1.2 Saia® PCD3 series

1.2.1 Saia® PCD3 controllers

1 Automation stations

2 HMI Visualization and operating

3 Dedicated room controller

4 Consumption data acquisition

5 Cabinet components

Layout for Saia® PCD3 controllers

The CPU has been incorporated in the back-plate of the device, unlike comparable systems. Its capacity can be increased individually with plug-in communication modules and/or intelligent I/O modules. These have a direct, very fast bus connection to the CPU.

PCD3.Mxxxxx base unit

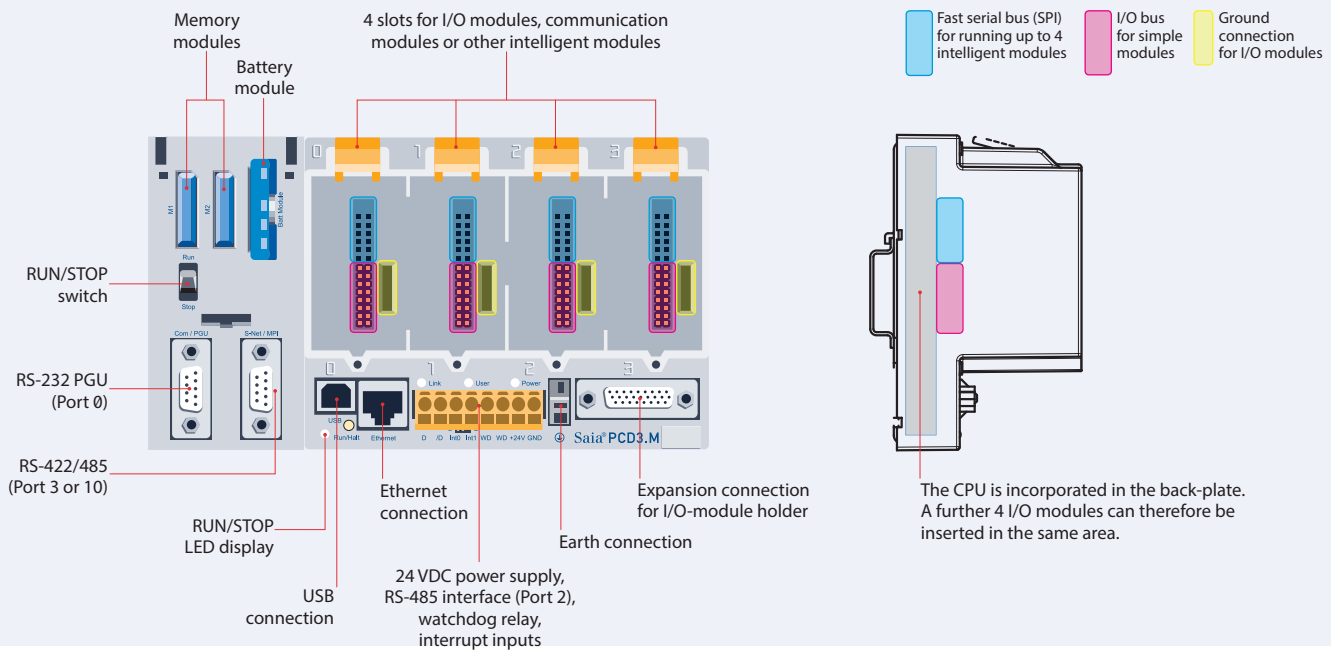Base unit with CPU and 4 slots for I/O modules, communication or other specific modules (e.g. PCD3.Hxxx counting module)

Layout

Memory modules

Battery module

4 slots for I/O modules, communication modules or other intelligent modules

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

I/O bus for simple modules

Ground connection for I/O modules

RUN/STOP switch

RS-232 PGU (Port 0)

RS-422/485 (Port 3 or 10)

RUN/STOP LED display

USB connection

Ethernet connection

24 VDC power supply, RS-485 interface (Port 2), watchdog relay, interrupt inputs

Earth connection

Expansion connection for I/O-module holder

The CPU is incorporated in the back-plate. A further 4 I/O modules can therefore be inserted in the same area.

With the left expansion, the Standard (PCD3.M5/M6xxx) and High Power (PCD3.Mxx60) CPU types have slots for a battery holder module with LED displays, a run/stop switch, two slots for flash memory modules and two further communication interfaces. The LED displays on the battery module indicate the status of the CPU and battery and any errors in the application. The battery also protects the data in the event of the supply voltage being interrupted. It can be replaced while under power during operation. The configuration, programs and data can be transferred from one controller to another using the plug-in flash memory modules. No programming tool is required for this.

Dimensions

PCD3.M5xx0/M6xx0

180 × 100.5 × 139 mm (W × H × D)
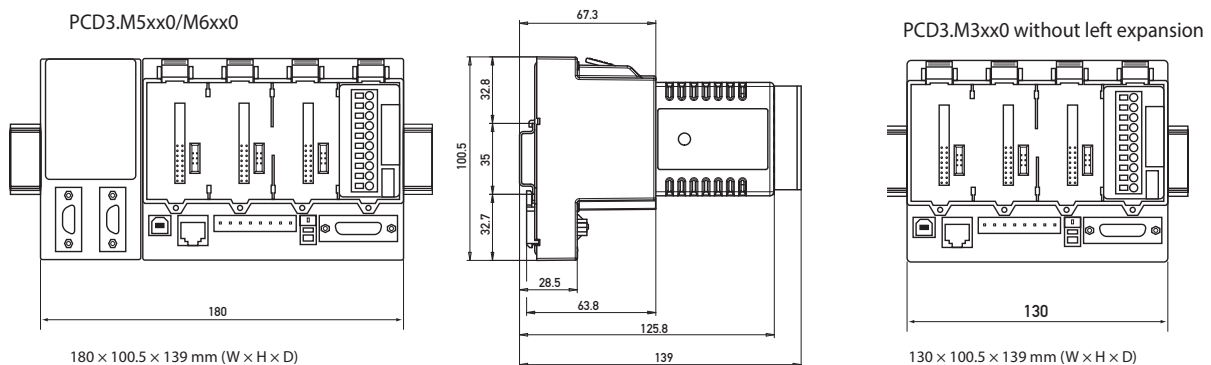
▲ Standard and High Power CPU with slots for battery and memory modules, run/stop switch and additional interfaces

PCD3.M3xx0 without left expansion

130 × 100.5 × 139 mm (W × H × D)

▶ Minimum Basic CPU without battery module PCD3.Rxxx memory modules are plugged into an I/O slot.

Saia® PCD3.Cxxx module holder

I/O expansion module holders are available in either a 2 or 4 slot version. They can be expanded to a maximum of 64 I/O modules or a maximum of 1,203 I/Os.
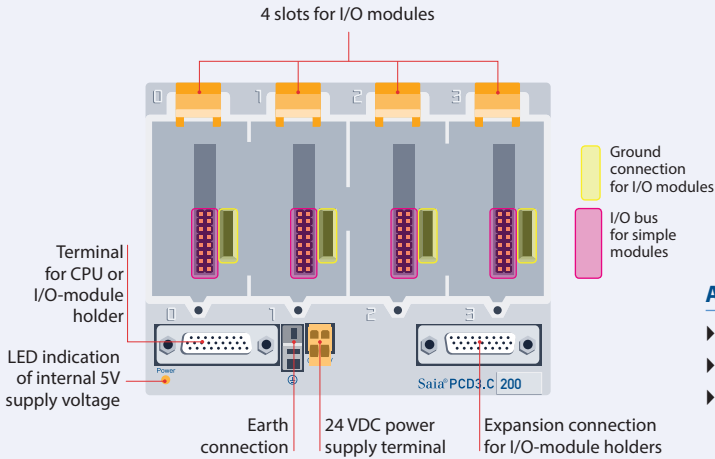
Layout Module holder

4 slots for I/O modules

Terminal for CPU or I/O-module holder

LED indication of internal 5V supply voltage

Earth connection

24 VDC power supply terminal

Expansion connection for I/O-module holders

Ground connection for I/O modules

I/O bus for simple modules

All standard I/O-modules can be used in the expansion module holders. Communication modules or other intelligent modules can only be used in the slots of the Basic CPU.

Available types

▶ **PCD3.C100** Expansion module holder with 4 I/O slots
▶ **PCD3.C110** Expansion module holder with 2 I/O slots
▶ **PCD3.C200** Expansion module holder with 4 I/O slots and terminal connectors for 24 VDC power supply for all connected I/O modules, plus any downstream PCD3.C1xx module holders

PCD3.C100/200
with 4 I/O slots

130
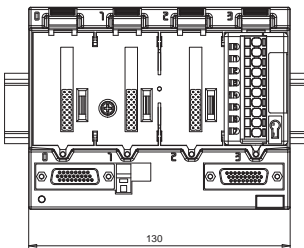
PCD3.C110
with 2 I/O slots

66
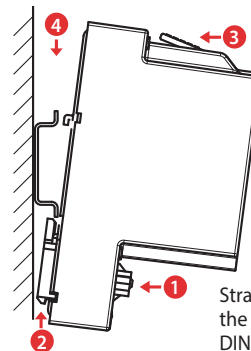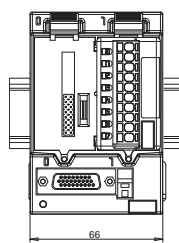
Straightforward mounting of the CPUs and module holders on DIN top-hat rail (1 × 35 mm)

System can be expanded to max. 1,023 I/Os

Single-row and multiple-row mounting of the module holders

PCD3.M5540 CPU incl. 4 I/O slots

PCD3.C100 I/O-module holder 4 slots

PCD3.K1xx Extension cable for multiple-row mounting

Extension plug PCD3.K010

PCD3.C200 I/O-module holder 4 slots

PCD3.C110 I/O-module holder 2 slots

Extension plug PCD3.K010
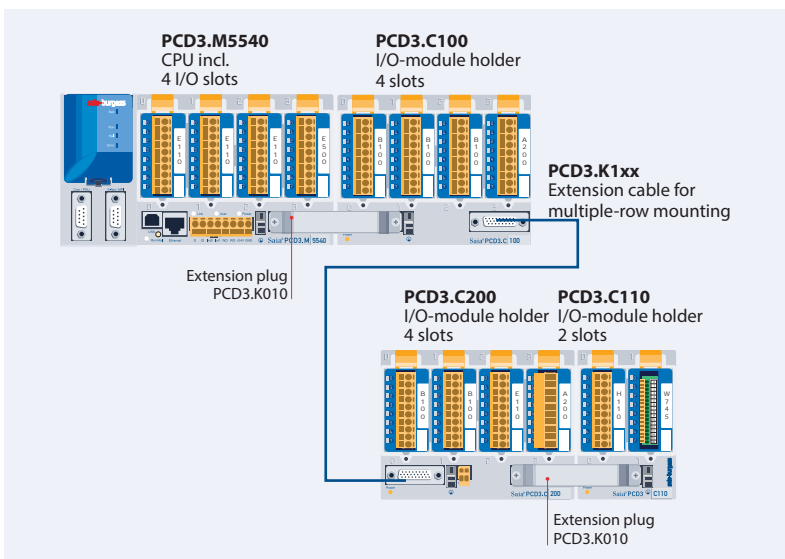
PCD3 in multiple-row mounting in the switch cabinet

Extension plug and cables

▶ **PCD3.K010** Extension plug
▶ **PCD3.K106** Extension cable 0.7 m
▶ **PCD3.K116** Extension cable 1.2 m

Automation stations 1

HMI Visualization and operating 2

Dedicated room controller 3

Consumption data acquisition 4

Cabinet components 5

Saia® PCD3.Mxx60 controllers

High Power CPU for all requirements

Thanks to the fast processor and the increased system resources, the Power CPU has sufficient power reserves to process the most demanding control and communication tasks.

