1.4 PCD2 – modular, expandable, compact CPU

Overview of fully programmable controllers Saia PCD2 device series

Saia PCD2 controllers

Base unit with 4 slots for I/O modules
▸ PCD2.M4160   Basic 64 I/Os
▸ PCD2.M4560   Extended 1023 I/Os

Base unit with 8 slots for I/O modules
▸ PCD2.M5540   Expanded with Ethernet switch

Up to 4 integrated communication interfaces. With plug-in modules expandable up to max.15 communication interfaces. Integrated Automation Server in all CPUs.

Saia PCD2 module holder for I/O expansion

Module holder for I/O modules
▸ PCD2.C1000   4 I/O slots
▸ PCD2.C2000   8 I/O slots
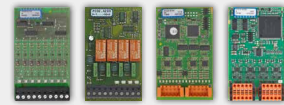
Expandable up to 1023 I/Os

Saia PCD2 input/output modules

Modules with various functions with plug-in terminals
▸ PCD2.Exxx   Digital input modules
▸ PCD2.Axxx   Digital output modules
▸ PCD2.Bxxx   Digital input/output modules
▸ PCD2.Wxxx   Analogue input/output modules
▸ PCD2.Gxxx   Combined input/output modules

Saia PCD2 interface modules

**Plug-in modules to expand the communication interfaces
(up to 4 modules or 8 interfaces)**
▸ PCD7.F1xxS   1 serial interface RS-232, RS-422/485, Belimo MP-Bus
▸ PCD2.F2xxx   2 serial interfaces RS-232, RS-422/RS-485
▸ PCD2.F2150   BACnet® MSTP
▸ PCD2.F2610   DALI
▸ PCD2.F27x0   M-Bus
▸ PCD2.F2180   Belimo MP-Bus

Saia PCD2 memory modules

Plug-in memory modules for data and program backup
▸ PCD2.R6xx Basic module for SD flash cards for slots 0…3
▸ PCD7.R-SD SD flash cards for PCD3.R6xx
▸ PCD7.R5xx   Flash memory modules for slots M1 & M2
▸ PCD7.R610   Flash memory modules for slot M1 & M2

Consumables and accessories for Saia PCD2 controllers

**Housing covers, plug-in screw terminal blocks, I/O bus connection,
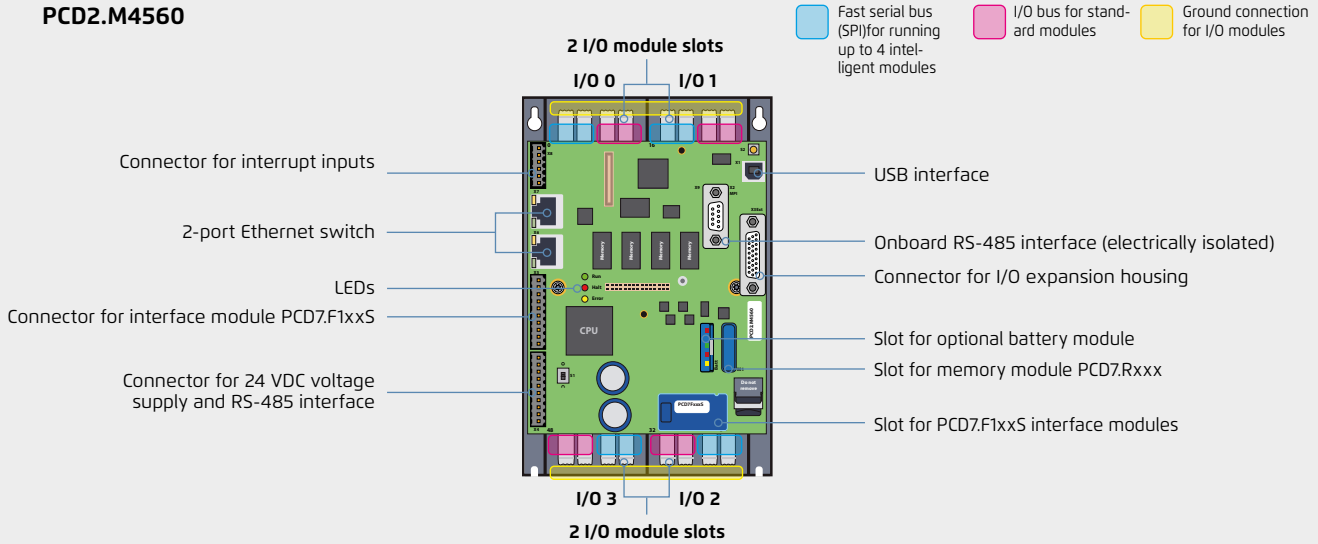battery, system cables and adapters**

Saia PCD2.M4xx controllers

The PCD2.M4x60 controller is based on a flat, space-saving housing design that has already been successfully used in the OEM and project business for many years. This modular, fully programmable CPU is suitable for both small and large applications, for example in machine controllers, building automation and infrastructure automation. The modular CPU is powerful, compact and can be expanded with up to 1,023 local data points Generous memory resources and sufficient CPU power for demanding communication tasks with up to 14 interfaces (BACnet, Profibus, M-Bus, Modbus, DALI, etc.).
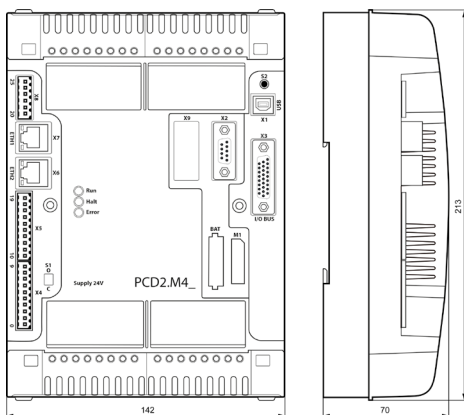

PCD2.M4560

Fast serial bus (SPI)for running up to 4 intelligent modules

I/O bus for standard modules

Ground connection for I/O modules

2 I/O module slots

I/O 0   I/O 1

Connector for interrupt inputs

2-port Ethernet switch

LEDs

Connector for interface module PCD7.F1xxS

Connector for 24 VDC voltage supply and RS-485 interface

USB interface

Onboard RS-485 interface (electrically isolated)

