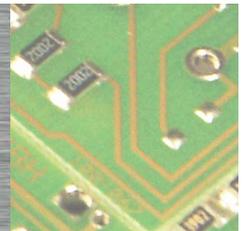**Honeywell**

PCD3.W315

## Analog input module, 7 channel, 12 bit, 0 … 20 mA, electrically isolated from the CPU

High-speed input modules for general use with 7 channels, each with 12 bit resolution and 0 … 20 mA. Electrically isolated from the CPU.

Technical specifications

|	
Number of inputs (channels)	7
Signal range	0 … 20 mA
Resolution (representation)	12 bit (0 … 4095)
Resolution (value of least significant bit(LSB))	5 µA
Galvanic separation	500 V, electrical isolation of outputs to CPU, channels themselves not separated
Measuring principle	non-differential, single-ended
Input resistance	120 Ω / 0.1 %
Accuracy at 25 °C	± 0.15 %
Repeating accuracy (under same conditions)	± 0.05 %
Temperature error (0 … +55 °C)	± 0.25 %
Conversion time A/D	≤ 2 ms
Overcurrent protection	± 35 mA (permanent)
EMV protection	yes
Time constant of input filter	typisch 2.4 ms
Internal current consumption (from +5 V bus)	< 60 mA
Internal current consumption (from V+ bus)	0 mA
External current consumption	0 mA
Terminals	Pluggable 10-pole spring terminal block for Ø up to 2.5 mm², plug type E (4 405 4998 0)

PCD3.W315

Block schematic
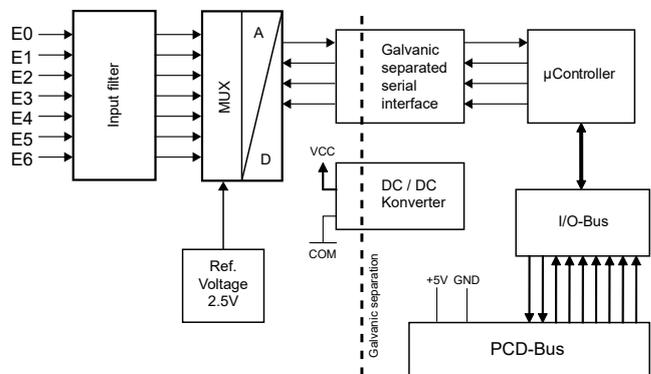
Indicators and connections
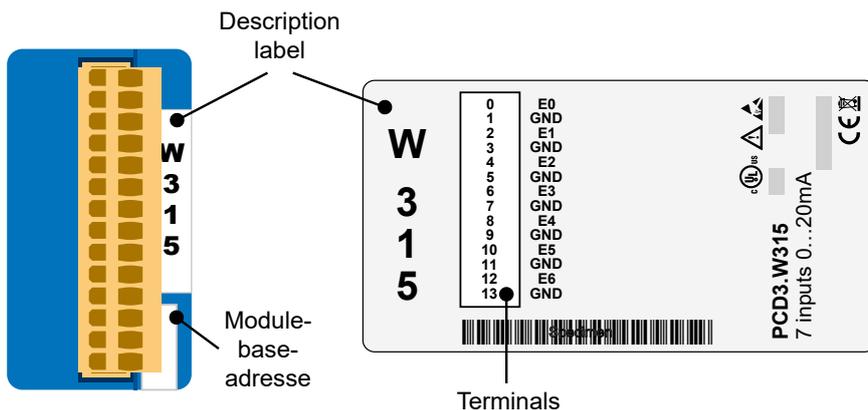
Description label
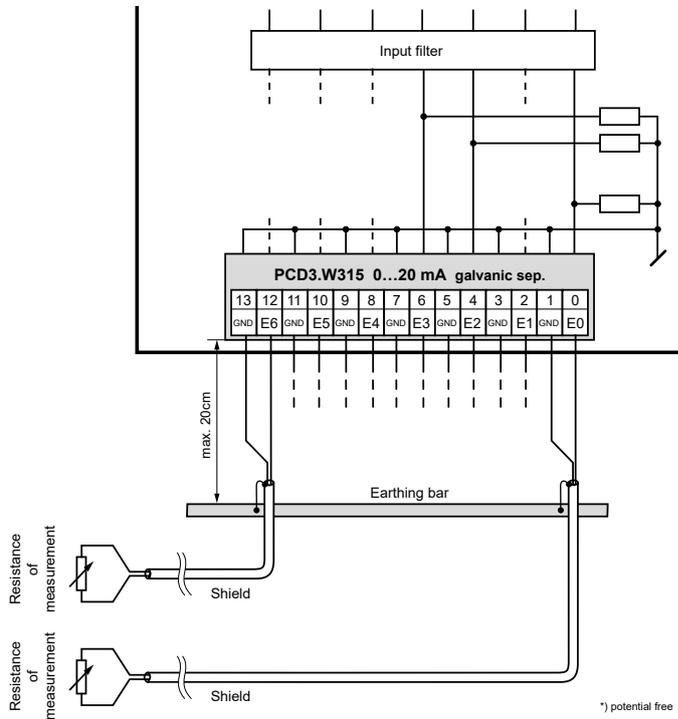
Module-base-adresse

