Spec. 3.0

Model number

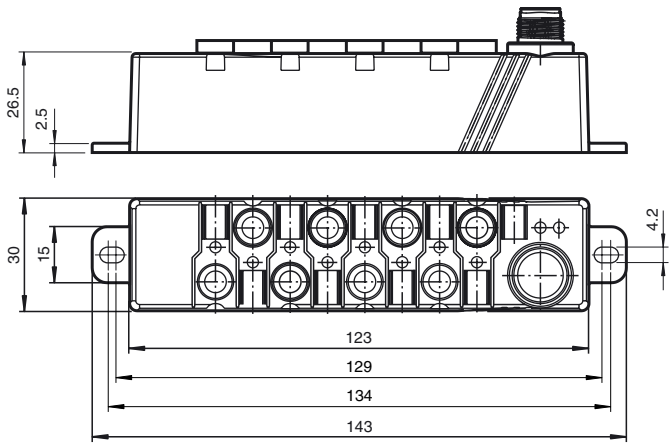
VAA-4E4A-G16-ZEJ/E2L

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

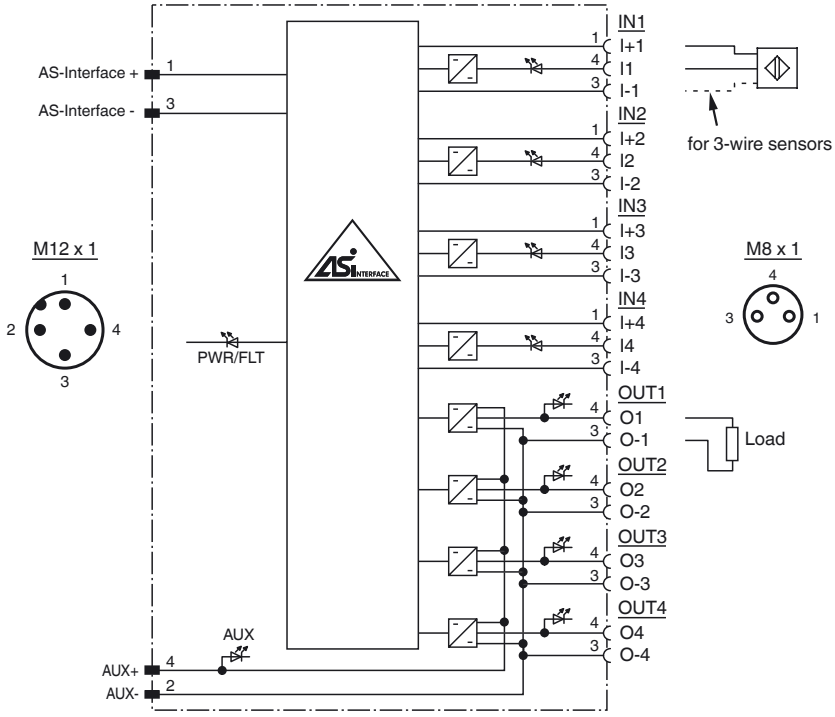
Features

- 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
- Protection degree 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

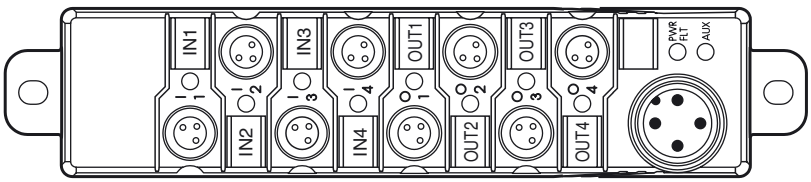
Dimensions



Electrical connection



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		E87056
Functional safety related parameters		
$MTTF_d$		190 a
Mission Time (T_M)		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_{AUX}; 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_{AUX}	20 ... 30 V DC PELV
Rated operating voltage	U_e	26.5 ... 31.6 V from AS-Interface
Rated operating current	I_e	≤ 40 mA (without sensors) / max. 240 mA
Protection class		III
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_B ≤ 40 °C), ≤ 150 mA (T_B ≤ 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_{AUX}
Current		1 A per output
Voltage		≥ (U_{AUX} - 0.5 V)
Usage category		DC-13
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)	**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 (basic setting)
P1	Input filter P1 = 0 input filter on, pulse suppression ≤ 2 ms P1 = 1 input filter off (basic setting)
P2	Synchronous mode P2 = 0 synchronous mode on P2 = 1 synchronous mode off (basic setting)
P3	not used

Ambient conditions	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
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
Mechanical specifications	
Protection degree	IP67 / IP68 / IP69k

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 communcation 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

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Connection	AS-Interface and auxiliary voltage: M12 x 1 round connector sensors/actuators: M8 x 1 round connector
Material	
Housing	PBT
Mass	150 g
Mounting	screw mounting
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 50295:1999
Emitted interference	EN 61000-6-4:2007
Input	EN 61131-2
Protection degree	EN 60529
Fieldbus standard	EN 50295, IEC 62026-2

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