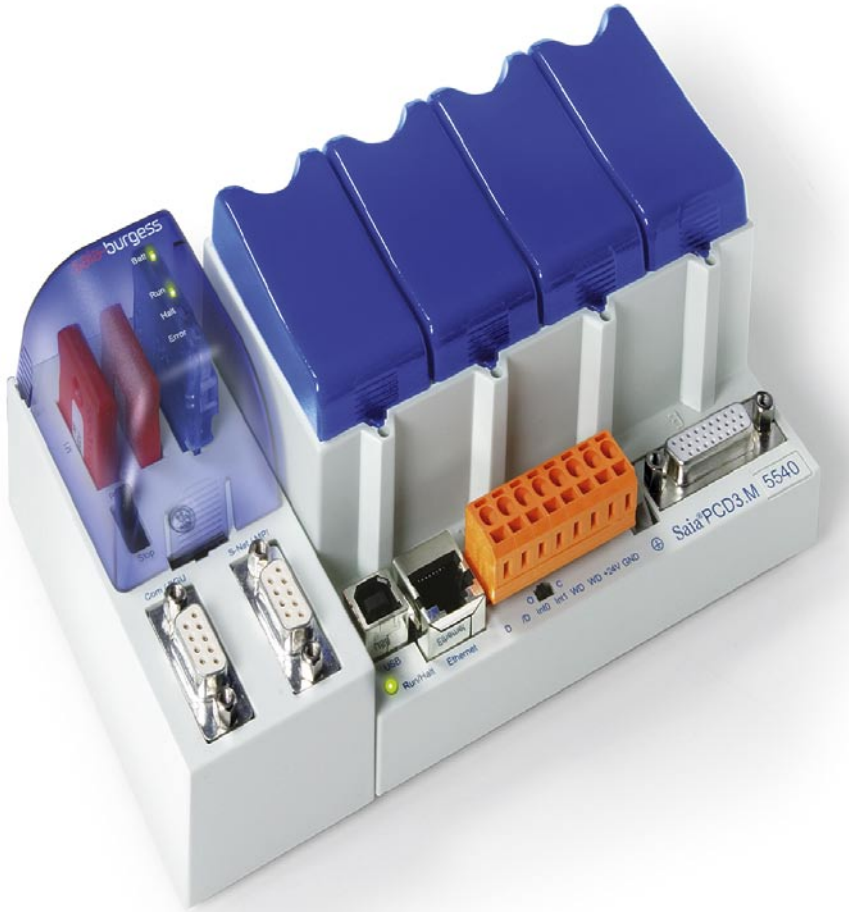
Technical information



saia-burgess

Smart solutions for comfort and safety

Saia®PCD3.Mxxx0 – compact programmable CPUs

Controls Division

By the combination of a fast microprocessor generation with the component-based Saia®NT operating system, the new Saia®PCD3 controller sets highest benchmarks at functionality and performance.

The new controller family consists of seven different equipment variants. Up to four intelligent modules can be connected directly with the main processor, thus ensure extremely effective communication.

Programmable with PG5 from Saia-Burgess Controls AG.

Latest CPU technology

- Future-safe processor technology and 512 Kbytes memory on board, combined with the new Saia®NT operating system, transform a simply packed PLC into a very high performance, enormously low-priced PLC of the middle class
- Profibus- and Ethernet-TCP/IP-interface in the base unit. Integrated Web server

Maximum peripheral connections

- Up to 1023 central inputs/outputs plus 2 interrupt inputs on board
- Additional remote inputs/outputs via Profibus

Efficient Saia® programming tools

- PG5 from Saia-Burgess with integral HMI editor and comprehensive application components make programming convenient and efficient
- A coordinating combination of operating system and programming tool achieves maximum speed, reliability and functionality

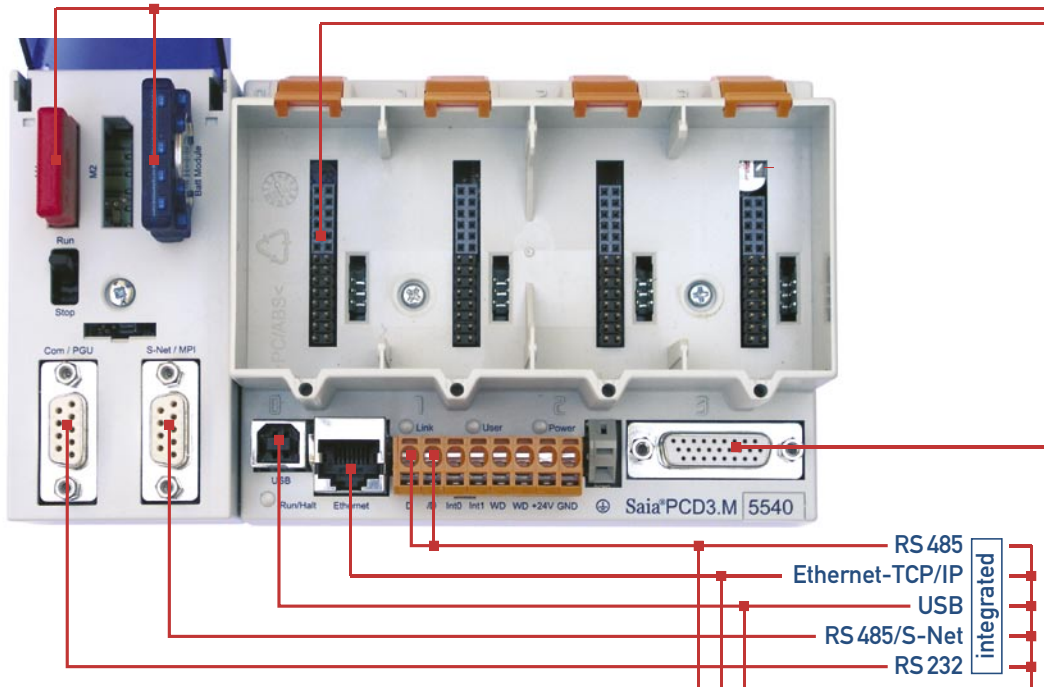
PCD3.Mxxx0 -
compact programmable CPUs

The PCD3.Mxxx0 is made up of a fine-tuned combination of component based operating system, controller CPU, interface modules and software tools, all of which have been developed and produced by Saia-Burgess Controls.

