

Datasheet - AES 2285



Guard door monitors and Safety control modules for Emergency Stop applications / Micro Processor based safety controllers (Series AES) / AES 2285



- Multi-evaluation of up to 6 safety guards
- Monitoring of BNS range magnetic safety sensors
- 2 safety contacts, STOP 0
- 6 Signalling outputs
- Additional contacts by means of output expander
- Individual signal outputs for each guard door

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

Ordering details

Product type description	AES 2285
Article number	101172211
EAN code	4030661300436
eCl@ss	27-37-19-01

Approval

Approval



Classification

Standards	EN ISO 13849-1, IEC 61508, EN 60947-5-1
PL	up e
Control category	up 4
DC	99%
CCF	> 65 points
PFH value	$\leq 2,0 \cdot 10^{-8}/h$
SIL	up 3
Mission time	20 Years

notice

The PFH value is applicable for the combinations listed in the table for contact load (K) (current through enabling paths) and switching cycle number (n-op/y).

In case of 365 operating days per year and a 24-hour operation, this results in the specified switching cycle times (t-cycle) for the relay contacts.

Diverging applications on request.

K	n-op/y	t-cycle
20 %	525.800	1,0 min
40 %	210.240	2,5 min
60 %	75.087	7,0 min
80 %	30.918	17,0 min
100 %	12.223	43,0 min

Global Properties

Product name	AES 2285
Standards	IEC/EN 60204-1, EN 60947-5-1, IEC 60947-5-3, EN ISO 13849-1, IEC 61508, BG-GS-ET-14, BG-GS-ET-20
Compliance with the Directives (Y/N) 	Yes
Climatic stress	EN 60068-2-78
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	AgCdO, self-cleaning, positive action
Weight	220 g
Start conditions	Automatic or Start button (Optional monitored)
Start input (Y/N)	Yes
Feedback circuit (Y/N)	Yes
Start-up test (Y/N)	No
Reset after disconnection of supply voltage (Y/N)	Yes
Automatic reset function (Y/N)	Yes
Reset with edge detection (Y/N)	Yes
Pull-in delay	
- ON delay with automatic start	120 ms
- ON delay with reset button	≤ 30 ms
Drop-out delay	
- Drop-out delay in case of emergency stop	20 ms / max. 35 ms

Mechanical data

Connection type	Screw connection
Cable section	
- Min. Cable section	0,25 mm ²
- Max. Cable section	2.5 mm ²
Pre-wired cable	rigid or flexible
Tightening torque for the terminals	0,6 Nm
Detachable terminals (Y/N)	Yes
Mechanical life	10.000.000 operations
Electrical lifetime	Derating curve available on request
resistance to shock	10 g / 11 ms
Resistance to vibration To EN 60068-2-6	10...55 Hz, Amplitude 0,35 mm

Ambient conditions

Ambient temperature	
- Min. environmental temperature	-25 °C

- Max. environmental temperature	+45 °C
Storage and transport temperature	
- Min. Storage and transport temperature	-40 °C
- Max. Storage and transport temperature	+85 °C
Protection class	
- Protection class-Enclosure	IP40
- Protection class-Terminals	IP20
- Protection class-Clearance	IP54
Degree of pollution	2

Electromagnetic compatibility (EMC)

EMC rating	conforming to EMC Directive
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Electrical data

Rated DC voltage for controls	
- Min. rated DC voltage for controls	20.4 V
- Max. rated DC voltage for controls	28.8 V
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	max. 3.6 W / 6.6 VA
Type of actuation	DC
Switch frequency	max. 3 Hz
Rated impulse withstand voltage U_{imp}	4 kV
Rated insulation voltage U_i	250 V
Rated operating voltage U_e	24 VDC -15% / +20%, residual ripple max. 10%
Thermal test current I_{the}	6 A
Operating current I_e	0,125 A
Frequency range	50 / 60 Hz
Electronic protection (Y/N)	Yes
Fuse rating for the operating voltage	F1: Internal electronic trip, tripping current > 1 A, Reset after disconnection of supply voltage

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 ... 6 piece
Number of openers	1 ... 6 piece
Cable length	1500 m with 1.5 mm ² ; 2500 m with 2.5 mm ² (for Rated voltage)
Conduction resistance	max. 40 Ω

Outputs

Stop category	0
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Number of safety contacts	2 piece
Number of auxiliary contacts	2 piece
Number of signalling outputs	6 piece
Switching capacity	
- Switching capacity of the safety contacts	max. 250 V, 6 A ohmic (inductive in case of appropriate protective wiring)
- Switching capacity of the auxiliary contacts	31/32: 24 VDC, 2 A
- Switching capacity of the signaling/diagnostic outputs	Y1...Y6: 24 VDC, 20 mA
Fuse rating	
- Protection of the safety contacts	6 A gG D-fuse
- Fuse rating for the auxiliary contacts	2 A slow blow
- Fuse rating for the signaling/diagnostic outputs	Internal electronic trip, tripping current > 0,2 A short-circuit proof, p-type
Signalling output	Y1...Y6: Guard system 1 ... 6 on
Utilisation category To EN 60947-5-1	AC-15: 250 V / 6 A DC-13: 24 V / 6 A
Number of undelayed semi-conductor outputs with signaling function	6 piece
Number of undelayed outputs with signaling function (with contact)	1 piece
Number of delayed semi-conductor outputs with signaling function.	0 piece
Number of delayed outputs with signalling function (with contact).	0 piece
Number of secure undelayed semi-conductor outputs with signaling function	0 piece
Number of secure, undelayed outputs with signaling function, with contact.	2 piece
Number of secure, delayed semi-conductor outputs with signaling function	0 piece
Number of secure, delayed outputs with signaling function (with contact).	0 piece

