RoHS

T5 TC-L

PCA T5 ECO lp x:tec II, 14 – 80 W

T5 fluorescent lamps

Product description

- Processor-controlled ballast with x:tec II inside
- CELMA energy class A1 BAT[1)]
- Noise-free precise control via DSI signal, switchDIM, corridorFUNCTION or DALI
- Nominal lifetime up to 100,000 h (at ta 50 °C with a failure rate of max. 0,2 % per 1.000 h)
- Multi-lamp management
- OEM-specific reserved memory areas
- 5-year guarantee

Interfaces

- DALI
- DSI
- switchDIM (with memory function + selectable dimming rate)
- corridorFUNCTION (3 preprogrammed profiles)
- Integrated SMART-Interface for operation with SMART-Sensor 5D 19f and corridorFUNCTION plugs

Functions

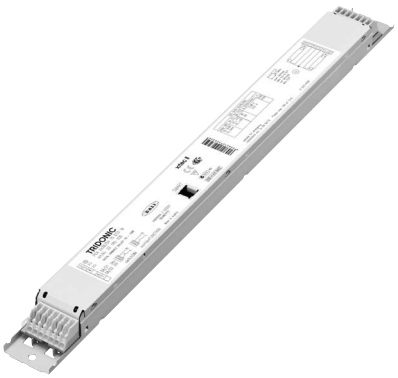
- Intelligent Temperature Guard (overtemperature protection)
- Intelligent Voltage Guard (overvoltage indication and undervoltage shutdown)
- Optimum filament heating in any dimmer setting
- Disconnection of filament heating from a dimming level of approx. 90 % for maximum energy efficiency (SMART-Heating Concept)
- corridorFUNCTION with daylight control
- Automatically triggered emergency lighting value in DC mode, 15 %
- For emergency lighting systems as per EN 50172
- Automatic start after replacement of defective lamps
- Automatic shutdown if the lamp is faulty

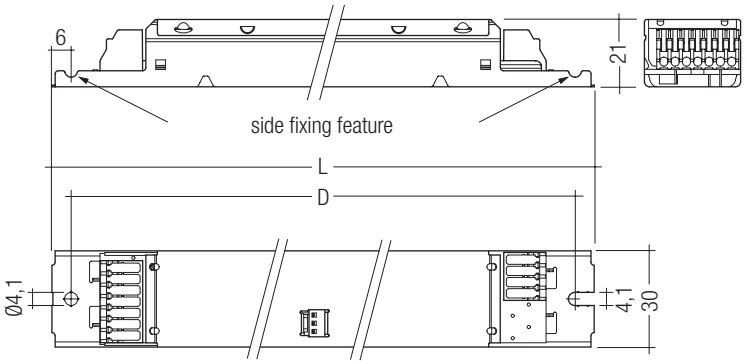
1) according to the EU directives on ecodesign requirements (EC) No. 245/2009 and (EC) No. 347/2010

→

Standards, page 3

Wiring diagrams and installation examples, page 8





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
Typ. power input on standby	< 0.2 W
Protective hot restart	0.5 s for AC / 0.2 s for DC
Dimming range	1 – 100 %
Lamp start possible from	1 %
Operating frequency	~40 – 130 kHz
Height	21 mm

Ordering data

Type	Article number
For luminaires with 1 lamp	
PCA 1x14/24 T5 ECO lp x:tec II	**22185094**
PCA 1x21/39 T5 ECO lp x:tec II	**22185101**
PCA 1x28/54 T5 ECO lp x:tec II	**22185099**
PCA 1x35/49/80 T5 ECO lp x:tec II	**22185096**
For luminaires with 2 lamps	
PCA 2x14/24 T5 ECO lp x:tec II	**22185095**
PCA 2x21/39 T5 ECO lp x:tec II	**22185102**
PCA 2x28/54 T5 ECO lp x:tec II	**22185100**
PCA 2x35/49 T5 ECO lp x:tec II	**22185097**
PCA 2x80 T5 ECO lp x:tec II	**22185098**

