

### PC T8 TEC, 18 – 58 W

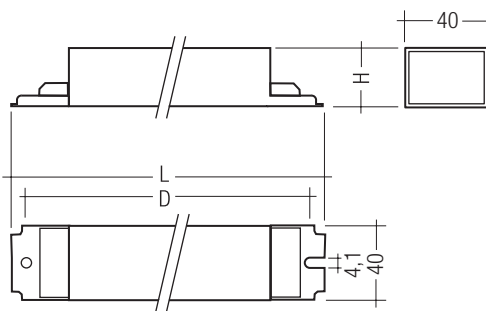
#### PC TEC

#### Product description

- CELMA Energy Efficiency Index A2
- Nominal life time up to 30,000 h (at ta 50 °C with a failure rate max. 0.3 % per 1,000 h)
- Large temperature range (for values see table)
- Reduced lamp preheating for min. 5,000 starts without replacement of lamps (3,000 for 4x18 W applications)
- Automatic start after replacement of defective lamps (details on page 4)
- Safety shutdown of defective lamps
- For 1x58 W and 2x58 W applications safety shutdown at end of lamp life
- Push terminal for rapid automatic or manual wiring
- Temperature protection as per EN 61347-2-3 C5e

#### Technical data

Mains voltage range	220 – 240 V
AC voltage range	206 – 254 V (lamp start ≥ 198 V <sub>AC</sub> )
Mains frequency	50 / 60 Hz
Overvoltage protection	320 V AC, 1 h (280 V AC, 48 h for 2x58 W applications)
Time to light	≤ 1 s
Operating frequency	> 40 kHz
Protection type	IP20



#### Ordering data

Type	Article number	Packaging carton	Packaging pallet	Weight per pcs.
<b>For luminaires with 1 lamp</b>				
PC 1x18 T8 TEC	87500113	60 pieces	1,260 pieces	0.116 kg
PC 1x36 T8 TEC (2x18 W application)	87500115	60 pieces	1,260 pieces	0.117 kg
PC 1x58 T8 TEC	87500150	60 pieces	1,260 pieces	0.118 kg
<b>For luminaires with 2 lamps</b>				
PC 2x18 T8 TEC	87500114	60 pieces	900 pieces	0.168 kg
PC 1x36 T8 TEC (2x18 W application)	87500115	60 pieces	1,260 pieces	0.117 kg
PC 2x36 T8 TEC (4x18 W application)	87500116	60 pieces	900 pieces	0.185 kg
PC 2x58 T8 TEC	87500151	60 pieces	900 pieces	0.184 kg
<b>For luminaires with 4 lamps</b>				
PC 2x36 T8 TEC (4x18 W application)	87500116	60 pieces	900 pieces	0.185 kg



