

## AS-Interface analog module

### VBA-4A-KE5-IJL/UJL

- Housing with push-in connection technology and mechanically coded terminal blocks
- Housing width 19 mm, installation in the switch cabinet on DIN mounting rail
- Power supply of outputs external or from the module, as required
- Function indicator for the bus, external auxiliary voltage, internal output voltage, and outputs

Switch cabinet module Four analog outputs



### Function

The AS-Interface connecting module VBA-4A-KE5-IJL/UJL is a switch cabinet module with 4 analog outputs. The housing is only 19 mm wide and takes up little space in the switch cabinet. The module is mounted by snapping it onto the 35 mm DIN rail in compliance with EN 50022. The connection is made via removable 4-pin push-in terminal blocks. For AS-i+, AS-i-, AUX+, and AUX-, two connections are available in each case; these connections are bridged in the terminal block. If the terminal block is disconnected from the module, the link between these connections is retained. The terminal blocks are mechanically coded.

The supply to the outputs and the connected actuators can be fed either from the internal supply of the module from the AS-Interface or via the external UAUX voltage source. A switch located on the side of the module changes the source.

The internal output supply is displayed via the INT LED. The relevant OUT LED displays the current switching status of the outputs. The OUT LEDs also indicate a lead breakage or an output value outside of the value range of the output.

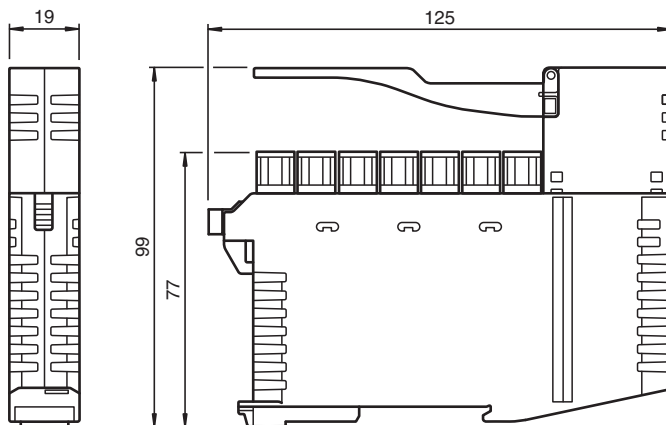
#### Notes:

The device is equipped with a communication monitor, which sets the outputs to zero 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. The output mode of current or voltage output is configured via the parameters P1 and P3 or via the terminals CON1 and CON2.

A wire break at the current output, an output value outside of the value range, or an overload of the actuator supply cause a peripheral fault. The parameter P2 determines whether a peripheral fault is reported to the AS-Interface master. The communication via AS-Interface remains unaffected.

If an overload occurs on the actuator supply, the outputs are set to zero.

### Dimensions



### Technical Data

#### General specifications

Node type	Standard node
AS-Interface specification	V3.0
Required gateway specification	≥ V2.1

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

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## Technical Data

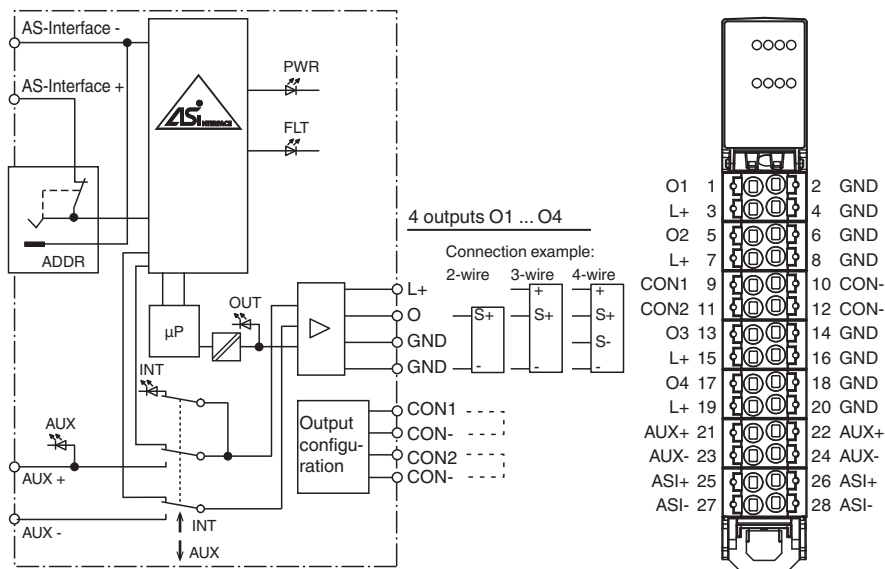
UL File Number		E223772
MTBF		115 a
<b>Indicators/operating means</b>		
LED FAULT		Fault indication: red LED Red: communication error or address is 0 Red flashing: peripheral fault
LED INT		Internal output voltage active; green LED
LED PWR		AS-Interface voltage; green LED Green: voltage OK Flashing green: address 0 or peripheral error
LED AUX		ext. auxiliary voltage $U_{AUX}$ ; dual LED green/red green: voltage OK red: reverse voltage
LED OUT		Status of output signal; yellow LED Yellow: Output value within range Yellow flashing: lead breakage (on current output) or output value out of range
<b>Electrical specifications</b>		
Auxiliary voltage (output)	$U_{AUX}$	24 V DC $\pm$ 15 % PELV
Rated operating voltage	$U_e$	26.5 ... 31.6 V from AS-Interface
Rated operating current	$I_e$	$\leq$ 75 mA (without outputs) / max. 200 mA
Protection class		III
Current consumption		$I_{AUX} \leq$ 650 mA
Surge protection		$U_{AUX}$ , $U_e$ : overvoltage category II, safe isolated power supplies (PELV)
<b>Output</b>		
Number/Type		4 analog outputs Current: 0 ... 20 mA Voltage: 0 ... 10 V
Supply		From AS-Interface (switch setting INT, default setting) or from auxiliary voltage $U_{AUX}$ (switch setting AUX)
Load		voltage output: min. 1 k $\Omega$ current output: max. 600 $\Omega$
Current loading capacity		$\leq$ 100 mA (signal current + actuator power supply) from AS-Interface; overload-proof and short-circuit proof $\leq$ 600 mA (signal current + actuator power supply) from external auxiliary voltage $U_{AUX}$ , overload-proof and short-circuit proof
Resolution		Voltage output: 3 mV Current output: 6 $\mu$ A
Accuracy		0.15 % of full-scale value
Temperature influence		1 $\mu$ A/K or 0,3 mV/K
Short-circuit current		voltage output: max. 22 mA
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 62026-2:2013
<b>Standard conformity</b>		
Degree of protection		EN 60529:2000
Fieldbus standard		EN 62026-2:2013
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
<b>Programming instructions</b>		
Profile		S-7.3.6
IO code		7
ID code		3
ID1 code		F
ID2 code		6
<b>Data bits</b> (function via AS-Interface)		The transfer of the data value is based on AS-Interface Profile 7.3.
<b>Parameter bits</b> (programmable via AS-i)		<b>function</b>
P0		Watchdog: P0=1 (default), watchdog active P0=0, watchdog inactive