Connector for I/O expansion housing

Slot for optional battery module

Slot for memory module PCD7.Rxxx

Slot for PCD7.F1xxS interface modules

I/O 3   I/O 2

2 I/O module slots

System properties

▸ Up to 14 communication interfaces
▸ 4 slots for PCD2 I/O modules in base unit
▸ Up to 64 inputs/outputs in base unit, can be expanded locally to up to 1,023 I/O
▸ Automation Server onboard
▸ Large onboard memory for programs (2 MB) and data (128 MB)
▸ Memory with SD flash cards can be expanded up to 4 GB
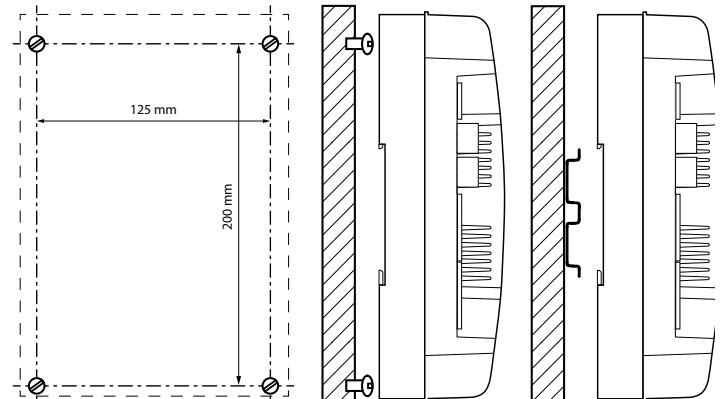▸ Battery-free with FRAM technology – protects PCD media (R, F, DB/TEXT) from loss even in a de-energised state

FTP   WWW   EMAIL   SNMP   SD

AUTOMATION SERVER INTEGRATED IN THE BASE UNIT

Dimensions

Compact mass:
142 × 213 × 49 mm

Mounting

125 mm

200 mm

| Screw diameter: | less than Ø 4.9 |
| Screw head diameter: | less than Ø 8.0 |

Technical data and ordering information for PCD2.M4xxx controllers

Technical overview

Technical data		PCD2.M4160	PCD2.M4560
Number of digital inputs onboard		4 digital inputs (24 V, 4 × interrupt)	
Number of digital inputs/outputs in the base unit resp. I/O module slots in the base unit		64 4	
Number of digital inputs/outputs expandable with PCD2.C2000 and PCD2.C1000 module holders resp. I/O module slots			960 60
Processing time [µs]	Bit operation Word operation	0.1…0.8 µs 0.3 µs	
Real-time clock (RTC)		Yes	
Supercap to support real-time clock		< 10 days	
Slot for optional battery holder module Order number 463948980		Yes, to support real-time clock for < 3 years	

Onboard memory

	PCD2.M4160	PCD2.M4560
Program memory, DB/text (flash)	512 kB	2 MB
User memory, DB/text (RAM)	128 kB	1 MB
Flash memory (S-RIO, configuration and backup)	128 MB	128 MB
User flash file system (INTFLASH)	8 MB	128 MB
Data backup with FRAM technology (the data is retained in a de-energised state)	for R, F, DB, TEXT	for R, F, DB, TEXT

Onboard interfaces

	PCD2.M4160	PCD2.M4560
USB 1.1	≤ 12 Mbit/s	
Ethernet, 2-port switch	≤ 10/100 Mbit/s, full duplex, auto-sensing/auto-crossing	
RS-485 on terminal block (port 0)	≤ 115.2 kbit/s	
RS-485 free protocols on D-Sub connector (port 2) or RS-485 Profibus-DP Slave, Profi-S-Net on D-Sub connector (port 10)	No	≤ 115.2 kbit/s ≤ 1.5 Mbit/s (elec. isolated)

Additional interfaces

	PCD2.M4160	PCD2.M4560
PCD2.F2xxx modules for RS-232, RS-422, RS-485, BACnet MS/TP, Belimo MP-Bus, DALI and M-Bus	I/O slot 0…1 2 modules	I/O slot 0…3 4 modules
Slot A for PCD7.F1xxS modules	Yes	

General data

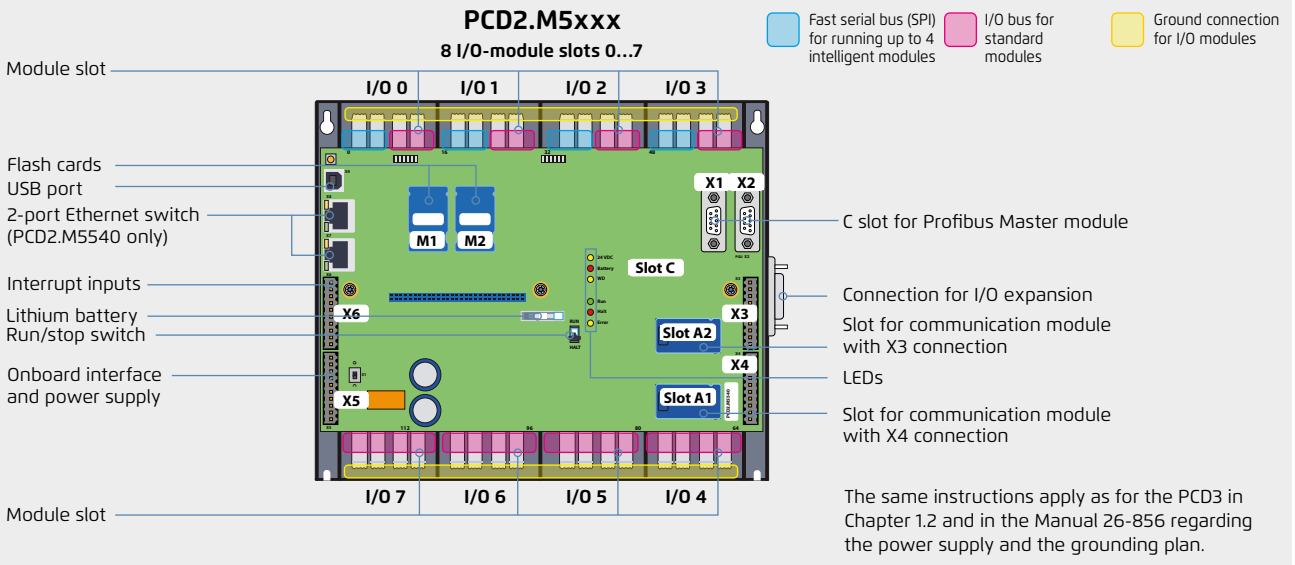|	
Supply voltage (in accordance with EN/IEC 61131-2)	24 VDC, −20/+25% max. incl. 5% ripple
Power consumption	typically 15 W for 64 I/Os
Load capacity 5 V/+ V internal	max. 800 mA/250 mA

Ordering information

Type	Description
PCD2.M4160	PCD2 processor unit with Ethernet TCP/IP, 512 kbytes program memory, 64 I/Os
PCD2.M4560	PCD2 processor unit with Ethernet TCP/IP, 2 MB program memory, 1,023 I/Os

◆ Accessories, e.g. connectors, covers, etc. are described in the last page of this chapter.

◆ Details can be found in the manual 27-645.

