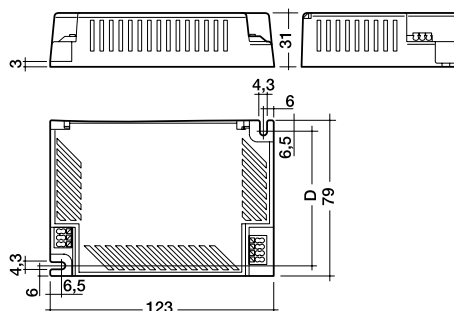
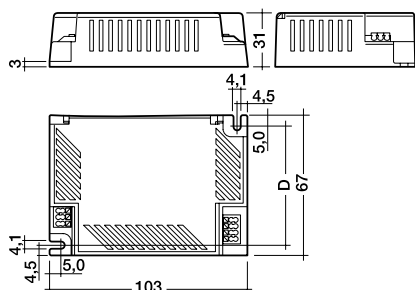



Electronic ballasts
Compact lamps
PC PRO 1/9–70 W 220–240 V 50/60/0 Hz


- defined lamp warm start in ≤ 1.5 s
- constant light output independent of fluctuations in mains voltage
- Average service life = 50,000 h (at ta max. 50 °C resp. 60 °C with a failure rate $\leq 0.2\%$ per 1000 operating hours)
- AC voltage range 198–264 V
- DC voltage range 176–280 V, for ignition input voltage ≥ 198 V
- power factor > 0.94
- overvoltage protection 320 VAC, 1 h
- overvoltage indication ≥ 306 VAC
- undervoltage protection (shut down) below 150 VAC / 176 VDC

- operating frequency ≥ 40 kHz
- wide operating temperature range from -25 °C to +50 °C resp. +60 °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 $\nabla\nabla$ and $\nabla\nabla\nabla$ in acc. with EN 60598/VDE 0710 and VDE 0711
- suitable for luminaires with protection class SK I and SK II
- Ingress protection IP 20
- thermal protection according to EN 61347-2-3 C5e ∇

Packaging L=103:

15 pieces/carton
50 cartons/pallet
750 pieces/pallet

Packaging L=123:

10 pieces/carton
50 cartons/pallet
500 pieces/pallet

Certified:

EN 55015
EN 55022
EN 60925
EN 60929
EN 61000-3-2
EN 61347-2-3
EN 61347-2-4
EN 61547
in accordance with VDE 0108
IEC 68-2-64 Fh
IEC 68-2-29 Eb
IEC 68-2-30

