Model number

VAS-1A-K12-U-S1

Safety Monitor, 1 integrated safe output

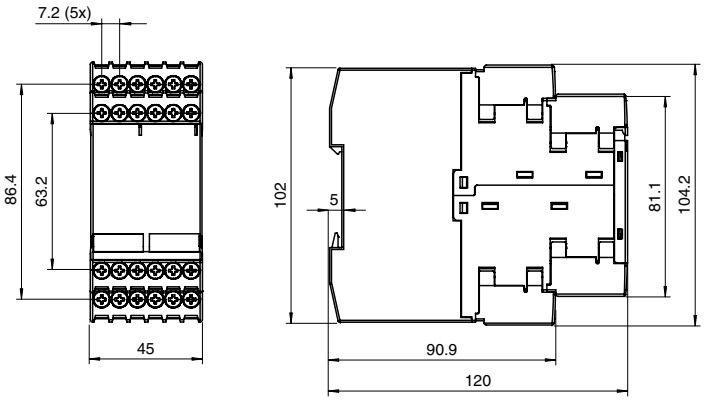
Features

- One open circuit
- Fulfills technical safety requirements for Category 4 according to EN 954-1, EN 61508, SIL 3 and Performance Level e (PL_e)
- Logic configuration by means of drag & drop with diagrammatical display on the PC

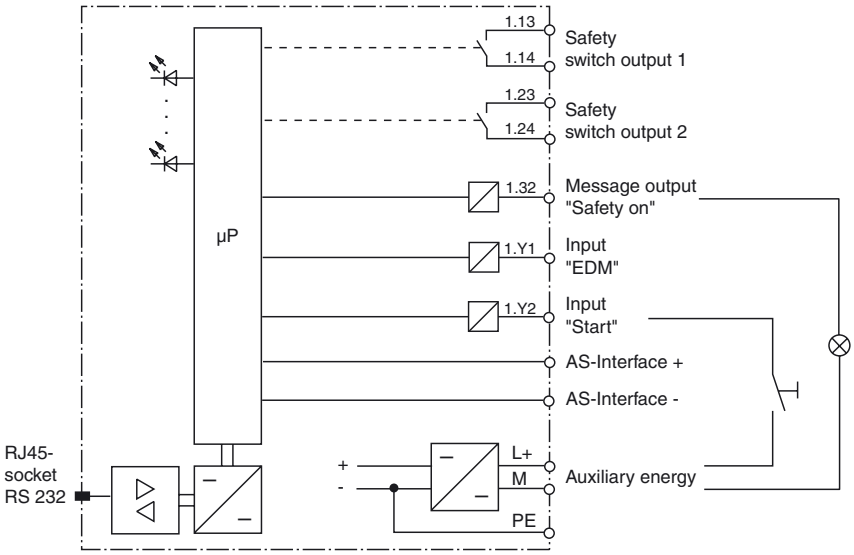
Function

When used in accordance with requirements, the AS-Interface safety monitor makes it possible to operate sensor-controlled personal protection equipment and other safety components up to and including Category 4 in accordance with EN 954-1. If additional sensors of lower categories are connected, the maximum category that can be achieved for the safety path in question is determined by these sensors. For example, laser scanners can be classified to a maximum of Type 3 in accordance with EN 61496-3. If laser scanners are included in the AS-Interface safety circuit, the maximum safety category that can be achieved for the path in question is Category 3. Any safety light curtain of Type 4 connected to the same safety monitor remains unaffected by this. Category 4 is still possible for the safety light curtain.
The safety monitor is also responsible for the compulsory EMERGENCY OFF function of all non-manually controlled machines (Stop Category 0 or 1), dynamic monitoring of the restart function and the protection control function.

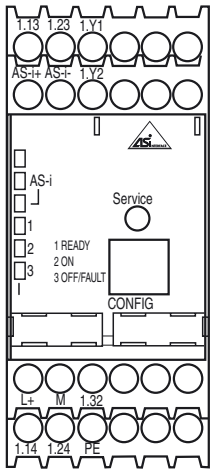
Dimensions



Electrical connection



Indicating / Operating means



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Technical data

General specifications		
AS-Interface specification		V2.1
Switch-on delay		< 10 s
Response delay		< 50 ms
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 3
Performance level (PL)		PL e
$MTTF_d$		389 a
B_{10d}		2 E+5
Indicators/operating means		
LED green		Off: contacts of the safety output (OSSD) open constantly lit: contacts of the safety output (OSSD) closed flashing: delay time running for Stop Category 1
LED yellow		off: - constantly lit: startup/restart lock active flashing: external test required
LED red		Off: contacts of the safety output (OSSD) closed constantly lit: contacts of the safety output (OSSD) open flashing: error
LED POWER		from: no power supply green, continuous illuminated: AS-Interface power supply available
LED AS-i		from: normal operation red, continuous illuminated: communication error
Electrical specifications		
Rated operating voltage	U_e	24 V DC ± 15 % Residual ripple ≤ 15 % 26.5 ... 31.6 V from AS-Interface
Rated operating current	I_e	≤ 150 mA ≤ 45 mA from AS-Interface
Surge protection		overvoltage category III for rated operating voltage 300 V DC acc. to VDE 0110 Part 1
Interface		
Interface type		RS 232, serial
Transfer rate		9600 baud, no parity, 1 start bit, 1 stop bit, 8 data bits
Input		
Number/Type		2 opto-coupling inputs (high-active) "Start" and "protection control (EDM)", input currents about 10 mA at 24 V DC
Output		
Safety output		2 potential-free NO contacts, max. contact loading: 1 A DC-13 at 24 V DC, 3 A AC-15 at 230 V AC
Output type		Signal output: PNP transistor output, 200 mA, short-circuit and reverse-polarity-proof
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 62026-2:2013 EN 61000-6-2:2006, EN 61000-6-4:2007
Low voltage		
Directive 2006/95/EC		EN 60947-5-1:2005
Machinery Directive		
Directive 2006/42/EC		EN 954-1:1996, EN 61496:2005, EN 60204-1:2006
Standard conformity		
Degree of protection		EN 60529:2000
Electrical safety		EN 50178:1998
AS-Interface		EN 62026-2:2013
Functional safety		ISO 13849-1:2008 (up to category 4/PL e), IEC 61508:2000/IEC 62061:2005 (up to SIL3)
Standards		NFPA 79:2002
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-30 ... 70 °C (-22 ... 158 °F)
Mechanical specifications		
Degree of protection		IP20 (only for use in electrical operating rooms / switch cabinet suitable with minimum protection type IP54)
Connection		screw terminals
Material		
Housing		Polyamide PA 66 , black
Mass		350 g
Mounting		DIN rail mounting

Notes

This safety monitor has an extended switch-off time of 50 ms. The safety monitor only switches off if a fault code has been transmitted 3 consecutive times. Plant availability can thereby be increased for EMC-critical applications.

Accessories

VAZ-SIMON-R2
Interface cable for connecting the K12 Safety Monitor to a PC

VAZ-SIMON-RJ45
Interface cable for connecting two K12-Safety Monitors

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

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