Model number

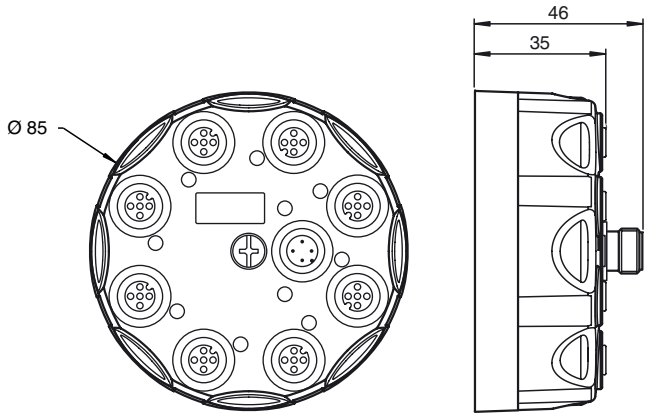
VBA-4E4A-G11-ZAJ/EA2L-V1

G11 module
4 inputs and 4 outputs

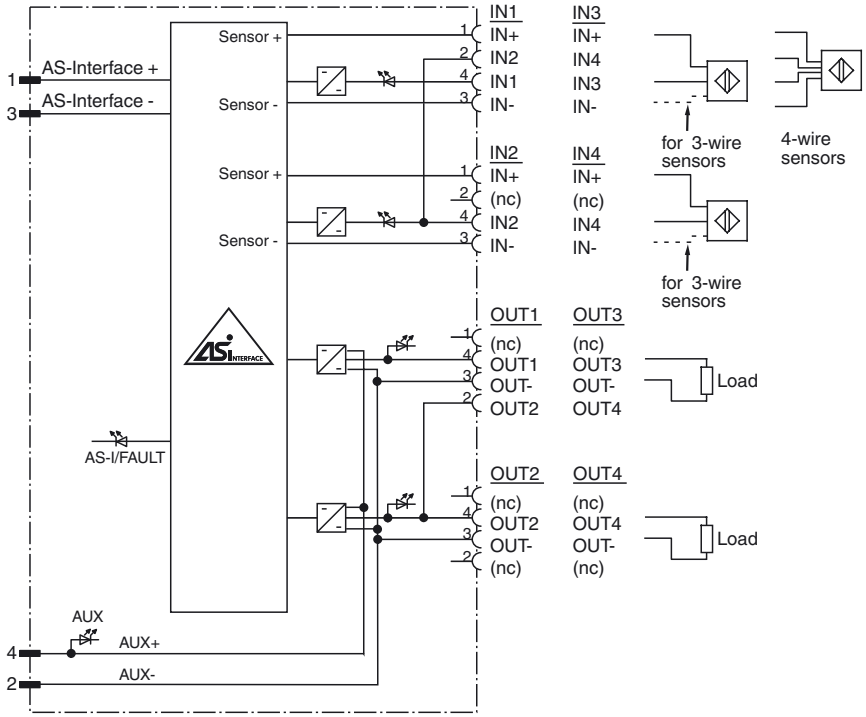
Features

- Inputs for 2-, 3-, and 4-wire sensors
- Power supply of outputs from the external auxiliary voltage
- Supply of sensors from AS-Interface
- Function display for bus, external auxiliary voltage, in- and outputs
- Red LED per channel, lights up in the event of output overload
- Communication monitoring
- Switchable lead breakage detection (outputs)
- Degree of protection IP68 / IP69K
- AS-Interface POWER24

