Electronic ballasts for fluorescent lamps

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Table showing an overview of the Energy Classification System for ballasts from CELMA 304
Digital, electronic ballasts for fluorescent lamps

Electronic ballasts from TridonicAtco are characterised as being:

- economical
- easy to use
- reliable

Fluorescent lamps cannot be connected directly to the power supply as they are unable to regulate power and would not strike. The ballast ensures that the lamp electrodes are preheated, sufficient voltage is generated to strike the lamp and that the discharge current is controlled.

This function is achieved by both electromagnetic (conventional switchstart and low loss) and Electronic High frequency ballasts.

Electronic ballasts operate fluorescent lamps with high-frequency voltages and currents (40–100 kHz). The starting voltage is generated internally (no starter required) and the power factor is > 0.95 (no capacitor required for correcting the reactive power).

Electronic ballasts from TridonicAtco start fluorescent lamps with a defined warm start.

Lamp friendly flicker free warmstart

After a specific period in which the lamp electrodes are pre-heated, the lamp is ignited using a preset ignition voltage. Warm starting the lamp protects the fluorescent lamp cathode and allows for frequent switching during the life of the lamp.
A high level of economy

Energy savings
Electronic ballasts operate fluorescent lamps in the high-frequency range (40–100 kHz). This increases the luminous flux of the lamp by approximately 10 % or put another way a 10 % reduction in lamp operating wattage will produce the same luminous flux.

Electronic ballasts have reduced power losses (< 10 % of lamp wattage). Electronic ballasts have a reduced level of self-heating (a lower lamp temperature increases the efficiency of the lamp).

Savings of up to 30 % can be achieved by using electronic high frequency ballasts when compared to a conventional switch start ballasts (diagram showing energy savings).

Longer service life of the lamp
Electronic warm start ballasts increase the operating life of fluorescent lamps considerably when compared with a conventional switch start circuit. Thus the costs of replacing the lamp and the maintenance costs for the lighting installation are reduced (maintenance intervals for the lighting installation become longer).

Constant power
Electronic ballasts with constant power control guarantee optimum performance of the lamp regardless of fluctuations in mains voltage (198–254 V). This produces a constant luminous output and energy savings.

Disconnection of faulty lamps
Electronic ballasts are able to identify faulty lamps and switch off the lamp. This avoids nuisance cycling of lamps at the end of their life and ensures no energy is wasted in repeated attempts to strike a faulty lamp. Once the lamp has been replaced, the lamp will start automatically.

Suitable for emergency lighting
Electronic ballasts can be operated with both AC and DC current. Therefore in cases where emergency lighting is required, there is no need to install a separate emergency lighting system (no additional investment costs).

Long service life
Electronic ballasts from Tridonic Atco are designed for an average service life of 50 000 hours under reference conditions and with a failure probability of less than 10 %. This corresponds to an average failure rate of 0.2 % for every 1 000 hours of operation. This can only be achieved by using high-quality components, by configuring the circuit accordingly and by operating rigorous test programs.
High comfort

High Quality Lighting through high frequency operation
Electronic ballasts operate fluorescent lamps at a higher frequency (40–100 kHz) than mains power 50 Hz. The effects of this are all very positive: the gas discharge is more constant than with conventional ballasts which interrupt the lamp current at 50 Hz 100 times a second. The visible results of this constant gas discharge include:
- no cathode flickering (even at low temperatures)
- no stroboscopic effects (particularly important on rotating parts of machinery)
Overall improved visual comfort due to improved lighting quality.

Visual comfort and performance
due to ASIC light management
High frequency ballasts from TridonicAtco are manufactured using the latest in ASIC technology and lamp management.
- The lamps start reliably without nuisance flickering or noise
- In the event of a fault, the lamp is switched off automatically without causing any further faults (flashing of faulty lamps)
- Safe shut down when the lamp comes to the end of its life

Disturbance free infrared
Electronic ballasts from TridonicAtco have an operating frequency of > 40 kHz and therefore do not interfere with IR remote control facilities (36 kHz).

Low weight
Compared with electromagnetic chokes electronic ballasts have a low weight.

