Dimensions
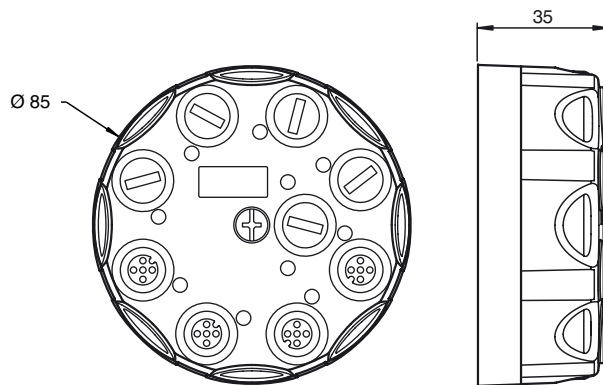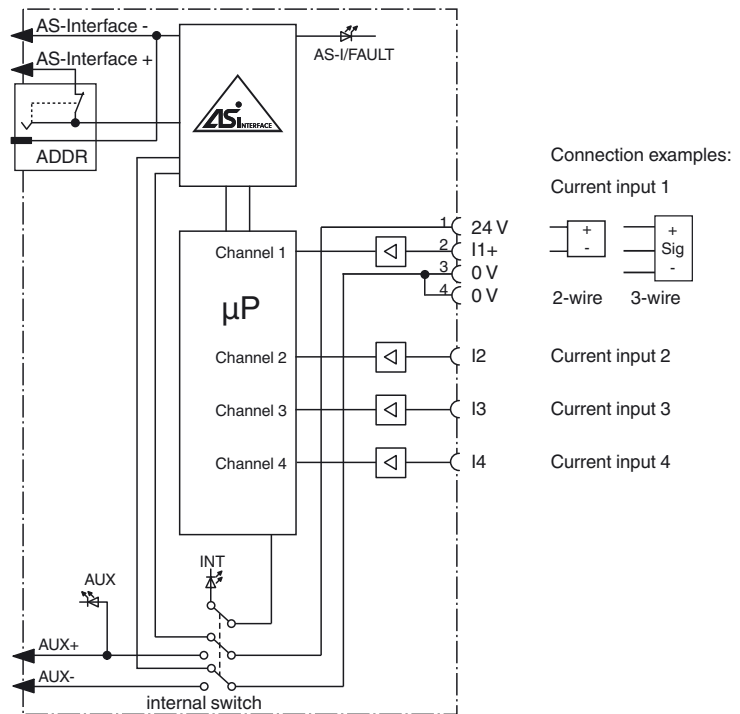

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Model number

VBA-4E-G11-I-F

G11 analog module
4 analog current inputs

Features

- Addressing jack

- 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 ± 0.1 %

- Integrated shielding

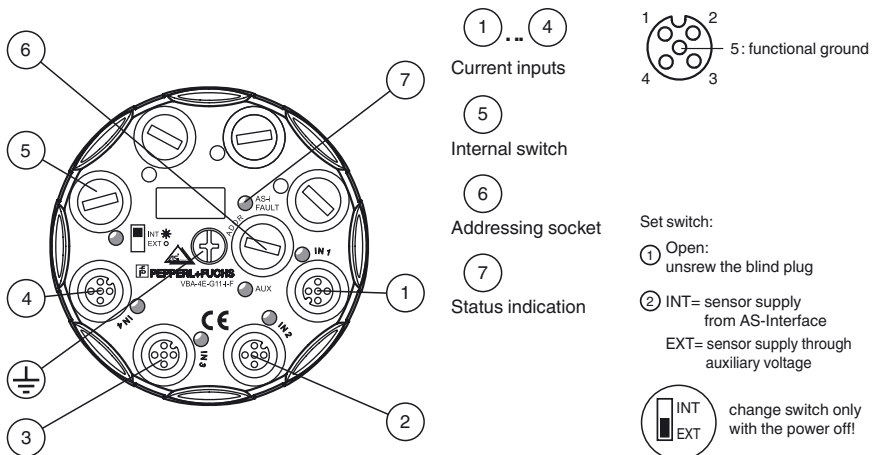- Channel-specific input monitoring

Function

The VBA-4E-G11-I-F analog module has four analog current inputs with a range of 0 mA ... 20 mA or 4 mA ... 20 mA.
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 1 µA with a value range of 0 to 20000 or 4000 to 20000. 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.

