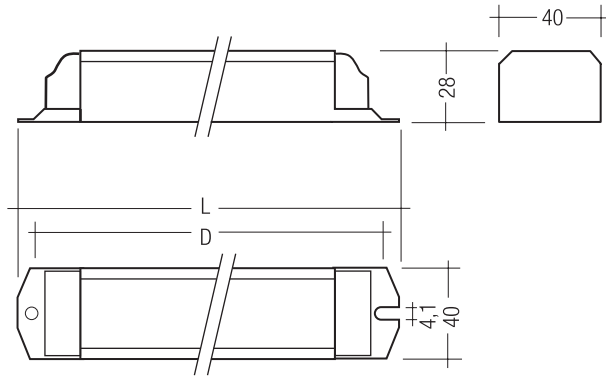




PC DD PRO sc, 28 – 55 W
TC-DD fluorescent lamps

Product description

- Average life = 50,000 hours (at max ta. with a failure rate $\leq 0.2\%$ per 1,000 hours)
- Large temperature range (for values see table)
- Safety shutdown at end of life
- Automatic start after replacement of defective lamps
- For emergency lighting systems as per EN 50172
- Constant luminous flux irrespective of fluctuations in mains voltage
- For luminaires of protection class 1 and protection class 2
- For luminaires with F or M and MM as per EN 60598, VDE 0710 and VDE 0711
- Insulation Displacement Connection (IDC) terminal for rapid automatic or manual wiring
- Temperature protection as per EN 61347-2-3 C5e



Technical data

| | |
|------------------------|--|
| AC voltage range | 198 – 264 V |
| DC voltage range | 176 – 280 V (Lamp start ≥ 198 V DC) |
| Overvoltage protection | 320 V AC, 1 h |
| Defined warm start | ≤ 1.5 s |
| Operating frequency | ≥ 40 kHz |
| Type of protection | IP20 |



Standards, page 2

Wiring diagrams and installation examples, page 4

Ordering data

| Type | Article number |
|-----------------------------------|----------------|
| For luminaires with 1 lamp | |
| PC 1/28 DD PRO sc | 89800004 |
| PC 1/38 DD PRO sc | 89800005 |
| PC 1/55 DD PRO sc | 89800006 |

Packaging: 25 pieces/carton, 1250 pieces/pallet

Specific technical data

| Lamp wattage | Lamp type | Type | Length L | Hole spacing D | Weight | Lamp wattage | Circuit power | EEI | Current at 50 Hz | | λ at 50 Hz | | tc point | Ambient temperature ta |
|-----------------------------------|-----------|-------------------|----------|----------------|---------|--------------|---------------|-----|------------------|--------|--------------------|-------|----------|------------------------|
| | | | | | | | | | 220 V | 240 V | 220 V | 240 V | | |
| For luminaires with 1 lamp | | | | | | | | | | | | | | |
| 1 x 28 W | TC-DD | PC 1/28 DD PRO sc | 150 mm | 139 mm | 0.15 kg | 25.4 W | 28.7 W | A3 | 0.14 A | 0.12 A | 0.95 | 0.95 | 85 °C | -25 ... 60 °C |
| 1 x 38 W | TC-DD | PC 1/38 DD PRO sc | 150 mm | 139 mm | 0.15 kg | 34.6 W | 39.7 W | A3 | 0.19 A | 0.17 A | 0.96 | 0.96 | 85 °C | -25 ... 60 °C |
| 1 x 55 W | TC-DD | PC 1/55 DD PRO sc | 150 mm | 139 mm | 0.16 kg | 53.0 W | 60.0 W | A2 | 0.28 A | 0.24 A | 0.98 | 0.98 | 80 °C | -25 ... 60 °C |

Standards:

EN 55015
EN 61347-2-4
EN 61347-2-3
EN 60929
EN 61000-3-2
EN 61547
in accordance with EN 50172

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 EN 50172 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 Tridonic. This innovative feature of the PC PRO family of control gear from Tridonic 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 approx. 305 V (voltage depends on the ballast type), the lamp starts 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

Innovative heating circuit. Reduced filament heating after lamp has struck.

Mains currents in DC operation

| Type | lamp type | wattage | mains current at | |
|-------------------|-----------|---------|--------------------|--------------------|
| | | | $U_n = 220 V_{DC}$ | $U_n = 240 V_{DC}$ |
| PC 1/28 DD PRO sc | TC-DD | 1x28 W | 0.13 A | 0.12 A |
| PC 1/38 DD PRO sc | TC-DD | 1x38 W | 0.18 A | 0.17 A |
| PC 1/55 DD PRO sc | TC-DD | 1x58 W | 0.27 A | 0.25 A |

Harmonic distortion in the mains supply

| Type | lamp type | wattage | THD | |
|-------------------|-----------|---------|------------------|--|
| | | | at 230 V / 50 Hz | |
| PC 1/28 DD PRO sc | TC-DD | 1x28 W | $< 15\%$ | |
| PC 1/38 DD PRO sc | TC-DD | 1x38 W | $< 10\%$ | |
| PC 1/55 DD PRO sc | TC-DD | 1x58 W | $< 10\%$ | |

Working voltage

| Type | lamp type | wattage | U_{out} |
|-------------------|-----------|---------|-----------|
| PC 1/28 DD PRO sc | TC-DD | 1x28 W | 250 V |
| PC 1/38 DD PRO sc | TC-DD | 1x38 W | 250 V |
| PC 1/55 DD PRO sc | TC-DD | 1x58 W | 250 V |

Ballast lumen factor (EN 60929 8.1)

| Type | lamp type | wattage | AC/DC-BLF | |
|-------------------|-----------|---------|--------------------------------|--|
| | | | at $U = 198-254 V, 25^\circ C$ | |
| PC 1/28 DD PRO sc | TC-DD | 1x28 W | 1.00 | |
| PC 1/38 DD PRO sc | TC-DD | 1x38 W | 1.00 | |
| PC 1/55 DD PRO sc | TC-DD | 1x58 W | 1.00 | |

All data are typical values

PC PRO with xitec processor

Is the very latest in lighting management design technology. The lamp friendly warm start is delivering maximum TC-DD lamp life and enables high switching frequency applications. Smallest power loss and new freedom in the lamp design thanks to convincing thermal management.

