DATASHEET

AES 2336 UE: 24...230V AC/DC

- Monitoring of BNS range magnetic safety sensors
- 3 safety contacts, STOP 0
- 2 Signalling outputs

Data

Ordering data

Note (Delivery capacity)	Phased-out product
Product type description	AES 2336 UE: 24...230V AC/DC
Article number (order number)	101181678
EAN (European Article Number)	4030661323091
eCl@ss number, Version 9.0	27-37-18-19
eCl@ss number, Version 11.0	27-37-18-19
ETIM number, version 6.0	EC001449
Available until	31.12.2021

Approval - Standards

Certificates	BG cULus EAC

General data

Standards	IEC 61508 IEC/EN 60204-1 IEC 60947-5-3 BG-GS-ET-14 BG-GS-ET-20 EN 60947-5-1
Climatic stress	EN 60068-2-3 BG-GS-ET-14
Enclosure material	Glass-fibre, reinforced thermoplastic
Material of the contacts, electrical	Ag-Ni 10 and 0.2 µm gold-plated
Gross weight	300 g

General data - Features

Stop-Category	0
Wire breakage detection	Yes
Short-circuit recognition	Yes
Feedback circuit	Yes
Automatic reset function	Yes
Start-up test	Yes
Reset after disconnection of supply voltage	Yes
Integral System Diagnostics, status	Yes
Number of LEDs	1
Number of openers	2
Number of shutters	1
Number of undelayed semi-conductor outputs with signaling function	2
Number of safety contacts	3
Number of signalling outputs	2

Safety appraisal

Standards	EN ISO 13849-1 IEC 61508

Safety appraisal - Relay outputs

Performance Level, up to	d
Control category to EN13849	3
PFH-value	1.00 x 10^{-7} /h
Notice	for max. 50,000 switching cycles/year and max. 80% contact load
Safety Integrity Level (SIL), suitable for applications in	2
Mission time	20 Year(s)

Mechanical data

Mechanical life, minimum	20,000,000 Operations
Mounting	Snaps onto standard DIN rail to EN 60715

Mechanical data - Connection technique

Terminal Connector	Screw connection rigid or flexible
Terminal designations	IEC/EN 60947-1
Cable section, minimum	0.25 mm²
Cable section, maximum	2.5 mm²
Tightening torque of Clips	0.6 Nm

Mechanical data - Dimensions

Width	45 mm
Height	100 mm
Depth	121 mm

Ambient conditions

Degree of protection of the enclosure	IP40
Degree of protection of the mounting space	IP54

Degree of protection of clips or terminals	IP20
Ambient temperature, minimum	+0 °C
Ambient temperature, maximum	+55 °C
Storage and transport temperature, minimum	-25 °C
Storage and transport temperature, maximum	+70 °C
Resistance to vibrations to EN 60068-2-6	10...55 Hz, Amplitude 0.35 mm, ± 15 %
Restistance to shock	30 g / 11 ms

Ambient conditions - Insulation value

Rated impulse withstand voltage U_{imp}	4 kV
Overvoltage category	III
Degree of pollution to IEC/EN 60664-1	2

Electrical data

Frequency range	50 Hz 60 Hz
Thermal test current	6 A
Rated operating voltage	24 ... 230 VAC/DC
Rated AC voltage for controls, 50 Hz, minimum	20.4 VAC
Rated control voltage at AC 50 Hz, maximum	253 VAC
Rated AC voltage for controls, 60 Hz, minimum	20.4 VAC
Rated control voltage at AC 60 Hz, maximum	253 VAC
Rated AC voltage for controls at DC minimum	20.4 VDC
Rated control voltage at DC, maximum	253 VDC

Electrical power consumption	5 W
Contact resistance, maximum	0.1 Ω
Note (Contact resistance)	in new state
Drop-out delay in case of power failure, typically	80 ms
Drop-out delay in case of emergency, typically	20 ms
Pull-in delay at automatic start, maximum, typically	100 ms
Pull-in delay at RESET, typically	20 ms

Electrical data - Safe relay outputs

Voltage, Utilisation category AC15	230 VAC
Current, Utilisation category AC-15	3 A
Voltage, Utilisation category DC13	24 VDC
Current, Utilisation category DC13	2 A
Switching capacity, minimum	10 VDC
Switching capacity, minimum	10 mA
Switching capacity, maximum	250 VAC
Switching capacity, maximum	8 A

Electrical data - Digital inputs

Input signal, HIGH Signal "1"	10 … 30 VDC
Input signal, LOW Signal "0"	0 … 2 VDC
Conduction resistance, maximum	40 Ω

Electrical data - Digital Output

Voltage, Utilisation category DC12	24 VDC

Current, Utilisation category DC12	0.1 A

Electrical data - Relay outputs (auxiliary contacts)

Switching capacity, maximum	24 VDC
Switching capacity, maximum	2 A

Electrical data - Electromagnetic compatibility (EMC)

EMC rating	EMC-Directive

Integral system diagnosis (ISD)

Note (ISD -Faults)	The following faults are registered by the safety monitoring modules and indicated by ISD.
Faults	Failure of the safety relay to pull-in or drop-out Failure of door contacts to open or close Cross-wire or short-circuit monitoring of the switch connections Interruption of the switch connections Fault on the input circuits or the relay control circuits of the safety monitoring module Failure of or functional fault on the safety relay

Other data

Note (applications)	Safety sensor Guard system

Notes

Note (General)	Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.

