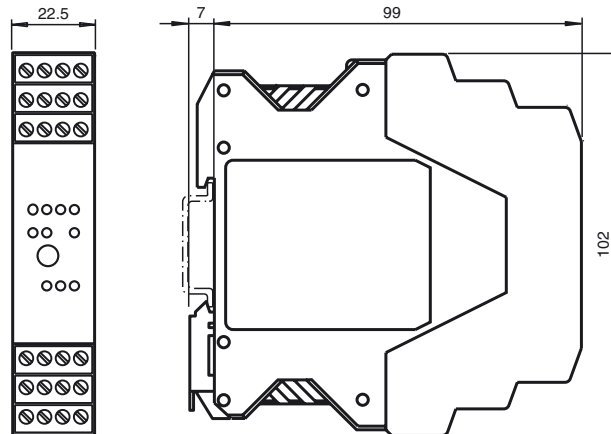




62
Spec 2.1

Dimensions



Electrical connection

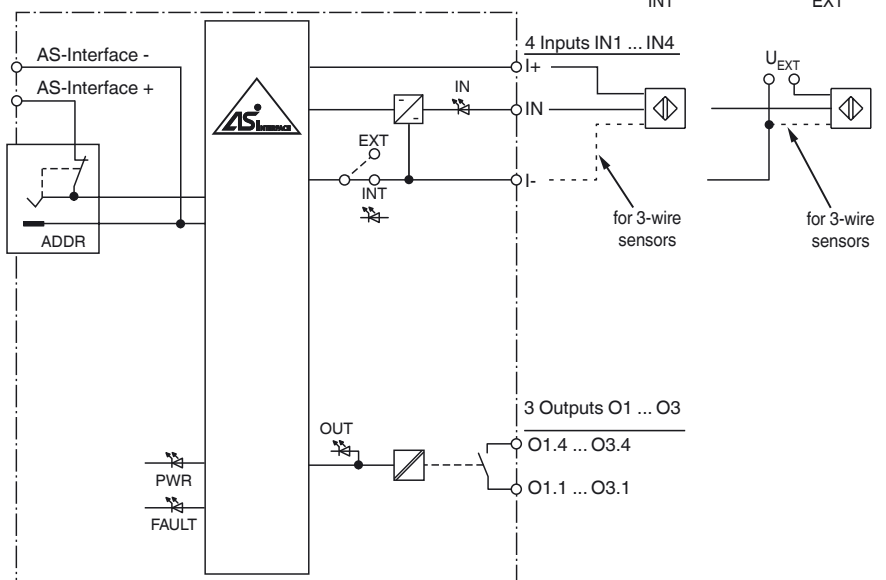
Model number

VBA-4E3A-KE-ZE/R

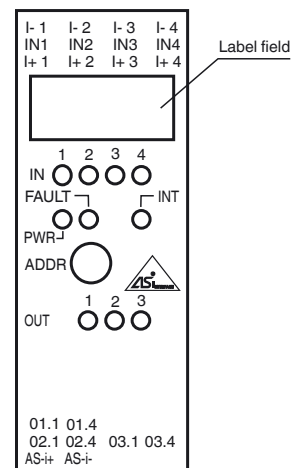
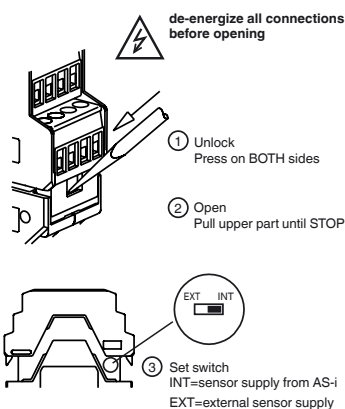
KE switch cabinet module
4 inputs (PNP) and 3 relay outputs

Features

- A/B slave with extended addressing possibility for up to 62 slaves
- 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



Indicating / Operating means



Release date: 2019-01-09 10:27 Date of issue: 2019-01-09 114307_eng.xml

Technical data

General specifications

Slave type	A/B slave
AS-Interface specification	V2.1
Required master specification	≥ V2.1
UL File Number	E106378

Functional safety related parameters

MTTF _d	330 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

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
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

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.

Accessories

VBP-HH1-V3.0-KIT

AS-Interface Handheld with accessory

VBP-HH1-V3.0

AS-Interface Handheld

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

Adapter cable module/hand-held programming device

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		
Programming instructions			
Profile	S-7.A.0		
IO code	7		
ID code	A		
ID1 code	7		
ID2 code	0		
Data bits (function via AS-Interface)	input	output	
D0	IN1	O1	
D1	IN2	O2	
D2	IN3	O3	
D3	IN4	-	
Parameter bits (programmable via AS-i)	function		
P0	not used		
P1	not used		
P2	not used		
P3	not used		
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		

Notes

Installation, commissioning, maintenance:

The device has to be installed into a separate electrical operation facility with access only for electrical professionals or instructed persons.

The plug connectors must not be connected or disconnected under power.

The operator is responsible for complying with rights, guidelines and standards according to the intended or planned use.

Bundled devices:

Isolation to external surfaces: basic isolation according to EN 60947-1, no basic isolation to terminals.

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.