

AS-Interface sensor/actuator module VBA-4E3A-KE-ZE/R

- A/B node with extended addressing possibility for up to 62 nodes
- Housing with removable terminals
- Communication monitoring
- Inputs for 2- and 3-wire sensors
- Isolated relay output
- Addressing jack
- Supply of inputs external or from the module, as required
- Function display for bus, internal input supply, inputs and outputs

KE switch cabinet module, 4 inputs (PNP) and 3 relay outputs



Function

The AS-Interface VBA-4E3A-KE-ZE/R I/O module is a switch cabinet module with 4 inputs and 3 relay outputs. The housing, only 22.5 mm in width, takes up little place in the switch cabinet. The VBA-4E3A-KE-ZE/R can be mounted by snapping it onto the 35 mm carrier rail in accordance with EN 50022.

Plug-in terminals are used for connection. 4X terminal blocks (black) are used for the inputs. Double terminal blocks (red outputs, yellow AS-Interface) are used to connect outputs and the AS-Interface. This makes it possible to separate individual actuators or to supply power during commissioning or servicing.

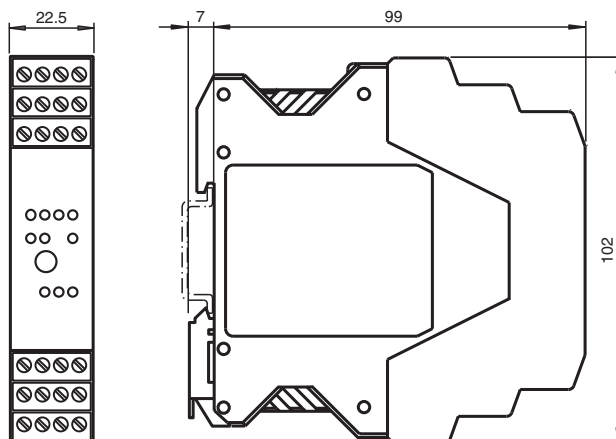
Either the module (from the AS-Interface) or an external power source are used to supply power to the inputs and the connected sensors. One switch in the device is used for switching. The selection of the internal input power supply is displayed on the INT LED. An LED on the front control plate is used to display the current switching state for each input and output.

Note:

The device is equipped with communication monitoring that turns off the outputs if no AS-Interface communication has taken place with the device for more than 40 ms.

An overload of the internal input supply is reported by the 'periphery error' to the AS-Interface master. Communication over the AS-Interface remains in effect.

Dimensions



Technical Data

General specifications	
Node type	A/B node
AS-Interface specification	V2.1
Required gateway specification	≥ V2.1
Profile	S-7.A.0
IO code	7

Technical Data

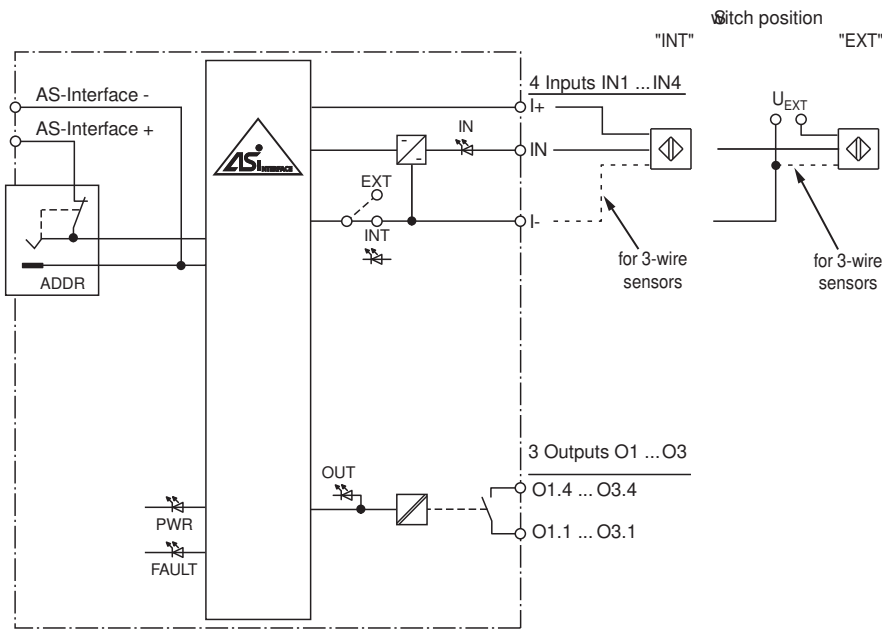
ID code		A
ID1 code		7
ID2 code		0
UL File Number		E106378
Indicators/operating means		
LED FAULT		Fault display; Red LED red: Communication fault or address is 0 red, flashing: Overload, internal input supply
LED INT		Internal input supply active; LED green
LED PWR		AS-Interface voltage; LED green
LED IN		switching state (input); 4 LED yellow
LED OUT		Switching state (output); 3 LED yellow
Electrical specifications		
Auxiliary voltage (input)	U_{EXT}	12 ... 30 V DC PELV
Rated operating voltage	U_e	26.5 ... 31.6 V from AS-Interface
Rated operating current	I_e	≤ 35 mA (without sensors) / max. 235 mA
Surge protection		O1 ... O3: Over voltage category II U_{EXT} , U_e : 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 (switch position INT, default settings) or external U_{EXT} (switch position EXT)
Voltage		21 ... 31 V DC (INT)
Current loading capacity		≤ 150 mA, overload- and short-circuit protected (INT)
Input current		≤ 8 mA (limited internally)
Switching point		according to DIN EN 61131-2 (Type 2)
0 (unattenuated)		≤ 2 mA
1 (attenuated)		≥ 4 mA
Signal delay		< 2 ms (input/AS-Interface)
Signal frequency		≤ 250 Hz
Output		
Number/Type		3 relay outputs, normally open
Supply		none
Nominal load		
Per contact		max. 2 A / 30 V DC; 2 A / 250 V AC
Per module		6 A
Minimum load		
Per contact		10 mA / 5 V DC
Short-circuit-proof		Contact: 500 A / 40 ms
Switching off power		500 VA
Switching delay		< 10 ms (AS-Interface/contact)
Usage category		DC-13 and AC-14
Switching frequency	f	< 20 Hz (without load) < 0.1 Hz (nominal load)
Switching		
Mechanical		30 x 10 ⁶
Electrical		1 x 10 ⁶ switching cycles (40 V DC, 2 A, ohmic) 0.5 x 10 ⁶ switching cycles (253 V AC, 2 A, cos φ = 1) 0.45 x 10 ⁶ switching cycles (253 V AC, 2 A, cos φ = 0.7)
Galvanic isolation		
Input/Output		IN1 ... IN4 to O1 ... O3: safe isolation acc. to EN 60947-1, rated insulation voltage 278 V AC
Input/AS-Interface		none
Output/Output		O1 to O2, O3: safe isolation according to EN 60947-1, rated insulation voltage 278 V AC O2 to O3: basic insulation according to EN 60947-1, rated insulation voltage 278 V AC