Circuit example

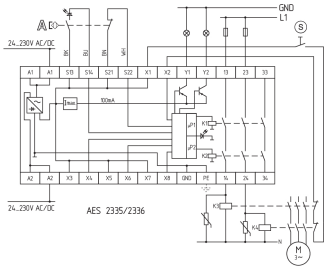
Note (Wiring diagram)	The wiring diagram is shown with guard doors closed and in de-energised condition. To secure a guard door up to PL d and Category 3 The ISD tables (Intergral System Diagnostics) for analysis of the fault indications and their causes are shown in the appendix. Start push button: A start push button (NO) can optionally be connected into the feedback circuit. With the guard door closed, the enabling paths are then not closed until the start push button has been operated. Modification for 2 NC contacts: The safety monitoring module can be modified to monitor two NC contacts by bridging the terminals X3 and X4. In this configuration, the short-circuit detection becomes inoperative. Inversion of the output function: By establishing a bridge between X5 and X6, the output function of the additional outputs can be altered. This control can also be realised when e.g. a PLC is running (24 VDC at terminal X6). Expansion of the enable delay time. The enable delay time can be increased from X7 s to X8 s by mounting a jumper connection between the terminals 0,1 and 1. Monitoring a guard door using 2 position switches with safety function. The NC contact A must have positive break when the guard door is opened. Category 3 to ISO 13849-1 can also be achieved using only one safety switch with one NO and one NC contact. Exclusion of faults due to breakage or loosening of the actuating element or the actuating head as well as releasing, dismantling. The feedback circuit monitors the position of the positive-guided NC contacts of the contactors K3 and K4. If neither start button nor feedback circuit are connected, a jumper connection must be mounted between X1 and X2.

Pictures

Product picture (catalogue individual photo)

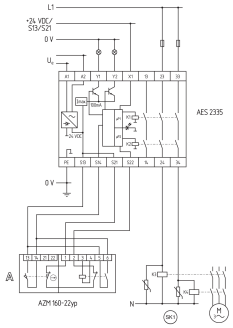
ID: kaes2f10
| 1.2 MB | .jpg | 342.194 x 529.167 mm - 970 x 1500 px - 72 dpi
| 79.4 kB | .png | 74.083 x 114.3 mm - 210 x 324 px - 72 dpi

Wiring example



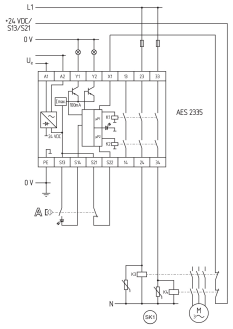
ID: kaes2l10
| 37.2 kB | .cdr |
| 156.1 kB | .jpg | 352.778 x 287.514 mm - 1000 x 815 px - 72 dpi

Wiring example



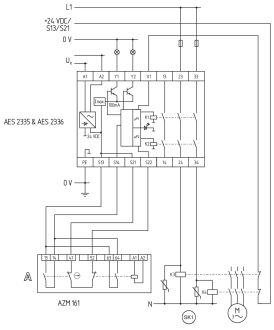
ID: kaes2l01
| 80.1 kB | .cdr |
| 190.2 kB | .jpg | 352.778 x 504.825 mm - 1000 x 1431 px - 72 dpi

Wiring example



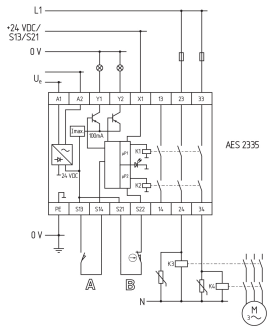
ID: kaes2l05
| 114.6 kB | .cdr |
| 169.8 kB | .jpg | 352.425 x 508.353 mm - 999 x 1441 px - 72 dpi

Wiring example



ID: kaes2l06
| 108.7 kB | .cdr |
| 167.6 kB | .jpg | 352.778 x 422.275 mm - 1000 x 1197 px - 72 dpi

Wiring example



ID: kaes2l07
| 75.2 kB | .cdr |
| 162.4 kB | .jpg | 352.778 x 434.622 mm - 1000 x 1232 px - 72 dpi

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The details and data referred to have been carefully checked. Images may diverge from original. Further technical data can be found in the manual. Technical amendments and errors possible.
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