



### PC TC TOP, 18 – 42 W

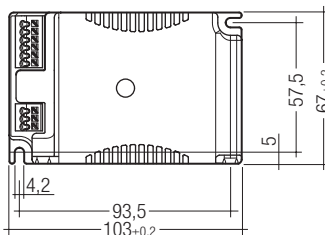
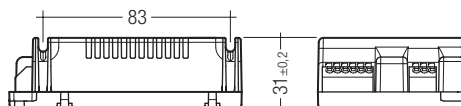
PC TOP compact

#### Product description

- CELMA Energy Efficiency Index A2
- Nominal life-time up to 50,000 h (at ta 50 °C with a failure rate max. 0.2 % per 1,000 h)
- Large temperature range (for values see table)
- Fixed frequency operation for constant lamp current
- Lamp preheating for min. 30,000 starts without replacement of lamps
- Constant luminous lux irrespective of fluctuations in mains voltage
- Designed for THD < 10 %
- For luminaires of protection class I and protection class II
- Automatic start after replacement of defective lamps (detects 1 lamp)
- Safety shutdown of defective lamps and at end of lamp life
- Push terminal for rapid automatic or manual wiring
- For emergency lighting systems as per EN 50172

#### Technical data

|                        |                                     |
|------------------------|-------------------------------------|
| Mains voltage range    | 220 – 240 V                         |
| AC voltage range       | 198 – 264 V                         |
| DC voltage range       | 176 – 280 V (lamp start ≥ 198 V DC) |
| Mains frequency        | 0 / 50 / 60 Hz                      |
| Overvoltage protection | 320 V AC, 1 h                       |
| Defined warm start     | ≤ 1.6 s                             |
| Operating frequency    | ≥ 40 kHz                            |
| Type of protection     | IP20                                |



#### Ordering data

| Type                               | Article number | Packaging, carton | Packaging, pallet | Weight per pc. |
|------------------------------------|----------------|-------------------|-------------------|----------------|
| <b>For luminaires with 1 lamp</b>  |                |                   |                   |                |
| PC 1x18 TC TOP                     | 28000073       | 15 pc(s).         | 750 pc(s).        | 0.105 kg       |
| PC 1x26-42 TC TOP                  | 28000075       | 15 pc(s).         | 750 pc(s).        | 0.105 kg       |
| <b>For luminaires with 2 lamps</b> |                |                   |                   |                |
| PC 2x18 TC TOP                     | 28000074       | 15 pc(s).         | 750 pc(s).        | 0.106 kg       |
| PC 2x26 TC TOP                     | 28000076       | 15 pc(s).         | 750 pc(s).        | 0.111 kg       |

