



**Model number**

**VAS-1A-K12**

Safety Monitor, 1 integrated safe output

**Features**

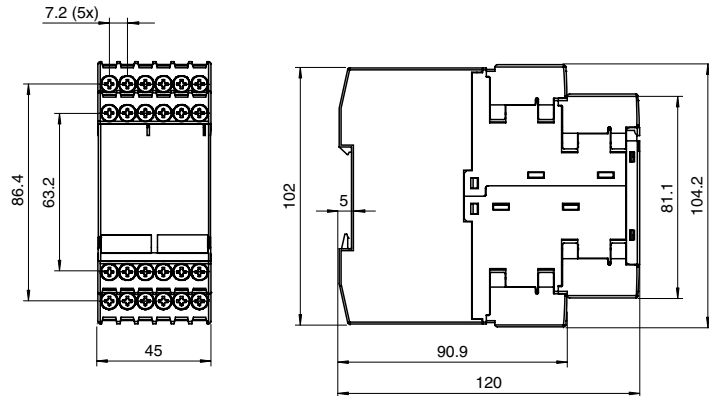
- One open circuit
- Fulfills technical safety requirements for Category 4 according to EN 954-1, EN 61508, SIL 3 and Performance Level e (PL<sub>e</sub>)
- Logic configuration by means of drag & drop with diagrammatical display on the PC
- Extended logic functions

**Function**

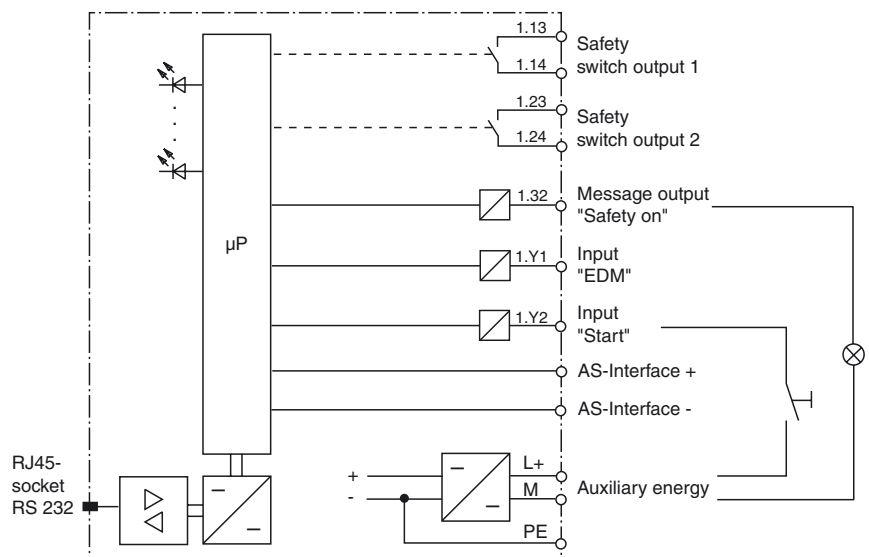
When used in accordance with requirements, the AS-Interface safety monitor makes it possible to operate sensor-controlled personal protection equipment and other safety components up to and including Category 4 in accordance with EN 954-1. If additional sensors of lower categories are connected, the 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.

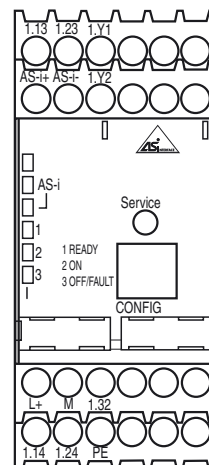
**Dimensions**



**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	< 40 ms
UL File Number	E198304

**Functional safety related parameters**

Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e
MTTF <sub>d</sub>	389 a
B <sub>10d</sub>	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 <sub>e</sub>	24 V DC ± 15 % Residual ripple ≤ 15 % 26.5 ... 31.6 V from AS-Interface
Rated operating current	I <sub>e</sub>	≤ 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
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**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

**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-RJ45**

Interface cable for connecting two K12-Safety Monitors

**VAZ-SIMON-R2**

Interface cable for connecting the K12 Safety Monitor to a PC