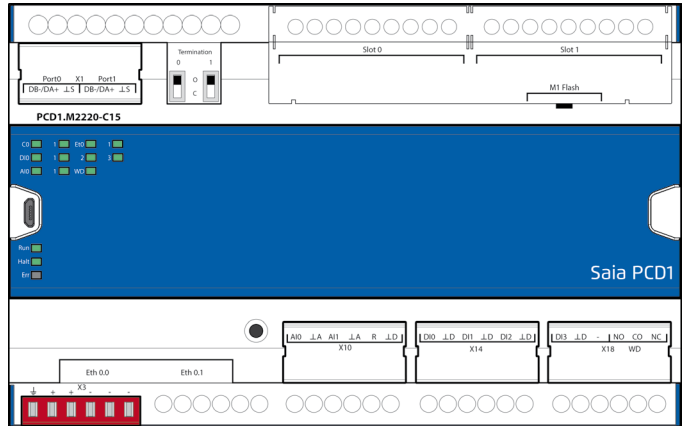




PCD1.M2220-C15

E-Line CPU with Ethernet, 512 kB



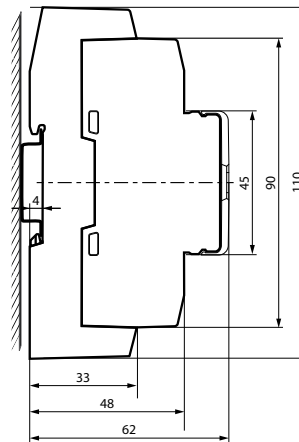
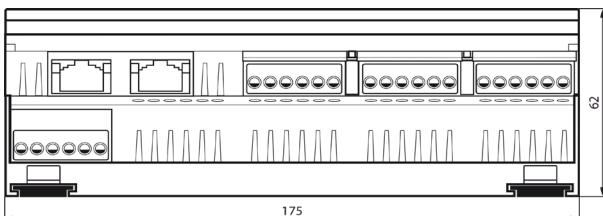
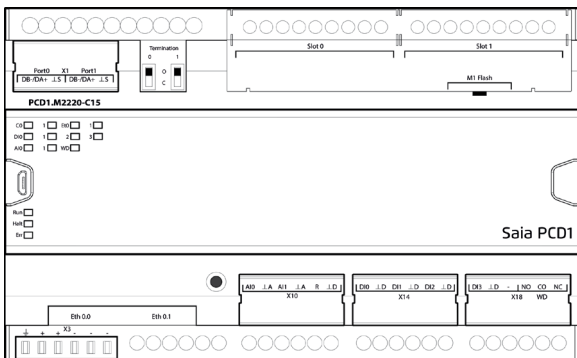
The Saia PCD1 E-Line CPU series was specifically developed for installation in electrical sub-distributors. The compact design enables automation in confined spaces. The E-Line CPU is designed and produced to industrial quality in accordance with IEC 61131-2. The extensive programmability and integration of web+IT technologies enables effective automation over the entire service life of plants and properties. The Saia PCD® E-Line CPU is the ideal interface for other plants owing to the support of numerous protocols such as BACnet, LON, Modbus, etc. It is also ideal to achieve (energy-) efficient and individual room automation. It also provides a good basis to achieve the energy efficiency classes in accordance with EN 15232:2012.

Features



- 4 digital inputs
- 2 analogue inputs, individually configurable via software
- 1 Watchdog relay/changeover contact
- Electrical isolation between supply, bus and I/Os
- Pluggable terminal blocks protected by flaps
- Status LEDs on the front
- Ethernet switch, 2x RS-485, USB and NFC interface
- Large onboard memory for data (up to 128 MByte file system)
- Automation server for integration in web+IT systems
- Freely programmable with Saia PG5®

Dimensions and installation



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

Housing width 10 HP (175 mm)
Compatible with electrical control cabinets
(in accordance with DIN 43880, size 2 x 55 mm)

General technical data

Power supply

Supply voltage	Nominal 24 VAC (50 Hz) or DC, 24 VDC, -20/+25 % incl. 5% ripple, 24 VAC, -15 %/+15% (in accordance with EN/IEC 61131-2)
Electrically isolated	500 VDC between power supply and RS-485 as well as I/Os
Power consumption	6.5 W

Interfaces

Communications interface	2x RS-485 with galvanic isolation, baud rate: 1200, 2400, 5600, 9600, 19200, 38400, 57600, 115200 bps
Terminating resistors	Each connectable using a switch
SBus address	Address range: 0...253 by Saia PG5® Device Configurator
Service interface	Micro USB, NFC (near field communication)
Ethernet connection	(2-port switch) 10/100 Mbit/s, full-duplex, auto-sensing, auto-crossing
Onboard field level protocols	Serial S-Bus, Ether S-Bus, Modbus RTU or TCP
Optional interface in I/O slots	PCD2.F2xxx (with slot for PCD7.F1xxS modules)
Slot M1 for protocol extension	LON over IP (PCD7.R56x module), BACnet® (PCD7.R58x module)

Memory and file system

Program memory, DB/text (Flash)	512 kByte
User memory, DB/text (FRAM)	128 kByte
Onboard user flash file system	128 MByte

General data

Ambient temperature	Operation: 0 ... +55 °C Storage: -40 ... +70 °C
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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 ms (DC)

Relay outputs

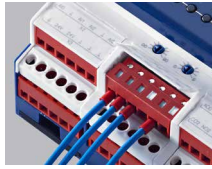
1 Watchdog relay or as changeover contact	48 VAC or VDC, 1 A (mount a freewheeling diode over the load when switching DC tension)
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Analogue inputs

