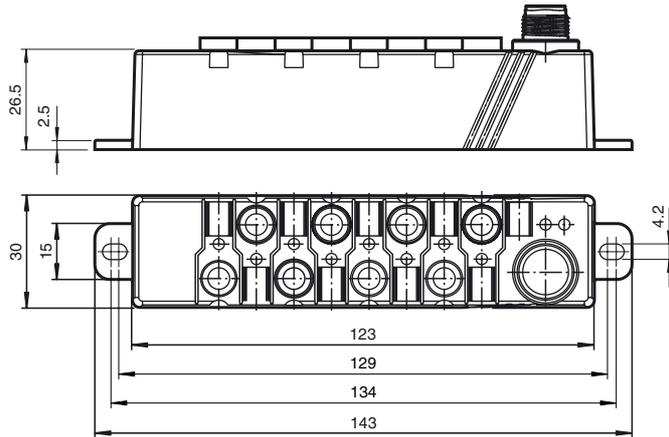


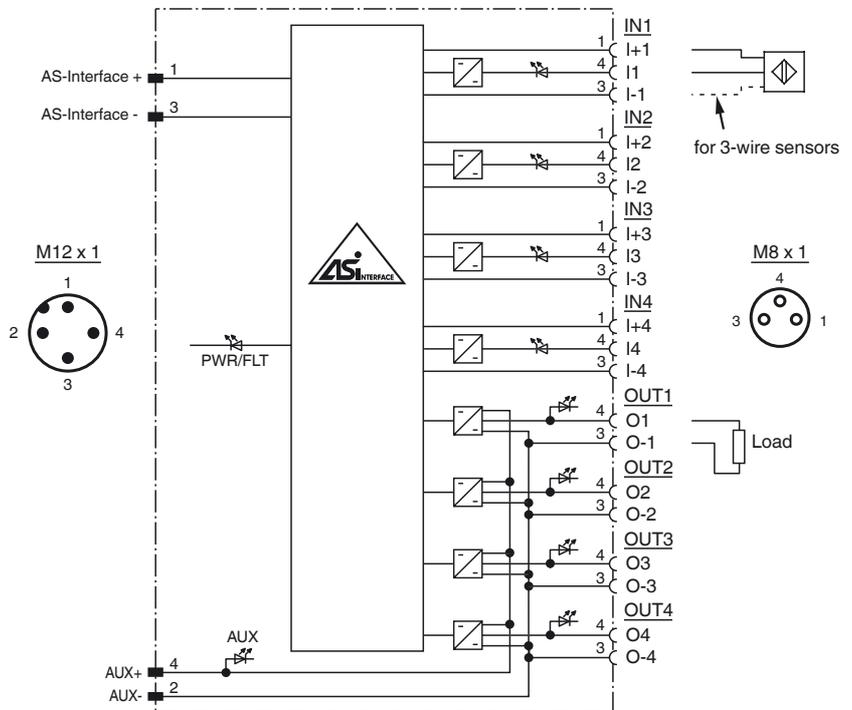


Spec. 3.0

Dimensions



Electrical connection



Model number

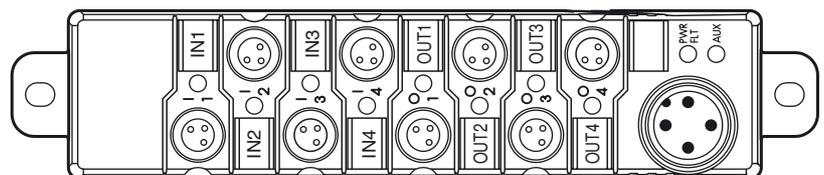
VAA-4E4A-G16-ZEJ/E2L

G16 compact module 4 inputs (PNP) and 4 electronic outputs

Features

- Compact design
- Connections via round connector
- AS-Interface connection via M12 metal threaded insert with SPEEDCON
- Function display for bus, ext. auxiliary voltage, inputs and outputs
- Degree of protection IP67 / IP68 / IP69K
- Inputs for 2- and 3-wire sensors
- Supply for inputs from AS-Interface
- Power supply of outputs from the external auxiliary voltage
- Communication monitoring
- Detection of overload on sensor supply
- Detection of output overload with LED per channel

Indicating / Operating means



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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	E223772

### Functional safety related parameters

MTTF <sub>d</sub>	190 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

### Indicators/operating means

LED PWR/FAULT	Status display; multi-colour LED Green: normal operation Red: communication fault Flashing yellow/red: address 0 Flashing green/red: sensor supply or output overload
LED AUX	ext. auxiliary voltage U <sub>AUX</sub> ; dual LED green/red green: voltage OK red: reverse voltage
LED IN	switching state (input); 4 LED yellow
LED OUT	Switching status (output); 4 yellow/red LEDs Yellow: output active Red: output overload

