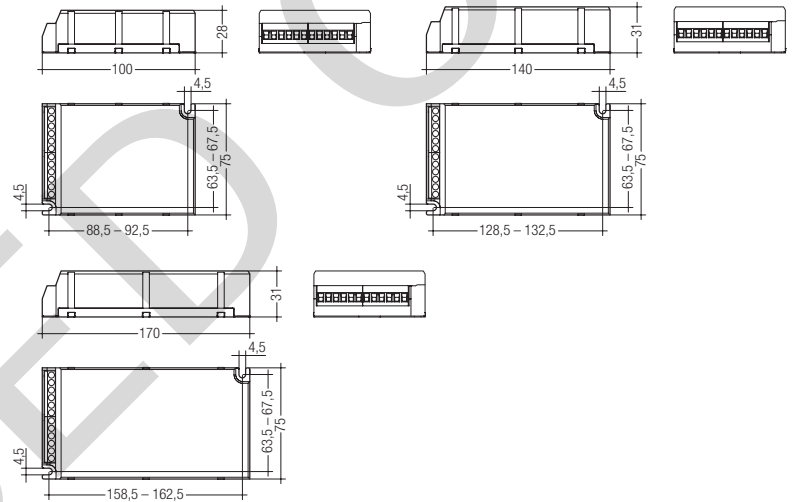




**PCI FOX B011**  
PCI PRO built-in

**Product description**

- For metal halide lamps
- Also for mobile luminaires with connectors
- Pulse packets for increased ignition energy (pulseCONTROL technology)
- Switching possible via mains or powerless via the digital interface
- Noise-free precise control via DALI or DSI signal
- On/off switching via DALI/DSI signal
- Fault reporting in DALI mode
- 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
- Screw terminals:  $\leq 1.5 \text{ mm}^2$  for stranded wire,  $\leq 2.5 \text{ mm}^2$  for solid wire
- Lower section of casing made of steel
- Upper section of casing made of Makrolon, VO material, black



**Technical data**

|                       |                |
|-----------------------|----------------|
| Mains voltage range   | 220 – 240 V    |
| AC voltage range      | 198 – 254 V    |
| DC voltage range      | 153 – 320 V    |
| Mains frequency       | 0 / 50 / 60 Hz |
| Max. ignition voltage | 5 kVp          |
| Operating frequency   | 145 Hz         |
| Type of protection    | IP20           |

**Ordering data**

| Type                              | Article number | Packaging, carton | Packaging, pallet | Weight per pc. |
|-----------------------------------|----------------|-------------------|-------------------|----------------|
| <b>For luminaires with 1 lamp</b> |                |                   |                   |                |
| PCI 0020 FOX B011                 | 86458340       | 15 pc(s).         | 600 pc(s).        | 0.195 kg       |
| PCI 0035 FOX B011                 | 86458341       | 15 pc(s).         | 600 pc(s).        | 0.193 kg       |
| PCI 0070 FOX B011                 | 86458342       | 15 pc(s).         | 600 pc(s).        | 0.256 kg       |
| PCI 0150 FOX B011                 | 86458343       | 15 pc(s).         | 600 pc(s).        | 0.366 kg       |



