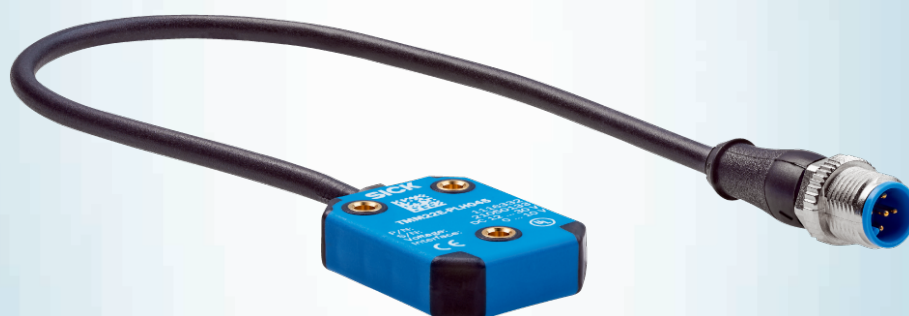




TMM22B-PKH090

TMS/TMM22

INCLINATION SENSORS

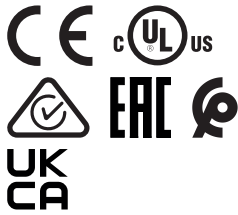
SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	part no.
TMM22B-PKH090	1140832

Other models and accessories → www.sick.com/TMS_TMM22

Detailed technical data

Safety-related parameters

MTTF_D (mean time to dangerous failure)	349 years (EN ISO 13849-1) ¹⁾
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¹⁾ This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 40 °C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

Performance

Number of axis	2
Measuring range	± 90°
Resolution	≤ 0.01°
Static measurement accuracy	Typ. 0.1°, max. 0.2° ¹⁾
Repeatability	Typ. 0.04°, max. 0.12° ²⁾
Compensated cross-sensitivity (2-dimensional)	± 0.3°
Temperature coefficient (zero point)	Typ. ±0,0167°/K ³⁾
Limit frequency	0.1 Hz ... 10 Hz, 2 Hz, default
Sampling rate	400 Hz

¹⁾ In accordance with DIN ISO 1319-1, position of the upper and lower error limit depends on the installation situation, specified value refers to a symmetrical position, i.e. deviation in upper and lower direction is the same.

²⁾ In accordance with DIN ISO 55350-13; 68.3% of the measured values are inside the specified area.

³⁾ 68.3% of the measured values are inside the specified area.

Interfaces

Communication interface	Analog / Current
Current output	4 mA ... 20 mA
0-set function via hardware pin	✓
Load resistance	200 Ω ... 900 Ω ¹⁾
Status information	
LED	2x (green/red)

¹⁾ At 24 V DC. Value depends on supply voltage and can be found in the operating instructions.

Output signal (error state)	1...2,5 mA
Parameterising data	Measuring range Zeraset Limit frequency Preset value Inverting of counting direction Axis assignment Free adjustable outbound
Programmable/configurable	Over PGT-15
Initialization time	100 ms

¹⁾ At 24 V DC. Value depends on supply voltage and can be found in the operating instructions.

Electronics

Connection type	Cable, 5-wire, with male connector, M12, 5-pin, 0.3 m
Supply voltage	8 V DC ... 32 V DC
Current consumption	< 45 mA (+ I _{loop}) @ 24 V
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓

Mechanics

Dimensions	38.8 mm x 30 mm x 10.4 mm
Weight	Approx. 60 g
Housing material	Plastic (PA12), glass-fiber reinforced
Material, cable	PUR

Ambient data

EMC	EN 61326-1
Enclosure rating	IP66 IP67 IP68 IP69K
Operating temperature range	-40 °C ... +80 °C
Storage temperature range	-40 °C ... +85 °C
Resistance to shocks	100 g, 6 ms (EN 60068-2-27)
Resistance to vibration	10 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