Release date: 2023-11-21 Date of issue: 2023-11-21 Filename: 114307_eng.pdf

Technical Data

Output/AS-Interface		safe isolation acc. to EN 60947-1, rated insulation voltage 278 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 62026-2:2013 EN 61000-6-2:2005, EN 61000-6-4:2007
Low voltage		
Directive 73/23/EEC		EN 60947-1:2007
Standard conformity		
Galvanic isolation		EN 60947-1
Electromagnetic compatibility		NAMUR NE 21: 1998-08
Degree of protection		EN 60529:2000
Pollution degree		EN 60947-5-1
Input		EN 61131-2:2004
Usage category		EN 60947-5-1
Emitted interference		EN 61000-6-4:2007
AS-Interface		EN 62026-2:2013
Noise immunity		EN 61000-6-2:2005
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		≤ 2000 m above MSL
Pollution degree		2
Mechanical specifications		
Degree of protection		IP20
Connection		removable terminals rated connection capacity: rigid/flexible (with and without wire-end ferrules): 0.25 mm ² ... 2.5 mm ² for multiple-wire connection with two wires of equal cross-section: flexible with twin wire-end ferrules: 0.5 mm ² ... 1.5 mm ²
Material		
Housing		PA 66-FR
Mass		170 g
Mounting		DIN mounting rail
Tightening torque of clamping screws		0.5 Nm ... 0.6 Nm

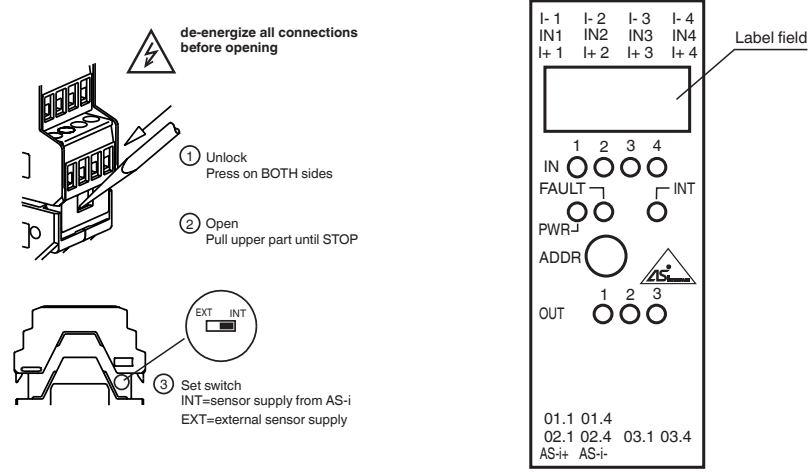
Connection



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 bits	Input	Output
D0	IN1	O1
D1	IN2	O2
D2	IN3	O3
D3	IN4	-

Parameter bits
(programmable via AS-Interface)

Parameter bits	Function
P0	not used

Release date: 2023-11-21 Date of issue: 2023-11-21 Filename: 114307_eng.pdf

Programming

Parameter bits	Function
P1	not used
P2	not used
P3	not used

Release date: 2023-11-21 Date of issue: 2023-11-21 Filename: 114307_eng.pdf