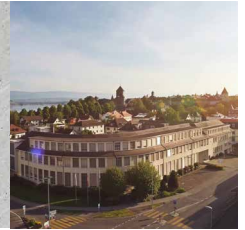


PCD3.W200

Analog input module, 8 channel, 10 bit, 0 ... 10 V



Description

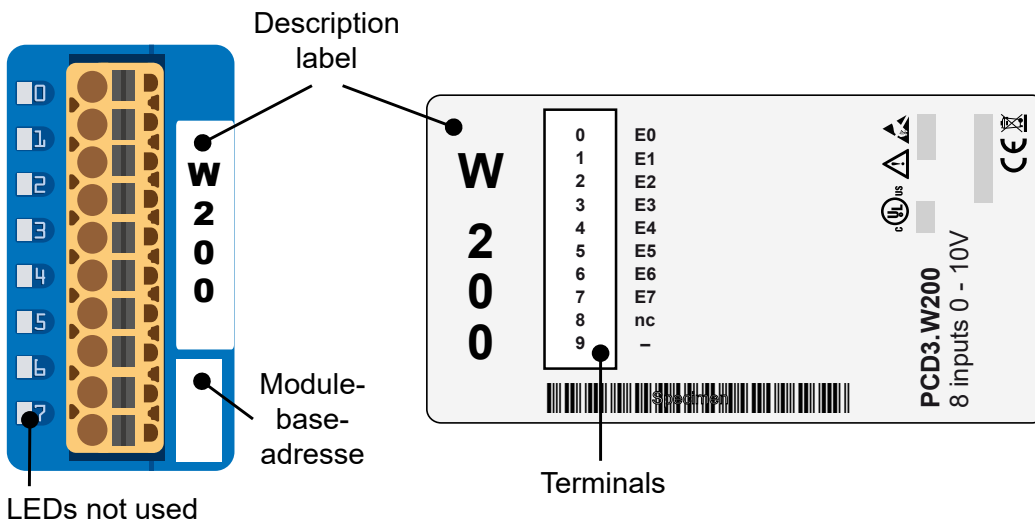
With its short conversion time of <math>< 50 \mu\text{s}</math>, this module is universally suitable for recording analogue signals.

Technical specifications	
Number of inputs (channels)	8
Signal range	0 à 10 V
Resolution (representation)	10 bit (0 ... 1023)
Resolution per bit	9.775 mV per bit
Galvanic separation	no
Measuring principle	non-differential, single-ended
Input resistance	200 k Ω / 0.15 %
Accuracy (of measured value)	± 3 LSB
Repeating accuracy (under same conditions)	within 1 LSB
Temperature error (0 ... +55 °C)	± 0.3 % (± 3 LSB)
Conversion time A/D	$\leq 50 \mu\text{s}$
Overvoltage protection	± 50 VDC
Burst protection (IEC1000-4-4)	± 1 kV, Leitungen nicht abgeschirmt ± 2 kV, Leitungen abgeschirmt
Time constant of input filter	typisch 5 ms
Internal current consumption (from +5 V bus)	8 mA
Internal current consumption (from V+ bus)	5 mA
External current consumption	0 mA
Terminals	Pluggable 10-pole spring terminal block for \varnothing up to 2.5 mm ² , plug type A (4 405 4954 0)

