



AS-Interface safety module

VAA-2E-KE1-S

- 2 safe inputs for mechanical contacts such as EMERGENCY-STOP switch
- Housing with removable terminals
- Communication monitoring
- Power supply of inputs from the module
- Function display for bus and inputs
- Cross-circuit detection
- Addressing jack

KE1 safety module for the control cabinet, 2 Safety-related inputs



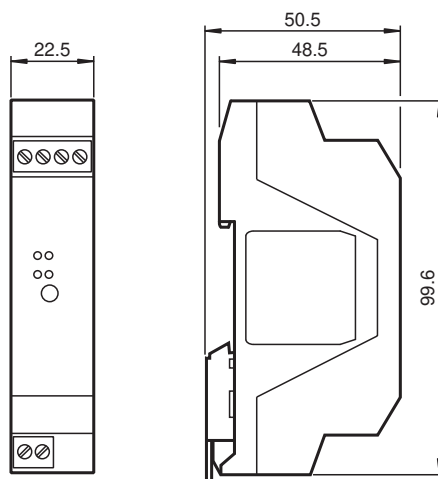
Function

The VAA-2E-KE1-S is an AS-Interface safety module with 2 safety-related inputs. A dual channel mechanical switch or in each case a single channel mechanical switch can be connected to the two inputs. 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. Plug-in terminals are used for connection. A 4-way terminal block (black) is used for the inputs. The AS-Interface is connected via a double terminal block (yellow). The current switching state of each channel is indicated by an LED, located on the module's top side. Similarly, an LED is provided to monitor the AS-Interface communication and to indicate that the module has the address 0. When single channel force-directed mechanical switches are connected, up to Category 2 / PL c in accordance with EN ISO 13849-1 can be achieved, given the appropriate wiring and selection of switch. When a two-channel force-directed mechanical switch is connected, up to Category 4 / PL e in accordance with EN ISO 13849-1 can be achieved, given the appropriate wiring and selection of switch. As per approval in accordance with IEC 61508 up to SIL 3 can be achieved. Both inputs of the module are assigned. The two channels of the mechanical switch are monitored for a cross circuit. A LED is also provided to indicate AS-Interface voltage.

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.

Dimensions



Technical Data

General specifications	
Node type	Safety node
AS-Interface specification	V2.11

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

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Technical Data

Required gateway specification	≥ V2.0	
Profile	S-0.B	
IO code	0	
ID code	B	
ID1 code	F	
ID2 code	0	
UL File Number	E87056	
Functional safety related parameters		
Safety Integrity Level (SIL)	SIL 3 / PL e	
MTTF _d	200 a	
Indicators/operating means		
LED FAULT	error display; LED red red: communication error or address is 0	
LED PWR	AS-Interface voltage; LED green	
LED IN	switching state (input); 2 LED yellow	
Electrical specifications		
Rated operating voltage	U _e	26.5 ... 31.6 V PELV from AS-Interface
Rated operating current	I _e	≤ 70 mA
Protection class	III	
Input		
Number/Type	2 safety-related inputs for mechanical contacts, cross-circuit monitored: 2 single-channel contacts: up to category 2 / PL c according to EN ISO 13849-1 or 1 two-channel contact: up to category 4 / PL e according to EN ISO 13849-1 Cable length must not exceed 300 m per input.	
Supply	from AS-Interface	
Voltage	20 ... 30 V DC pulsed	
Current loading capacity	input current limited ≤ 15 mA, overload and short-circuit resistant	
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU	EN 62026-2:2013+A1:2019	
Standard conformity		
Insulation coordination	EN 50178:1998	
Electromagnetic compatibility	EN 61000-6-2, EN 61000-4-5 1 kV asymmetric, criterion B, EN 61000-6-4	
Degree of protection	EN 60529:2000	
Fieldbus standard	EN 62026-2:2013+A1:2019	
Electrical safety	EN 50178:1998 IEC 60204-1:2007	
Emitted interference	EN 61000-6-4:2001	
AS-Interface	EN 62026-2:2013	
Functional safety	Category 4 / PL e to EN ISO 13849-1:2015 SIL 3 according to IEC 62061:2015 and IEC 61508 Part 1-7:2010	
Standards	NFPA 79:2002	
Ambient conditions		
Ambient temperature	-25 ... 50 °C (-13 ... 122 °F)	
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)	
Shock and impact resistance	10 g, 16 ms in 6 spatial directions 1000 shocks	
Vibration resistance	0.75 mm 10 ... 57 Hz, 5 g 57 ... 150 Hz, 20 cycles	
Mechanical specifications		
Degree of protection	IP20	
Connection	removable terminals, terminal connection ≤ 2.5 mm ²	
Material		
Housing	PA 66-FR	
Mass	80 g	
Mounting	DIN mounting rail	

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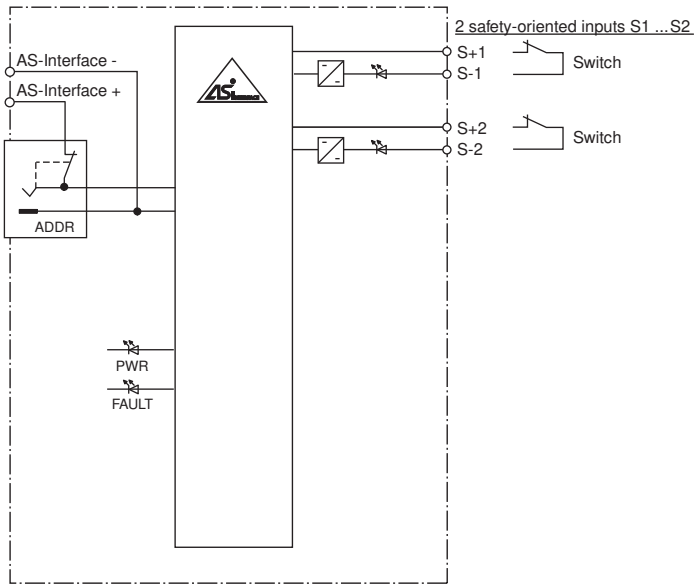
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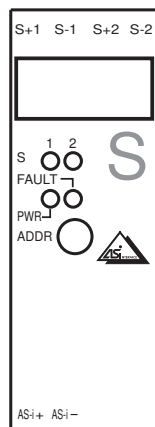
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Connection



Assembly



Safety Information

The cables and the way they are laid must comply with the standards that apply to the application, e. g. IEC 60204. The requirements specified in the instructions must be observed.

Programming

Data bit safety node
(function via AS-Interface)

Data bit	Input
D0	dyn. safety code 1
D1	dyn. safety code 1
D2	dyn. safety code 2
D3	dyn. safety code 2

Parameter bit
(programmable via AS-Interface)




Parameter bit	Function
P0	not used
P1	not used
P2	not used

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Programming

Parameter bit	Function
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