Packaging 360 mm casing: 10 pieces/carton, 760 pieces/pallet

Packaging 425 mm casing: 10 pieces/carton, 640 pieces/pallet

Specific technical data

Lamp wattage	Lamp type	Type	Article number	Length L	Hole spacing D	Weight	Circuit power[1]	Lamp wattage[1]	EEI	Current at 230 V / 50 Hz[1]	λ at 50 Hz / 230 V	tc point	Ambient temperature ta[2]
For luminaires with 1 lamp													
1 x 14 W	T5	**PCA 1x14/24 T5 ECO lp xitec II**	22185094	360 mm	350 mm	0.25 kg	16.0 W	14 W	A1 BAT	0.08 A	0.95	80 °C	-25 ... 70 °C
1 x 24 W	T5	**PCA 1x14/24 T5 ECO lp xitec II**	22185094	360 mm	350 mm	0.25 kg	25.5 W	23 W	A1 BAT	0.12 A	0.97	80 °C	-25 ... 70 °C
1 x 21 W	T5	**PCA 1x21/39 T5 ECO lp xitec II**	22185101	360 mm	350 mm	0.25 kg	23.0 W	21 W	A1 BAT	0.11 A	0.95	80 °C	-25 ... 70 °C
1 x 36 W	TC-L	**PCA 1x21/39 T5 ECO lp xitec II**	22185101	360 mm	350 mm	0.25 kg	35.5 W	32 W	A1 BAT	0.16 A	0.96	80 °C	-25 ... 65 °C
1 x 39 W	T5	**PCA 1x21/39 T5 ECO lp xitec II**	22185101	360 mm	350 mm	0.25 kg	41.5 W	38 W	A1 BAT	0.19 A	0.97	80 °C	-25 ... 65 °C
1 x 40 W	TC-L	**PCA 1x21/39 T5 ECO lp xitec II**	22185101	360 mm	350 mm	0.25 kg	43.0 W	40 W	A1 BAT	0.20 A	0.98	80 °C	-25 ... 65 °C
1 x 28 W	T5	**PCA 1x28/54 T5 ECO lp xitec II**	22185099	360 mm	350 mm	0.25 kg	31.5 W	28 W	A1 BAT	0.14 A	0.95	80 °C	-25 ... 75 °C
1 x 54 W	T5	**PCA 1x28/54 T5 ECO lp xitec II**	22185099	360 mm	350 mm	0.25 kg	58.0 W	54 W	A1 BAT	0.26 A	0.98	80 °C	-25 ... 70 °C
1 x 35 W	T5	**PCA 1x35/49/80 T5 ECO lp xitec II**	22185096	360 mm	350 mm	0.25 kg	39.0 W	35 W	A1 BAT	0.18 A	0.95	85 °C	-25 ... 75 °C
1 x 49 W	T5	**PCA 1x35/49/80 T5 ECO lp xitec II**	22185096	360 mm	350 mm	0.25 kg	53.5 W	49 W	A1 BAT	0.25 A	0.97	80 °C	-25 ... 70 °C
1 x 55 W	TC-L	**PCA 1x35/49/80 T5 ECO lp xitec II**	22185096	360 mm	350 mm	0.25 kg	60.0 W	55 W	A1 BAT	0.28 A	0.97	80 °C	-25 ... 60 °C
1 x 80 W	T5	**PCA 1x35/49/80 T5 ECO lp xitec II**	22185096	360 mm	350 mm	0.25 kg	85.5 W	80 W	A1 BAT	0.40 A	0.99	80 °C	-25 ... 60 °C
1 x 80 W	TC-L	**PCA 1x35/49/80 T5 ECO lp xitec II**	22185096	360 mm	350 mm	0.25 kg	85.5 W	80 W	A1 BAT	0.36 A	0.98	80 °C	-25 ... 60 °C
For luminaires with 2 lamps													
2 x 14 W	T5	**PCA 2x14/24 T5 ECO lp xitec II**	22185095	360 mm	350 mm	0.25 kg	31.0 W	28 W	A1 BAT	0.14 A	0.96	80 °C	-25 ... 70 °C
2 x 18 W	TC-L	**PCA 2x14/24 T5 ECO lp xitec II**	22185095	360 mm	350 mm	0.25 kg	38.0 W	32 W	A1 BAT	0.15 A	0.96	80 °C	-25 ... 65 °C
2 x 24 W	T5	**PCA 2x14/24 T5 ECO lp xitec II**	22185095	360 mm	350 mm	0.25 kg	49.5 W	45 W	A1 BAT	0.22 A	0.98	80 °C	-25 ... 65 °C
2 x 24 W	TC-L	**PCA 2x14/24 T5 ECO lp xitec II**	22185095	360 mm	350 mm	0.25 kg	49.0 W	44 W	A1 BAT	0.21 A	0.98	80 °C	-25 ... 65 °C
2 x 21 W	T5	**PCA 2x21/39 T5 ECO lp xitec II**	22185102	360 mm	350 mm	0.25 kg	45.5 W	41 W	A1 BAT	0.21 A	0.96	85 °C	-25 ... 70 °C
2 x 36 W	TC-L	**PCA 2x21/39 T5 ECO lp xitec II**	22185102	360 mm	350 mm	0.25 kg	71.0 W	64 W	A1 BAT	0.31 A	0.98	85 °C	-25 ... 65 °C
2 x 39 W	T5	**PCA 2x21/39 T5 ECO lp xitec II**	22185102	360 mm	350 mm	0.25 kg	85.0 W	76 W	A1 BAT	0.37 A	0.98	85 °C	-25 ... 65 °C
2 x 40 W	TC-L	**PCA 2x21/39 T5 ECO lp xitec II**	22185102	360 mm	350 mm	0.25 kg	86.0 W	80 W	A1 BAT	0.40 A	0.99	85 °C	-25 ... 65 °C
2 x 28 W	T5	**PCA 2x28/54 T5 ECO lp xitec II**	22185100	425 mm	415 mm	0.35 kg	61.0 W	56 W	A1 BAT	0.28 A	0.96	80 °C	-25 ... 70 °C
2 x 54 W	T5	**PCA 2x28/54 T5 ECO lp xitec II**	22185100	425 mm	415 mm	0.35 kg	117.0 W	108 W	A1 BAT	0.51 A	0.99	80 °C	-25 ... 55 °C
2 x 35 W	T5	**PCA 2x35/49 T5 ECO lp xitec II**	22185097	360 mm	350 mm	0.25 kg	74.5 W	70 W	A1 BAT	0.34 A	0.97	80 °C	-25 ... 65 °C
2 x 49 W	T5	**PCA 2x35/49 T5 ECO lp xitec II**	22185097	360 mm	350 mm	0.25 kg	106.0 W	98 W	A1 BAT	0.49 A	0.98	80 °C	-25 ... 60 °C
2 x 55 W	TC-L	**PCA 2x80 T5 ECO lp xitec II**	22185098	425 mm	415 mm	0.35 kg	117.0 W	110 W	A1 BAT	0.55 A	0.99	75 °C	-25 ... 55 °C
2 x 80 W	T5	**PCA 2x80 T5 ECO lp xitec II**	22185098	425 mm	415 mm	0.35 kg	167.5 W	160 W	A1 BAT	0.71 A	0.99	75 °C	-25 ... 55 °C