Lamp		Ballast													
wattage W	type	type	article number	L x W x H mm	fixing centres D mm	weight kg	lamp power W	circuit power W	Celma class EEI	current at 50 Hz		λ at 50 Hz		tc point °C	temperature range ta °C
										220 V A	240 V A	220 V	240 V		
1x9	TC-SEL	PC 1/9/11 TCS PRO	22176027	103x67x31	57.5	0.14	6.8	10.2	A2	0.048	0.045	0.96	0.95	80	-25 → +60
1x11	TC-SEL	PC 1/9/11 TCS PRO	22176027	103x67x31	57.5	0.14	10	14.1	A2	0.066	0.061	0.98	0.97	80	-25 → +60
1x10	TC-DEL	PC 1/10/13 TCD PRO	22088899	103x67x31	57.5	0.14	9.5	12	A3	0.055	0.055	0.97	0.95	75	-25 → +50
1x13	TC-DEL	PC 1/9/11 TCS PRO	22176027	103x67x31	57.5	0.14	11.2	15.8	A3	0.073	0.068	0.98	0.97	80	-25 → +60
1x13	TC-DEL	PC 1/10/13 TCD PRO	22088899	103x67x31	57.5	0.14	12.5	15	A3	0.070	0.065	0.98	0.96	75	-25 → +50
1x18	TC-DEL	PC 1/18 TCD PRO	22088906	103x67x31	57.5	0.14	16.5	19.5	A3	0.090	0.085	0.99	0.97	70	-25 → +50
1x26	TC-DEL	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	24	26.5	A2	0.125	0.115	0.97	0.95	80	-25 → +60
1x13	TC-TEL	PC 1/9/11 TCS PRO	22176027	103x67x31	57.5	0.14	11.2	15.8	A3	0.073	0.068	0.98	0.97	80	-25 → +60
1x13	TC-TEL	PC 1/10/13 TCD PRO	22088899	103x67x31	57.5	0.14	12.5	15	A3	0.070	0.065	0.98	0.96	75	-25 → +50
1x18	TC-TEL	PC 1/18 TCD PRO	22088906	103x67x31	57.5	0.14	16.5	19.5	A3	0.090	0.085	0.99	0.97	70	-25 → +50
1x26	TC-TEL	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	24	26.5	A2	0.125	0.115	0.97	0.95	80	-25 → +60
1x32	TC-TEL	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	32	34.5	A2	0.160	0.150	0.98	0.96	80	-25 → +60
1x42	TC-TEL	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	42	46	A2	0.210	0.200	0.99	0.97	80	-25 → +60
1x57	TC-TEL	PC 1/57/70 TCT PRO	22088915	123x79x31	66.5	0.17	57.5	60.5	A2	0.280	0.265	0.98	0.96	85	-25 → +50
1x70	TC-TEL	PC 1/57/70 TCT PRO	22088915	123x79x31	66.5	0.17	70	75	A2	0.345	0.320	0.99	0.97	85	-25 → +50
1x22	T5c	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	22.3	25.4	A2	0.126	0.117	0.98	0.97	80	-25 → +60
1x40	T5c	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	40.0	43.0	A2	0.191	0.176	0.99	0.98	80	-25 → +60
1x18	TC-L	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	16.0	18.5	A2	0.086	0.080	0.96	0.94	80	-25 → +60
1x24	TC-L	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	22.0	25.5	A2	0.122	0.113	0.98	0.97	80	-25 → +60
1x18	TC-F	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	16.0	18.5	A2	0.081	0.076	0.96	0.94	80	-25 → +60
1x24	TC-F	PC 1/26/32/42 TCT PRO	22088329	103x67x31	57.5	0.14	22.0	25.5	A2	0.112	0.104	0.97	0.96	80	-25 → +60

Electronic ballasts Compact lamps

Lamp starting characteristics

Warm start

Starting time ≤ 1.5 secs with AC and DC operation
Cathode heating will be reduced after preheat time

AC operation

Mains voltage:

220–240 V 50/60 Hz

198–264 V 50/60 Hz including safety

tolerance ($\pm 10\%$)

202–254 V 50/60 Hz including performance

tolerance (+6% / -8%)

DC operation

220–240 V 0 Hz

198–280 V 0 Hz certain lamp start

176–280 V 0 Hz operating range

Light output level in DC operation: 100%

Emergency lighting

Use in emergency lighting installations according to VDE 0108 or for emergency luminaires according to EN 61347-2-3 appendix J.

Instant start after mains interruption < 0.5 s



Intelligent Voltage Guard

Intelligent Voltage Guard is the name of the new electronic monitor from TridonicAtco. This innovative feature of the PC PRO family of control gear from TridonicAtco immediately shows if the mains voltage rises above or falls below certain thresholds. Measures can then be taken quickly to prevent damage to the control gear.

- If the mains voltage rises above ≥ 306 V the lamps start flashing on and off.
- This signal "demands" disconnection of the power supply to the lighting system.
- If the mains voltage falls below 150 V the control gear automatically disconnects the lamp circuit to protect the control gear from being irreparably damaged.



Smart Heating

PC PRO ignition technology (smart heating) optimises lamp start and ensures no energy is wasted. After the lamp has struck the filament heating is reduced automatically to a defined minimum value. This reduction in filament heating, saves energy, yet maintains the proper operating conditions for the lamp. The lamp is always operated within specification.

