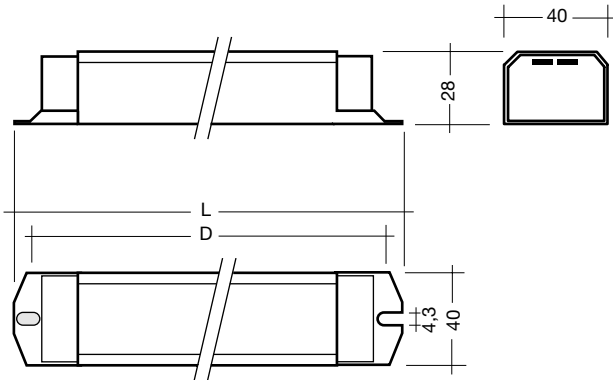
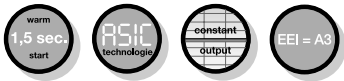
Square pcb:

Ballast			
type	article number	LxBxH 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 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 $\nabla M/M$ in acc. with EN 60598/ VDE 0710 and VDE 0711
- temperature rated $\nabla 10$ in acc. with EN 61347-1-C.5e

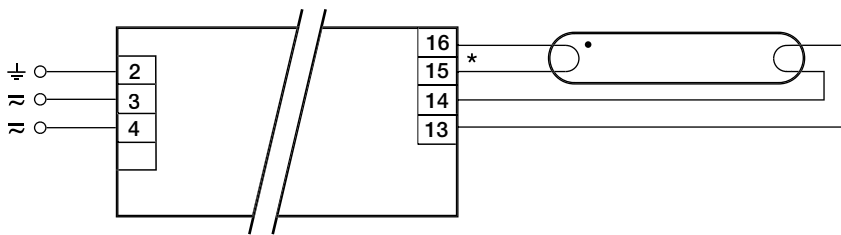
Packaging:
box of 20
50 boxes/pallet
1 000 pieces/pallet

Wiring:
page 47 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

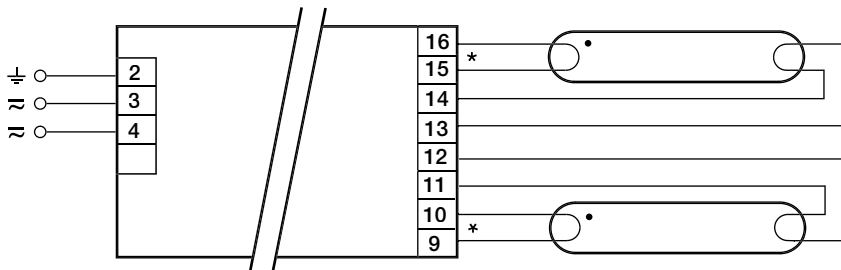
Lamp		Ballast										
watt- age W	type	type	article number	length L mm	fixing centres D mm	weight kg	circuit power W	lamp power W	current at 230V/50Hz A	λ at 230V/50Hz	tc point °C	temperature range °C
28	202	PC 1x28 DD PRO 220–240 V 50/60/0 Hz	89895964	154	140	0,175	28,7	25,4	0,130	0,96	85	-25 → +60
38	202	PC 1x38 DD PRO 220–240 V 50/60/0 Hz	89895965	154	140	0,177	39,7	34,6	0,180	0,96	85	-25 → +60
55	202	PC 1x55 DD PRO 220–240 V 50/60/0 Hz	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.



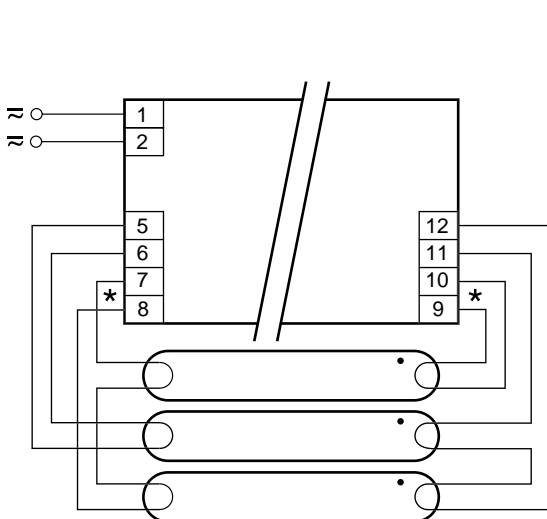
- * leads (15,16) max. 1,0 m (< 150 pF)
- leads (13,14) max. 2,0 m (< 300 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