Standards, page 2

Wiring diagrams and installation examples, page 4

#### Specific technical data

Lamp wattage	Lamp type	Type	Article number	Dimension L x W x H	Hole spacing D	Lamp power	Circuit power	EEI	Current at 50 Hz		λ at 50 Hz		tc point max.	Ambient temperature ta
									220 V	240 V	220 V	240 V		
<b>For luminaires with 1 lamp</b>														
1 x 18 W	T8	PC 1x18 T8 TEC	87500113	150 x 40 x 28 mm	138 mm	17 W	19 W	A2	0.08 A	0.08 A	0.97	0.97	65 °C	-10 ... 50 °C
1 x 36 W	T8	PC 1x36 T8 TEC	87500115	150 x 40 x 28 mm	138 mm	32 W	35 W	A2	0.15 A	0.15 A	0.98	0.98	65 °C	-10 ... 50 °C
1 x 58 W	T8	PC 1x58 T8 TEC	87500150	150 x 40 x 28 mm	138 mm	50 W	55 W	A2	0.24 A	0.24 A	0.97	0.97	65 °C	-10 ... 50 °C
1 x 55 W	TC-L	PC 1x58 T8 TEC	87500150	150 x 40 x 28 mm	138 mm	50 W	55 W	A2	0.24 A	0.24 A	0.97	0.97	65 °C	-10 ... 50 °C
<b>For luminaires with 2 lamps</b>														
2 x 18 W	T8	PC 2x18 T8 TEC	87500114	210 x 40 x 30 mm	198 mm	32 W	35 W	A2	0.16 A	0.16 A	0.98	0.98	65 °C	-10 ... 50 °C
2 x 18 W	T8	PC 1x36 T8 TEC	87500115	150 x 40 x 28 mm	138 mm	32 W	35 W	A2	0.15 A	0.15 A	0.98	0.98	65 °C	-10 ... 50 °C
2 x 36 W	T8	PC 2x36 T8 TEC	87500116	210 x 40 x 30 mm	198 mm	62 W	67 W	A2	0.30 A	0.30 A	0.98	0.98	70 °C	-10 ... 50 °C
2 x 58 W	T8	PC 2x58 T8 TEC	87500151	210 x 40 x 30 mm	198 mm	100 W	107 W	A2	0.47 A	0.47 A	0.97	0.97	70 °C	-10 ... 50 °C
2 x 55 W	TC-L	PC 2x58 T8 TEC	87500151	210 x 40 x 30 mm	198 mm	100 W	107 W	A2	0.47 A	0.47 A	0.97	0.97	70 °C	-10 ... 50 °C
<b>For luminaires with 4 lamps</b>														
4 x 18 W	T8	PC 2x36 T8 TEC	87500116	210 x 40 x 30 mm	198 mm	62 W	67 W	A2	0.30 A	0.31 A	0.98	0.98	70 °C	-10 ... 50 °C

## Standards

EN 55015  
EN 61000-3-2  
EN 61000-3-3  
EN 61347-1  
EN 61347-2-3  
EN 61547

## AC operation

Mains voltage:  
220 – 240 V 50/60 Hz  
176 – 264 V 50/60 Hz including safety  
tolerance (+10 % / –20 %)  
206 – 254 V 50/60 Hz including performance  
tolerance (±6 %)  
198 – 264 V 50/60 Hz certain lamp start

Below 198 V<sub>ac</sub> for sustained periods of time with  
reduced ballast life.

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

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

## Harmonic distortion in the mains supply

Type	Lamp type	Wattage	THD at 230 V/50 Hz
PC 1x18 T8 TEC	T8	1x18 W	20 %
PC 1x36 T8 TEC	T8	1x36 W	20 %
PC 1x36 T8 TEC	T8	2x18 W	20 %
PC 1x58 T8 TEC	T8	1x58 W	20 %
PC 1x58 T8 TEC	TC-L	1x55 W	20 %
PC 2x18 T8 TEC	T8	2x18 W	20 %
PC 2x36 T8 TEC	T8	2x36 W	20 %
PC 2x36 T8 TEC	T8	4x18 W	20 %
PC 2x58 T8 TEC	T8	2x58 W	20 %
PC 2x58 T8 TEC	TC-L	2x55 W	20 %

## Working voltage

Type	Lamp type	Wattage	U <sub>out</sub>
PC 1x18 T8 TEC	T8	1x18 W	250 V
PC 1x36 T8 TEC	T8	1x36 W	250 V
PC 1x36 T8 TEC	T8	2x18 W	250 V
PC 1x58 T8 TEC	T8	1x58 W	250 V
PC 1x58 T8 TEC	TC-L	1x55 W	250 V
PC 2x18 T8 TEC	T8	2x18 W	250 V
PC 2x36 T8 TEC	T8	2x36 W	250 V
PC 2x36 T8 TEC	T8	4x18 W	250 V
PC 2x58 T8 TEC	T8	2x58 W	300 V
PC 2x58 T8 TEC	TC-L	2x55 W	300 V

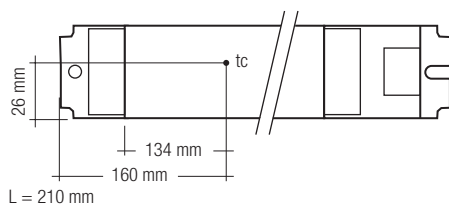
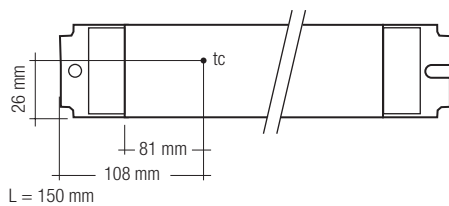
## Ballast lumen factor (EN 60929 8.1)