Fast wiring
Electronic ballasts from TridonicAtco are fitted with Insulation displacement (IDC = Insulation Displacement Connection) terminals which allow for both automated and manual wiring (see page 303 for technical specifications).

Safety, reliability and standards

Safety and standards
Electronic ballasts from TridonicAtco comply with all European standards relating to safety, operation and EMC/immunity.

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TridonicAtco Quality Assurance
A full and comprehensive test program is carried out on 100 % of the goods produced by TridonicAtco in order to maintain the highest standards of reliability for all TridonicAtco devices.

All components undertake a strict thermal function test program based on all current standards and methods.

Lamp matrix

Which ballast for what lamp?
You can obtain the current lamp matrix
- via the Internet at www.tridonicatco.com – FAQ
- on request by e-mail: hotline.tec@tridonic.co.at
PC T5 PRO 14–80 W 220–240 V 50/60/0 Hz

- defined lamp warm start within 0.5 s
- cut off of filament heating (cut off technology)
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor > 0.95
- overvoltage protection 320 V AC, 1 h

- operating frequency ≥ 42 kHz
- suitable for automatic and manual wiring with insulation displacement connector (IDC)
- wide operating temperature range from -25°C to +60°C (50°C)
- suitable for use in emergency lighting installations in accordance with VDE 0108
- safe switch off of defective lamps
- automatic re-start after lamp change

Certified:
- EN 55015
- EN 55022
- EN 60924
- EN 60925
- EN 60928
- EN 60929
- EN 60928
- EN 61000-3-2
- EN 61547

in accordance with VDE 0108

Packaging

(360 x 30 x 28 mm):
- box of 25
- 700 pieces/pallet

(360 x 40 x 28 mm):
- box of 20
- 600 pieces/pallet

Wiring:
- page 43 figure A, B, C, D

With a DC supply L and N terminals are interchangeable.

* released for TC-L 80 W

Wiring:

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**Electronic ballasts**

- **Linear lamps**

**PC T5 PRO LP 14–80 W 220–240 V 50/60/0 Hz**

- Defined lamp warm start within 1.5 s
- Constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- Power factor > 0.95
- Overvoltage protection 320 V AC, 1 h
- Operating frequency ≥ 42 kHz
- Suitable for automatic and manual wiring with insulation displacement connector (IDC)

**Certified:**
- EN 55015
- EN 55022
- EN 61347-2-4
- EN 60925
- EN 61347-2-3
- EN 61000-3-2
- EN 61547

With a DC supply L and N terminals are interchangeable.

### Lamp Data

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<th>Length L mm</th>
<th>Article number</th>
<th>Cross section mm</th>
<th>Fixed centres D mm</th>
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<th>Lamp power W</th>
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<td>280</td>
<td>270</td>
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<td>-25 → +50</td>
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<td>49</td>
<td>1449</td>
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<td>PC 1/80 T5 PRO 220-240V 50/60/0Hz</td>
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<td>21x30</td>
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<td>in preparation</td>
<td>-25 → +50</td>
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<td>PC 2/80 T5 PRO 220-240V 50/60/0Hz</td>
<td>in preparation</td>
<td>28x40</td>
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<td>350</td>
<td>in preparation</td>
<td>-25 → +50</td>
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<td></td>
<td></td>
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</tbody>
</table>

*With a DC supply L and N terminals are interchangeable.*
PC-E 011 IDC 18–70 W 220–240 V 50/60/0 Hz

- defined lamp warm start within 0.9 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor > 0.95
- overvoltage protection 320 V AC, 1 h
- operating frequency ≥ 42 kHz
- suitable for automatic and manual wiring with insulation displacement connector (IDC)
- wide operating temperature range from -25°C to +60°C (50°C)
- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with \( \frac{\lambda}{L} \) or \( \frac{\lambda}{D} \) and in acc. with EN 60598/ VDE 0710 and VDE 0711
- VDE EMV

Packaging L 234: box of 25
30 boxes/pallet
750 pieces/pallet

Packaging L 360: box of 20
30 boxes/pallet
600 pieces/pallet

Certified:
- EN 55015
- EN 55022
- EN 60924
- EN 60925
- EN 60929
- EN 61000-3-2
- EN 61547

Wide operating temperature range from -25°C to +60°C (50°C)

Suitable for use in emergency lighting installations in accordance with VDE 008.