System properties

▸ Up to 1,023 inputs/outputs
Can be expanded locally with RIO PCD3.T66x or PCD3.T76x

▸ Up to 13 communication interfaces

▸ USB and Ethernet interface onboard

▸ 2 Ethernet interfaces (PCD3.M6860 only)

▸ Fast program processing (0.1 µs for bit operations)

▸ Large onboard memory for programs (2 MByte)
and data (128 MByte file system)

▸ Memory with SD flashcards can be expanded to 4 GByte

▸ AutomationServer for the integration into Web/IT systems

AutomationServer
integrated in
the base unit

Types

▸ **PCD3.M5560**   CPU basic module with Ethernet TCP/IP,
2 MByte of program memory

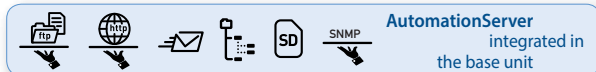▸ **PCD3.M6560**   CPU basic module with Ethernet TCP/IP and
Profibus-DP Master 12 Mbit/s,
2 MByte of program memory

▸ **PCD3.M6860***   CPU basic module with 2 × Ethernet TCP/IP,
2 MByte of program memory

*) In preparation, see section C2 Product status
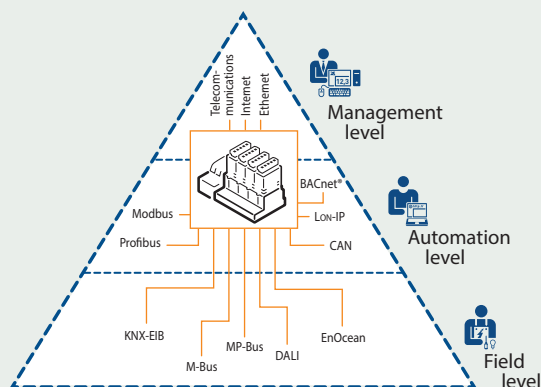
The Saia® PCD3 Power CPU has sufficient system resources to operate up to 13 communication interfaces in the same device. Even the most demanding tasks, such as simultaneous communication via BACnet® and Lᴏɴ IP, are handled reliably.
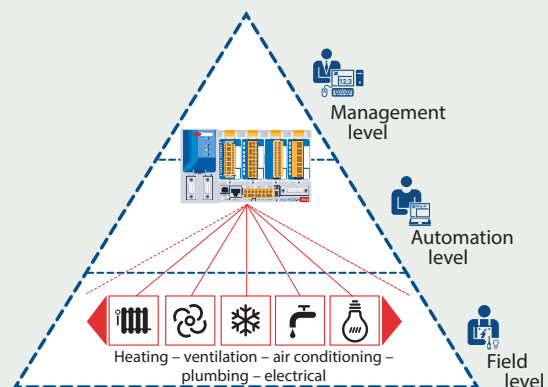
The generous memory resources (4 GByte) of the new PCD3 Power CPU make it possible to record/monitor, archive and control the data and statuses of all trades in the Saia® PCD, even without computer equipment and control system software. Applications for the various subsystems (HVAC) can be conveniently created using the graphical PG5 engineering tool and application-specific software libraries.

Saia® PCD3.Mxx60 controllers

High Power CPU
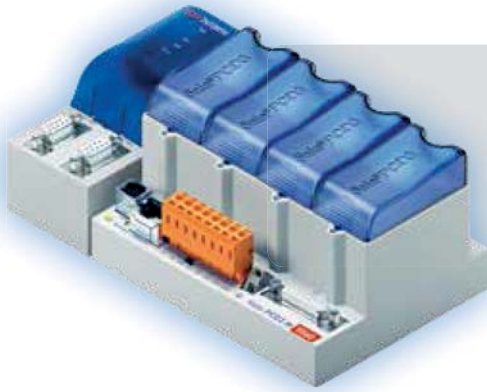
1,023	I/O
4.2 GByte	File system
2 MByte	Program
0.1/0.3 µs bit/word	CPU speed

	PCD3.M5560	PCD3.M6560	PCD3.M6860
Technical data	Power	DP Master	2 × Ethernet
Number of inputs/outputs	1023		
or I/O-module slots	64		
I/O expansion connection for PCD3.C module holder	Yes		
Processing time [µs] bit operation	0.1…0.8 µs		
word operation	0.3 µs		
Real time clock (RTC)	Yes		

On-Board memory

Program memory, DB/text (ROM)	2 MByte
User memory, DB/text (RAM)	1 MByte
Flash memory (S-RIO, configuration and backup)	128 MByte
User flash file system (INTFLASH)	128 MByte
Data backup	1…3 years with lithium battery

On-Board interfaces

	PCD3.M5560	PCD3.M6560	PCD3.M6860
USB 1.1	Yes		
Ethernet 10/100 Mbit/s, full-duplex, auto-sensing/auto-crossing	Yes		2×
RS-232 on D-Sub connector (PGU/Port 0)	up to 115 kbit/s		No
RS-485 on terminal block (Port 2) or	up to 115 kbit/s	up to 115 kbit/s	up to 115 kbit/s
RS-485 Profibus-DP Slave, Profi-S-Net on terminal block (Port 2)	No	up to 187.5 kbit/s	up to 187.5 kbit/s
RS-485 on D-Sub connector (Port 3) * or	up to 115 kbit/s	No	No
Profibus-DP Slave, Profi-S-Net on D-Sub connector (Port 10) * or	up to 1.5 Mbit/s	No	No
Profibus-DP Master up to 12 Mbit/s on D-Sub connector (Port 10) *	No	Yes	No

* can be used as an alternative, electrically isolated

Options

The data memory can be extended with flash memory modules (with file system) up to 4 GByte.

Optional data interfaces

I/O slot 0	PCD3.F1xx modules for RS-232, RS-422, RS-485 and Belimo MP-Bus
I/O slot 0…3 up to 4 modules or 8 interfaces	PCD3.F2xx modules for RS-232, RS-422, RS-485, BACnet® MS/TP, Belimo MP-Bus, DALI and M-Bus

General data

Supply voltage (according to EN/IEC 61131-2)	24 VDC −20/+25% max. incl. 5% ripple or 19 VAC +/−15% full-wave rectified (18 VDC)
Power consumption	typically 15 W for 64 I/Os
Capacity 5 V/+V (24 V) internal	max. 600 mA/100 mA

1 Automation stations

2 HMI Visualization and operating

3 Dedicated room controller

4 Consumption data acquisition

5 Cabinet components

Saia® PCD3.M5x40 controllers

Standard CPU for a large number of applications

|	
1,023	I/O
4 GByte	File system
1 MByte	Program
0.3/0.9 µs bit/word	CPU speed

AutomationServer integrated in the base unit

Types

▸ **PCD3.M5340**   CPU basic module with Ethernet TCP/IP, 1 MByte of program memory

▸ **PCD3.M5440**   CPU basic module without Ethernet TCP/IP, 1 MByte of program memory

▸ **PCD3.M5540**   CPU basic module with Ethernet TCP/IP and Profibus-DP Slave 1.5 Mbit/s, 1 MByte of program memory

Technical data	PCD3.M5340	PCD3.M5440	PCD3.M5540
	Standard	Standard	Standard
Number of inputs/outputs	1,023		
or I/O-module slots	64		
I/O expansion connection for PCD3.Cxxx module holder	Yes		
Processing times [µs] bit operation	0.3 … 1.5 µs		
word operation	0.9 µs		
Real time clock (RTC)	Yes		

On-Board memory

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

On-Board interfaces

	PCD3.M5340	PCD3.M5440	PCD3.M5540
USB 1.1	Yes		
Ethernet 10/100 Mbit/s, full-duplex, auto-sensing/auto-crossing	Yes	No	Yes
RS-232 on D-Sub connector (PGU/Port 0)	up to 115 kbit/s		
RS-485 on terminal block (Port 2) or	up to 115 kbit/s	up to 115 kbit/s	up to 115 kbit/s
RS-485 Profibus-DP Slave, Profi-S-Net on terminal block (Port 2)	up to 187.5 kbit/s	No	No
RS-422/485 (electrically connected) on D-Sub connector (Port 3) *	up to 115 kbit/s	No	No
RS-485 (electrically separated) on D-Sub connector (Port 3) *	No	up to 115 kbit/s	up to 115 kbit/s
Profibus-DP Slave, Profi-S-Net on D-Sub connector (Port 10) *	No	up to 1.5 Mbit/s	up to 1.5 Mbit/s

* can be used as an alternative

Options

The data memory can be expanded to 4 GByte with flash memory modules (with file system).