Terminals

! The GND connections are connected together in the module and are galvanically isolated from the CPU. These GNDs must not be connected to the CPU, process GNDs or ground !

Connection concept for voltage inputs

The voltage input signals are connected directly to the 14-pole terminal block (E0 … E6 and GND). To minimize the amount of interference coupled into the module via the transmission lines, connection should be made according to the principle explained below.
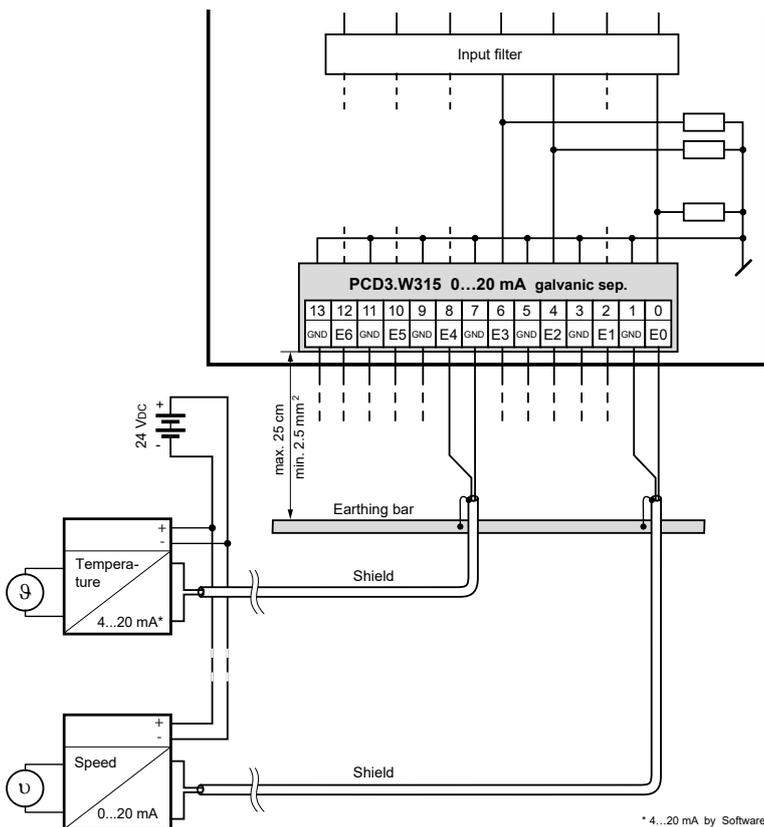
Connection for 0 … 20 mA

> **!** The GND connections are connected together in the module and are galvanically isolated from the CPU. These GNDs must not be connected to the CPU, process GNDs or ground !