Safe switch off of defective lamps.

Automatic re-start after lamp change for luminaires with \( \frac{\lambda}{L} \) or \( \frac{\lambda}{D} \) and in acc. with EN 60598/ VDE 0710 and VDE 0711.

VDE EMV.

With a DC supply L and N terminals are interchangeable.

Line extension:
PC 4x36 GM001 (art. no. 89818848) please see datasheet.
**PC T8 PRO 18–58 W 220–240 V 50/60/0 Hz**

- Defined lamp warm start within 0.9 s
- Suitable for automatic and manual wiring with insulation displacement connector (IDC)
- Operating frequency ≥ 42 kHz
- Wide operating temperature range from -25°C to 50°C
- Power factor > 0.95
- Overvoltage protection 320 V AC, 1 h
- Operated on mains voltage AC range 198–254 V, DC range 176–280 V, battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- Safe switch off of defective lamps
- Automatic re-start after lamp change

### Packaging:
- Box of 25 lamps
- 28 boxes/pallet
- 700 pieces/pallet

### Wiring:
- Page 45, 46 figure K, L

### Certified:
- EN 55015
- EN 55022
- EN 60924
- EN 60925
- EN 60928
- EN 60929
- EN 61000-3-2
- EN 61547
- VDE 0108

### Lamp Ballast

<table>
<thead>
<tr>
<th>Wattage</th>
<th>Length</th>
<th>Type</th>
<th>Article Number</th>
<th>Length L</th>
<th>Fixing Centres D</th>
<th>Weight kg</th>
<th>Circuit Power W</th>
<th>Lamp Power W</th>
<th>Current at 230V/50Hz A</th>
<th>λ at 230V/50Hz</th>
<th>Tc Point °C</th>
<th>Temperature Range °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>590</td>
<td>PC 1/18 T8 PRO 220–240 V 50/60/0Hz</td>
<td>22058627</td>
<td>360</td>
<td>350</td>
<td>0.27</td>
<td>19.5</td>
<td>15.5</td>
<td>0.09</td>
<td>0.97</td>
<td>60</td>
<td>-25 → +50</td>
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<tr>
<td>2x18</td>
<td>590</td>
<td>PC 2/18 T8 PRO 220–240 V 50/60/0Hz</td>
<td>22058633</td>
<td>360</td>
<td>350</td>
<td>0.28</td>
<td>40.0</td>
<td>31.0</td>
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<td>0.97</td>
<td>65</td>
<td>-25 → +50</td>
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<tr>
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<td>1200</td>
<td>PC 1/36 T8 PRO 220–240 V 50/60/0Hz</td>
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<td>350</td>
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<td>38.0</td>
<td>31.5</td>
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<td>0.97</td>
<td>65</td>
<td>-25 → +50</td>
</tr>
<tr>
<td>2x36</td>
<td>1200</td>
<td>PC 2/36 T8 PRO 220–240 V 50/60/0Hz</td>
<td>22058655</td>
<td>360</td>
<td>350</td>
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<td>76.0</td>
<td>62.5</td>
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<tr>
<td>58</td>
<td>1500</td>
<td>PC 1/58 T8 PRO 220–240 V 50/60/0Hz</td>
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<td>360</td>
<td>350</td>
<td>0.28</td>
<td>57.5</td>
<td>50.0</td>
<td>0.27</td>
<td>0.97</td>
<td>65</td>
<td>-25 → +50</td>
</tr>
<tr>
<td>2x58</td>
<td>1500</td>
<td>PC 2/58 T8 PRO 220–240 V 50/60/0Hz</td>
<td>22058674</td>
<td>360</td>
<td>350</td>
<td>0.31</td>
<td>107</td>
<td>99.0</td>
<td>0.48</td>
<td>0.97</td>
<td>70</td>
<td>-25 → +50</td>
</tr>
</tbody>
</table>

With a DC supply L and N terminals are interchangeable.
• defined lamp warm start within 1.5 s
• constant light output independent of fluctuations in mains voltage
• AC voltage range 198 – 254 V
• DC voltage range 176 – 280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
• power factor > 0.95
• overvoltage protection 320 V AC, 1 h
• operating frequency ≥ 42 kHz
• suitable for automatic and manual wiring with insulation displacement connector (IDC)

