



## AS-Interface sensor/actuator module VBA-4E4A-KE1-Z/E2

- Housing with removable terminals
- Communication monitoring
- Inputs for 2-wire sensors and mechanical contacts
- Addressing jack
- Power supply of the inputs and outputs from the external auxiliary voltage
- Function display for bus, ext. auxiliary voltage, inputs and outputs

KE1 switch cabinet module, 4 inputs and 4 outputs



### Function

The AS-Interface Module VAA-4E4A-KE1-Z/E2 is a control cabinet with 4 inputs and 4 electronic outputs. The housing, only 22.5 mm in width and 48.5 mm in height, takes up little place in the switch cabinet. The module features an integrated addressing jack is mounted by snapping onto the 35 mm DIN rail in accordance with EN 50022.

For easy disconnection for commissioning and servicing, the connection is via plug-in black 4-pin spring terminals. The external auxiliary voltage, the AS-Interface cable, the inputs and outputs (IN and O), as well as the plus potential of the inputs (I+) and the minus potential of the outputs (O-) are connected with the module via double terminals.

The inputs and outputs and the connected sensors and actuators are supplied via external auxiliary power UAUX. Polarity reversal is signalled by a red light on the AUX-LED.

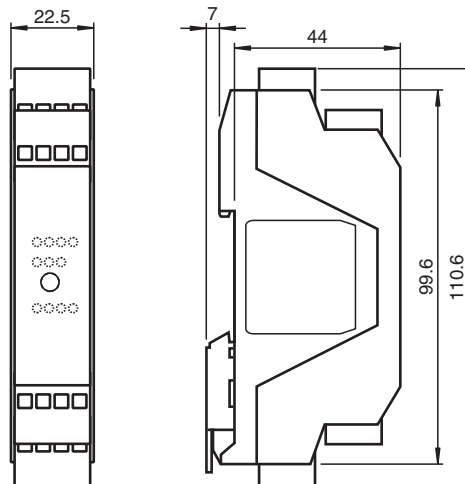
The current switching status is indicated for each input and output by means of an LED on the top of the module.

**Note:**

The device features communication monitoring. 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 outputs, e.g. due to short-circuiting, the FAULT-LED on the module flashes and a signal is communicated to the AS-Interface master via the "Peripheral error" function. Communication via the AS-Interface remains uninterrupted.

### 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  |
| IO code                        | 7        |

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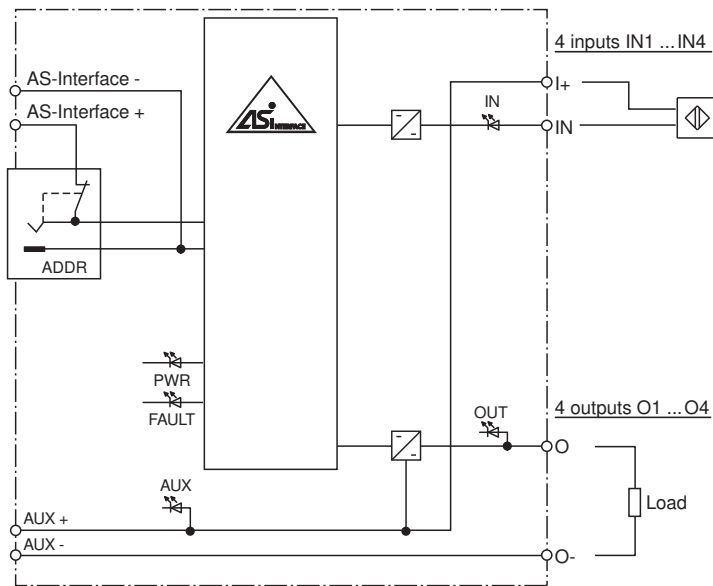
## Technical Data