[1] Valid at 100 % dimming level.

[2] +10 °C to ta max: unrestricted dimming. -25 °C to +10 °C: unrestricted dimming from 100 % to 30 %.
-25 °C to +10 °C. dimming below 30 %: malfunction possible but no damage to ECG. This applies to AC and DC operation.

Standards
EN 55015
EN 55022
EN 60929
EN 61000-3-2
EN 61347-2-3
EN 61547
Suitable for emergency installations according to
EN 50172
CISPR 15
CISPR 22
IEC 60929
IEC 61000-3-2
IEC 61347-2-3
IEC 61547
IEC 62386

Lamp starting characteristics
Warm start
Starting time 0.5 s with AC
Starting time 0.2 s with DC
Start at any dimming level

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

DC operation
220–240 V 0 Hz
198–254 V 0 Hz certain lamp start
176–280 V 0 Hz operating range
Use in emergency lighting installations according to EN 50172 or for emergency luminaires according to EN 61347-2-3 appendix J.

Mains current for defective or missing lamps at DC operation < 35 mA.

Light output level in DC operation
Default value is 15 %

Emergency units
The "PCA T5 ECO lp x:tec II" ballasts are compatible with all emergency units from Tridonic. See the table in the data sheet. Also all "5-pole" emergency units can be used. When used with other emergency units tests are necessary.

Temperature range
Unlimited dimming range from 10 °C to ta max.
-25 °C to 10 °C: dimming operation from 100 % to 30 %. If dimm level goes below 30 % malfunction possible, but no electronic ballast damage.
This applies to AC and DC operation.

Mains currents in DC operation (at 15 % light output)