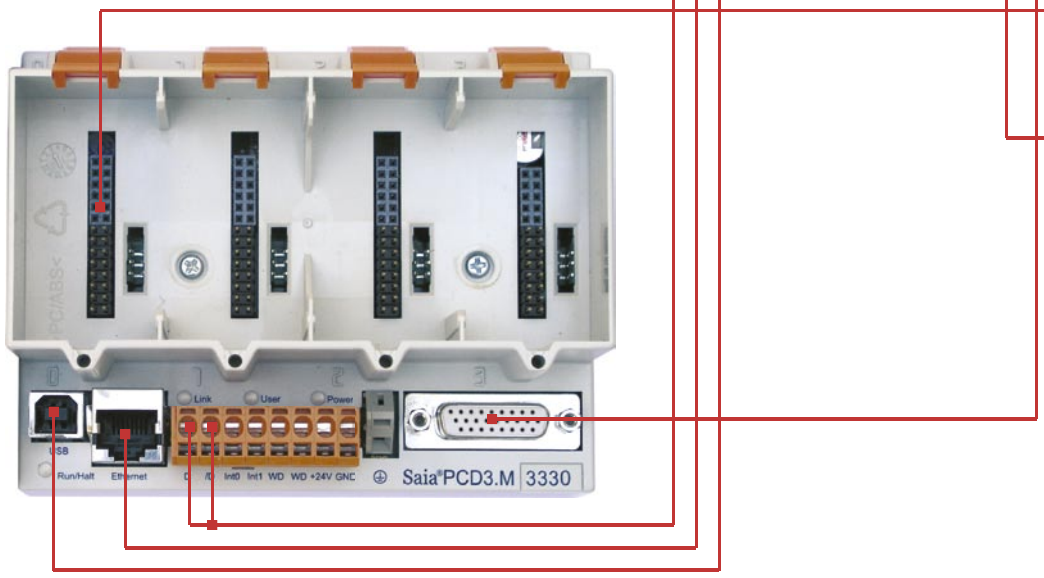
With its new COLDFIRE processor and expansion to 1023 central I/Os, the PCD3.Mxxx0 offers a powerful controller platform with outstanding communications features.

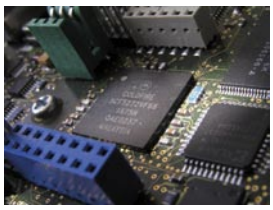
The PCD3.Mxxx0 is compatible in its construction and design with the PCD3 product family. It is about 5 times faster than the PCD2.M170, has four times the number of registers, up to 3 interfaces built into the base unit, plus USB. With add-on modules, an extra serial port can be achieved. The operating system supports different protocols, such as S-Bus and field busses, such as Profibus and Ethernet TCP/IP. The Profibus layer 2 (FDL) based Saia® private control network Profi-S-Net includes special features, e.g. multi protocol operation (e.g. DP, MPI and HTTP), multimaster communication, the transmission of plugins (active slaves) and web access.

PCD3.M5540 with opened cover, Flash Card (optional) and battery module (PCD3.M5440 without Ethernet)



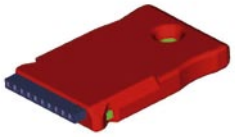
PCD3.M3330 (PCD3.M3230 without Ethernet)





Fast CPUs with new COLDFIRE processor CF5272

- With processing ~5 times faster than the PCD2.M170, it can be used in time-critical applications to replace the formerly most powerful PCD multi-processor technology
- Use of convenient graphical software is possible, due to the fast CPU and large memory capacity
- Ideally suited for use as master controller in large installations with many remote inputs/outputs and intelligent actuators and sensors



Plentiful memory possibillities

- 512 Kbytes RAM user memory (programs and data), buffer battery, for mid-range applications
- 1 Mbytes flash-card (PCD7.R500) for user-program backups optional
- 256 Kbytes on board Flash for securing user-specific data

Characteristics of the Saia®PCD operating system

(see TI P+P26/354)

- Program portability across the entire PCD family
- Short reaction times, due to the instruction sets proximity to hardware, efficient addressing modes, direct access to I/Os, and other features
- The open architecture of the new, component-based Saia®NT operating system provides a basis for problem-free adaption to future developments, thereby guaranteeing maximum investment protection

Up to 1023 central I/Os, 2 interrupt inputs

- Up to 1023 central I/Os with PCD3.Cxxx module holders. All I/O sockets can be equipped as desired with counting, measuring, motion-control or I/O modules for the most diverse functions
- 2 interrupt inputs that influence the process directly
- Additional remote I/Os via Profibus or other field-bus connections for applications with a wide physical spread

(see TI P+P26/389)

PCD3 I/O modules in cassette form (PCD3.Axxx/ .Exxx/ .Wxxx/ .Bxxx/ .Hxxx)

- More than 50 I/O modules available with differing functionalities
- Status of digital signals indicated via LEDs
- Consistent PG5 support in all CPUs and RIOs via FBs and FBoxes

(see TI P+P26/388)

Integral ports in base units

PCD3.M3xx0

- With USB 1.1 (slave device) interface, for use as programming interface
- RS485 port, up to 115 kbit/s, usable as free user interface or Profi-S-Net up to 187.5 kbit/s
- Ethernet-TCP/IP (with **PCD3.M3330**)

