

PCD3.W350 Analog input module, 8 channel, 12 bit, Pt100/Ni100

Fast, analog 8 channel input module with 12 bit resolution for Pt100 / Ni100 temperature sensors.

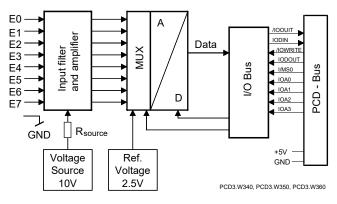
Use of a fast on-board micro controller allows decoupling and relief of the PCD regarding intensive computing tasks, such as scaling and filtering of signal data.

Technical specifications			
Number of inputs	(channels)	8	
Signal range	Pt100 Ni100	−50 +600 °C −50 +250 °C	
Resolution (repres	sentation)	12 bit (0 4095)	
Resolution *)	Pt100 Ni100	0.14 0,20 °C 0.06 0.12 °C	
Method of linearization for temperature inputs		by software	
Galvanic separati	on	no	
Measuring princip	le	non-differential, single-ended	
Input resistance		nicht relevant	
Maximum measurement current for tempe- rature probes		1.5 mA	
Accuracy at 25 °C		± 0.3 %	
Repeating accuracy (under same conditions)		± 0.05 %	
Temperature error (0 +55 °C)		± 0.2 %	
Conversion time A/D		≤ 10 µs	
EMV protection		yes	
Time constant of input filter		typically 16.9 ms	
Internal current consumption (from +5 V bus)		< 8 mA	
Internal current consumption (from V+ bus)		< 30 mA	
External current c	consumption	0 mA	
Terminals		Pluggable 10-pole spring termi- nal block for $Ø$ up to 2.5 mm ² , plug type A (4 405 4954 0)	



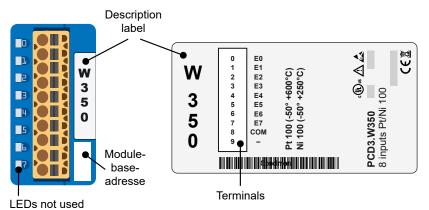
PCD3.W350

Block schematic



*) value of least significant bit(LSB)

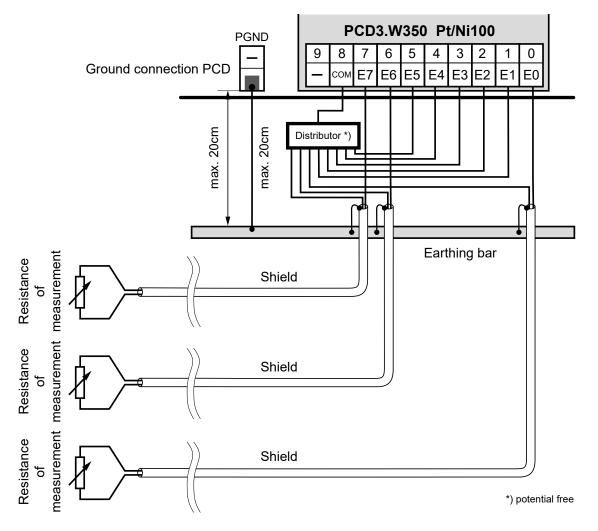
Indicators and connections



Connection concept

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 Pt100 / Ni100



Good to now



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.

Galvanic separation of inputs to CPU, channels themselves not separated.



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. Watchdog ..

- .. in classic system
 - The watchdog with his address 255 can influence this module if it is used at the base address 240.
 - .. in IEC-controller system is not affected



Further information This can be found in the Manual "27-600_I/Omodules for PCD1 / PCD2 series and for PCD3".

Configuration

Saia PG5 [®]	ື Controls Sເ	uite		
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Saia Qron Engineeri		Commi	sioning	Suite	
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Formulae for temperature measurement			
Sensors		T = temperature in °C DV = digital value (0 4095)	
Ni 100 Validity: Computational error:	Temperature range - 50 … + 250 °C ± 1.65 °C	$T = -28.7 + \frac{300 \cdot DV}{3628} - 7.294 \cdot 10^{-6} \cdot (DV - 1850)^2$	
Pt100 Validity: Computational error:	Temperature range - 50 … + 600 °C ± 1 °C	$T = -99.9 + \frac{650 \cdot DV}{3910} + 6.625 \cdot 10^{-6} \cdot (DV - 2114)^2$	



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, 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.W350



4 405 4954 0

Ordering information				
Туре	Short description	Description	Weight	
PCD3.W350	8 analogue inputs, 12 bit, Pt100 / Ni100	Analogue input module, 8 inputs (channels), resolution 12 bit, signal range Pt100 / Ni100, (the channels themselves not separated), connection with pluggable spring terminals, plug-in type A (4 405 4954 0) included	80 g	

Ordering information equipment			
Туре	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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