A) PC T5 PRO 14–80 W



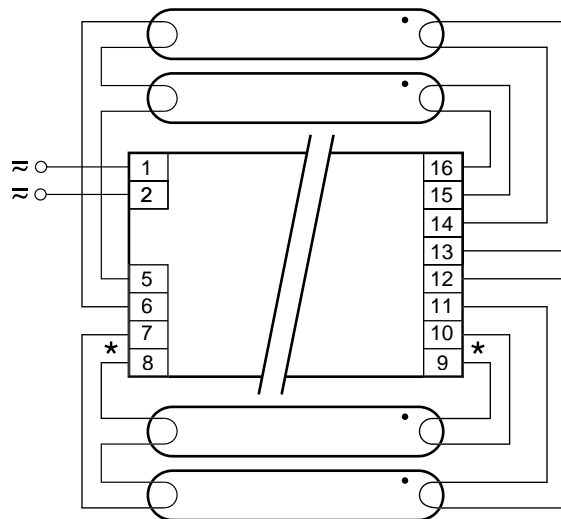
- * leads (9,10,15,16) max. 1,0 m (< 150 pF)
- leads (11,12,13,14) max. 2,0 m (< 300 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

B) PC T5 PRO 2 x 14–54 W



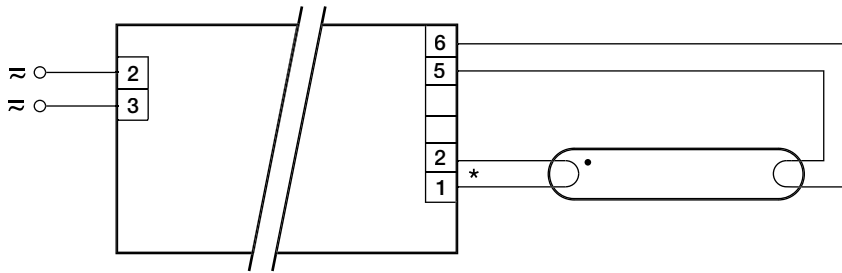
- * leads (7,8,9,10) max.1,0 m (< 150 pF)
- leads (5,6,11,12) max. 2,0 m (< 300 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

C) PC T5 PRO 3 x 14 W



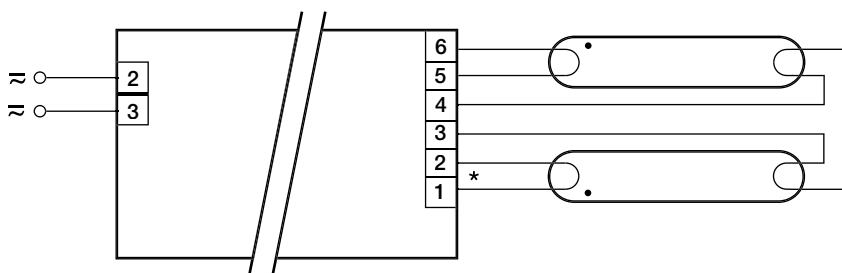
- * leads (7,8,9,10) max. 1,0 m (< 150 pF)
- leads (5,6,11,12,13,14,15,16) max. 2,0 m (< 300 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

D) PC T5 PRO 4 x 14 W



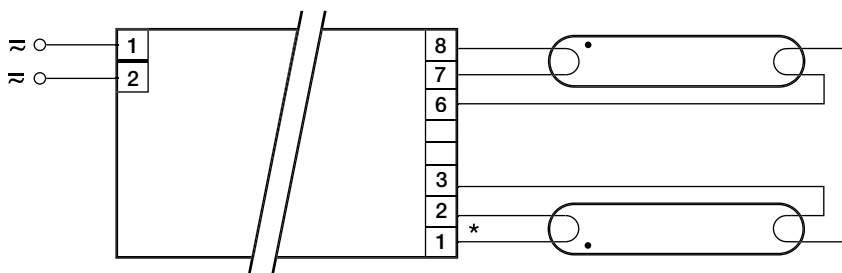
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (5,6) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