Mains currents in DC operation

type	lamp type	wattage W	mains current at	
			Un = 220 VDC	Un = 240 VDC
PC 1/9/11 TCS PRO	TC-SEL	1x9	48 mA	45 mA
PC 1/9/11 TCS PRO	TC-SEL	1x11	66 mA	61 mA
PC 1/10/13 TCD PRO	TC-DEL	1x10	55 mA	55 mA
PC 1/9/11 TCS PRO	TC-DEL	1x13	74 mA	68 mA
PC 1/10/13 TCD PRO	TC-DEL	1x13	85 mA	80 mA
PC 1/18 TCD PRO	TC-DEL	1x18	85 mA	90 mA
PC 1/26/32/42 TCT PRO	TC-DEL	1x26	135 mA	125 mA
PC 1/9/11 TCS PRO	TC-TEL	1x13	74 mA	68 mA
PC 1/10/13 TCD PRO	TC-TEL	1x13	85 mA	80 mA
PC 1/18 TCD PRO	TC-TEL	1x18	85 mA	90 mA
PC 1/26/32/42 TCT PRO	TC-TEL	1x26	135 mA	125 mA
PC 1/26/32/42 TCT PRO	TC-TEL	1x32	155 mA	145 mA
PC 1/26/32/42 TCT PRO	TC-TEL	1x42	200 mA	185 mA
PC 1/57/70 TCT PRO	TC-TEL	1x57	265 mA	245 mA
PC 1/57/70 TCT PRO	TC-TEL	1x70	320 mA	300 mA
PC 1/26/32/42 TCT PRO	T5c	1x22	126 mA	117 mA
PC 1/26/32/42 TCT PRO	T5c	1x40	191 mA	176 mA
PC 1/26/32/42 TCT PRO	TC-L	1x18	86 mA	80 mA
PC 1/26/32/42 TCT PRO	TC-L	1x24	122 mA	113 mA
PC 1/26/32/42 TCT PRO	TC-F	1x18	81 mA	76 mA
PC 1/26/32/42 TCT PRO	TC-F	1x24	112 mA	104 mA

Harmonic distortion in the mains supply

type	lamp type	wattage W	THD
			at 220–240 V / 50/60 Hz
PC 1/9/11 TCS PRO	TC-SEL	1x9	15 %
PC 1/9/11 TCS PRO	TC-SEL	1x11	15 %
PC 1/10/13 TCD PRO	TC-DEL	1x10	12 %
PC 1/9/11 TCS PRO	TC-DEL	1x13	15 %
PC 1/10/13 TCD PRO	TC-DEL	1x13	12 %
PC 1/18 TCD PRO	TC-DEL	1x18	12 %
PC 1/26/32/42 TCT PRO	TC-DEL	1x26	10 %
PC 1/9/11 TCS PRO	TC-TEL	1x13	15 %
PC 1/10/13 TCD PRO	TC-TEL	1x13	12 %
PC 1/18 TCD PRO	TC-TEL	1x18	12 %
PC 1/26/32/42 TCT PRO	TC-TEL	1x26	10 %
PC 1/26/32/42 TCT PRO	TC-TEL	1x32	10 %
PC 1/26/32/42 TCT PRO	TC-TEL	1x42	10 %
PC 1/57/70 TCT PRO	TC-TEL	1x57	10 %
PC 1/57/70 TCT PRO	TC-TEL	1x70	10 %
PC 1/26/32/42 TCT PRO	T5c	1x22	10 %
PC 1/26/32/42 TCT PRO	T5c	1x40	10 %
PC 1/26/32/42 TCT PRO	TC-L	1x18	12 %
PC 1/26/32/42 TCT PRO	TC-L	1x24	10 %
PC 1/26/32/42 TCT PRO	TC-F	1x18	12 %
PC 1/26/32/42 TCT PRO	TC-F	1x24	10 %

Output voltage

type	lamp type	wattage W	U _{out}
			PC 1/9/11 TCS PRO
PC 1/9/11 TCS PRO	TC-SEL	1x11	250
PC 1/10/13 TCD PRO	TC-DEL	1x10	250
PC 1/9/11 TCS PRO	TC-DEL	1x13	250
PC 1/10/13 TCD PRO	TC-DEL	1x13	250
PC 1/18 TCD PRO	TC-DEL	1x18	250
PC 1/26/32/42 TCT PRO	TC-DEL	1x26	250
PC 1/9/11 TCS PRO	TC-TEL	1x13	250
PC 1/10/13 TCD PRO	TC-TEL	1x13	250
PC 1/18 TCD PRO	TC-TEL	1x18	250
PC 1/26/32/42 TCT PRO	TC-TEL	1x26	250
PC 1/26/32/42 TCT PRO	TC-TEL	1x32	250
PC 1/26/32/42 TCT PRO	TC-TEL	1x42	250
PC 1/57/70 TCT PRO	TC-TEL	1x57	250
PC 1/57/70 TCT PRO	TC-TEL	1x70	250
PC 1/26/32/42 TCT PRO	T5c	1x22	250
PC 1/26/32/42 TCT PRO	T5c	1x40	250
PC 1/26/32/42 TCT PRO	TC-L	1x18	250
PC 1/26/32/42 TCT PRO	TC-L	1x24	250
PC 1/26/32/42 TCT PRO	TC-F	1x18	250
PC 1/26/32/42 TCT PRO	TC-F	1x24	250