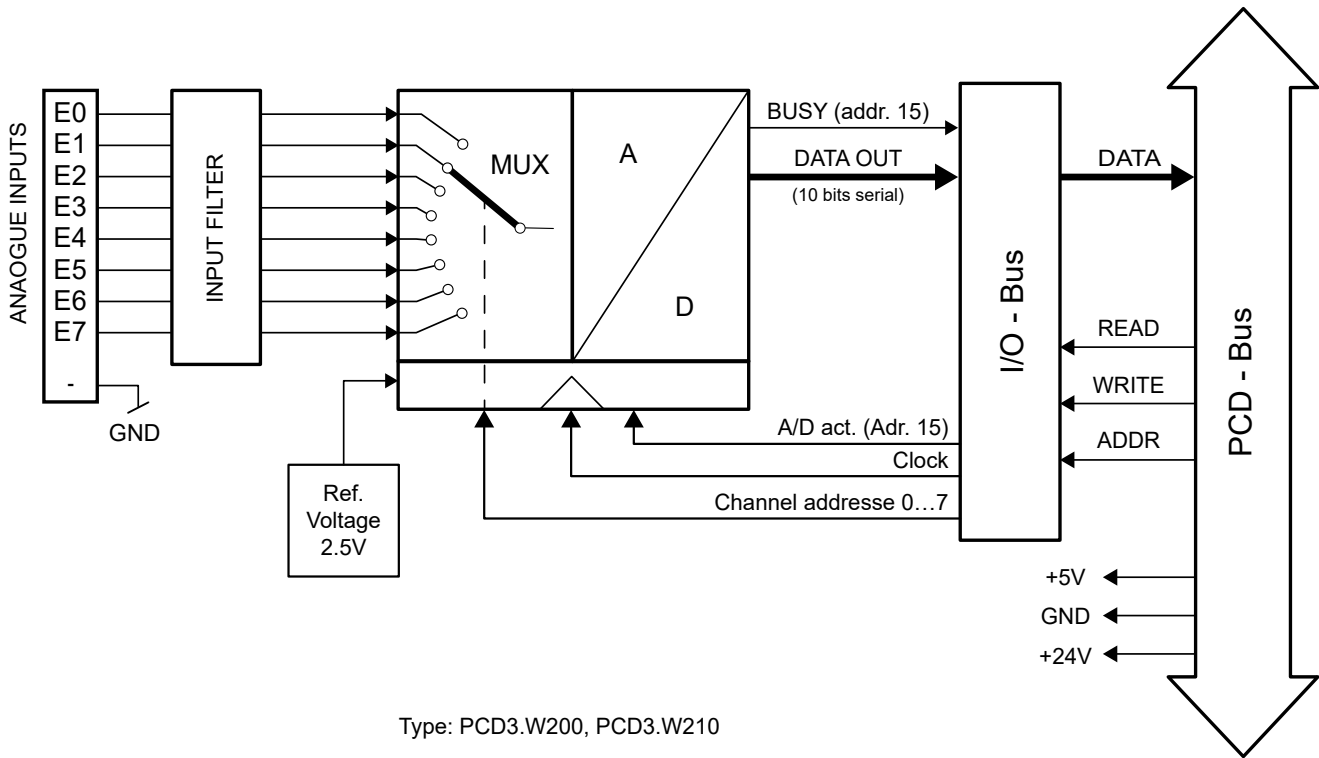


PCD3.W200

Indicators and connections



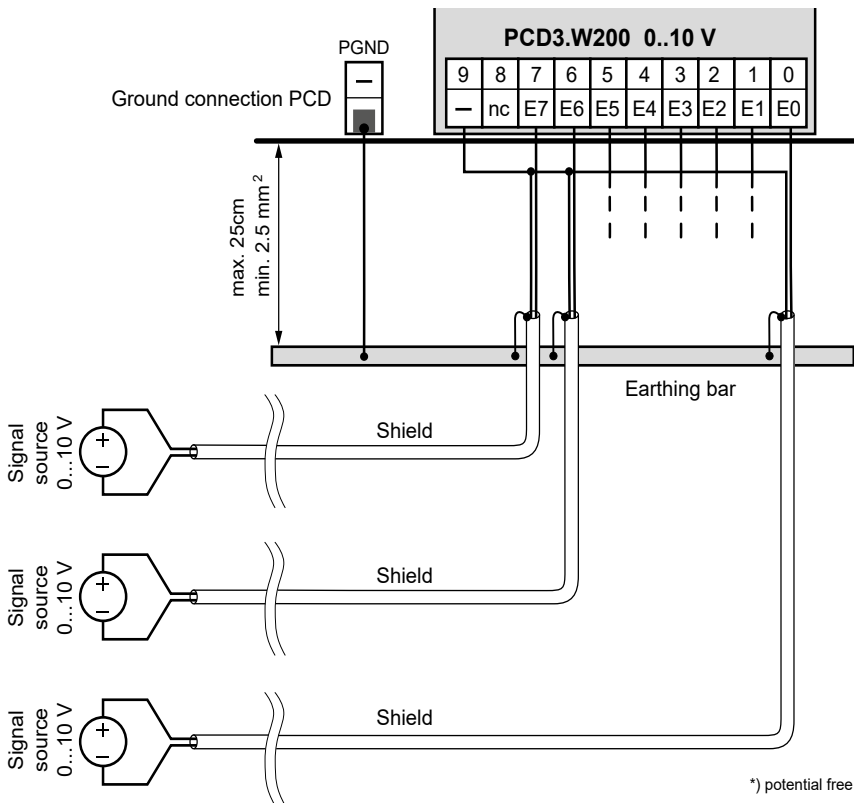
Block diagram



Connection concept for voltage inputs

The voltage input signals are connected directly to the 10-pole terminal block (E0 ... E7 and COM). To minimize the amount of interference coupled into the module via the transmission lines, connection should be made according to the principle explained below.

Connection for 0 ... 10 V



- 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 an earthing bar should be avoided.
- If shielded cables are used, the shielding should be connected to an earthing rail.
- Input signals with incorrect polarity significantly distort the measurements on the other channels.

Configuration

PCD-System	Evaluation
Classic	The evaluation is performed by the firmware. It reads the values according to the configuration (Device Configurator or Network Configurator).