E) PC-E 011 IDC 18-70 W



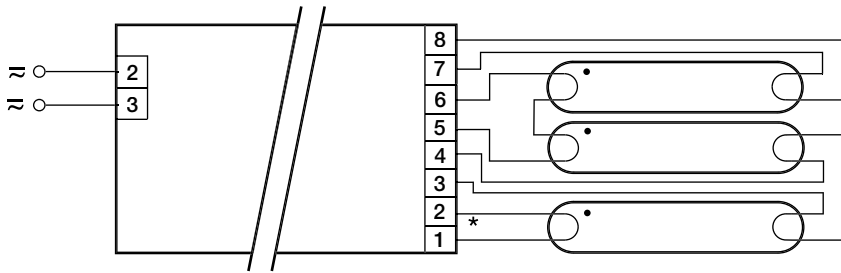
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

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



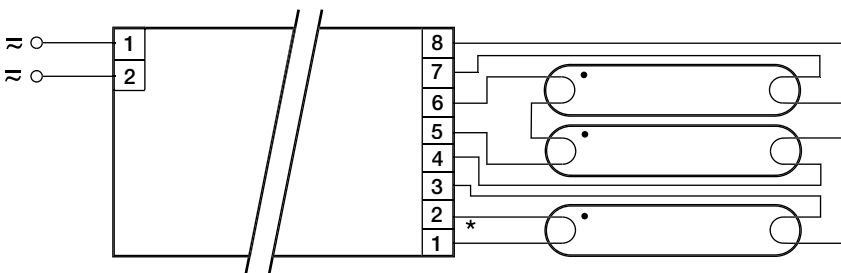
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,6,7,8) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

G) PC-E 011 IDC 2 x 70 W



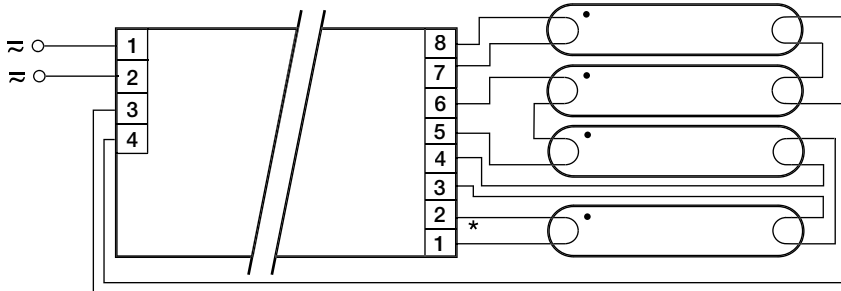
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

H) PC-E 011 IDC 3 x 18 W



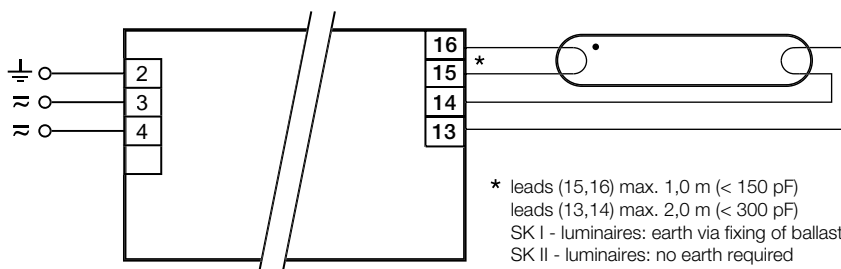
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

I) PC-E 011 IDC 3 x 36 W



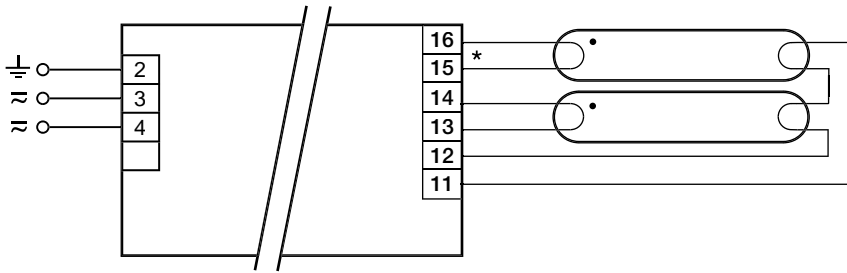
- * leads (1,2) max. 1,0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2,0 m (< 200 pF)
- SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
- SK II - luminaires: no earth required

