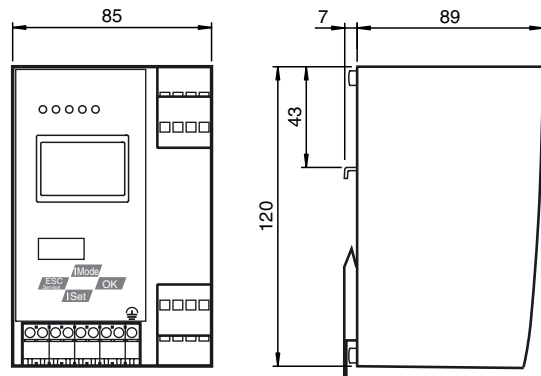## Dimensions

Model number

VAS-4A16L-K31

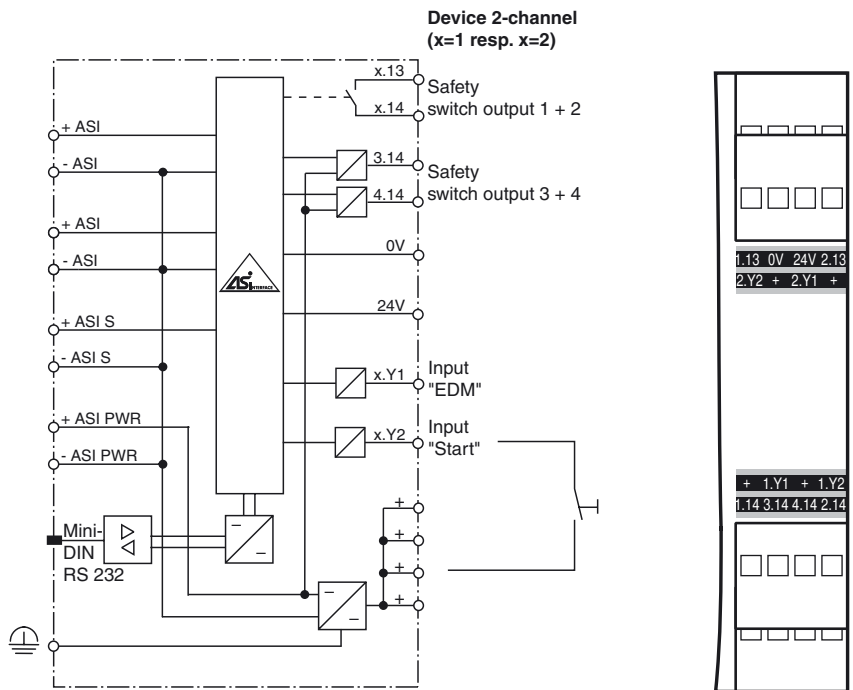Safety Monitor, 16 decentralized output circuits

Features

- Certified up to SIL 3 according to IEC 61508 and EN 62061 and up to PL$_e$ according to EN 13849
- Stainless steel housing
- LC display for slave addresses and error messages
- Configuration and commissioning with configuration software
- 2 safe output relays and 2 safe electronic outputs
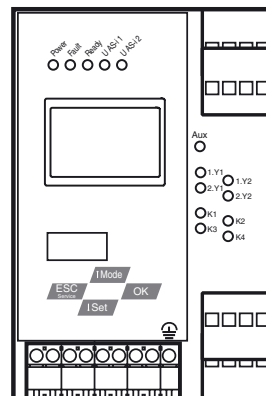- 2 AS-Interface networks
- Memory card for configuration data

Electrical connection

Device 2-channel (x=1 resp. x=2)

Indicating / Operating means

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Technical data

General specifications

AS-Interface specification		V3.0
PLC-Functionality		none
Duplicate address detection		from AS-Interface slaves
Earth fault detection	EFD	integrated
EMC monitoring		integrated
Diagnostics function		Extended function via display
Switch-on delay		< 10 s
Response delay		< 40 ms
UL File Number		E223772 only from low voltage, limited energy source (SELV or PELV) or listed Class 2 source

Functional safety related parameters

Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e
$MTTF_d$	200 a
B_{10d}	2 E+7