• wide operating temperature range from -25°C to +60°C (50°C)
• suitable for use in emergency lighting installations in accordance with VDE 008
• safe switch off of defective lamps
• automatic re-start after lamp change
• for luminaires with + or - and in acc. with EN 60598/ VDE 0710 and VDE 0711
• VDE EMV

Certified:
EN 55015
EN 55022
EN 60924
EN 60925
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Packaging L 234:
- box of 25
- 750 pieces/pallet

Packaging L 360:
- box of 20
- 600 pieces/pallet

Wiring:
- page 46 figure M, N, O

With a DC supply L and N terminals are interchangeable.

Lamp wattage type Ballast article number length L mm fixing centres D mm weight kg circuit power W lamp power W current at 230V/50Hz A λ at 230V/50Hz °C tc point temperature range °C
18/24 TC-L PC PRO 18/24 FSD a101 IDC 220–240 V 50/60/0 Hz 22084817 234 220 0,28 20/27 16/22 0,09/0,12 0,95 75 -25 → +60
2x18 TC-L PC PRO 2x18 FSD a101 IDC 220–240 V 50/60/0 Hz 22084823 234 220 0,28 40 2x26 0,18 0,97 80 -25 → +60
2x24 TC-L PC PRO 2x24 FSD a101 IDC 220–240 V 50/60/0 Hz 22084839 234 220 0,28 57 2x22 0,22 0,97 80 -25 → +60
36 TC-L PC PRO 36 FSD a101 IDC 220–240 V 50/60/0 Hz 22085061 234 220 0,28 37,5 32,0 0,18 0,95 80 -25 → +60
2x36 TC-L PC PRO 2x36 FSD a101 IDC 220–240 V 50/60/0 Hz 22085077 234 220 0,28 76 2x32 0,34 0,96 80 -25 → +60
40 TC-L PC PRO 40 FSD a101 IDC 220–240 V 50/60/0 Hz 22085083 234 220 0,28 44 40,0 0,2 0,95 70 -25 → +60
2x40 TC-L PC PRO 2x40 FSD a101 IDC 220–240 V 50/60/0 Hz 22085099 234 220 0,28 87 2x40 0,38 0,96 75 -25 → +60
55 TC-L PC PRO 55 FSD a101 IDC 220–240 V 50/60/0 Hz 22085104 234 220 0,28 60 55,0 0,27 0,96 85 -25 → +60
2x55 TC-L PC PRO 2x55 FSD a101 IDC 220–240 V 50/60/0 Hz 22084496 360 340–350 0,36 120 2x55 0,53 0,97 75 -25 → +50

With a DC supply L and N terminals are interchangeable.
PC PRO TC-L 18–24 W 220–240 V 50/60/0 Hz

- defined lamp warm start within 1.5 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 196–254 V
- DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition must be ≥ 198 V
- power factor > 0.95
- overvoltage protection 320 V AC, 1 h
- operating frequency ≥ 42 kHz
- wide operating temperature range from -25°C to +60°C

- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with √ or √√√ in acc. with EN 60598/ VDE 0710 and VDE 0711
- VDE EMV

Packaging L 103: box of 15 50 boxes/pallet 750 pieces/pallet
Packaging L 123: box of 10 50 boxes/pallet 500 pieces/pallet

Certified: EN 55015
EN 55022
EN 60924
EN 60925
EN 60928
EN 60929
EN 61000-3-2
EN 61547

in accordance with VDE 0108

Accessories (page 47):
- mounting bracket L103 (art. no. 4635080)
- mounting bracket L123 (art. no. 4635096)

