FWS 3505

- Detects standstill using 2 impulse sensors
- Control Category 3 to EN 954-1
- 4 enabling paths
- Operating voltage 24 VDC
- Reset input
- 2 short-circuit proof additional transistor outputs
- 1 signalling contact
- ISD Integral System Diagnostics
- 2 channel microprocessor controlled
- Customer-specific standstill frequencies possible

Technical data

Standards:	EN 60204-1, EN 954-1, BG-GS-ET-20
Control category:	3
Start conditions:	Automatic
Enclosure:	glass-fibre reinforced thermoplastic
Mounting:	snaps onto standard DIN rail to EN 50022
Termination:	screw terminals
Cable section:	max. 4 mm^2 (incl. conductor ferrules)
Protection class:	terminals IP 20 enclosure IP 40 to EN 60529
U_e:	24 VDC ± 15%
I_e:	0.3 A
Monitored inputs	2 channels, pulse generator p-type
Input resistance:	approx. 2 kΩ to ground
Input signal „1“:	10 ... 30 VDC
Input signal „0“:	0 ... 2 VDC
Max. cable length:	100 m of 0.75 mm^2 conductor
Standstill frequency:	version C: input X2/X4: 1 Hz/1 Hz other versions: on request
Hysteresis:	10 % of standstill frequency
Max. input frequency:	1000 Hz
Min. pulse duration:	500 µs
Enabling contacts:	4 enabling paths
Utilisation category:	AC-15, DC-13
I_e/U_e:	3 A / 250 VAC 2 A / 24 VDC
Contact load capacity:	max. 250 VAC, max. 6 A (cos φ = 1)
Max. fuse rating:	6 A gL/gG D-fuse
Signalling output:	2 transistor outputs, Y1 + Y2 = max. 100 mA, p-type, short-circuit proof
Function display:	LED (ISD)
EMC rating:	conforming to EMC Directive
Overvoltage category:	III to DIN VDE 0110
Degree of pollution:	2 to DIN VDE 0110
Resistance to vibration:	10 ... 55 Hz / amplitude 0.35 mm
Resistance to shock:	30 g / 11 ms
Ambient temperature:	0 °C ... + 55 °C
Storage and transport temperature:	– 25 °C ... + 70 °C
Dimensions:	100 x 75 x 110 mm
Note:	Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.

Approvals

in preparation

Ordering details

FWS 3505-2204 ①

No.	Replace	Description
①		24 VDC

Function table

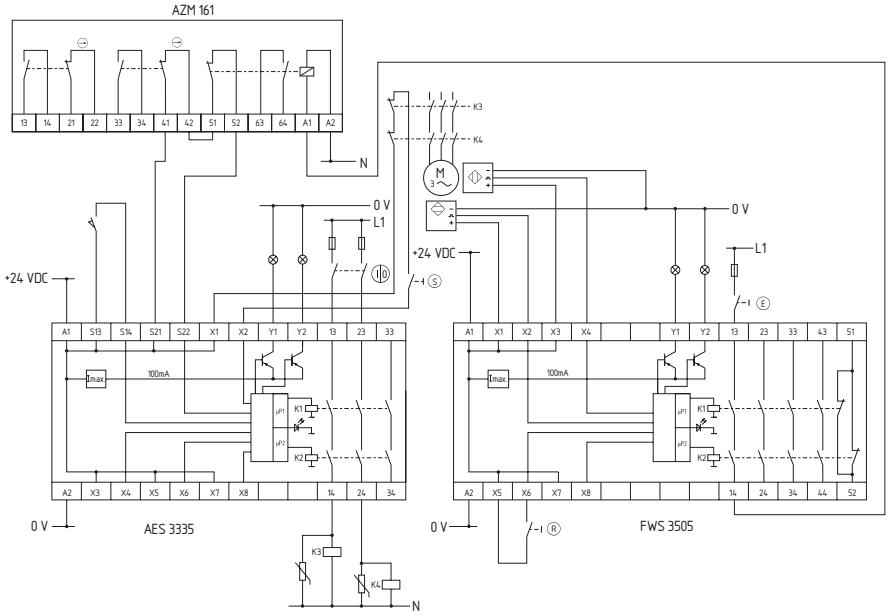
Additional transistor output:	Function:
Y1	Authorized operation, enabling paths closed
Y2	Fault

Standstill monitoring

Note

- FWS to monitor one guard door at plants with dangerous run-on movements up to control category 3 to EN 954-1
- Standstill monitoring for unlocking solenoid interlocks
- The solenoid interlock can be opened, when the standstill monitor has detected the end of the run-on movement by means of one or two inductive proximity switches. When the button Ⓔ is actuated, the solenoid of the solenoid interlock is energised.
- If only one inductive proximity switch is connected to the standstill monitor, the standstill frequencies must be identical and inputs X1 and X4 must be bridged
- For suitable IFL range p-type inductive proximity switches, refer to „Schmersal Catalogue Automatisierungstechnik“.

Wiring diagram



ISD

The following faults are recognised by safety monitoring module and indicated by the ISD

- Interruption of the connections to the inductive proximity switches
- Failure of the proximity switches
- Failure of one channel being evaluated
- Failure of safety relay to pull-in or drop-out
- Faults on input or relay control circuits of the safety monitoring module

Note

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.