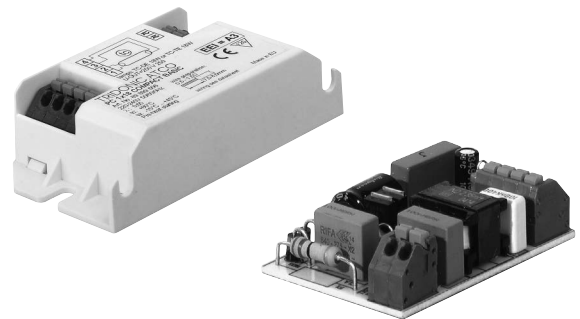
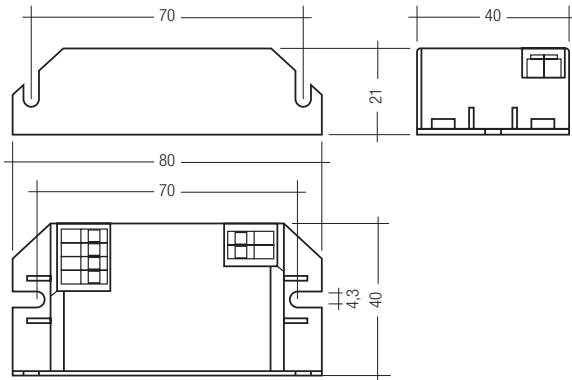


## Electronic ballasts

### Linear and compact lamps

## PC Basic 4–28 W 220–240 V 50/60/0 Hz, non dimmable



- defined lamp warm start < 2 s
- switching cycles > 25.000
- average life = 50.000 h  
(at ta max. and a failure rate of ≤ 0,2 % per 1.000 h)
- AC voltage range 198–264 V
- DC voltage range 176–264 V  
(lamp start ≥ 198 V DC)
- overvoltage protection 270 V AC, 360 h
- operating frequency ≥ 40 kHz

- wide operating temperature range from -25 °C to +50 °C
- safe switch off of defective lamps
- safe shutdown of lamps at end of life
- automatic re-start after lamp change
- thermal protection according EN 61347-1 (PC 1x26 W Basic )
- ballasts are depending on the type also available as printed circuit board without case as PC Basic PCB (information see schedule)

**Packaging:**  
25 pieces/carton  
32 carton/palett  
800 pieces/palett

**Certified:**  
EN 55015  
EN 61000-3-2  
EN 61347-2-3  
EN 61347-2-4  
EN 61547

### PC Basic:

Lamp		Ballast													
wattage W	type	type	article number	L x W x H mm	fixing centres D mm	weight g	lamp power W	circuit power W	Celma class EEI	current at 50 Hz 220 V A	240 V A	λ at 50 Hz 220 V	240 V	tc point °C	temperature range °C
4	T5	PC 1x4–13 W Basic 220–240 V 50/60/0 Hz	24138831	80x40x21	70	42	3.5	5.0	A2	0.045	0.043	0.51	0.48	80	-25 → +50
6	T5	PC 1x4–13 W Basic 220–240 V 50/60/0 Hz	24138831	80x40x21	70	42	5.0	7.0	A2	0.059	0.057	0.54	0.51	80	-25 → +50
8	T5	PC 1x4–13 W Basic 220–240 V 50/60/0 Hz	24138831	80x40x21	70	42	6.5	8.5	A2	0.067	0.063	0.58	0.56	80	-25 → +50
13	T5	PC 1x4–13 W Basic 220–240 V 50/60/0 Hz	24138831	80x40x21	70	42	11.0	15.5	A3	0.114	0.106	0.62	0.61	80	-25 → +50
5	TC-SEL	PC 1x5–16 W Basic 220–240 V 50/60/0 Hz	24138830	80x40x21	70	42	4.5	6.5	A2	0.055	0.051	0.54	0.53	85	-25 → +50
7	TC-SEL	PC 1x5–16 W Basic 220–240 V 50/60/0 Hz	24138830	80x40x21	70	42	6.0	8.0	A2	0.065	0.063	0.56	0.53	85	-25 → +50
9	TC-SEL	PC 1x5–16 W Basic 220–240 V 50/60/0 Hz	24138830	80x40x21	70	42	7.5	10.0	A2	0.078	0.073	0.58	0.57	85	-25 → +50
11	TC-SEL	PC 1x5–16 W Basic 220–240 V 50/60/0 Hz	24138830	80x40x21	70	42	11.0	15.0	A3	0.110	0.104	0.62	0.60	85	-25 → +50
10	TC-DEL	PC 1x5–16 W Basic 220–240 V 50/60/0 Hz	24138830	80x40x21	70	42	8.5	11.5	A3	0.089	0.084	0.59	0.57	85	-25 → +50
13	TC-DEL	PC 1x5–16 W Basic 220–240 V 50/60/0 Hz	24138830	80x40x21	70	42	12.0	15.5	A3	0.112	0.106	0.63	0.61	85	-25 → +50
13	TC-TEL	PC 1x5–16 W Basic 220–240 V 50/60/0 Hz	24138830	80x40x21	70	42	11.5	15.5	A3	0.112	0.106	0.63	0.61	85	-25 → +50
10	TC-DD	PC 1x4–13 W Basic 220–240 V 50/60/0 Hz	24138831	80x40x21	70	42	9.0	11.5	A3	0.087	0.081	0.60	0.59	80	-25 → +50
16	TC-DD	PC 1x5–16 W Basic 220–240 V 50/60/0 Hz	24138830	80x40x21	70	42	14.0	18.0	A3	0.130	0.121	0.63	0.62	85	-25 → +50
18	TC-TEL	PC 1x18 W Basic 220–240 V 50/60/0 Hz	24138829	80x40x21	70	42	15.0	19.0	A3	0.135	0.128	0.64	0.62	85	-25 → +50
18	TC-DEL	PC 1x18 W Basic 220–240 V 50/60/0 Hz	24138829	80x40x21	70	42	15.5	19.0	A3	0.135	0.128	0.64	0.62	85	-25 → +50
26	TC-TEL	PC 1x26 W Basic 220–240 V 50/60/0 Hz	22176208	80x40x21	70	42	21.0	24.5	A2	0.180	0.170	0.62	0.61	80	-25 → +50
26	TC-DEL	PC 1x26 W Basic 220–240 V 50/60/0 Hz	22176208	80x40x21	70	42	20.5	24.0	A2	0.180	0.170	0.62	0.61	80	-25 → +50
① 28	TC-DD	PC 1x26 W Basic 220–240 V 50/60/0 Hz	22176208	80x40x21	70	42	21.5	25.0	A2	0.180	0.170	0.62	0.61	80	-25 → +45