Standards, page 2

Wiring diagrams and installation examples, page 2

**Specific technical data**

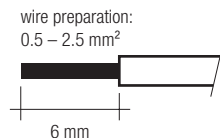
| Lamp wattage                      | Lamp type | Type              | Article number | Dimensions L x W x H | Lamp power | Circuit power <sup>Ⓞ</sup> | EEL | Efficiency | Current at 50 Hz 230 V | $\lambda$ at 50 Hz 230 V | Max. cable length to lamp | tc point max. | Ambient temperature ta | tc/ta for $\geq 50,000 \text{ h}$ |
|-----------------------------------|-----------|-------------------|----------------|----------------------|------------|----------------------------|-----|------------|------------------------|--------------------------|---------------------------|---------------|------------------------|-----------------------------------|
| <b>For luminaires with 1 lamp</b> |           |                   |                |                      |            |                            |     |            |                        |                          |                           |               |                        |                                   |
| 1 x 20 W                          | HI        | PCI 0020 FOX B011 | 86458340       | 100 x 75 x 28 mm     | 20 W       | 24.5 W                     | A2  | > 84 %     | 0.10 A                 | 0.95                     | 1.5 m / 120 pF            | 80 °C         | -25 ... +55 °C         | 80/55 °C                          |
| 1 x 35 W                          | HI        | PCI 0035 FOX B011 | 86458341       | 100 x 75 x 28 mm     | 39 W       | 45.0 W                     | A2  | > 87 %     | 0.20 A                 | 0.97                     | 1.5 m / 120 pF            | 80 °C         | -25 ... +50 °C         | 80/50 °C                          |
| 1 x 70 W                          | HI        | PCI 0070 FOX B011 | 86458342       | 140 x 75 x 31 mm     | 72 W       | 80.0 W                     | A2  | > 89 %     | 0.35 A                 | 0.97                     | 1.5 m / 120 pF            | 80 °C         | -25 ... +50 °C         | 80/50 °C                          |
| 1 x 150 W                         | HI        | PCI 0150 FOX B011 | 86458343       | 170 x 75 x 31 mm     | 147 W      | 160.0 W                    | A2  | > 91 %     | 0.70 A                 | 0.97                     | 1.5 m / 120 pF            | 80 °C         | -25 ... +50 °C         | 80/50 °C                          |

<sup>Ⓞ</sup> At ta = 25 °C.

## Installation instructions

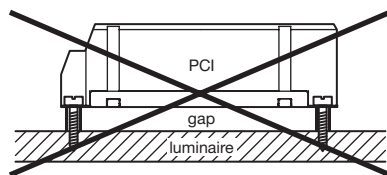
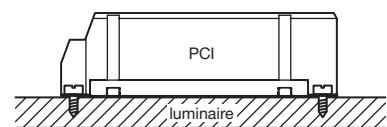
### Wiring type and cross section

Stranded wire with end ferrule with a cross section of 1.5 mm<sup>2</sup> or solid wire up to 2.5 mm<sup>2</sup> may be used for wiring. Strip 6 mm of insulation from the cables to ensure perfect operation of the screw terminals.



### Mounting recommendation

To ensure optimum heat removal the ECG should be mounted on a metal plate (luminaire body). No insulators between the ECG and the the cooling surface (air, adhesive tape, etc.). Finally, the temperature measurement remains important.



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

### 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 in the luminaire short.
- Parallel runs (x) of mains and lamp cables must be kept as short as possible.

### 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.

### Note on wiring

The length of the lamp wires is limited by the value of cable capacitance. The maximum of 120 pF would enable connection of approximately 1.5 metres of lamp wire.

In class 1 luminaires it is necessary to earth the ballast and the luminaire via the earth terminal.

Protection class 2 luminaires do not need an earth connection. Insulation must be provided by the luminaire design.

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.).

### Standards

- EN 55015 (radio interference)
- EN 61000-3-2 (mains harmonics)
- EN 61347-2-12
- EN 61547 (interference immunity)
- IEC 62386-203 (DALI standard)
- CE mark
- EMV-VDE mark
- ENEC mark

### Harmonic distortion in the mains supply

| Ballast Type | THD  | 3   | 5   | 7   | 9   | 11  |
|--------------|------|-----|-----|-----|-----|-----|
| PCI 0020     | 8.3  | 3.4 | 5.6 | 3.0 | 4.0 | 1.6 |
| PCI 0035     | 9.0  | 6.8 | 4.3 | 2.4 | 4.0 | 2.0 |
| PCI 0070     | 10.0 | 9.0 | 3.3 | 2.2 | 2.6 | 1.7 |
| PCI 0150     | 7.5  | 3.9 | 4.4 | 2.0 | 2.0 | 0.7 |

### Ballast lumen factor EN 60929 8.1

| Type     | AC/DC BLF<br>at U = 198-254 V, 25 °C |
|----------|--------------------------------------|
| PCI 0020 | 1.0                                  |
| PCI 0035 | 1.0                                  |
| PCI 0070 | 1.0                                  |
| PCI 0150 | 1.0                                  |

