**PCD3.W340**

Analog input module, 8 channel, 12 bit, 0...10 V, 0...20 mA or Pt/Ni1000

High-speed input module for general use with 8 channels, each with 12 bit resolution. Different variants for voltage 0 ... 10 V, current 0 ... 20 mA and the use of different resistance thermometers are available.

### Technical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of inputs (channels)</td>
<td>8</td>
</tr>
<tr>
<td>Signal range</td>
<td>0 ... 2.5 V, 0 ... 10 V, 0 ... 20 mA Pt/Ni 1000</td>
</tr>
<tr>
<td>Resolution (representation)</td>
<td>12 bit (0 ... 4095)</td>
</tr>
<tr>
<td>Resolution (value of least significant bit (LSB))</td>
<td>Pt/Ni 1000 (default)</td>
</tr>
<tr>
<td>Method of linearization for temperature inputs</td>
<td>by software</td>
</tr>
<tr>
<td>Galvanic separation</td>
<td>no</td>
</tr>
<tr>
<td>Measuring principle</td>
<td>non-differential, single-ended</td>
</tr>
<tr>
<td>Input resistance</td>
<td>U: 200 kΩ / I: 125 Ω</td>
</tr>
<tr>
<td>Accuracy at 25 °C</td>
<td>± 0.3 %</td>
</tr>
<tr>
<td>Repeating accuracy (under same conditions)</td>
<td>± 0.05 %</td>
</tr>
<tr>
<td>Temperature error (0 ... +55 °C)</td>
<td>± 0.2 %</td>
</tr>
<tr>
<td>Conversion time A/D</td>
<td>≤ 10 μs</td>
</tr>
<tr>
<td>Overvoltage protection</td>
<td>≤ 50 VDC (permanently)</td>
</tr>
<tr>
<td>Overcurrent protection</td>
<td>≤ 40 mA (permanently)</td>
</tr>
<tr>
<td>EMV protection</td>
<td>yes</td>
</tr>
</tbody>
</table>
| Time constant of input filter | V: typically 7.8 ms  
C: typically 24.2 ms  
T: typically 24.2 ms |

### Technical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal current consumption (from +5 V bus)</td>
<td>&lt; 8 mA</td>
</tr>
<tr>
<td>Internal current consumption (from V+ bus)</td>
<td>&lt; 20 mA</td>
</tr>
<tr>
<td>External current consumption</td>
<td>0 mA</td>
</tr>
<tr>
<td>Terminals</td>
<td>Pluggable 10-pole spring terminal block for Ø up to 2.5 mm², plug type A (I440549540)</td>
</tr>
</tbody>
</table>

### Indicators and connections

- **LEDs not used**
- **Module-base-adresse**
- **Terminals**

### Block schematic

- **Input filter and amplifier**
- **MUX**
- **Data**
- **IO Bus**
- **PCD - Bus**
- **PCD3.W340**
- **PCD3.W350**
- **PCD3.W360**
- **Ref. Voltage 2.5 V**
- **Voltage Source 10 V**
- **GND**
- **Rsource**
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.

No negative input voltage should be applied on these modules.

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

All inputs set for temperature (position T) must be wired. All unused inputs must be adjusted to current range ‘C’ or voltage range ‘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.

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/O-modules for PCD1 / PCD2 series and for PCD3”.

Topology (open housing)
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 0 … 10 V

Connection for 0…20 mA with two-wire transducers

Two-wire transducers need a 24 VDC-supply in the measuring trunk.

Formulae for temperature measurement

For Ni1000

Validity: Temperature range -50 … +210 °C
Computational error: ± 0.5 °C

\[ T = -188.5 + \frac{260 \cdot DV}{2616} - 4.676 \cdot 10^{-6} \cdot (DV - 2784)^2 \]

For Pt1000

Validity: Temperature range -50 … +400 °C
Computational error: ± 1.5 °C

\[ T = -366.5 + \frac{450 \cdot DV}{2474} + 18.291 \cdot 10^{-6} \cdot (DV - 2821)^2 \]

Resistance measurement up to 2.5 kΩ
Special temperature sensors or any other resistances up to 2.5 kΩ can be connected to the PCD3.W340. The digital value can be calculated as follows:

\[ DV = \frac{16380 \cdot R}{(7500 + R)} \]

where 0 ≤ DV ≤ 4095 and R = the resistance to be measured in Ω.
### Configuration

#### Saia PCD® Classic

<table>
<thead>
<tr>
<th>PCD-System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic</td>
<td>The evaluation is performed by the firmware. It reads the values according to the configuration (Device Configurator or Network Configurator).</td>
</tr>
</tbody>
</table>

#### Saia PCD® IEC-Controller

<table>
<thead>
<tr>
<th>PCD-System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC-Controller</td>
<td>The evaluation is performed by the firmware. It reads the values according to the configuration (Device Configurator).</td>
</tr>
</tbody>
</table>

### Ordering information

<table>
<thead>
<tr>
<th>Type</th>
<th>Short description</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCD3.W340</td>
<td>8 analogue inputs 0...20 mA, 12 bit</td>
<td>Analogue input module, 8 inputs (channels), resolution 12 bit, signal range 0...20 mA, (the channels themselves not separated), connection with pluggable spring terminals, plug-in type A (4 405 4954 0) included</td>
<td>80 g</td>
</tr>
</tbody>
</table>

### Ordering information equipment

<table>
<thead>
<tr>
<th>Type</th>
<th>Short description</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 405 4954 0</td>
<td>Plug-in, type A</td>
<td>Plug-in I/O spring terminal block, 10-pole up to 2.5 mm2, labelled 0...9</td>
<td>15 g</td>
</tr>
</tbody>
</table>
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.
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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or
(TAC) hfs-tac-support@honeywell.com

Specifications are subject to change without notice.