

Retroflective sensing sensor, Sn=2m, 4L, 10-30VDC, NPN, PNP, M18, metal, line 2m



Part no. LSO-R18S-B2000-LD Article no. 281989 Catalog No. -

livery	

Basic function			Optical proximity switches
Part group reference			LSO
Product range			Reflected-light barrier
Description			For combination with light-barrier reflector
Operating range	S_{d}	mm	2000
Style		mm	M18 x 1
Housing			Metal
Terminal connection			2 m connection cable
Maximum load current	l _e	mA	150

Technical data

General

Standards		IEC/EN 60947-5-2
Ambient temperature		40 - +70
Degree of Protection		IP67
Characteristics		
Range	mm	2000

Characteristics			
Range		mm	2000
Rated operating voltage	U _e	V DC	10 - 30
Maximum load current	l _e	mA	< 150
Operating current in the switched state at 24 V DC	I _b	mA	25
Max. operating frequency (resistive load)	f	Hz	≦ ₁₆₀
Overcurrent release		mA	220
Readiness delay	t_{v}	ms	100
Switching state display		LED	Yellow
Alarm display		LED	Yellow, flashing
Operating voltage display		LED	red
Fault display		LED	Green, flashing
Short-circuit and reverse polarity protection			•
Output function			Programmable
Style			
Threaded barrel		mm	M18 x 1
Connection options			
Cable, open			•
Connector M12, "A"-keyed			•
Enclosure material			
Plastic			PBT
Metal			Stainless steel 1.4301
Enclosure nut tightening torque			
Plastic		Nm	5

Notes

Metal

Switching range S_d [mm] with LSO

The switching range is defined conform to IEC/EN 60947-5-2. It relates to reflected-light beams on a white paper card with a 90 % degree of reflection and

- 100 mm edge length with $S_d < 400 \ \text{mm}$
- 200 mm edge length with $S_d \stackrel{}{=} 400$ mm

Correction factor with LSO as an optical sensor:

25

Paper, matt white, 200 g/m 2 1.0 x S_d Metal, gloss 1.2...1.6 x S_d Aluminium, black anodized 1.1...1.8 x S_d

Expanded polystyrene, white 1 x S_d

Cotton, white 0.6 x S_d

PVC, grey $0.5 \times S_d$

Wood, untreated 0.4 x S_d

Carton, black, gloss $0.3 \times S_d$

Carton, black, matt 0.1 x S_d

Short-circuit protection monitored

DC-operated proximity switches are proof against short-circuit. The device is not damaged by the effects of a short-circuit. No matter how long its duration. Once the fault has been cleared, the switch is immediately ready for operation again.

Design verification as per IEC/EN 61439

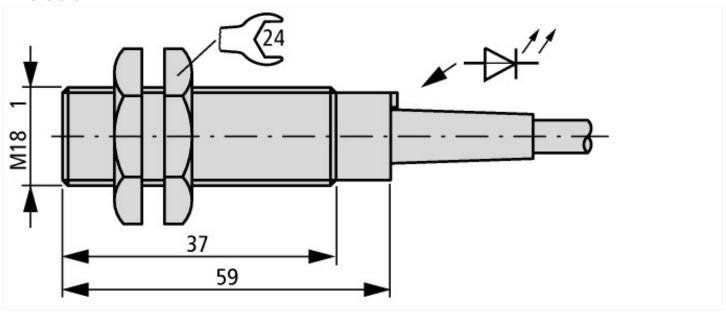
Technical data for design verification		
Operating ambient temperature min.	°C	40
Operating ambient temperature max.	°C	70

Technical data ETIM 6.0

Sensors (EG000026) / Reflection light barrier (EC002717) Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Optoelectronic sensor / Reflection light barrier (ecl@ss8.1-27-27-09-02 [AKP251010])			
Nith time function		No	
Rated switching distance	mm	2000	
Max. switching distance	mm	2000	
Max. output current	mA	150	
Reflector included		No	
Analogue output 0 V 10 V		No	
Analogue output 0 mA 20 mA		No	
Analogue output 4 mA 20 mA		No	
Analogue output -10 V +10 V		No	
Nith other analog output		No	
Setting procedure		Manual adjustment	
Vith communication interface analog		No	
Vith communication interface AS-Interface		No	
Vith communication interface CANOpen		No	
Vith communication interface DeviceNet		No	
Vith communication interface Ethernet		No	
Vith communication interface INTERBUS		No	
Vith communication interface PROFIBUS		No	
Vith communication interface RS-232		No	
Vith communication interface RS-422		No	
Vith communication interface RS-485		No	
Vith communication interface SSD		No	
Vith communication interface SSI		No	
lumber of semiconductor outputs with signalling function		0	
lumber of contact energized outputs with signalling function		0	
lumber of protected semiconductor outputs		0	
lumber of protected contact energized outputs		0	
ype of interface for safety communication		-	
ype of electric connection		Cable	
ype of switching output		PNP	
ype of switch function		Programmable/configurable	