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

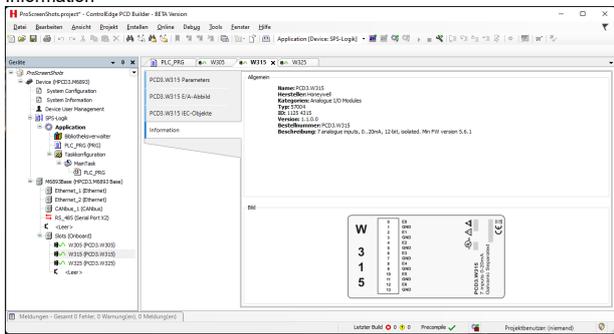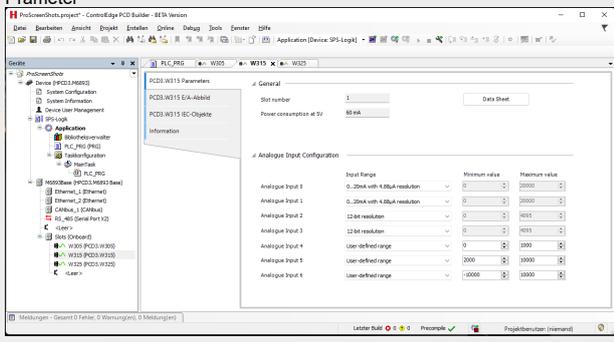**Connection for 0…20 mA with two-wire transducers**

Configuration

HPS
ControlEdge PCD Builder

The evaluation is performed by the firmware. It reads the values according to the configuration (Device Configurator)
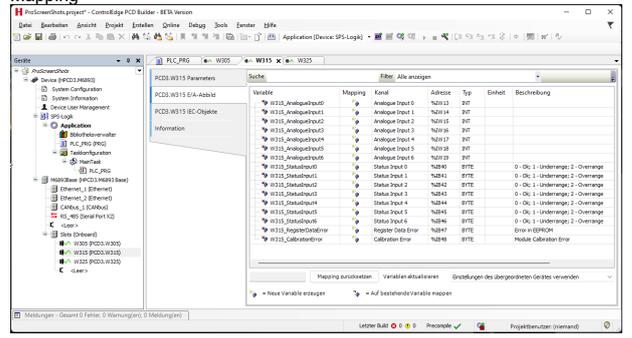
Information

Prameter

HPS
ControlEdge PCD Builder

Mapping

Configuration of the modules

The module has a resolution of 12 bits. This corresponds to 4096 possible measured values.

With a measuring range of 0…20 mA, this results in a resolution of 4,88 µA/bit.

The module can output much more precise values than the 12-bit resolution allows by using suitable algorithms (moving averages, etc.). A measuring range of 0…20 mA with a resolution of 1 µA is achieved as standard.

In the configurator you can choose whether you want to use the measurement results in µA or in bits.

A user-defined range can also be displayed for special applications. The user can make specifications:
▶ Lower value: Displayed value with an input signal of 0 mA.

▶ Upper value: Displayed value at an input signal of 20 mA.

Any integer value (−32'768 up to +32'767) can be entered for both values, but the lower value must be smaller than the upper value. However, to avoid error messages when outputting in the extended range (−1% up to +110%), the following values should be used:
▶ Lower value: greater than −32'440