### Loading of automatic circuit breakers

| Automatic circuit breaker type | C10                 | C13                 | C16                 | C20                 | B10                 | B13                 | B16                 | B20                 |
|--------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 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> |
| PCI 0020                       | 30                  | 40                  | 50                  | 60                  | 15                  | 20                  | 25                  | 30                  |
| PCI 0035                       | 30                  | 40                  | 50                  | 60                  | 15                  | 20                  | 25                  | 30                  |
| PCI 0070                       | 14                  | 25                  | 36                  | 42                  | 8                   | 14                  | 18                  | 18                  |
| PCI 0150                       | 7                   | 14                  | 20                  | 20                  | 4                   | 6                   | 7                   | 7                   |

## Safety switch off

### End of life of the lamps

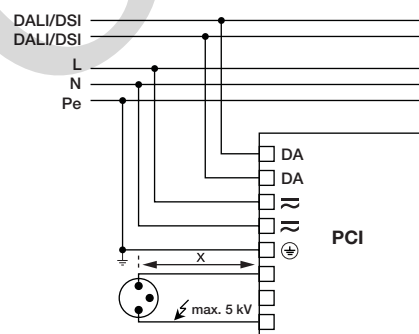
At the end of their useful life, lamps often cycle on/off. The PCI ballast recognises this condition and switches off the lamp, after three complete on/off cycles and whilst the supply has been unswitched. Complete lamp switch-off enables easy identification of a defective lamp in the application. After 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

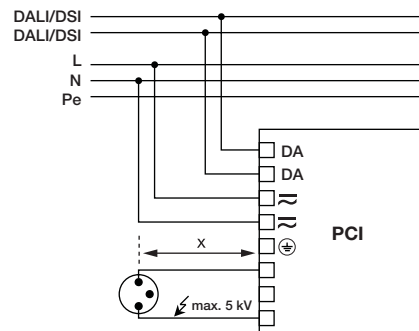
The ballasts switch off at an overtemperature of around 10 °C. They can be restored with an OFF-ON sequence via DALI/DSI or with a mains reset.

### Overload strength

320 VAC/1 h



Circuit diagram PCI class 1 application



Circuit diagram PCI class 2 application

## Installation instructions

### Control input (DA)

Digital DALI/DSI signal can be wired on the terminals DA.

### 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 should be installed in accordance with the requirements of low voltage installations. Different functions depending on each module.

### Standards (DALI)

DALI standard IEC 62368  
HID EVG → device type 2  
DALI 0 = 0 % light  
DALI > 0 = 100 % light

### Programmable parameters

- Groups 1–16
- Scenes 1–16 (values 0 % / 100 % / MASK)
- Power On Level (values 0 % / 100 %)
- System Failure Level (values 0 % / 100 %)

### Queries

via DALI standard:

- Lamp wattage (values yes/no)
- Lamp error (values yes/no)

via eDALI:

- Lamp type
- Device type
- Article number
- Production date
- Serial number
- Software version
- Commissioning

### OEM Memory Bank

The customer can store additional luminaire information in the ECG (Memory Bank 1), such as luminaire type and article number. Data is written to Memory Bank 1 in accordance with DALI standard IEC 62368.

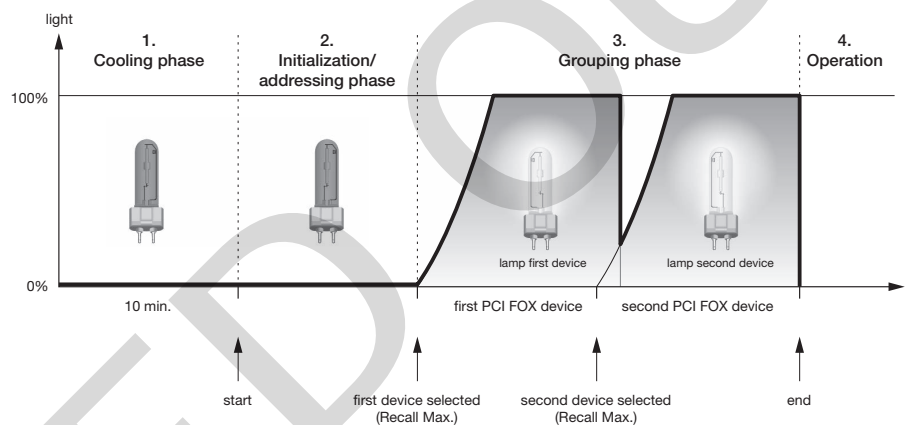
## Commissioning of PCI FOX ballasts

Because of the special characteristics of HID light sources, PCI FOX ballasts (Device Type 2) cannot be addressed in the same way as conventional DALI ballasts for fluorescent or halogen lamps for example. For visualisation during the grouping phase the HID lamps must remain switched off before and during the addressing phase as they can only be properly ignited in the cold state. Dimmed operation of these lamps is not recommended, which also calls for different handling during commissioning.