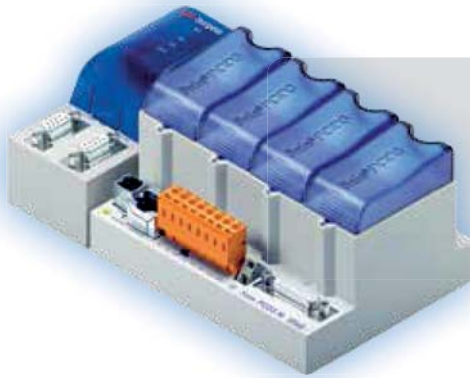### Optional data interfaces

I/O slot 0	PCD3.F1xx modules for RS-232, RS-422, RS-485 and Belimo MP-Bus
I/O slot 0…3 up to 4 modules or 8 interfaces	PCD3.F2xx modules for RS-232, RS-422, RS-485, BACnet® MS/TP, Belimo MP-Bus, DALI and M-Bus

General data

Supply voltage (according to EN/IEC 61131-2)	24 VDC –20/+25% max. incl. 5% ripple or 19 VAC +/–15% full-wave rectified (18 VDC)
Power consumption	typically 15 W for 64 I/Os
Capacity 5 V/+V (24 V) internal	max. 600 mA/100 mA

Saia® PCD3.M3xx0 controllers

Basic CPU for simple applications
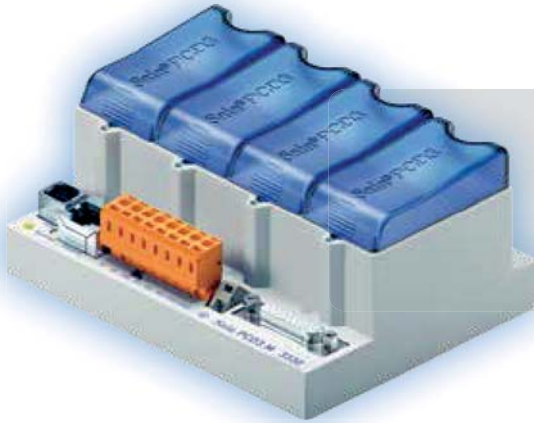
1,023	I/O	
4 GByte	File system	
512 kByte	Program	
0.3/0.9 µs bit/word	CPU speed	

AutomationServer integrated in the base unit
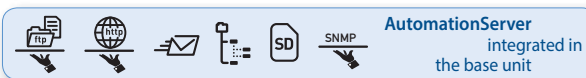
Types

▶ **PCD3.M3120** CPU basic module with Ethernet TCP/IP, 64 I/Os, 128 kByte of program memory

▶ **PCD3.M3230** CPU basic module without Ethernet TCP/IP, 1,023 I/Os, 512 kByte of program memory

▶ **PCD3.M3330** CPU basic module with Ethernet TCP/IP, 1,023 I/Os, 512 kByte of program memory

Technical data	PCD3.M3120	PCD3.M3230	PCD3.M3330
	Basic	Basic	Basic
Number of inputs/outputs	64	1,023	1,023
or I/O-module slots	4	64	64
I/O expansion connection for PCD3.Cxxx module holder	No	Yes	Yes
Processing times [µs] bit operation		0.3…1.5 µs	
word operation		0.9 µs	
Real time clock (RTC)		Yes	

On-Board memory

	PCD3.M3120	PCD3.M3230	PCD3.M3330
Main memory (RAM) for program and DB/text	128 kByte	512 kByte	512 kByte
Flash memory (S-RIO, configuration and backup)		2 MByte	
User flash file system (INTFLASH)		No	
Data backup		4 hours with SuperCap	

On-Board interfaces

	PCD3.M3120	PCD3.M3230	PCD3.M3330
USB 1.1		Yes	
Ethernet 10/100 Mbit/s, full-duplex, auto-sensing/auto-crossing	Yes	No	Yes
RS-485 on terminal block (Port 2) or		up to 115 kbit/s	
RS-485 Profibus-DP Slave, Profi-S-Net on terminal block (Port 2)		up to 187.5 kbit/s	

Options

The data memory can be expanded to 4 GByte with flash memory modules (with file system).

### Optional data interfaces

I/O slot 0	PCD3.F1xx modules for RS-232, RS-422, RS-485 and Belimo MP-Bus
I/O slot 0…3 up to 4 modules or 8 interfaces	PCD3.F2xx modules for RS-232, RS-422, RS-485, BACnet® MS/TP, Belimo MP-Bus, DALI and M-Bus

### General data

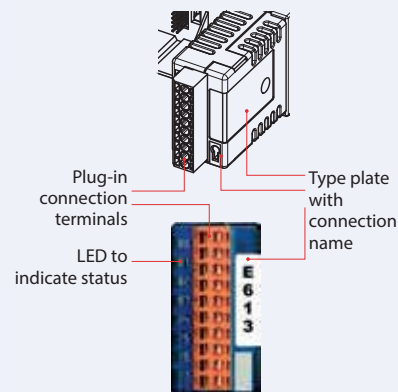|	
Supply voltage (according to EN/IEC 61131-2)	24 VDC –20/+25% max. incl. 5% ripple or 19 VAC +/–15% full-wave rectified (18 VDC)
Power consumption	typically 15 W for 64 I/Os
Capacity 5 V/+V (24 V) internal	max. 600 mA/100 mA

Automation stations

HMI Visualization and operating

Dedicated room controller

Consumption data acquisition

Cabinet components

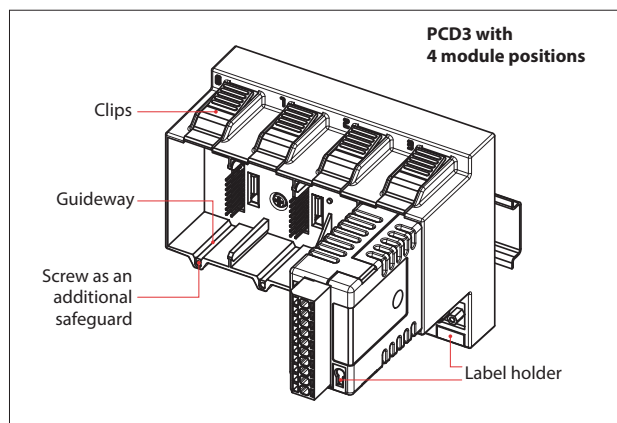## Saia® PCD3 input and output modules in cassette design

The functions of the Saia® PCD3 can be expanded as required using a wide range of plug-in I/O modules and can be adapted to specified needs. This not only ensures that a project can be implemented quickly but also provides the option of expanding or modifying the system at any time.

System properties

▸ Numerous variants available

▸ Slot directly in the Saia® PCD3 basic CPU or in the module holder

▸ Full integration into the Saia® PCD3 housing

▸ Stable cassette design

▸ Connection to the I/O level via plug-in spring terminal blocks or ribbon cables and adapters

▸ I/O terminal blocks are supplied as standard

▸ No tools required for replacing modules

Plug-in connection terminals

Type plate with connection name

LED to indicate status

Insertion of I/O modules

PCD3 with 4 module positions

Clips

Guideway

Screw as an additional safeguard

Label holder

▲ Simple exchange of I/O modules

More than 50 modules available with different functionalities

Types

▸ **PCD3.Axxx**	Digital output modules
▸ **PCD3.Bxxx**	Digital combined input/output modules
▸ **PCD3.Exxx**	Digital input modules
▸ **PCD3.Fxxx**	Communication modules
▸ **PCD3.Hxxx**	Fast counter modules
▸ **PCD3.Rxxx**	Memory modules
▸ **PCD3.Wxxx**	Analog input/output modules

Webcode scen13026

Connecting plugs/terminals
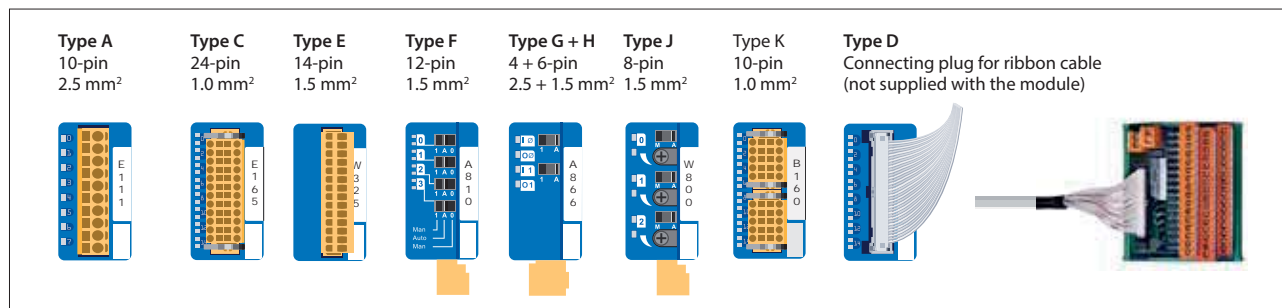
Type A 10-pin 2.5 mm²	**Type C** 24-pin 1.0 mm²	**Type E** 14-pin 1.5 mm²	**Type F** 12-pin 1.5 mm²	**Type G + H** 4 + 6-pin 2.5 + 1.5 mm²	**Type J** 8-pin 1.5 mm²	**Type K** 10-pin 1.0 mm²	**Type D** Connecting plug for ribbon cable (not supplied with the module)

▲ Spare terminals, ribbon connectors with system cables and separate terminals are ordered as accessories.

Saia® PCD3 Digital input and output modules

The digital I/O modules can be easily plugged into the Saia® PCD3 Basis CPU or an appropriate module holder. In addition to inputs for various voltage levels, digital outputs are provided with both the transistor technology 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 I/Os	Input voltage	Output breaking capacity DC	AC	Input delay	Electrical isolation	Internal current draw 5 V bus [1]	+ V bus [2]	I/O connector type [3]
PCD3.E110	8 I	15…30 VDC			8 ms		24 mA		A
PCD3.E111	8 I	15…30 VDC	---	---	0.2 ms	---	24 mA	---	A
PCD3.E112	8 I	7.5…15 VDC			9 ms		24 mA		A
PCD3.E116	8 I	3.5…7 VDC			0.2 ms		24 mA		A
PCD3.E160	16 I	15…30 VDC	---	---	8 ms	---	10 mA	---	D
PCD3.E161	16 I	15…30 VDC			0.2 ms		10 mA		D
PCD3.E165	16 I	15…30 VDC	---	---	8 ms	---	10 mA	---	C
PCD3.E166	16 I	15…30 VDC			0.2 ms		10 mA		C
PCD3.E500	6 I	80…250 VAC	---	---	20 ms	●	1 mA	---	A
PCD3.E610	8 I	15…30 VDC	---	---	10 ms	●	24 mA	---	A
PCD3.E613	8 I	30…60 VDC			9 ms	●	24 mA		A

Digital output modules

Type	Number of I/Os	Input voltage	Output breaking capacity DC	AC	Input delay	Electrical isolation	Internal current draw 5 V bus [1]	+ V bus [2]	I/O connector type [3]
PCD3.A200	4 O, relay (make)	---	2 A/50 VDC	2 A/250 VAC	---	●	15 mA	---	AA
PCD3.A210	4 O, relay (break)		2 A/50 VDC	2 A/250 VAC		●	15 mA		
PCD3.A220	6 O, relay (make)	---	2 A/50 VDC	2 A/250 VAC	---	●	20 mA	---	A
PCD3.A251	8 O, relay (6 changeover + 2 make)	---	2 A/50 VDC	2 A/48 VAC	---	●	25 mA	---	C
PCD3.A300	6 O, transistor	---	2 A/10…32 VDC	---	---	---	20 mA	---	A
PCD3.A400	8 O, transistor	---	0.5 A/5…32 VDC	---	---	---	25 mA	---	A
PCD3.A410	8 O, transistor	---	0.5 A/5…32 VDC	---	---	●	24 mA	---	A
PCD3.A460	16 O, transistor	---	0.5 A/10…32 VDC	---	---	---	10 mA	---	D
PCD3.A465	16 O, transistor		0.5 A/10…32 VDC				10 mA		C
PCD3.A810 Manual control	4 O, relay (2 changeover + 2 make)	---	2 A/50 VDC 2 A/50 VDC	5 A/250 VAC 6 A/250 VAC	---	● ●	40 mA	---	F

