PCD3.W610

Analog output module, 4 channel, 12 Bit, 0 … 10 V, -10 … +10 V, 0 … 20 mA

High-speed output module for general use with 4 channels, each with 12 bit resolution. Different variants for voltage 0 … 10 V, -10 … +10 V and current 0 … 20 mA are available.

Technical specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of outputs (channels)</td>
<td>4, short circuit protected</td>
</tr>
<tr>
<td>Signal range</td>
<td>0 … 10 V, -10 … +10 V, 0 … 20 mA (durch Jumper wählbar)</td>
</tr>
</tbody>
</table>
| Resolution (value of least significant bit[LSB]) | 2.442 mV (0 … 10 V)  
|                                        | 4.884 mV (-10 … +10 V)  
|                                        | 4.884 μA (0 … 20 mA)                                                      |
| Galvanic separation                   | no                                                                           |
| Resolution (representation)           | 12 bit (0 … 4095)                                                            |
| Conversion time A/D                   | typically 10 μs                                                              |
| Load impedance                        | Voltage: > 3 kΩ  
|                                        | Current: < 500 Ω                                                            |
| Repeating accuracy                    | Voltage: ± 0.5 %  
| (under same conditions)               | Ström: ± 0.8 % *)                                                           |
| Temperature error (over temperature range 0 … +55 °C) | Voltage: ± 0.1 %  
|                                        | Current: ± 0.2 %                                                           |
| Internal current consumption (from +5 V bus) | max. 110 mA                                                                |
| Internal current consumption (from V+ bus) | 0 mA                                                                        |
| External current consumption          | max. 100 mA (for current outputs)                                           |
| Terminals                             | Pluggable 10-pole spring terminal block for Ø up to 2.5 mm², plug type A (4 405 4954 0) |

*) Characteristics, see diagram under “Principle diagram of analog outputs”

Indicators and connections

PCD3.W610

Typ: PCD3.W600, PCD3.W610

LEDs not used

Module-base-adresse

Terminals

Description label
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.

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

Range selection

<table>
<thead>
<tr>
<th>Jumpers, factory settings</th>
<th>“V” (voltage)</th>
<th>“B” (bipolar)</th>
<th>“mid” (reset to mid-scale, i.e. 0V in bipolar mode)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A0…A3</td>
<td>U/B</td>
<td>Reset select</td>
<td></td>
</tr>
<tr>
<td>U/B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reset select</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“mid”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ranges depending on application

<table>
<thead>
<tr>
<th>Pro Modul</th>
<th>U/B</th>
<th>Reset select</th>
<th>Empf. Einstellung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unipolarer or Bipolarer operation</td>
<td>Reset to low- or mid scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unipolarer → low-scale</td>
<td>Bipolar → mid-scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per channel</td>
<td>“V”</td>
<td>Voltage output:</td>
<td></td>
</tr>
<tr>
<td>“V”</td>
<td>0…+10 V or –10 V…+10 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“C”</td>
<td>Current output: 0…20 mA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Current outputs have been laid out for unipolar mode. Bipolar mode is possible, but for the negative half of this operation the output is 0 mA.

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.
**Principle diagram of analog outputs**

Output connection for 0...10 V, -10...+10 V

![Diagram of analog output connection]

During start-up, a voltage of 5 V is sent to all outputs of the W610 module. The start-up phase lasts 40 ms, then 0 V is sent to the outputs.

Output connection for 0...20 mA

![Diagram of 20 mA output connection]

**Characteristics of the current outputs**

![Graph showing characteristics of current outputs]

**Digital/analogue values**

<table>
<thead>
<tr>
<th>LED</th>
<th>Output signals</th>
</tr>
</thead>
<tbody>
<tr>
<td>4095</td>
<td>+ 20.1 mA</td>
</tr>
<tr>
<td>4075</td>
<td>+ 20 mA</td>
</tr>
<tr>
<td>2048</td>
<td>+ 10 mA</td>
</tr>
<tr>
<td>20</td>
<td>0 mA</td>
</tr>
<tr>
<td>0</td>
<td>0 mA</td>
</tr>
</tbody>
</table>

For current outputs, an external supply of 24 VDC is required at terminals 8 and 9.
Connection concept

The voltage input signals 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, -10 … +10 V, 0…20 mA

Connection for 0…10 V, -10 … +10 V, 0…20 mA

Ordering information

<table>
<thead>
<tr>
<th>Type</th>
<th>Short description</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCD3.W610</td>
<td>4 analogue outputs, 12 bit.</td>
<td>Analogue output modules, 4 inputs (channels), resolution 12 bit, signal range 0…10 V, -10 … +10 V, 0…20 mA. The channels themselves not separated. Connection with pluggable spring terminals, plug-in type A (4 405 4954 0) included</td>
<td>100 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, 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,
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

For more information
Learn more about ControlEdge PCD, visit our website www.honeywellprocess.com/ControlEdgePCD or contact your Honeywell account manager.

Specifications are subject to change without notice.