PCD1.G1100-C15
E-Line light and blind module

The module has a housing width of 35 mm (2 HP*) that is compatible with electrical control cabinets, is controlled via RS-485 and enables light and blind control. It has two analogue and two relay outputs and four digital inputs. The user can optionally use the relay for the direct switching of two light groups or to control window shading or blinds. The blinds or shading can be positioned and defects localised via the integrated load current measurement. The user can implement the digital inputs to connect electrical sensors. All inputs/outputs are available to the PLC program at all times via the communications interface.

Features

- 4 digital inputs
- 2 relays incl. current detection
- 2 analogue outputs
- Electrical isolation between supply, bus and I/Os
- Pluggable terminal blocks protected by flaps
- Status LEDs on the front
- RS-485, USB and NFC interfaces
- Freely programmable with Saia PG5

General technical data

<table>
<thead>
<tr>
<th>Power supply</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>Nominal 24 VAC (50 Hz) or DC 24 VDC, -15 %/+20 % incl. 5 % ripple 24 VAC, -15 %/+10 % (in accordance with EN/IEC 61131-2)</td>
</tr>
<tr>
<td>Electrically isolated</td>
<td>500 VDC between power supply and RS-485 as well as between power supply and inputs/outputs</td>
</tr>
<tr>
<td>Power consumption max.</td>
<td>2 W</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interfaces</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications interface</td>
<td>RS-485 with galvanic isolation Baud rate: 9,600, 19,200, 38,400, 57,600, 115,200 bps (autobauding)</td>
</tr>
<tr>
<td>Address switch for S-Bus address</td>
<td>Two rotary switches 0…9 Address range 0…253</td>
</tr>
<tr>
<td>Service interface</td>
<td>Micro USB NFC (Near Field Communication)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>Operation: 0 … +55 °C Storage: -40 … +70 °C</td>
</tr>
</tbody>
</table>

Dimensions and installation

on DIN rails 35 mm (in accordance with DIN EN 60715 TH35)

Housing width 2 HP* (35 mm) Compatible with electrical control cabinets (in accordance with DIN 43880, size 2 × 55 mm)

* Horizontal pitch 1 HP corresponds to 17.5 mm
### Input/output configuration

#### Digital inputs

<table>
<thead>
<tr>
<th>Number</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>24 VAC / VDC source operation (positive switching) or sink operation</td>
</tr>
<tr>
<td>Switching level</td>
<td>Low: 0...5 V, High: 15...24 V</td>
</tr>
<tr>
<td>Input current</td>
<td>Typically 2 mA (AC/DC)</td>
</tr>
<tr>
<td>Input delay</td>
<td>20 ms (AC), 2 / 8 / 50 ms (DC)</td>
</tr>
</tbody>
</table>

#### Relay outputs

<table>
<thead>
<tr>
<th>Number</th>
<th>2 (changeovers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching voltage max.</td>
<td>250 VAC / 30 VDC</td>
</tr>
<tr>
<td>Switching current max.</td>
<td>8 A (AC1, DC1)</td>
</tr>
<tr>
<td>Max. inrush current</td>
<td>15 A</td>
</tr>
<tr>
<td>Contact protection</td>
<td>None</td>
</tr>
<tr>
<td>Local operation</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Analogue outputs

<table>
<thead>
<tr>
<th>Number</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>12 bit</td>
</tr>
<tr>
<td>Signal range</td>
<td>0...10 V</td>
</tr>
<tr>
<td>Protection</td>
<td>Short-circuit protection</td>
</tr>
<tr>
<td>Resolution</td>
<td>2.44 mV</td>
</tr>
<tr>
<td>Max. load at output</td>
<td>3.3 kΩ (3.3 mA @ 10 V)</td>
</tr>
<tr>
<td>Accuracy (at TAmbient = 25°C)</td>
<td>0.3 % of the value +/- 10 mV</td>
</tr>
<tr>
<td>Residual ripple</td>
<td>&lt; 15 mVpp</td>
</tr>
<tr>
<td>Temperature error (0°C...+55°C)</td>
<td>+/- 0.2 %</td>
</tr>
<tr>
<td>Output delay</td>
<td>Channel update 1 ms (all channels are updated during this time)</td>
</tr>
<tr>
<td>Time constant of hardware output filter voltage measurement</td>
<td>τ = 2.5 ms</td>
</tr>
<tr>
<td>Local override operation</td>
<td>None</td>
</tr>
</tbody>
</table>

### Assignment overview

![Assignment overview diagram]

### Connection diagrams

#### Digital input

- **Source operation**
  - DI (positive switch)
  - 24 VAC or DC

- **Sink operation**
  - DI (negative switch)
  - 24 VAC or DC

#### Relay (6A)

- CO (common)
- NC (neutral)
- NO (normal open)
- max. 8 A
- 48 VAC/DC L
- 48 VAC/DC N

#### Analogue output

- AO (analog output)
- 0...10 V (3.3 mA max.)

### Grounding

- GND (ground)
- DGND (digital galvanic isolated ground)
- AGND (analog galvanic isolated ground)
- SGND (signal ground)
- a, b, c, d (alphanumeric index by different grounds)
**Terminal technology**

Rigid or flexible wires with a diameter of up to 1.5 mm² can be used. A max. of 1 mm² is permitted with wire ferrules.