Digital input/output modules

Type	Number of I/Os	Input voltage	Output breaking capacity DC	AC	Input delay	Electrical isolation	Internal current draw 5 V bus [1]	+ V bus [2]	I/O connector type [3]
PCD3.A860 Light&shade	2 O, relay (make) 2 I	15…30 VDC	---	12 A/250 VAC	8 ms	●	18 mA	---	G H
PCD3.B100	2 I + 2 O + 4 selectable I or O	I:15…32 VDC	0.5 A/5…32 VDC	---	8 ms	---	25 mA	---	A
PCD3.B160	16 I/O (configurable)	I: 24 VDC	0.25 A/18…30 VDC	---	8 ms or 0.2 ms	---	120 mA	---	2× K

Fast counter modules (only for I/O slots with fast SPI bus)

Type	Number of counters	Inputs per counter	Outputs per counter	Counting range	Selectable digital filter	Current draw 5 V bus [1]	+ V bus [2]	I/O connector type [1]
PCD3.H112 [4]	2	2 I + 1 configurable I	1 CCO	0…16 777 215 (24-bit)	10 kHz…150 kHz	50 mA	4 mA	2× K
PCD3.H114 [4]	4	2 I + 1 configurable I	1 CCO	0…16 777 215 (24-bit)	10 kHz…150 kHz	50 mA	4 mA	2× K

Capacity of the internal bus (5V, +V) of the PCD3 controllers and module holders

Capacity	PCD3.Mxxx0	PCD3.Txxx	PCD3.C200
[1] Internal 5 V	600 mA	600 mA	1500 mA
[2] Internal +V (24 V)	100 mA	100 mA	630 mA

The electrical requirement of the internal +5V and +V bus for the I/O modules is calculated in the PG5 2.0 Device Configurator.

[3] Plug-in I/O terminal blocks are included with I/O modules.
  Spare terminals, ribbon connectors with system cables and separate termi-
  nals are ordered as accessories (see page 34 and page 78).
[4] Delivery on demand

More information on counting modules, stepper motor control and positioning modules: Webcode scen13027

1 Automation stations
2 HMI Visualization and operating
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5 Cabinet components

Saia® PCD3 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-bit. The digitized values can be processed further directly in the project in the Saia® PCD3. The large number of different modules means that suitable modules can be found to cover nearly every requirement.

Analogue input modules

Type	Number of I/Os	Signal ranges/description	Resolution	Electrical isolation	Internal current draw 5 V bus [1]	+ V bus [2]	I/O connector type [3]
PCD3.W200	8 I	0…+10 V	10-bit		8 mA	5 mA	A
PCD3.W210	8 I	0…20 mA [4]	10-bit		8 mA	5 mA	A
PCD3.W220	8 I	Pt 1000: −50 °C…400 °C/Ni 1000: −50 °C…+200 °C	10-bit	---	8 mA	16 mA	A
PCD3.W220Z03	8 I	NTC 10 temperature sensor	10-bit		8 mA	16 mA	A
PCD3.W220Z12	4 I	4 I: 0…10 V	10-bit		8 mA	11 mA	A
	+4 I	4 I Pt 1000: −50 °C…400 °C/Ni 1000: −50 °C…+200 °C					
PCD3.W300	8 I	0…+10 V	12-bit		8 mA	5 mA	A
PCD3.W310	8 I	0…20 mA [4]	12-bit		8 mA	5 mA	A
PCD3.W340	8 I	0…+10 V/0…20 mA [4]	12-bit	---	8 mA	20 mA	A
		Pt 1000: −50 °C…400 °C/Ni 1000: −50 °C…+200 °C					
PCD3.W350	8 I	Pt 100: −50 °C…+600 °C/Ni 100: −50 °C…+250 °C	12-bit		8 mA	30 mA	A
PCD3.W360	8 I	Pt 1000: −50 °C…+150 °C	12-bit		8 mA	20 mA	A
PCD3.W305	7 I	0…+10 V	12-bit	●	60 mA	0 mA	E
PCD3.W315	7 I	0…20 mA/4…20 mA parameters can be set	12-bit	●	60 mA	0 mA	E
PCD3.W325	7 I	−10 V…+10 V	12-bit	●	60 mA	0 mA	E
PCD3.W720	2 I	Weighing module with 2 systems for up to 6 weighing cells	≤18 Bit	---	60 mA	100 mA	E
PCD3.W745	4 I	Temperature module for TC type J, K and 4-wire Pt/Ni 100/1000	16-bit	●	200 mA	0 mA	[6]

Analogue output modules

Type	Number of I/Os	Signal ranges/description	Resolution	Electrical isolation	Internal current draw 5 V bus [1]	+ V bus [2]	I/O connector type [3]
PCD3.W400	4 O	0…+10 V	8-bit		1 mA	30 mA	A
PCD3.W410	4 O	0…+10 V/0…20 mA/4…20 mA jumper-selectable	8-bit	---	1 mA	30 mA	A
PCD3.W600	4 O	0…+10 V	12-bit		4 mA	20 mA	A
PCD3.W610	4 O	0…+10 V/−10 V…+10 V/0…20 mA/4…20 mA jumper-selectable	12-bit	---	110 mA	0 mA	A
PCD3.W605	6 O	0…+10 V	10-bit	●	110 mA	0 mA	E
PCD3.W615	4 O	0…20 mA/4…20 mA parameters can be set	10-bit	●	55 mA	0 mA	E
PCD3.W625	6 O	−10 V…+10 V	10-bit	●	110 mA	0 mA	E
PCD3.W800	4 O, 3 of which are manually operated	0…+10 V, short circuit proofed	10-bit	---	45 mA	35 mA [5]	J

Analogue input/output modules

Type	Number of I/Os	Signal ranges/description	Resolution	Electrical isolation	Internal current draw 5 V bus [1]	+ V bus [2]	I/O connector type [3]
PCD3.W525	4 I + 2 O	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)	I: 14-bit O: 12-bit	●	40 mA	0 mA	E

Manual control modules

PCD3.A810
Relay outputs, 2 changeover and 2 make contacts

PCD3.A860
Light and shade 2 relay outputs and 2 inputs

PCD3.W800
4 analog outputs (3 channels with manual control)

Capacity of the internal bus (5V, +V) of the PCD3 controllers and module holders

Capacity	PCD3.Mxxx0	PCD3.Txxx	PCD3.C200
[1] Internal 5 V	600 mA	600 mA	1500 mA
[2] Internal +V (24 V)	100 mA	100 mA	630 mA

The electrical requirement of the internal +5V and +V bus for the I/O modules is calculated in the PG5 2.0 Device Configurator.

[3] 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 34 and 78).
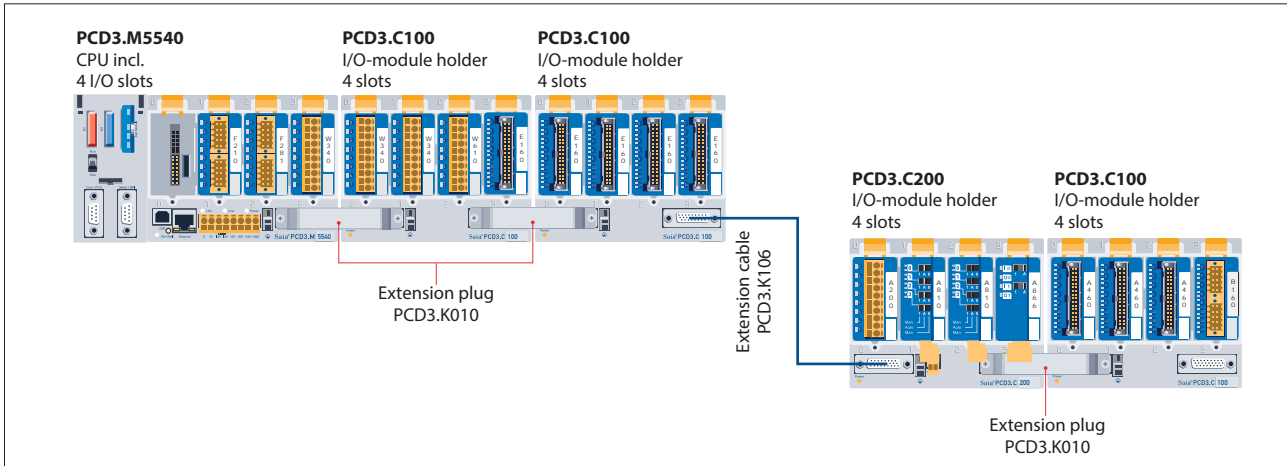
[4] 4…20 mA via user program

[5] At 100% output value and 3 kΩ load

[6] With soldered I/O spring terminal block

Information for project planning with PCD3 module holders

The internal load current taken by the I/O modules from the +5V and +V (24V) supply must not exceed the maximum supply current specified for the CPUs, RIOs or PCD3.C200 module holders.

Example calculation for the current consumption of the internal +5V and +V (24V) bus of the I/O modules

PCD3.M5540
CPU incl.
4 I/O slots

PCD3.C100
I/O-module holder
4 slots

PCD3.C100
I/O-module holder
4 slots

PCD3.C200
I/O-module holder
4 slots

PCD3.C100
I/O-module holder
4 slots

Extension plug
PCD3.K010

Extension cable
PCD3.K106

Extension plug
PCD3.K010

Consumption: M5540 + C100 + C100

Module	Internal 5V	Internal +V (24V)
Not used		
F210	110 mA	
F281	90 mA	15 mA
W340	8 mA	20 mA
Total for M5540	208 mA	35 mA
W340	8 mA	20 mA
W340	8 mA	20 mA
W610	110 mA	0 mA
E160	10 mA	
Total for C100	136 mA	40 mA
E160	10 mA	
E160	10 mA	
E160	10 mA	
E160	10 mA	
Total for C100	40 mA	0
Total for M5540	**384 mA**	**75 mA**

Consumption: C200 + C100

Module	Internal 5V	Internal +V (24V)
A200	15 mA	
A810	40 mA	
A810	40 mA	
A860	18 mA	
Total for C200	113 mA	
A460	10 mA	
A460	10 mA	
A460	10 mA	
B160	120 mA	
Total for C100	150 mA	
Total for C200	**263 mA**	**0**

Capacity	PCD3.M5540	PCD3.C200
Internal 5V	600 mA	1500 mA
Internal +V (24V)	100 mA	630 mA

The calculation example given shows that internal capacity is maintained in the CPU basic module PCD3.M5540 and the holder module PCD3.C200. The CPU basic module has sufficient reserves to accommodate an additional communication module in the empty 0 slot. The holder module PCD3.C200 also has sufficient reserves for an additional PCD3.C100 or PCD3.C110 holder module to be connected. The power consumption of the internal +5V and +V (24 V) bus for the I/O modules is calculated in the PG5 Device Configurator.