Slot 2 : PCD3.W200, 8 Analogue Inputs, 0..+10V

Property	Value
General	
BaseAddress	32
Connector Type	Type A, Spring Terminals 10-pole
Power Consumption	
Power Consumption SV [mA]	8
Power Consumption V+ [mA]	5
Media Mapping	
Media Mapping Enabled	No
Media Type	Register
Number Of Media	8
Analogue Input 0	
Input 0 Range	0..10V in mV resolution
Minimum Value Input 0	0
Maximum Value Input 0	10000
Analogue Input 1	
Input 1 Range	0..10V in mV resolution
Minimum Value Input 1	0
Maximum Value Input 1	10000
Analogue Input 2	
Input 2 Range	0..10V in mV resolution
Minimum Value Input 2	0
Maximum Value Input 2	10000
Analogue Input 3	
Input 3 Range	10 Bit resolution
Minimum Value Input 3	0
Maximum Value Input 3	1023
Analogue Input 4	
Input 4 Range	10 Bit resolution
Minimum Value Input 4	0
Maximum Value Input 4	1023
Analogue Input 5	
Input 5 Range	10 Bit resolution
Minimum Value Input 5	0
Maximum Value Input 5	1023
Analogue Input 6	
Input 6 Range	User defined range
Minimum Value Input 6	0
Maximum Value Input 6	1000
Analogue Input 7	
Input 7 Range	User defined range
Minimum Value Input 7	0
Maximum Value Input 7	500

Maximum Value Input 7
Maximal value for the conversion of the analogue input 7.

Alternatively

An FBox "PCD2/3.W2" exists for evaluation.

FBox for PCD3.W200 (Inputs 0...7 selectable)

PCD-System	Evaluation
IEC-Controller	The evaluation is performed by the firmware. It reads the values according to the configuration (Device Configurator)




Information

Parameter

Analogue Input	Input Range	Resolution	Minimum Value	Maximum Value
Analogue Input 0	0..10V in mV resolution	12 Bit resolution	0	10000
Analogue Input 1	0..10V in mV resolution	12 Bit resolution	0	10000
Analogue Input 2	0..10V in mV resolution	12 Bit resolution	0	10000
Analogue Input 3	0..10V in mV resolution	10 Bit resolution	0	1023
Analogue Input 4	0..10V in mV resolution	10 Bit resolution	0	1023
Analogue Input 5	0..10V in mV resolution	10 Bit resolution	0	1023
Analogue Input 6	User defined range	12 Bit resolution	0	1000
Analogue Input 7	User defined range	12 Bit resolution	0	500

Mapping

Variable	Mapping	Channel	Address	Type	Unit	Description
in0_analogue0	Analogue Input 0	in0	32	SP		
in1_analogue1	Analogue Input 1	in1	32	SP		
in2_analogue2	Analogue Input 2	in2	32	SP		
in3_analogue3	Analogue Input 3	in3	32	SP		
in4_analogue4	Analogue Input 4	in4	32	SP		
in5_analogue5	Analogue Input 5	in5	32	SP		
in6_analogue6	Analogue Input 6	in6	32	SP		
in7_analogue7	Analogue Input 7	in7	32	SP		

	<p>Watchdog: This module can interact with the watchdog, if it is used on base address 240. For details, please refer to the manual "27-600_I/O-modules for PCD1 / PCD2 series and for PCD3" in chapter "A4 Hardware Watchdog", which describes the correct use of the watchdog together with PCD components.</p> <p>Watchdog: This does not apply when used in PCD3.M6893.</p>
	<p>I/O modules and I/O terminal blocks may only be plugged in and removed when the Saia PCD® and the external +24 V are disconnected from the power supply.</p>
	<p>Further information can be found in the document: "27-600 ENG Manual I/O-Modules for PCD1 / PCD2 and PCD3"</p>

**ATTENTION**

These devices must only be installed by a professional electrician, otherwise there is the risk of fire or the risk of an electric shock.

**WARNING**

Product is not intended to be used in safety critical applications, using it in safety critical applications is unsafe.

**WARNING - Safety**

The unit is not suitable for the explosion-proof areas and the areas of use excluded in EN61010 Part 1.

**WARNING - Safety**

Check compliance with nominal voltage before commissioning the device (see type label).
Check that connection cables are free from damage and that, when wiring up the device, they are not connected to voltage.
Do not use a damaged device!

**NOTE**

In order to avoid moisture in the device due to condensate build-up, acclimatise the device at room temperature for about half an hour before connecting.

**CLEANING**

The device can be cleaned in dead state with a dry cloth or cloth soaked in soap solution.
Do not use caustic or solvent-containing substances for cleaning.

**MAINTENANCE**

These devices are maintenance-free.
If damaged, no repairs should be undertaken by the user.

**GUARANTEE**

Opening the module invalidates the guarantee.

Observe this instructions (data sheet) and keep them in a safe place.
Pass on the instructions (data sheet) to any future user.



WEEE Directive 2012/19/EC Waste Electrical and Electronic Equipment directive

The product should not be disposed of with other household waste. Check for the nearest authorized collection centers or authorized recyclers. The correct disposal of end-of-life equipment will help prevent potential negative consequences for the environment and human health.



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



PCD3.W200



4 405 4954 0

Ordering information

Type	Short description	Description	Weight
PCD3.W200	8 analogue inputs 0...10 V, 10 bit	Analogue input module, 8 inputs (channels), resolution 10 bit, signal range 0...10 V, (the channels themselves not separated), connection with pluggable spring terminals, plug-in type A (4 405 4954 0) included	80 g

Ordering information equipment

Type	Short description	Description	Weight
4 405 4954 0	Plug-in, type A	Plug-in I/O spring terminal block, 10-pole up to 2.5 mm ² , labelled 0 ... 9	15 g

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