Energy class CELMA EEI = A2 / A3¹⁾

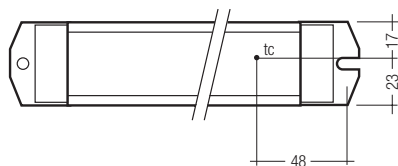
PC DD PRO sc ignition technology (smart heating) optimises lamp start and ensures no energy is wasted. After the lamp has struck the filament heating is reduced automatically to a defined minimum value. This reduction in filament heating, saves energy, yet maintains the proper operating conditions for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

¹⁾ according to the EU directives on ecodesign requirements (EC) No. 245/2009 and (EC) No. 347/2010

Ambient Temperature

-25 °C to +60 °C

PC 1/xx DD PRO sc



The nominal t_a and t_c point are related to the ballast life duration.

The relation of t_c to t_a temperature depends also on the luminaire design. If the measured t_c temperature is approx. 5 K below t_c max., t_a temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

PC DD PRO sc 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 | C10 | C13 | C16 | C20 | B10 | B13 | B16 | B20 |
|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Installation Ø | 1.5 mm ² | 1.5 mm ² | 1.5 mm ² | 2.5 mm ² | 1.5 mm ² | 1.5 mm ² | 1.5 mm ² | 2.5 mm ² |
| PC 1/28 DD PRO sc | 32 | 46 | 66 | 80 | 16 | 23 | 33 | 40 |
| PC 1/38 DD PRO sc | 20 | 30 | 40 | 44 | 10 | 15 | 20 | 22 |
| PC 1/58 DD PRO sc | 14 | 20 | 26 | 30 | 7 | 10 | 13 | 15 |

Wiring advice

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

For safety reasons, the PC DD PRO sc must only be earthed in the case of a safety class 1 luminaire. Earthing is not required for the device to operate. Connection to earth reduces radio interference.

With standard solid wire 0.5/0.75 mm² the capacitance of the lead is approx. 80 pF/m. This value is influenced by the way the wiring is made. In borderline cases the capacitance must be measured inside the luminaire. Keep lamp wires short. Lamp connection with twin ballast should be made with symmetrical wiring. Hot leads and cold leads should be separated as much as possible.

| Ballast Typ | Terminal | Maximum capacitance allowed | | | |
|-------------------|----------|-----------------------------|--|--------|--------|
| | | Cold | | Hot | |
| PC 1/xx DD PRO sc | 11, 12 | 13, 14 | | 200 pF | 100 pF |

To avoid the damage of the control gear, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.)

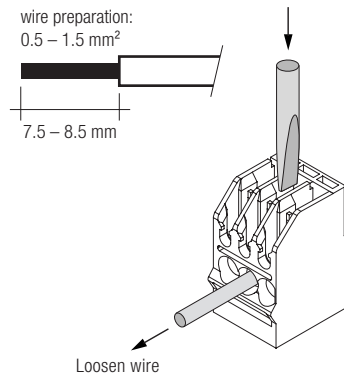
Installation instructions

IDC interface

- solid wire with a cross section of 0.5 mm^2 according to the specification from WAGO

Horizontal interface

- solid wire with a cross section of $0.5\text{--}1.5 \text{ mm}^2$ according to the specification from WAGO
- strip $7.5\text{--}8.5 \text{ mm}$ of insulation from the cables to ensure perfect operation of the screw terminals



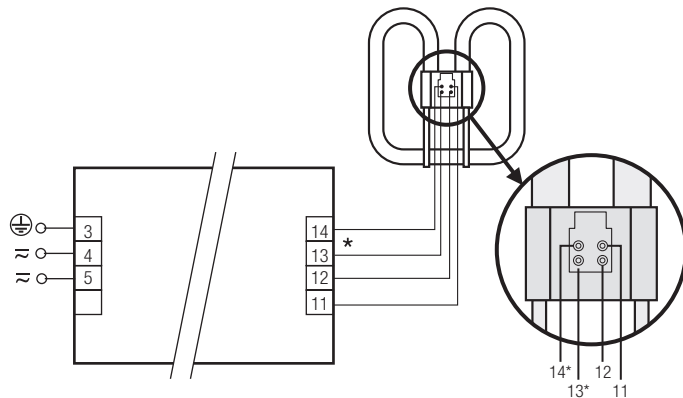
RFI

Tridonic ballasts are RFI protected in accordance with EN 55015. To operate the luminaire correctly and to minimise RFI we recommend the following instructions:

- Connection to the lamps of the “hot leads” must be kept as short as possible (marked with *)
- Mains leads should be kept apart from lamp leads (ideally $5\text{--}10 \text{ cm}$ distance)
- 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
- Connect functional earth, either over the terminal or over the mounting screw of the ballast
- Mains wiring to be twisted when through wiring
- 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 13,14 max. 1.0 m ($< 100 \text{ pF}$)
- leads 11,12 max. 2.0 m ($< 200 \text{ pF}$)
- For luminaires of protection class I: Earthing via ECG casing or earth terminal (according to IEC 60598)
- For luminaires of protection class II: No earthing required

PC 1x28-55 W DD PRO sc