① For enclosed luminaires to fulfil the requirement of circuit power ≤ 25 W according to EN 61000-3-2. For AC operation only

### PC Basic PCB:

type	article number	L x W x H mm (max. dimensions)	weight g
PC 1x5–16 W Basic PCB 220–240 V 50/60/0 Hz	24138836	56.6x36.5x17.0	28
PC 1x18 W Basic PCB 220–240 V 50/60/0 Hz	24138835	56.6x36.5x17.0	28

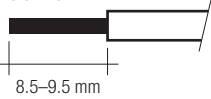
With a DC supply L and N terminals are interchangeable.

**Installation instructions**

**Wiring type and cross section**

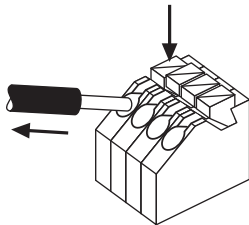
The wiring can be in flexible cable with ferules or solid with a cross section of 0.5–1.5 mm<sup>2</sup>. Strip 9.5 mm of insulation from the cables to ensure perfect operation of push-wire terminals.

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.



**Wiring advice**

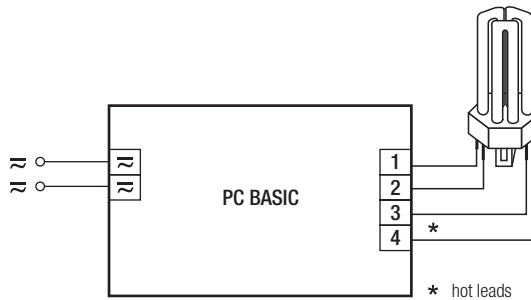
The lead length is dependent on the capacitance of the cable.

Ballast Type	Terminal		Maximum capacitance allowed	
	Cold	Hot	Cold	Hot
PC 1x4–13 W Basic	1, 2	3, 4	120 pF	60 pF
PC 1x5–16 W Basic	1, 2	3, 4	120 pF	60 pF
PC 1x18 W Basic	1, 2	3, 4	120 pF	60 pF
PC 1x26 W Basic	1, 2	3, 4	120 pF	60 pF

With standard solid wire 0.5/0.75 mm<sup>2</sup> the capacitance of the lead is 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. Lamp connection should be as short as possible and be made with symmetrical wiring.

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.)