PCD3.M5xx0

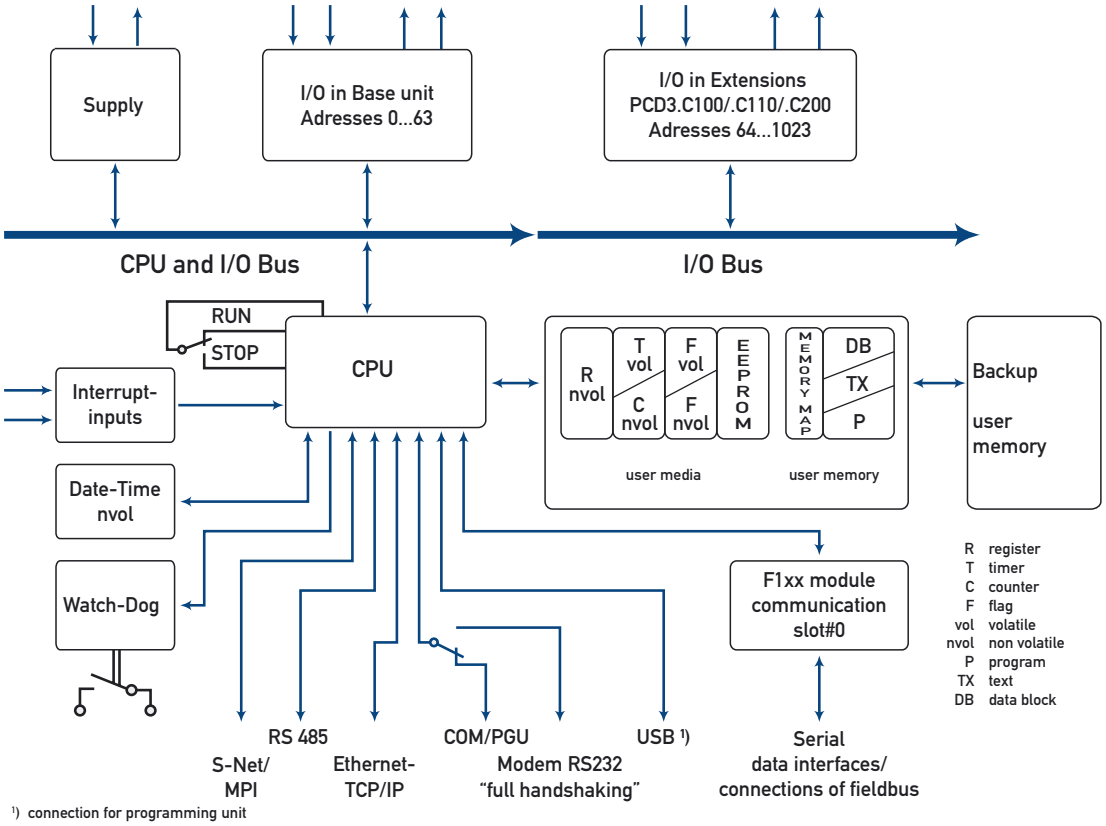
- With USB 1.1 (slave device) interface, for use as programming interface
- RS485 port, up to 115 kbit/s, can be used as freely assigned user interface
- RS232 port (Com/PGU) up to 115 kbit/s, for use as programming or user interface for terminal. Switchable on „Full RS232 handshaking“ for modem
- Profi-S-Net interface up to 1.5 Mbit/s for the binding of RIO PCD3.T7xx inclusive Profi-S-Net features, for multi-master communication, usable as Profibus DP-Slave and for the connection of terminals
- Ethernet-TCP/IP (with **PCD3.M5540**)

Optional PCD3.F1xx COM ports applicable on I/O module, card location Slot#0

- **PCD3.F110:** RS422 with RTS/CTS or RS485, electrically connected, with possible activation of line termination resistors, suitable for S-Bus
- **PCD3.F121:** RS232 with RTS/CTS, DTR/DSR, DCD, suitable for modem
- **PCD3.F130:** TTY/20mA current loop (active or passive)
- **PCD3.F150:** RS485 electrically isolated, with possible activation of line termination resistors, suitable for S-Bus
- **PCD3.F180:** Belimo MP-Bus, up to 8 drives can be connected

Manifold system resources

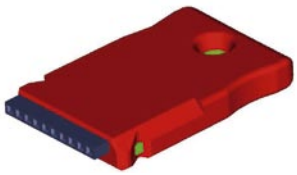
Block diagram of resources by the example of PCD3.M5540



System resources

Flags	8192 × 1 bit, volatile or non-volatile, division programmable
Registers	16 384 × 32 bits, non volatile
Computational ranges	Integers: –2 147 483 648… +2 147 483 647 (-2^{31}…$+2^{31}-1$) Floating-point numbers: $\pm 9.22337 \times 10^{18}$…$\pm 5.42101 \times 10^{-20}$ Formats: decimal, binary, BCD, hexadecimal or floating point
Index registers	17 × 13 bit (1 each per COB and XOB)
Timers/Counters	1600 volatile timers or non-volatile counters, division programmable
Counting range	31 bit, unsigned (0…2 147 483 647)
Timing range	31 bit, unsigned (0…2 147 483 647) timing signals, selectable (10 ms to 10 s)
Texts and DBs	8192
Date-time	Time values: s/min/h, week/day of week, month/day of month, year
Accuracy	better than 1 min/month
Power reserve	PCD3.M3xx0: 8 hours PCD3.M5xx0: 1 to 3 years

1 Mbyte Flash Card for the PCD3.M5xx0



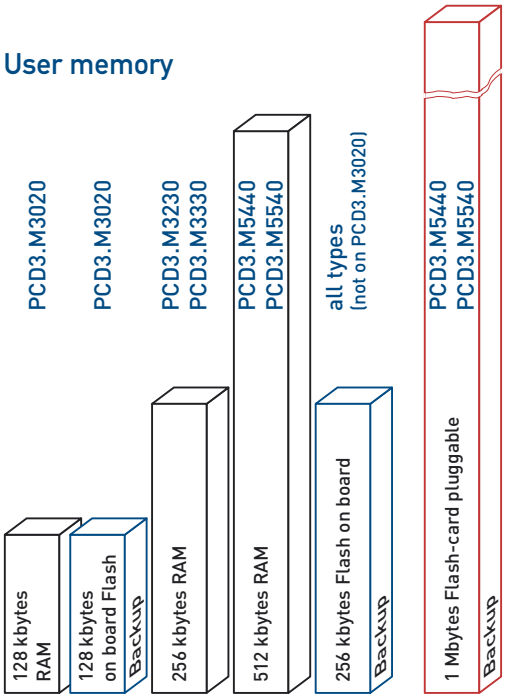
The PCD7.R500 flash card offers the following capabilities:

- Backup for user program
- Automatic loading if no user program is present in RAM on start-up
- Simple, convenient program change
- Prompt loading of diagnostic program

For some of this functions the programming unit is not required: by a defined operating procedure when starting, the CPU can be brought into the load condition, and contents of the flash card are transferred into the RAM memory.

