

AS-Interface sensor/actuator module VBA-4E3A-KE-ZEJ/E2L-LEN

- 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 node with extended addressing possibility for up to 62 nodes

KE switch cabinet module, 4 inputs and 3 outputs



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.

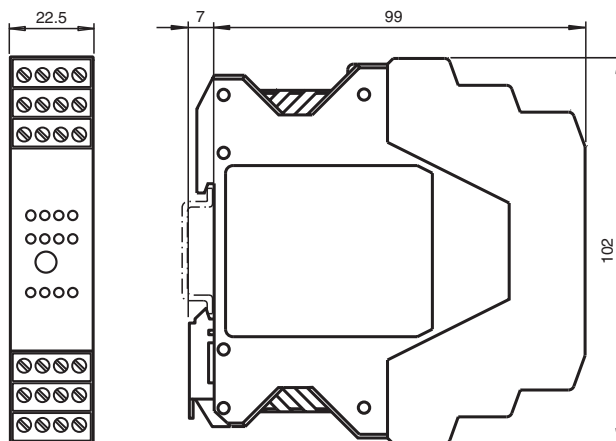
The communication monitor can be deactivated via the parameter P0.

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.

Dimensions



Technical Data

General specifications

Node type	A/B node
AS-Interface specification	V3.0

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

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Technical Data

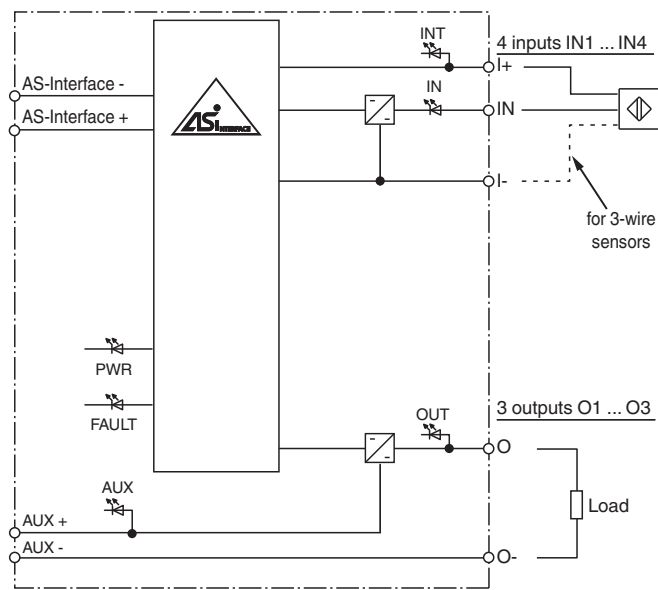
Required gateway specification		≥ V2.1
UL File Number		E223772
Indicators/operating means		
LED FAULT		Error display; red LED red: communication error, i.e. address is 0 red flashing: overload internal input supply, i.e. overload or lead interruption outputs
LED INT		Internal input supply active; LED 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	≤ 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		≤ 150 mA, overload and short-circuit protected
Input current		≤ 9 mA (limited internally)
Switching point		according to DIN EN 61131-2 (Type 2)
0 (unattenuated)		≤ 3 mA
1 (attenuated)		≥ 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}
Voltage		≥ (U_{AUX} - 0.5 V)
Current		O1 max. 3 A, O2/O3 max. 1.5 A, total 6 A ($T_B \leq 40^\circ\text{C}$) O1 max. 2 A, O2/O3 max. 1 A, total 4 A ($T_B \leq 60^\circ\text{C}$)
Usage category		DC-13
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 62026-2:2013 EN 61000-6-2:2005, EN 61000-6-4:2007
Standard conformity		
Degree of protection		EN 60529:2000
Fieldbus standard		EN 62026-2:2013
Input		EN 61131-2:2004
Emitted interference		EN 61000-6-4:2007
AS-Interface		EN 62026-2:2013
Noise immunity		EN 61000-6-2:2005, EN 61326-1:2006, EN 62026-2:2013
Programming instructions		
Profile		S-7.A.0
IO code		7
ID code		A
ID1 code		7
ID2 code		0

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Data bits (function via AS-Interface)	InputOutput
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 (default settings)
P1	Input filter P1 = 0 input filter on, pulse suppression ≤ 2 ms P1 = 1 input filter off (default settings)
P2	Lead breakage outputs P2 = 0 lead breakage on P2 = 1 lead breakage off (default settings)
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	150 g
Dimensions	
Height	99 mm
Width	22.5 mm
Length	102 mm
Mounting	DIN mounting rail
Tightening torque of clamping screws	0.5 Nm ... 0.6 Nm

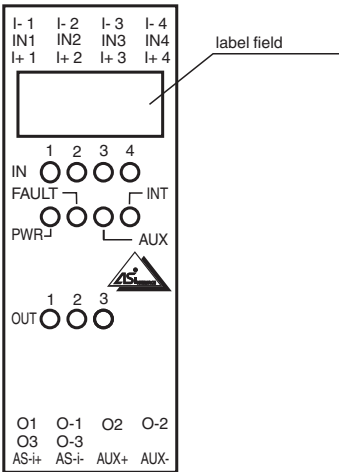
Connection



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



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