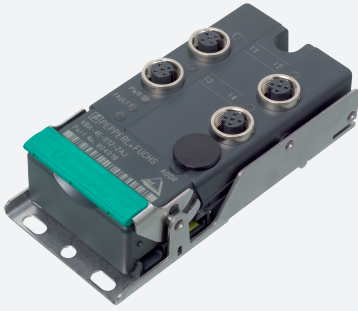


# AS-Interface sensor/actuator module

## VBA-4E4A-G12-XEL



- One-piece housing with stainless steel base
- Installation without tools
- Metal threaded inserts with SPEEDCON technology
- Flat cable connection with cable piercing technique, variable flat cable guide
- Communication monitoring, configurable
- Inputs for 2- and 3-wire sensors
- DIN rail mounting
- Sensor supply powered by AUX
- Input and output connection on each M12 connector

G12 flat module, 4 inputs (PNP) and 4 electronic outputs



### Function

The VBA-4E4A-G12-XEL is an AS-Interface trigger 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. 24 V DC and 1 A per output.

The solid housing permits fast mounting without tools as well as easy removal without tools. The stainless steel shell and the cast housing ensure durability and a high protection category.

The connection to the AS-Interface cable and to the external power supply is achieved via penetration technology in the integrated flat cable. The insert for the flat cables can be turned in two orientations.

All connections to inputs and outputs are implemented via metal inserts for high stability. The connection to the sensors/actuators is achieved via a M12 x 1 circular connector with SPEEDCON quick locking option.

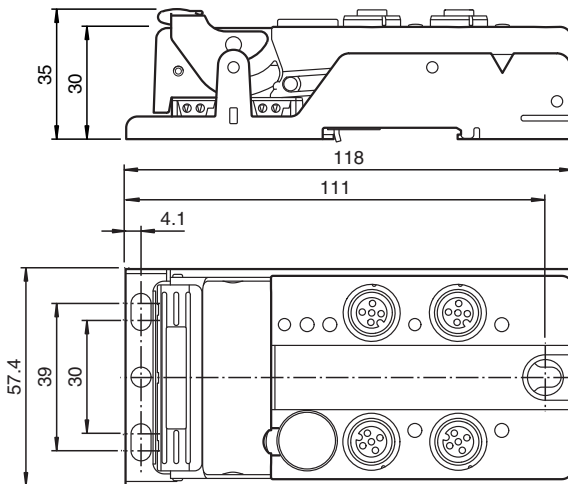
The inputs and the connected sensors as well as the outputs and the connected actuators are supplied via an external power source (AUX). To indicate the current switching state there is an LED for each input fitted to the top of the module.

An LED to indicate the AS-Interface voltage and that the module has an address of 0 is available, another indicates errors in the AS-Interface communication as well as periphery faults. Another LED indicates the external power supply (AUX).

This module can be mounted in any position using three screws or can be snapped onto the DIN rail using the stainless steel holder.

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

### Dimensions



### Technical Data

#### General specifications

|                                |          |
|--------------------------------|----------|
| Node type                      | A/B node |
| AS-Interface specification     | V3.0     |
| Required gateway specification | ≥ V3.0   |
| Profile                        | S-7.A.7  |