Wiring:
- page 46 Figure P, Q

<table>
<thead>
<tr>
<th>Lamp watt-age W</th>
<th>Ballast type</th>
<th>Article number</th>
<th>LxBxH fixing centres</th>
<th>fixing weight</th>
<th>circuit power W</th>
<th>lamp power W</th>
<th>current at 230V/50Hz</th>
<th>λ at 230V/50Hz</th>
<th>tc point</th>
<th>temperature range °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 TC-L PC PRO 18/24 FSD b101 220–240V 50/60/0Hz</td>
<td>22083278</td>
<td>103x67x30</td>
<td>57.5</td>
<td>0.14</td>
<td>20</td>
<td>16</td>
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<td>22083284</td>
<td>123x79x30</td>
<td>66.5</td>
<td>0.17</td>
<td>40.5</td>
<td>2x18</td>
<td>0.19</td>
<td>0.96</td>
<td>80</td>
<td>-25 → +60</td>
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<tr>
<td>24 TC-L PC PRO 18/24 FSD b101 220–240V 50/60/0Hz</td>
<td>22083278</td>
<td>103x67x30</td>
<td>57.5</td>
<td>0.14</td>
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<tr>
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<td>123x79x30</td>
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<td>0.17</td>
<td>57</td>
<td>2x25</td>
<td>0.25</td>
<td>0.96</td>
<td>85</td>
<td>-25 → +60</td>
</tr>
</tbody>
</table>
• defined lamp warm start within 1,0 s
• constant light output independent of fluctuations in mains voltage
• AC voltage range 198–254 V
• DC voltage range 176–280 V; battery voltage must be ≥ 198 V
• power factor > 0.95
• overvoltage protection 320 V AC, 1 h
• constant light output independent of fluctuations in mains voltage
• AC voltage range 198–254 V
• DC voltage range 176–280 V; battery voltage may drop briefly to 154 V, although ignition
• operating frequency ≥ 42 kHz
• temperature range from -25°C to +60°C
• suitable for use in emergency lighting installations in accordance with VDE 0108
• safe switch off of defective lamps
• automatic restart after lamp change
• for luminaires with \( V \) or \( V' \) and \( V'' \) in acc. with EN 60598; VDE 0710 and VDE 0711
• VDE EMV

Accessories (page 47):
- mounting bracket L103 (art. no. 4635080)
- mounting bracket L123 (art. no. 4635096)

Packaging L103:
- box of 15
- 50 boxes/pallet
- 750 pieces/pallet

Packaging L123:
- box of 10
- 50 boxes/pallet
- 500 pieces/pallet

Wiring:
- page 46 figure P, Q
PC COMPACT BASIC 7–18 W 220–240 V 50/60/0 Hz

- defined lamp warm start < 2 s
- switching cycles > 10 000
- average service of 50 000 h at nominal rating
- conditions with a maximum failure rate of 10 %
- ENEC mark indicates lamp operation within lamp specification
- AC operation 198–254 V
- AC operation 154–250 V DC (lamp start 200–250 V DC)
- overvoltage protection 264 V AC, 360 h
- operating frequency ≥ 42 kHz
- wide operating temperature range from -15°C to +45°C
- suitable for use in emergency lighting installations in accordance with VDE 008
- safe switch off of defective lamps
- automatic end of lamp life shut off
- automatic restart after lamp change
- temperature protection according to EN 61347-1-C.5e
- ENEC approval also for T5 lamps.
- For complete lamp matrix please see datasheet.

Packaging: box of 25
70 boxes/pallet
1 750 pieces/pallet

Certified: EN 55015
EN 61347-2-4
EN 60925
EN 61347-2-3
EN 60929
EN 61000-3-2
EN 61547
EN 60929
EN 61000-3-2
IEC 68-2-64 Fh
IEC 68-2-29 Eb
IEC 68-2-30

Wiring: page 47 figure R

ENEC approval also for T5 lamps.

For complete lamp matrix please see datasheet.

Square housing:

<table>
<thead>
<tr>
<th>Lamp watt-</th>
<th>Ballast</th>
<th>LxxBxH</th>
<th>fixing</th>
<th>weight</th>
<th>circuit</th>
<th>lamp power</th>
<th>current</th>
<th>λ</th>
<th>tc point</th>
<th>temperature range</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>type</td>
<td>article number</td>
<td>D mm</td>
<td>g</td>
<td>W</td>
<td>W</td>
<td>A</td>
<td>°C</td>
<td>°C</td>
<td></td>
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<tr>
<td>7 TC-SEL</td>
<td>PC 1x7/9/10 COMPACT BASIC</td>
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<td>80x40x22,25</td>
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<td>8,3</td>
<td>6,2</td>
<td>0,036</td>
<td>0,65</td>
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<tr>
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<td>PC 1x7/9/10 COMPACT BASIC</td>
<td>89895974</td>
<td>80x40x22,25</td>
<td>35</td>
<td>9,8</td>
<td>7,7</td>
<td>0,065</td>
<td>0,65</td>
<td>75</td>
<td>-15 → +45</td>
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<td>PC 1x11/13 COMPACT BASIC</td>
<td>89895975</td>
<td>80x40x22,25</td>
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<td>14,1</td>
<td>11,8</td>
<td>0,096</td>
<td>0,65</td>
<td>80</td>
<td>-15 → +45</td>
</tr>
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<td>PC 1x11/13 COMPACT BASIC</td>
<td>89895975</td>
<td>80x40x22,25</td>
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<td>14,7</td>
<td>12,7</td>
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<td>0,65</td>
<td>80</td>
<td>-15 → +45</td>
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<tr>
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<td>PC 1x18 COMPACT BASIC</td>
<td>89899606</td>
<td>80x40x22,25</td>
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<td>18,9</td>
<td>16,3</td>
<td>0,130</td>
<td>0,65</td>
<td>80</td>
<td>-15 → +45</td>
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</tbody>
</table>

Square pcb:

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<tr>
<th>Ballast</th>
<th>LxxBxH</th>
<th>weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>article number</td>
<td>D mm</td>
</tr>
<tr>
<td>PC 1x7/9/10 COMPACT BASIC PCB</td>
<td>89899612</td>
<td>56x36,4x17</td>
</tr>
<tr>
<td>PC 1x11/13 COMPACT BASIC PCB</td>
<td>89899613</td>
<td>56x36,4x17</td>
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<tr>
<td>PC 1x18 COMPACT BASIC PCB</td>
<td>89899614</td>
<td>56x36,4x17</td>
</tr>
</tbody>
</table>

With a DC supply L and N terminals are interchangeable.
• defined lamp warm start within 1.5 s
• constant light output independent of fluctuations in mains voltage (198–254 V)
• AC voltage range 198–254 V
• DC voltage range 154–250 V; (lamp start 200–250 V)
• power factor > 0.96
• overvoltage protection 320 V AC, 1 h
• operating frequency ≥ 42 kHz
• wide operating temperature range from -25°C to +60°C

With a DC supply L and N terminals are interchangeable.

Lamp Ballast

<table>
<thead>
<tr>
<th>watt-age W</th>
<th>type</th>
<th>article number</th>
<th>length L mm</th>
<th>fixing centres D mm</th>
<th>weight kg</th>
<th>circuit power W</th>
<th>lamp power W at 230V/50Hz</th>
<th>current λ at 230V/50Hz A</th>
<th>λ °C</th>
<th>tc point °C</th>
<th>temperature range °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>202</td>
<td>PC 1x28 DD PRO 220-240 V 50/60/0 Hz</td>
<td>89895964</td>
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<td>140</td>
<td>0.175</td>
<td>28.7</td>
<td>25.4</td>
<td>0.130</td>
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<td>202</td>
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<td>140</td>
<td>0.177</td>
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<td>-25 → +60</td>
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<td>202</td>
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<td>89895967</td>
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<td>60.0</td>
<td>53.0</td>
<td>0.265</td>
<td>0.98</td>
<td>-25 → +60</td>
</tr>
</tbody>
</table>

Certified:
EN 55015
EN 61347-2-4
EN 60924
EN 60925
EN 61347-2-3
EN 60928
EN 60929
EN 61000-3-2
EN 61547
in accordance with VDE 0108

Packaging:
box of 20
50 boxes/pallet
1 000 pieces/pallet

Wiring:
page 47 figure 5

Product description:
- compact fluorescent lamps
- operation from 198–254 V AC
- operation from 154–250 V DC
- temperature range -25°C to +60°C
- power factor > 0.96
- overvoltage protection 320 V AC, 1 h
- mains operational frequency ≥ 42 kHz
- defined lamp warm start within 1.5 s
- constant light output independent of fluctuations in mains voltage (198–254 V)
- safe switch off of defective lamps
- safe shutdown of lamps at end of life (rectifying effect)
- automatic re-start after lamp change
- for luminaires with √ √ or √ √ in acc. with EN 60598/ VDE 0710 and VDE 0711
- temperature rated √ √ in acc. with EN 61347-1-C.5e
**A) PC T5 PRO 14–80 W**