### Electrical specifications

Auxiliary voltage (output)	U <sub>AUX</sub>	20 ... 30 V DC PELV
Rated operating voltage	U <sub>e</sub>	26.5 ... 31.6 V from AS-Interface
Rated operating current	I <sub>e</sub>	≤ 40 mA (without sensors) / max. 240 mA
Protection class		III
Surge protection	U <sub>AUX</sub> , U <sub>in</sub>	Over voltage category III, safe isolated power supplies (PELV)

### Input

Number/Type	4 inputs for 2- or 3-wire sensors (PNP), DC
Supply	from AS-Interface
Voltage	21 ... 31 V
Current loading capacity	≤ 200 mA (T <sub>B</sub> ≤ 40 °C), ≤ 150 mA (T <sub>B</sub> ≤ 70 °C), overload-proof 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 <sub>AUX</sub>
Current	1 A per output
Voltage	≥ (U <sub>AUX</sub> - 0.5 V)
Usage category	DC-13

### Directive conformity

Electromagnetic compatibility	
Directive 2014/30/EU	EN 62026-2:2013 EN 61000-6-2:2005, EN 61000-6-4:2007

### Standard conformity

Degree of protection	EN 60529:2000
Fieldbus standard	EN 62026-2:2013
Input	EN 61131-2
Emitted interference	EN 61000-6-4:2007
AS-Interface	EN 62026-2:2013
Noise immunity	EN 61000-6-2:2005 EN 62026-2:2013

### Programming instructions

Profile	S-7.0
IO code	7
ID code	0
ID1 code	F
ID2 code	E

Data bits (function via AS-Interface)	input	output
D0	IN1	OUT1
D1	IN2	OUT2
D2	IN3	OUT3
D3	IN4	OUT4

### Parameter bits (programmable via AS-i)

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)

## Function

The VAA-4E4A-G16-ZEJ/E2L is an AS-Interface compact module with 4 inputs and 4 outputs. 2- and 3-wire sensors as well as mechanical contacts can be connected to the plus switching electronic inputs. The outputs are electronic outputs which can be energized with max. 1 A per output.

The particularly slim design with 30 mm is ideally suited for the common profile widths with simple sliding block mounting or screw fitting in narrow shafts. To guarantee the protection category the electronics is compound-filled.

All module connections are implemented with metal inserts for high stability. The connection to the AS-Interface cable and to the external power supply is achieved via a M12 x 1 circular connector with SPEEDCON quick locking option. The advantage of the plug-connection is that no separate base is required. For addressing a standard cable with M12 x 1 screw connections can also be used. The connections to the sensors/actuators are made via M8 x 1 screw connections.

The inputs and the connected sensors are supplied from the internal power supply of the module (from AS-Interface), the outputs and the connected actuators via an external power source (AUX).

To indicate the current switching state there is an LED for each channel fitted to the top of the module. The outputs are protected against overload and short circuit, an output overload is indicated via an LED per channel. An LED to indicate the AS-Interface voltage, to monitor the AS-Interface communication, and to indicate that the module has an address of 0, is also available. Another LED indicates the external power supply (AUX).

The module can be fitted in any position using two screws.

An output overload is reported to the AS-Interface master via the function "periphery fault". The communication with the AS-Interface remains intact.

## Accessories

### VBP-HH1-V3.0-KIT

AS-Interface Handheld with accessory

### VAZ-2T1-FK-0,3M-PUR-V1-W

Splitter box AS-Interface and auxiliary voltage to 1 x M12 round connector

### V1-G

Female connector, M12, 4-pin, field attachable

### VAZ-V3-B

Blind plug for M8 sockets

### VBP-HH1-V3.0

AS-Interface Handheld

P2	Synchronous mode P2 = 0 synchronous mode on P2 = 1 synchronous mode off (default settings)
P3	not used
<b>Ambient conditions</b>	
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
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
<b>Mechanical specifications</b>	
Degree of protection	IP67 / IP68 / IP69k
Connection	AS-Interface and auxiliary voltage: M12 x 1 round connector sensors/actuators: M8 x 1 round connector
<b>Material</b>	
Housing	PBT
Mass	150 g
Tightening torque, cable gland	0.4 Nm (M12 connector), 0.2 Nm (M8 connector)
Mounting	screw mounting