Standards, page 2

Wiring diagrams and installation examples, page 6

#### Specific technical data

| Lamp wattage                       | Lamp type | Type              | Article number | Dimensions L x W x H | Lamp power | Circuit power | EEL | Current at 50 Hz |         | λ at 50 Hz |       | tc point max. | Ambient temperature ta | tc/ta for ≥ 50,000 h |
|------------------------------------|-----------|-------------------|----------------|----------------------|------------|---------------|-----|------------------|---------|------------|-------|---------------|------------------------|----------------------|
|                                    |           |                   |                |                      |            |               |     | 220 V            | 240 V   | 220 V      | 240 V |               |                        |                      |
| <b>For luminaires with 1 lamp</b>  |           |                   |                |                      |            |               |     |                  |         |            |       |               |                        |                      |
| 1 x 18 W                           | TC-DEL    | PC 1x18 TC TOP    | 28000073       | 103 x 67 x 31 mm     | 16.5 W     | 18.2 W        | A2  | 0.085 A          | 0.080 A | 0.97       | 0.95  | 75 °C         | -25 ... 65 °C          | 70/60 °C             |
| 1 x 18 W                           | TC-TEL    | PC 1x18 TC TOP    | 28000073       | 103 x 67 x 31 mm     | 16.5 W     | 18.2 W        | A2  | 0.085 A          | 0.080 A | 0.97       | 0.95  | 75 °C         | -25 ... 65 °C          | 70/60 °C             |
| 1 x 26 W                           | TC-DEL    | PC 1x26-42 TC TOP | 28000075       | 103 x 67 x 31 mm     | 24.0 W     | 26.8 W        | A2  | 0.127 A          | 0.119 A | 0.96       | 0.94  | 75 °C         | -25 ... 65 °C          | 65/55 °C             |
| 1 x 26 W                           | TC-TEL    | PC 1x26-42 TC TOP | 28000075       | 103 x 67 x 31 mm     | 24.0 W     | 26.8 W        | A2  | 0.127 A          | 0.119 A | 0.96       | 0.94  | 75 °C         | -25 ... 65 °C          | 65/55 °C             |
| 1 x 32 W                           | TC-TEL    | PC 1x26-42 TC TOP | 28000075       | 103 x 67 x 31 mm     | 32.0 W     | 35.1 W        | A2  | 0.164 A          | 0.154 A | 0.97       | 0.95  | 75 °C         | -25 ... 65 °C          | 65/55 °C             |
| 1 x 42 W                           | TC-TEL    | PC 1x26-42 TC TOP | 28000075       | 103 x 67 x 31 mm     | 42.0 W     | 47.1 W        | A2  | 0.218 A          | 0.204 A | 0.98       | 0.96  | 75 °C         | -25 ... 60 °C          | 65/50 °C             |
| <b>For luminaires with 2 lamps</b> |           |                   |                |                      |            |               |     |                  |         |            |       |               |                        |                      |
| 2 x 18 W                           | TC-DEL    | PC 2x18 TC TOP    | 28000074       | 103 x 67 x 31 mm     | 33.0 W     | 34.7 W        | A2  | 0.163 A          | 0.152 A | 0.97       | 0.95  | 80 °C         | -25 ... 65 °C          | 70/55 °C             |
| 2 x 18 W                           | TC-TEL    | PC 2x18 TC TOP    | 28000074       | 103 x 67 x 31 mm     | 33.0 W     | 34.7 W        | A2  | 0.163 A          | 0.152 A | 0.97       | 0.95  | 80 °C         | -25 ... 65 °C          | 70/55 °C             |
| 2 x 26 W                           | TC-DEL    | PC 2x26 TC TOP    | 28000076       | 103 x 67 x 31 mm     | 48.5 W     | 53.1 W        | A2  | 0.246 A          | 0.230 A | 0.98       | 0.96  | 75 °C         | -25 ... 60 °C          | 65/50 °C             |
| 2 x 26 W                           | TC-TEL    | PC 2x26 TC TOP    | 28000076       | 103 x 67 x 31 mm     | 48.5 W     | 53.1 W        | A2  | 0.246 A          | 0.230 A | 0.98       | 0.96  | 75 °C         | -25 ... 60 °C          | 65/50 °C             |

## Standards

EN 55015  
EN 60929  
EN 61000-3-2  
EN 61000-3-3  
EN 61347-2-3  
EN 61347-2-4  
EN 61547  
according to EN 50172

## Lamp starting characteristics

Warm start  
Starting time  $\leq 1.6$  s 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

Mains voltage:  
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  
EBLF  $\geq 0.5$

Mains current for defective or missing lamps at DC  
operation  $< 10$  mA.

### Mains current in DC operation

| Type              | Lamp type | Wattage | Mains current at<br>$U_n = 220$ V <sub>DC</sub> | Mains current at<br>$U_n = 240$ V <sub>DC</sub> |
|-------------------|-----------|---------|-------------------------------------------------|-------------------------------------------------|
| PC 1x18 TC TOP    | TC-DEL    | 1x18 W  | 85 mA                                           | 80 mA                                           |
|                   | TC-TEL    | 1x18 W  | 85 mA                                           | 80 mA                                           |
| PC 1x26–42 TC TOP | TC-DEL    | 1x26 W  | 127 mA                                          | 119 mA                                          |
|                   | TC-TEL    | 1x26 W  | 127 mA                                          | 119 mA                                          |
|                   | TC-TEL    | 1x32 W  | 164 mA                                          | 154 mA                                          |
|                   | TC-TEL    | 1x42 W  | 218 mA                                          | 204 mA                                          |
| PC 2x18 TC TOP    | TC-DEL    | 2x18 W  | 163 mA                                          | 152 mA                                          |
|                   | TC-TEL    | 2x18 W  | 163 mA                                          | 152 mA                                          |
| PC 2x26 TC TOP    | TC-DEL    | 2x26 W  | 264 mA                                          | 230 mA                                          |
|                   | TC-TEL    | 2x26 W  | 264 mA                                          | 230 mA                                          |