▶ Upper value: less than +29'490

All values in between are converted directly proportional to these two basic values and indicated as measured value.
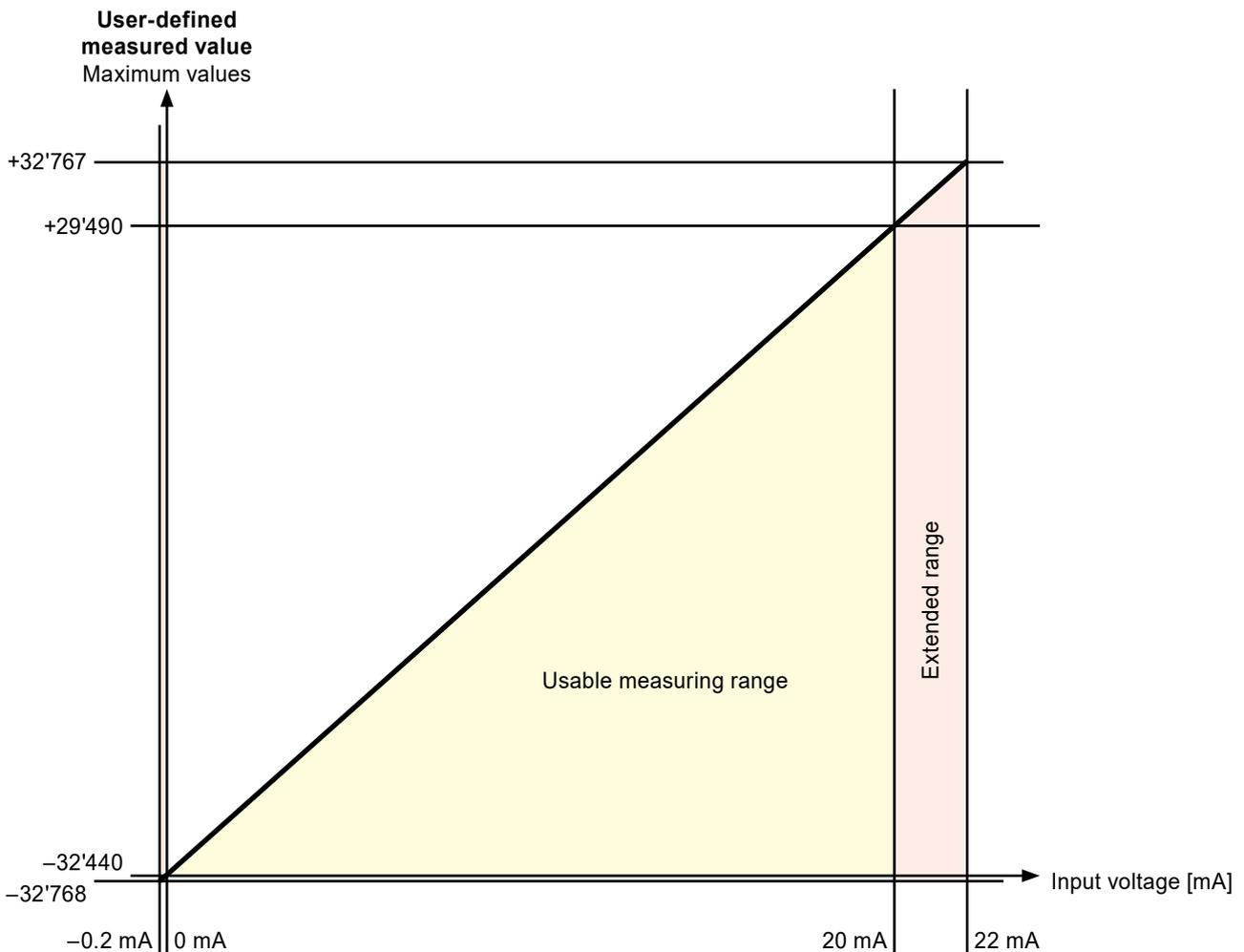
Graph with the maximum possible user-defined measured values

Media mapping - symbol name and description

Error register

To use the module diagnosis in the programme, the error output can be used. The meaning of the bits is as follows:

Error-Register																																
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
		No response from W3x5 module	Initialisation failed	Calibration error	Internal error	Not used	Not used	Overrange	Underrange	Not used	Not used	Overrange	Underrange	Not used	Not used	Overrange	Underrange	Not used	Not used	Overrange	Underrange	Not used	Not used	Overrange	Underrange	Not used	Not used	Overrange	Underrange	Not used	Not used	Overrange	Underrange
Nibble	7				6				5				4				3				2				1				0			
	Module Diagnostic				Channel 6 Diagnostic				Channel 5 Diagnostic				Channel 4 Diagnostic				Channel 3 Diagnostic				Channel 2 Diagnostic				Channel 1 Diagnostic				Channel 0 Diagnostic			

	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.

PCD3.W315

4 405 4998 0

Ordering information

Type	Short description	Description	Weight
PCD3.W315	7 analogue inputs, 0 … 20 mA, 12 bit, electrical isolation	Analog input module with electrical isolation, 7 channels (the channels are not isolated from each other), resolution 12 bit, range 0 … 20 mA, connection with pluggable spring terminals, connector type E (4 405 4998 0) supplied	100 g

Ordering information equipment

Type	Short description	Description	Weight
4 405 4998 0	Plug-in, type E	Plug-in I/O spring terminal block, 14-pole up to 1.5 mm^2, labelled 0 … 13	13 g

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 0used 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 EN 61010 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.

Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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Document No.: 51-52-03-84
Rev.3.0
March 2022