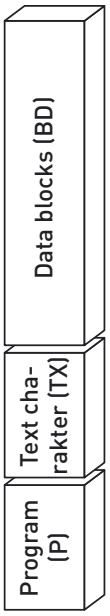
Memory, communication possibilities

User memory



Total available user memory can practically be divided at will into sectors for program, text and data blocks. This enables the requirements of any particular application to be met in the best possible way. With the instructions available, data can be transferred under the other user media, such as flags, registers, timers and counters. The following values are valid:

- 1 register content (32 bit) occupies 4 bytes in the data block range and 8 bytes in the text range
- 1 text character occupies 1 byte
- 1 program line occupies 4 bytes



Serial data ports

The PCD supports a large number of protocols for connecting peripherals, such as printers, weighing machines, barcode readers, terminals or other controllers.

Technical data

Transmission rates	up to 115 kbit/s (TTY/current loop 20 mA up to 9.6 kbit/s)
Protocols	MC mode for single character, user definable ASCII driver

Telecommunication via modem

External digital and analogue modem modules, combined with the appropriate modem software library, enable telecommunication with the PCD. Great distances can therefore be overcome quickly and easily, and costs can be saved.

For details see Technical Information P+P26/335.

- SMS messages can be sent and received directly from the PCD
- Data exchange across great distances via modem.

Integrated Saia®S-Net-connections

For details see Technical Information P+P26/381.

Serial-S-Net

Supports the S-Bus protocol on serial interfaces (RS232, RS485/422, Modem) in the master/slave-mode. The Saia®S-Bus with his simple and safe protocol is available with all PCD already in the basic equipment.

Technical data

Transmission rates	up to 115 kbit/s
Protocol	S-Bus, high net data rates thanks to its small protocol-overhead
Number of stations	up to 254 stations in segments of 32 stations each.

Profi-S-Net

«Private Control Network (PCN)» contains all protocols and services for operating Saia®-devices (PLC, RIO, HMI, PG) at the Profibus. Supports the Multi-Protocol operation on the same cable and plug.

Technical data

Transmission rates	up to 1.5 Mbit/s
Number of stations	up to 124 stations in segments of 32 stations each
Protocols	Profi-S-Bus, Profi-S-IO, DP, HTTP

Ether-S-Net

«Private Control Network (PCN)» contains all protocols and services for operating Saia®-devices (PLC, RIO, HMI, PG) at the Ethernet. Supports the Multi-Protocol operation on the same cable and plug.

Technical data

Connection	10 Base-T/100 Base TX (RJ45)
Speed	10/100 Mbit/s (autosensing)
Protocols	TCP/IP or UDP/IP, Ether-S-Bus, Ether-S-IO, HTTP, SMTP

Ether- and/or Profi-S-Bus for event-controlled data exchange with multi-master communication between controllers. Contains apart from the normal data exchange also services for the access with the PG5 programming unit, Saia®OPC server or the Web Browser to the PCD controller.

Ether-[1] and/or Profi-S-IO optimized for operation of RIO head stations PCD3.T76x. Contain apart from the normal data exchange also special services for the configuration and diagnosis as well as the management of the RIO PlugIns.

Profibus DP standard protocol for the data exchange with Profibus-DP units (PLC, RIOs, Frequency inverter, ...).

HTTP Hyper Text Transfer Protocol for the access to the PCD Web server via Ether-S-Net and Profi-S-Net.

SMTP[1] Simple Mail Transfer Protocoll for sending E-Mail messages via Ether-S-Net.

[1] In preparation

Control and monitoring
Counting, measuring and motion control

Economical remote display of data

PCD7.D120

- Particularly bright, 6-digit LED display with decimal point. Very clear to read, even in conditions of poor visibility
- Does not take one of the PCD's serial ports; only needs 3 transistor outputs
- Parallel driving of up to 14 remote displays. The same value (up to 6 digits) is shown on all displays
- Serial driving of 2 (or more) remote displays: useful if more than 6 digits have to be displayed

For details see P+P26/361.

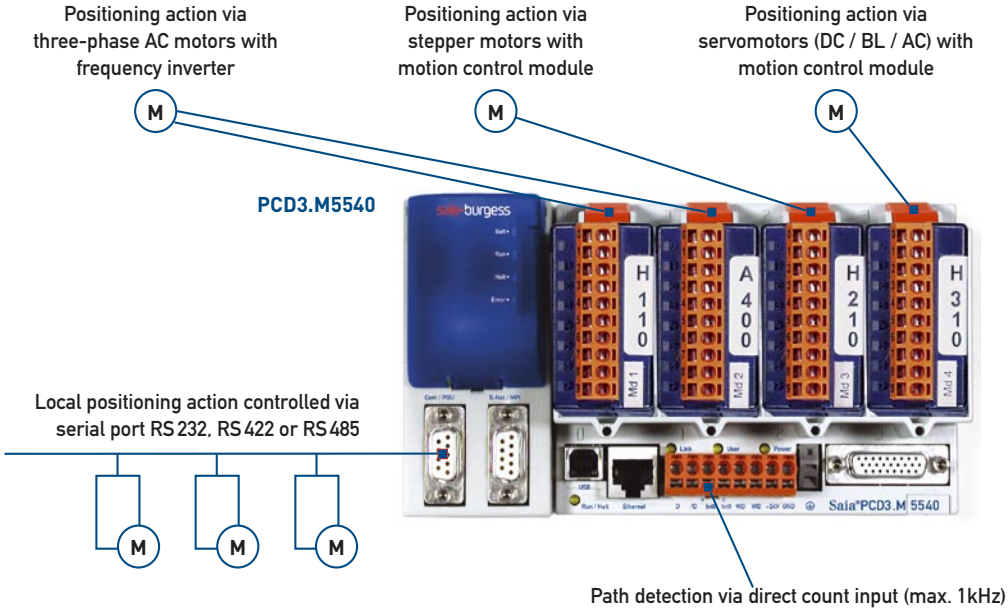
Low-cost terminal with graphical display

