AS-Interface sensor/actuator module

VAA-4E4A-KE1-Z/E2

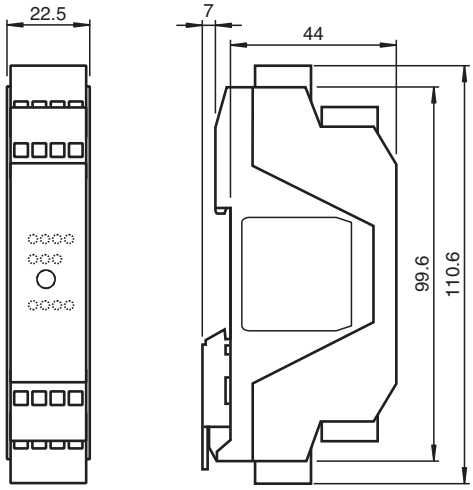
- Housing with removable terminals
- Communication monitoring
- Inputs for 2-wire sensors and mechanical contacts
- Addressing jack
- Power supply of the inputs and outputs from the external auxiliary voltage
- Function display for bus, ext. auxiliary voltage, inputs and outputs

KE1 switch cabinet module, 4 inputs and 4 outputs

Function

The AS-Interface Module VAA-4E4A-KE1-Z/E2 is a control cabinet with 4 inputs and 4 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 features an integrated addressing jack is mounted by snapping onto the 35 mm DIN rail in accordance with EN 50022.
For easy disconnection for commissioning and servicing, the connection is via plug-in black 4-pin spring terminals. The external auxiliary voltage, the AS-Interface cable, the inputs and outputs (IN and O), as well as the plus potential of the inputs (I+) and the minus potential of the outputs (O-) are connected with the module via double terminals.
The inputs and outputs and the connected sensors and actuators are supplied via external auxiliary power UAUX. Polarity reversal is signalled by a red light on the AUX-LED.
The current switching status is indicated for each input and output by means of an LED on the top of the module.
Note:
The device features communication monitoring. It switches off the power to the outputs when no communication has occurred on the AS-Interface cable for more than 40 ms.
In the event of overloading of the outputs, e.g. due to short-circuiting, the FAULT-LED on the module flashes and a signal is communicated to the AS-Interface master via the "Peripheral error" function. Communication via the AS-Interface remains uninterrupted.

Dimensions



Technical Data

General specifications	
Node type	Standard node
AS-Interface specification	V3.0
Required gateway specification	≥ V2.0
Profile	S-7.0
IO code	7

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 186880_eng.pdf

Technical Data

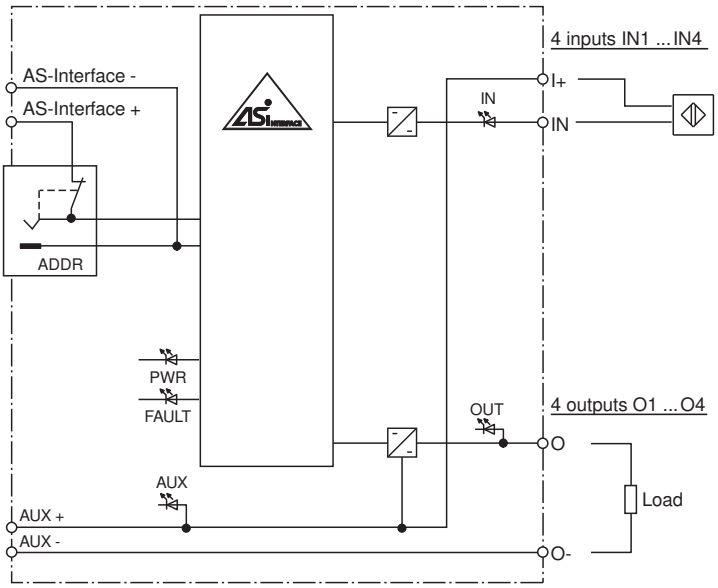
ID code		0
ID1 code		F
ID2 code		E
UL File Number		E87056
Indicators/operating means		
LED FAULT		error display; LED red red: communication error or address is 0 red flashing: overload of outputs
LED PWR		AS-Interface voltage; LED green
LED AUX		ext. auxiliary voltage U_{AUX}; dual LED green/red green: 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 (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	≤ 40 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 external auxiliary voltage U_{AUX}
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}
Voltage		≥ (U_{AUX} - 0.5 V)
Current		0.5 A per output , 2 A per module
Usage category		DC-13
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		IEC 62026-2:2015 EN 61326-1:2006
Standard conformity		
Degree of protection		EN 60529:2000
Fieldbus standard		EN 62026-2:2013
Input		EN 61131-2:2015
Emitted interference		EN 55011:2009
AS-Interface		EN 62026-2:2013
Noise immunity		EN 61326-1:2006
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

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 186880_eng.pdf

Technical Data

Connection		removable spring double terminals rated connection capacity: rigid/flexible (with and without wire-end ferrules): 0.25 mm² ... 1.5 mm² recommended tools for 1.5 mm²: PxC CRIMPFOX ZA3 or Weidmüller PZ 6 roto
Material		
Housing		PA 66-FR
Mass		80 g
Mounting		DIN mounting rail

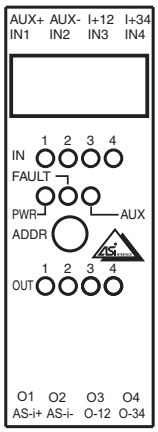
Connection



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



Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 186880_eng.pdf

Programming

Data bits
(function via AS-Interface)

Data bit	Input	Output
D0	IN1	O1
D1	IN2	O2
D2	IN3	O3
D3	IN4	O4

Parameter bits
(programmable via AS-Interface)

Parameter bit	Function
P0	Communication monitoring P0=0 monitoring off, the outputs maintain the status if communication fails P0=1 monitoring on, if communication fails, the outputs are deenergised, default setting
P1	Input filter P1=0 input filter on, pulse suppression ≤ 2 ms P1=1 input filter off, default setting
P2	Synchronous mode P2=0 Synchronous mode on P2=1 Synchronous mode off, default setting
P3	not used

Accessories

	**VBP-HH1-V3.0-KIT**	AS-Interface Handheld with accessory
	**VAZ-PK-1,5M-V1-G**	Adapter cable module/hand-held programming device
	**VAZ-CHAIN-BU/BN70MM/1,0-25**	25-point wiring link for control cabinet modules with screw terminals

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 186880_eng.pdf