Dimensions

Base is sold separately

Electrical connection

for 3-wire sensors
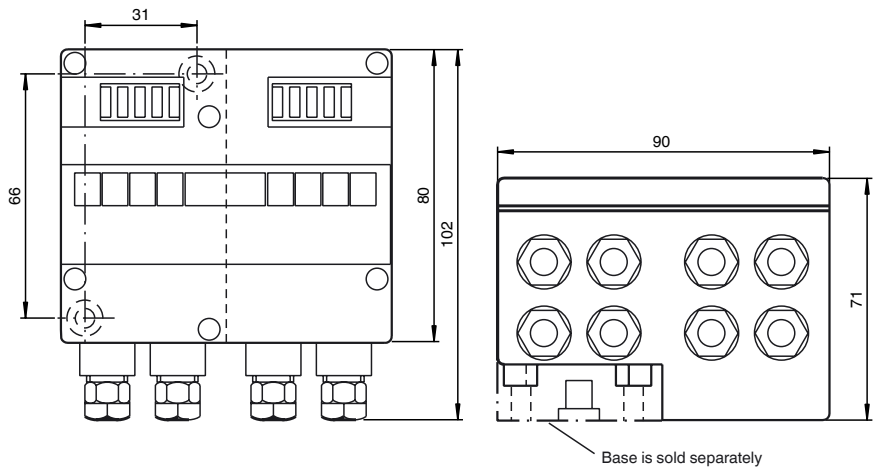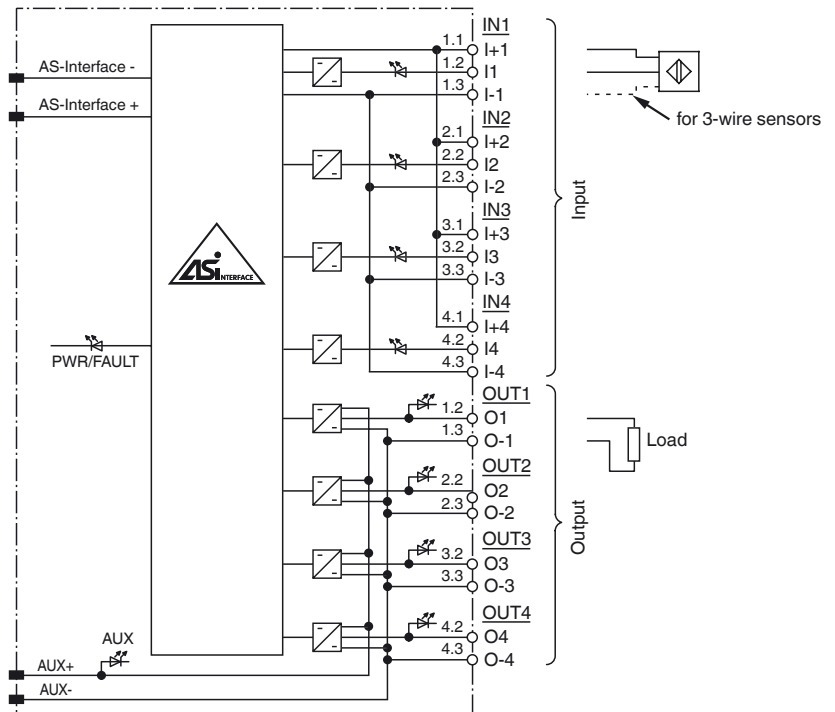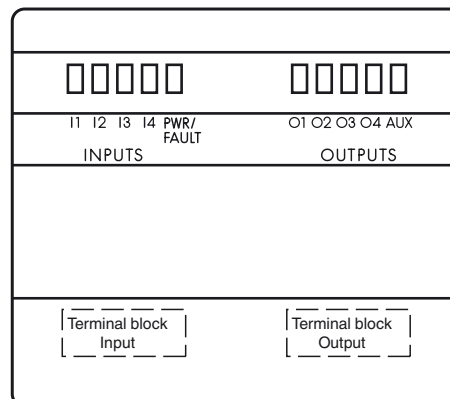
Load

Model number

VAA-4E4A-G4-ZE/E2-Y909711

G4 module IP65
4 inputs (PNP) and 4 electronic outputs

Features

- Degree of protection IP65
- Flat or round cable connection (via standardized EEMS base, not included with delivery)
- Cable piercing method for flat cable
- Communication monitoring, turn-off
- Inputs for 2- and 3-wire sensors
- Power supply of outputs from the external auxiliary voltage
- Power supply of inputs from the module
- Function display for bus, ext. auxiliary voltage, inputs and outputs
- Monitoring of sensor overloads
- Hot glue added for additional circuit board stability in high vibration applications

