13.02.2019
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Datasheet - FWS 2105C

Fail-safe standstill monitors / FWS 2105

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

- Detects standstill using 2 impulse sensor(s)
- 1 safety contact
- 2 Signalling outputs

Ordering details

Product type description	FWS 2105C
Article number	101181696
EAN Code	4030661323220
eCl@ss	27-37-19-01

Approval

Approval	BG USA/CAN EAC

Classification

Standards	EN ISO 13849-1, IEC 61508
PL	up d
Control category	up 3
PFH value	1.0 x 10-7/h
SIL	up 2
Mission time	20 Years

Global Properties

Permanent light	FWS 2105
Standards	IEC/EN 60204-1, EN ISO 13849-1, BG-GS-ET-20
Compliance with the Directives (Y/N) CE	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 + Au
Weight	282
Start input (Y/N)	No
Feedback circuit (Y/N)	No
Reset after disconnection of supply voltage (Y/N)	Yes
Automatic reset function (Y/N)	Yes
Reset with edge detection (Y/N)	No

Mechanical data

Connection type	Screw connection
Cable section	
- Min. Cable section	0,2
- 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	50.000.000 operations
Electrical lifetime	100.000 operations for 230 VAC, 6 A (cos φ = 1)
hysteresis	10 % of standstill frequency
restistance to shock	30 g / 11 ms
Resistance to vibration To EN 60068-2-6	10…55 HZ, Amplitude 0,35 mm
Standstill frequency	Inputs X2 / X4: 1 / 1

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
- Degree of pollution	2 To VDE 0110

Electromagnetic compatibility (EMC)

EMC rating	10 V/m

Electrical data

Rated DC voltage for controls	
- Max. rated DC voltage for controls	20.4
- Max. rated DC voltage for controls	253
Rated AC voltage for controls, 50 Hz	
- Min. rated AC voltage for controls, 50 Hz	20.4
- Max. rated AC voltage for controls, 50 Hz	253
Rated AC voltage for controls, 60 Hz	
- Min. rated AC voltage for controls, 60 Hz	20.4
- Max. rated AC voltage for controls, 60 Hz	253
Contact resistance	max. 100 mΩ
Power consumption	< 5
Type of actuation	AC/DC
Rated operating voltage U_e	24 … 230 VAC/DC
Operating current I_e	0,4 A
Electronic protection (Y/N)	No

Inputs

Monitored inputs	
- Short-circuit recognition (Y/N)	No
- Wire breakage detection (Y/N)	Yes
- Earth connection detection (Y/N)	No
Input frequency	4000
min. pulse duration	125
Input resistance	approx. 4000 Ω at GND
Input signal "1"	10 … 30 VDC
Input signal "0"	0 … 2 VDC
Cable length	100 m with 0,75 mm² (for Rated voltage)

Outputs

Stop category	0
Number of safety contacts	1
Number of auxiliary contacts	0
Number of signalling outputs	2
Switching capacity	
- Switching capacity of the safety contacts	min. 10 mA, max. 6 A
- Switching capacity of the signaling/diagnostic outputs	Y1, Y2: max. 100 mA
Fuse rating	
- Protection of the safety contacts	6 A gG D-fuse
- Fuse rating for the signaling/diagnostic outputs	short-circuit proof
Signalling output	Y1: Authorized operation, safety contacts on; Y2: Error, high signal
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	2
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	0
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
- Interruption of the connections to the inductive proximity switches
- 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
- Failure of the proximity switches
- Failure of one channel being evaluated

Miscellaneous data

Applications	 safe standstill monitoring

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 monitor one guard door at plants with dangerous run-on movements up to PL d and Category 3

Standstill monitoring for unlocking solenoid interlocks

The solenoid interlock can be opened, when the fail-safe standstill monitor has detected the end of the run-on movement by means of two inductive proximity switches. When the button (E) is actuated, the coil of the solenoid interlock is energised.

For suitable IFL range p-type inductive proximity switches, refer to "Schmersal Catalogue Automatisierungstechnik".

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

The ISD tables (Intergral System Diagnostics) for analysis of the fault indications and their causes are shown in the appendix.

Documents

Operating instructions and Declaration of conformity (es) 276 kB, 10.01.2018

Code: mrl_fws2105-2505_es

Operating instructions and Declaration of conformity (pl) 291 kB, 31.01.2018

Code: mrl_fws2105-2505_pl

Operating instructions and Declaration of conformity (jp) 849 kB, 27.07.2011

Code: mrl_fws2105-2505_jp

Operating instructions and Declaration of conformity (fr) 277 kB, 01.02.2018
Code: mrl_fws2105-2505_fr

Operating instructions and Declaration of conformity (de) 234 kB, 13.11.2017
Code: mrl_fws2105-2505_de

Operating instructions and Declaration of conformity (en) 273 kB, 13.11.2017
Code: mrl_fws2105-2505_en

Operating instructions and Declaration of conformity (nl) 273 kB, 16.02.2018
Code: mrl_fws2105-2505_nl

Operating instructions and Declaration of conformity (pt) 279 kB, 24.01.2018
Code: mrl_fws2105-2505_pt

Operating instructions and Declaration of conformity (it) 275 kB, 02.02.2018
Code: mrl_fws2105-2505_it

Wiring example (99) 29 kB, 20.08.2008
Code: kfws2l05

ISD tables (Intergral System Diagnostics) (de) 49 kB, 29.07.2008
Code: i_fwsp01

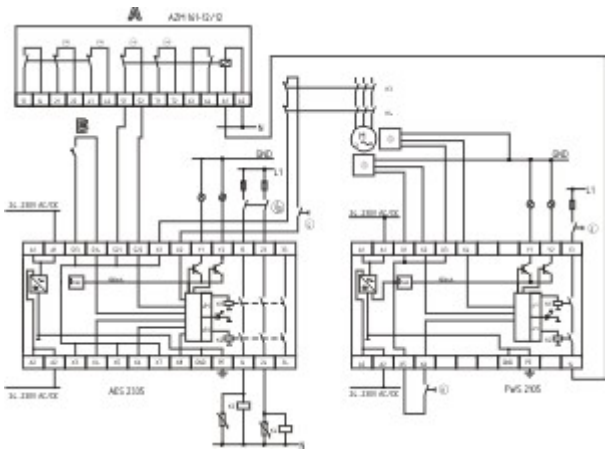
ISD tables (Intergral System Diagnostics) (en) 30 kB, 29.07.2008
Code: i_fwsp02

BG-test certificate (en) 767 kB, 16.05.2017
Code: z_f05p02

BG-test certificate (de) 780 kB, 16.05.2017
Code: z_f05p01

EAC certification (ru) 1 MB, 15.03.2018
Code: q_aesp01

Images



Wiring example