Model number

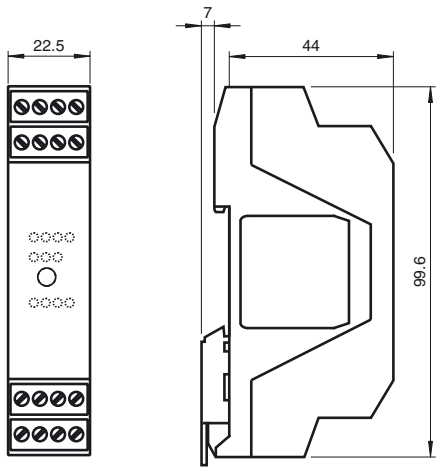
VBA-4E2A-KE1-Z/E2

KE1 switch cabinet module
4 inputs and 2 outputs

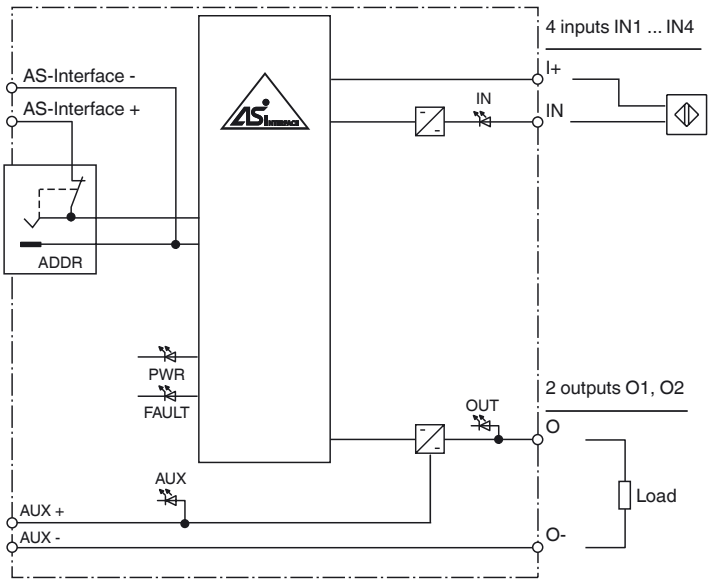
Features

- A/B slave with extended addressing possibility for up to 62 slaves
- Housing with removable terminals
- Communication monitoring
- Inputs for 2-wire sensors and mechanical contacts
- Addressing jack
- Power supply of outputs from the external auxiliary voltage
- Power supply of inputs from the module
- Function display for bus, ext. auxiliary voltage, inputs and outputs

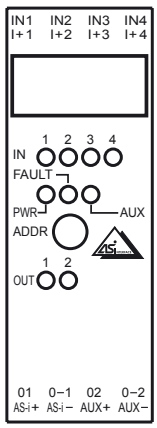
Dimensions



Electrical connection



Indicating / Operating means



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Technical data

General specifications		
Slave type		A/B slave
AS-Interface specification		V2.1
Required master specification		≥ V2.1
UL File Number		E87056
Functional safety related parameters		
$MTTF_d$		270 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
LED FAULT		error display; LED red red: communication error or address is 0 red flashing: overload of outputs
LED PWR		AS-Interface voltage; LED green
LED AUX		ext. auxiliary voltage U_{AUX} ; LED green
LED IN		switching state (input); 4 LED yellow
LED OUT		Switching state (output); 2 LED yellow
Electrical specifications		
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	≤ 25 mA (without sensors) / max. 60 mA
Protection class		III
Surge protection		U_{AUX}, U_{in}: Over voltage category III, safe isolated power supplies (PELV)
Input		
Number/Type		4 inputs for 2-wire sensors (PNP), DC or for mechanical contacts
Supply		from AS-Interface
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		2 electronic outputs, PNP, overload and short-circuit proof
Supply		from external auxiliary voltage U_{AUX}
Current		O1/O2 max. 1.5 A, total 3 A (T_B ≤ 40 °C) O1/O2 max. 1 A, total 2 A (T_B ≤ 70 °C)
Voltage		≥ (U_{AUX} - 0.5 V)
Usage category		DC-13
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	-
D3	IN4	-

Parameter bits (programmable via AS-i)	**function**
P0	Communication monitoring P0 = 0 monitoring = off, the outputs maintain the status if communication fails P0 = 1 monitoring = on, i.e. if communication fails, the outputs are deenergised (basic setting)
P1	Input filter P1 = 0 input filter on, pulse suppression ≤ 2 ms P1 = 1 input filter off (basic setting)
P2	Synchronous mode P2 = 0 synchronous mode on P2 = 1 synchronous mode off (basic setting)
P3	not used

Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-25 ... 85 °C (-13 ... 185 °F)
Relative humidity		90 % , noncondensing
Pollution Degree		2
Mechanical specifications		
Protection degree		IP20

Function

The VBA-4E2A-KE1-Z/E2 AS-interface coupling module is a cabinet module with 4 inputs and 2 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 is mounted by snapping onto the 35 mm DIN rail in accordance with EN 50022. Plug-in terminals are used for connection. 4-way terminal blocks (black) are used for the inputs. The connection of the outputs and the external auxiliary supply and AS-Interface is made through the 2-way terminal blocks (outputs black, auxiliary voltage gray and AS-Interface yellow). This makes it possible to separate individual actuators or to supply power during commissioning or servicing.
The supply of the inputs and the connected sensors occurs internally via the module (from AS-Interface). 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 a watchdog, which switches the outputs to their de-energized state, when on the AS-interface cable is no communication for more than 40 ms.
An overload of the outputs 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

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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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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	80 g
Mounting	DIN mounting rail
Compliance with standards and directives	
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
AS-Interface	EN 50295:1999
Input	EN 61131-2:2007
Protection degree	EN 60529:2000

Notes

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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