



M45S-034000ELO, M45E-034000ELO

M4000 Standard in IP69K Housing

MULTIPLE LIGHT BEAM SAFETY DEVICES

SICK
Sensor Intelligence.



Ordering information

System part	Type	Part no.
Sender	M45S-034000ELO	1057664
Receiver	M45E-034000ELO	1057665

Other models and accessories → www.sick.com/M4000_Standard_in_IP69K_Housing



Detailed technical data

Features

Scanning range	0.5 m ... 15.5 m
Number of beams	3
Beam separation	400 mm
Response time	10 ms
Synchronization	Optical synchronisation

Safety-related parameters

Type	Type 4 (IEC 61496)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (EN 62061)
Category	Category 4 (EN ISO 13849)
Performance level	PL e (EN ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	6.6×10^{-9} (EN ISO 13849)
T_M (mission time)	20 years (EN ISO 13849)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

Functions

	Functions	Delivery status
Beam coding	✓	Code 1
Sender test	✓	Deactivated
Configurable application diagnostic output	✓	Contamination (OWS)

Interfaces

System connection	
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¹⁾ For additional information on Flexi Soft -> www.sick.com/Flexi_Soft.

Connection type	PVC cable, 8-pin
Cable length	15 m
Conductor cross-section	0.25 mm ²
Configuration method	None
Specialty	The devices are sealed in the IP69K Housing from the factory and cannot be re-configured.
Display elements	LEDs 7-segment display
Fieldbus, industrial network	
Integration via Flexi Soft safety controller	CANopen, DeviceNet™, EtherCAT®, EtherNet/IP™, Modbus TCP, PROFIBUS DP, PROFINET ¹⁾

¹⁾ For additional information on Flexi Soft -> www.sick.com/Flexi_Soft.

Electrical data

Protection class	III (EN 50178)
Supply voltage V_S	24 V DC (19.2 V DC ... 28.8 V DC) ¹⁾
Residual ripple	≤ 10 % ²⁾
Power consumption	≤ 0.2 A: ≤ 0.6 A (depending on type)
Safety outputs (OSSD)	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored ³⁾
Switching voltage HIGH	24 V DC (V _S – 2.25 V DC ... V _S)
Switching voltage LOW	≤ 2 V DC
Switching current	≤ 500 mA
Diagnostic outputs	
Type of output	PNP semiconductor, short-circuit protected
Switching voltage HIGH	24 V DC (V _S – 4.2 V DC ... V _S)
Switching voltage LOW	High resistance
Switching current	≤ 100 mA

¹⁾ The external voltage supply must be capable of buffering brief mains voltage failures of 20 ms as specified in EN 60204-1. Suitable power supplies are available as accessories from SICK.

²⁾ Within the limits of V_S.

³⁾ Applies to the voltage range between –30 V and +30 V.

Mechanical data

Housing diameter	80 mm
Material	
End caps	Stainless steel
Plastic tube	PMMA
Compensating element (membrane)	PA 6
PG connector	PA 6

Ambient data

Enclosure rating	IP69K, IP67, IP66, IP65 (EN 60529)
Ambient operating temperature	–30 °C ... +55 °C
Storage temperature	–30 °C ... +70 °C
Air humidity	15 % ... 95 %, Non-condensing
Vibration resistance	5 g, 10 Hz ... 55 Hz (IEC 60068-2-6)

Shock resistance	10 g, 16 ms (IEC 60068-2-29)
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Other information

Wave length	950 nm
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Classifications

ECl@ss 5.0	27272703
ECl@ss 5.1.4	27272703
ECl@ss 6.0	27272703
ECl@ss 6.2	27272703
ECl@ss 7.0	27272703
ECl@ss 8.0	27272703
ECl@ss 8.1	27272703
ECl@ss 9.0	27272703
ETIM 5.0	EC001832
ETIM 6.0	EC001832
UNSPSC 16.0901	46171620

	Brief description	Type	Part no.
Device protection (mechanical)			
	Bidirectional ventilation membrane made from Gore-Tex	Bidirectional ventilation membrane	5309082

	Brief description	Type	Part no.
Other mounting accessories			
	1 piece, Mounting tool for M12 cable socket, large housing	Installation wrench	4067618
Terminal and alignment brackets			
	2 pieces, Stainless steel support bracket, Stainless steel	BEF-2AAAAOES2	2060164
	4 pieces, Reinforced stainless steel bracket, rotatable, Stainless steel	BEF-2SMGVAES4	2060165

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com