Automation stations
1
Operation and monitoring
2
Room controllers
3
Consumer data acquisition
4
Switch cabinet components
5

Saia PCD2.M5xxx controllers

Due to its flat housing design, the Saia PCD2.M5xxx is ideal for space-saving applications. The powerful CPU enables the control and regulation functions of complex applications with up to 1023 central data points. This allows the PCD2 to be expanded for Lon IP® or BACnet®-compatible controller using plug-in memory modules. The PCD2 has communication interfaces such as USB, Ethernet, RS-485 and onboard Automation Server.
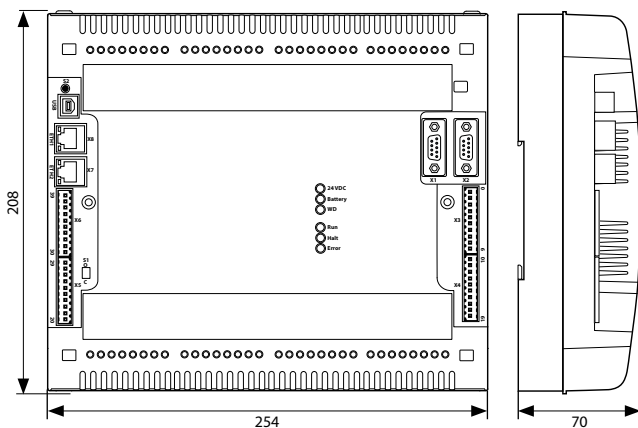

PCD2.M5xxx
8 I/O-module slots 0…7

Module slot — I/O 0 · I/O 1 · I/O 2 · I/O 3

Fast serial bus (SPI) for running up to 4 intelligent modules
I/O bus for standard modules
Ground connection for I/O modules

Flash cards
USB port
2-port Ethernet switch (PCD2.M5540 only)
Interrupt inputs
Lithium battery
Run/stop switch
Onboard interface and power supply
Module slot — I/O 7 · I/O 6 · I/O 5 · I/O 4

C slot for Profibus Master module
Connection for I/O expansion
Slot for communication module with X3 connection
LEDs
Slot for communication module with X4 connection

The same instructions apply as for the PCD3 in Chapter 1.2 and in the Manual 26-856 regarding the power supply and the grounding plan.

System properties

▸ Up to 15 communication interfaces (RS-232, RS-485, etc.)
▸ 8 I/O slots that can be expanded using module holders to max. 64 slots (1023 central data points)
▸ Remote I/O expansion with RIO PCD3.T66x (Ethernet)
▸ 1 MB of program memory
▸ Automation Server Onboard

▸ Data memory with flash memory modules that can be expanded to 4 GB
▸ 6 fast interrupt/counter inputs on the CPU
▸ Compatible with all PCD3 module holders

Onboard interfaces of the Saia PCD2.M5xxx

Type	Connection	Port	Transmission rate
RS-232 (serial) or	X2 (D-Sub)	0	≤ 115.2 kbit/s
RS-485 (serial)	X5 (terminal)	0	≤ 115.2 kbit/s
RS-485 (serial) for free protocols or	X1 (D-Sub)	3	≤ 115.2 kbit/s
Profi S-Net / Profibus DP Slave	X1 (D-Sub)	10	≤ 1.5 Mbit/s
Ethernet (2-port switch) (PCD2.M5540 only)	Ethernet	9	10/100 Mbit/s
USB 1.1 (PGU)	USB	---	≤ 12 Mbit/s

Dimensions

254 · 70 · 208

Mounting
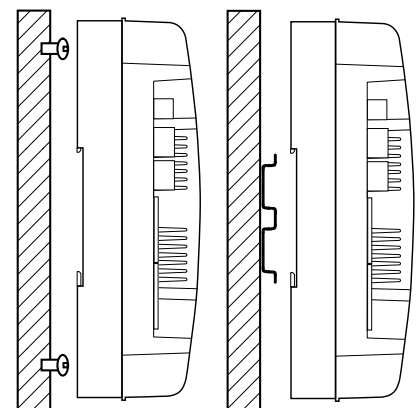
Technical data and ordering information for PCD2.M5xxx controllers

						AUTOMATION SERVER INTEGRATED IN THE BASE UNIT
FTP	WWW	EMAIL	SNMP		SD	

Technical overview

Technical data

Number of onboard digital inputs/outputs	6 digital inputs (24 V, 4 × interrupt) 2 digital outputs (2 × PWM, 24 V 100 mA)
Number of digital inputs/outputs in the base unit or I/O module slots in the base unit	128 8
Number of digital inputs/outputs with 7 PCD2.C2000 module holders or I/O module slots	896 56
Processing times [µs] bit operation word operation	0.3…1.5 µs 0.9 µs
Real-time clock (RTC)	Yes

Onboard memory

Main memory (RAM) for program and DB/Text	1 MB
Flash memory (S-RIO, configuration and backup)	2 MB
User flash file system (INTFLASH)	No
Data backup	1…3 years with lithium battery

Onboard communication interfaces

RS-232, RS-485 / PGU	≤ 115 kbit/s
RS-485 Profibus DP–Slave, Profi S-Net (S-IO, S-Bus)	≤ 1.5 Mbit/s
USB 1.1 (PGU)	≤ 12 Mbit/s
Ethernet, 2-port switch (PCD2.M5540 only)	≤ 10/100 Mbit/s (full duplex, auto-sensing/auto-crossing)

General specifications

|	
Supply voltage (in accordance with EN/IEC 61131-2)	24 VDC, –20/+25% max. incl. 5% ripple
Load capacity 5 V / + V internal	max. 1400 mA / 800 mA
Automation Server	Flash memory, file system, FTP and web server, email, SNMP

Order details

Type	Description
PCD2.M5540	Programmable controller, 1024 kByte of RAM, Ethernet interface

Additional accessories, e.g. connectors, covers, etc. are described on the last page of this Chapter.
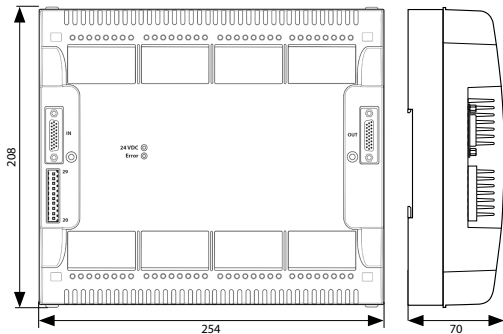
Saia PCD2.Cxxxx module holder

