SAFETY PRODUCTS

Sense 11Z Series
Magnetic Non-Contact Safety Switch
Data Sheet

Sense 11Z is a coded magnetic non-contact safety switch used for interlocking doors and hatches.

The switch is mounted on the frame and the actuator on the moving part of the guard.

Sense 11Z offers an interlocking function reaching PLe/SIL 3 with low level coding. It also has a stainless-steel housing that is designed for harsh environments and extreme temperatures, suitable for splash zones in accordance with EHEDG guidelines.

Easy to install

Compact size
Compact in size to make it easy to position and hide on gates and hatches.

Large sensing distance
With a large sensing distance and a high tolerance for misalignment makes it easy to install.

Continuous operation

Easier Troubleshooting
LED indication gives visual status of the switch reducing downtime.

No wear, no mechanical breakage
Non-contact sensing means no mechanical wear and the large sensing tolerance gives a better tolerance to vibrations, resulting in fewer unwanted process stops.

Optimum Interface

Small Design
Small footprint makes it easy to install in restricted space.

Industry Footprint
Standard industry footprint for smaller magnetic non-contact switches.

Ordering Information

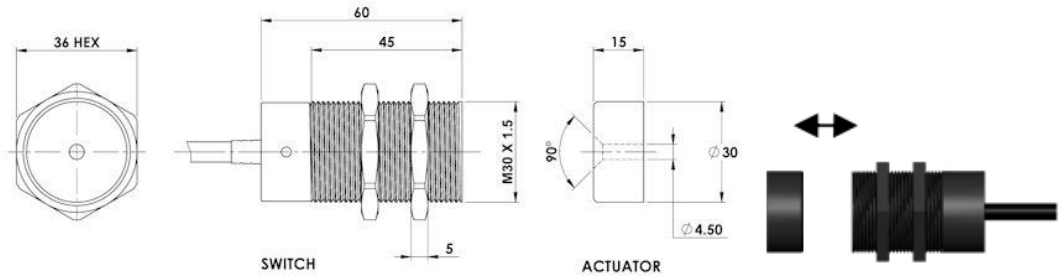
Description	Material Housing	Type	Order code
Sense 11Z, 2m cable, 2NC/1NO, LED	Stainless Steel	Sense 11Z	2TLA050060R4120
Sense 11Z, 5m cable, 2NC/1NO, LED	Stainless Steel	Sense 11Z	2TLA050060R5120
Sense 11Z, 10m cable, 2NC/1NO, LED	Stainless Steel	Sense 11Z	2TLA050060R6120
Sense 11Z, QC cable, 2NC/1NO, LED	Stainless Steel	Sense 11Z	2TLA050060R2120

Note: Quick connect M12 versions fitted with 250mm (10”) cable

Accessories

Description	Material Housing	Order code
Sense 11Z Spare Actuator	Stainless Steel	2TLA050040R0216

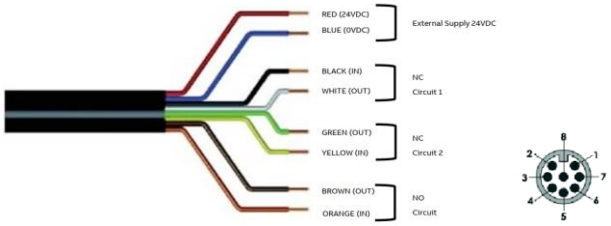
Dimensions (in mm)



Wiring

Quick Connect (QC) M12 8pin	Flying Lead Colors	Circuit (Actuator Present)	Output Types Solid State
2	Red	Supply 24VDC	Supply 24VDC +/- 10%
3	Blue	Supply 0VDC	
7	Black	Safety NC1 +ve	200mA Max. 24VDC
1	White	Safety NC1 -ve	
4	Yellow	Safety NC2 +ve	200mA Max. 24VDC
6	Green	Safety NC2 -ve	
8	Orange	Auxiliary NO	200mA Max. 24VDC
5	Brown	Auxiliary NO	

Note: The NC1 and NC2 Outputs are polarity sensitive.



Technical Data	
Manufacturer	
Address	ABB Electrification Sweden AB SE-721 61 Västerås Sweden
Electrical characteristics	
Minimum switched current	10VDC 1mA
Dielectric withstand	250 VAC
Safety channel 1-NC	24VDC 0.2 A max. rating
Safety channel 2-NC	24VDC 0.2 A max. rating
Safety channel 3-NO	24VDC 0.2 A max. rating
Insulation resistance	100 MOhms
Power Consumption	25mA Max.
General	
Recommended setting gap	5 mm
Switching Distance (target to target)	S_{ao} 10 mm close (ON) S_{ar} 20 mm open (OFF)
Tolerance to misalignment	5 mm in any direction from 5 mm setting gap
Switching frequency	1.0 Hz maximum
Approach speed	200 mm/m to 1000 mm/s
Vibration resistance	IEC 68-2-6, 10-55 Hz 1 mm
Shock resistance	IEC 68-2-27, 11 ms, 30 g
Protection class	IP67, IP69K
Response Time (OFF)	60ms Maximum
Cable Type	PVC 8 core 6 mm O.D
Ambient temperature	-25 °C to +70 °C, +105 °C for short duration during CIP/SIP cleaning
Size	60mm(length)
Material	316 Grade Stainless Steel
Color	Silver
Mounting Position	Any
Mounting Bolts	2 x M4 Tightening torque 1.0Nm
Safety-related characteristic data and Conformity	
Conformity	European Machinery Directive 2006/42/EC EN ISO 12100:2010, EN ISO 14119:2013, EN ISO 13849-1:2015, EN 60947-5-3:2013
EN ISO 13849-1	Up to PLe Category 4 (if both channels are used with a PLe control device)
EN 62061	Up to SIL3 depending on system architecture
Coding Level according to EN ISO 14119	Low
Safety data	
PFH_D	2.6×10^{-10} (1/h)
Proof test interval (life)	20 years
$MTTF_d$	866 years
Certifications	TÜV, cULus
Information with regard to UL 508	Type 1 Enclosure Max. Temp: 70ºC Maximum output 24V.dc 100mA. Powered by Class 2 or equivalent.

—
ABB Inc.
305 Gregson Drive
Cary, North Carolina 27511
United States
electrification.us.abb.com/products/machine-motor-control