



AS-Interface analog module VBA-2E-G11-I/U/PT100-V1

- Function display for bus, internal and external sensor power supply, inputs
- Supply for inputs from AS-Interface or auxiliary voltage
- Degree of protection IP68 / IP69K
- Accuracy $\pm 0.1\%$
- Channel-specific input monitoring
- Inputs for current, voltage or Pt100 temperature sensor

G11 analog module, 2 analog inputs



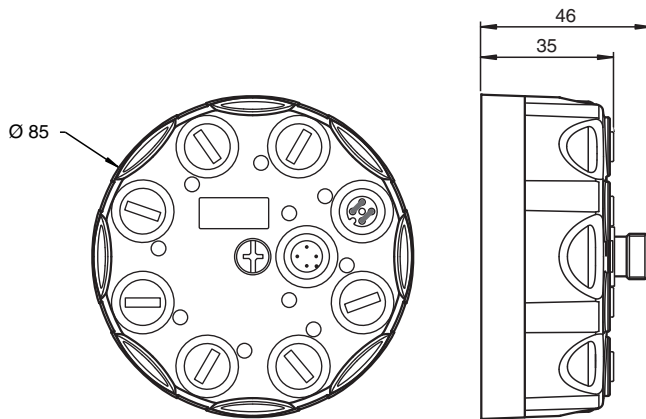
Function

The VBA-2E-G11-I/U/PT100-* analog module has two analog inputs which can be current input (4 mA to 20 mA), voltage input (0 to 10 V) or resistance thermometer input (-200 to 850 °C). The power supply to the measurement value generators takes place depending on the position of the internal slide switch, via AS-Interface or through auxiliary voltage. The choice of input supply is displayed via the INT/EXT LED. Measured value conversion and data transfer is provided asynchronously according to the AS-Interface profile 7.3. The resolution of the analog values is 16 bit with a value range of 4000 to 20000 (current input), 0 to 10000 (voltage input) and -200 °C to 850 °C (resistance thermometer input). Network interference can be eliminated with a configurable filter (50 Hz/60 Hz) in the A/D converter.

Note:

An overload of the internal input supply is also reported to the AS-Interface master via the 'peripheral fault' function. Communication via the AS-Interface continues.

Dimensions



Technical Data

General specifications

| Node type | Standard node |
|--------------------------------|---------------|
| AS-Interface specification | V3.0 |
| Required gateway specification | \geq V2.1 |
| Profile | S-7.3.D |
| IO code | 7 |
| ID code | 3 |
| ID1 code | F |
| ID2 code | D |