Electrical connection

Connection examples:
Current input 1

Current input 2

Current input 3

Current input 4

Indicating / Operating means

1 .. 4 Current inputs

5 Internal switch

6 Addressing socket

7 Status indication

5 : functional ground

Set switch:

① Open:
unsrew the blind plug

② INT= sensor supply
from AS-Interface

EXT= sensor supply through
auxiliary voltage

INT / EXT change switch only
with the power off!

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

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Technical data

General specifications

Slave type	Standard slave
AS-Interface specification	V3.0
Required master specification	≥ V2.1
UL File Number	E87056

Functional safety related parameters

$MTTF_d$	180 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

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	4 Inputs 0/4 ... 20 mA
Supply	from AS-Interface (switch position INT, basic setting) 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	≤ 70 Ω
Accuracy	0.1 % of full-scale value
Resolution	16 Bit
Temperature influence	0.0025 %/K of input signal range

Programming instructions

Profile	S-7.3.E
IO code	7
ID code	3
ID1 code	F
ID2 code	E
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-i)	**function**
P0	50/60 Hz filter P0=1, enabled P0=0, disabled
P1	not used
P2	Message of peripheral error P2=1, peripheral error is reported P2=0, peripheral error is not reported
P3	P3=1, wire break detection active, automatic channel detection (if > 1 mA) P3=0, wire break detection deactivated, all 4 channels active

Ambient conditions

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)

Mechanical specifications

Degree of protection	IP68 / IP69K
Connection	AS-Interface/U_{AUX}: cable piercing method, flat cable yellow/flat cable black Inputs: M12 round connector
Material	
Housing	PBT PC
Mounting screw	Stainless steel 1.4305 / AISI 303
Mass	200 g
Mounting	Mounting base

Compliance with standards and directives

Accessories

VAZ-V1-B3
Blind plug for M12 sockets

V1-G-42-0,3M-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

VAZ-PK-1,5M-V1-G
Adapter cable module/hand-held programming device

VAZ-FK-S-BK-SEAL
AS-Interface flat cable seal

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

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| Directive conformity	
EMC Directive 2004/108/EC	EN 50295:1999
Standard conformity	
Noise immunity	EN 61000-6-2:2005, EN 61326-1:2006, IEC 62026-2:2008
Emitted interference	EN 61000-6-4:2007
Input	EN 61131-2:2007
Degree of protection	EN 60529:2000
Fieldbus standard	EN 50295:1999, IEC 62026-2:2008

Notes

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.

Connecting instruction
Use shielded cable to connect the sensors.

Mounting instructions
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. Make sure that the metal insert is connected to protective earth via the mounting screws. The mounting screws are not included.
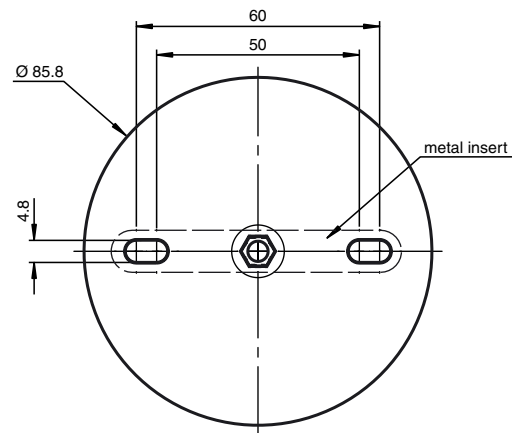
Screw a blind plug onto spare connections to ensure the protection category.

Channel activation
When delivered, all input channels are disabled, the wire break detection and automatic channel detection are active. An input channel is activated when an input signal 1 mA ... 23 mA is applied. An activated input channel remains active after a restart.
If the wire break detection is disabled, all four input channels are active.

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