Type	Lamp type	Wattage	AC-BLF at U = 230 V, 25 °C
PC 1x18 T8 TEC	T8	1x18 W	1.00 (±10 %)
PC 1x36 T8 TEC	T8	1x36 W	1.00 (±10 %)
PC 1x36 T8 TEC	T8	2x18 W	1.00 (±10 %)
PC 1x58 T8 TEC	T8	1x58 W	1.00 (±10 %)
PC 1x58 T8 TEC	TC-L	1x55 W	0.95 (±10 %)
PC 2x18 T8 TEC	T8	2x18 W	1.00 (±10 %)
PC 2x36 T8 TEC	T8	2x36 W	1.00 (±10 %)
PC 2x36 T8 TEC	T8	4x18 W	1.00 (±10 %)
PC 2x58 T8 TEC	T8	2x58 W	1.00 (±10 %)
PC 2x58 T8 TEC	TC-L	2x55 W	0.95 (±10 %)

All data are typical values

## Ambient Temperature

-10 °C to +50 °C



The tc point is related to the ballast life duration.

PC T8 TEC is designed for an average service life of 30,000 hours under reference conditions and with a failure rate of less than 0.3 % for every 1,000 hours of operation.  
Reduced temperature will extend ballast life time.

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 (ta) before they can be operated.

#### Expected lifetime

Type	Lamp type	Lamp power	ta	40 °C	50 °C	60 °C
PC 1x18 T8 TEC	T8	1x18 W	tc	55 °C	65 °C	x
			Lifetime	50,000 h	30,000 h	x
PC 1x36 T8 TEC	T8	1x36 W	tc	55 °C	65 °C	x
			Lifetime	50,000 h	30,000 h	x
		2x18 W	tc	55 °C	65 °C	x
			Lifetime	50,000 h	30,000 h	x
PC 1x58 T8 TEC	T8	1x58 W	tc	55 °C	65 °C	x
			Lifetime	50,000 h	30,000 h	x
	TC-L	1x55 W	tc	55 °C	65 °C	x
			Lifetime	50,000 h	30,000 h	x
PC 2x18 T8 TEC	T8	2x18 W	tc	55 °C	65 °C	x
			Lifetime	50,000 h	30,000 h	x
PC 2x36 T8 TEC	T8	2x36 W	tc	60 °C	70 °C	x
			Lifetime	50,000 h	30,000 h	x
		4x18 W	tc	60 °C	70 °C	x
			Lifetime	50,000 h	30,000 h	x
PC 2x58 T8 TEC	T8	2x58 W	tc	60 °C	70 °C	x
			Lifetime	50,000 h	30,000 h	x
	TC-L	2x55 W	tc	60 °C	70 °C	x
			Lifetime	50,000 h	30,000 h	x

x = not permitted

#### Maximum loading of automatic circuit breakers

Automatic circuit	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation Ø	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>	Pulse
PC 1x18 T8 TEC	50	90	150	190	25	45	150	190	13.0 A	121 µs
PC 1x36 T8 TEC	48	62	76	95	35	60	76	95	14.1 A	121 µs
PC 1x58 T8 TEC	30	40	50	70	15	20	25	35	17.4 A	150 µs
PC 2x18 T8 TEC	48	62	75	95	34	62	75	95	11.3 A	146 µs
PC 2x36 T8 TEC	27	28	43	54	18	28	43	54	17.9 A	206 µs
PC 2x58 T8 TEC	15	20	25	35	8	10	13	18	39.5 A	139 µs

#### Wiring advice

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

Earthing is not required for the device to operate.

Connection to earth reduces radio interference.

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

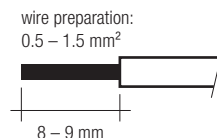
Hot leads and cold leads should be separated as much as possible.