**Ballast lumen factor
EN 60929 8.1**

type	lamp type	wattage W	AC/DC-BLF
			U = 198–254 V, 25 °C and 35 °C
PC 1/9/11 TCS PRO	TC-SEL	1x9	0.96
PC 1/9/11 TCS PRO	TC-SEL	1x11	1.04
PC 1/10/13 TCD PRO	TC-DEL	1x10	0.95
PC 1/9/11 TCS PRO	TC-DEL	1x13	1
PC 1/10/13 TCD PRO	TC-DEL	1x13	1.05
PC 1/18 TCD PRO	TC-DEL	1x18	1
PC 1/26/32/42 TCT PRO	TC-DEL	1x26	1
PC 1/9/11 TCS PRO	TC-TEL	1x13	1
PC 1/10/13 TCD PRO	TC-TEL	1x13	1.05
PC 1/18 TCD PRO	TC-TEL	1x18	1
PC 1/26/32/42 TCT PRO	TC-TEL	1x26	1
PC 1/26/32/42 TCT PRO	TC-TEL	1x32	1
PC 1/26/32/42 TCT PRO	TC-TEL	1x42	1
PC 1/57/70 TCT PRO	TC-TEL	1x57	1
PC 1/57/70 TCT PRO	TC-TEL	1x70	0.99
PC 1/26/32/42 TCT PRO	T5c	1x22	1.01
PC 1/26/32/42 TCT PRO	T5c	1x40	0.96
PC 1/26/32/42 TCT PRO	TC-L	1x18	0.98
PC 1/26/32/42 TCT PRO	TC-L	1x24	1.02
PC 1/26/32/42 TCT PRO	TC-F	1x18	0.98
PC 1/26/32/42 TCT PRO	TC-F	1x24	1.02

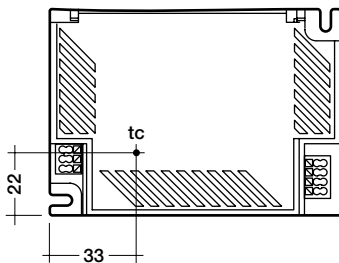
Preheat time

type	lamp type	wattage W	preheat time
			s
PC 1/9/11 TCS PRO	TC-SEL	1x9	1.5
PC 1/9/11 TCS PRO	TC-SEL	1x11	1.5
PC 1/10/13 TCD PRO	TC-DEL	1x10	1.5
PC 1/9/11 TCS PRO	TC-DEL	1x13	1.5
PC 1/10/13 TCD PRO	TC-DEL	1x13	1.5
PC 1/18 TCD PRO	TC-DEL	1x18	1.0
PC 1/26/32/42 TCT PRO	TC-DEL	1x26	1.5
PC 1/9/11 TCS PRO	TC-TEL	1x13	1.5
PC 1/10/13 TCD PRO	TC-TEL	1x13	1.5
PC 1/18 TCD PRO	TC-TEL	1x18	1.0
PC 1/26/32/42 TCT PRO	TC-TEL	1x26	1.5
PC 1/26/32/42 TCT PRO	TC-TEL	1x32	1.5
PC 1/26/32/42 TCT PRO	TC-TEL	1x42	1.5
PC 1/57/70 TCT PRO	TC-TEL	1x57	1.5
PC 1/57/70 TCT PRO	TC-TEL	1x70	1.5
PC 1/26/32/42 TCT PRO	T5c	1x22	1.5
PC 1/26/32/42 TCT PRO	T5c	1x40	1.5
PC 1/26/32/42 TCT PRO	TC-L	1x18	1.5
PC 1/26/32/42 TCT PRO	TC-L	1x24	1.5
PC 1/26/32/42 TCT PRO	TC-F	1x18	1.5
PC 1/26/32/42 TCT PRO	TC-F	1x24	1.5

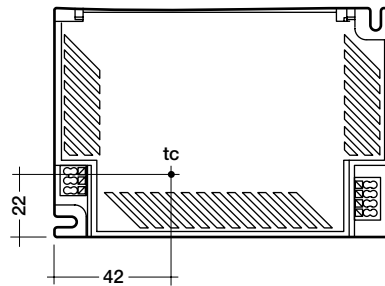
ASIC light management

ASIC (Application specific integrated circuit) is the very latest in lighting management design technology. The lamp friendly warm start in 1.5 seconds and a whole series of energy saving measures and light management feature make PC PRO a real champion in its class.

