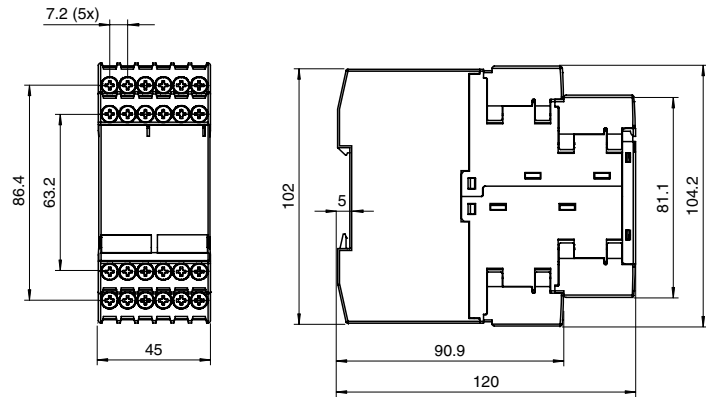
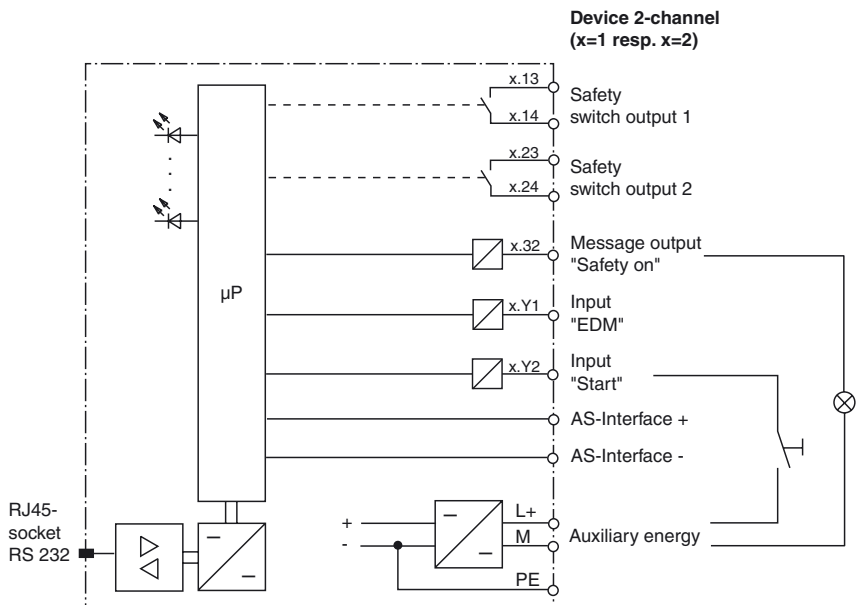




Dimensions



Electrical connection



Model number

VAS-2A-K12-U-S1

Safety Monitor, 2 integrated safe outputs

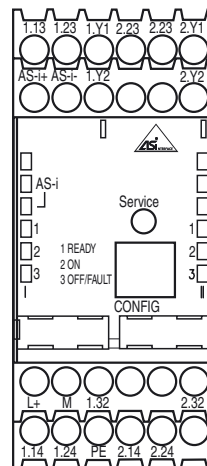
Features

- Two dependent or independent open circuits
- 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

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.

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 <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<br>constantly lit: contacts of the safety output (OSSD) closed<br>flashing: delay time running for Stop Category 1 |
| LED yellow | off: -<br>constantly lit: startup/restart lock active<br>flashing: external test required   |
| LED red    | Off: contacts of the safety output (OSSD) closed<br>constantly lit: contacts of the safety output (OSSD) open<br>flashing: error                                  |
| LED POWER  | from: no power supply<br>green, continuous illuminated: AS-Interface power supply available   |
| LED AS-i   | from: normal operation<br>red, continuous illuminated: communication error  |

**Electrical specifications**

|                         |                |  |
|-------------------------|----------------|--|
| Rated operating voltage | U <sub>e</sub> | 24 V DC ± 15 %<br>Residual ripple ≤ 15 %<br>26.5 ... 31.6 V from AS-Interface            |
| Rated operating current | I <sub>e</sub> | ≤ 200 mA<br>≤ 45 mA from AS-Interface  |
| Surge protection        |                | overvoltage category III<br>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 x 2 potential-free NO contacts,<br>max. contact loading:<br>1 A DC-13 at 24 V DC,<br>3 A AC-15 at 230 V AC |
| Output type   | Signal output:<br>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),<br>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                 | 450 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