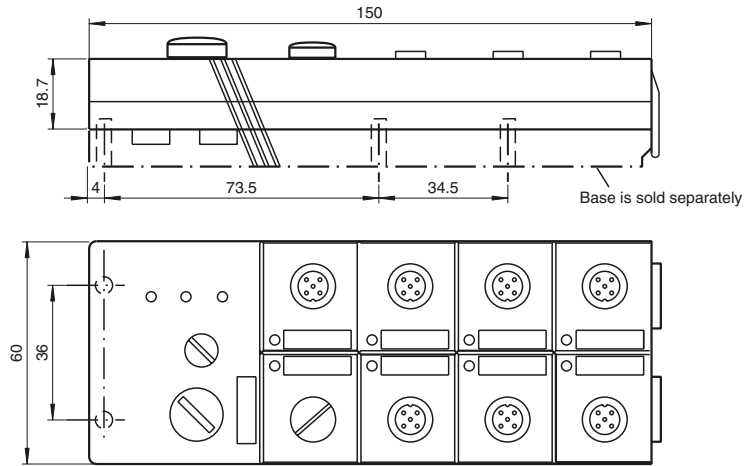




**Dimensions**



**Model number**

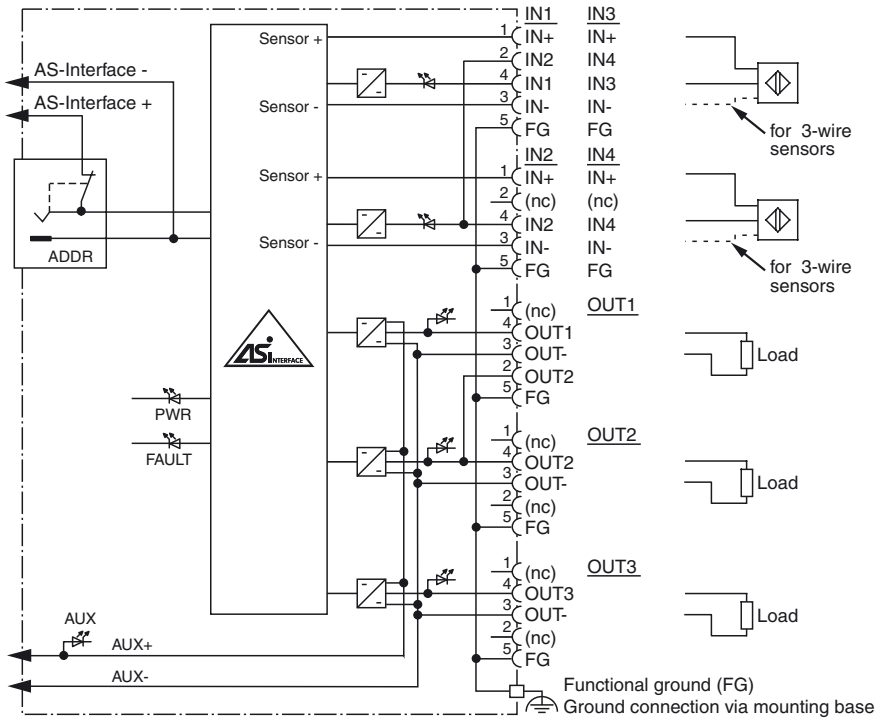
**VBA-4E3A-G2-ZA/EA2**

G2 flat module  
4 inputs (PNP) and 3 electronic outputs

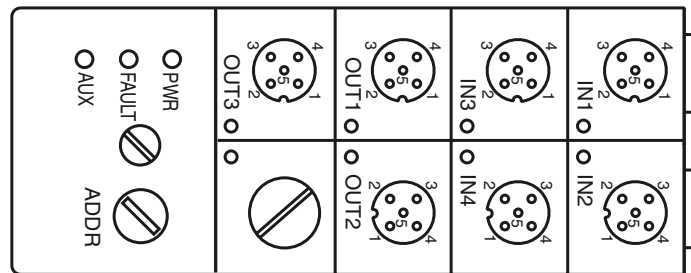
**Features**

- AS-Interface certificate
- Protection degree IP67
- A/B slave with extended addressing possibility for up to 62 slaves
- 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