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

| | | |
|-----------------------------------|---|---|
| UL File Number | E223772 | |
| Indicators/operating means | | |
| LED AS-i/FAULT | Status display; multi-colour LED Green: normal operation Red: communication fault Flashing yellow/red: address 0 Flashing green/red: peripheral fault | |
| LED ANALOG | status of input signal; LED yellow off: not active on: signal within measurement range flashing: signal outside of measurement range | |
| LED AUX | ext. auxiliary voltage U_{AUX} ; dual LED green/red green: voltage OK red: reverse voltage | |
| LED INT/EXT | status display input supply; LED green green: input supply from AS-Interface off: input supply from auxiliary voltage | |
| Electrical specifications | | |
| Auxiliary voltage (output) | U_{AUX} | 20 ... 30 V DC PELV |
| Rated operating voltage | U_e | 26.5 ... 31.6 V from AS-Interface |
| Rated operating current | I_e | ≤ 60 mA (without sensors) / max. 200 mA |
| Protection class | III | |
| Surge protection | U_{AUX} , U_{in} : Over voltage category III, safe isolated power supplies (PELV) | |
| Input | | |
| Number/Type | 2 analog inputs Current: 0 ... 20 mA/4 ... 20 mA voltage: 0 ... 10 V Pt100: -200 ... 850 °C | |
| Supply | from AS-Interface (switch position INT, default settings) or auxiliary voltage U_{EXT} (switch position EXT) | |
| Current loading capacity | ≤ 140 mA from AS-Interface; overload and short-circuit resistant ≤ 600 mA from external auxiliary voltage U_{AUX} , overload and short-circuit protected | |
| Input resistance | current input: max. 70 Ω voltage input: 100 kΩ | |
| Measuring current | for Pt100: approx. 1 mA | |
| Accuracy | Voltage/current: 0.1% of accumulated value Pt100: 0.1% of indicated temperature [°C] + 0.3 °C | |
| Resolution | 16 Bit / 1 μA (current input) or 16 bit / 1 mV (voltage input) or 16 Bit / 0.1°C (temperature input) | |
| Temperature influence | Voltage/current: 20 ppm/K Pt100: (10 ppm of indicated temperature [°C] + 0.003 °C)/K | |
| Directive conformity | | |
| Electromagnetic compatibility | | |
| Directive 2014/30/EU | EN 62026-2:2013 | |
| Standard conformity | | |
| Degree of protection | EN 60529:2000 | |
| Fieldbus standard | EN 62026-2:2013 | |
| Input | EN 61131-2:2007 | |
| Emitted interference | EN 61000-6-4:2007 | |
| AS-Interface | EN 62026-2:2013 | |
| Noise immunity | EN 61000-6-2:2005, EN 61326-1:2006, EN 62026-2:2013 | |
| Ambient conditions | | |
| Ambient temperature | -25 ... 70 °C (-13 ... 158 °F) | |
| Storage temperature | -25 ... 85 °C (-13 ... 185 °F) | |
| Relative humidity | 85 % , noncondensing | |
| Climatic conditions | For indoor use only | |
| Altitude | ≤ 2000 m above MSL | |
| Pollution degree | 3 | |
| Mechanical specifications | | |
| Degree of protection | IP68 / IP69K | |

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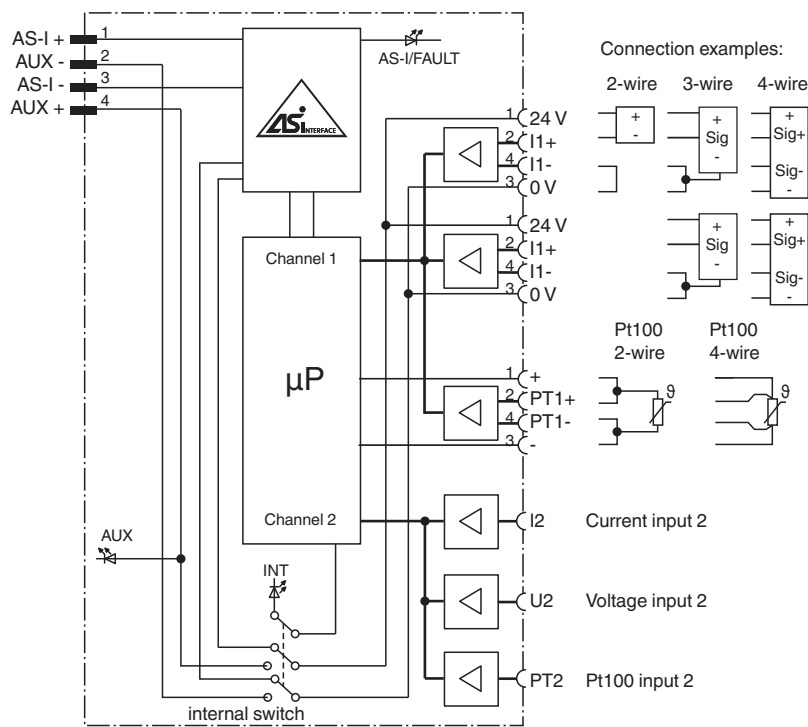
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Technical Data

| | |
|-----------------------------------|--|
| Connection | AS-Interface/U _{AUX} : M12 round connector Inputs: M12 round connector |
| Material | |
| Housing | PBT PC |
| Mounting screw | Stainless steel 1.4305 / AISI 303 |
| Mass | 200 g |
| Tightening torque, housing screws | 1.8 Nm |
| Tightening torque, cable gland | 0.4 Nm |
| Mounting | Mounting plate |