PCD7.D230 PCD7.D231 PCD7.D232

- The graphical displays with LED back-lighting have a resolution of 128 x 64 pixels
- Convenient visual display editing with the HMI editor (integrated within PG5)
- Integral RS232, RS422 or RS485 port for all applications

For details see P+P26/382 and 26/795.

Overview for axis control



Whether the drive is analogue or digital, whether there is a frequency inverter, stepper and servomotors (DC / BL / AC), whether positioning action takes place centrally in der PCD or locally in an intelligent drive: the PCD offers an efficient solution for every technology and topology. By close coupling of the PCD and the driving controller, even complex motion sequences and their associated peripheral control functions can be realized with the comfort and diagnostic capabilities of PCD programming.

Performance level	Low Cost Control in CPU	Mid range Positioning action in motion control module		High End Positioning action in drive
Drive type	Frequency inverter with AC motor	Stepper motor	Servodrive and servo-motor	Intelligent drive
Velocity setpoint	Fixed velocities triggered with digital signals	Monophase pulse string and direction signal up to 20 kHz	±100% setpoint with ±10V analogue signal	By power component, motion control via DP or RS485 serial data port
Path detection	Incremental or SSI absolute value encoder	-	Incremental or SSI absolute value encoder	In power component
Modules	PCD3.H110/..H150 PCD3.A400	PCD3.H210	PCD3.H31x	PCD3.F1xx

Counting, measuring and **motion control**

Optimum solutions for every counting and measuring task

Every PCD3 has 1600 counting registers with a counting capacity of 2 147 483 647 (31 bit). The counting frequency reaches, on average, frequencies around 20 Hz. Via the interrupt inputs counting frequencies of 1 kHz are achieved with the help of counting registers..

PCD3.H100 counting module

The PCD3.H100 counting module counts pulses up to 20 kHz with 16-bit resolution (counting capacity 0…65 535; can be used in tandem with CPU counter). The module has two inputs A and B and recognizes the direction of incremental shaft encoders. The counter can be enabled via an external enable signal. The CCO output (counter controlled output) is directly controlled by the counter and can, for example, be used to trigger precise external switch operations or to release an interrupt.

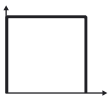
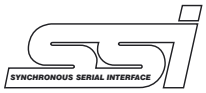
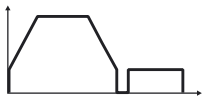
The module is suitable for counting revolutions, distances, volumes, etc. and for measuring by counting the pulses.

PCD3.H110 counting and measuring module

This universal module not only enables counting functions up to 100 kHz but also the precise measurement of frequencies up to 100 kHz and the duration of periods and pulses up to one hour. For this purpose a modern FPGA (Field Programmable Gate Array) component is used.

The two counting inputs A and B allow the direction of incremental shaft encoders to be recognized and the simultaneous use of counting and measuring functions in the same module. The two fast outputs: CCO (counter controlled output) and TCO (timer controlled output) can, for example, be used to trigger precise external switch operations or to release an interrupt.

Overview of PCD3.-modules for axis control

Module	Velocity profile	Drive	Frequency Encoder	Output	Count range / position distance	Number of axes [1]	Current draw [2]
PCD3.H100			max. 20 kHz	digital	16 bit (65535)	max. 16	90 mA
PCD3.H110			max. 100 kHz	digital	24 bit (16777215)	max. 16	90 mA
PCD3.H150			max. 500 kHz SSI	+4 digital outputs	8...29 bit selectable	max. 16	25 mA
PCD3.H210		stepper motor	max. 19.5 kHz	square pulse	24 bit (16777215)	max. 16	85 mA
PCD3.H310 PCD3.H311		servomotor, frequency inverter	max. 100 kHz 24 VDC 5V/RS422	analogue ±10 V, 12 Bit	±30 bit (±1 073 741 824)	max. 16	140 mA

[1] No ..H.. module can be used at I/O base address 240 (conflict with WD at 255).

[2] Current draw from the internal 5 V bus, loading capacity PCD3.Mxxx0: max. 600 mA, PCD3.T76x: max. 650 mA and PCD3.C200: max. 1000 mA.

Overview of a part of input/output modules

(For details see Technical Information P+P26/388)

PCD3: digital input/output modules

Type	Total I/Os	Input voltage	Output breaking capacity DC	Output breaking capacity AC	Input filter	Electrical isolation	Internal current draw 5 V[1]	Internal current draw 24 V[2]	I/O connector type
PCD3.E110	8 I	15...30 VDC			8 ms		12 mA		A or B
PCD3.E111	8 I	15...30 VDC			0.2 ms		12 mA		A or B
PCD3.E116	8 I	3.5...7 VDC			0.2 ms		12 mA		A oder B
PCD3.E160	16 I	15...30 VDC			8 ms		8 mA		D
PCD3.E165	16 I	15...30 VDC			8 ms		8 mA		C
PCD3.E610	8 I	15...30 VDC			10 ms	■	12 mA		A or B
PCD3.E009	–	Empty module (protection for unequipped sockets)							
PCD3.A400	8 O, transistor		0.5 A/5...32 VDC				15 mA		A or B
PCD3.A410	8 O, transistor		0.5 A/5...32 VDC			■	15 mA		A or B
PCD3.A460	16 O, transistor		0.5 A/5...32 VDC				8 mA		D
PCD3.A465	16 O, transistor		0.5 A/5...32 VDC				8 mA		C
PCD3.A300	6 O, transistor		2 A/10...32 VDC				12 mA		A or B
PCD3.A200	4 O, relay (make)		2 A/50 VDC	2 A/250 VAC		■	10 mA		A or B
PCD3.A210	4 O, relay (break)		2 A/50 VDC	2 A/250 VAC		■	10 mA		A or B
PCD3.A220	6O, relay (make)		2 A/50 VDC	2 A/250 VAC		■	10 mA		A or B
PCD3.A251	8 O, relay (6 changeover + 2 make)		2 A/50 VDC	2 A/48 VAC		■	15 mA		C
PCD3.B100	2 E + 2 A + 4 E/A	E:15...32 VDC	0.5 A/5...32 VDC		8 ms		15 mA		A or B