**Electrical connection**



**Indicating / Operating means**



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**Technical data****General specifications**

|                               |           |
|-------------------------------|-----------|
| Slave type                    | A/B slave |
| AS-Interface specification    | V3.0      |
| Required master specification | ≥ V2.1    |
| UL File Number                | E87056    |

**Functional safety related parameters**

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 140 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

**Indicators/operating means**

|           |  |
|-----------|--|
| 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; LED green  |
| LED AUX   | ext. auxiliary voltage U <sub>AUX</sub> ; LED green  |
| LED IN    | switching state (input); 4 LED yellow  |
| LED OUT   | Switching state (output); 3 LED yellow   |

**Electrical specifications**

|                            |                  |  |
|----------------------------|------------------|--|
| Auxiliary voltage (output) | U <sub>AUX</sub> | 20 ... 30 V DC PELV<br>(protection class 3 according to VDE 0106/IEC 364-4-41) |
| Rated operational voltage  | U <sub>e</sub>   | 26.5 ... 31.6 V from AS-Interface  |
| Rated operational current  | I <sub>e</sub>   | ≤ 40 mA (without sensors) / max. 240 mA  |
| Protection class           |                  | III  |

**Input**

|                          |   |
|--------------------------|---|
| Number/Type              | 4 inputs for 2- or 3-wire sensors (PNP), DC<br>option 2 inputs for 4-wire sensors (PNP), DC                         |
| Supply                   | from AS-Interface   |
| Voltage                  | 21 ... 31 V   |
| Current loading capacity | ≤ 200 mA (T <sub>B</sub> ≤ 40 °C),<br>≤ 150 mA (T <sub>B</sub> ≤ 60 °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  |

**Output**

|             |   |
|-------------|---|
| Number/Type | 3 electronic outputs, PNP, overload and short-circuit proof |
| Supply      | from external auxiliary voltage U <sub>AUX</sub>            |
| Current     | 4 A total,<br>OUT 1, OUT 2: 2 A per output,<br>OUT 3: 1.5 A |
| Voltage     | ≥ (U <sub>AUX</sub> - 0.5 V)                                |

**Programming instructions**

|          |        |
|----------|--------|
| Profile  | S-7A.2 |
| IO code  | 7      |
| ID code  | A      |
| ID1 code | 7      |
| ID2 code | 2      |

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

**Parameter bits (programmable via AS-i) function**

|    |   |
|----|---|
| P0 | Communication monitoring<br>P0 = 0 monitoring = off, the outputs maintain the status if communication fails<br>P0 = 1 monitoring = on, i.e. if communication fails, the outputs are deenergised (basic setting) |
| P1 | Input filter<br>P1 = 0 input filter on, pulse suppression ≤ 2 ms<br>P1 = 1 input filter off (basic setting)   |
| P2 | Synchronous mode<br>P2 = 0 synchronous mode on<br>P2 = 1 synchronous mode off (basic setting)   |
| P3 | not used  |

**Ambient conditions**

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 60 °C (-13 ... 140 °F) |
| Storage temperature | -25 ... 85 °C (-13 ... 185 °F) |

**Mechanical specifications**

|                   |  |
|-------------------|--|
| Protection degree | IP67   |
| Connection        | cable piercing method<br>flat cable yellow/flat cable black<br>inputs/outputs: M12 round connector |
| Material          |  |
| Housing           | PBT  |
| Mass              | 150 g  |

**Function**

The VBA-4E3A-G2-ZA/EA2 is an AS-Interface module with 4 Inputs and 3 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 2 A or 1.5 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.

**Accessories****VBP-HH1-V3.0**

AS-Interface Handheld

**VAZ-PK-1,5M-V1-G**

Connection cable module/hand-held programming device

**VAZ-FK-ED-G2**

AS-Interface end seal for G2 modules

**Matching system components****U-G2FF**

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

| Mounting  | Mounting base                                       |
|---|---|
| <b>Compliance with standards and directives</b> |   |
| 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                                     |
| Protection degree                               | EN 60529:2000                                       |
| Fieldbus standard                               | EN 50295:1999, IEC 62026-2:2006                     |

### Notes

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).

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.