Connection

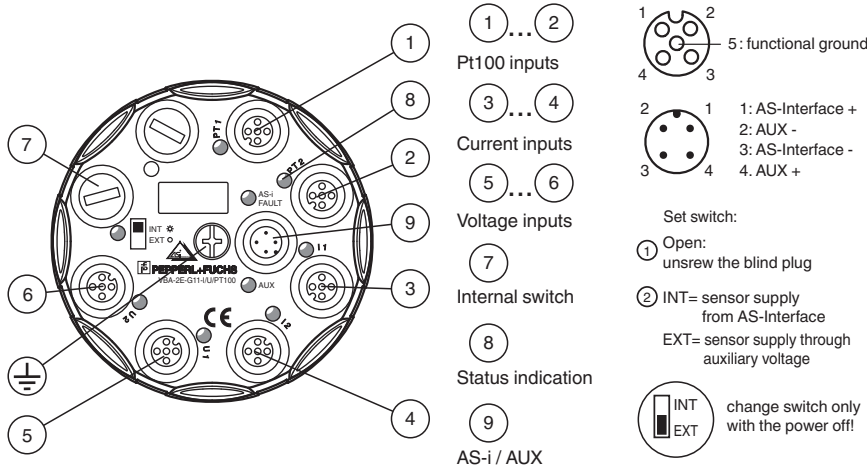


Connection

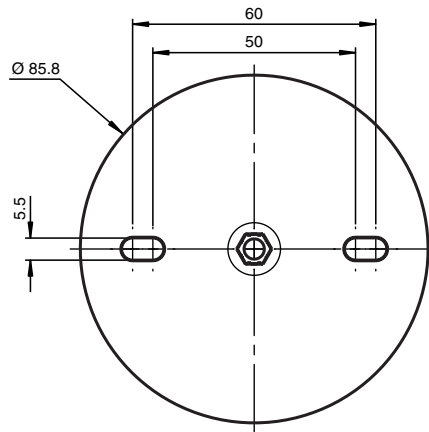
Do not connect inputs and outputs, which are supplied via the module from AS-interface or via auxiliary power, with power supply and signal circuits with external potentials.
Use shielded cable to connect the sensors.

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Assembly



Mounting



Screw the device onto a level mounting surface using two M4 attachment screws. The functional earth of the M12 round connectors is connected with the metal insert in the base via the tightened central screw. This metal insert can be connected to functional earth via the mounting screws to improve the EMC. The mounting screws are not included. Screw a blind plug onto spare connections to ensure the protection category.

Commissioning

Shutdown 2nd channel

When delivered, the PT100 input PT2 is bridged to turn off channel 2. Remove the bridge to use channel 1 & 2.

Programming

Data bits

(function via AS-Interface)

The transfer of the data value is based on AS-Interface Profile 7.3.





Parameter bits

(programmable via AS-Interface)

| Parameter bit | Function |
|---------------|---|
| P0 | 50/60 Hz filter P0=0 disabled P0=1 enabled |
| P1 | Projecting of the 2nd channel P1=0 channel 2 is not projected P1=1 channel 2 is projected |
| P2 | Indication of the peripheral fault by exceeding measuring range P2=0 peripheral fault is not reported P2=1 peripheral fault is reported |
| P3 | P3=0 both channels in current mode and without recognition of wire breakage P3=1 normal operating mode |

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Accessories

| | | |
|---|------------------------------------|---|
|  | VAZ-V1-B3 | Blind plug for M12 sockets |
|  | V1-G-0,3M-PUR-ABG-V1-W-Y | Connecting cable, M12 to M12, PUR cable, 4-pin, bridged, shielded |
|  | VBP-HH1-V3.0-KIT | AS-Interface Handheld with accessory |
|  | V1-G-42-0,3M-PUR-ABG-V1-W-Y | Connecting cable, M12 to M12, PUR cable, 4-pin, bridged, shielded |