Type	Lamp type	Wattage	Mains current at U_n = 220 V_{DC}	Mains current at U_n = 275 V_{DC}
PCA 1x14/24 T5 ECO lp x:tec II	T5	1 x 14 W	0.04 A	0.04 A
	T5	1 x 24 W	0.05 A	0.05 A
PCA 1x21/39 T5 ECO lp x:tec II	T5	1 x 21 W	0.05 A	0.04 A
	TC-L	1 x 36 W	0.07 A	0.06 A
	T5	1 x 39 W	0.07 A	0.07 A
	TC-L	1 x 40 W	0.07 A	0.06 A
PCA 1x28/54 T5 ECO lp x:tec II	T5	1 x 28 W	0.06 A	0.06 A
	T5	1 x 54 W	0.11 A	0.10 A
PCA 1x35/49/80 T5 ECO lp x:tec II	T5	1 x 35 W	0.07 A	0.06 A
	T5	1 x 49 W	0.09 A	0.08 A
	TC-L	1 x 55 W	0.11 A	0.10 A
	T5	1 x 80 W	0.14 A	0.13 A
	TC-L	1 x 80 W	0.13 A	0.12 A
PCA 2x14/24 T5 ECO lp x:tec II	T5	2 x 14 W	0.07 A	0.06 A
	TC-L	2 x 18 W	0.07 A	0.06 A
	T5	2 x 24 W	0.10 A	0.09 A
	TC-L	2 x 24 W	0.09 A	0.09 A
PCA 2x21/39 T5 ECO lp x:tec II	T5	2 x 21 W	0.08 A	0.07 A
	TC-L	2 x 36 W	0.12 A	0.11 A
	T5	2 x 39 W	0.13 A	0.12 A
	TC-L	2 x 40 W	0.13 A	0.12 A
PCA 2x28/54 T5 ECO lp x:tec II	T5	2 x 28 W	0.10 A	0.10 A
	T5	2 x 54 W	0.20 A	0.18 A
PCA 2x35/49 T5 ECO lp x:tec II	T5	2 x 35 W	0.12 A	0.11 A
	T5	2 x 49 W	0.16 A	0.15 A
PCA 2x80 T5 ECO lp x:tec II	TC-L	2 x 55 W	0.20 A	0.19 A
	T5	2 x 80 W	0.27 A	0.25 A

Ballast lumen factor AC operation (AC-BLF) EN 60929 8.1

Type	Lamp type	Wattage	AC-BLF at U = 230 V_{AC}
PCA 1x14/24 T5 ECO lp x:tec II	T5	1 x 14 W	1.00
	T5	1 x 24 W	1.01
PCA 1x21/39 T5 ECO lp x:tec II	T5	1 x 21 W	0.99
	TC-L	1 x 36 W	0.97
	T5	1 x 39 W	1.01
	TC-L	1 x 40 W	1.05
PCA 1x28/54 T5 ECO lp x:tec II	T5	1 x 28 W	0.98
	T5	1 x 54 W	1.02
PCA 1x35/49/80 T5 ECO lp x:tec II	T5	1 x 35 W	1.00
	T5	1 x 49 W	1.00
	TC-L	1 x 55 W	1.02
	T5	1 x 80 W	1.02
	TC-L	1 x 80 W	1.04
PCA 2x14/24 T5 ECO lp x:tec II	T5	2 x 14 W	1.01
	TC-L	2 x 18 W	0.90
	T5	2 x 24 W	1.00
	TC-L	2 x 24 W	0.98
PCA 2x21/39 T5 ECO lp x:tec II	T5	2 x 21 W	0.97
	TC-L	2 x 36 W	0.97
	T5	2 x 39 W	0.98
	TC-L	2 x 40 W	1.05
PCA 2x28/54 T5 ECO lp x:tec II	T5	2 x 28 W	1.00
	T5	2 x 54 W	1.00
PCA 2x35/49 T5 ECO lp x:tec II	T5	2 x 35 W	1.01
	T5	2 x 49 W	1.02
PCA 2x80 T5 ECO lp x:tec II	TC-L	2 x 55 W	1.03
	T5	2 x 80 W	1.02

The ballast lumen factor for AC operation (AC-BLF) does not alter from U_n = 198 V AC to U_n = 254 V AC.
The ballast lumen factor for DC operation (DC-BLF) on the basis of an automatic power reduction of the ballasts (default value is 15 %) will be smaller than AC. It does not alter in the DC operating range (198–264 V DC).

Dimming

Dimming curve is adapted to the eye sensitiveness.
Dimming range 1 % to 100 %
Digital control with:

- DSI signal: 8 bit Manchester Code
  Speed 1 % to 100 % in 1.4 s
- DALI signal: 16 bit Manchester Code
  Maximum speed 1 % to 100 % in 550 ms
  (adjustable between 100 ms and 90 s)
  Programmable parameter:
  Minimum dimming level
  Maximum dimming level
  Default minimum = 1 %
  Default maximum = 100 %

Control input (DA/D1, DA/D2)

Digital DALI/DSI signal or a push-to-make switch (switchDIM) or a motion detector (corridorFUNCTION) can be wired on the same terminals (DA/D1 and DA/D2).

Digital signal DALI/DSI

The control input is non-polar and protected against accidental connection with a mains voltage up to 264 V. The control signal is not SELV. Control cable has to be installed in accordance to the requirements of low voltage installations.
Different functions depending on each module.