PCD3: analogue input/output modules

Type	Total I/Os	Signal ranges	Resolution	Electrical isolation	Internal current draw 5 V[1]	Internal current draw 24 V[2]	I/O connector Typ
PCD3.W200	8 I	0...+10 V	10 Bit		8 mA	5 mA	A or B
PCD3.W210	8 I	0...20 mA	10 Bit		8 mA	5 mA	A or B
PCD3.W220	8 I	Pt 1000: –50 °C...400 °C/Ni 1000: –50 °C...+200 °C	10 Bit		8 mA	16 mA	A or B
PCD3.W300	8 I	0...+10 V	12 Bit		8 mA	5 mA	A or B
PCD3.W310	8 I	0...20 mA	12 Bit		8 mA	5 mA	A or B
PCD3.W340	8 I	0...+10 V/0...20 mA[3] Pt 1000: –50 °C...400 °C/Ni 1000: –50 °C...+200 °C	12 Bit		8 mA	20 mA	A or B
PCD3.W350	8 I	Pt 100: –50 °C...+600 °C/Ni 100: –50 °C...+250 °C	12 Bit		8 mA	30 mA	A or B
PCD3.W360	8 I	Pt 1000: –50 °C...+150 °C	12 Bit		8 mA	20 mA	A or B
PCD3.W400	4 O	0...+10 V	8 Bit		1 mA	30 mA	A or B
PCD3.W410	4 O	0...+10 V/0...20 mA/4...20 mA jumper selectable	8 Bit		1 mA	30 mA	A or B
PCD3.W600	4 O	0...+10 V	12 Bit		4 mA	20 mA	A or B
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 or B
PCD3.W500	2 I +2 O	0...+10 V/–10 V...+10 V/0...20 mA/–20 mA...+20 mA	12 Bit		200 mA	0 mA	A or B
PCD3.W3x5	7 I	.W305: 0...+10 V	12 Bit	■	60 mA	0 mA	E
		.W315: 0...20 mA/4...20 mA, parameters can be set	12 Bit	■	60 mA	0 mA	E
		.W325: –10 V...+10 V	12 Bit	■	60 mA	0 mA	E
PCD3.W6x5	6 O	.W605: 0...+10 V	10 Bit	■	110 mA	0 mA	E
	4 O	.W615: 0...20 mA/4...20 mA, parameters can be set	10 Bit	■	55 mA	0 mA	E
	6 O	.W625: –10 V...+10 V	10 Bit	■	110 mA	0 mA	E

[1]) Current draw from internal 5 V-Bus (Loading capacity: PCD3.Mxxx0: max. 600 mA, PCD3.T76x: max. 650 mA and PCD3.C200: max. 1000 mA)
[2]) Current draw from internal 24 V-Bus (Loading capacity: PCD3.Mxxx0, PCD3.T76x and PCD3.C200: max. 100 mA)
[3]) 4...20 mA via user program

Overview of a part of input/output modules
Extension of the input- /output capacity

PCD3: Weighing and temperature modules

Type	Total I/Os	Signal ranges	Resolution	Electrical isolation	Internal current draw 5 V[1]	Internal current draw 24 V[2]	I/O connector Typ
PCD3.W710[3]	1 I	Weighing module, 1 system, up to 4 weighing cells	18 Bit		60 mA	70 mA	E
PCD3.W720	2 I	Weighing module, 2 systems, up to 6 weighing cells	18 Bit		60 mA	100 mA[4]	E
PCD3.W745	4 I	Temperature module for TC and 4 wire Pt/Ni	18 Bit	■	200 mA	0 mA	[5]

[1]) Current draw from internal 5 V-Bus (Loading capacity: PCD3.Mxxx0: max. 600 mA, PCD3.T76x: max. 650 mA and PCD3.C200: max. 1000 mA)
[2]) Current draw from internal 24 V-Bus (Loading capacity: PCD3.Mxxx0, PCD3.T76x and PCD3.C200: max. 100 mA)
[3]) On demand
[4]) Only one weighing cell can be connected to each channel
[5]) Non-pluggable spring terminal block

Plug-in spring terminal blocks, screw terminal blocks, or adapter

Connection of the I/O level is either via plug-in screw terminals or spring terminal blocks, or via a 34-pole ribbon-cable adapter (type D).

