

PCD3.W410

Analog output module, 4 channels, 8 bit,
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA



High-speed output module with 4 output channels of 8 bits each. Different output signals can be chosen with the aid of jumpers. Suitable for processes in which a large number of actuators have to be controlled, such as in the chemical industry and building automation.

Technical specifications		
Number of outputs (channels)	4, short circuit protected	
Signal range selectable with jumpers	voltage	0 ... 10 V ¹⁾
	current	0 ... 20 mA
		4 ... 20 mA
Resolution (digital representation)	8 bits (0 ... 255)	
Conversion time D/A	≤ 5 µs	
Galvanic separation	no	
Load impedance	for 0 ... 10 V	≥ 3 kΩ
	for 0 ... 20 mA	0 ... 500 Ω
	for 4 ... 20 mA	0 ... 500 Ω
Accuracy (of output value)	for 0 ... 10 V	1 % ± 50 mV
	for 0 ... 20 mA	1 % ± 0.2 mA
	for 4 ... 20 mA	1 % ± 0.2 mA
Residual ripple	for 0 ... 10 V	< 15 mV pp
	for 0 ... 20 mA	< 50 µA pp
	for 4 ... 20 mA	< 50 µA pp
Temperature error (across temperature range 0 ... +55 °C)	typ. ± 0.2 %	
Burst protection (IEC 801-41)	± 1 kV, with unshielded cables	
	± 2 kV, with shielded cables	
Internal current consumption (from +5 V bus)	1 mA	
Internal current consumption (from V+ bus)	30 mA	
External current consumption	max. 0.1 A	
Terminals	Pluggable 10-pole spring terminal block for Ø up to 2.5 mm², plug type A ((4 405 4954 0)	

¹⁾ Factory setting

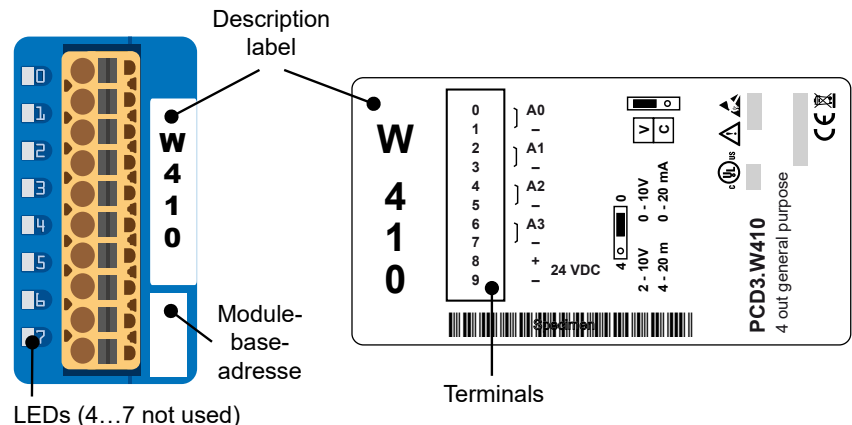


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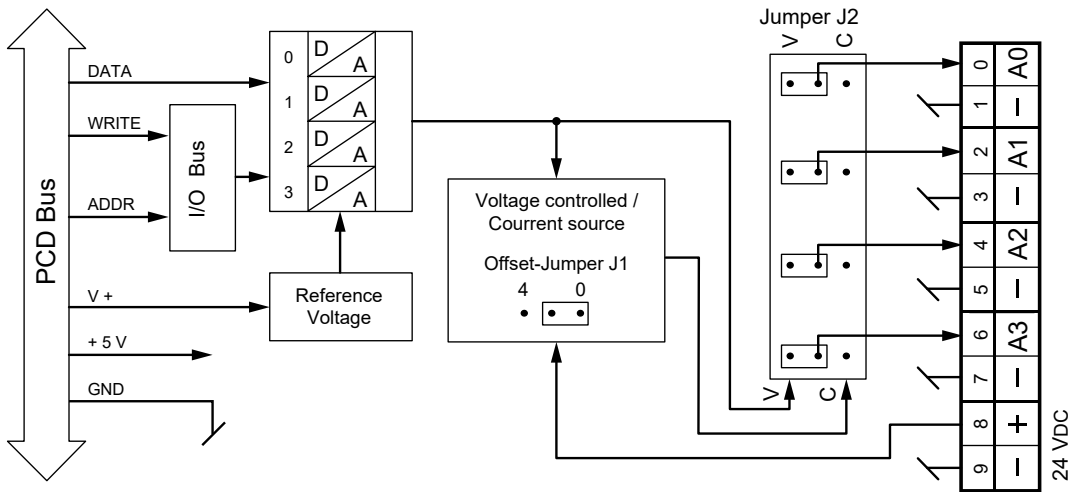


I/O modules and I/O terminal blocks may only be plugged in and removed when the CPU and the external +24 V are disconnected from the power supply.