SMART interface

An additional interface for the direct connection of the SMART-Sensor 5D 19f[1)] or corridorFUNCTION plugs.
Application and functionallity see corridorFUNCTION user manual.
SMART-Sensor 5D 19f[1)] light sensor operating mode:
The sensor registers actual ambient light and maintains the individually defined constant lux level.
After every mains reset the SMART interface automatically checks for an installed sensor. With the sensor installed the PCA T5 ECO lp xitec II automatically runs in the constant lux level mode.
ON/OFF switch via mains, switchDIM or DSI signal.
DSI signal = 0 switches off,
DSI signal ≥ 1 switches on.
With switchDIM signals it is possible to change the controlled light level temporarily.
Temporarily means that after a switching cycle OFF/ON command the ballast will start at the preset value determined by the SMART-Sensor 5D 19f. The installation of the two wire bus is according to the appropriate low voltage regulations.

[1)] SMART-Sensor 5D 19f: article number 86459169

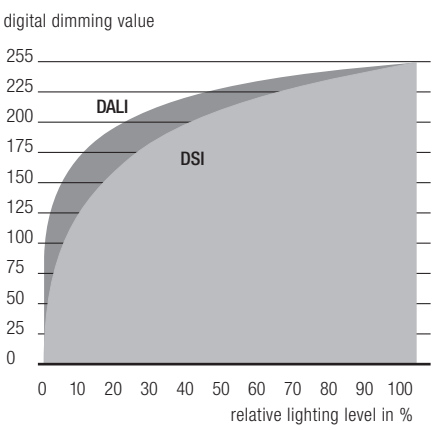
switchDIM

Integrated switchDIM function allows a direct connection of a push to make switch for dimming and switching.
Brief push (< 0.6 s) switches ballast ON and OFF. The ballasts switch-ON at light level set at switch-OFF. After switch ON the last settet dimming level will be activated again.
When the push to make switch is held, PCA ballasts are dimmed. After repush the PCA is dimmed in the opposite direction.
The switchDIM fade time is set to 3 s from min. to max. in the factory settings. With a 20 s push to the push to make switch this fade time can be changed to 6 s. In this instance the switchDIM application will be synchronized to 50 % light level after 10 s and after 20 s the light level rises to 100 % with the new fade time.
At every synchronizsation (10 s keystroke) the device will reset to 3 s (factory setting)
In installations with PCAs with different dimming levels or opposite dimming directions (e.g. after a system extension), all PCAs can be synchronized to 50 % dimming level by a 10 s push.
Use of push to make switch with indicator lamp is not permitted.
switchDIM and corridorFUNCTION are very simple tools for controlling ballasts with conventional momentary-action switches or motion sensors. To ensure correct operation a sinusoidal mains voltage with a frequency of 50 Hz or 60 Hz is required at the control input. Special attention must be paid to achieving clear zero crossings. Serious mains faults may impair the operation of switchDIM and corridorFUNCTION.

corridorFUNCTION

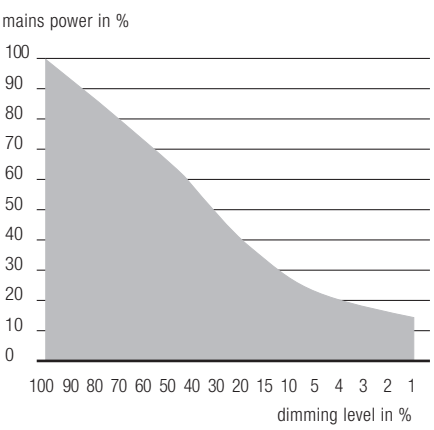
To activate the corridorFUNCTION a voltage of 230 V simply has to be applied for five minutes at switchDIM connection. The unit will then switch automatically to the corridorFUNCTION.
Note: If the corridorFUNCTION is wrongly activated in a switchDIM system (for example a switch is used instead of pushbutton), there is the option of installing a pushbutton and deactivating the corridorFUNCTION mode by five short pushes of the button within three seconds.
The corridorFUNCTION offers the added benefit of a second and third preprogrammed profile, which can be activated by the corridorFUNCTION plugs. It is also possible to combine the corridorFUNCTION with the SMART-Sensor 5D 19f light sensor.
Application and functionallity of profiles see user manual of the corridorFUNCTION.

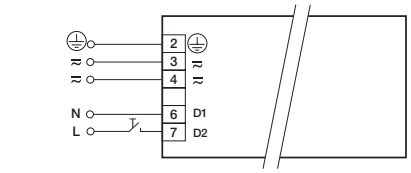
Dimming characteristics
PCA T5 ECO lp xitec II



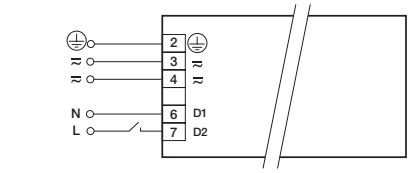
Dimming characteristics as seen by the human eye

