

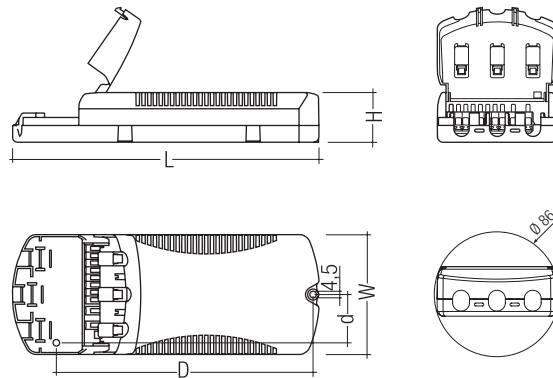


powerCONTROL PCI PRO C021 Single

Surface-mounted applications

Product description

- For metal halide lamps
- Also for mobile luminaires with connectors
- Pulse packets for increased ignition energy (pulseCONTROL technology)
- With patented circuit elements
- Flicker-free light
- Colour stability thanks to constant power
- Guaranteed long life
- No acoustic resonance
- Safety shutdown if a lamp is faulty or missing
- Greatly reduced reignition time
- Hardly any EMC interference in the ignition phase
- Automatic shutdown on overheating
- Through-wiring possible
- No tools required for installing the terminal cover and cable clamps
- Plug-in terminals up to 2.5 mm²
- 3 separate strain relief channels
- Casing: polycarbonate, black



Technical data

AC voltage range	198 – 254 V
DC voltage range	198 – 320 V
Mains frequency	0 / 50 / 60 Hz
Operating frequency	145 Hz
Max. ignition voltage	5 kV ₀
Type of protection	IP20



Standards, page 2

Wiring diagrams and installation examples, page 2

Ordering data

Lamp wattage	Lamp type	Type	Article number
For luminaires with 1 lamp			
1 x 20 W	HI	PCI 20 PRO C021	86459018
1 x 22 W	HI	PCI 22 PRO C021	86459021
1 x 35 W	HI	PCI 35 PRO C021	86458606
1 x 50 W	HI	PCI 50 PRO C021	86459308
1 x 70 W	HI	PCI 70 PRO C021	86458607
1 x 150 W	HI	PCI 150 PRO C021	86458608

Packaging: 15 pieces/carton, 720 pieces/pallet

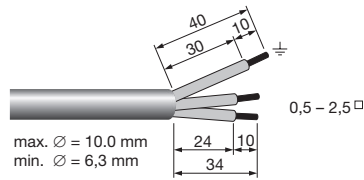
Specific technical data

Type	Dimensions LxWxH	Hole spacing D	Hole spacing d	Weight	Mains current	Lamp wattage	Circuit power	λ	Max. cable length to lamp	tc point max	Ambient temperature ta	tc/ta for ≥ 50.000 h
For luminaires with 1 lamp												
PCI 20 PRO C021	159.4x82x34 mm	125.5 mm	33 mm	0.25 kg	0.10 A	20 W	23.0 W	0.95	2 m / 160 pF	70 °C	-25 ... +65 °C	70/65 °C
PCI 22 PRO C021	159.4x82x34 mm	125.5 mm	33 mm	0.25 kg	0.11 A	22 W	25.5 W	0.95	2 m / 160 pF	70 °C	-25 ... +65 °C	70/65 °C
PCI 35 PRO C021	159.4x82x34 mm	125.5 mm	33 mm	0.25 kg	0.20 A	39 W	43.5 W	0.97	5 m / 400 pF	80 °C	-25 ... +65 °C	80/65 °C
PCI 50 PRO C021	159.4x82x34 mm	125.5 mm	33 mm	0.26 kg	0.25 A	50 W	55.0 W	0.96	5 m / 400 pF	75 °C	-25 ... +60 °C	75/60 °C
PCI 70 PRO C021	159.4x82x34 mm	125.5 mm	33 mm	0.26 kg	0.35 A	73 W	79.0 W	0.97	5 m / 400 pF	75 °C	-25 ... +50 °C	75/50 °C
PCI 150 PRO C021	209.4x82x34 mm	175.5 mm	33 mm	0.48 kg	0.70 A	147 W	158.5 W	0.97	5 m / 400 pF	80 °C	-25 ... +45 °C	80/45 °C

Installation instructions

Wiring type and cross section

Stranded wire or solid wire up to 2.5 mm² may be used for wiring. Strip 10–11 mm of insulation from the cables to ensure perfect operation of the push-in terminals.