Indicating / Operating means

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

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1

Technical data

General specifications

Slave type	Standard slave
AS-Interface specification	V3.0
Required master specification	$\geq$ V2.0
UL File Number	E223772

Functional safety related parameters

$MTTF_d$	150 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

LED PWR/FAULT	dual LED green/red green: AS-Interface voltage red: communication error or address 0 green/red flashing: overload sensor supply or outputs
LED AUX	ext. auxiliary voltage U_{AUX} ; LED green
LED IN	switching state (input); 4 LED yellow
LED OUT	Switching state (output); 4 LED yellow

Electrical specifications

Auxiliary voltage (output)	U_{AUX}	24 V DC ± 15 % PELV
Rated operating voltage	U_e	26.5 ... 31.6 V from AS-Interface
Rated operating current	I_e	$\leq$ 30 mA (without sensors) / max. 230 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
Supply	from AS-Interface
Voltage	21 ... 31 V
Current loading capacity	$\leq$ 200 mA ($T_B \leq 40$ °C), $\leq$ 160 mA ($T_B \leq 60$ °C), short-circuit protected
Input current	$\leq$ 9 mA (limited internally)
Switching point	according to DIN EN 61131-2 (Type 2)
0 (unattenuated)	$\leq$ 3 mA
1 (attenuated)	$\geq$ 5 mA

Output

Number/Type	4 electronic outputs, PNP, overload and short-circuit proof
Supply	from external auxiliary voltage U_{AUX}
Current	1 A per output, 4 A total
Voltage	$\geq$ (U_{AUX} - 0.5 V)

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 = 1 (default settings), monitoring = ON, i.e. if communication fails, the outputs are de-energised P0 = 0, monitoring = OFF, if communication fails, the outputs maintain their condition
P1	not used
P2	not used
P3	not used

Ambient conditions

Ambient temperature	-25 ... 60 °C (-13 ... 140 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
Relative humidity	85 % , noncondensing
Climatic conditions	For indoor use only
Altitude	$\leq$ 2000 m above MSL
Pollution degree	3

Mechanical specifications

Degree of protection	IP65
Connection	cable piercing method or terminal compartment yellow flat cable/black flat cable or standard round cable inputs/outputs:M12 x 1.5 cable glands and cage tension spring terminals
Material	
Housing	PA 6 GF30
Mass	350 g
Tightening torque, housing screws	0.8 Nm

Function

The AS-Interface Module VAA-4E4A-G4-ZE/E2 has 4 inputs and 4 outputs. Both 2-wire and 3-wire sensors and also mechanical contacts can be connected to the inputs. The sensors are supplied from the module. The outputs are electronic, which can be loaded to a max. 24 V DC and 1 A per output.

the G4 Module is particularly suitable for harsh field conditions. The connections to the sensors/actuators are made via cable glands and cage spring terminals. This makes the installation particularly user-friendly. Pre-addressing can be carried out by plugging the module directly into the VBP-HH1 hand-held programming device adapter.

An LED is provided for each channel on the top of the module to indicate the current switching status. Communication monitoring is integrated in the module. In the event of faults on the bus the monitoring system switches off the current to the outputs.

Connection the AS-Interface transfer cable and the external 24 V DC supply can be achieved by means of flat or round cable. If the AS-Interface flat cable is used, the U-G1FF base component is required. The contact with the two cables is made via the AS-Interface-standardised EEMS interface, i. e. by means of the insulation penetration technique.

If a round cable is used, the U-G1PP base component is required. This base also provides the option of connecting both the AS-Interface cable and the external power supply.

Note:

The device features communication monitoring. When this is active, it switches off the power to the outputs when no communication has occurred on the AS-Interface cable for more than 40 ms.

In the event of overloading of the internal input power supply or output supply, a signal is communicated to the AS-Interface master via the "Peripheral error" function. Communication via the AS-Interface remains uninterrupted.

Accessories

VAZ-G4-B1
Blind plug M12

Matching system components

U-G1FF
AS-Interface module mounting base for connection to flat cable (AS-Interface and external auxiliary power)

U-G1FFA
AS-Interface module mounting base with adressing jack for connection to flat cable (AS-Interface and external auxiliary power)

U-G1PP
AS-Interface module mounting base for connection to round cable (AS-Interface and external auxiliary power)

Mounting	DIN rail or screw mounting
Compliance with standards and directives	
Directive conformity	
EMC Directive 2004/108/EC	EN 61000-6-2:2001, EN 61000-6-4:2001, EN 50295:1999
Standard conformity	
Noise immunity	EN 61000-6-2:2001
Emitted interference	EN 61000-6-4:2001
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.

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3