Model number

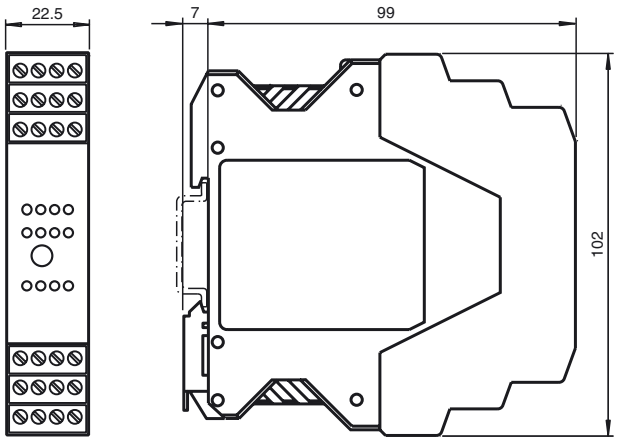
VAA-4E4A-KE-ZE/E2

KE switch cabinet module
4 inputs and 4 outputs

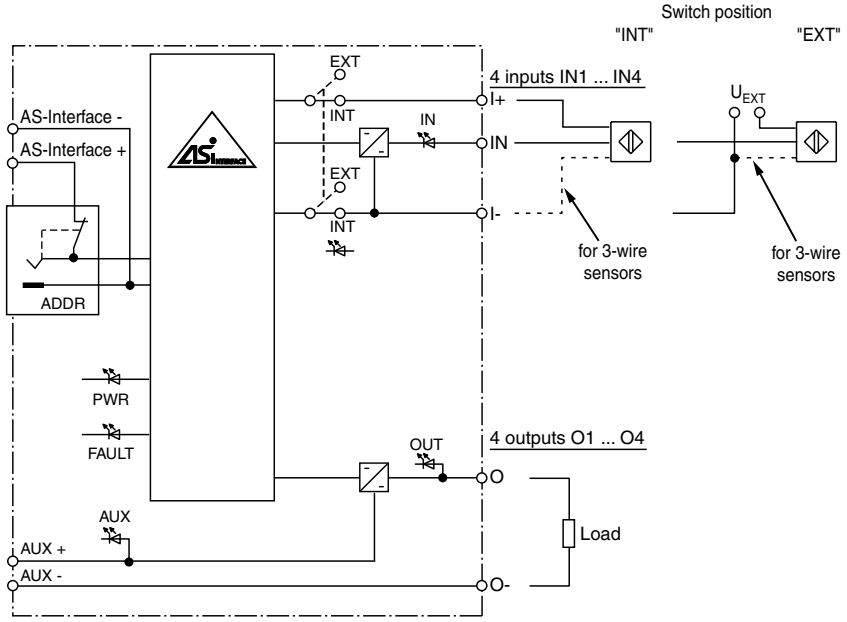
Features

- Housing with removable, mechanical and color coded terminals
- Communication monitoring
- Inputs for 2- and 3-wire sensors
- Addressing jack
- Power supply of outputs from the external auxiliary voltage
- Selectable supply to the sensors: External or from the module
- Function display for bus, external auxiliary voltage, internal sensor supply, inputs, and outputs

Dimensions



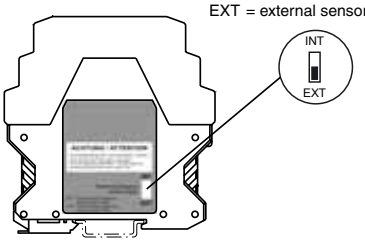
Electrical connection

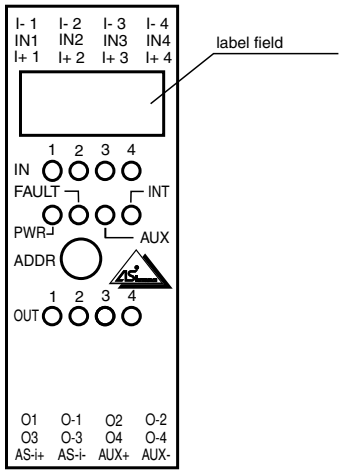


Indicating / Operating means

ATTENTION
Do not connect the terminals I+, IN and I- with any external potential when switch set to "INT"

Sensor supply:
INT = internal sensor supply (from AS-i)
EXT = external sensor supply





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Technical data

General specifications		
Slave type		Standard slave
AS-Interface specification		V2.1
Required master specification		≥ V2.0
UL File Number		E87056
Indicators/operating means		
LED FAULT		Fault display; Red LED red: Communication fault or address is 0 red, flashing: Overload, internal input supply or outputs
LED INT		Internal input supply active; LED green
LED PWR		AS-Interface voltage; LED green
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); 4 LED yellow
Electrical specifications		
Auxiliary voltage (input)	U_{EXT}	12 ... 30 V DC PELV
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_{EXT}, U_{AUX}, 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		4 electronic outputs, PNP, overload and short-circuit proof
Supply		from external auxiliary voltage U_{AUX}
Current		O1 ... O4 max. 0.7 A, Sum 2.8 A
Voltage		≥ (U_{AUX} - 0.5 V)
Usage category		DC-13
Programming instructions		
Profile		S-7.0
IO code		7
ID code		0
ID1 code		F
ID2 code		E
Data bits (function via AS-Interface)		**input** / **output**
D0		IN1 / O1
D1		IN2 / O2
D2		IN3 / O3
D3		IN4 / O4
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		90 % , noncondensing
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 mm² ... 2.5 mm² for multiple-wire connection with two wires of equal cross-section: flexible with twin wire-end ferrules: 0.5 mm² ... 1.5 mm²
Material		
Housing		PA 66-FR
Mass		150 g
Mounting		DIN mounting rail

Function

The VAA-4E4A-KE-ZE/E2 AS-Interface I/O module is a cabinet module with 4 inputs and 4 electronic outputs. The only 22.5 mm width housing requires not much space in the switch cabinet. The module is installed by snapping on the 35 mm DIN Rail in accordance with EN 50022.
The connection is made through plug-in terminals. For the inputs and outputs 4-way terminal blocks (black) are used. The connection of the external auxiliary supply and AS-Interface is made through the 2-way-terminal blocks (auxiliary supply gray, AS-Interface yellow). In order to avoid exchanges, the terminals for inputs and outputs are coded mechanically.
The power supply of the inputs and the connected sensors can be made as required via the internal supply of the module (AS-Interface) or via an external voltage source. The switching is carried out by means of a switch that is positioned at the side of the module. The selection of the internal input supply is indicated via the LED INT. The current switching state of each input and output is indicated by the resp. LED IN and OUT.

Note:
The device is equipped with a communication monitoring, which switches the outputs to their de-energized state, when there is no AS-Interface communication with the module for more than 40 ms.
An overloading of the internal input supply or of the outputs will be reported via the function 'peripheral error' to the AS-Interface master. The communication via the AS-Interface remains intact.

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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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
Emitted interference	EN 61000-6-4:2007
Input	EN 61131-2:2004
Degree of protection	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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