Temperature range



PC PRO L = 103 mm



PC PRO L = 123 mm

tc point is related to the ballast life duration. PC PRO is 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.

Maximum loading of automatic circuit breakers

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20
Installation Ø	1.5 mm ²	1.5 mm ²	2.5 mm ²	4.0 mm ²	1.5 mm ²	1.5 mm ²	2.5 mm ²	4.0 mm ²
PC 1/9/11 TCS PRO	48	72	80	100	24	36	40	50
PC 1/10/13 TCD PRO	46	70	78	98	23	35	39	49
PC 1/18 TCD PRO	48	72	80	100	24	36	40	50
PC 1/26/32/42 TCT PRO	34	46	74	84	17	23	37	42
PC 1/57/70 TCT PRO	20	32	36	44	10	16	18	22

Electronic ballasts Compact lamps

Wiring advice

The lead length is dependant on the capacitance of the cable.

Ballast Type	Terminal		Maximum capacitance allowed	
	Cold	Hot	Cold	Hot
PC 1/xx PRO	1, 2	3, 4	200 pF	100 pF
PC 1/57/70 TCT PRO	1, 2	5, 6	200 pF	100 pF

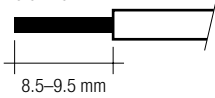
With standard solid wire 0.5/0.75 mm² the capacitance of the lead is 30–80 pF/m. This value is influenced by the way the wiring is made. Lamp connection should be made with symmetrical wiring.

Installation instructions

Wiring type and cross section

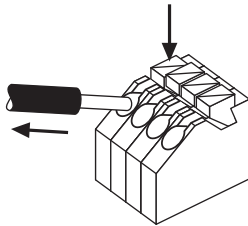
The wiring can be in flexible cable with ferules or solid with a cross section of 0.5–1.5 mm². Strip 9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

wire preparation:
0.5–1.5 mm²



Release of the wiring

Press down the “push button” and remove the cable from front.

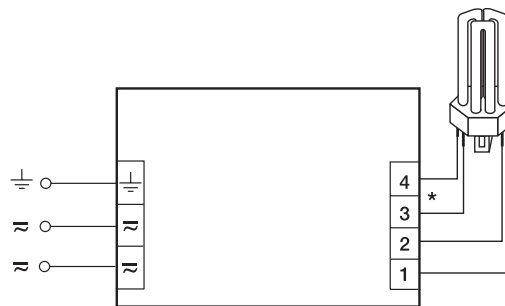


RFI

- Connection to the lamps of the “hot leads” must be kept as short as possible
- Mains leads should be kept apart from lamp leads
- Do not run mains leads adjacent to the electronic ballast
- Twist the lamp leads
- Keep the distance of lamp leads from the metal work as large as possible
- Ballast must be earthed
- Keep the mains leads inside the luminaire as short as possible

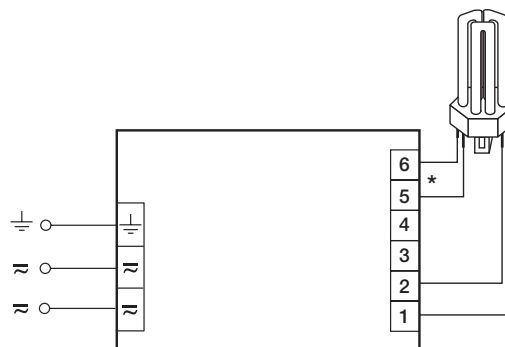
Defective lamp

If a lamp is defective, the ballast switches off and goes into standby. There is an automatic restart once the lamp has been changed.



- * leads (3, 4) max. 1.0 m (< 100 pF)
- leads (1, 2) max. 2.0 m (< 200 pF)

PC 1/xx PRO



- * leads (5, 6) max. 1.0 m (< 100 pF)
- leads (1, 2) max. 2.0 m (< 200 pF)

PC 1/57/70 TCT PRO