Up to 8 Saia PCD2.C1000 or Saia PCD2.C2000 module holders can be connected to the Saia PCD2.M4x60 (7 with PCD2.M5xxx). This makes it possible to connect up to 64 I/O modules or 1023 digital I/Os.
A module holder has space for 4/8 I/O modules. In addition to Saia PCD2.Cxxxx module holders, all Saia PCD3 module holders can also be connected.
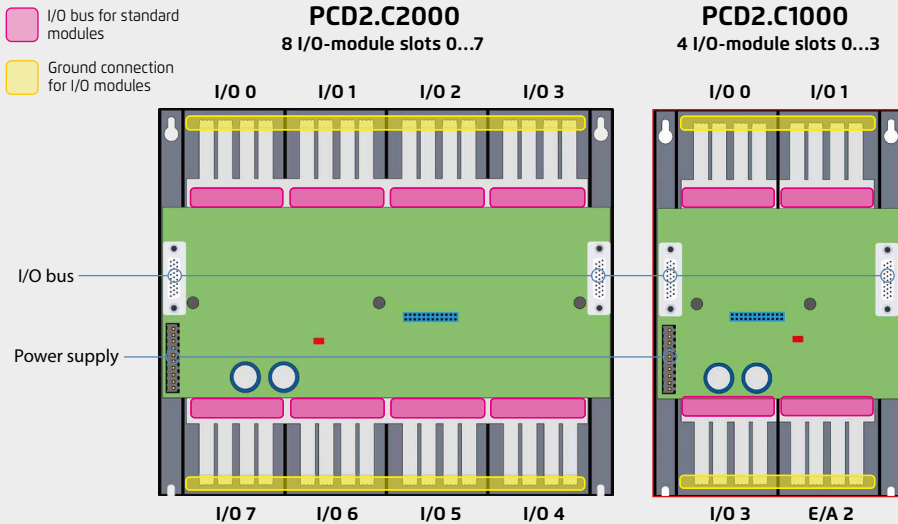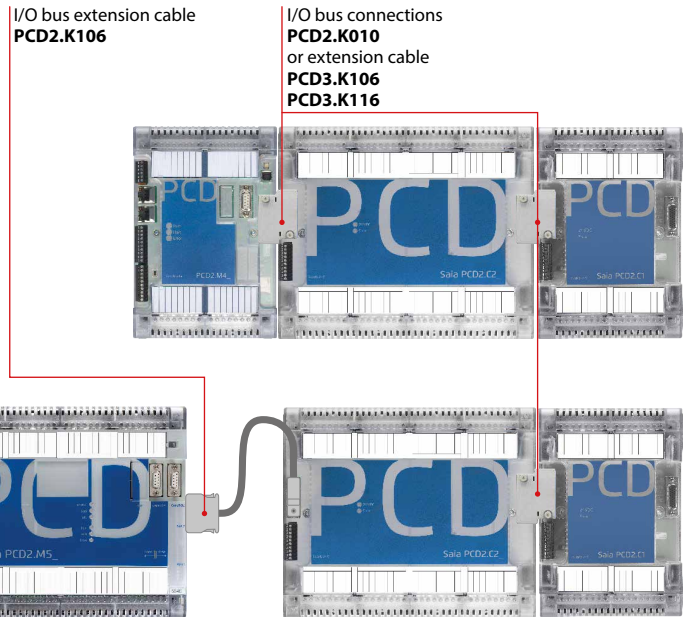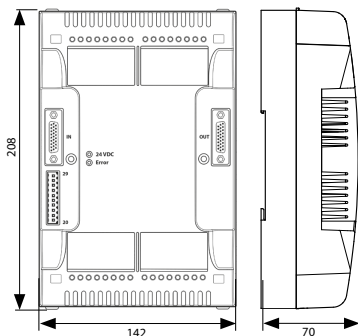

System properties

▸ Up to 1023 central data points
▸ Numerous module variants can be plugged in
▸ Mounting is quick and easy
▸ Can be combined with Saia PCD3.Cxxx module holders
▸ Connections for a power supply on each module holder
▸ Can be connected below or next to each other

Dimensions PCD2.C2000

Dimensions PCD2.C1000

I/O bus extension cable **PCD2.K106**

I/O bus connections **PCD2.K010** or extension cable **PCD3.K106 PCD3.K116**

PCD2.M5x40 to PCD2.Cx000	PCD2.M4x60 to PCD2.Cx000	PCD2.Cx000 to PCD2.Cx000
PCD2.K106	PCD2.K010 PCD3.K106 PCD3.K116	PCD2.K010 PCD3.K106 PCD3.K116

Saia PCD2 I/O module holder

Type	Description
PCD2.C1000	Expansion module holder with 4 I/O slots
PCD2.C2000	Expansion module holder with 8 I/O slots
PCD2.K010	I/O bus connector
PCD2.K106	I/O bus extension cable length 0.9 m (connection between PCD2.M5xxx and PCD2.Cxxxx)
PCD3.K106	I/O bus extension cable length 0.7 m (connection between two module holders)
PCD3.K116	I/O bus extension cable length 1.2 m (connection between two module holders)

No more than 5 extension cables may be used for this.

Overview of Saia PCD2 plug-in I/O modules

The functions of the Saia PCD2 can be expanded as required using a wide range of plug-in I/O modules and adapted to specific needs. This not only ensures that a project can be implemented quickly, but also provides the option of expanding the system at any time during operation.
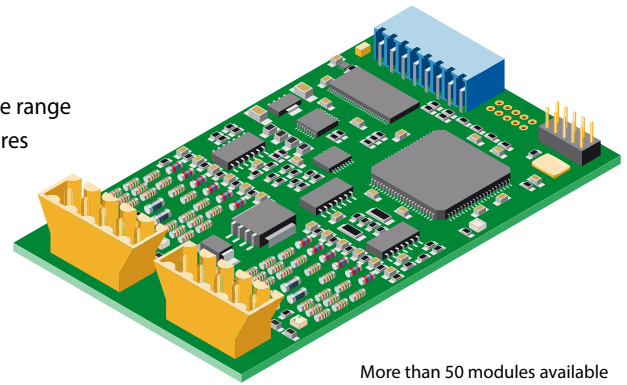
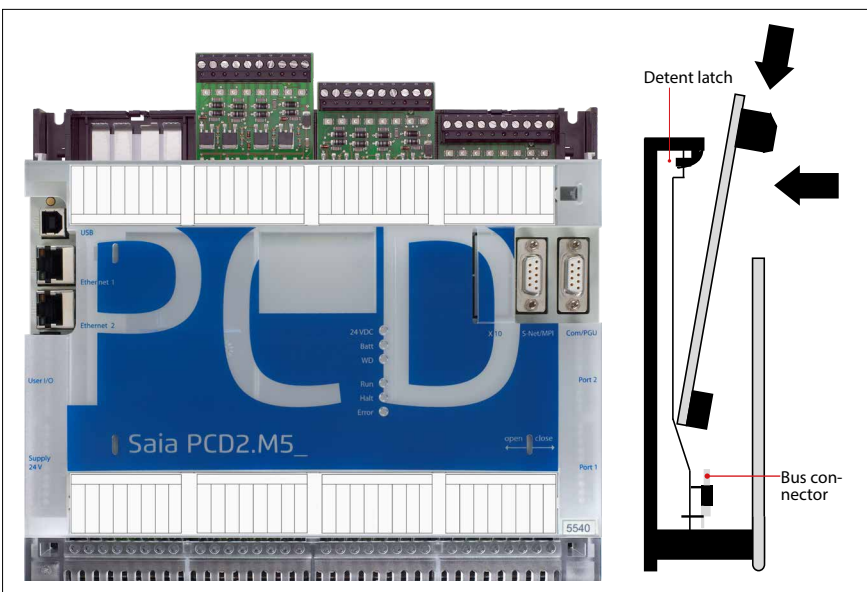More than 50 modules available with different functionalities