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

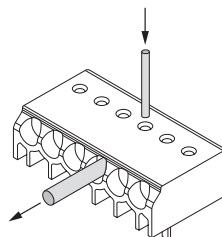
##### Wiring type and cross section

The wiring can be in flexible cable with ferrules or solid cable with a cross section of 0.5–1.5 mm<sup>2</sup>. For perfect function of the simple to use push-wire terminals the strip length should be 8–9 mm.



##### Release of the wiring

Loosen wire through twisting and pulling or using a Ø 1 mm release tool.



Ballast Type	Terminals		Maximum capacitance allowed	
	Cold	Hot	Cold	Hot
PC 1x18 T8 TEC	11, 12	13, 14	200 pF	100 pF
PC 1x36 T8 TEC	11, 12	13, 14	200 pF	100 pF
PC 1x36 T8 TEC (2x18 W application)	15, 16	11, 12, 13, 14	200 pF	100 pF
PC 1x58 T8 TEC	11, 12	13, 14	200 pF	100 pF
PC 2x18 T8 TEC	9, 10	11, 12, 13, 14	200 pF	100 pF
PC 2x36 T8 TEC	9, 10	11, 12, 13, 14	200 pF	100 pF
PC 2x36 T8 TEC (4x18 W application)	9, 10	11, 12, 13, 14	200 pF	100 pF
PC 2x58 T8 TEC	12, 13, 14	10, 11, 15, 16	200 pF	100 pF




### Defective lamp

(Broken Filament, Rectifying Effect, Gas Defect)

If a lamp is defective then the ballast will either switch off and go into the stand-by mode or it will continue to run the lamp in a safe mode of operation.

- **Ballasts for luminaires with 1 lamp:** automatic restart after lamp is replaced.
- **Ballasts for luminaires with 2 lamps:**
  - PC 1x36 T8 TEC for 2x18 W applications: automatic restart after lamp is replaced.
  - PC 2x18 T8 TEC, PC 2x36 T8 TEC: restart after mains reset.
  - PC 2x58 T8 TEC: automatic restart after lamp is replaced.
- **Ballasts for luminaires with 4 lamps:** restart after mains reset.

### T8 lamp information

	Wattage	Length
	18 W	590 mm
	36 W	1200 mm
	58 W	1500 mm

### TC-L lamp information

	wattage	length
	55 W	535 mm

### RFI

Tridonic ballasts are RFI protected in accordance with CISPR 15. 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 5–10 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

### Isolation and electric strength testing of luminaires

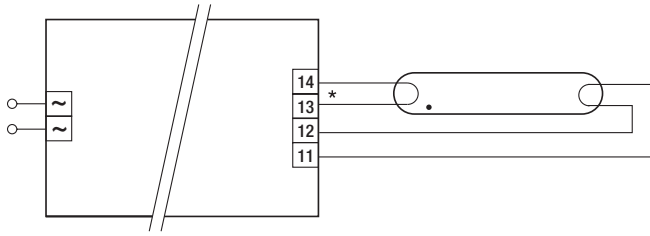
Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

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.

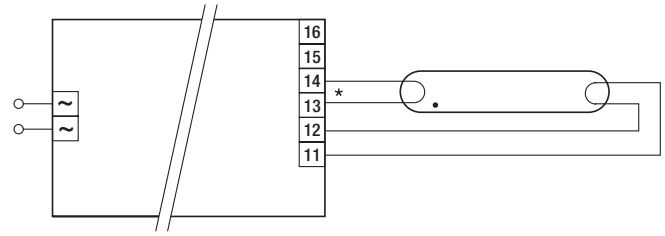
The isolation resistance must be at least 2 MΩ.

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.