### Harmonic distortion in the mains supply

| Type              | Lamp type | Wattage | THD<br>at 230V/50 Hz |
|-------------------|-----------|---------|----------------------|
| PC 1x18 TC TOP    | TC-DEL    | 1x18 W  | $< 10$ %             |
|                   | TC-TEL    | 1x18 W  | $< 10$ %             |
| PC 1x26–42 TC TOP | TC-DEL    | 1x26 W  | $< 10$ %             |
|                   | TC-TEL    | 1x26 W  | $< 10$ %             |
|                   | TC-TEL    | 1x32 W  | $< 10$ %             |
|                   | TC-TEL    | 1x42 W  | $< 10$ %             |
| PC 2x18 TC TOP    | TC-DEL    | 2x18 W  | $< 10$ %             |
|                   | TC-TEL    | 2x18 W  | $< 10$ %             |
| PC 2x26 TC TOP    | TC-DEL    | 2x26 W  | $< 10$ %             |
|                   | TC-TEL    | 2x26 W  | $< 10$ %             |

### Output voltage

| Type              | Lamp type | Wattage | $U_{out}$ |
|-------------------|-----------|---------|-----------|
| PC 1x18 TC TOP    | TC-DEL    | 1x18 W  | 250 V     |
|                   | TC-TEL    | 1x18 W  | 250 V     |
| PC 1x26–42 TC TOP | TC-DEL    | 1x26 W  | 250 V     |
|                   | TC-TEL    | 1x26 W  | 250 V     |
|                   | TC-TEL    | 1x32 W  | 250 V     |
|                   | TC-TEL    | 1x42 W  | 250 V     |
| PC 2x18 TC TOP    | TC-DEL    | 2x18 W  | 250 V     |
|                   | TC-TEL    | 2x18 W  | 250 V     |
| PC 2x26 TC TOP    | TC-DEL    | 2x26 W  | 250 V     |
|                   | TC-TEL    | 2x26 W  | 250 V     |

### Ballast lumen factor (EN 60929 8.1)

| Type              | Lamp type | Wattage | AC/DC-BLF<br>at $U = 198–254$ V, 25 °C |
|-------------------|-----------|---------|----------------------------------------|
| PC 1x18 TC TOP    | TC-DEL    | 1x18 W  | 1.00                                   |
|                   | TC-TEL    | 1x18 W  | 1.00                                   |
| PC 1x26–42 TC TOP | TC-DEL    | 1x26 W  | 1.00                                   |
|                   | TC-TEL    | 1x26 W  | 1.00                                   |
|                   | TC-TEL    | 1x32 W  | 1.00                                   |
|                   | TC-TEL    | 1x42 W  | 1.00                                   |
| PC 2x18 TC TOP    | TC-DEL    | 2x18 W  | 1.00                                   |
|                   | TC-TEL    | 2x18 W  | 1.00                                   |
| PC 2x26 TC TOP    | TC-DEL    | 2x26 W  | 1.00                                   |
|                   | TC-TEL    | 2x26 W  | 1.00                                   |

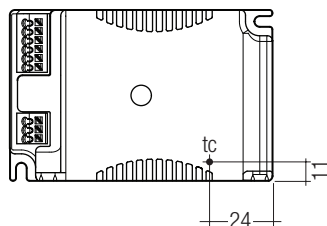
# Energy class: CELMA EEI = A2<sup>1)</sup>

Maximum energy efficiency:

Right from the early stages in the development of xitec technology the focus has always been on achieving maximum energy efficiency. In conjunction with Smart Heating Technology, PC TC TOP is rated in the best possible efficiency class of A2 that CELMA provides for ballasts with a constant luminous flux.

