

Datasheet - AES 1176



Guard door monitors and Safety control modules for Emergency Stop applications / Micro Processor based safety controllers (Series AES) / AES 117x



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

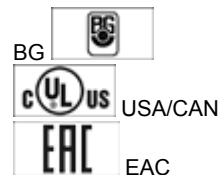
(Minor differences between the printed image and the original product may exist!)

Ordering details

Product type description	AES 1176
Article number	101170044
EAN Code	4030661297019
eCl@ss	27-37-19-01

Approval


Approval



Classification

Standards	EN ISO 13849-1, IEC 61508
PL	up d
Control category	up 3
PFH value	1.0 x 10 ⁻⁷ /h
- notice	up to max. 50.000 switching cycles/year and at max. 80% contact load
SIL	up 2
Mission time	20 Years

Global Properties

Permanent light	AES 117x
Standards	IEC/EN 60204-1, IEC 60947-5-3, IEC 61508, BG-GS-ET-14, BG-GS-ET-20
Compliance with the Directives (Y/N) 	Yes
Climatic stress	EN 60068-2-3, BG-GS-ET-14
Mounting	snaps onto standard DIN rail to EN 60715
Terminal designations	IEC/EN 60947-1
Materials	
- Material of the housings	Plastic, glass-fibre reinforced thermoplastic, ventilated
- Material of the contacts	Ag-Ni, 0,2 µm gold flashed
Weight	155
Start conditions	Automatic
Start input (Y/N)	No
Feedback circuit (Y/N)	Yes
Start-up test (Y/N)	Yes
Reset after disconnection of supply voltage (Y/N)	Yes
Automatic reset function (Y/N)	Yes
Reset with edge detection (Y/N)	No
Pull-in delay	
- ON delay with automatic start	adjustable 0,1 / 1.0 s
Drop-out delay	
- Drop-out delay in case of emergency stop	< 50

Mechanical data

Connection type	Screw connection
Cable section	
- Min. Cable section	0,25
- Max. Cable section	2.5
Pre-wired cable	rigid or flexible
Tightening torque for the terminals	0,6
Detachable terminals (Y/N)	No
Mechanical life	20.000.000 operations
Electrical lifetime	150.000 operations for 230 VAC, 5 A (cos φ = 1)
restistance to shock	30 g / 11 ms
Resistance to vibration To EN 60068-2-6	10...55 HZ, Amplitude 0,35 mm, ± 15 %

Ambient conditions

Ambient temperature	
- Min. environmental temperature	0
- Max. environmental temperature	+55
Storage and transport temperature	
- Min. Storage and transport temperature	-25
- Max. Storage and transport temperature	+70
Protection class	
- Protection class-Enclosure	IP40
- Protection class-Terminals	IP20
- Protection class-Clearance	IP54
Air clearances and creepage distances To IEC/EN 60664-1	
- Rated impulse withstand voltage U _{imp}	4.8 kV
- Overvoltage category	III To VDE 0110

Electromagnetic compatibility (EMC)

EMC rating	10 V/m
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Electrical data

Rated DC voltage for controls	
- Max. rated DC voltage for controls	20.4
- Max. rated DC voltage for controls	27.6
Rated AC voltage for controls, 50 Hz	
- Min. rated AC voltage for controls, 50 Hz	-
- Max. rated AC voltage for controls, 50 Hz	-
Rated AC voltage for controls, 60 Hz	
- Min. rated AC voltage for controls, 60 Hz	-
- Max. rated AC voltage for controls, 60 Hz	-
Contact resistance	max. 100 mΩ
Power consumption	< 5
Type of actuation	DC
Switch frequency	
Rated insulation voltage U_i	250 V
Rated operating voltage U_e	24 VDC ±15%
Thermal test current I_{the}	6 A
Operating current I_e	0,2 A
Electronic protection (Y/N)	No

Inputs

Monitored inputs

- Short-circuit recognition (Y/N)	Yes
- Wire breakage detection (Y/N)	Yes
- Earth connection detection (Y/N)	Yes
Number of shutters	1
Number of openers	1
Input resistance	approx. 4000 Ω at GND
Input signal "1"	10 ... 30 VDC
Input signal "0"	0 ... 2 VDC
Cable length	1000 m with 0,75 mm ² (for Rated voltage)

Outputs

Stop category	0
Number of safety contacts	1
Number of signalling outputs	0
Switching capacity	
- Switching capacity of the safety contacts	min. 10 mA, max. 6 A
Fuse rating	
- Protection of the safety contacts	6 A gG D-fuse
Utilisation category To EN 60947-5-1	AC-15: 230 V / 3 A DC-13: 24 V / 2 A
Number of undelayed semi-conductor outputs with signaling function	0
Number of undelayed outputs with signaling function (with contact)	0
Number of delayed semi-conductor outputs with signaling function.	0