The following aspects should be considered when planning PCD3 applications:

▸ In keeping with lean automation, it is recommended to leave the first slot in the CPU basic module free for any subsequent expansions. Both simple I/O modules and communication modules can be used in this slot.

▸ The total length of the I/O bus is limited by technical factors; the shorter, the better.

The PCD3.C200 is used to extend the I/O bus or for the internal power supply (+5V and +V (24V)) to a module segment. Please note the following rules:

▸ Do not use more than six PCD3.C200s in one configuration, or the time delay will exceed the I/O access time.

▸ Use a maximum of five PCD3.K106/116 cables.

▸ After each cable (at the start of a row), insert a PCD3.C200. Exception: In a small configuration with no more than 3 PCD3.C1xxs, these can be supplied from the PCD3.Mxxx. A PCD3.C200 is not needed

▸ Where an application is mounted in a single row (max. 15 module holders), after every five PCD3.C100s a PCD3.C200 must be inserted to amplify the bus signal (unless the configuration ends with the fifth PCD3.C100).

▸ If the application is mounted in multiple rows, the restricted length of cable means that only three module holders (1× PCD3.C200 and 2× PCD3.C100) may be mounted in one row

Saia® PCD3 power supply and connection plan

External power supply

For most modules, a full wave rectified power supply can be used.
The following modules must be connected to
24 VDC smoothed: PCD3. H1xx, H2xx, H3xx, PCD7.D2xx

Using robust and interference-resistant Saia®
power supply units with 24 VDC output is
generally recommended. For available types
see section 1.7 "accessories".
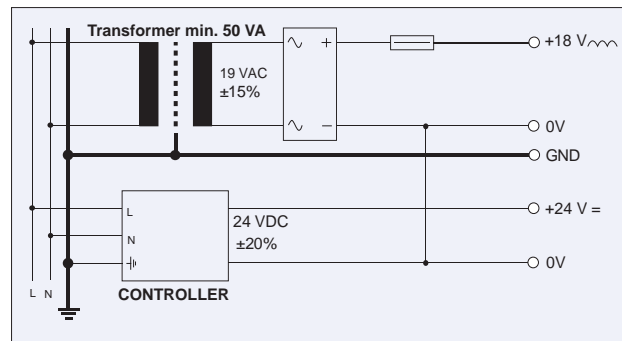
Grounding and connection plan

▶ The zero-potential (GND) of the 24 V supply is connected to the GND and the controller's grounding terminal. This should be connected to the ground bar with the shortest possible wire (< 25 cm) of 1.5 mm^2. The same applies to the negative connection to the PCD3.F1xx or the interrupt terminal.

▶ Any shielding of analog signals or communication cables should also be brought to the same grounding potential, either via a negative terminal or via the ground bar.

▶ All negative connections are linked internally. For problem-free operation, these connections should be reinforced externally by short wires with a cross-section of 1.5 mm^2.
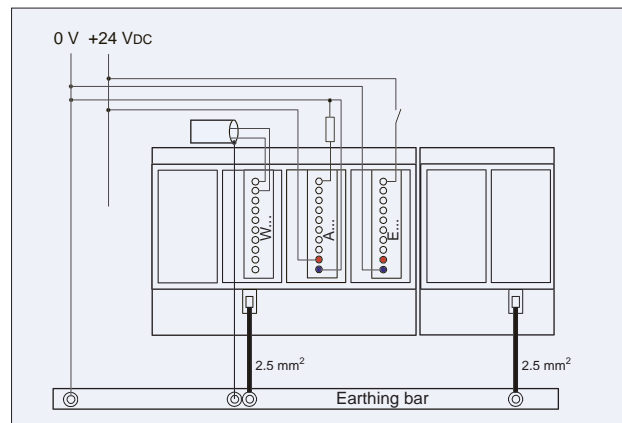

Grounding and connection plan for analog inputs that are not isolated electrically (PCD3.W2x0, PCD3.W3x0)

Signal sources (such as temperature sensors) should be connected directly to the input module where possible.

The reference potentials of signal sources should be wired to a common GND connection ("−" and "COM" terminals). To obtain optimum measurement results, any connection to a ground bar should be avoided. Additional external GND connections to the sensor signals may result in equalizing currents which distort the measurement.

If shielded cables are used, the shield should be continued to a ground bar.
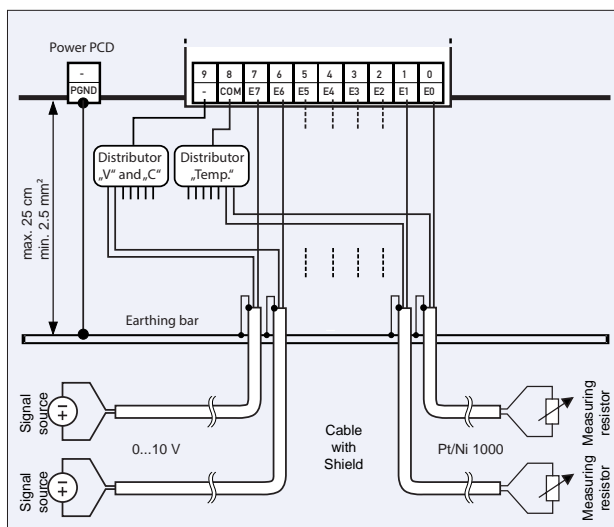
Connection concept for PCD3.W3x0
The reference potential of voltage and current inputs must be wired to a common GND distribution at the "-" terminal. Temperature sensors must be wired to a common GND distribution at the "COM" terminal.
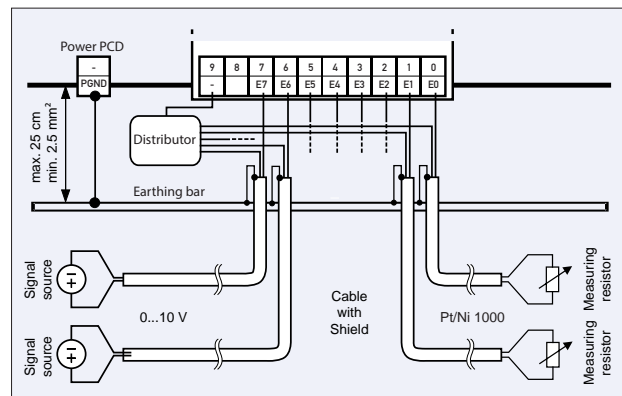
Connection concept for PCD3.W2x0
The reference potential of signal sources must be wired to a common GND distribution at the "-" terminal

Communication interfaces of Saia® PCD3.Mxxxx controllers

In addition to the interfaces that the Saia® PCD3 has onboard, the interface functions can also be expanded by means of various slots. Numerous protocols are therefore supported by the PCD3. For the majority of protocols, the physical bus specifications are offered as a plug-in module. If this is not the case, the bus can be connected via an external converter.

Protocols supported by PCD3.Mxxxx via FBoxes

‣ Modem communication with the PCD
‣ S-Bus
‣ Modbus
‣ JCI N2-Bus
‣ KNX® S-Mode/EIB (with external converter)

‣ DALI
‣ EnOcean (with external converter)
‣ M-Bus
‣ BACnet® MS/TP
‣ HMI editor applications with PCD7.Dxxx text terminals (RS-232 only)

ref:Modbus

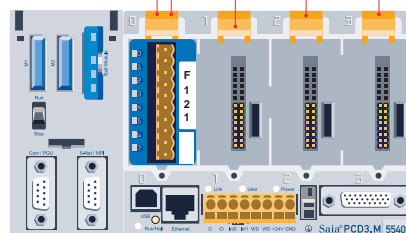| Read Int Ind	●
—Enable	Error—
—Func	
—RemAdd	
—Number	
Add	R 500
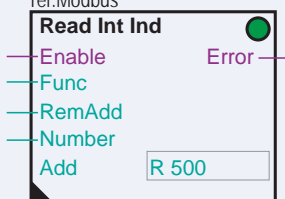
PCD3.F1xx
for slot 0
Port 1   RS-232
or   RS-422
or   RS-485
or   MP-Bus
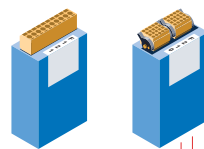
PCD3.F2xx
for slot no. 0…3
PCD3.F221 → RS-232
PCD3.F210 → RS-422/RS-485
PCD3.F281 → MP-Bus
PCD3.M215 → BACnet®-MS/TP
PCD3.F261 → DALI
PCD3.F27x → M-Bus

Physical interfaces that can be freely programmed

Module	Specifications	Slot	Internal current draw	
			5V	+V (24V)
PCD3.F110	RS-422 with RTS/CTS or RS-485 (electrically connected), with activatable terminating resistors.	I/O 0	40 mA	---
PCD3.F121	RS-232 with RTS/CTS, DTR/DSR, DCD	I/O 0	15 mA	---
PCD3.F150	RS-485 electrically isolated, with activatable terminating resistors.	I/O 0	130 mA	---
PCD3.F210	RS-422 / RS-485 plus PCD7.F1xxS as an option	I/O 0...3	110 mA	---
PCD3.F221	RS-232 plus PCD7.F1xxS as an option	I/O 0...3	90 mA	---

Physical interfaces for specific protocols

Module	Specifications	Slot	Internal current draw	
			5V	+V (24V)
PCD3.F180	Belimo MP-Bus, for connecting up to 8 drives on one line	I/O 0...3	15 mA	15 mA
PCD3.F215	BACnet® MS/TP	I/O 0...3	110 mA	---
PCD3.F240*	LonWorks®-Interface-Modul only for PCD3.M5x6x	I/O 0...3	90 mA	---
PCD3.F261	DALI	I/O 0...3	90 mA	---
PCD3.F270	M-Bus 240 nodes	I/O 0...3	70 mA	8 mA
PCD3.F271	M-Bus 20 nodes	I/O 0...3	70 mA	8 mA
PCD3.F272	M-Bus 60 nodes	I/O 0...3	70 mA	8 mA
PCD3.F273	M-Bus 120 nodes	I/O 0...3	70 mA	8 mA
PCD3.F281	Belimo MP-Bus with slot for PCD7.F1xxS modules	I/O 0...3	90 mA	15 mA

System properties of PCD3.F2xxx modules:

The PCD3 system has a processor, who handles both the application and the serial ports. To determine the maximum communication capacity for each PCD3.M5xxx system, consult the information and examples provided in Manual 26-789 for PCD3.M5xxx.

