



AS-Interface sensor/actuator module

VAA-4E4A-G2-ZA/EA2

- AS-Interface certificate
- Degree of protection IP67
- Addressing jack
- Flat cable connection with cable piercing technique, variable flat cable guide
- Communication monitoring
- Inputs for 2-, 3-, and 4-wire sensors
- Power supply of outputs from the external auxiliary voltage
- Supply for inputs from AS-Interface
- Ground connection (FE) possible
- Function display for bus, ext. auxiliary voltage, inputs and outputs
- Detection of overload on sensor supply
- Detection of output overload

G2 flat module, 4 inputs (PNP) and 4 electronic outputs



Function

The VAA-4E4A-G2-ZA/EA2 is an AS-Interface module with 4 Inputs and 4 outputs. Mechanical contacts (e. g. push buttons) as well as 2-, 3- and 4-wire sensors can be connected to the inputs. The outputs are electronic outputs, which can be collectively loaded with 24 V DC and 1 A per output.

The IP67 flat module is ideal for applications in the field. An addressing jack is integrated in the module.

The connection for the sensors/actuators is via M12 x 1 screw connections. An LED is provided on the top of the module, for each channel, to indicate the current switching status. Similarly, an LED is provided to monitor the AS-Interface communication and to indicate that the module has the address 0. LEDs are also provided to indicate AS-Interface voltage and external power supply.

The mounting plate U-G2FF is used as standard for the connection to the AS-Interface flat cable and the external 24 V DC supply. The specially designed base enables the user to connect flat cable from both sides.

The device incorporates communication monitoring, which switches off power to the outputs if no communication has taken place on the AS-Interface line for longer than 40 ms.

An overloading of the internal input supply or of the outputs is signalled to the AS-interface master via the "Peripheral fault" function.

Communication via the AS-Interface remains intact.

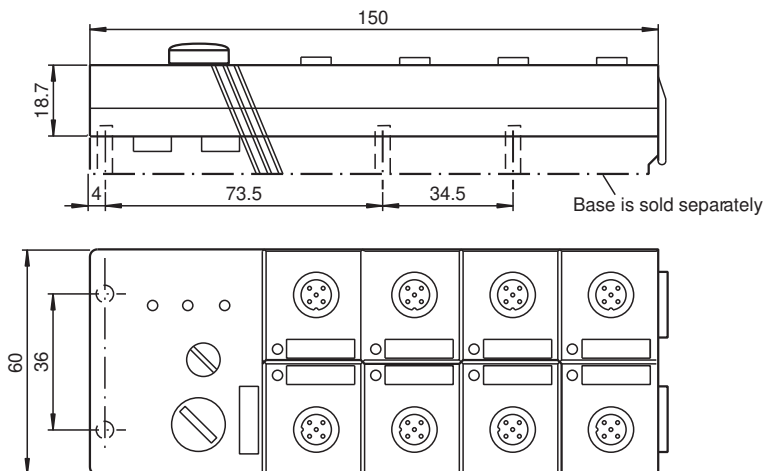
Note:

The mounting base for the module is sold separately.

Application

For 4-wire sensors, it is only possible to use plug-in slot IN1 or IN3 for inputs 1+2 or 3+4 (jumped internally).

Dimensions



Technical Data

General specifications

Node type	Standard node
AS-Interface specification	V3.0
Required gateway specification	≥ V2.0
Profile	S-7.F
IO code	7
ID code	F
ID1 code	F
ID2 code	E
UL File Number	E223772

Indicators/operating means

LED FAULT	error display; LED red red: communication error or address is 0 red flashing: overload of sensor power supply or outputs
LED PWR	AS-Interface voltage; LED green
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}	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. 220 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	21 ... 31 V
Current loading capacity	≤ 180 mA ($T_B \leq 40^\circ\text{C}$), ≤ 140 mA ($T_B \leq 60^\circ\text{C}$), , 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	< 2 ms (input/AS-Interface)
Signal frequency	≤ 250 Hz

Output

Number/Type	4 electronic outputs, PNP, overload and short-circuit proof
Supply	from external auxiliary voltage U_{AUX}
Voltage	≥ ($U_{AUX} - 0.5\text{ V}$)
Current	2 A per output Sum 4 A ($T_B \leq 40^\circ\text{C}$) Sum 3 A ($T_B \leq 60^\circ\text{C}$)

Directive conformity

Electromagnetic compatibility	
Directive 2014/30/EU	EN 62026-2:2013 EN 61000-6-2:2001 EN 61000-6-4:2001