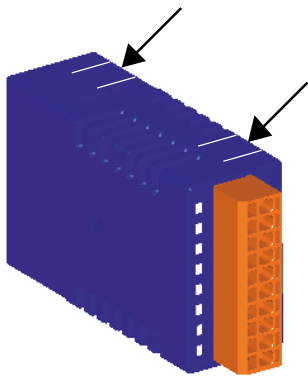
Indicators and connections



Block schematic



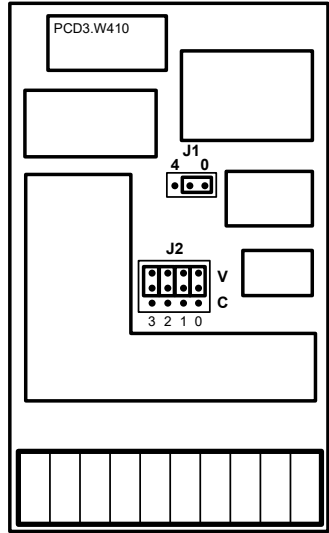
Open and close the module housing



Open
On each of the two narrow sides of the housing are two snap-in clips. Lift these gently with your fingernails on one side then the other and separate the two parts of the housing.

Close
To close the housing, lay the bottom part on a flat surface (table etc.). Ensure that the circuit board is precisely located in this part of the housing. Press top part onto bottom until you hear the snap-in clips engage. Ensure that all four clips are correctly engaged.

Topology (open housing)



- J1 Offset-Jumper**
- Position "0" 0 ... 10 V or 0 ... 20 mA
 - Position "4" 2 ... 10 V or 4 ... 20 mA
- J2 Jumper for Voltage/Current**
- Position "V" Voltage output
 - Position "C" Current output
- Factory setting**
- Position "V" Voltage output
 - Position "0" Range 0 ... 10 V



Changing the jumpers
On this circuit board there are components that are sensitive to electrostatic discharges.

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.

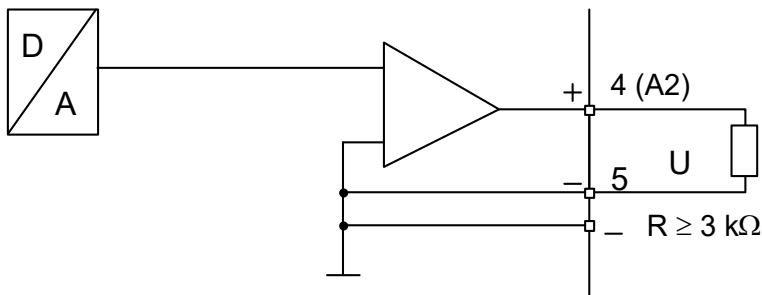
This does not apply when used in PCD3.M6893.

Analogue/digital values and jumper positions			
J1 Jumper "0/4"	0	0	4
J2 Jumper "V/C"	V	C	C
Signal range	0 ... 10 V	0 ... 20 mA	4 ... 20 mA
Digital values			
255	10.0 V	20 mA	20 mA
128	5.0 V ^{*)}	20 mA ^{*)}	12 mA ^{*)}
0	0	0	0