System properties

▶ Numerous variants available
▶ Slot direct in the Saia PCD2.M4x60, PCD2.M5540, PCD1.M2xxx or on the module holder
▶ Full integration into the Saia PCD2 housing
▶ Compact design
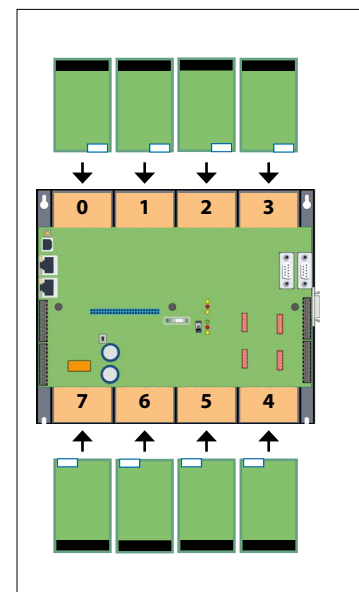▶ Up to 16 I/Os per module
▶ Modules with an input delay of 0.2 ms

General type key

PCD2.Axxx	Digital output modules
PCD2.Bxxx	Combined digital input/output modules
PCD2.Exxx	Digital input modules
PCD2.Fxxx	Communication modules
PCD2.Hxxx	Fast counter modules
PCD2.Rxxx	Memory modules
PCD2.Wxxx	Analogue input/output modules

Insertion into housing

Detent latch

Bus con-nector

Slots for I/O modules

Differences between the terminals of the I/O modules

Type K 2×5-pin plug	**Type L** 10-pin terminal plug-in	**Type M** 14-pin plug-in terminal	**Type N** 20-pin terminal	**Type O** 34-pin flat cable	**Type P** 14-pin terminal plug-in	**Type R** 17-pin terminal
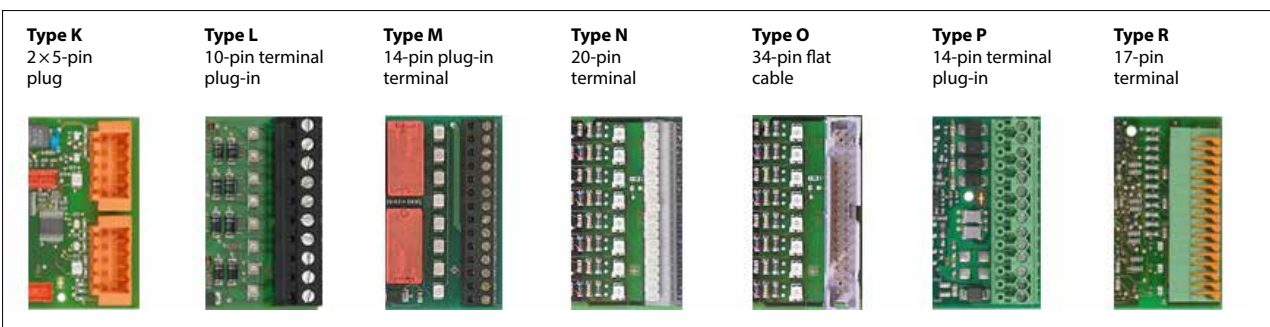
The screw terminal blocks and connectors can also be ordered individually as accessories.

Saia PCD2 digital input and output modules

The digital I/O modules can be easily plugged into Saia PCD2 and Saia PCD1 base units or a suitable I/O module holder.
In addition to inputs for various voltage levels, digital outputs are provided with both transistor construction and as mechanical relays.
This means that electrical isolation from the switching electrical circuit can be achieved easily and reliably.

Digital input modules

Type	Number of inputs	Input voltage	Switching capacity DC	AC	Input filter	Electrical isolation	Current draw 5V-Bus [1]	+V-Bus [2]	I/O connector type [3]
PCD2.E110	8	15…30 VDC	---	---	8 ms	---	24 mA	---	L
PCD2.E111	8	15…30 VDC			0.2 ms		24 mA		L
PCD2.E160	16	15…30 VDC	---	---	8 ms	---	72 mA	---	O
PCD2.E161	16	15…30 VDC			0.2 ms		72 mA		O
PCD2.E165	16	15…30 VDC			8 ms		72 mA		N
PCD2.E166	16	15…30 VDC			0.2 ms		72 mA		N
PCD2.E610	8	15…30 VDC	---	---	10 ms	●	24 mA	---	L

Digital output modules

Type	Number of outputs	Input voltage	Switching capacity DC	AC	Input filter	Electrical isolation	Current draw 5V-Bus [1]	+V-Bus [2]	I/O connector type [3]
PCD2.A200	4, relay (make with contact protection)	---	2 A/50 VDC	2 A/250 VAC	---	●	15 mA	---	L
PCD2.A220	6, relay (make)	---	2 A/50 VDC	2 A/250 VAC	---	●	20 mA	---	L
PCD2.A250	8, relay (make)	---	2 A/50 VDC	2 A/48 VAC	---	●	25 mA	---	M
PCD2.A400	8, transistor	---	0.5 A/5…32 VDC	---	---	---	25 mA	---	L
PCD2.A410	8, transistor	---	0.5 A/5…32 VDC	---	---	●	24 mA	---	L
PCD2.A460	16, transistor (with short circuit protection)	---	0.5 A/10…32 VDC	---	---	---	74 mA	---	O
PCD2.A465	16, transistor (with short circuit protection)	---	0.5 A/10…32 VDC	---	---	---	74 mA	---	N

Digital input/output modules

Type	Number of I/Os	Input voltage	Switching capacity DC	AC	Input filter	Electrical isolation	Current draw 5V-Bus [1]	+V-Bus [2]	I/O connector type [3]
PCD2.B100	2 In + 2 Out + 4 selectable In or Out	15…32 VDC	0.5 A/5…32 VDC	---	8 ms	---	25 mA	---	L
PCD2.B160	16 I/O (in blocks of 4 configurable)	24 VDC	0.25 A/18…30 VDC	---	8 ms or 0.2 ms	---	120 mA	---	2× K

Fast counter modules

Type	Number of counters	Inputs per counter	Outputs per counter	Counting range	Selectable digital filter	Current draw 5V-Bus [1]	+V-Bus [2]	I/O connector type [3]
PCD2.H112	2	2 In + 1 configurable In	1 CCO	0…16 777 215 (24 bit)	10 kHz…150 kHz	50 mA	4 mA	K
PCD2.H114	4	2 In + 1 configurable In	1 CCO	0…16 777 215 (24 bit)	10 kHz…150 kHz	50 mA	4 mA	2× K

! The internal load current drawn by the I/O modules from the +5V and +V bus supply must not exceed the maximum supply current specified for the PCD2.M4x60, PCD2.M5540, PCD2.Cxxxx and PCD1.M2xxx.