Energy saving
PCA T5 ECO lp xitec II

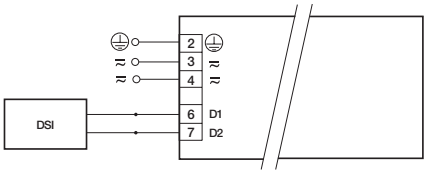




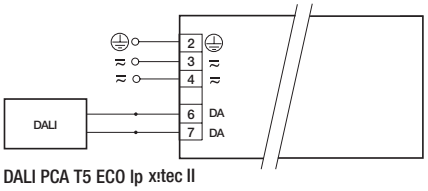
switchDIM PCA T5 ECO lp xitec II



corridorFUNCTION PCA T5 ECO lp xitec II



DSI PCA T5 ECO lp xitec II



DALI PCA T5 ECO lp xitec II

Loading of automatic circuit breakers (Limitation via inrush current)

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current (1.5 mm²)		Inrush current (2.5 mm²)	
Installation Ø	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	I_{max}	time	I_{max}	time
PCA 1x14/24 T5 ECO lp xıtec II	50	80	150	180	25	40	75	90	19.3 A	144 µs	19.6 A	147 µs
PCA 1x21/39 T5 ECO lp xıtec II	34	50	76	86	17	25	38	43	25.3 A	190 µs	25.1 A	192 µs
PCA 1x28/54 T5 ECO lp xıtec II	22	32	46	52	11	16	23	26	26.6 A	235 µs	28.5 A	223 µs
PCA 1x35/49/80 T5 ECO lp xıtec II	16	22	28	34	8	11	14	17	31.2 A	271 µs	31.2 A	273 µs
PCA 2x14/24 T5 ECO lp xıtec II	22	32	44	50	11	16	22	25	28.1 A	227 µs	28.3 A	227 µs
PCA 2x21/39 T5 ECO lp xıtec II	16	22	28	34	8	11	14	17	37.2 A	207 µs	38.8 A	203 µs
PCA 2x28/54 T5 ECO lp xıtec II	16	22	30	36	8	11	15	18	28.9 A	288 µs	30.3 A	282 µs
PCA 2x35/49 T5 ECO lp xıtec II	16	22	30	34	8	11	15	17	33.0 A	241 µs	33.9 A	240 µs
PCA 2x80 T5 ECO lp xıtec II	8	12	18	20	4	6	9	10	48.3 A	261 µs	50.1 A	258 µs

Continuous operation: to calculate the protective saftey switch see main current, page 2

Intelligent Voltage Guard

Intelligent Voltage Guard is the name of the electronic monitor from Tridonic. This innovative feature of the PCA family of control gear from Tridonic immediately shows if the mains voltage rises above certain thresholds. Measures can then be taken quickly to prevent damage to the control gear.

- If the mains voltage rises above approx. 318 V_{rms} (voltage depends on the ballast type), the lamp starts flashing on and off.
- To avoid a damage of the device the mains supply has to be switched off at this signal.

Intelligent Temperature Guard

The intelligent temperature guard protects the PCA T5 ECO lp xıtec II from thermal overheating by reducing the output power or switching off in case of operation above the thermal limits of the luminaire or ballast. Depending on the luminaire design, the ITG operates at about 5 to 10 °C above tc temperature.

Harmonic distortion in the mains supply (at 230 V / 50 Hz)

Type	Lamp type	Wattage	THD	3	5	7	9	11
PCA 1x14/24 T5 ECO lp xıtec II	T5	1 x 14 W	9	6	3	3	1	1
	T5	1 x 24 W	9	6	2	3	1	1
PCA 1x21/39 T5 ECO lp xıtec II	T5	1 x 21 W	9	4	3	2	2	2
	TC-L	1 x 36 W	8	4	2	1	1	1
	T5	1 x 39 W	7	4	2	1	1	1
	TC-L	1 x 40 W	6	4	1	1	1	1
PCA 1x28/54 T5 ECO lp xıtec II	T5	1 x 28 W	10	4	2	2	2	2
	T5	1 x 54 W	6	4	1	1	1	1
PCA 1x35/49/80 T5 ECO lp xıtec II	T5	1 x 35 W	10	6	2	3	3	3
	T5	1 x 49 W	10	8	3	3	2	2
	TC-L	1 x 55 W	7	5	1	1	1	2
	T5	1 x 80 W	6	5	1	1	1	1
	TC-L	1 x 80 W	6	5	1	1	1	1
PCA 2x14/24 T5 ECO lp xıtec II	T5	2 x 14 W	8	1	3	1	1	2
	TC-L	2 x 18 W	7	1	2	1	1	2
	T5	2 x 24 W	5	1	2	1	1	1
	TC-L	2 x 24 W	6	1	2	1	1	1
PCA 2x21/39 T5 ECO lp xıtec II	T5	2 x 21 W	10	7	3	4	4	2
	TC-L	2 x 36 W	7	4	1	1	2	1
	T5	2 x 39 W	6	4	1	1	1	1
	TC-L	2 x 40 W	6	4	1	1	1	1
PCA 2x28/54 T5 ECO lp xıtec II	T5	2 x 28 W	10	7	2	2	2	2
	T5	2 x 54 W	8	6	1	1	1	1
PCA 2x35/49 T5 ECO lp xıtec II	T5	2 x 35 W	9	5	1	1	2	2
	T5	2 x 49 W	7	6	1	1	1	1
PCA 2x80 T5 ECO lp xıtec II	TC-L	2 x 55 W	6	4	2	1	1	1
	T5	2 x 80 W	5	4	2	1	1	1