## Wiring diagrams



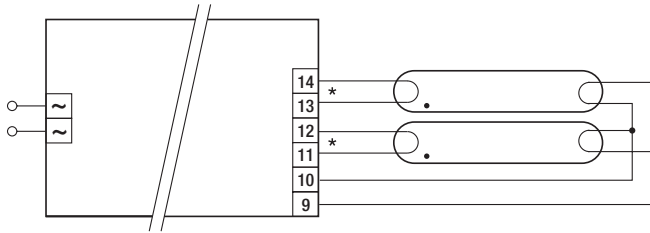
\* leads 13, 14 max. 1.0 m (< 100 pF)  
leads 11, 12 max. 2.0 m (< 200 pF)  
Protection class I – luminaires: earth of ballast housing required (according to IEC 598)  
Protection class II – luminaires: no earth required



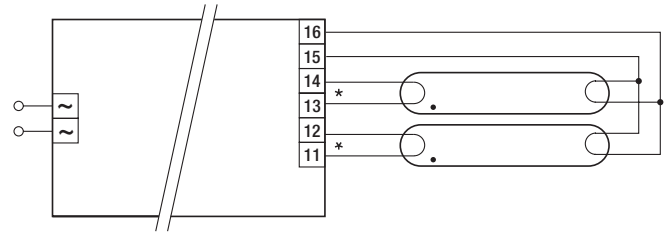
\* leads 13, 14 max. 1.0 m (< 100 pF)  
leads 11, 12 max. 2.0 m (< 200 pF)  
Protection class I – luminaires: earth of ballast housing required (according to IEC 598)  
Protection class II – luminaires: no earth required

PC 1x18 T8 TEC, art. no.: 87500113  
PC 1x58 T8 TEC, art. no.: 87500150

PC 1x36 T8 TEC, art. no.: 87500115



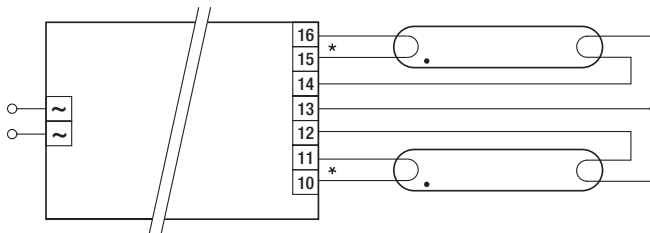
\* leads 11, 12, 13, 14 max. 1.0 m (< 100 pF)  
leads 9, 10 max. 2.0 m (< 200 pF)  
Protection class I – luminaires: earth of ballast housing required (according to IEC 598)  
Protection class II – luminaires: no earth required



\* leads 11, 12, 13, 14 max. 1.0 m (< 100 pF)  
leads 15, 16 max. 2.0 m (< 200 pF)  
Protection class I – luminaires: earth of ballast housing required (according to IEC 598)  
Protection class II – luminaires: no earth required

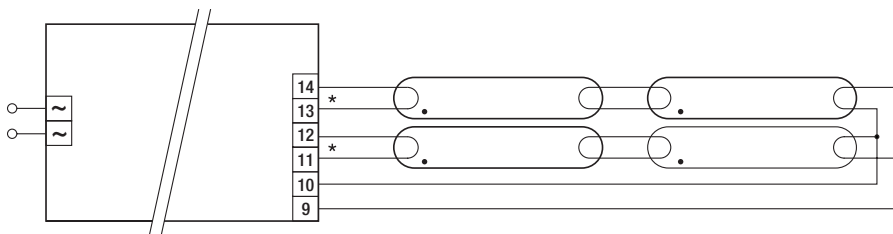
PC 2x18 T8 TEC, art. no.: 87500114  
PC 2x36 T8 TEC, art. no.: 87500116

PC 1x36 T8 TEC (2x18 W application), art. no.: 87500115



\* leads 10, 11, 15, 16 max. 1.0 m (< 100 pF)  
leads 12, 13, 14 max. 2.0 m (< 200 pF)  
Protection class I – luminaires: earth of ballast housing required (according to IEC 598)  
Protection class II – luminaires: no earth required

PC 2x58 T8 TEC, art. no.: 87500151



\* leads 11, 12, 13, 14 max. 1.0 m (< 100 pF)  
leads 9, 10 max. 2.0 m (< 200 pF)  
Protection class I – luminaires: earth of ballast housing required (according to IEC 598)  
Protection class II – luminaires: no earth required

PC 2x36 T8 TEC (4x18 W application), art. no.: 87500116

## 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.