**Circuit diagramm PC Basic**



\* leads 3, 4 max. 0.5 m (< 60 pF)  
 leads 1, 2 max. 1.0 m (< 120 pF)

**RFI**

TridonicAtco 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 must be kept as short as possible
- Mains leads should be kept apart from lamp leads (ideally 5–10 cm distance)
- Do not lead mains leads too closely along the electronic ballast
- Keep the distance of lamp leads from the metal work as large as possible
- Mains wiring to be twisted when through wiring
- Keep the mains leads inside the luminaire as short as possible

**AC operation**

Mains voltage:  
 220–240 V 50/60 Hz  
 198–264 V 50/60 Hz including safety tolerance (±10 %)  
 202–254 V 50/60 Hz including performance tolerance (+6 % / -8 %)

Min. lamp starting temperature -25 °C

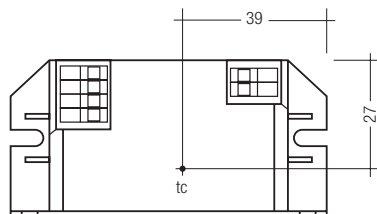
**DC operation**

220–240 V DC  
 198–264 V DC certain lamp start  
 176–264 V DC operating range

Min. lamp starting temperature -25 °C

**Temperature range**

from -25 °C to +50 °C



**Hottest point for the open PCB**

When open PCB version are supplied it is the responsibility of the fitting/housing manufacturer to ensure the circuit board is adequately protected from dust and moisture and that no live parts are accessible to the end user during operation or when changing the lamp.

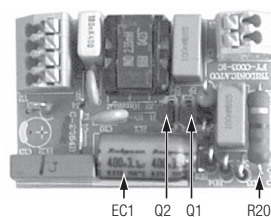
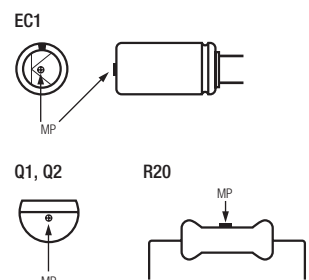
Be aware that the maximum temperature limits of the devices are not exceeded. The max. temperature values can be taken from the attached table (max. device temperature).

The exact measurement points on the devices are shown in the graphic “Temperature measurement points”.

**max. device temperature**

device	max. temperature
R20	110 °C
Q1, Q2	120 °C
EC1 (4–13 W)	85 °C
EC1 (5–16 W)	90 °C
EC1 (18 W)	95 °C

**Temperature measurement points**



### Precautions for use of open PCB (EN 61340-5-1 / EN 61340-5-2)

The ballast contains static sensitive devices. The boxed version will withstand normal handling for installation, but precautions should be taken when handling the open circuit board.

### Lamp matrix

Lamp	PC Basic 4–13 W	PC Basic 5–16 W	PC Basic 18 W	PC Basic 28 W
TC-SEL	5 W	•		
	7 W	•		
	9 W	•		
	11 W	•		
TC-DEL	10 W	•		
	13 W	•		
	18 W		•	
	26 W			•
TC-TEL	13 W	•		
	18 W	•		
	26 W			•
T5	4 W	•		
	6 W	•		
	8 W	•		
	13 W	•		
TC-DD	10 W	•		
	16 W		•	
	28 W			•

### Abnormal operation protection

All ballasts are equipped with a protection circuit against abnormal operation. The circuit is used to shut down the ballast if the lamp fails to strike, or if the lamp is defect.

The ballast can be restarted after shut down by turning off the supply for 10 seconds or by replacing the lamp.

### Ingress protection

IP 20 for boxed versions

### Protection class

The ballasts are suitable for use in class I or class II luminaires.

### Loading of automatic circuit breakers

Automatic circuit breaker type	B10	B13	B16	B20	C10	C13	C16	C20
Installation $\varnothing$	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>
PC 1x4–13 W Basic	90	117	144	181	90	117	144	181
PC 1x5–16 W Basic	80	106	130	163	80	106	130	163
PC 1x14–21 W Basic	28	54	102	127	56	83	102	127
PC 1x18 W Basic	76	99	122	153	76	99	122	153
PC 1x18–24 W Basic	28	54	90	112	56	73	90	112
PC 1x26 W Basic	28	54	88	110	56	71	88	110

Max. load per MCB at supply voltage  $U_n = 230$  V

### Harmonic distortion in the mains supply

EMC standard EN 61000-3-2 for lighting equipment with active input power  $\leq 25$  W.

All ballasts comply with the standard EN 61000-3-2 to operate lighting equipment with an active input power  $\leq 25$  W where distortion limits for current drawn from the supply are 86 % for 3<sup>rd</sup> harmonic and 61 % for 5<sup>th</sup> harmonic only.

### Remark

The EMC standard applies to the luminaire and reflects the specific properties of each fitting whether single or multi-lamp.

### Ballast lumen factor

at 230 V 50 Hz

Lamp type	wattage	BLF
T5	4 W	1.00
	6 W	1.03
	8 W	1.01
	13 W	0.98
TC-SEL	5 W	0.98
	7 W	0.96
	9 W	0.98
	11 W	1.03
TC-DEL	10 W	0.95
	13 W	0.99
	18 W	0.96
	26 W	0.91
TC-TEL	13 W	1.00
	18 W	0.96
	26 W	0.97
TC-DD	10 W	0.98
	16 W	0.99
	28 W	0.85