Number	2			
Potential isolation	No			
Signal range and measured values (can be set via FBoxes)	Voltage measurement -10 V ... +10 V Resistance 0 Ω ... 2500 Ω Pt1000 -50 °C ... +400 °C Ni1000 -50 °C ... +210 °C Ni1000 L&S -30 °C ... +140 °C			
	+/- 20V (independent of input configuration) voltages > 15V / < -15V, can result in incorrect values at other inputs			
Input delay	Channel update	10 ms (all channels are updated during this time)		
	Hardware input filter time constant	Voltage measurement $\tau = 2.5$ ms Resistance $\tau \approx 8$ ms		
	Software input filter	Connectable using Saia PG5® Device Configurator (forms the average value of the last 16 values)		
Mode	Resolution [bit]	Resolution [measured value]	Accuracy (at T _{Ambient} = 25°C)	Display
Voltage -10 V ... +10 V	12 + sign	2.44 mV (linear) $R_N = 220$ kΩ	0.3% of the measured value +/- 10 mV	0...1000 (standard) or user scaling
Resistance 0...2500 Ω	12	0.50 ... 0.80 Ω Measured current: 1.0 ... 1.3 mA	0.3% of the measured value +/- 3 Ω	0...25000
Pt 1000	12	-50 .. +400 °C: 0.15 .. 0.25 °C Measured current: 1.0 ... 1.3 mA	0.3% of the measured value +/- 0.5 °C	-500...4000
Ni 1000	12	-50 .. +210 °C: 0.09 .. 0.11 °C Measured current: 1.0 ... 1.3 mA	0.3% of the measured value +/- 0.5 °C	-500...2100
Ni 1000 L&S	12	-30 .. +140 °C: 0.12 ... 0.15 °C Measured current: 1.0 ... 1.3 mA	0.3% of the measured value +/- 0.5 °C	-300...1400

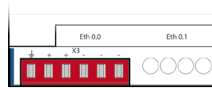
Terminal technology

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.



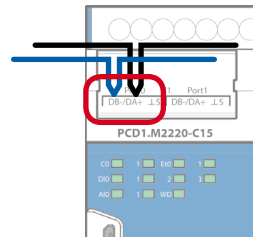
Connection concept

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



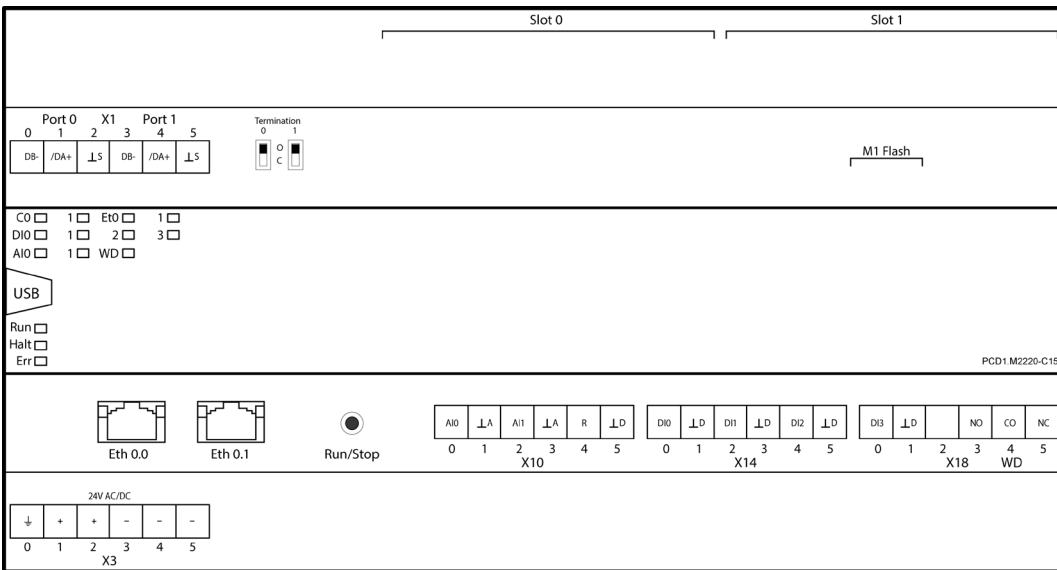
Bus wiring

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.

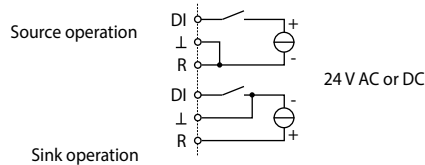
Assignment overview



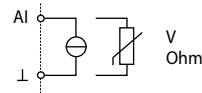
PCD1.M2220-C15

Connection diagrams

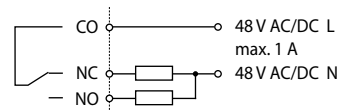
Digital input



Analogue input



Relay (1A) as Watchdog or changeover



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		

Ordering information

Type	Short description	Description	Weight
PCD1.M2220-C15	E-Line CPU with Eth, 512 kByte	E-Line CPU with Ethernet TCP/IP for electrical control cabinet, web and FTP server, file system, 512 kByte user program, 128 kByte RAM DB/text, 128 MByte Flash memory, M1 slot, 2 I/O module slots, 4 digital input, 2 analog input, 1 Watchdog, 4 interfaces: RS-485 (S-Bus), additional RS-485, USB & NFC (service) Supply 24 VAC/VDC	550 g

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