Overview of the internal bus capacity of the module holders

Capacity	PCD1.M2xxx	PCD2.M4x60	PCD2.M5540	PCD2.C1000	PCD2.C2000
[1] Internal 5V bus	500 mA	800 mA	1400 mA	1400 mA	1400 mA
[2] Internal +V (24 V)	200 mA	250 mA	800 mA	800 mA	800 mA
The electrical requirement of the internal +5V and +V bus for the I/O modules is calculated in the PG5 2.1 Device Configurator.					

[3] Plug-in I/O terminal blocks are supplied with I/O modules. Spare terminals, ribbon connectors with system cables and separate terminals are ordered as accessories (see pages 57 and 150).

Saia PCD2 analogue input and output modules

The numerous analogue modules allow complex control tasks or measurements. Depending on the speed of the AD converter, the resolution is between 8 and 16 bits. The digitised values can be processed further direct in the project in the PCD2 and PCD1. The large number of different modules means that the most suitable module is available for almost any requirement.

Analogue input modules

Type / Order no.	Number of channels	Signal range	Resolution	Electrical isolation	Current draw 5V-Bus [1] +V-Bus [2]		I/O connector type [3]
PCD2.W200	8 In	0…+10 V	10 bits	---	8 mA	5 mA	L
PCD2.W210	8 In	0…20 mA (4…20 mA via user program)	10 bits		8 mA	5 mA	L
PCD2.W220	8 In	Pt1000: −50 °C…400 °C/Ni1000: −50 °C…+200 °C	10 bits		8 mA	16 mA	L
PCD2.W300	8 In	0…+10 V	12 bits	---	8 mA	5 mA	L
PCD2.W310	8 In	0…20 mA (4…20 mA via user program)	12 bits		8 mA	5 mA	L
PCD2.W340	8 In	0…+10 V/0…20 mA (4…20 mA via user program) Pt1000: −50 °C…400 °C/Ni1000: −50 °C…+200 °C	12 bits		8 mA	20 mA	L
PCD2.W350	8 In	Pt100: −50 °C…+600 °C/Ni100: −50 °C…+250 °C	12 bits		8 mA	30 mA	L
PCD2.W360	8 In	Pt1000: −50 °C…+150 °C	12 bits		8 mA	20 mA	L
PCD2.W380	8 In	0–10 V…+10 V, −20 mA…+20 mA, Pt/Ni1000, Ni1000 L&S, NTC10k/NTC20k (configuration via software)	13 bits		25 mA	25 mA	2× K
PCD2.W315	7 In	0…20 mA (4…20 mA via user program)	12 bits	●	60 mA	0 mA	P
PCD2.W745	4 In	Temperature module for TC type J, K and 4-wire Pt/Ni 100/1000	16 bits	●	200 mA	0 mA	R

Analogue output modules

Type Order no.	Number of channels	Signal range	Resolution	Electrical isolation	Current draw 5V-Bus [1] +V-Bus [2]		I/O connector type [3]
PCD2.W400	4 Out	0…+10 V	8 bits	---	1 mA	30 mA	L
PCD2.W410	4 Out	0…+10 V/0…20 mA/4…20 mA jumper-selectable	8 bits		1 mA	30 mA	L
PCD2.W600	4 Out	0…+10 V	12 bits	---	4 mA	20 mA	L
PCD2.W610	4 Out	0…+10 V/−10 V…+10 V/0…20 mA/4…20 mA selectable with jumper	12 bits		110 mA	0 mA	L
PCD2.W605	6 Out	0…+10 V	10 bits	●	110 mA	0 mA	P
PCD2.W615	4 Out	0…20 mA/4…20 mA, configurable	10 bits	●	55 mA	0 mA	P

Analogue input/output modules

Type / Order no.	Number of channels	Signal range	Resolution	Electrical isolation	Current draw 5V-Bus [1] +V-Bus [2]		I/O connector type [3]
PCD2.W525	4 In + 2 Out	I: I:0…10 V, 0(4)…20 mA, Pt 1000, Pt 500 or Ni 1000 (selectable by DIP switch) O: 0…10 V or 0(4)…20 mA (selectable by software)	In: 14 bits Out: 12 bits	●	40 mA	0 mA	P

Saia PCD2 mixed digital and analogue input and output modules

With the multi-function I/O module PCD2.G200 a total of 24 digital and analogue inputs and outputs is achieved. Thus, the need for additional module holders can be avoided, and sophisticated small applications can be implemented cost-effectively.
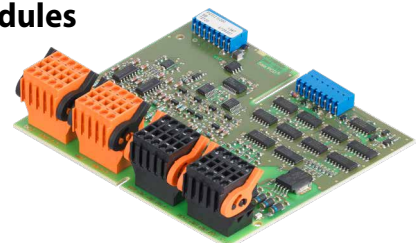
Multifunctional input/output modules

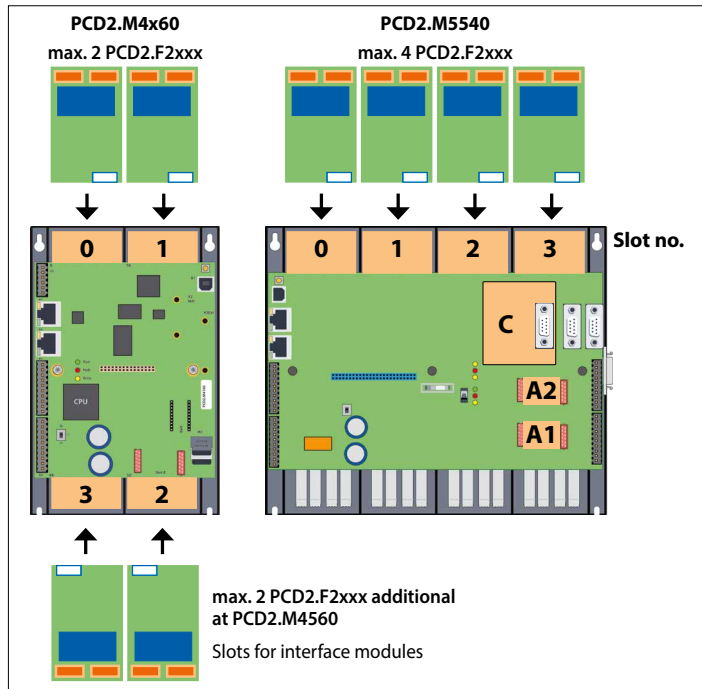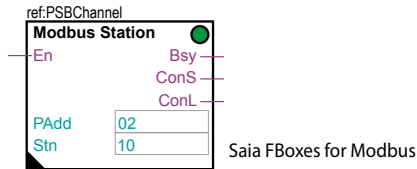| Type / Order no.	Number of channels	Signal range	Resolution	Input filter	Electrical isolation	Current draw 5V-Bus [1] +V-Bus [2]		I/O connector type [3]
PCD2.G200	4 In	Digital: 15…30 VDC		8 ms	---	12 mA	35 mA	KB black
	4 Out	Digital: 0.5 A/10…32 VDC			---			KB black
	2 In 2 In 4 In	Analogue: 0…10 V Analogue: Pt1000 or Ni1000 Analogue: Universal, 0…10 V, 0…20 mA, Ni/Pt1000 (selectable via DIP switch)	12 bits 12 bits 12 bits	10 ms 20 ms 10 ms Ni/Pt 20 ms	---			K orange
	8 Out	Analogue: 0…10 V	10 bits		---			K orange