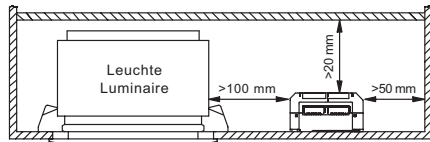


Use one wire for each terminal connector only.

Use each strain relief channel for one cable only.

Fixing conditions

Dry, acidfree, oilfree, fatfree. The maximum ambient temperature must not be exceeded. Is not suitable for fixing in corner. Whenever possible keep the ballast away from hot parts. It helps increasing the lifetime of the ballast.



If several ballasts are installed in masts, boxes, etc., measures must be taken to avoid overheating of individual components.

To prevent the use of a wrong lamp type we recommend to mark the luminaire with the correct lamp type that fits to the ballast.

Note on wiring

The length of the lamp wires is limited by the value of cable capacitance. The maximum of 160/400 pF would enable connection of approximately 2/5 metres of lamp wire.

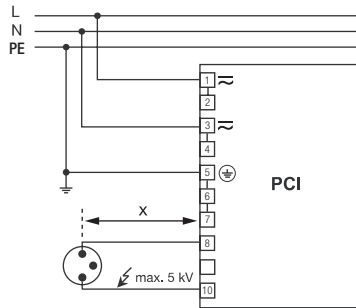
In class 1 luminaires it is necessary to earth the ballast and the luminaire, in class 2 luminaires not.

Storage conditions

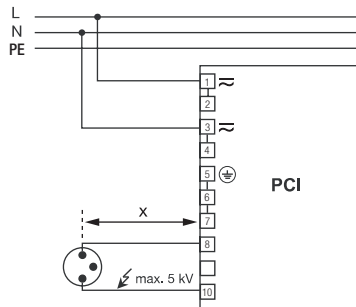
Humidity: 5 % up to max. 85 %, not condensed (max. 56 days/year at 85 %)

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.



Circuit diagram PCI class 1 application



Circuit diagram PCI class 2 application

Radio interference

- Do not cross mains and lamp cables.
- Do not lay mains cables together with lamp cables (ideally they should be 5–10 cm apart).
- Do not lead mains cables too closely along the electronic ballast.
- Twist lamp cables.
- Increase the distance between lamp cables and earthed metal surfaces.
- Keep the mains cable short.
- Parallel runs (x) of mains and lamp cables must be kept as short as possible.
- Connection to earth reduces radio interference.

Important advise

When a lamp is changed (at the end of its life), if a lamp is missing or after overtemperature shutdown the mains voltage of the ECG must be disconnected.

Warning – starting voltage up to max. 5 kV!

Not suitable for use with lamps with integral ignitors.

A list of released lamps for the save operation with PCI can be found on www.tridonic.com → Technical Data → Lamp matrix → Lamp Matrix for HID

Safety switch off

End of life of the lamps

At the end of their useful life, lamps often cycle on/off. The PCI ballast recognises this condition and switches off the lamp, after three complete on/off cycles and whilst the supply has been unswitched. Complete lamp switch off enables easy identification of a defective lamp in the application. After a change of the faulty lamp and an interruption of the mains supply (mains reset) the ballast will strike the lamp. When there is no lamp in circuit or a defective lamp is connected to the ballast, the ballast will switch off after apr. 25 minutes.

Overtemperature shutdown

The units shut down at Δt approx. +12 °C compared with tc. A mains reset must be carried out so that the units switch on again.