|                                   |           |                                                                                                         |
|-----------------------------------|-----------|---------------------------------------------------------------------------------------------------------|
| 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 outputs |
| LED PWR                           |           | AS-Interface voltage; LED green                                                                         |
| 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                                                                   |
| LED OUT                           |           | Switching state (output); 4 LED yellow                                                                  |
| <b>Electrical specifications</b>  |           |                                                                                                         |
| 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           | $I_e$     | $\leq 40$ mA                                                                                            |
| Protection class                  |           | III                                                                                                     |
| Surge protection                  |           | $U_{AUX}$ , $U_{in}$ : Over voltage category III, safe isolated power supplies (PELV)                   |
| <b>Input</b>                      |           |                                                                                                         |
| Number/Type                       |           | 4 inputs for 2-wire sensors (PNP), DC or for mechanical contacts                                        |
| Supply                            |           | from external auxiliary voltage $U_{AUX}$                                                               |
| Input current                     |           | $\leq 8$ mA (limited internally)                                                                        |
| Switching point                   |           | according to DIN EN 61131-2 (Type 2)                                                                    |
| 0 (unattenuated)                  |           | $\leq 2$ mA                                                                                             |
| 1 (attenuated)                    |           | $\geq 4$ mA                                                                                             |
| Signal delay                      |           | $< 2$ ms (input/AS-Interface)                                                                           |
| Signal frequency                  |           | $\leq 250$ Hz                                                                                           |
| <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                           |           | 0.5 A per output , 2 A per module                                                                       |
| Usage category                    |           | DC-13                                                                                                   |
| <b>Directive conformity</b>       |           |                                                                                                         |
| Electromagnetic compatibility     |           |                                                                                                         |
| Directive 2014/30/EU              |           | IEC 62026-2:2015<br>EN 61326-1:2006                                                                     |
| <b>Standard conformity</b>        |           |                                                                                                         |
| Degree of protection              |           | EN 60529:2000                                                                                           |
| Fieldbus standard                 |           | EN 62026-2:2013                                                                                         |
| Input                             |           | EN 61131-2:2015                                                                                         |
| Emitted interference              |           | EN 55011:2009                                                                                           |
| AS-Interface                      |           | EN 62026-2:2013                                                                                         |
| Noise immunity                    |           | EN 61326-1:2006                                                                                         |
| <b>Ambient conditions</b>         |           |                                                                                                         |
| Ambient temperature               |           | -25 ... 60 °C (-13 ... 140 °F)                                                                          |
| Storage temperature               |           | -25 ... 85 °C (-13 ... 185 °F)                                                                          |
| Relative humidity                 |           | 90 % , noncondensing                                                                                    |
| Pollution degree                  |           | 2                                                                                                       |
| <b>Mechanical specifications</b>  |           |                                                                                                         |
| Degree of protection              |           | IP20                                                                                                    |

**Technical Data**

|            |                                                                                                                                                                                                                                                              |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connection | removable spring double terminals<br>rated connection capacity:<br>rigid/flexible (with and without wire-end ferrules): 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup><br>recommended tools for 1.5 mm <sup>2</sup> : PxC CRIMPFOX ZA3 or Weidmüller PZ 6 roto |
| Material   |                                                                                                                                                                                                                                                              |
| Housing    | PA 66-FR                                                                                                                                                                                                                                                     |
| Mass       | 80 g                                                                                                                                                                                                                                                         |
| Mounting   | DIN mounting rail                                                                                                                                                                                                                                            |

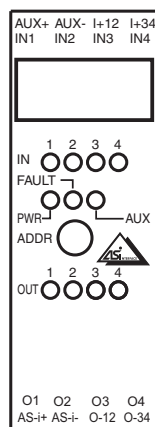
**Connection**



**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**



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## Programming

### Data bits

(function via AS-Interface)




| Data bit | Input | Output |
|----------|-------|--------|
| D0       | IN1   | O1     |
| D1       | IN2   | O2     |
| D2       | IN3   | O3     |
| D3       | IN4   | O4     |

### 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 $\leq 2$ 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>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-CHAIN-BU/BN70MM/1,0-25</b> | 25-point wiring link for control cabinet modules with screw terminals |