Classifications

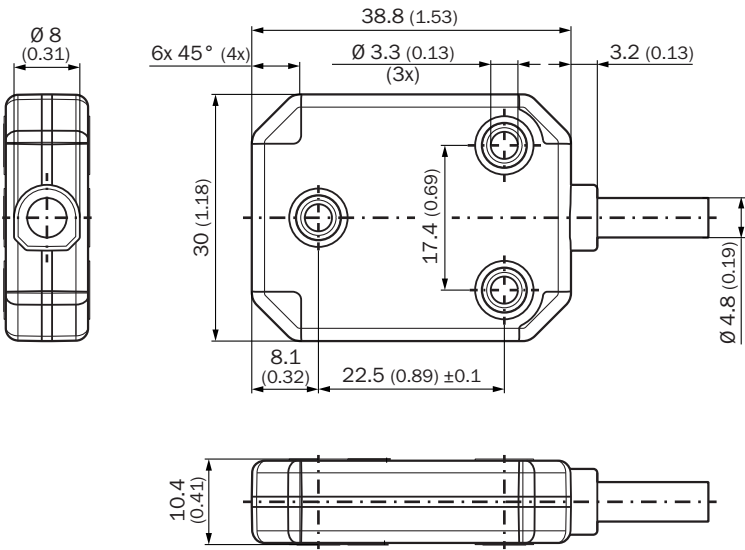
ECLASS 5.0	27270790
ECLASS 5.1.4	27270790
ECLASS 6.0	27270790
ECLASS 6.2	27270790
ECLASS 7.0	27270790
ECLASS 8.0	27270790
ECLASS 8.1	27270790
ECLASS 9.0	27270790
ECLASS 10.0	27271101
ECLASS 11.0	27271101
ECLASS 12.0	27271101

ETIM 5.0	EC001852
ETIM 6.0	EC001852
ETIM 7.0	EC001852
ETIM 8.0	EC001852
UNSPSC 16.0901	41111613

Certificates

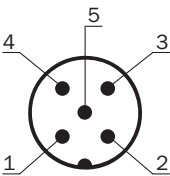
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
EAC certificate / DoC	✓

Dimensional drawing



Dimensions in mm (inch)

Anschlussbelegung



PINM12 male connector, 5-pin	Wire colors (cable connection)	SignalTMS22B	SignalTMM22B
1	Brown	U _S	U _S

PINM12 male connector, 5-pin	Wire colors (cable connection)	SignalTMS22B	SignalTMM22B
2	White	OUT 2 (default: Z)	OUT 2 (default: Y)
3	Blue	GND	GND
4	Black	OUT 1 (default: n.c.)	OUT 1 (default: X)
5	Gray	TEACH ¹⁾	TEACH ¹⁾

¹⁾To activate the zero point setting, connect TEACH (pin 5) to GND (pin 3) for at least 1 second.

Recommended accessories

Other models and accessories → www.sick.com/TMS_TMM22

	Brief description	Type	part no.
connectors and cables			
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1.5 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A25-015UB6XLEAX	2095833
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A25-030UB6XLEAX	2095834
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A25-050UB6XLEAX	2095733
	Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YG2A25-030UB6XLEAX	2095791
	Connection type head A: Male connector, M12, 5-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² Note: For field bus technology	STE-1205-G	6022083
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm²	DOS-1205-G	6009719
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A25-020UB6XLEAX	2145583
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A25-010UB6XLEAX	2145582
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A25-C60UB6XLEAX	2145581

	Brief description	Type	part no.
programming devices			
	• Product segment: Programming devices • Product family: PGT-15 • Description: PC programming unit for programmable TMS/TMM22B inclination sensors. Connects the M12 male connector of the sensor to a PC/laptop, enabling parameterization and diagnostics via SOPAS ET. The cable of the programming unit must not be extended. • Items supplied: 1 x PGT-15-M12 PC programming unit	PGT-15-M12	1131448
	• Product segment: Programming devices • Product family: PGT-15 • Description: PC programming unit for programmable TMS/TMM22B inclination sensors. Connects the strands of the sensor to a PC/laptop via the terminal box, enabling parameterization and diagnostics via SOPAS ET. The cable of the programming unit must not be extended. • Items supplied: 1 x PGT-15-WIRE PC programming unit	PGT-15-WIRE	1131450

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