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

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## Technical Data

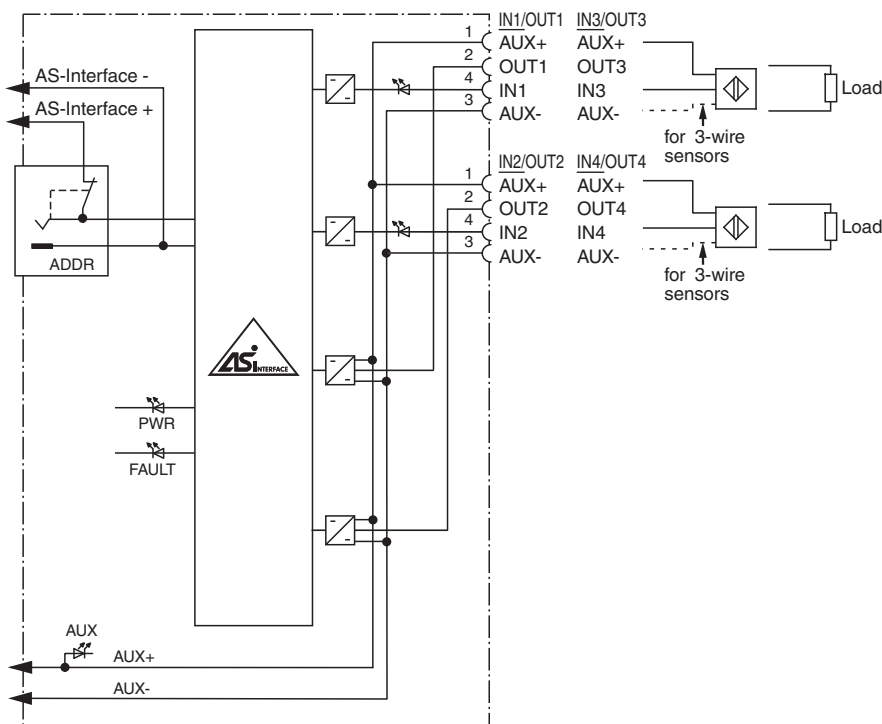
|                                   |           |   |
|-----------------------------------|-----------|---|
| IO code                           |           | 7   |
| ID code                           |           | A   |
| ID1 code                          |           | 7   |
| ID2 code                          |           | 7   |
| UL File Number                    |           | E223772   |
| <b>Indicators/operating means</b> |           |   |
| LED FAULT                         |           | error display; LED red<br>red: communication error or address is 0<br>red flashing: overload of sensor power supply or outputs          |
| LED PWR                           |           | AS-Interface voltage; green LED<br>green: voltage OK<br>flashing green: address 0   |
| LED AUX                           |           | ext. auxiliary voltage $U_{AUX}$ ; dual LED green/red<br>green: voltage OK<br>red: reverse voltage                                      |
| LED IN                            |           | switching state (input); 4 LED yellow   |
| <b>Electrical specifications</b>  |           |   |
| Auxiliary voltage                 | $U_{AUX}$ | 24 V DC $\pm$ 15 % PELV   |
| Rated operating voltage           | $U_e$     | 26.5 ... 31.6 V from AS-Interface   |
| Rated operating current           | $I_e$     | $\leq$ 40 mA  |
| Protection class                  |           | III   |
| Surge protection                  |           | $U_{AUX}$ , $U_{in}$ : Over voltage category III, safe isolated power supplies (PELV) derived from mains up to 300 V AC line-to-neutral |
| <b>Input</b>                      |           |   |
| Number/Type                       |           | 4 inputs for 2- or 3-wire sensors (PNP), DC   |
| Supply                            |           | from external auxiliary voltage $U_{AUX}$   |
| Current loading capacity          |           | $\leq$ 500 mA overload and short-circuit resistant  |
| Input current                     |           | $\leq$ 8 mA (limited internally)  |
| Switching point                   |           | according to DIN EN 61131-2 (Type 2)  |
| 0 (unattenuated)                  |           | $\leq$ 2 mA   |
| 1 (attenuated)                    |           | $\geq$ 6 mA   |
| Signal delay                      |           | $<$ 1 ms (input/AS-Interface)   |
| <b>Output</b>                     |           |   |
| Number/Type                       |           | 4 electronic outputs, PNP, overload and short-circuit proof   |
| Supply                            |           | from external auxiliary voltage $U_{AUX}$   |
| Voltage                           |           | $\geq$ ( $U_{AUX}$ - 0.5 V)   |
| Current                           |           | 1 A per output  |
| <b>Directive conformity</b>       |           |   |
| Electromagnetic compatibility     |           |   |
| Directive 2014/30/EU              |           | EN 62026-2:2013 EN 61000-6-2:2005, EN 61000-6-4:2007  |
| <b>Standard conformity</b>        |           |   |
| Degree of protection              |           | EN 60529:2000   |
| Fieldbus standard                 |           | EN 62026-2:2013   |
| Input                             |           | EN 61131-2:2007   |
| Emitted interference              |           | EN 61000-6-4:2007   |
| AS-Interface                      |           | EN 62026-2:2013   |
| Noise immunity                    |           | EN 61000-6-2:2005 EN 62026-2:2013   |
| <b>Ambient conditions</b>         |           |   |
| Ambient temperature               |           | -25 ... 70 °C (-13 ... 158 °F)  |
| Storage temperature               |           | -25 ... 85 °C (-13 ... 185 °F)  |
| Relative humidity                 |           | 85 % , noncondensing  |
| Altitude                          |           | $\leq$ 2000 m above MSL   |
| Shock and impact resistance       |           | 30 g, 11 ms in 6 spatial directions 3 shocks<br>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   |

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## Technical Data

| Mechanical specifications      |  |
|--------------------------------|--|
| Degree of protection           | IP67   |
| Connection                     | Cable piercing method<br>flat cable yellow/flat cable black<br>inputs/outputs: M12 round connector |
| Material                       |  |
| Housing                        | PBT  |
| Mass                           | 200 g  |
| Tightening torque, cable gland | 0.4 Nm   |
| Mounting                       | Mounting plate   |

## Connection

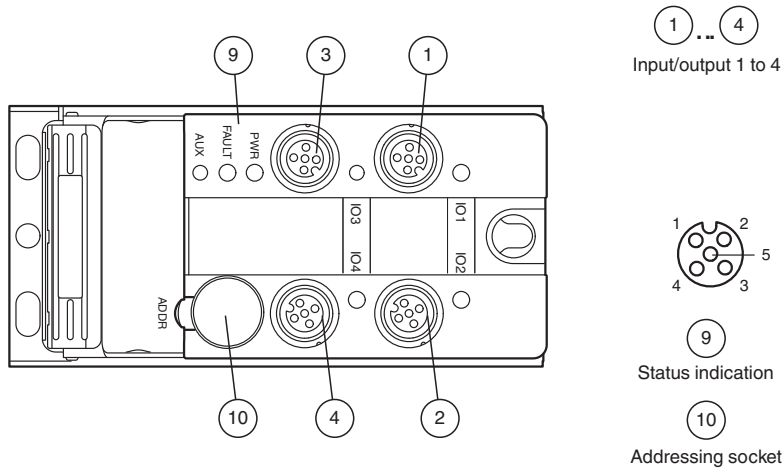


## Connection

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.

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**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<br>P0=0 monitoring off, the outputs maintain the status if communication fails<br>P0=1 monitoring on, if communication fails, the outputs are deenergised, default setting |
| P1            | Input filter<br>P1=0 input filter on, pulse suppression ≤ 2 ms<br>P1=1 input filter off, default setting  |
| P2            | Synchronous mode<br>P2=0 Synchronous mode on<br>P2=1 Synchronous mode off, default setting  |
| P3            | not used  |

**Accessories**

|  |                         |   |
|--|-------------------------|---|
|  | <b>VAZ-V1-B3</b>        | Blind plug for M12 sockets                        |
|  | <b>VBP-HH1-V3.0-KIT</b> | AS-Interface Handheld with accessory              |
|  | <b>VAZ-PK-1,5M-V1-G</b> | Adapter cable module/hand-held programming device |
|  | <b>VAZ-CLIP-G12</b>     | lock for G12 module                               |

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