Tridonic recommends configTOOL ≥ V1.5 software for commissioning PCI FOX ballasts (download from [www.tridonic.com](http://www.tridonic.com) → Services → Download → Software).

**IMPORTANT:** Other DALI controllers can only be used for commissioning if they handle DALI Device Type 2 units appropriately (see Requirements of control products).

### Overview – commissioning cycle with configTOOL ≥ V1.5



### Commissioning comparison table

|                                       | DALI HID ballast<br>PCI FOX   | Standard DALI ballast<br>e.g. PCA Excel one4all   |
|---------------------------------------|---|---|
| Before commissioning the installation | Devices must have been switched off for at least 10 minutes!  | –   |
| Initialisation and addressing phase   | Devices remain switched off   | <ul style="list-style-type: none"> <li>• Devices fade to minimum value</li> <li>• On successful addressing the devices fade up to 100 %</li> <li>• At the end of the addressing phase the devices fade down to the minimum value</li> </ul> |
| Visualisation in the grouping phase   | <ul style="list-style-type: none"> <li>• Selected device starts the lamp at 100 %</li> <li>• If a different device is selected the previously selected device switches off with a maximum delay of 10 s</li> </ul> <p><b>Visualisation/grouping is not possible with hot HID lamps!</b></p> | <ul style="list-style-type: none"> <li>• Selected device fades from minimum value to 100 %</li> <li>• If a different device is selected the previously selected device fades to the minimum value</li> </ul>                                |
| Operation                             | Devices can be controlled/operated with other DALI/DSI control products   | Devices can be controlled/operated with other DALI/DSI control products   |

## Step-by-step commissioning with configTOOL ≥ V1.5

### 1. Cooling phase

HID EVG → Device Type 2

The lighting must have been switched off before start-up for at least 10 min. (visualization/grouping is not possible with hot lamps)

### 2. Initialisation and addressing phase

- Launch DALI configTOOL and select the DALI interface
- Go to the "DALI Device Programmer" tab
- Click on "Search Devices" and follow the on-screen instructions.

PCI FOX devices remain dark during the entire addressing phase. In contrast, DALI devices for fluorescent lamps, LEDs and incandescent lamps fade down to their minimum value and go to 100 % during the addressing phase. At the end of the addressing phase they fade back to their minimum value.

### 3. Visualisation in the grouping phase

- Activate the "Enable optical selection feedback" by ticking the checkbox
- If a PCI FOX device (Device Type 2, special symbol) is selected in configTOOL the appropriate device switches on. It remains on until a different DALI device is selected in the system.  
→ PCI FOX then switches off after a maximum delay of 10 seconds.

### 4. Operation

- PCI FOX devices can be switched powerless with a broadcast signal (DALI or DSI, without addressing of the devices)
- PCI FOX devices can be addressed and operated individually or in groups with a DALI signal. For examples with Tridonic controls please see matrix above.

## Requirements of control products

Initialization/addressing phase:

#### INITIALIZE

...

...

...

#### RECALL MIN LEVEL

...

...

...

#### TERMINATE

(This command must be sent first)

When the INITIALIZE command is sent, PCI FOX devices change the RECALL MIN value to 0 % → devices switch off/remain switched off

(Last command in the initialization phase)

When the TERMINATE command is sent, PCI FOX changes the RECALL MIN value back to 1 % (100 % light)

## Realisation with Tridonic controls

|                     | Commissioning  | Operation |
|---------------------|----------------|-----------|
| DALI GC             |                | ✓         |
| x-touchPANEL        | in preparation | ✓         |
| x-touchBOX          | in preparation | ✓         |
| DALI TOUCHPANEL     |                | ✓         |
| Software configTOOL | ✓              | ✓         |