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

Power supply

Supply voltage	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)
Electrically isolated	500 VDC between power supply and RS-485 as well as between power supply and inputs/outputs
Power consumption max.	2 W

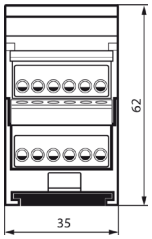
Interfaces

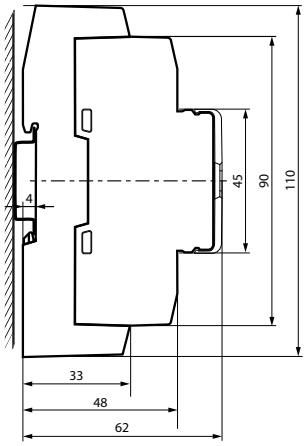
Communications interface	RS-485 with galvanic isolation Baud rate: 9,600, 19,200, 38,400, 57,600, 115,200 bps (autobauding)
Address switch for S-Bus address	Two rotary switches 0…9 Address range 0…253
Service interface	Micro USB NFC (Near Field Communication)

General data

Ambient temperature	Operation: 0 … +55 °C Storage: –40 … +70 °C

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

Number	4
Input voltage	24 VAC / VDC source operation (positive switching) or sink operation
Switching level	Low: 0…5 V, High: 15…24 V
Input current	Typically 2 mA (AC/DC)
Input delay	20 ms (AC), 2 / 8 / 50 ms (DC)

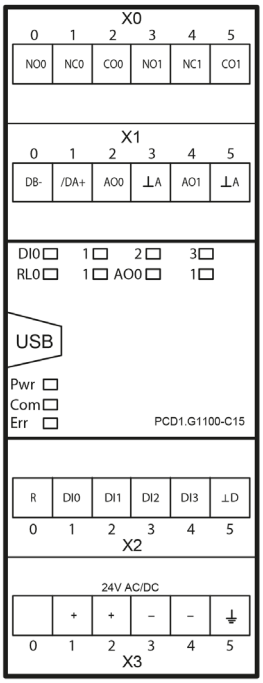
Relay outputs

Number	2 (changeovers)
Switching voltage max.	250 VAC / 30 VDC
Switching current max.	8 A (AC1, DC1)
Max. inrush current	15 A
Contact protection	None
Local operation	None
Load current measurement	≥ 200 mA, resolution 100 mA

Analogue outputs

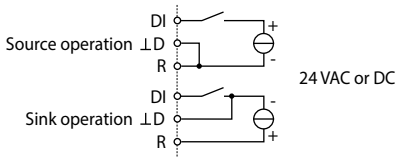
Number	2	
Resolution	12 bit	
Signal range	0…10 V	
Protection	Short-circuit protection	
Resolution	2.44 mV	
Max. load at output	3.3 kΩ (3.3 mA @ 10 V)	
Accuracy (at TAmbient = 25°C)	0.3 % of the value ± 10 mV	
Residual ripple	< 15 mVpp	
Temperature error (0°C…+55°C)	± 0.2 %	
Output delay	Channel update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

Assignment overview

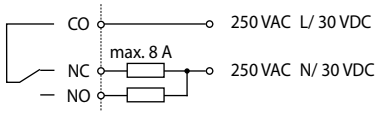


Connection diagrams

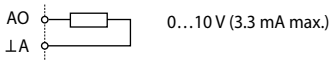
Digital input



Relay



Analogue output



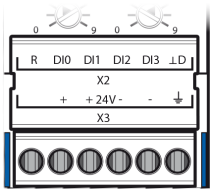
GND	⊥	ground
DGND	⊥D	digital galvanic isolated ground
AGND	⊥A	analogue galvanic isolated ground
SGND	⊥S	signal ground
	a, b, ..	alphanumeric index by different grounds

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.

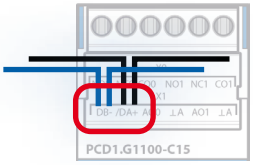
Connection concept

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



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.

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	COB 0
XOB	XOB 10, 12, 13 and 16
PB / FB	100 with maximum hierarchy of 8

Data types

ROM Text / DB	50

Memory

Program memory	64 kByte

Media

Volatile memory (RAM) without battery backup

Data types

Register	2000
Flag	2000
Timer / Counter	200

Memory

Memory (RAM) for 50 Text / DB	5 kByte
Memory (EEPROM) for up to 500 parameters (media) backup	2 kByte
Cyclic synchronisation with PCD controller	Real-time clock (RTC)

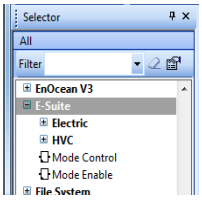
Supported libraries

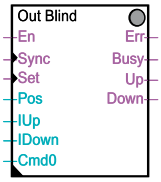
The modules are planned with Saia PG5® using FBoxes or IL. The Saia PG5® Fupla Editor provides a selection of FBoxes which significantly simplify engineering.

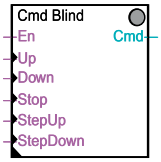
PG5 standard FBox libraries:

- 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)
- HVC (partly)
- 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

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 may 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, no repairs should be undertaken by the user.

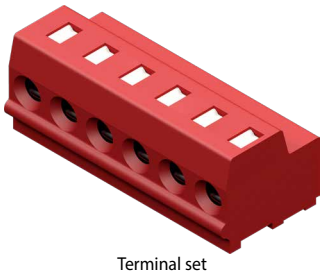
GUARANTEE

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 Mark of Conformity for Machinery Exports to Russia, Kazakhstan or Belarus.

PCD1.G1100-C15



Terminal set
32304321-003-S

Order details

Type	Short description	Description	Weight
PCD1.G1100-C15	E-Line light and blind module	Programmable E-Line input/output module for light and sunblind control Supply 24 VAC/VDC 4 digital inputs 24 VAC / VDC 2 changeover relays 230 VAC / 30 VDC, 8 A, max. inrush current 15 A, incl. electrically isolated current measurement of the burden 2 analogue outputs 12 bit, 0…10 V (3 mA max.) 2 interfaces: RS-485 (S-Bus), µUSB for PG5	140 g
32304321-003-S	Terminal set	6-pin terminal. Set of 6 terminal blocks	40 g

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