* leads (15, 16) max. 1,0 m (< 150 pF)
  leads (13, 14) max. 2,0 m (< 300 pF)
* SK I - luminaires: earth via fixing of
  ballast housing required (according to IEC598)
* SK II - luminaires: no earth required

---

**B) PC T5 PRO 2 x 14–54 W**

* leads (9, 10, 15, 16) max. 1,0 m (< 150 pF)
  leads (11, 12, 13, 14) max. 2,0 m (< 300 pF)
* SK I - luminaires: earth via fixing of
  ballast housing required (according to IEC598)
* SK II - luminaires: no earth required

---

**C) PC T5 PRO 3 x 14 W**

* leads (7, 8, 9, 10) max. 1,0 m (< 150 pF)
  leads (5, 6, 11, 12) max. 2,0 m (< 300 pF)
* SK I - luminaires: earth via fixing of
  ballast housing required (according to IEC598)
* SK II - luminaires: no earth required

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**D) PC T5 PRO 4 x 14 W**

* leads (7, 8, 9, 10) max. 1,0 m (< 150 pF)
  leads (5, 6, 11, 12, 13, 14, 15, 16) max. 2,0 m (< 300 pF)
* SK I - luminaires: earth via fixing of
  ballast housing required (according to IEC598)
* SK II - luminaires: no earth required
* leads (1,2) max. 1.0 m (< 100 pF) 
leads (5,6) max. 2.0 m (< 200 pF) 
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598) 
SK II - luminaires: no earth required

E) PC-E 011 IDC 18-70 W

* leads (1,2) max. 1.0 m (< 100 pF) 
leads (3,4,5,6) max. 2.0 m (< 200 pF) 
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598) 
SK II - luminaires: no earth required

F) PC-E 011 IDC 2 x 18-58 W

* leads (1,2) max. 1.0 m (< 100 pF) 
leads (3,6,7,8) max. 2.0 m (< 200 pF) 
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598) 
SK II - luminaires: no earth required

G) PC-E 011 IDC 2 x 70 W
Circuit diagrams

H) PC-E 011 IDC 3 x 18 W

- leads (1,2) max. 1.0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2.0 m (< 200 pF)
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
SK II - luminaires: no earth required

I) PC-E 011 IDC 3 x 36 W

- leads (1,2) max. 1.0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2.0 m (< 200 pF)
SK I - luminaires: earth via fixing of ballast housing required (according to IEC598)
SK II - luminaires: no earth required

J) PC-E 011 IDC 4 x 18 W

- leads (15,16) max. 1.0 m (< 150 pF)
- leads (13,14) max. 2.0 m (< 300 pF)
SK I - luminaires: earth via fixing of ballast housing required (acc. to IEC598)
SK II - luminaires: no earth required

K) PC T8 PRO 18–58 W

- leads (1,2) max. 1.0 m (< 100 pF)
- leads (3,4,5,6,7,8) max. 2.0 m (< 200 pF)
SK I - luminaires: earth via fixing of ballast housing required (acc. to IEC598)
SK II - luminaires: no earth required
Circuit diagrams

Electronic ballasts

L) PC T8 PRO 2x18–58 W

M) PC PRO a FSD 18–55 W

N) PC PRO a FSD 2 x 18–40 W

O) PC T8 PRO a FSD 2x55 W

P) PC PRO b 5–70 W; PC PRO b FSD 18–24 W

Q) PC PRO b 2 x 5–42 W; PC PRO b FSD 2 x 18–24 W
Circuit diagrams
Electronic ballasts

**R) PC BASIC 7–18 W**

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

**S) PC DD PRO**

* leads (1,2) max. 1.0 m (< 100 pF)
leads (7,8) max. 2.0 m (< 200 pF)

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**Accessories**

Mounting bracket L103 (art. no. 4635080)
Mounting bracket L123 (art. no. 4635096)