[1] [2] [3] See page 57

Communication interfaces of the Saia PCD2 controllers

In addition to the onboard interfaces of Saia PCD2, the interface functions can also be expanded in a modular way with various slots. The PCD2 series therefore supports numerous protocols. The physical bus specifications are available for most protocols as a plug-in module. If this is not the case, the bus can be connected via an external converter.

Protocols supported by the PCD2.M4x60, PCD2.M5540 via FBoxes

▸ Modem communication with the PCD
▸ HMI editor applications with PCD7.Dxxx text terminals
▸ Serial S-Net (S-Bus)
▸ Modbus
▸ JCI N2-Bus
▸ KNX® S-Mode/EIB (with external converter)
▸ DALI
▸ EnOcean (with external converter)
▸ M-Bus
▸ BACnet®

ref:PSBChannel

Saia FBoxes for Modbus

PCD2.M4x60
max. 2 PCD2.F2xxx

PCD2.M5540
max. 4 PCD2.F2xxx

Slot no.

max. 2 PCD2.F2xxx additional at PCD2.M4560

Slots for interface modules

Physical interfaces that can be fully programmed

PCD7.F150S

PCD2.F2150 with PCD7.F150S

Module	Specifications	Electrical isolation	Current draw 5V-Bus +V-Bus		Slot	I/O connector type [1]
PCD7.F110S	RS-422 with RTS/CTS or RS-485 [2]	---	40 mA	---	A1 / A2	
PCD7.F121S	RS-232 with RTC/CTS, DTR/DSR, DCD, suitable for modem or EIB connection	---	15 mA	---	A1 / A2	
PCD7.F150S	RS-485 [2]	●	130 mA	---	A1 / A2	
PCD2.F2100	RS-422/RS-485 [2], plus PCD7.F1xxS as an option	---	110 mA	---	I/O 0-3	2× K
PCD2.F2210	RS-232 plus PCD7.F1xxS as option	---	90 mA	---	I/O 0-3	2× K

Physical interfaces for specific protocols

PCD2.F2210

PCD2.F2150

PCD2.F2810

Module	Specifications	Electrical isolation	Current draw 5V-Bus +V-Bus		Slot	I/O connector type [1]
PCD7.F180S	Belimo MP-Bus, for connecting up to 8 drives on one line	---	15 mA	15 mA	A1 / A2	
PCD2.F2150	BACnet® MS/TP or fully programmable	---	110 mA	---	I/O 0-3	2× K
PCD2.F2610	DALI	---	90 mA	---	I/O 0-3	L
PCD2.F2700	M-Bus 240 nodes	---	70 mA	8 mA	I/O 0-3	L
PCD2.F2710	M-Bus 20 nodes	---	70 mA	8 mA	I/O 0-3	L
PCD2.F2720	M-Bus 60 nodes	---	70 mA	8 mA	I/O 0-3	L
PCD2.F2810	Belimo MP-Bus with base for PCD7.F1xxS modules	---	90 mA	15 mA	I/O 0-3	2× K

[1] Plug-in I/O terminal blocks are included with I/O modules. Spare terminals, ribbon connectors with system cables and separate terminals are ordered as accessories (see pages 57 and 150).
[2] with line termination resistors that can be activated.
[3] For 254 network variables, with base for PCD7.F1xxS modules.

System properties of PCD2.F2xxx modules

The following points must be noted when using the PCD2.F2xxx interface modules:

▸ Up to 4 PCD2.F2xxx modules (8 interfaces) can be used in slots 0…3 for each PCD2 system.

▸ The PCD2 system has a processor to process both the application and the serial interfaces. Processing of the interface modules requires the appropriate CPU capacity.

▸ Consult the information and examples provided in the Manual 26-856 for PCD2.M5 to determine the maximum communication capacity for each PCD2.M5 system.

Memory modules of the Saia PCD2 controllers

The functions of the Saia PCD2 can be expanded using flash memory. Memory cards with file systems and data backup are available for this task. The various protocols whose firmware is installed on the flash cards can also be used by simply inserting the relevant card. The controller therefore becomes BACnet® compatible. More information to memory management and structure is contained in Chapter 1.1 Saia PCD System Description.
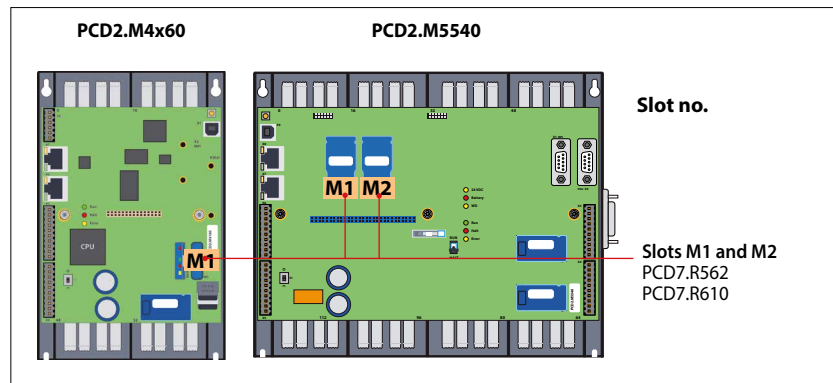
System properties

Onboard user memory:
▸ 1024 kByte RAM for program + DB/text
▸ 2 MB flash memory (S-RIO, configuration and backup)

Expansion options:
▸ Two slots (M1 and M2) for memory cards integrated into the CPU

Slots for memory modules

Flash memory with file system, program and data backup, BACnet®

Type	Description	Slot
PCD7.R562	Flash card with BACnet® and 128 MB file system	M1 & M2
PCD7.R610	Holder module for micro SD card	M1 & M2
PCD7.R-MSD1024	MicroSD memory card 1 GB, PCD formatted	PCD7.R610

Battery for data backup

| Type	Description
463948980	Battery holder module for PCD2. M4x60
450748170	Lithium battery for PCD processor unit (RENATA button battery type CR 2032)

System properties of PCD7.R562 modules
▸ Only one BACnet® module can be operated per PCD2.M5540.