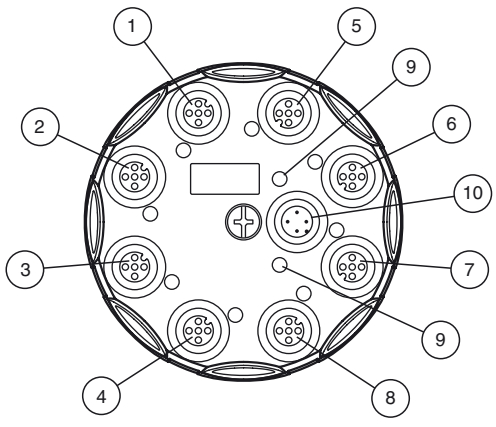
Dimensions



Electrical connection

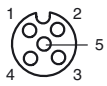


Indicating / Operating means



1 ... 4
Input 1 to 4

5 ... 8
Output 1 to 4



9
Status indication

10
AS-i/AUX connection

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Technical data

General specifications		
Slave type		A/B slave
AS-Interface specification		V3.0
Required master specification		≥ V3.0
UL File Number		E223772
Functional safety related parameters		
$MTTF_d$		120 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: sensor supply i.e. overload or lead interruption outputs
LED AUX		ext. auxiliary voltage U_{AUX}; dual LED green/red green: voltage OK red: reverse voltage
LED IN		switching state (input); 4 LED yellow
LED OUT		switching state (output); 4 LED yellow/red yellow: output active red: output overload or lead interruption
Electrical specifications		
Auxiliary voltage (output)	U_{AUX}	20 ... 30 V DC PELV
Rated operating voltage	U_e	18,0 ... 31.6 V from AS-Interface
Rated operating current	I_e	≤ 40 mA (without sensors) / max. 240 mA
Protection class		III
Surge protection		U_{AUX}, U_{in}: Over voltage category III, safe isolated power supplies (PELV)
Input		
Number/Type		4 inputs for 2- or 3-wire sensors (PNP), DC option 2 inputs for 4-wire sensors (PNP), DC
Supply		from AS-Interface
Voltage		12 ... 31 V
Current loading capacity		≤ 200 mA, overload and short-circuit protected
Input current		≤ 9 mA (limited internally)
Switching point		according to DIN EN 61131-2 (Type 2)
0 (unattenuated)		≤ 3 mA
1 (attenuated)		≥ 5 mA
Signal delay		< 1 ms (input/AS-Interface)
Output		
Number/Type		4 electronic outputs, PNP, overload and short-circuit proof
Supply		from external auxiliary voltage U_{AUX}
Current		2 A per output TB ≤ 40 °C: 6 A total TB ≤ 70 Â°C: sum O1 + O2 max. 2 A, sum O3 + O4 max. 2 A
Voltage		≥ (U_{AUX} - 0.5 V)
Electrical isolation		
Input/Output		safe isolation, rated insulation voltage 40 V DC
Output/AS-Interface		safe isolation, rated insulation voltage 40 V DC
Programming instructions		
Profile		S-7.A.7
IO code		7
ID code		A
ID1 code		7
ID2 code		7
Data bits (function via AS-Interface)		**input** / **output**
D0		IN1 / O1
D1		IN2 / O2
D2		IN3 / O3
D3		IN4 / O4
Parameter bits (programmable via AS-i)		**function**
P0		Communication monitoring P0 = 0 monitoring = off, the outputs maintain the status if communication fails P0 = 1 monitoring = on, i.e. if communication fails, the outputs are deenergised (default settings)
P1		Input filter P1 = 0 input filter on, pulse suppression ≤ 2 ms P1 = 1 input filter off (default settings)
P2		Lead breakage outputs P2 = 0 lead breakage on P2 = 1 lead breakage off (default settings)
P3		not used
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)

Function

The V*A-4E4A-G11-ZAJ/EA2L-V1 is an AS-Interface I/O module with 4 inputs and 4 outputs. 2, 3 and 4 wire sensors can also be connected as mechanical contacts to the 4 sourcing electronic inputs. The 4 electronic outputs are overload and short-circuit protected.
The housing with a central screw enables fast mounting on the base plate.
Connection to the AS-Interface cable, to the external power supply and to the sensors/actuators is via M12x1 plug-in connections on the top side of the device.
The inputs and the connected sensors are powered by the internal supply of the module (from the AS-Interface). The outputs and the connected actuators are powered by an external voltage source (AUX).
The current switching state of each input and output is indicated via an IN or OUT LED. The OUT LED also indicates an overload or a lead breakage at the associated output. The AS-i/FAULT LED indicates the status of the AS-Interface (normal operation, communication error, peripheral fault, address 0). The AUX LED indicates the external power supply. The I/O module is compatible with AS-Interface POWER24.

Note:
The device is equipped with a communication monitor, which deactivates the outputs if the AS-Interface does not communicate with the module for more than 40 ms. The communication monitor can be deactivated via the parameter P0. Filters that suppress pulses with a duration of 2 ms or less at the inputs can be connected via the parameter P1.
Parameter P2 activates a lead breakage detection system for the outputs. This function detects and reports a missing load, providing the relevant output is deactivated. The associated OUT LED and the 'peripheral fault' function display the signal transmitted to the AS-Interface master. An overload of the input supply or the outputs is also reported to the AS-Interface master via the 'peripheral fault' function. Communication via the AS-Interface remains established even if a peripheral fault is set.

Accessories

VBP-HH1-V3.0-KIT
AS-Interface Handheld with accessory

VAZ-V1-B3
Blind plug for M12 sockets

VBP-HH1-V3.0
AS-Interface Handheld

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

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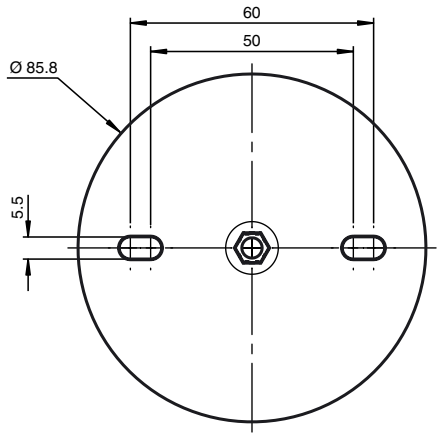
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
Relative humidity	85 % , noncondensing
Climatic conditions	For indoor use only
Altitude	≤ 2000 m above MSL
Shock and impact resistance	30 *g*, 11 ms in 6 spatial directions 3 shocks 10 *g*, 16 ms in 6 spatial directions 1000 shocks
Vibration resistance	0.75 mm 10 ... 57 Hz , 5 g 57 ... 150 Hz, 20 cycles
Pollution degree	3
Mechanical specifications	
Degree of protection	IP68 / IP69K
Connection	AS-Interface/U_{AUX}: M12 round connector Inputs/outputs: 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
Compliance with standards and directives	
Directive conformity	
EMC Directive 2004/108/EC	EN 61000-6-2:2005, EN 61000-6-4:2007, EN 50295:1999
Standard conformity	
Noise immunity	EN 61000-6-2:2005, EN 61326-1:2006, EN 50295:1999
Emitted interference	EN 61000-6-4:2007
Input	EN 61131-2:2007
Degree of protection	EN 60529:2000
Fieldbus standard	EN 50295:1999, IEC 62026-2:2006

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.

Mounting instructions
Screw the device onto a level mounting surface using two M5 attachment screws. The attachement screws are not included.



Screw a blind plug onto spare connections to ensure the protection category.

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