**Connection concept**

The device is supplied by a 24 VDC or AC voltage supply.

---

**Programming**

The modules are programmed with Saia PG5® via a master controller or directly via Micro USB.

**Program**

Non-volatile memory (Flash memory)

- **Program blocks**
  - COB
  - XOB
  - PB/FB

- **Data types**
  - ROM Text/DB
  - Memory

**Media**

Volatile memory (RAM) without battery backup

- **Data types**
  - Register
  - Flag
  - Timer / Counter

**Supported libraries**

The modules are planned with Saia PG5® using FBoxes or IL. The Saia PG5® Fupla Editor provides a selection of FBoxes which significantly simplify engineering.

- PGS standard FBox libraries:
  - Binary
  - Blinker
  - Block Control (without SB)
  - Buffers
  - Com.Text (not interpreted)
  - Converter
  - Counter
  - DALI E-Line Driver (new)
  - Data Block
  - Data Buffer
  - EIB Driver (partly)
  - EnOcean (partly)
  - Flip-Flop
  - Floating Point (IEEE only)
  - Indirect
  - Integer
  - Ladder
  - Move In / Out
  - MP-Bus
  - Regulation (partly)
  - Special, sys info (partly)
  - Timer

In addition to these libraries, an “E-Suite” library is available for specific applications that can be created with the Saia PCD1 E-Line modules. An example for the electrical plant: shade control, light dimming,…

More details on which FBoxes are supported, Getting Started, etc. are available on our support page

[www.saia-support.com](http://www.saia-support.com)

---

**Bus wiring**

DB- and /DA+ terminals must be used for exchanging data between the modules. The bus is through-wired to a terminal to ensure the exchange between modules to avoid an interruption in the bus connection.

Flexible RS-485 cables with a cross section of no more than 0.75 mm² are permissible for bus wiring. A cable cross section of 1.5 mm² per terminal applies overall.

External bus terminating resistors must be used.

---

**Connection concept**

The device is supplied by a 24 VDC or AC voltage supply.

---

**Bus wiring**

DB- and /DA+ terminals must be used for exchanging data between the modules. The bus is through-wired to a terminal to ensure the exchange between modules to avoid an interruption in the bus connection.

Flexible RS-485 cables with a cross section of no more than 0.75 mm² are permissible for bus wiring. A cable cross section of 1.5 mm² per terminal applies overall.

External bus terminating resistors must be used.
NOTE
Extra low voltages (ELV) or secure low voltages (SELV) are voltages up to 50 Volts.

NOTE
Low voltages are voltages between 50 ... 250 Volts.

INSTALLATION DIRECTION FOR SWITCHING LOWER VOLTAGES

For reasons of safety it is not allowed that extra low voltages and low voltages are connected to two adjacent relay contacts. Neither may different phases be connected to two adjacent relay contacts. But a relay contact between them can be left empty.

If a Saia PCD® system module is connected to low voltage, then all components which are electrically connected to this system must be approved for low voltage.

When using low voltage, all connections to the relay contacts, which are connected to the same circuit, must be protected by a common fuse.

The individual load circuits, on the other hand, may be protected individually by a fuse.
ATTENTION
These devices must only be installed by a professional electrician, otherwise there is the risk of fire or the risk of an electric shock.

WARNING
Product is not intended to be used in safety critical applications, using it in safety critical applications is unsafe.

WARNING - Safety
The unit is not suitable for the explosion-proof areas and the areas of use excluded in EN 61010 Part 1.

WARNING - Safety
Check compliance with nominal voltage before commissioning the device (see type label). Check that connection cables are free from damage and that, when wiring up the device, they are not connected to voltage.

NOTE
In order to avoid moisture in the device due to condensate build-up, acclimatise the device at room temperature for about half an hour before connecting.

CLEANING
The device can be cleaned in dead state with a dry cloth or cloth soaked in soap solution. Do not use caustic or solvent-containing substances for cleaning.

MAINTENANCE
These devices are maintenance-free. If damaged during transportation or storage, no repairs should be undertaken by the user.

GUARANTEE
Opening the module invalidates the guarantee.

WEEE Directive 2012/19/EC Waste Electrical and Electronic Equipment directive
The product should not be disposed of with other household waste. Check for the nearest authorized collection centers or authorized recyclers. The correct disposal of end-of-life equipment will help prevent potential negative consequences for the environment and human health.

EAC
EAC Mark of Conformity for Machinery Exports to Russia, Kazakhstan or Belarus.
### Order details

<table>
<thead>
<tr>
<th>Type</th>
<th>Short description</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCD1.G1100-C15</td>
<td>E-Line light and blind module</td>
<td>Fully programmable E-line input/output module for light and blind</td>
<td>140 g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supply 24 VAC/VDC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 digital inputs 24 VAC / VDC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 changeover relays 230 VAC / 30 VDC, 8 A, max. inrush current 15 A, incl. electrically isolated current measurement</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 analogue outputs 12 bit, 0...10 V (3 mA max.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 interfaces: RS-485 (S-Bus), USB &amp; NFC (Service)</td>
<td></td>
</tr>
<tr>
<td>32304321-003-S</td>
<td>Terminal set</td>
<td>6-pin terminal. Set of 6 terminal blocks</td>
<td>40 g</td>
</tr>
</tbody>
</table>