Number of delayed outputs with signalling function (with contact).	0
Number of secure undelayed semi-conductor outputs with signaling function	2
Number of secure, undelayed outputs with signaling function, with contact.	0
Number of secure, delayed semi-conductor outputs with signaling function	0
Number of secure, delayed outputs with signaling function (with contact).	0

LED switching conditions display

LED switching conditions display (Y/N)	Yes
Number of LED's	1

Integral system diagnosis \$missingShortName\$

Integral system diagnosis ISD

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

Miscellaneous data

Applications



Safety sensor



Guard system

Dimensions

Dimensions

- | | |
|----------|---------|
| - Width | 22.5 mm |
| - Height | 100 mm |
| - Depth | 121 mm |

notice

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

notice - Wiring example

To secure a guard door up to PL 3 and Category #03#

Monitoring 1 guard door(s), each with a magnetic safety sensor of the BNS range

If the load is directly switched by the AES, the complete system can be classified in Category 3 to EN ISO 13849-1.

The two relays K3/K4 are directly controlled through the additional transistor outputs Y1/Y2. One NC contact of the relay is always connected to inputs X1/X2.

The wiring diagram is shown with guard doors closed and in de-energised condition.

Documents

Operating instructions and Declaration of conformity (es) 238 kB, 21.12.2017

Code: mrl_aes1175-1176_es

Operating instructions and Declaration of conformity (jp) 919 kB, 16.02.2012

Code: mrl_aes1175-1176_jp

Operating instructions and Declaration of conformity (de) 200 kB, 15.11.2017

Code: mrl_aes1175-1176_de

Operating instructions and Declaration of conformity (da) 203 kB, 09.07.2013

Code: mrl_aes1175-1176_da

Operating instructions and Declaration of conformity (en) 238 kB, 15.11.2017

Code: mrl_aes1175-1176_en

Operating instructions and Declaration of conformity (pl) 254 kB, 19.04.2018

Code: mrl_aes1175-1176_pl

Operating instructions and Declaration of conformity (nl) 234 kB, 02.08.2018

Code: mrl_aes1175-1176_nl

Operating instructions and Declaration of conformity (it) 759 kB, 26.09.2011

Code: mrl_aes1175-1176_it

Operating instructions and Declaration of conformity (fr) 234 kB, 10.01.2018

Code: mrl_aes1175-1176_fr

Operating instructions and Declaration of conformity (pt) 244 kB, 23.01.2018

Code: mrl_aes1175-1176_pt

Wiring example (99) 18 kB, 20.08.2008

Code: maes1103

BG-test certificate (en) 756 kB, 27.08.2018

Code: z_135p02

BG-test certificate (de) 768 kB, 27.08.2018

Code: z_135p01

BG-test certificate (en) 1 MB, 17.08.2018

Code: z_113p02

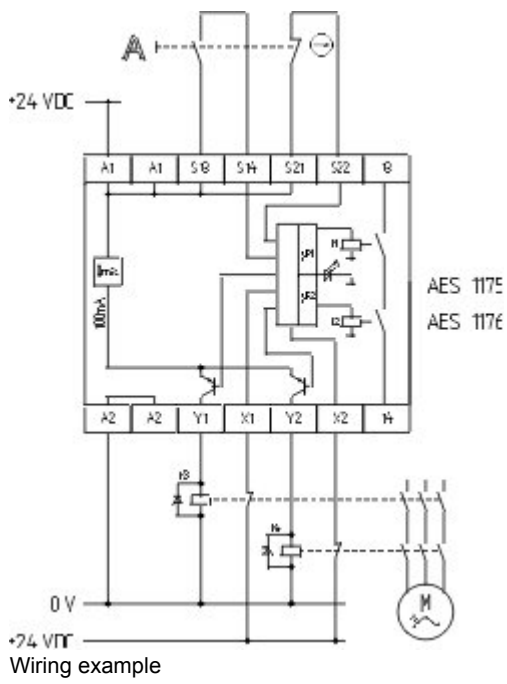
BG-test certificate (de) 1 MB, 17.08.2018

Code: z_113p01

EAC certification (ru) 1 MB, 15.03.2018

Code: q_aesp01

Images



K.A. Schmersal GmbH & Co. KG, Möddinghofe 30, D-42279 Wuppertal

The data and values have been checked thoroughly. Technical modifications and errors excepted.

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