Dimensions
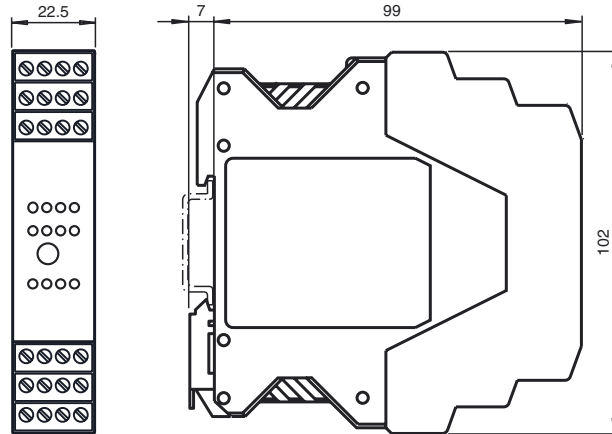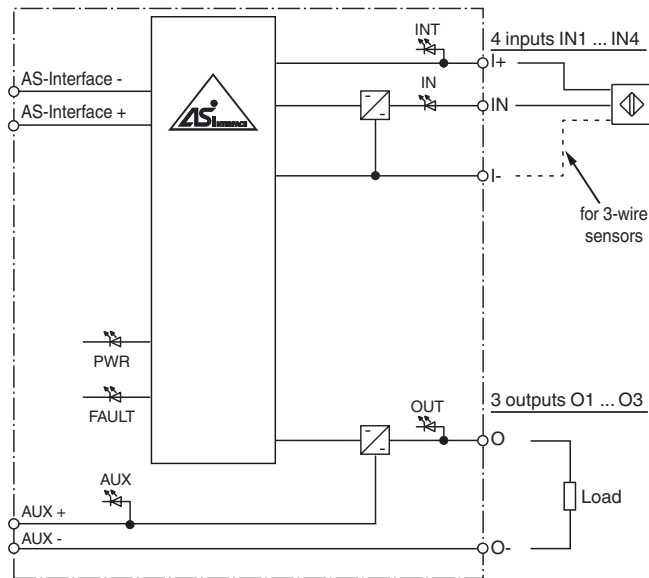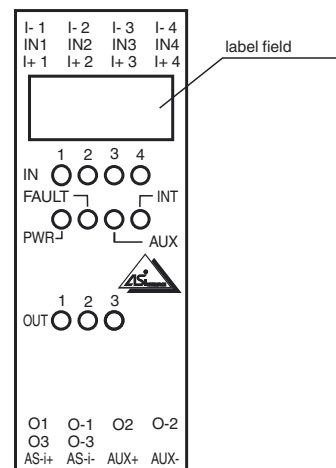

Model number

VBA-4E3A-KE-ZEJ/E2L-LEN

KE switch cabinet module
4 inputs and 3 outputs

Features

- Housing with removable and color coded terminals
- Communication monitoring
- Inputs for 2- and 3-wire sensors
- Power supply of outputs from the external auxiliary voltage
- Supply of sensors from the module
- Function display for bus, external auxiliary voltage, internal sensor supply, inputs, and outputs
- Red LED per channel, lights up in the event of output overload
- Switchable lead breakage detection (outputs)
- A/B slave with extended addressing possibility for up to 62 slaves
- PCB lacquer-coated

Electrical connection

4 inputs IN1 ... IN4

for 3-wire sensors

3 outputs O1 ... O3

Indicating / Operating means

I- 1	I- 2	I- 3	I- 4
IN1	IN2	IN3	IN4
I+ 1	I+ 2	I+ 3	I+ 4

label field

IN 1 2 3 4
FAULT — INT
PWR — AUX

OUT 1 2 3

O1	O-1	O2	O-2
O3	O-3		
AS-i+	AS-i-	AUX+	AUX-

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical data

General specifications

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

Indicators/operating means

LED FAULT	Error display; red LED red: communication error, i.e. address is 0 red flashing: overload internal input supply, i.e. overload or lead interruption outputs
LED INT	Internal input supply active; LED green
LED PWR	AS-Interface voltage; green LED green: voltage OK flashing green: address 0
LED AUX	ext. auxiliary voltage U_{AUX}; dual LED green/red green: voltage OK red: reverse voltage
LED IN	switching state (input); 4 LED yellow
LED OUT	Switching state (output); 3 LED yellow/red yellow: Output active red: Output overload or lead breakage

