DATASHEET

AZR31S1/24VDC

- Fail-safe standstill monitors
- Sensor-free detection of standstill by monitoring e.m.f.
- Direct connection to three-phase motors
- Suitable for connection to a frequency converter with the following interface date: rotary hysteresis 0 ... 1000 Hz; switching frequency of the end level up to 16 kHz; engine voltage range 0 ... 400 V
- This fail-safe standstill monitor has the particular advantage that no adjustment for a required-value is needed during comissioning.
- 3 safety contacts, STOP 0
- 1 Signalling output

Data

Ordering data

Note (Delivery capacity)	Not available!
Product type description	AZR31S1/24VDC
Article number (order number)	101049677
EAN (European Article Number)	4250116202546
eCl@ss number, version 12.0	27-37-18-19
eCl@ss number, version 11.0	27-37-18-19
eCl@ss number, version 9.0	27-37-18-19
ETIM number, version 7.0	EC001449
ETIM number, version 6.0	EC001449

General data

Standards	EN IEC 62061
	EN ISO 13849-1
	EN IEC 60947-5-1
	EN IEC 60947-5-3
	EN IEC 60947-5-5
	EN IEC 61508
	EN IEC 60204-1
	EN IEC 60947-1
Climatic stress	EN 60068-2-78
Enclosure material	Glass-fibre, reinforced thermoplastic
Gross weight	400 g

General data - Features

Stop-Category	0
Wire breakage detection	Yes
Cross-circuit detection	Yes
Feedback circuit	Yes
Automatic reset function	Yes
Earth connection detection	Yes
Integral system diagnostics, status	Yes
Number of auxiliary contacts	1
Number of LEDs	5
Number of safety contacts	3

Safety classification

Standards	EN IEC 60947-5-1
	EN IEC 61508
PFH value	2.00×10^{-8} /h
Mission time	20 Year(s)
Common Cause Failure (CCF), minimum	65

Safety classification - Relay outputs

Performance Level, stop 0, up to	e

Category, Stop 0	4
Diagnostic Coverage (DC) Level, Stop 0	≥ 99 %
Safety Integrity Level (SIL), Stop 0, suitable for applications in	3

Mechanical data

Mechanical life, minimum	10,000,000 Operations
Mounting	Snaps onto standard DIN rail to EN 60715

Mechanical data - Connection technique

Termination	rigid or flexible Screw terminals M20 x 1.5
Terminal designations	IEC/EN 60947-1
Cable section, minimum	0.25 mm²
Cable section, maximum	2.5 mm²
Tightening torque of Clips	0.6 Nm

Mechanical data - Dimensions

Width	45 mm
Height	73.2 mm
Depth	121 mm

Ambient conditions

Degree of protection of the enclosure	IP40
Degree of protection of the mounting space	IP54
Degree of protection of clips or terminals	IP20
Ambient temperature	-25 ... +45 °C
Storage and transport temperature, minimum	-40 °C
Storage and transport temperature, maximum	+85 °C

Resistance to vibrations	10 ... 55 Hz, Amplitude 0.35 mm
Restistance to shock	30 g / 11 ms

Ambient conditions - Insulation values

Rated impulse withstand voltage U_{imp}	4 kV
Overvoltage category	III
Degree of pollution	2

Electrical data

Frequency range	50 Hz 60 Hz
Operating voltage	24 VDC -10 % / +20 %
Ripple voltage	10 %
Rated operating voltage	24 VDC
Rated AC voltage for controls at DC minimum	20.4 VDC
Rated control voltage at DC, maximum	28.8 VDC
Electrical power consumption, maximum	3.2 W
Contact resistance, maximum	0.1 Ω
Note (Contact resistance)	in new state
Cable length (Master/Slave), maximum	10 m
Drop-out delay in case of power failure, typically	80 ms
Drop-out delay in case of emergency, typically	20 ms
Drop-out delay in case of "emergency stop", maximum	15 ms
Pull-in delay at automatic start (after detecting standstill), approx.	7,000 ms
Pull-in delay at RESET, typically	20 ms
Material of the contacts, electrical	AgSn0. self-cleaning, positive drive

Electrical data - Safe relay outputs

Voltage, Utilisation category AC-15	230 VAC
Current, Utilisation category AC-15	6 A
Voltage, Utilisation category DC-13	24 VDC
Current, Utilisation category DC-13	6 A
Switching capacity, minimum	10 VDC
Switching capacity, minimum	10 mA
Switching capacity, maximum	250 VAC
Switching capacity, maximum	8 A

Electrical data - Digital inputs

Conduction resistance, maximum	40 Ω

Electrical data - Digital Output

Voltage, Utilisation category DC-12	24 VDC
Current, Utilisation category DC-12	0.1 A

Electrical data - Relay outputs (auxiliary contacts)

Switching capacity, maximum	24 VDC
Switching capacity, maximum	2 A

Electrical data - Electromagnetic compatibility (EMC)

EMC rating	EMC-Directive

Status indication

Indicated operating states	OUT, green: release ON, green: supply voltage U_B ERR, red: error channel A + B

Other data

Note (applications)	safe standstill monitoring

Note

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

Wiring example

Note (Wiring diagram)	The wiring diagram is shown with guard doors closed and in de-energised condition.
	The sensor-free standstill monitor checks the e.m.f. of the three phase motor.
	The SRB range guard door monitor checks the position of the guard door.
	Monitoring the guard door using a solenoid interlock and a safety switch with separate actuator (A and B).
	Release takes place by means of the NO contact (E) only when the run-down movement has been terminated.
	After release has taken place, the guard door must be opened.
	To secure a guard door

Pictures

Product picture (catalogue individual photo)

ID: kazr3f06
| 690.1 kB | .jpg | 212.372 x 286.456 mm - 602 x 812 px - 72 dpi
| 100.4 kB | .png | 74.083 x 99.836 mm - 210 x 283 px - 72 dpi
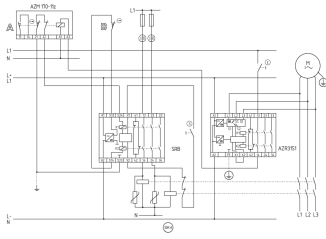
Symbol (technical standard)

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

ID: kformm02
| 191.1 kB | .jpg | 352.778 x 246.592 mm - 1000 x 699 px - 72 dpi

Wiring example

ID: kazr3l09
| 57.3 kB | .cdr |
| 139.6 kB | .jpg | 352.778 x 251.178 mm - 1000 x 712 px - 72 dpi

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The details and data referred to have been carefully checked. Images may diverge from original. Further technical data can be found in the manual. Technical amendments and errors possible.

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