Product data sheet

TMM88D-MCI090A

TMS/TMM88 Dynamic

DYNAMIC INCLINATION SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
TMM88D-MCI090A	1139501

Other models and accessories ➜ www.sick.com/TMS_TMM88_Dynamic

Detailed technical data

Performance

Number of axis	2
Measuring range	± 90°
Resolution	0.01°
Static measurement accuracy	± 0.1°
Dynamic measurement accuracy	± 0.25°
Temperature coefficient (zero point)	Typ. ±0.0016°/K [1]
Limit frequency	0.1 Hz ... 25 Hz, 8. range (with digital filter)
Interference suppression time for sensor fusion filter	100 ms ... 10,000 ms
Sampling rate	200 Hz
Additional information	
Pitch (Euler angle)	± 90° (Pitch) ± 180° (Roll)
Pitch (quaternion)	Scalar parts w, vector parts x, y, z
Acceleration	± 8 g (x-, y-, z-axis)
Turning rate	± 250 °/s (x-, y-, z-axis)

[1] Reffering to the temperature of 25 °C.

Interfaces

Communication interface	CANopen
Device profile	CiA DSP-410
Address setting	0...127, default: 10
Data transmission rate (baud rate)	10 kbit/s ... 1,000 kbit/s, Default: automatic baud rate detection
Status information	Via status LED
Bus termination	Via external terminator
Parameterising data	Zeroset Limit frequency Interference suppression time Sensor fusion Preset value Inverting of counting direction Mounting position
Initialization time	120 ms

Electrical data

Connection type	Male connector, Female connector, 1x, 1x, M12, M12, 5-pin, 5-pin
Supply voltage	7.5 V DC ... 36 V DC
Current consumption	12 mA @ 24 V
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓
MTTFd: mean time to dangerous failure	587 years (EN ISO 13849-1) [1]

[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.

Mechanical data

Dimensions	114 mm x 66 mm x 30 m
Weight	330 g
Housing material	Die-cast zinc

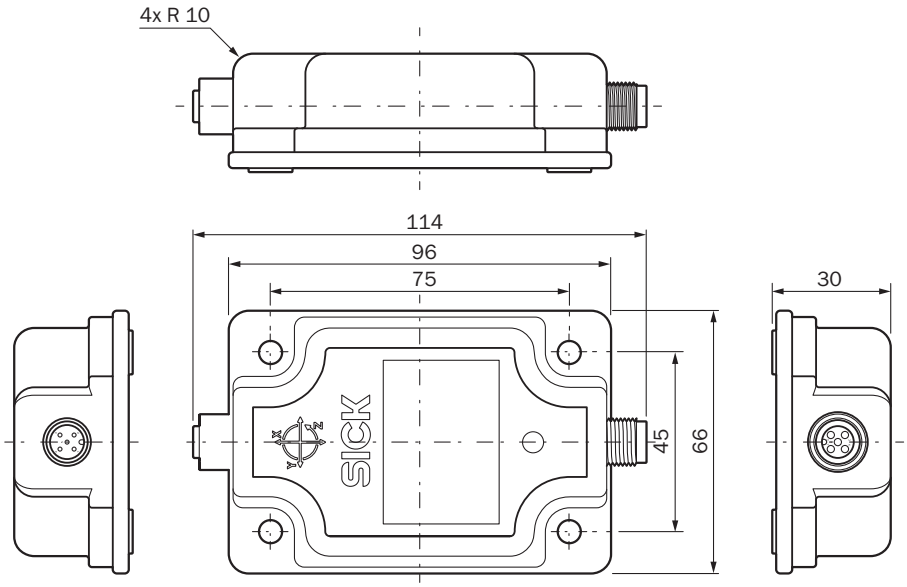
Ambient data

EMC	EN 61326-1
Enclosure rating	IP6K7 IP6K9K
Operating temperature range	–40 °C ... +85 °C
Storage temperature range	–40 °C ... +85 °C
Resistance to shocks	100 g, 6 ms (according to EN 60068-2-27)
Resistance to vibration	10 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

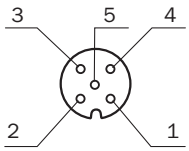
Classifications

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

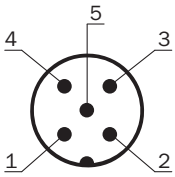
Dimensional drawing (Dimensions in mm (inch))



PIN assignment



PIN Female connector M12, 5-pin	Signal	
1	CAN Shield	Shielding
2	VDC	Supply voltage
3	GND/CAN GND	0V (GND)
4	CAN high	CAN signal
5	CAN low	CAN signal



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Recommended accessories

Other models and accessories ➜ www.sick.com/TMS_TMM88_Dynamic

	Brief description	Type	Part no.
Others			
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Fieldbus, CANopen, DeviceNet™ • **Cable:** 2 m, 4-wire, PUR, halogen-free • **Description:** Fieldbus, CANopen, DeviceNet™, shielded • **Application:** Drag chain operation, Zones with oils and lubricants	YF2A15-020C1BXLEAX	2106283
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Fieldbus, CANopen, DeviceNet™ • **Cable:** 5 m, 4-wire, PUR, halogen-free • **Description:** Fieldbus, CANopen, DeviceNet™, shielded • **Application:** Drag chain operation, Zones with oils and lubricants	YF2A15-050C1BXLEAX	2106284
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Fieldbus, CANopen, DeviceNet™ • **Cable:** 10 m, 4-wire, PUR, halogen-free • **Description:** Fieldbus, CANopen, DeviceNet™, shielded • **Application:** Drag chain operation, Zones with oils and lubricants	YF2A15-100C1BXLEAX	2106286
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Male connector, M12, 5-pin, straight, A-coded • **Signal type:** Fieldbus, CANopen, DeviceNet™ • **Cable:** 2 m, 4-wire, PUR, halogen-free • **Description:** Fieldbus, CANopen, DeviceNet™, shielded • **Application:** Drag chain operation, Zones with oils and lubricants	YF2A15-020C1BM2A15	2106279
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Male connector, M12, 5-pin, straight, A-coded • **Signal type:** Fieldbus, CANopen, DeviceNet™ • **Cable:** 5 m, 4-wire, PUR, halogen-free • **Description:** Fieldbus, CANopen, DeviceNet™, shielded • **Application:** Drag chain operation, Zones with oils and lubricants	YF2A15-050C1BM2A15	2106281
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Male connector, M12, 5-pin, straight, A-coded • **Signal type:** Fieldbus, CANopen, DeviceNet™ • **Cable:** 10 m, 4-wire, PUR, halogen-free • **Description:** Fieldbus, CANopen, DeviceNet™, shielded • **Application:** Drag chain operation, Zones with oils and lubricants	YF2A15-100C1BM2A15	2106282

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.

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