Interface modules for optional insertion in PCD3.F2xx modules

Module	Specifications
PCD7.F110S	RS-422 with RTS/CTS or RS-485 (electrically connected), with activatable terminating resistors.
PCD7.F121S	RS-232 with RTS/CTS, DTR/DSR, DCD. Suitable for modem connection and EIB connection.
PCD7.F150S	RS-485 (electrically isolated), with activatable terminating resistors.
PCD7.F180S	Belimo® MP-Bus, for connecting up to 8 drives on one line

*) In preparation, see section C2 Product status

1 Automation stations
2 HMI Visualization and operating
3 Dedicated room controller
4 Consumption data acquisition
5 Cabinet components

Memory modules of Saia® PCD3.Mxxxx controllers

In addition to the onboard memory contained within the base units, PCD3 controllers can also be expanded in a modular way with various flash memory modules for programs and data. The various communication protocols whose firmware is installed on the flashcards can also be used by simply inserting the relevant card.

More information to memory management and construction can be found in the section 1.1 Saia® PCD System description.

System properties

▸ Configuration, programs and data can be transferred from one CPU to another
▸ Two slots (M1 and M2) for memory cards
▸ Additional memory cards can be inserted in the I/O slots using I/O adapters
▸ Memory can be expanded to 4 GByte

PCD3.M5xxx / PCD3.M6xxx   PCD3.M3xxx
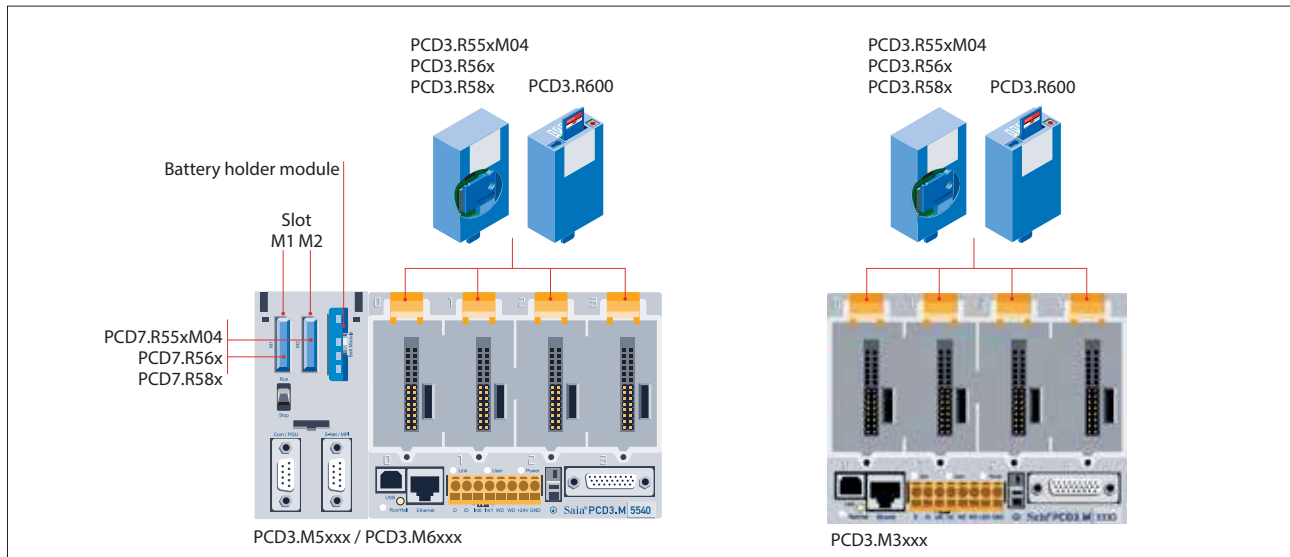
Flash memory with file system, program and data backup, BACnet® for slot M1/M2

Type	Description	Slot
PCD7.R550M04	4 MByte flashcard with file system	M1 & M2
PCD7.R560	Flashcard with BACnet®	M1 & M2
PCD7.R562	Flashcard with BACnet® and 128 MByte file system	M1 & M2
PCD7.R580	Flashcard with Lon IP	M1 & M2
PCD7.R582 *	Flashcard with Lon IP and 128 MByte file system	M1 & M2

PCD7.R55xM04
PCD7.R56x
PCD7.R58x

Plug-in flash modules for I/O-module slots of all PCD3.Mxxx0s

Type	Description	Slot
PCD3.R550M04	4 MByte flashcard with file system	I/O 0...3
PCD3.R560	Flashcard with BACnet®	I/O 0...3
PCD3.R562	Flashcard with BACnet® and 128 MByte file system	I/O 0...3
PCD3.R580	Flashcard with Lon IP	I/O 0...3
PCD3.R582*	Flashcard with Lon IP and 128 MByte file system	I/O 0...3

PCD3.R55xM04
PCD3.R56x
PCD3.R58x

Saia® PCD3 basic module for SD flashcards with file system

| Type	Description	Slot
PCD3.R600	Basic module with slot for SD flashcards (Up to 4 modules in I/O slots 0 to 3 on a CPU)	I/O 0...3
PCD7.R-SD512	Saia® SD flashcard, 512 MByte with file system	---
PCD7.R-SD1024	Saia® SD flashcard, 1024 MByte with file system	---

PCD3.R600

Spare parts (battery and battery holder module) see Consumables and accessories

*) In preparation, see section C2 Product status

Consumables and accessories for Saia® PCD3 controllers

Labeling accessories

❶ (4 310 8686 0)   ❷ (4 329 4819 1)

❸   ❸   ❹
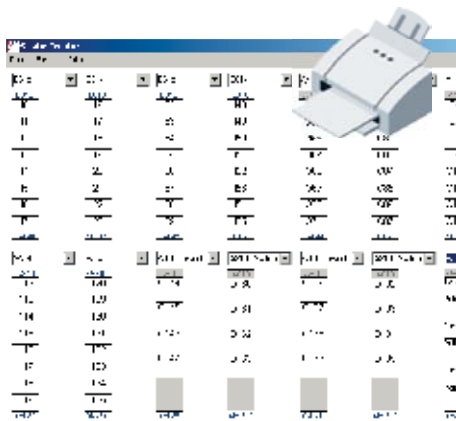
Addressing and marking I/O modules and module holders

I/O-module slots in the module holder are labeled with numbers:

▸ 0…3 (PCD3.Mxxxx /T66x/C100, C200)
▸ 0…1 (PCD3.C110)

The provided inscription labels ❷ can either be used for additional labeling of the module holders, or for the I/O modules themselves. They are blank and, depending on requirements, may either be labeled by hand or by means of preprinted adhesive strips ❶.
The circuit diagram ❸ printed on the side of each I/O-module not only makes wiring easier, it also helps during commissioning. Sufficient space ❹ is available on the opposite side of the cassette for the user to add customized labeling.

Type
(4 310 8723 0)

❺

Without clip   With clip

Additional labeling on the front ❺

The PCD3 modules can also be labeled on the front panel. Optionally, neutral labels with a snap-on cover (clip) are available for this purpose.

Fast labeling of I/O modules with the Saia® LabelEditor

The Saia® LabelEditor is included in the PG5 Controls Suite Device Configurator.
This software tool is used to label PCD3 label clips efficiently.

EPLAN macros are available for project planning and engineering

eplan® electric P8 macros for the PCD3 and PCD2.M5 series are currently provided on the support site. These are also available in DXF and DWG format.

Download:
http://www.sbc-support.ch/pcd3/eplan.htm

An update of the macros and article data for eplan® electric P8 and the providing on the eplan® Data Portal is in preparation.

Availability,
see chapter C2 Product status

# Consumables and accessories for Saia® PCD3.Mxxxx controllers

Saia® PCD3 battery and battery holder module

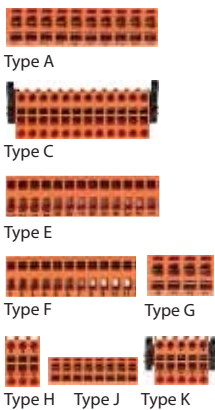| Type	Description
PCD3.R010	Battery kit for PCD3.M3xxx Basic CPU (battery module for slot#3 incl. lithium battery CR2032)
4 639 4898 0	Battery holder module (for PCD3.M5xxx)
4 507 4817 0	Lithium battery for PCD Basis CPU

Saia® PCD3 housing covers

Type	Description
4 104 7493 0	Cover for PCD3.M5xxx and M6xxx
PCD3.E009	Empty module housing for unused PCD3 I/O slots
4 104 7515 0	Slot cover for unused PCD3 I/O slots
4 104 7502 0	Slot cover for unused PCD3 I/O slots without Saia® logo
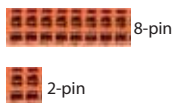
8-pin

2-pin

Saia® PCD3 plug-in terminal blocks for basic modules and module holders

Type	Description
4 405 4995 0	8-pin spring terminal block for power supply to PCD3.Mxxx0
4 405 4952 0	2-pin screw terminal block for power supply to PCD3.C200

Type A

Type C

Type E

Type F   Type G

Type H   Type J   Type K

Saia® PCD3 plug-in terminal blocks and labeling for I/O modules

| Type	Description		
4 405 4954 0	Plug-in I/O spring terminal block	10-pin for wires up to 2.5 mm^2	type A
4 405 4956 0	Plug-in I/O spring terminal block	24-pin for wires up to 1,0 mm^2	type C
4 405 4998 0	Plug-in I/O spring terminal block	14-pin for wires up to 1,5 mm^2	type E
4 405 4936 0	Plug-in I/O spring terminal block	12-pin for PCD3.A810 for wires up to 1,5 mm^2	type F
4 405 5027 0	Plug-in I/O spring terminal block	4-pin for PCD3.A860 for wires up to 2,5 mm^2	type G
4 405 5028 0	Plug-in I/O spring terminal block	6-pin for PCD3.A860 for wires up to 1,0 mm^2	type H
4 405 4934 0	Plug-in I/O spring terminal block	8-pin for PCD3.W800 for wires up to 1,5 mm^2	type J
4 405 5048 0	Plug-in I/O spring terminal block	10-pin for wires up to 1,0 mm^2	type K
4 310 8723 0	Set of 10: Transparent snap-on label holder including neutral inscription labels (2× DIN A4)		
4 329 4819 1	Set of 10: Snap-on inscription carrier for modules		
4 310 8686 0	Set of 10: Preprinted adhesive strips for snap-on label holder		

System cables & "ribbon-screw terminal" adapters (see section 1.7 for details)