Indicators/operating means

Display	Illuminated graphical LC display for addressing and error messages
LED FAULT	Error display; red LED red: Communication error red flashing: release circuit error
LED POWER	voltage ON; LED green
LED U AS-i 1 / U AS-i 2	AS-Interface voltage - circuit 1/circuit 2; green LED
LED ready	off: - constantly lit: startup/restart lock active flashing: external test required
LED AUX	ext. auxiliary voltage U_{AUX} ; LED green
LED EDM/Start	External device monitoring circuit inputs closed, 4x yellow LEDs
LED output circuit	Output circuit closed; 4 x green LEDs
Button	4

Electrical specifications

Insulation voltage	U_i	≥ 500 V
Rated operating voltage	U_e	26.5 ... 31.6 V from AS-Interface; 24 V $_{DC}$
Rated operating current	I_e	≤ 200 mA from 24 V_{DC} ≤ 45 mA from AS-Interface

Interface

Interface type	RS 232, serial
Transfer rate	19.6 kbaud, no parity, 1 start bit, 1 stop bit, 8 data bits

Interface 2

Interface type	Chip card slot

Input

Number/Type	4 EDM/Start inputs: EDM: Inputs for the external device monitoring circuits Start: start inputs: Static switching current 4 mA at 24 V, dynamic 30 mA at 24 V (T=100 µs)

Output

Safety output	Output circuits 1 and 2: 2 potential-free contacts, max. contact load: 3 A_{DC-13} at 30 V_{DC}, 3 A_{AC-15} at 30 V_{AC} Output circuits 3 and 4: 2 PNP transistor outputs max. contact load: 0.5 A_{DC-13} at 30 V_{DC}

Connection

AS-Interface	spring terminals, removable

Directive conformity

Electromagnetic compatibility	
Directive 2014/30/EU	EN 62026-2:2013 EN 61000-6-2:2005, EN 61000-6-4:2007

Standard conformity

Electromagnetic compatibility	EN 61000-6-2:2005, EN 61000-6-4:2007
Degree of protection	EN 60529:2000
AS-Interface	EN 62026-2:2013
Standards	EN 61000-6-2:2005, EN 61000-6-4:2007 EN 954-1:1996 (up to Kategorie 4), IEC 61508:2001 and EN 62061:2005 (up to SIL3) EN 13849:2008 (PL e)

Ambient conditions

Ambient temperature	0 ... 55 °C (32 ... 131 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)

Mechanical specifications

Degree of protection	IP20
Material	
Housing	Stainless steel
Mass	800 g

Function

The VAS-4A16L-K31 is a stainless steel safety monitor for 2 AS-Interface circuits in accordance with AS-Interface specification 3.0 with degree of protection IP20. The VAS-4A16L-K31 has four inputs and four outputs. Two inputs are used for extended EDM device monitoring. Due to the 16 independent AS-Interface release circuits, several safe AS-Interface outputs are possible on one address. The K31 model is particularly suitable for installation in a control cabinet.

Two safety relays provide a safe interface to the connected consumers.

Address assignment and the transfer of the desired configuration can be performed using switches. Five LEDs located on the front panel indicate the current status of the AS-Interface segment. Local operation using the graphical display and the four switches allows all the functions covered on the other AS-Interface masters by AS-i Control Tools software to be visualized on the display. An RS 232 socket provides a way of exporting data relating to the network and operation directly from the safety monitor for extended local diagnosis purposes.

Accessories

USB-0,8M-PVC ABG-SUBD9
Interface converter USB/RS 232

VAZ-SW-SIMON+
Software for configuration of K30 Master Monitors/K31 and KE4 Safety Monitors

VAZ-SIMON+-R2-1,8M-PS/2
Interface cable for connecting the K30/K31 Safety Monitor to a PC

Construction type	Low profile housing , Stainless steel
Approvals and certificates	
UL approval	An isolated source with a secondary open circuit voltage of ≤ 30 V_{DC} with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed. UL mark does not provide UL certification for any functional safety rating or aspects of the device.

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

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