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**Technical Data**

P1	Output mode: P1=1 (default), 4x current outputs P1=0, 4x voltage outputs
P2	Indication of peripheral fault: P2=1 (default), peripheral fault is reported P2=0, peripheral fault is not reported
P3	Automatic mode: P3=1 (default), manual setting of output mode P3=0, automatic load detection (mixed mode possible)
<b>Ambient conditions</b>	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
Relative humidity	85 % , noncondensing
Climatic conditions	For indoor use only
Altitude	≤ 2000 m above MSL
Shock and impact resistance	15 g, 11 ms in 6 spatial directions, 3 shocks 10 g, 16 ms in 6 spatial directions, 1000 shocks
Vibration resistance	0.35 mm 10 ... 57 Hz , 5 g 57 ... 150 Hz, 20 cycles
Pollution degree	2
<b>Mechanical specifications</b>	
Degree of protection	IP20
Connection	Removable push-in terminals rated connection capacity: rigid: 0.20 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> flexible (without wire end ferrule): 0.20 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> flexible (with wire end ferrule): 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
<b>Material</b>	
Housing	PA 66-FR
Mass	110 g
Mounting	DIN mounting rail
Note	Max. length of jumpers = 5 cm

**Connection**

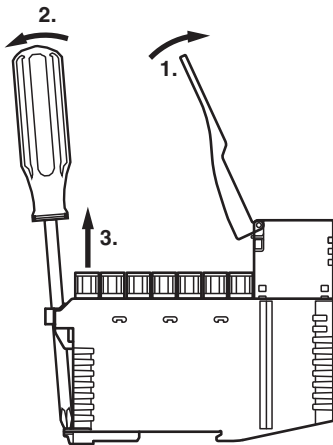
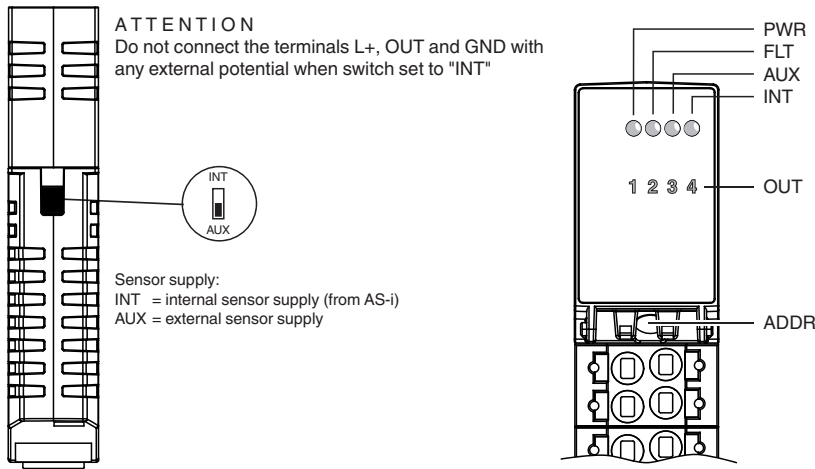


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**Connection**

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**



**Accessories**

	<b>VBP-HH1-V3.0-KIT</b>	AS-Interface Handheld with accessory
	<b>VAZ-PK-1,5M-V1-G</b>	Adapter cable module/hand-held programming device
	<b>VAZ-BRIDGE-BU/BN60MM/0,75-100</b>	Jumper for switch cabinet modules with spring terminals or screw terminals

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## Configuration

### Output mode

CON1	CON2	P1	P3	Output mode
Open	Open	1	1	4 x current
Open	Open	0	1	4 x voltage
Open	Open	1	0	Automatic mode
Open	Open	0	0	Reserved
CON-	Open	x	x	4 x voltage
Open	CON-	x	x	Automatic mode
CON-	CON-	x	x	Reserved

Do not connect the CON1, CON2 and CON- connections with external potentials. The length of the jumpers must not exceed 5 cm.