Type	Description
System cables for digital modules with 16 I/Os	
PCD2.K221	Sheathed, round cable with 32 strands of 0.25 mm^2, 1.5 m long PCD side: 34-pin ribbon cable connector type D, process side: strand ends free, color coded
PCD2.K223	Sheathed, round cable with 32 strands of 0.25 mm^2, 3.0 m long PCD side: 34-pin ribbon cable connector type D, process side: strand ends free, color coded
System cables for adapters PCD2.K520/..K521/..K525	
PCD2.K231	Sheathed, half-round cable with 34 strands, each 0.09 mm^2, 1.0 m long, 34-pin ribbon connector at both ends type D
PCD2.K232	Sheathed, half-round cable with 34 strands, each 0.09 mm^2, 2.0 m long, 34-pin ribbon connector at both ends type D
System cables for 2 adapters PCD2.K510/..K511 or 1 adapter and relay interface PCD2.K551	
PCD2.K241	Sheathed, half-round cable with 34 strands, each 0.09 mm^2, 1.0 m long, PCD side: 34-pin ribbon connector type D, process side: two 16-pin ribbon connector
PCD2.K242	Sheathed, half-round cable with 34 strands, each 0.09 mm^2, 2.0 m long, PCD side: 34-pin ribbon connector type D, process side: two 16-pin ribbon connector

"Ribbon/screw terminal" adapters

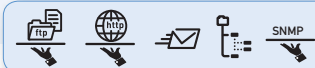| Type	Description
PCD2.K510	for 8 inputs/outputs, with 20 screw terminals without LED
PCD2.K511	for 8 inputs/outputs, with 20 screw terminals and LED (for source operation only)
PCD2.K520	for 16 inputs/outputs, with 20 screw terminals without LED
PCD2.K521	for 16 inputs/outputs, with 20 screw terminals 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 (on-off-auto switch) and 1 output as feedback for manual control
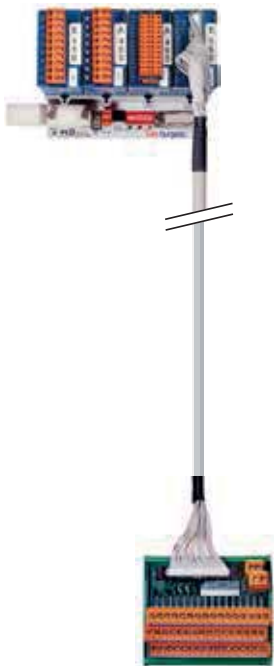
1.2.2 Saia® PCD3.M2130V6 Compact

The PCD3 Compact brings together a high degree of functionality in a very compact space. With its compact dimensions, it can fit into the smallest switch cabinets. This makes it ideal for upgrading existing installations. It includes all the features of PCD3 technology and also has I/Os directly onboard.
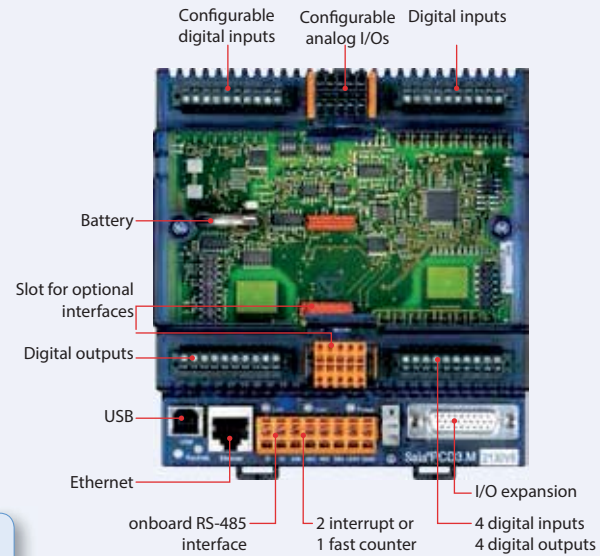
System properties

- Freely programmable with PG5
- Compact dimensions: 130 × 140 × 74 mm (W × H × D)
- Integral interfaces: USB, Ethernet and RS-485
- Slot A for optional PCD7.F1xxS serial communication modules
- 38 inputs/outputs already in base unit
- Replaceable lithium battery
- Configurable analog inputs for voltage, current and temperature
- Expandable with PCD3.C200 or PCD3.C110 I/O-module holder
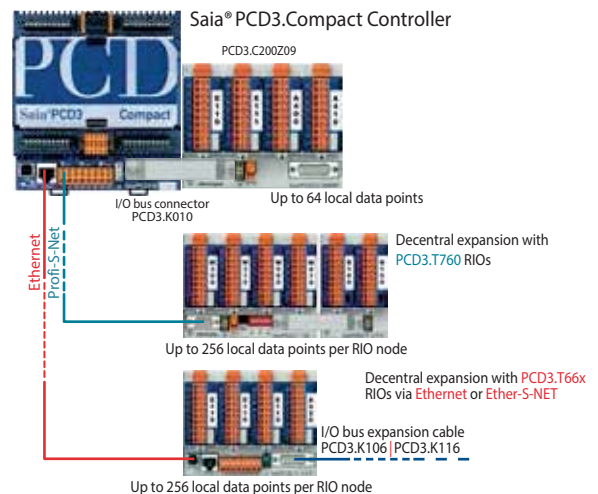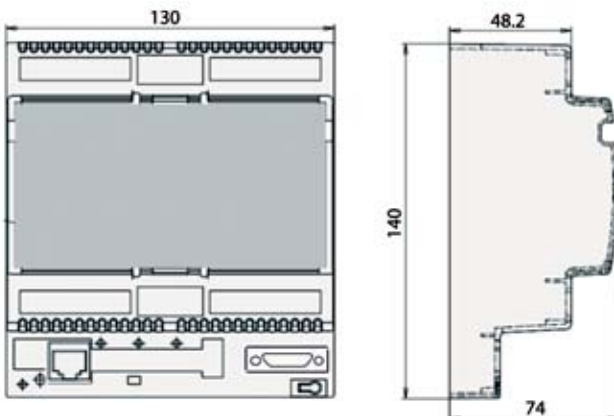- Local I/O expansion with remote I/O PCD3.T66x (Ethernet) or PCD3.T760 (Profi-S-IO)

AutomationServer integrated in the base unit

Configurable digital inputs / Configurable analog I/Os / Digital inputs / Battery / Slot for optional interfaces / Digital outputs / USB / Ethernet / onboard RS-485 interface / 2 interrupt or 1 fast counter / 4 digital inputs 4 digital outputs / I/O expansion

On-Board inputs/outputs

Type	Number	Input voltage	Signal ranges	Breaking capacity VDC	Resolution	I/O connector type
Digital inputs	20	15…30 VDC	---	---	---	Plug-in screw terminals or push-in terminals with LED (optional)
Digital outputs Transistor	12	---	---	0,5 A/ 5…32 VDC	---	Plug-in screw terminals or push-in terminals with LED (optional)
Analog inputs Configurable	4	---	−10 V … +10 V / 0 …20 mA Pt/Ni 1000, Ni 1000 L&S, resistance 0…2500 Ω	---	13-bit / 12-bit	Plug-in spring terminals
Analog outputs	2	---	0 … 10 V	---	12-bit	Plug-in spring terminals

Dimensions

130 / 48.2 / 140 / 74

Saia® PCD3.Compact Controller

PCD3.C200Z09

Ethernet / Profi-S-Net

I/O bus connector PCD3.K010

Up to 64 local data points

Decentral expansion with PCD3.T760 RIOs

Up to 256 local data points per RIO node

Decentral expansion with PCD3.T66x RIOs via Ethernet or Ether-S-NET

I/O bus expansion cable PCD3.K106 | PCD3.K116

Up to 256 local data points per RIO node

1 Automation stations

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Performance overview and accessories

Power supply

Type	Description
Supply voltage (according to EN / IEC 61131-2)	24 VDC −20 / +25% incl. 5% ripple
Current draw / Input power	typically 175 mA / 4.2 W max. 500 mA / 12 W
Load capacity 5 V / +V internal	max. 600 mA / 100 mA
Reclosing (according to EN / IEC 61131-2)	≤ 10 ms at interval ≥ 1 s
Watchdog relay, make contact	48 VAC or VDC, 1 A

Communication interfaces to field level, options in slot A

PCD7.F110S	RS-422 with RTS/CTS or RS-485 electrically connected, with line termination resistors capable of activation. Suitable for Modbus, S-Bus, EnOcean, etc.
PCD7.F121S	RS-232 with RTS/CTS, DTR/DSR, DCD. Suitable for modem, EIB, DALI connection.
PCD7.F150S	RS-485 (electrically isolated), with line termination resistors capable of activation,
PCD7.F180S	Belimo® MP-Bus, for connecting up to 8 drives on one line

I/O expansions

Type	Description	Capacity
PCD3.C110Z09	2 module slots (connection with PCD3.K010 connector or cable PCD3.K106/K116)	0 mA
PCD3.C200Z09	4 module slots, with 24 VDC supply (connection with PCD3.K010 cable or cable PCD3.K106/K116)	1500 mA / 630 mA (5 V / +V)
PCD3.C110	2 module slots (connection with PCD3.K106/K116 cable only)	0 mA
PCD3.C200	4 module slots, with 24 VDC supply (connection with PCD3.K106/K116 cable only)	1500 mA / 630 mA (5 V / +V)

I/O-modules see pages 27 and 28

Ordering information

| Type	Description
PCD3.M2130V6	Base units with 38 I/Os (with plug-in terminal blocks) CPU with 512 kByte user program, backup with onboard flash memory, 1 MByte File System, USB port for programming with PG5, RS-485 interface, 2 interrupt inputs, integral Web & FTP server, 1 port (slot A) for PCD7.F1xxS communication modules, lithium battery for data backup for 1…3 years, Ethernet TCP/IP interface
PCD3.M2030V6	Same as PCD3.M2130V6 but without Ethernet TCP/IP interface
4 405 5066 0	Optional: pluggable 10-pin push-in terminal block with LEDs, for digital I/Os
4 405 5079 0	Optional: 3×10 pin (3-wire connection), pluggable push-in terminal block with LEDs, for digital I/Os

1.2.3 Saia® PCD3.M2330A4Tx Wide Area Controller

Saia® PCD3 Wide Area Controllers are freely programmable, industrial devices for control and automation devices with web, IT and telecommunications functions. Its potential uses therefore extend much further than those of a classic RTU station, which is normally only suitable for alarm monitoring with remote alarms and data logging. The PCD3 Wide Area Controller is also suitable for sophisticated control tasks.