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

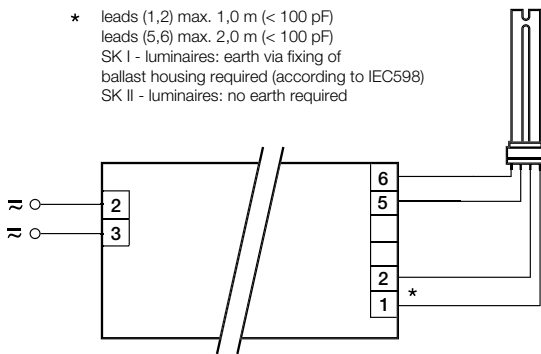
K) PC T8 PRO 18-58 W



- * 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

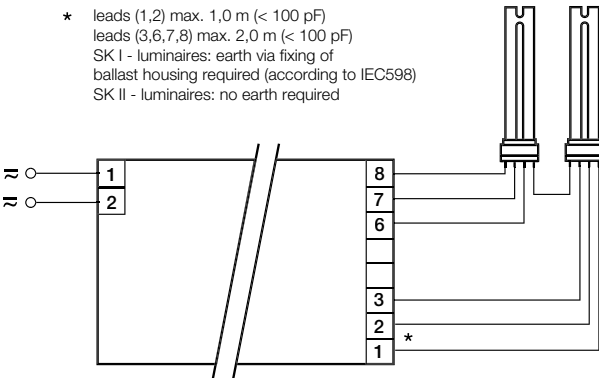
L) PC T8 PRO 2x18-58 W

- * 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



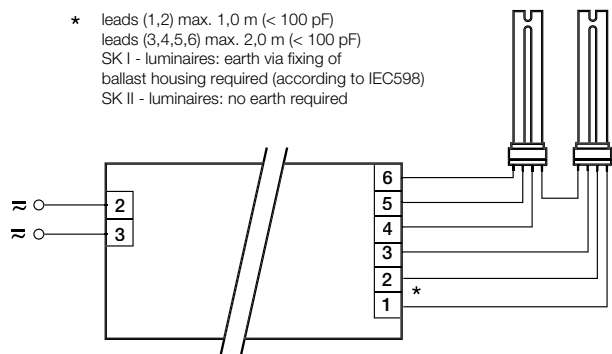
M) PC PRO a FSD 18-55 W

- * 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



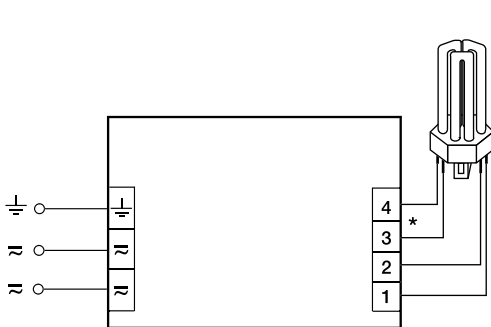
N) PC PRO a FSD 2 x 18-40 W

- * 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



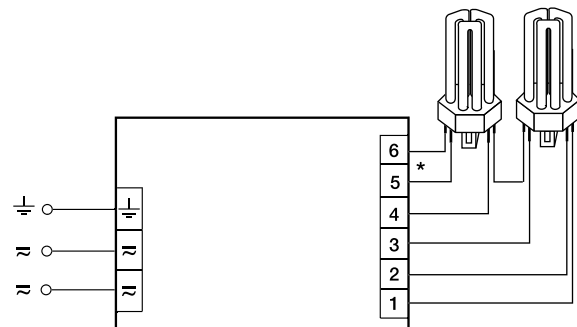
O) PC T8 PRO a FSD 2x55 W

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

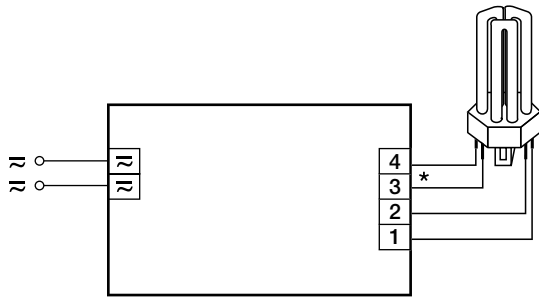


P) PC PRO b 5-70 W; PC PRO b FSD 18-24 W

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

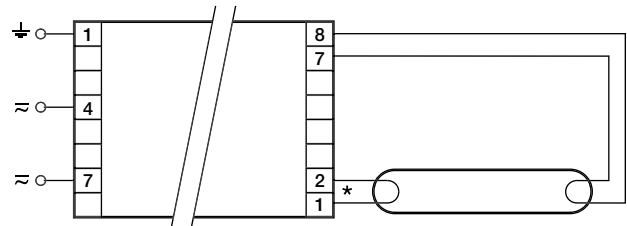


Q) PC PRO b 2 x 5-42 W; PC PRO b FSD 2 x 18-24 W



* 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

Accessories

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