- Type A (with printing: 0 to 9) 10 spring terminals for I/O modules with 4, 6 or 8 I/Os (up to 2.5 mm²)
- Type B (with printing: 0 to 9) 10 screw terminals for I/O modules with 4, 6 or 8 I/Os (up to 2.5 mm²)
- Type C (with printing: 0 to 23) 24 spring terminals for I/O modules with 16 I/Os or relay modules A251 (up to 1 mm²)
- Type D 34-pole ribbon-cable adapter
- Type E (with printing: 0 to 13) 14 spring terminals for complex modules, like the weighing module.. (up to 1.5 mm²)

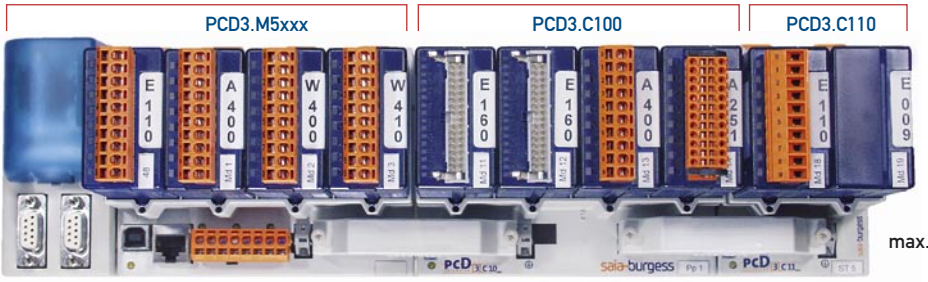
I/O terminal blocks are not included in the I/O module delivery pack and must therefore be ordered separately!

Extension of the input- / output capacitiy

The PCD3.Mxxx0 for central and decentralized tasks of automation

Up to 15 module holders PCD3.Cxxx can be attached to the PCD3.Mxxx0 (PCD3.M3020 is not expandable). Thus allows the user to connect up to 64 I/O-modules resp. 1023 digital I/O points.

For details, see technical information P+P26/388 or manual 26/789.



max. 1023 digital I/O's

PCD3.C100 module holder

- 4 PCD3 module slots
- Extension module holder for PCD3.Mxxxx/.T76x/.Cxxx and PCD2.Mxxx
- Additional PCD3.Cxxx devices connectable via extension cable and connector
- Diagnosis of internal 5V supply voltage via LED

PCD3.C110 module holder

- 2 PCD3 module slots
- Extension module holder for PCD3.Mxxxx/.T76x/.Cxxx and PCD2.Mxxx
- Diagnosis of internal 5V supply voltage via LED

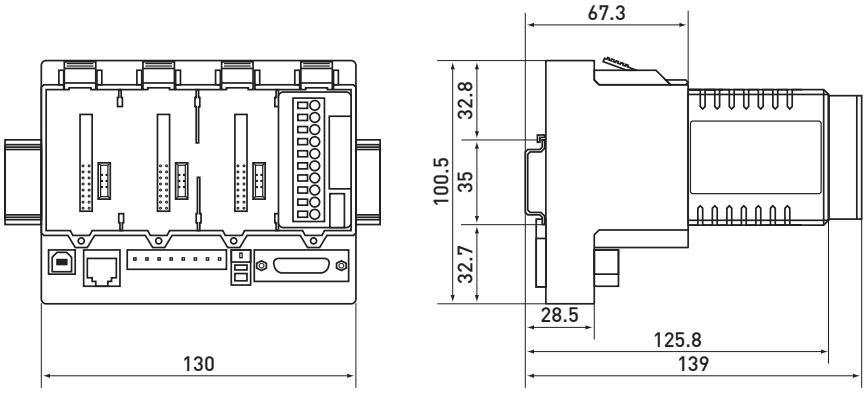
PCD3.C200 module holder with 24 VDC power supply

- 4 PCD3 module slots
- Extension module holder for PCD3.Mxxxx/.T76x/.Cxxx and PCD2.Mxxx
- 24 VDC power supply for all connected PCD3 I/O modules, plus any downstream PCD3.Cxxx module holders
- Diagnosis of 24V supply voltage via LED
- Additional PCD3.Cxxx devices connectable via extension cable and connector

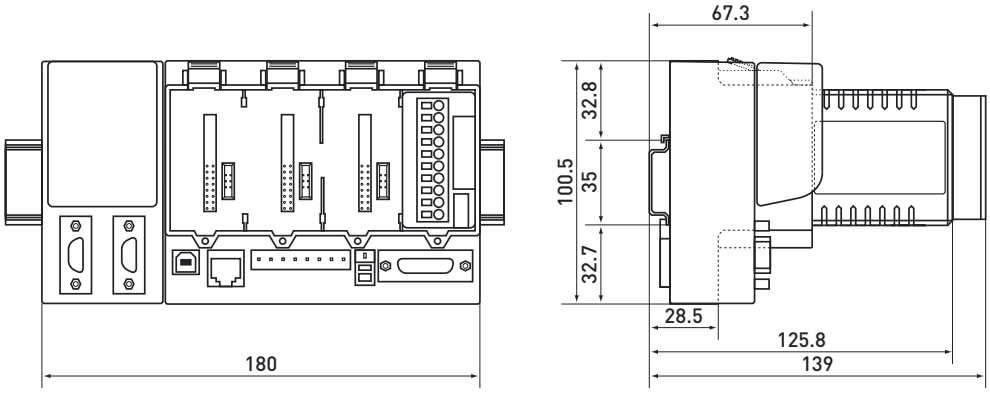
Dimension drawings, Connections

Dimension drawings

PCD3.M3xx0



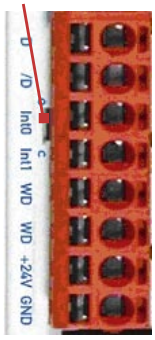
PCD3.M5xx0



Connections

With all types

RS 485-terminator-switch



Terminal blocks for supply, Watchdog, interrupt inputs and Port#2

Pin	Signal	Explanation	Profibus signal	Profibus wiring
1	D	Port#2: RS 485 up to 115 kbit/s usable as free user interface or Profi-S-Bus up to 187.5 kbits/s (only PCD3.M3xxx)	RxD/TxD-N	A green
2	/D		RxD/TxD-P	B red
3	Int0	2 interrupt inputs or 1 fast counter	RS 485-terminator-switch	
4	Int1			
5	WD	Watchdog	Switching position / Designation / Explanation	
6	WD			
7	+24V	Power supply	left / O / without terminator	
8	GND		right / C / with terminator	

Only with the types PCD3.M5xx0

Port#0 Port#10

PGU/RS 232 Port#0

D-Sub Pin	Signal
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	n.c.

