



AES 2135 UE: 24...230V AC/DC

- Monitoring of BNS range magnetic safety sensors
- 1 safety contact, STOP 0
- 2 Signalling outputs

Data

Approvals - Standards

Certificates	BG cULus
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General data

Standards	BG-GS-ET-14 BG-GS-ET-20 EN IEC 62061 EN IEC 60947-5-1 EN IEC 60947-5-3 EN IEC 60947-5-5 EN IEC 61508 EN IEC 60204-1 EN IEC 60947-1
Climatic stress	BG-GS-ET-14 IEC 60947-5-3
Enclosure material	Glass-fibre, reinforced thermoplastic
Gross weight	280 g

General data - Features

Stop-Category	0
Wire breakage detection	Yes

Cross-circuit detection	Yes
Automatic reset function	Yes
Reset after disconnection of supply voltage	Yes
Integral system diagnostics, status	Yes
Number of LEDs	1
Number of normally closed (NC)	2
Number of normally open (NO)	1
Number of undelayed semiconductor outputs with signaling function	2
Number of safety contacts	1
Number of signalling outputs	2

Safety classification

Standards	EN ISO 13849-1 EN IEC 61508
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Safety classification - Relay outputs

Performance Level, up to	d
Category	3
PFH value	1.00×10^{-7} /h
Safety Integrity Level (SIL), suitable for applications in	2
Mission time	20 Year(s)

Mechanical data

Mechanical life, minimum	50,000,000 Operations
Mounting	Snaps onto standard DIN rail to EN 60715

Mechanical data - Connection technique

Termination	rigid or flexible Screw terminals M20 x 1.5
Terminal designations	IEC/EN 60947-1
Cable section, minimum	0.25 mm ²
Cable section, maximum	2.5 mm ²
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	+0 ... +55 °C
Storage and transport temperature, minimum	-25 °C
Storage and transport temperature, maximum	+70 °C
Resistance to vibrations	10...55 Hz, Amplitude 0.35 mm, ± 15 %
Resistance to shock	30 g / 11 ms

Ambient conditions - Insulation values

Rated impulse withstand voltage U_{imp}	4 kV
Overvoltage category	III
Degree of pollution	2

Electrical data

Frequency range	50 Hz 60 Hz
Thermal test current	4 A
Rated operating voltage	24 ... 230 VAC 24 ... 230 VDC
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
Material of the contacts, electrical	Ag-Ni, Au

Electrical data - Safe relay outputs

Voltage, Utilisation category AC-15	230 VAC
Current, Utilisation category AC-15	3 A

Voltage, Utilisation category DC-13	24 VDC
Current, Utilisation category DC-13	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 DC-12	24 VDC
Current, Utilisation category DC-12	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
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Integral system diagnosis (ISD)

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

Note (applications)	<p>Safety sensor</p> <p>Guard system</p>
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Note

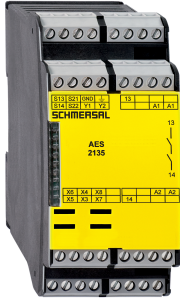
Note (General)	<p>Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.</p>
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Wiring example

Note (Wiring diagram)	<p>The wiring diagram is shown with guard doors closed and in de-energised condition.</p> <p>To secure a guard door up to PL d and Category 3</p> <p>Monitoring 1 guard door(s), each with a magnetic safety sensor of the BNS range</p> <p>The ISD tables (Integral System Diagnostics) for analysis of the fault indications and their causes are shown in the appendix.</p> <p>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.</p> <p>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).</p> <p>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.</p>
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Pictures

Product picture (catalogue individual photo)

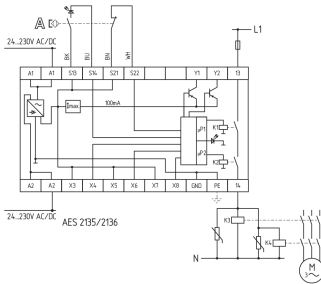


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| 1,1 MB | .jpg | 342.194 x 529.167 mm - 970 x 1500 px - 72 dpi

| 77,5 kB | .png | 74.083 x 114.3 mm - 210 x 324 px - 72 dpi

Wiring example

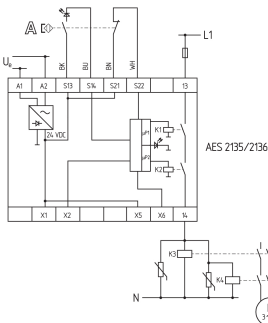


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| 35,4 kB | .cdr |

| 140,9 kB | .jpg | 352.778 x 305.506 mm - 1000 x 866 px - 72 dpi

Wiring example



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| 89,7 kB | .cdr |

| 134,2 kB | .jpg | 352.778 x 401.108 mm - 1000 x 1137 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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