Operating voltage

Type	Lamp type	Wattage	U_{out}
PCA 1x14/24 T5 ECO lp xıtec II	T5	1 x 14 W	430 V
	T5	1 x 24 W	430 V
PCA 1x21/39 T5 ECO lp xıtec II	T5	1 x 21 W	430 V
	TC-L	1 x 36 W	430 V
	T5	1 x 39 W	430 V
	TC-L	1 x 40 W	430 V
PCA 1x28/54 T5 ECO lp xıtec II	T5	1 x 28 W	430 V
	T5	1 x 54 W	430 V
PCA 1x35/49/80 T5 ECO lp xıtec II	T5	1 x 35 W	430 V
	T5	1 x 49 W	430 V
	TC-L	1 x 55 W	430 V
	T5	1 x 80 W	430 V
	TC-L	1 x 80 W	430 V
PCA 2x14/24 T5 ECO lp xıtec II	T5	2 x 14 W	430 V
	TC-L	2 x 18 W	430 V
	T5	2 x 24 W	430 V
	TC-L	2 x 24 W	430 V
PCA 2x21/39 T5 ECO lp xıtec II	T5	2 x 21 W	430 V
	TC-L	2 x 36 W	430 V
	T5	2 x 39 W	430 V
	TC-L	2 x 40 W	430 V
PCA 2x28/54 T5 ECO lp xıtec II	T5	2 x 28 W	430 V
	T5	2 x 54 W	430 V
PCA 2x35/49 T5 ECO lp xıtec II	T5	2 x 35 W	430 V
	T5	2 x 49 W	430 V
PCA 2x80 T5 ECO lp xıtec II	TC-L	2 x 55 W	430 V
	T5	2 x 80 W	430 V

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

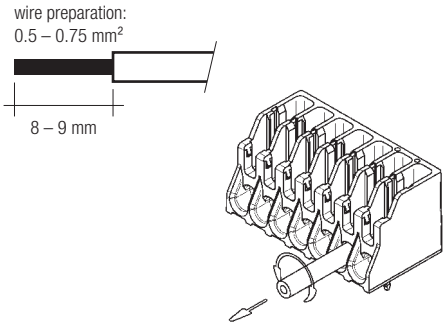
Type	Lamp type	Wattage		ta = 40 °C	ta = 50 °C	ta = 60 °C
PCA 1x14/24 T5 ECO lp xɪtec II	T5	1 x 14 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	T5	1 x 24 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
PCA 1x21/39 T5 ECO lp xɪtec II	T5	1 x 21 W	tc	50 °C	60 °C	70 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	TC-L	1 x 36 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	T5	1 x 39 W	tc	50 °C	60 °C	70 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	TC-L	1 x 40 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
PCA 1x28/54 T5 ECO lp xɪtec II	T5	1 x 28 W	tc	50 °C	60 °C	70 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	T5	1 x 54 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	90,000 h
PCA 1x35/49/80 T5 ECO lp xɪtec II	T5	1 x 35 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	T5	1 x 49 W	tc	55 °C	60 °C	70 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	TC-L	1 x 55 W	tc	65 °C	70 °C	80 °C
			Lifetime	> 100,000 h	> 100,000 h	50,000 h
	T5	1 x 80 W	tc	65 °C	70 °C	80 °C
			Lifetime	> 100,000 h	> 100,000 h	50,000 h
	TC-L	1 x 80 W	tc	65 °C	70 °C	80 °C
			Lifetime	> 100,000 h	> 100,000 h	50,000 h
PCA 2x14/24 T5 ECO lp xɪtec II	T5	2 x 14 W	tc	50 °C	60 °C	70 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	TC-L	2 x 18 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	90,000 h
	T5	2 x 24 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	90,000 h
	TC-L	2 x 24 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	90,000 h
PCA 2x21/39 T5 ECO lp xɪtec II	T5	2 x 21 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	TC-L	2 x 36 W	tc	60 °C	70 °C	80 °C
			Lifetime	> 100.000 h	> 100.000 h	90.000 h
	T5	2 x 39 W	tc	60 °C	70 °C	80 °C
			Lifetime	> 100.000 h	> 100.000 h	70.000 h
	TC-L	2 x 40 W	tc	60 °C	70 °C	80 °C
			Lifetime	> 100.000 h	> 100.000 h	80.000 h
PCA 2x28/54 T5 ECO lp xɪtec II	T5	2 x 28 W	tc	55 °C	60 °C	70 °
			Lifetime	> 100,000 h	> 100,000 h	> 100,000 h
	T5	2 x 54 W	tc	65 °C	75 °C	x
			Lifetime	> 100,000 h	70,000 h	x
PCA 2x35/49 T5 ECO lp xɪtec II	T5	2 x 35 W	tc	55 °C	65 °C	75 °C
			Lifetime	> 100,000 h	> 100,000 h	80,000 h
	T5	2 x 49 W	tc	65 °C	75 °C	80 °C
			Lifetime	> 100,000 h	80,000 h	50,000 h
PCA 2x80 T5 ECO lp xɪtec II	TC-L	2 x 55 W	tc	65 °C	75 °C	x
			Lifetime	> 100,000 h	80,000 h	x
	T5	2 x 80 W	tc	65 °C	70 °C	x
			Lifetime	> 100,000 h	80,000 h	x