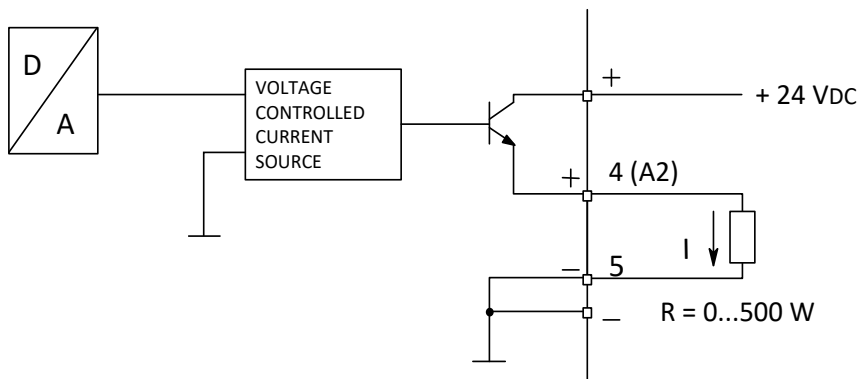
^{*)} The exact values are 1/255 higher

Principle diagram of analog outputs

Output connection for 0 ... 10 V



Output connection for 0 ... 20 mA

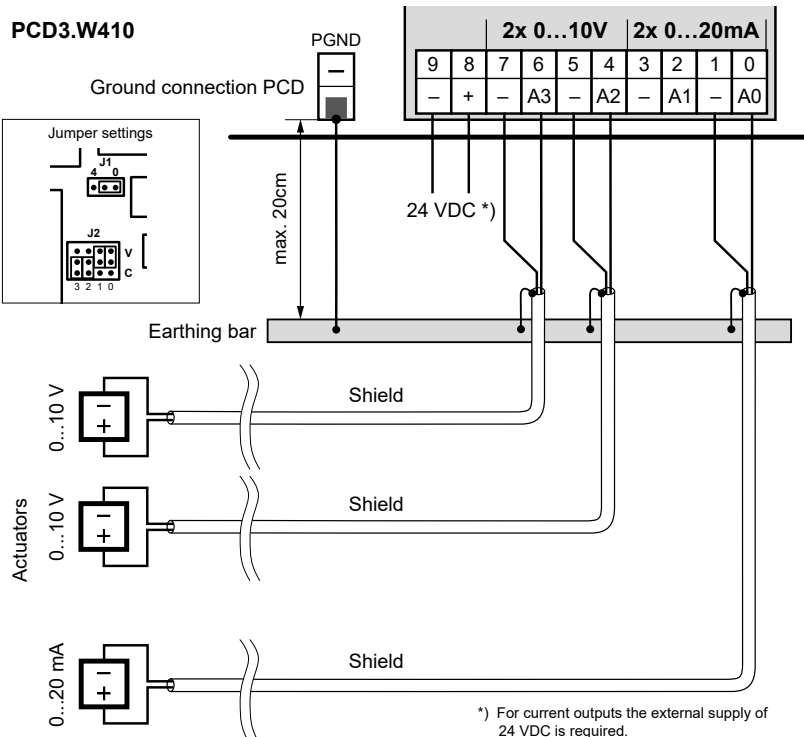


Connection concept for voltage outputs

The actuators are connected directly to the 10-pole terminal block. To minimize the amount of interference coupled into the module via the transmission lines, connection should be made according to the principle explained below.

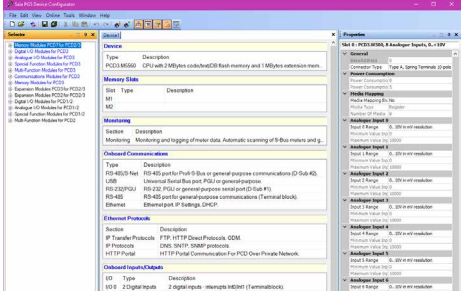
Connection for 0 ... 10 V and 0 ... 20 mA

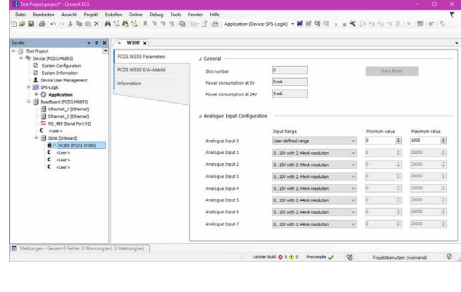
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If shielded cables are used, the shielding should be connected to an earthing rail.

Configuration

Saia PG5®	
PCD-System	Evaluation
Classic	The evaluation is performed by the firmware. It reads the values according to the configuration (Device Configurator or Network Configurator). 
Alternatively	An FBox "PCD2/3.W4" exists for evaluation. FBox for PCD3.W410 (Outputs 0...3 selectable) PCD2/3.W4 -o0 -o1 -o2 -o3 Add O80 PCD2/3.W4 -o0 Add O80

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



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 during transportation or storage, no repairs should be undertaken by the user.



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.W410



4 405 4954 0

Ordering information

Type	Short description	Description	Weight
PCD3.W410	4 analogue outputs, 8 bits, 0... 10 V / 0...20 mA / 4...20 mA	Analogue output module, 4 output (channels), resolution 8 bits, signal range Bereich 0... 10 V / 0...20 mA / 4...20 mA, per channel with jumper selectable, connection with pluggable spring terminals, plug-in type A (4 405 4954 0) included	100 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 mm², labelled 0 ... 9	15 g

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