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

## Temperature range



PC TC TOP

The ballast life duration is related to the ambient temperature  $t_a$ . 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. or higher,  $t_a$  temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

PC TC TOP is designed for an average life-time of 50,000 (at  $t_a$  for  $\geq 50.000$  h) 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.

Humidity: 5 % up to max. 85 %,  
not condensed  
(max. 56 days/year at 85 %)

Storage temperature: -40 °C up to max. +80 °C

The devices have to be within the specified temperature range ( $t_a$ ) before they can be operated.

## Expected life-time

| Type              | Lamp type | Lamp power |           | $t_a = 40\text{ °C}$ | $t_a = 50\text{ °C}$ | $t_a = 55\text{ °C}$ | $t_a = 60\text{ °C}$ | $t_a = 65\text{ °C}$ |
|-------------------|-----------|------------|-----------|----------------------|----------------------|----------------------|----------------------|----------------------|
| PC 1x18 TC TOP    | TC-DEL    | 1x18 W     | $t_c$     | 50 °C                | 60 °C                | 65 °C                | 70 °C                | 75 °C                |
|                   | TC-TEL    | 1x18 W     | Life-time | > 100,000 h          | > 100,000 h          | 70,000 h             | 50,000 h             | 40,000 h             |
| PC 1x26–42 TC TOP | TC-DEL    | 1x26 W     | $t_c$     | 50 °C                | 60 °C                | 65 °C                | 70 °C                | 75 °C                |
|                   | TC-TEL    | 1x26 W     | Life-time | > 100,000 h          | 85,000 h             | 60,000 h             | 45,000 h             | 30,000 h             |
|                   | TC-TEL    | 1x32 W     | $t_c$     | 50 °C                | 60 °C                | 65 °C                | 70 °C                | 75 °C                |
|                   |           |            | Life-time | > 100,000 h          | 75,000 h             | 50,000 h             | 40,000 h             | 30,000 h             |
|                   | TC-TEL    | 1x42 W     | $t_c$     | 55 °C                | 65 °C                | 70 °C                | 75 °C                | x                    |
|                   |           |            | Life-time | 90,000 h             | 50,000 h             | 40,000 h             | 30,000 h             | x                    |
| PC 2x18 TC TOP    | TC-DEL    | 2x18 W     | $t_c$     | 55 °C                | 65 °C                | 70 °C                | 75 °C                | 80 °C                |
|                   | TC-TEL    | 2x18 W     | Life-time | > 100,000 h          | 70,000 h             | 50,000 h             | 40,000 h             | 30,000 h             |
| PC 2x26 TC TOP    | TC-DEL    | 2x26 W     | $t_c$     | 55 °C                | 65 °C                | 70 °C                | 75 °C                | x                    |
|                   | TC-TEL    | 2x26 W     | Life-time | 90,000 h             | 50,000 h             | 35,000 h             | 25,000 h             | x                    |

x = nicht zulässig

### Maximum loading of automatic circuit breakers

| Automatic circuit          | C10                 | C13                 | C16                 | C20                 | B10                 | B13                 | B16                 | B20                 | Inrush current   |        |
|----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------|--------|
| Installation cross section | 1.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 2.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 1.5 mm <sup>2</sup> | 2.5 mm <sup>2</sup> | I <sub>max</sub> | time   |
| PC 1x18 TC TOP             | 48                  | 72                  | 153                 | 160                 | 24                  | 36                  | 80                  | 80                  | 14 A             | 200 μs |
| PC 1x26-42 TC TOP          | 24                  | 38                  | 62                  | 66                  | 12                  | 19                  | 31                  | 33                  | 17 A             | 210 μs |
| PC 2x18 TC TOP             | 36                  | 54                  | 76                  | 88                  | 18                  | 27                  | 38                  | 44                  | 17 A             | 200 μs |
| PC 2x26 TC TOP             | 24                  | 38                  | 52                  | 66                  | 12                  | 19                  | 31                  | 33                  | 21 A             | 160 μs |