x = not permitted

Installation instructions

Wiring type and cross section

The wiring can be solid cable with a cross section of 0.5 to 0.75 mm² for push terminal and 0.5 mm² for IDC terminal. For the push-wire connection you have to strip the insulation (8–9 mm).



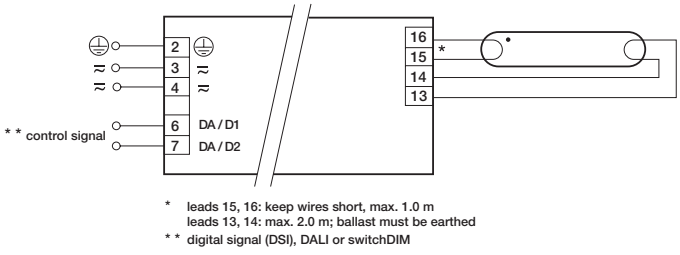
Wiring advice

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

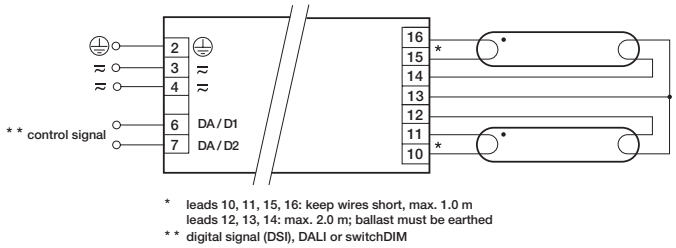
Ballast	Terminal		Maximum capacitance allowed	
Type	Cold	Hot	Cold	Hot
PCA 1xx T5 ECO lp x:tec II	13, 14	15, 16	200 pF	100 pF
PCA 2xx T5 ECO lp x:tec II	12, 13, 14	10, 11, 15, 16	200 pF	100 pF

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.
Hot leads (10, 11, 15, 16) and cold leads (12, 13, 14) should be separated as much as possible.
When using two or more dimmable ballasts in one luminaire with separate dimming controls, the lamp leads must be kept separate.

Dimmable ballasts from Tridonic have to be earthed.



PCA T5 ECO lp x:tec II 1x14–80 W



PCA T5 ECO lp x:tec II 2x14–80 W

Dimmable ballasts from Tridonic have to be earthed.

RFI

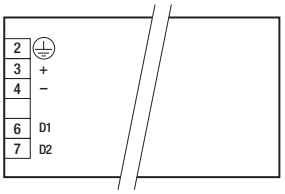
- Connection to the lamps of the hot leads must be kept as short as possible
- Mains leads should be kept apart from lamp leads (ideally 5–10 cm distance)
- Do not run mains leads adjacent to the electronic ballast
- Twist the lamp leads
- Keep the distance of lamp leads from the metal work as large as possible
- Mains wiring to be twisted when through wiring
- Keep the mains leads inside the luminaire as short as possible

General advise

Electronic ballasts are virtually noise free.
Magnetic fields generated during the ignition cycle can cause some background noise but only for a few milliseconds.

Operation on DC voltage

Our ballasts are construed to operate DC voltage and pulsed DC voltage.
To operate ballasts with pulsed DC voltage the polarity is absolute mandatory.



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 VDC 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 VAC (or 1.414 x 1500 VDC). To avoid damage to the electronic devices this test must not be conducted.

ⓘ For further technical information please visit www.tridonic.com