Consumables and accessories for Saia PCD2 controllers

Fast labelling of I/O modules with the Saia LabelEditor

The software tool efficiently labels the PCD2 labelling strip. The user can enter the unique data point text in the tool. This can then be printed out on A4 paper. The user selects appropriate distance formats for the various types of PCD2 modules. The text entered can be saved as templates and reused.

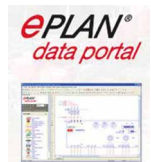SBC Label Editor is delivered with the PG5 Controls Suite.
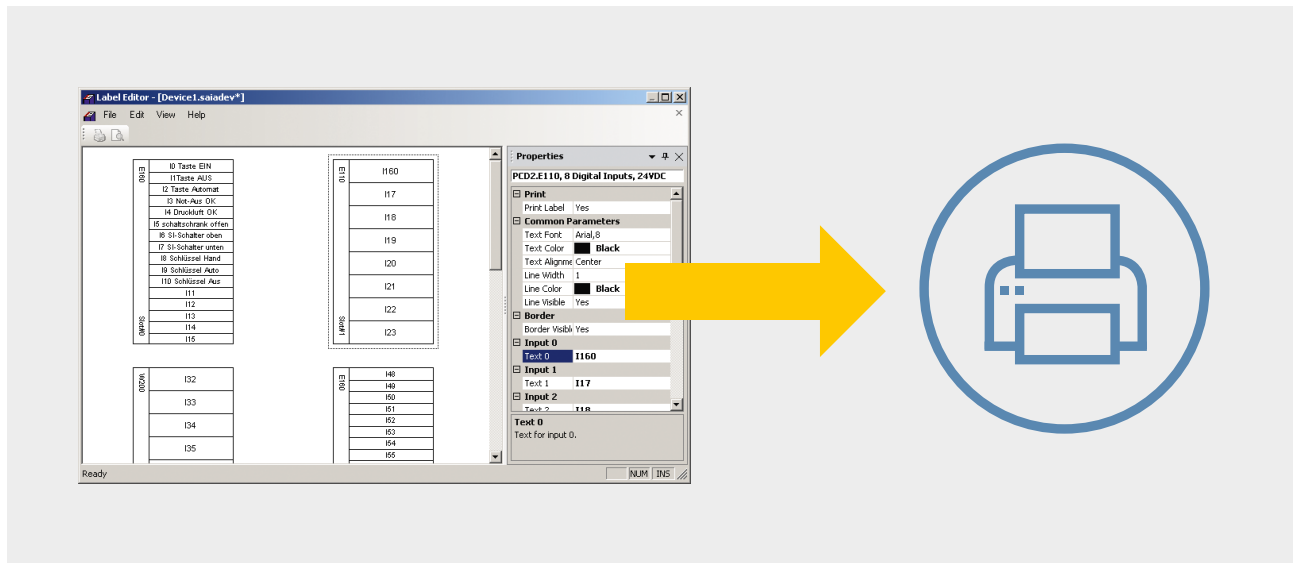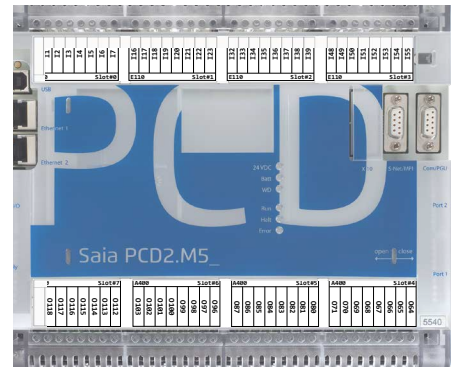
EPLAN macros

EPLAN macros are available for project planning and engineering

The EPLAN® electric P8 macros are available on the support site.

The macros and article data are also available on the EPLAN® data portal.

Download:
www.sbc-support.com

Consumables and accessories for Saia PCD2 controllers

Saia PCD2 housing covers

Type	Description
410477190	Cover for PCD2.M5x40 without logo (neutral housing cover)

Saia PCD2 plug-in screw terminal blocks for onboard I/Os

Type	Description
440549160	Plug-in screw terminal block, 10-pin, labelling 0… 9
440549170	Plug-in screw terminal block, 10-pin, labelling 10…19
440549180	Plug-in screw terminal block, 10-pole, labelling 20…29
440549190	Plug-in screw terminal block, 10-pole, labelling 30…39

Plug-in screw terminal blocks and connectors for Saia PCD2 I/O modules

Type	Description
440548470	Plug-in screw terminal block, 10-pin (type L) for wires up to 1.5 mm², labelling 0…9
440550480	Plug-in spring terminal block 2 × 5-pin (type K) for wires up to 1.0 mm², orange
440550540	Plug-in spring terminal block 2 × 5-pin (type KB) for wires up to 1.0 mm², black

I/O bus connection

Type	Description
PCD2.K010	I/O bus connector
PCD2.K106	I/O bus extension cable

Battery

Type	Description
463948980	Battery carrier module for PCD2. M4x60
450748170	Lithium battery for PCD2.M5540

System cables for digital modules with 16 I/Os[1]

PCD2.K221	Sheathed, round cable with 32 strands, each 0.25 mm², 1.5 m long, PCD side: 34-pin ribbon connector type D, process side: strand ends free, colour coded
PCD2.K223	Sheathed, round cable with 32 strands, each 0.25 mm², 3.0 m long, PCD side: 34-pin ribbon connector type D, process side: strand ends free, colour coded

System cables for adapters PCD2.K520/…K521/…K525[1]

PCD2.K231	Sheathed, half-round cable with 34 strands, each 0.09 mm², 1.0 m long, with 34-pin ribbon connector type D at both ends
PCD2.K232	Sheathed, half-round cable with 34 strands, each 0.09 mm², 2.0 m long, with 34-pin ribbon connector type D at both ends

System cables for 2 relay interfaces PCD2.K551/K552[1]

PCD2.K241	Sheathed, half-round cable with 34 strands, each 0.09 mm², 1.0 m long, PCD side 34-pin ribbon connector type D, process side: two 16-pin ribbon connectors
PCD2.K242	Sheathed, half-round cable with 34 strands, each 0.09 mm², 2.0 m long, PCD side 34-pin ribbon connector type D, process side: two 16-pin ribbon connectors

"Ribbon connector ←→ screw terminal" adapters

PCD2.K520	for 16 inputs/outputs, with 20 screw terminals, without LED
PCD2.K521	for 16 inputs/outputs, with 20 screw terminals and LED (for source operation only)
PCD2.K525	for 16 inputs/outputs, with 3 × 16 screw terminals and LED (for source operation only)
PCD2.K551	Relay interface for 8 PCD transistor outputs with 24 screw terminals and LED
PCD2.K552	Relay interface for 8 PCD transistor outputs with 24 screw terminals, LED and manual control mode (switch on-off-auto) and 1 output as feedback for the manual control mode

[1] For details, see Chapter 5.10