Explosion safety category for gas Mone Explosion safety category for dust Mone Construction type housing Mm 0 Width sansor mm 0 Height of sensor mm 0 Langth of sensor mm 99 Switch function mm 99 Material of potical surface mm 0 Material housing mm 0 Max. output current at protected output mm 0 Min. reflector distance mm 0 Ambient temperature "C 40-70 Time of reaction ms 100 Transmission range of the safety field ms 100 Switching frequency Hz 160 Yee of safety acc. IEC 61496-1 V 0 Switching voltage Us at AC 50HZ V 0 Rated control supply voltage Us at AC 50HZ V 0 Rated control supply voltage Us at AC 60HZ V 0 Rated control supply voltage Us at AC 60HZ V 0			
Explosion safety category for dust None Construction type housing Cylinder, screw-thread Width sensor mm 0 Diameter sensor mm 0 Length of sensor mm 99 Switch function mm 99 Material of optical surface Metal Material of potical surface Metal Material of potical surface mm 0 Min. reflector distance mm 0 Ambient temperature mm 0 Time of reaction ms 100 Transmission range of the safety field m 0 Switching requency ms 100 Type of safety sec. LEC 61486-1 m 0 Switching voltage of OSSD at state "high" V 0 Rated control supply voltage Us at AC 50HZ V 0 Rated control supply voltage Us at AC 50HZ V 0 Rated control supply voltage Us at AC 50HZ V 0 With monitoring function downstream switching devices m None <tr< td=""><td>Operation agent-safety class</td><td></td><td>•</td></tr<>	Operation agent-safety class		•
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Switch function Image: Company of the safety field Image: Company of the safety field of the	Height of sensor	mm	0
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In me of reaction ms 100 Transmission range of the safety field m	Min. reflector distance	mm	0
Transmission range of the safety field me 0 Switching frequency Hz 160 Switching frequency 179e of safety acc. IEC 61496-1 Switching voltage of OSSD at state "high" V 0 Rated control supply voltage Us at AC 50HZ V 0-0 Rated control supply voltage Us at AC 60HZ V 0-0 Rated control supply voltage Us at AC 60HZ V 0-0 Rated control supply voltage Us at DC V 24-24 Voltage type DC With monitoring function downstream switching devices No Laser protection class None Wavelength of the sensor nm 0 Vavelength of the sensor Infrared light Light dot mm² 0 With restart blockage None With restart blockage None Suitable for safety functions	Ambient temperature	°C	-40 - 70
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Type of safety acc. IEC 61496-1 Switching voltage of OSSD at state "high" Rated control supply voltage Us at AC 50HZ Rated control supply voltage Us at AC 60HZ Rated control supply voltage Us at AC 60HZ Rated control supply voltage Us at AC 60HZ V Voltage type Voltage type With monitoring function downstream switching devices Laser protection class Wavelength of the sensor Type of light Light dot With restart blockage Suitable for safety functions No O O O O O O O O O O O O O	Transmission range of the safety field	m	0
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Rated control supply voltage Us at AC 50HZ Rated control supply voltage Us at AC 60HZ Rated control supply voltage Us at DC V 24 - 24 Voltage type Voltage type Vibria monitoring function downstream switching devices Laser protection class V No Laser protection class V None Vavelength of the sensor Type of light Light dot With restart blockage Suitable for safety functions	Type of safety acc. IEC 61496-1		
Rated control supply voltage Us at AC 60HZ Rated control supply voltage Us at DC V 24 - 24 Voltage type DC With monitoring function downstream switching devices Laser protection class Wavelength of the sensor Type of light Light dot mm² O With restart blockage Suitable for safety functions	Switching voltage of OSSD at state "high"	V	0
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Voltage type Voltage type With monitoring function downstream switching devices Laser protection class Wavelength of the sensor Type of light Light dot With restart blockage Suitable for safety functions DC No No No No No No No No No N	Rated control supply voltage Us at AC 60HZ	V	0 - 0
With monitoring function downstream switching devices Laser protection class Wavelength of the sensor Type of light Light dot With restart blockage Suitable for safety functions No	Rated control supply voltage Us at DC	V	24 - 24
Laser protection class Wavelength of the sensor Type of light Light dot With restart blockage Suitable for safety functions None None Infrared light No No No No No No No No No N	Voltage type		DC
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Type of light Light dot mm² 0 With restart blockage No Suitable for safety functions No	Laser protection class		None
Light dot mm² 0 With restart blockage No Suitable for safety functions No	Wavelength of the sensor	nm	0
With restart blockage No Suitable for safety functions No	Type of light		Infrared light
Suitable for safety functions No	Light dot	mm²	0
	With restart blockage		No
Degree of protection (IP)	Suitable for safety functions		No
	Degree of protection (IP)		IP67

Dimensions



Additional product information (links)

AWA1360-2158 Optical Proximity Switches

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ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/21580404.pdf