System properties

▸ Freely programmable with PG5

▸ Compact dimensions: 130 × 140 × 74 mm (W × H × D) (without antenna)

▸ Management of historical data with up to 1 GByte flash memory

▸ Integral telecommunications interface (ISDN, PSTN, GSM/GPRS)

▸ Always accessible, thanks to redundant communication

▸ 14 inputs/outputs already in base unit
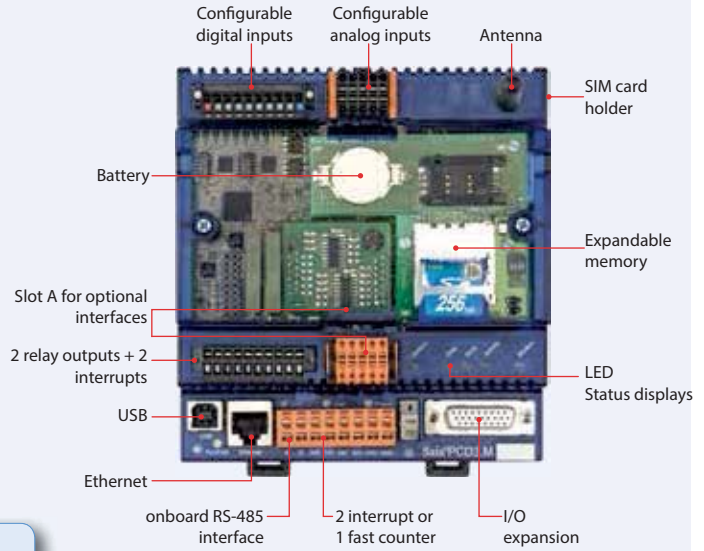

AutomationServer integrated in the base unit

On-Board inputs/outputs

I/O data point	Properties
8 digital inputs + 2 interrupts	15…30 VDC
2 relay outputs	DC 2 A/50 V, AC 6 A/250 V
4 configurable analog inputs	−10…+10 VDC, 0…±20 mA, Pt1000, Ni1000, Ni1000 L&S, 0…2.5 kΩ

On-Board interfaces

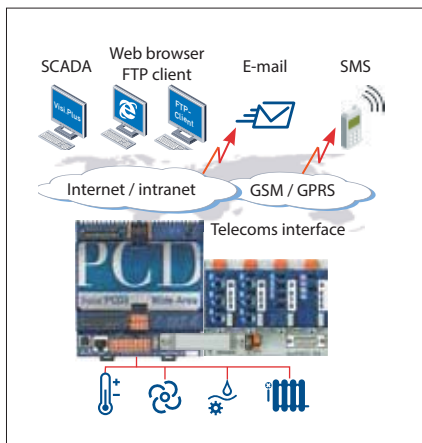| Interface	Transmission rate
RS-485 (serial) on terminal block for free protocols or Profi-S-Net / Profibus-DP Slave	≤ 115.2 kbit/s ≤ 187.5 kbit/s
Ethernet TCP/IP	10/100 Mbit/s
USB 1.1 slave (PGU)	

Dimensions
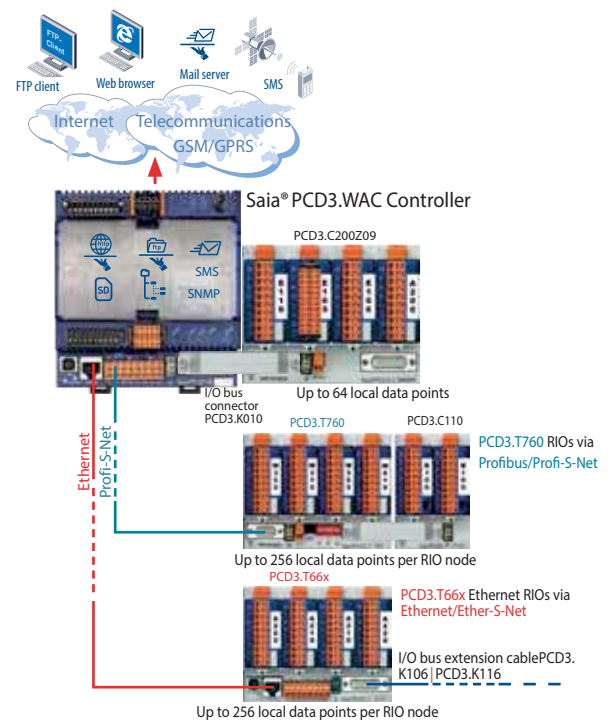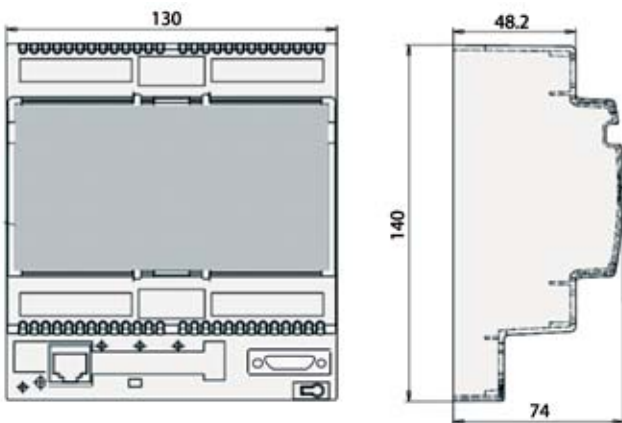
Saia® PCD3.WAC Controller

### PCD3.WAC as RTU controller

Send SMS messages and emails through the GSM/GPRS network. Use the PCD3.WAC with local I/Os and send messages, statuses or alarms to the SCADA system or, by email and SMS, to the end user.
Via integrated web and FTP servers, external stations are easily brought together across internet and internet. The integrated web server also permits access to external stations via standard web browsers.
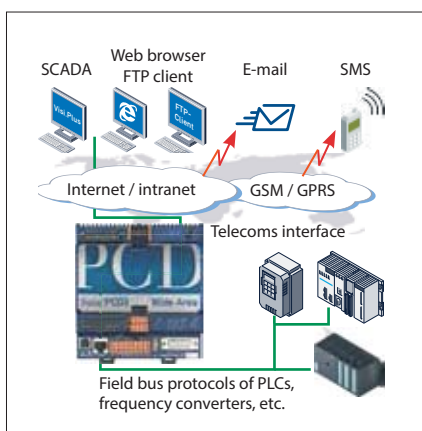
WAC communications gateway

With integrated protocols such as FTP, HTTP, or by using open data modes, Ethernet, or a serial interface, the Saia® PCD3.WAC can be used for non-Saia® systems as a communications gateway to Internet or intranet applications.
Many field bus protocols are supported at the field level, such as Modbus TCP/RTU/ASCII, EIB, M-Bus, etc.
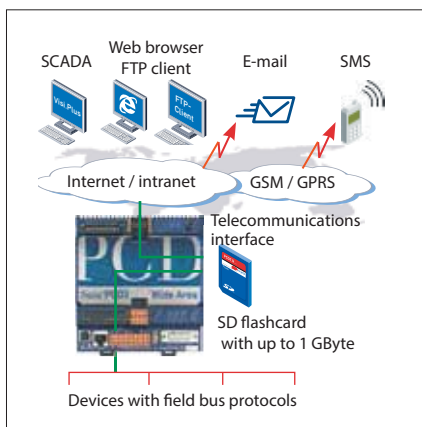
Ready for data management:

With up to 1 GByte of memory, the Saia® PCD3.WAC has enough memory to store data received from the field level over a long period. This data can be processed directly by the Saia® PCD and then transferred to the management or upstream monitoring systems by e-mail, FTP, HTTP or data communication. This makes the Saia® PCD3 Wide Area Controller independent of management stations and therefore suitable as a data concentrator.
Many potential uses can be found with remote operation and control wherever measurements have to be taken, the statuses of systems monitored, and the relevant data transferred.
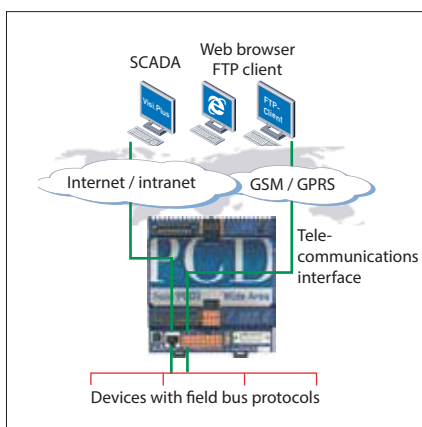
Always available, thanks to redundant communication

Bridging geographical distances is often a requirement for systems with a large number of distributed stations. With integrated telecommunications interfaces (GSM/GPRS, PSTN or ISDN) and an Ethernet interface, the Wide Area Controller is permanently available via its telecommunications interface and Ethernet port. Redundant communication paths (telecommunications or Ethernet interface) increase the reliability and availability of the system.

Performance overview, ordering information and accessories

CPU technology

RAM as program memory	512 kByte
Back-up memory (flash)	512 kByte
Memory for file system (flash)	1 MByte (onboard)
PCD media	8,192 flags, 16,384 × 32-bit register

Telecom communication interface (alternatively integrated interfaces)

GSM / GPRS / PSTN / ISDN / SMS – sending and receiving

**Internet and intranet protocols**

HTTP server	Visualization with web browser and web panel
FTP server	Easy exchange of data
TCP/IP-PPP Point-to-Point Protocol	Efficient communication
SMTP client	Sending e-mails with files (e.g. log files) as attachments
DHCP and DNS client	Easy integration into IP networks
SNTP client	Synchronization of the internal clock
SNMP agent	Network management

Field level protocols

Serial-S-Bus, Ether-S-Bus and Profi-S-Bus
MODBUS RTU or TCP EIB M-Bus IEC 870-5-101/103/104
For other protocols please refer to section B2
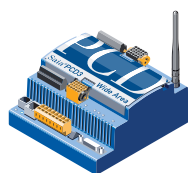
Types

PCD3.M2330A4T1	with PSTN modem
PCD3.M2330A4T3	with ISDN modem
PCD3.M2330A4T5	with GSM/GPRS modem (without antenna)
PCD3.M2230A4T5	with GSM/GPRS modem, without Ethernet (without antenna)

Additional data storage

Slot for SD flashcards	Saia® SD card with up to 1 GByte file system
Data files with up to 900 files with Saia® file system	Download and upload via ftp
PCD7.R-SD512	Saia® SD flashcard, 512 MByte with file system
PCD7.R-SD1024	Saia® SD flashcard, 1024 MByte with file system

Communication modules for slot A

PCD7.F110S	RS-422 with RTS/CTS or RS-485 electrically connected, with line termination resistors capable of activation. Suitable for Modbus, S-Bus, EnOcean, etc.
PCD7.F121S	RS-232 with RTS/CTS, DTR/DSR, DCD. Suitable for modem, EIB, DALI connection.
PCD7.F150S	RS-485 (electrically isolated), with line termination resistors capable of activation,
PCD7.F180S	Belimo® MP-Bus, for connecting up to 8 drives on one line

I/O expansions

PCD3.C110Z09	2 module slots (connection with PCD3.K010 connector or with PCD3.K106/K116 cable)	0 mA
PCD3.C200Z09	4 module slots, with 24 VDC supply (connection with PCD3.K010 connector or with PCD3.K106/K116 cable)	1500 mA / 630 mA (5 V / +V)
PCD3.C110	2 module slots (connection with PCD3.K106/K116 cable only)	0 mA
PCD3.C200	4 module slots, with 24 VDC supply (connection with PCD3.K106/K116 cable only)	1500 mA / 630 mA (5 V / +V)

I/O-modules see pages 27 and 28

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