TÜV approved up to cat.4 / SIL3

Model number

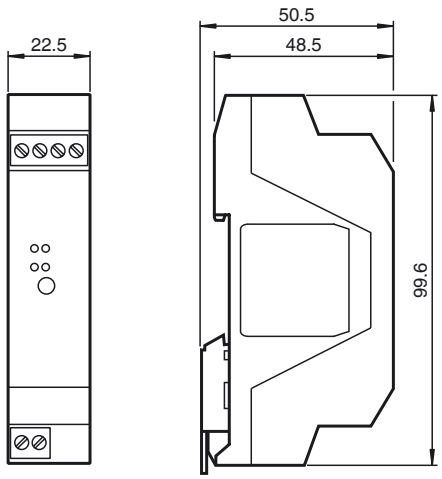
VAA-2E-KE1-S

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

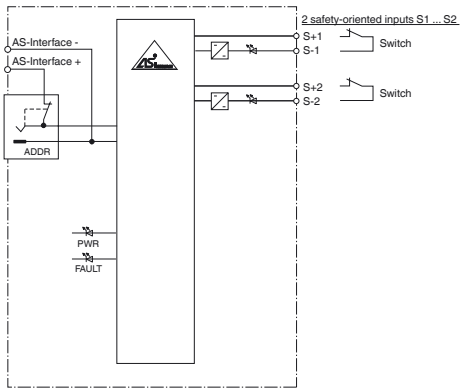
Features

- 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

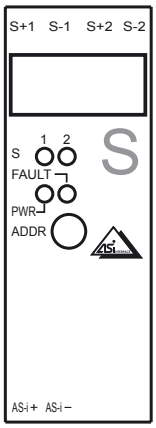
Dimensions



Electrical connection



Indicating / Operating means



Technical data

General specifications	
Slave type	Safety-Slave
AS-Interface specification	V2.1
Required master specification	≥ V2.0
UL File Number	E87056
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 3
$MTTF_d$	200 a
Indicators/operating means	

Release date: 2013-11-29 13:53 Date of issue: 2014-01-13 134088_eng.xml

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 in accordance with EN 954-1 or 1, 2-channel contact: up to category 4 in accordance with EN 954-1 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
Programming instructions		
Profile		S-0.B
IO code		0
ID code		B
ID1 code		F
ID2 code		0
Data bits (function via AS-Interface)		**input** / **output**
D0		dyn. safety code 1 / -
D1		dyn. safety code 1 / -
D2		dyn. safety code 2 / -
D3		dyn. safety code 2 / -
Parameter bits (programmable via AS-i)		**function**
P0		not used
P1		not used
P2		not used
P3		not used
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		
Protection degree		IP20
Connection		removable terminals, terminal connection ≤ 2.5 mm^2
Material		
Housing		PA 66-FR
Mass		80 g
Mounting		DIN mounting rail
Compliance with standards and directives		
Directive conformity		
EMC Directive 2004/108/EC		EN 61326:2006, EN 50295:1999, EN 61496-1:2004
Standard conformity		
Electromagnetic compatibility		EN 61000-6-2, EN 61000-4-5 1 kV asymmetric, criterion B, EN 61000-6-4
Emitted interference		EN 61000-6-4:2001
Insulation coordination		EN 50178:1998
Functional safety		EN 954-1:1996 (up to category 4), BIA Final Draft "Proposal for a principle to the verification and certification of field busses for transmission of safety related signals" 28.05.2000, IEC 61508 up to SIL3
Protection degree		EN 60529:2000
Fieldbus standard		EN 50295:1999, IEC 62026-2:2006
Electrical safety		EN 50178:1998 , IEC 60204-1:2007
Standards		NFPA 79:2002

Notes

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.

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.

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 in accordance with EN 954-1 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 in accordance with EN 954-1 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.

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

Release date: 2013-11-29 13:53 Date of issue: 2014-01-13 134088_eng.xml