Datasheet - AES 2285

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

☒ Preferred typ

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

- 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

Ordering details

Product type description	AES 2285
Article number	101172219
EAN code	4030661300436

Approval

Approval	BG USA/CAN

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	≤ 2,0.0 x 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 %	525.600	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) CE	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 mm²
- Max. Cable section	2.5 mm²
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
restistance 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

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 mm²; 2500 m with 2.5 mm² (for Rated voltage)
Conduction resistance	max. 40 Ω

Outputs

Stop category	0
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

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) 303 kB, 05.12.2013
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) 310 kB, 05.12.2013
Code: mrl_aes2285_de

Operating instructions and Declaration of conformity (pl) 199 kB, 28.08.2013
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) 223 kB, 16.03.2012
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

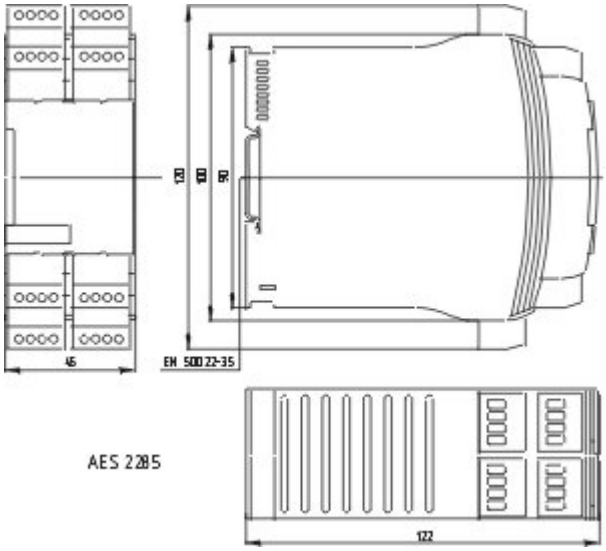
ISD tables (Intergral System Diagnostics) (de) 34 kB, 29.07.2008
Code: i_ae4p01

ISD tables (Intergral System Diagnostics) (en) 34 kB, 29.07.2008
Code: i_ae4p01

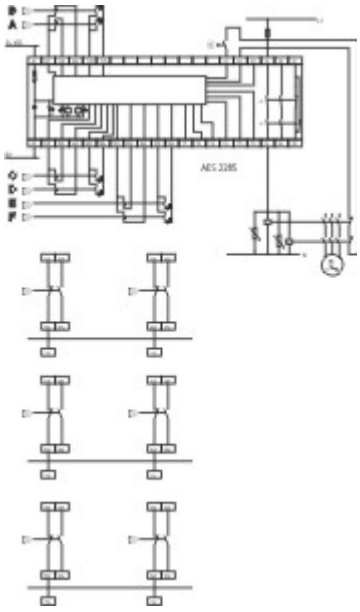
BG-test certificate (en) 562 kB, 05.01.2011
Code: z_ae2p02

BG-test certificate (de) 577 kB, 05.01.2011
Code: z_ae2p01

Images



Dimensional drawing (basic component)


Wiring example

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