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	$\leq$ 35 mA (without sensors) / max. 190 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- or 3-wire sensors (PNP), DC
Supply	from AS-Interface
Voltage	21 ... 31 V DC
Current loading capacity	$\leq$ 150 mA, overload and short-circuit protected
Input current	$\leq$ 9 mA (limited internally)
Switching point	according to DIN EN 61131-2 (Type 2)
0 (unattenuated)	$\leq$ 3 mA
1 (attenuated)	$\geq$ 5 mA
Signal delay	< 1 ms (input/AS-Interface)

Output

Number/Type	3 electronic outputs, PNP, overload and short-circuit proof
Supply	from external auxiliary voltage U_{AUX}
Current	O1 max. 3 A, O2/O3 max. 1.5 A, total 6 A ($T_B \leq$ 40 °C) O1 max. 2 A, O2/O3 max. 1 A, total 4 A ($T_B \leq$ 60 °C)
Voltage	$\geq$ (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	O3
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 $\leq$ 2 ms P1 = 1 input filter off (basic setting)
P2	Lead breakage outputs P2 = 0 lead breakage on P2 = 1 lead breakage off (basic setting)
P3	not used

Ambient conditions

Ambient temperature	-25 ... 60 °C (-13 ... 140 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
Relative humidity	90 % , noncondensing
Pollution Degree	2

Mechanical specifications

Protection degree	IP20

Function

The AS-Interface I/O module VBA-4E3A-KE-ZEJ/E2L-LEN is a control cabinet module with 4 inputs and 3 electronic outputs. The housing is only 22.5 mm wide and takes up little space in the control cabinet. The module is mounted by snapping onto the 35-mm DIN rail in compliance with EN 50022.

The connection is made via plug-in terminals. Four-terminal blocks (black) are used for the inputs. The connection of the outputs, the external bulk power and AS Interface is via 2-terminal blocks (outputs black, bulk power grey, AS-Interface yellow).

The supply to the inputs and the connected sensors is fed from the internal supply of the module (from the AS-Interface). The internal input supply is displayed via the INT LED. The IN and OUT LEDs display the current switching status of the relevant inputs and outputs. The OUT LED also indicates an overload or a lead breakage at the associated output.

Note:

The device is equipped with a communication monitor, which deactivates the outputs if the AS-Interface does not communicate with the module for more than 40 ms. The communication monitor can be deactivated via the parameter P0. Filters that suppress pulses with a duration of 2 ms or less at the inputs can be connected via the parameter P1.

Parameter P2 activates a lead breakage detection system for the outputs. This function detects and reports a missing load, providing the relevant output is deactivated. The associated OUT LED and the 'peripheral fault' function display the signal transmitted to the AS-Interface master. A signal indicating an overload of the internal input supply or the outputs is also transmitted to the AS-Interface master via the 'peripheral fault' function. Communication via the AS-Interface continues even if a peripheral fault is set.

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

Connection	removable terminals rated connection capacity: rigid/flexible (with and without wire-end ferrules): $0.25 \text{ mm}^2 \dots 2.5 \text{ mm}^2$ for multiple-wire connection with two wires of equal cross-section: flexible with twin wire-end ferrules: $0.5 \text{ mm}^2 \dots 1.5 \text{ mm}^2$
Material	
Housing	PA 66-FR
Mass	150 g
Mounting	DIN mounting rail
Compliance with standards and directives	
Directive conformity	
EMC Directive 2004/108/EC	EN 61000-6-2:2005, EN 61000-6-4:2007, EN 50295:1999
Standard conformity	
Noise immunity	EN 61000-6-2:2005, EN 61326-1:2006, EN 50295:1999
Emitted interference	EN 61000-6-4:2007
Input	EN 61131-2:2004
Protection degree	EN 60529:2000
Fieldbus standard	EN 50295:1999, IEC 62026-2:2006

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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