Fast, analog 8 channel input module with Pt100 / Ni100 and 12 bit resolution per channel. 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:** -50 ... +600 °C
- **Signal range Ni100:** -50 ... +250 °C
- **Resolution (representation):** 12 bit (0 ... 4095)
- **Resolution (*) Pt100:** 0.14 ... 0.20 °C
- **Resolution (*) Ni100:** 0.06 ... 0.12 °C
- **Method of linearization for temperature inputs:** by software
- **Galvanic separation:** no
- **Measuring principle:** non-differential, single-ended
- **Input resistance:** nicht relevant
- **Maximum measurement current for temperature 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 consumption:** 0 mA
- **Terminals:** Pluggable 10-pole spring terminal block for Ø up to 2.5 mm², plug type A (4 405 4954 0)

**) value of least significant bit (LSB)

**Indicators and connections**

**Block schematic**

- **Voltage Source:** 10V
- **Ref. Voltage:** 2.5V

**PCD3.W350**

**Honeywell Process Solutions**
**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**

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**

<table>
<thead>
<tr>
<th>Saia PCD® Classic</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCD-System</td>
<td>Classic</td>
</tr>
<tr>
<td></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>

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

**Formulae for temperature measurement**

**Sensors**

<table>
<thead>
<tr>
<th></th>
<th>T = temperature in °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI 100</td>
<td>DV = digital value (0 … 4095)</td>
</tr>
<tr>
<td>Validity:</td>
<td>Temperature range - 50 ... + 250 °C</td>
</tr>
<tr>
<td>Computational error:</td>
<td>± 1.65 °C</td>
</tr>
<tr>
<td>T = - 28.7 + 300 ( \cdot \frac{DV}{3628} ) - 7.294 ( \cdot \times 10^{-6} ) (DV - 1850)^2</td>
<td></td>
</tr>
</tbody>
</table>

| Pt100      | Vertical error: Temperature range - 50 ... + 600 °C |
| Validity:  | ± 1 °C |
| Computational error: | |
| T = - 99.9 + 650 \( \cdot \frac{DV}{3910} \) + 6.625 \( \cdot \times 10^{-6} \) (DV - 2114)^2 |
### Ordering information

<table>
<thead>
<tr>
<th>Type</th>
<th>Short description</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCD3.W350</td>
<td>8 analogue inputs, 12 bit, Pt100 / Ni100</td>
<td>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</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>

---

**Good to now**

- 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”.

---

![PCD3.W350](image1)

![4 405 4954 0](image2)
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
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.

ASIA PACIFIC
Honeywell Process Solutions,
(TAC) hfs-tac-support@honeywell.com

Australia
Honeywell Limited
Phone: +(61) 7-3846 1255
FAX: +(61) 7-3840 6481
Toll Free 1300-36-39-36
Toll Free Fax:
1300-36-04-70

China – PRC - Shanghai
Honeywell China Inc.
Phone: (86-21) 5257-4568
Fax: (86-21) 6237-2826

Singapore
Honeywell Pte Ltd.
Phone: +(65) 6580 3278
Fax: +(65) 6445-3033

South Korea
Honeywell Korea Co Ltd
Phone: +(822) 799 6114
Fax: +(822) 792 9015

EMEA
Honeywell Process Solutions,
Phone: +80012026455 or
+44 (0)1344 656000

Email: (Sales)
FP-Sales-Apps@Honeywell.com
or
(TAC) hfs-tac-support@honeywell.com

AMERICA’S
Honeywell Process Solutions,
Phone: (TAC) 1-800-423-9883 or
215/641-3610
(Sales) 1-800-343-0228

Email: (Sales)
FP-Sales-Apps@Honeywell.com
or
(TAC) hfs-tac-support@honeywell.com

Specifications are subject to change without notice.