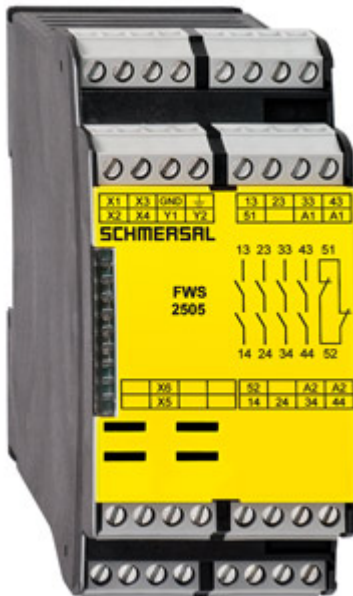


## Datasheet - FWS 2505A

Fail-safe standstill monitors / FWS 2505



- Detects standstill using 2 impulse sensor(s)
- 4 safety contacts
- 1 Signalling output
- 2 additional transistor outputs

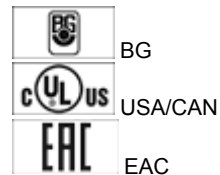
(Minor differences between the printed image and the original product may exist!)

### Ordering details

Product type description	FWS 2505A
Article number	101181693
EAN Code	4030661323237
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 <sup>-7</sup> /h
SIL	up 2
Mission time	20 Years

### Global Properties

Permanent light	FWS 2505
Standards	IEC/EN 60204-1, EN ISO 13849-1, 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	355
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	20.000.000 operations
Electrical lifetime	150.000 operations for 230 VAC, 5 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 / 2

### 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 <sub>imp</sub>	4.8 kV
- Overvoltage category	III To VDE 0110
- Degree of pollution	2 To VDE 0110

### Electromagnetic compatibility (EMC)

EMC rating	10 V/m
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## Electrical data

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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

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### Monitored inputs

- Short-circuit recognition (Y/N)	No
- Wire breakage detection (Y/N)	Yes
- Earth connection detection (Y/N)	No
Input frequency	1000
min. pulse duration	500
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 mm <sup>2</sup> (for Rated voltage)

## Outputs

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Stop category	0
Number of safety contacts	4
Number of auxiliary contacts	1
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

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

## Integral system diagnosis \$missingShortName\$

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### 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

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Applications



safe standstill monitoring

## Dimensions

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### Dimensions

- Width	45 mm
- Height	100 mm
- Depth	121 mm

## notice

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

## notice - Wiring example

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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 (Integral System Diagnostics) for analysis of the fault indications and their causes are shown in the appendix.

## Documents

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**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)** 30 kB, 20.08.2008

Code: kfws2106

**ISD tables (Integral System Diagnostics) (de)** 49 kB, 29.07.2008

Code: i\_fwsp01

**ISD tables (Integral 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

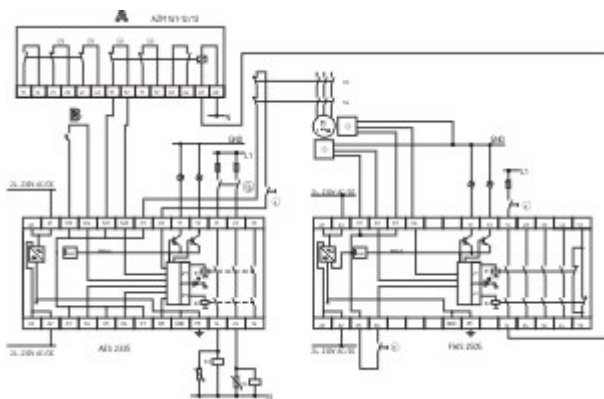
Code: z\_f05p01

**EAC certification (ru)** 1 MB, 15.03.2018

Code: q\_aesp01

## Images

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Wiring example

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