Overload strength

320 V_{AC} / 1 h
280 V_{AC} / 10 h

Standards

EN 55015 (radio interference)
EN 61000-3-2 (mains harmonics)
EN 61347-2-12
EN 61547 (interference immunity)
EN 61167

Glow-wire test according to EN 60598-1

850 °C passed

Harmonic distortion in the mains supply

Type	THD at 230 V/50 Hz
PCI 20 PRO C021	< 12 %
PCI 22 PRO C021	< 12 %
PCI 35 PRO C021	< 10 %
PCI 50 PRO C021	< 10 %
PCI 70 PRO C021	< 10 %
PCI 150 PRO C021	< 10 %

Ballast lumen factor EN 60929 8.1

Type	AC/DC-BLF at U = 198–254 V, 25 °C
PCI 20 PRO C021	1.00
PCI 22 PRO C021	1.00
PCI 35 PRO C021	1.00
PCI 50 PRO C021	1.00
PCI 70 PRO C021	1.00
PCI 150 PRO C021	1.00

Loading of automatic circuit breakers

Automatic circuit breaker type	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
PCI 20 PRO C021	30	40	50	60	15	20	25	30
PCI 22 PRO C021	30	40	50	60	15	20	25	30
PCI 35 PRO C021	30	40	50	60	15	20	25	30
PCI 50 PRO C021	14	25	36	42	8	14	18	18
PCI 70 PRO C021	14	25	36	42	8	14	18	18
PCI 150 PRO C021	7	14	20	20	4	6	7	7

Temperature range

The t_a temperature value is the basis for specifying the rated life.

The relationship between the t_c temperature and the t_a temperature depends on the design of the luminaire. If the measured t_c temperature is approximately 5 K under the t_c max. temperature the t_a temperature should be checked and, if necessary, measurements should be taken on the critical components (e.g. electrolytic capacitor).

Detailed information is available on request.

PCI PRO C021 is designed for an average life of 50,000 hours under rated conditions, with a failure probability of less than 10 %. This corresponds to an average failure rate of 0.2 % per 1,000 hours of operation.

The specified t_c temperature is the maximum permitted value (rated temperature according to EN 61347-1). Above this safety-related value the thermal cutout protects the device against damage.

The expected lifetime values are shown in the following table. The t_c values are the relevant values here.

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_{DC} 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_{AC} (or 1.414 x 1500 V_{DC}). To avoid damage to the electronic devices this test must not be conducted.

Additional information

Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

No warranty if device was opened.

Expected lifetime

Type	Lamp type	Lamp power	t_a	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C
				t_c	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C
PCI 20 PRO	HI	1x20 W	Lifetime	> 100,000 h	> 100,000 h	> 100,000 h	> 100,000 h	100,000 h	75,000 h	50,000 h
			t_c	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C
PCI 22 PRO	HI	1x22 W	Lifetime	> 100,000 h	> 100,000 h	> 100,000 h	> 100,000 h	100,000 h	75,000 h	50,000 h
			t_c	50 °C	55 °C	60 °C	65 °C	70 °C	75 °C	80 °C
PCI 35 PRO	HI	1x35 W	Lifetime	> 100,000 h	> 100,000 h	> 100,000 h	> 100,000 h	100,000 h	75,000 h	50,000 h
			t_c	50 °C	55 °C	60 °C	65 °C	70 °C	75 °C	x
PCI 50 PRO	HI	1x50 W	Lifetime	> 90,000 h	> 90,000 h	> 90,000 h	90,000 h	65,000 h	50,000 h	x
			t_c	60 °C	65 °C	70 °C	75 °C	x	x	x
PCI 70 PRO	HI	1x70 W	Lifetime	> 90,000 h	90,000 h	65,000 h	50,000 h	x	x	x
			t_c	70 °C	75 °C	80 °C	x	x	x	x
PCI 150 PRO	HI	1x150 W	Lifetime	100,000 h	75,000 h	55,000 h	x	x	x	x
			t_c	70 °C	75 °C	80 °C	x	x	x	x

x ... not permitted