Standard conformity

Degree of protection	EN 60529:2000
Fieldbus standard	EN 62026-2:2013
Input	EN 61131-2:2007
Emitted interference	EN 61000-6-4:2001
AS-Interface	EN 62026-2:2013
Noise immunity	EN 61000-6-2:2001

Ambient conditions

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 188848_eng.pdf

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

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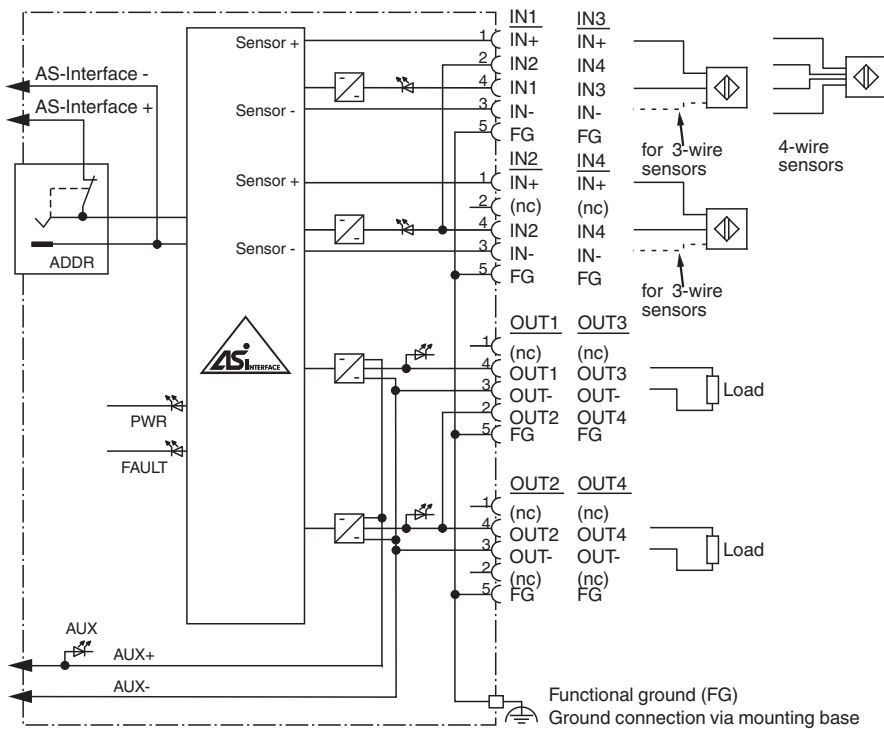
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 **PEPPERL+FUCHS**

Technical Data

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	≤ 2000 m above MSL
Pollution degree	3
Mechanical specifications	
Degree of protection	IP67
Connection	Cable piercing method flat cable yellow/flat cable black inputs/outputs: M12 round connector
Material	
Housing	PBT
Mass	150 g
Tightening torque, cable gland	0.4 Nm
Mounting	Mounting plate

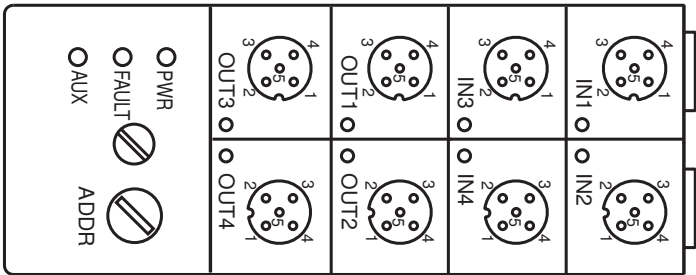
Connection



Connection

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.

Assembly



Programming

Data bits
(function via AS-Interface)

Data bit	Input	Output
D0	IN1	OUT1
D1	IN2	OUT2
D2	IN3	OUT3
D3	IN4	OUT4

Parameter bits
(programmable via AS-Interface)

Parameter bit	Function
P0	Communication monitoring P0=0 monitoring off, the outputs maintain the status if communication fails P0=1 monitoring on, if communication fails, the outputs are deenergised, default setting
P1	not used
P2	not used
P3	not used

Matching System Components

	U-G2FF	AS-Interface module mounting base for connection to flat cable (AS-Interface and external auxiliary power)
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Accessories

	VBP-HH1-V3.0-KIT	AS-Interface Handheld with accessory
	VAZ-PK-1,5M-V1-G	Adapter cable module/hand-held programming device