LED switching conditions display

LED switching conditions display (Y/N)	Yes
Number of LED's	3 piece
LED switching conditions display	
- The integrated LEDs indicate the following operating states.	
- Position relay K1	
- Position relay K2	
- Internal operating voltage U_i	

Miscellaneous data

Applications	 Guard system  Safety sensor
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Dimensions

Dimensions	
- Width	45 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 6 guard doors up to PL d and Category 3

Monitoring 6 guard door(s), each with a magnetic safety sensor of the BNS range

Start button (S) with edge detection

The feedback circuit monitors the position of the contactors K3 and K4.

Automatic start: The automatic start is programmed by connecting the feedback circuit to the terminals X1/X3. If the feedback circuit is not required, establish a bridge

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

Documents

Operating instructions and Declaration of conformity (en) 321 kB, 03.05.2016

Code: mrl_aes2285_en

Operating instructions and Declaration of conformity (da) 199 kB, 11.07.2013

Code: mrl_aes2285_da

Operating instructions and Declaration of conformity (es) 323 kB, 04.02.2014

Code: mrl_aes2285_es

Operating instructions and Declaration of conformity (de) 306 kB, 03.05.2016

Code: mrl_aes2285_de

Operating instructions and Declaration of conformity (pl) 336 kB, 11.03.2014

Code: mrl_aes2285_pl

Operating instructions and Declaration of conformity (nl) 323 kB, 04.02.2014

Code: mrl_aes2285_nl

Operating instructions and Declaration of conformity (it) 321 kB, 04.02.2014

Code: mrl_aes2285_it

Operating instructions and Declaration of conformity (fr) 318 kB, 11.03.2014

Code: mrl_aes2285_fr

Operating instructions and Declaration of conformity (jp) 411 kB, 04.02.2014

Code: mrl_aes2285_jp

Wiring example (99) 23 kB, 28.08.2008

Code: kaes2l09

ISD tables (Intergral System Diagnostics) (de) 34 kB, 29.07.2008

Code: i_ae4p01

ISD tables (Intergral System Diagnostics) (en) 34 kB, 29.07.2008

Code: i_ae4p01

BG-test certificate (en) 250 kB, 15.04.2016

Code: z_ae2p02

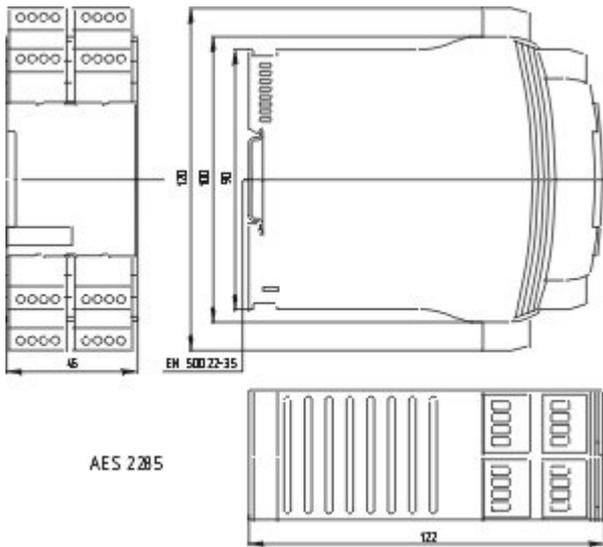
BG-test certificate (de) 255 kB, 15.04.2016

Code: z_ae2p01

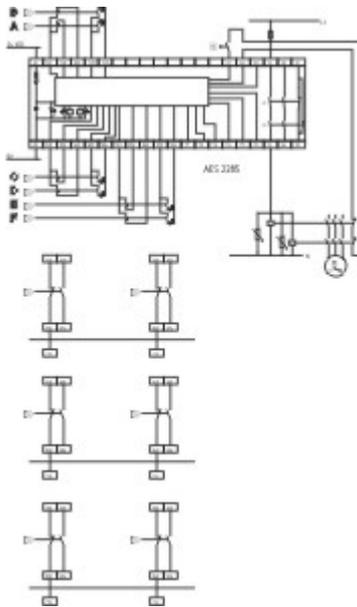
EAC certification (ru) 833 kB, 05.10.2015

Code: q_6042p17_ru

Images



Dimensional drawing (basic component)



Wiring example

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

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