### Wiring advice

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

With standard solid wire 0.5/0.75 mm<sup>2</sup> 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.

| Ballast       | Terminal   | Maximum capacitance allowed |      |        |        |
|---------------|------------|-----------------------------|------|--------|--------|
|               |            | Cold                        | Hot  | Cold   | Hot    |
| PC 1xx TC TOP | 4, 5       |                             | 8, 9 | 200 pF | 100 pF |
| PC 2xx TC TOP | 4, 5, 6, 7 |                             | 8, 9 | 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.)

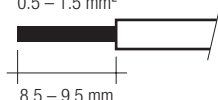
### Installation instructions

#### Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid with a cross section of 0.5–1.5 mm<sup>2</sup>.

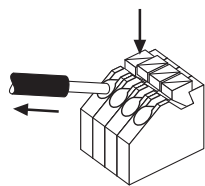
Strip 9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

wire preparation:  
0.5 – 1.5 mm<sup>2</sup>



### Release of the wiring

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



### Mounting of device

Max. torque for fixing: 0.5 Nm/M4

### 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
- 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. Switch off tested according to EN 61347-2-3 17.3 (Eol-Test 1). There is an automatic restart once the lamp has been changed.

### Isolation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an isolation test with 500 V<sub>DC</sub> for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.

The isolation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V<sub>AC</sub> (or 1.414 x 1500 V<sub>DC</sub>). To avoid damage to the electronic devices this test must not be conducted.

### Glow-wire test

according to EN 61347-1 with increased temperature of 850 °C passed.

### Additional information

Additional technical information at  
[www.tridonic.com](http://www.tridonic.com) → Technical Data

Guarantee conditions at  
[www.tridonic.com](http://www.tridonic.com) → Services

No warranty if device was opened.

### Accessories

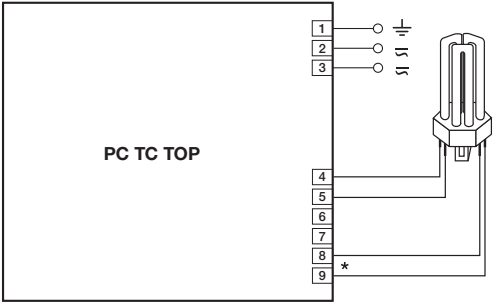
PC compact gear box for independant solutions



### Ordering data

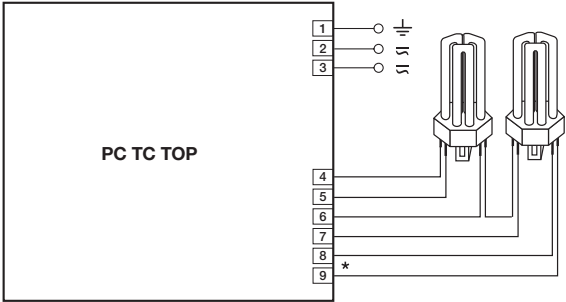
| Dimensions LxWxH  | Type                          | Article number |
|-------------------|-------------------------------|----------------|
| 278 x 114 x 55 mm | PC Ballast box, upper section | 24138824       |
| 278 x 114 x 55 mm | PC Ballast box, lower section | 24138825       |

### Wiring diagrams



\* Leads 8, 9 max. 1.0 m (< 100 pF)  
 Leads 4, 5 max. 2.0 m (< 200 pF)  
 For luminaires of protection class 1: Earthing via earth terminal (to IEC 60598)  
 For luminaires of protection class 2: No earthing required

PC 1x18 TC TOP  
 PC 1x26-42 TC TOP



\* Leads 8, 9 max. 1.0 m (< 100 pF)  
 Leads 4, 5, 6, 7 max. 2.0 m (< 200 pF)  
 For luminaires of protection class 1: Earthing via earth terminal (to IEC 60598)  
 For luminaires of protection class 2: No earthing required

PC 2x18 TC TOP  
 PC 2x26 TC TOP