S-Net/MPI/RS 485 (9-pole D-Sub-socket) Port#10

D-Sub Pin	Signal	Explanation
1	GND	GND
2	M24	0 V of the 24 V-supply
3	RxD/TxD-P*	Receive- / transmit data positive
4	CNTR-P*	Control signal for Repeater (direction control)
5	DGND*	Data communication potential (mass to 5 V)
6	VP*	Supply voltage of the terminal resistance
7	P24	Output voltage plus 24 V
8	RxD/TxD-N*	Receive- / transmit data negative
9	n.c.	not connected

*Mandatory signals (the user must absolutely make available)

Technical data

Technical data



	PCD3.M3020	PCD3.M3230/M3330	PCD3.M5440/M5540
Number of inputs/outputs or I/O module sockets	64 4	1023[1]) 64	1023[1]) 64
Connector for expansion housing	no	yes	yes
User memory (RAM)	128 Kbytes	256 Kbytes	512 Kbytes
Backup memory	128 Kbytes on board Flash	256 Kbytes on board Flash	1 Mbyte Flash Card
Data protection	8 h with SuperCap	8 h with SuperCap	1...3 years with lithium battery
Interrupt inputs	2	2	2
Watchdog-relay	yes	yes	yes
Real Time Clock	yes	yes	yes
USB 1.1 slave device	yes	yes	yes
Integrated Web-Server	yes	yes	yes
RS485 on terminal block	to 115 kbit/s or Profi-S-Bus to 187.5 kbit/s	to 115 kbit/s or Profi-S-Bus to 187.5 kbit/s	to 115 kbit/s
Option PCD3.F1xx-Module for RS232, RS485, RS422, TTY/20 mA Belimo MP-Bus (RS232)	yes	yes	yes
Ethernet-TCP/IP 10/100 Mbit/s	no	with PCD3.M3330	with PCD3.M5540
Profibus to 1.5 Mbit/s DP–slave, Profi-S-Net (S-IO, S-Bus)	no	no	yes (on D-Sub)
RS232 to 115 kbit/s	no	no	yes (on D-Sub)
Programmable	PG5 starting from version 1.3.100		
Processing time (µs)			
■ bit operation ■ word operation	0.3…1.5 µs 0.9 µs	0.3…1.5 µs 0.9 µs	0.3…1.5 µs 0.9 µs

[1]) when using PCD3.Cxxx and digital I/O-modules with 16 I/Os each.

General technical data / Operating conditions

Current supply

Supply voltage (according EN / IEC 61131-2)	24 VDC -20 / +25% incl. 5% ripples
Current / Power consumption	typ. 175 mA / 4.2 W max. 500 mA / 12 W
Load-carrying ability 5V / 24V internal	max. 600 mA / 100 mA
Short voltage interruptions (according EN / IEC 61131-2)	≤10 ms with interval ≥1 s
Watchdog relay closing contact	48 VAC or VDC[2]), 1A

Environmental influences

Storage temperature (according EN / IEC 61131-2)	-25...+70 °C
Ambient temperature operating (according EN / IEC 61131-2)	0...+55 °C[3]) or 0...+40 °C (depending upon mounting situation)
Relative air humidity (according EN/IEC 61131-2)	50...95 % r.h. non-condensing

Mechanical data

Type of mounting	DIN rail 35 mm
Protection level	IP 20
Flame resistance	UL94 V0
Vibration (according EN / IEC 61131-2)	0.075 mm / 1.0 g sinusoidally
Shock (according EN / IEC 61131-2)	15 g / 11 ms sine half wave

[2]) mount a free-wheeling diode over the load when switching DC tension
[3]) when assembling on vertical surface, all other mounting methods 0...40 °C

Ordering information

Type	Description	Weight
	Base units for 4 I/O-modules	
PCD3.M3020	PLC with 128 Kbytes of user memory Backup with internal Flash memory, USB port for PG5 max. 64 digital I/O (not expandable), 2 interrupts, web-server RS 485 for Profi-S-Net or S-Bus	400 g
PCD3.M3230	PLC with 256 Kbytes of user memory Backup with internal Flash memory, USB port for PG5 max. 1023 digital I/O, 2 interrupts, web-server RS 485 for Profi-S-Net or S-Bus	400 g
PCD3.M3330	like PCD3.M3230 with Ethernet TCP/IP	400 g
PCD3.M5440	PLC with 512 Kbytes of user memory mit Run/Stop switch Backup option with PCD7.R500 Flash Card, USB Port for PG5 max. 1023 digital I/O, 2 interrupts, web-server RS 232, RS 485 for Profi-S-Net and RS 485 for S-Bus Data protection 1...3 years with lithium battery	560 g
PCD3.M5540	like PCD3.M5440 with Ethernet TCP/IP	560 g
	Spare parts	
4'104'7515'0	I / O-slot-cover	6 g
4'104'7493'0	PCD3.M5xxx cover	12 g
4'639'4898'0	Battery module	12 g
4'507'4817'0	Lithium battery	3 g
	Communications modules for I/O module socket Slot#0	
PCD3.F110	with RS 422/RS 485 interface (electrically connected)	80 g
PCD3.F121	with RS 232 interface (suitable for modem)	80 g
PCD3.F130	with 20 mA current loop interface	80 g
PCD3.F150	with RS 485 interface (electrically isolated)	80 g
PCD3.F180	Belimo MP-Bus (based on RS 232)	80 g
	Memory modules	
PCD7.R500	Flash-memory module 1 Mbytes for PCD3.M5xx0, as backup for user program	7 g

saia-burgess

Smart solutions for comfort and safety

Addresses

Switzerland and international
Saia-Burgess Controls Ltd.
Bahnhofstrasse 18
CH-3280 Murten/Switzerland
T +41 26/672 71 11
F +41 26/672 74 99
pcd@saia-burgess.com
www.saia-burgess.com

Product support,
Technical reference website: www.sbc-support.ch

Other addresses: www.saia-burgess.com - Contact

This brochure was received from:

P+P26/397 E5 05.2005