



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).

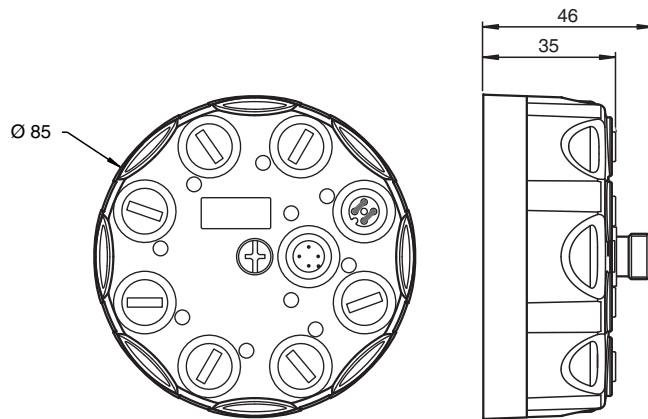
The power supply to the measurement value generators takes place depending on the position of the internal slide switch, via AS-Interface or through auxiliary voltage. The choice of input supply is displayed via the INT/EXT LED.

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

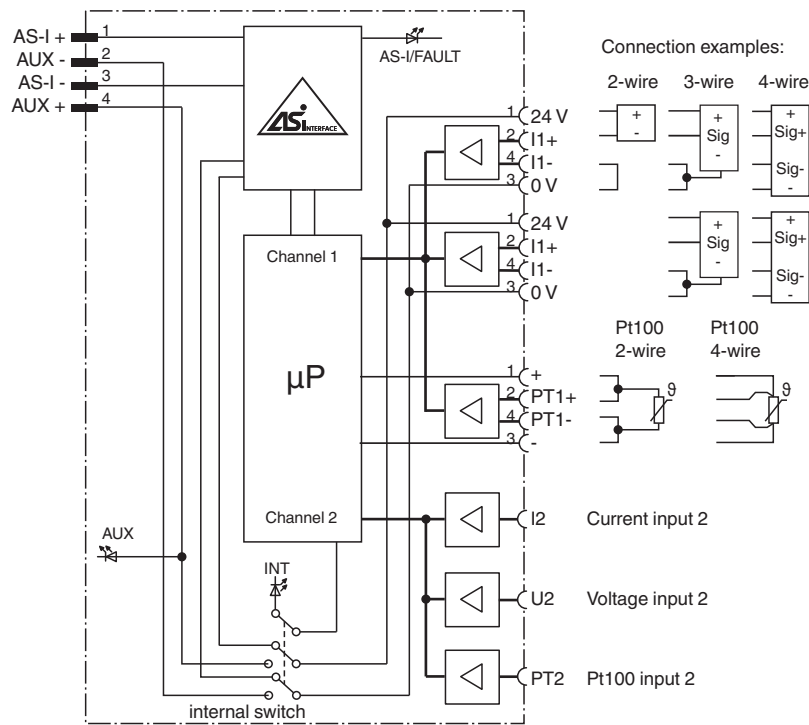
UL File Number		E223772
Indicators/operating means		
LED AS-i/FAULT		Status display; multi-colour LED Green: normal operation Red: communication fault Flashing yellow/red: address 0 Flashing green/red: peripheral fault
LED ANALOG		status of input signal; LED yellow off: not active on: signal within measurement 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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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

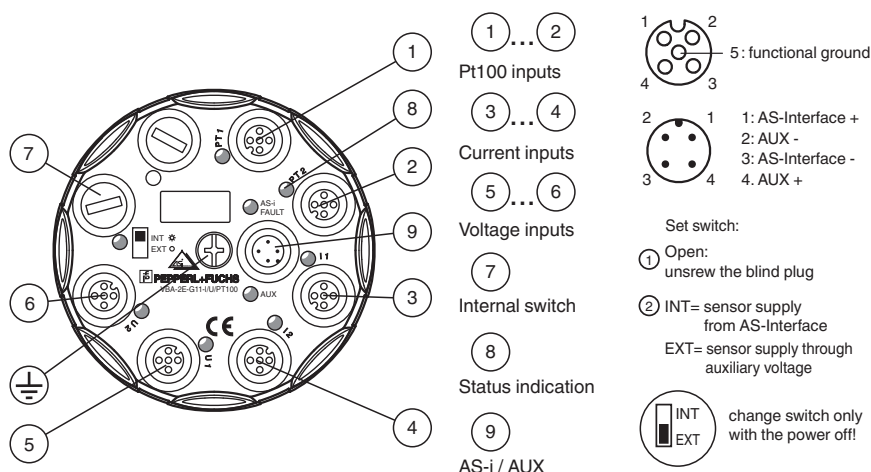


Connection

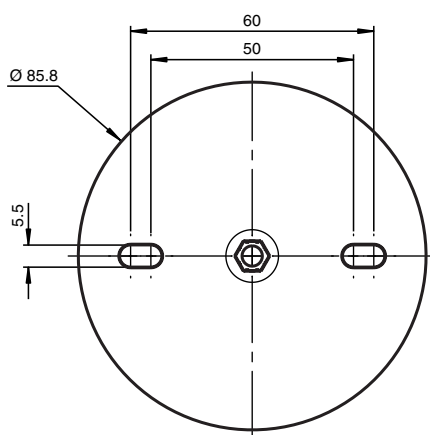
Do not connect inputs and outputs, which are supplied via the module from AS-interface or via auxiliary power, with power supply and signal circuits with external potentials.
Use shielded cable to connect the sensors.

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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

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