



# TMM88D-PCI090S05

TMS/TMM88 Dynamic

**DYNAMIC INCLINATION SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
TMM88D-PCI090S05	1101884

Other models and accessories → [www.sick.com/TMS\\_TMM88\\_Dynamic](http://www.sick.com/TMS_TMM88_Dynamic)

Detailed technical data

Features

Special device	✓
Specialty	Node ID 19 Baud rate 500 kBit/s Values are stored as default parameters so that they are available again after the sensor is re-set
Standard reference device	TMM88D-PCI090, 1094485

Safety-related parameters

MTTF <sub>D</sub> (mean time to dangerous failure)	619 years (EN ISO 13849-1) <sup>1)</sup>
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<sup>1)</sup> 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	± 0.3 °
Dynamic measurement accuracy	± 0.5 °
Temperature coefficient (zero point)	Typ. ±0.01 °/K <sup>1)</sup>
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)

<sup>1)</sup> Referring to the temperature of 25 °C.

## Interfaces

<b>Communication interface</b>	CANopen
<b>Device profile</b>	CiA DSP-410
<b>Address setting</b>	0...127, default: 19
<b>Data transmission rate (baud rate)</b>	10 kbit/s ... 1,000 kbit/s, default: 500 kbit/s
<b>Status information</b>	Via status LED
<b>Bus termination</b>	Via external terminator
<b>Parameterising data</b>	Zeroreset Limit frequency Interference suppression time Sensor fusion Preset value Inverting of counting direction
<b>Programmable/configurable</b>	Over PGT-12-Pro
<b>Initialization time</b>	120 ms

## Electronics

<b>Connection type</b>	Male connector, 1x, M12, 5-pin Female connector, 1x, M12, 5-pin
<b>Supply voltage</b>	8 V DC ... 36 V DC
<b>Current consumption</b>	< 15 mA @ 24 V
<b>Reverse polarity protection</b>	✓
<b>Short-circuit protection of the outputs</b>	✓

## Mechanics

<b>Dimensions</b>	66 mm x 90 mm x 36 mm
<b>Weight</b>	200 g
<b>Housing material</b>	Plastic (PBT)

## Ambient data

<b>EMC</b>	EN 61326-1, EN ISO 14982, EN ISO 13309
<b>Enclosure rating</b>	IP67 (IEC 60529) IP69K
<b>Operating temperature range</b>	-40 °C ... +80 °C
<b>Storage temperature range</b>	-40 °C ... +85 °C
<b>Resistance to shocks</b>	100 g, 6 ms (according to EN 60068-2-27)
<b>Resistance to vibration</b>	10 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

## Certificates

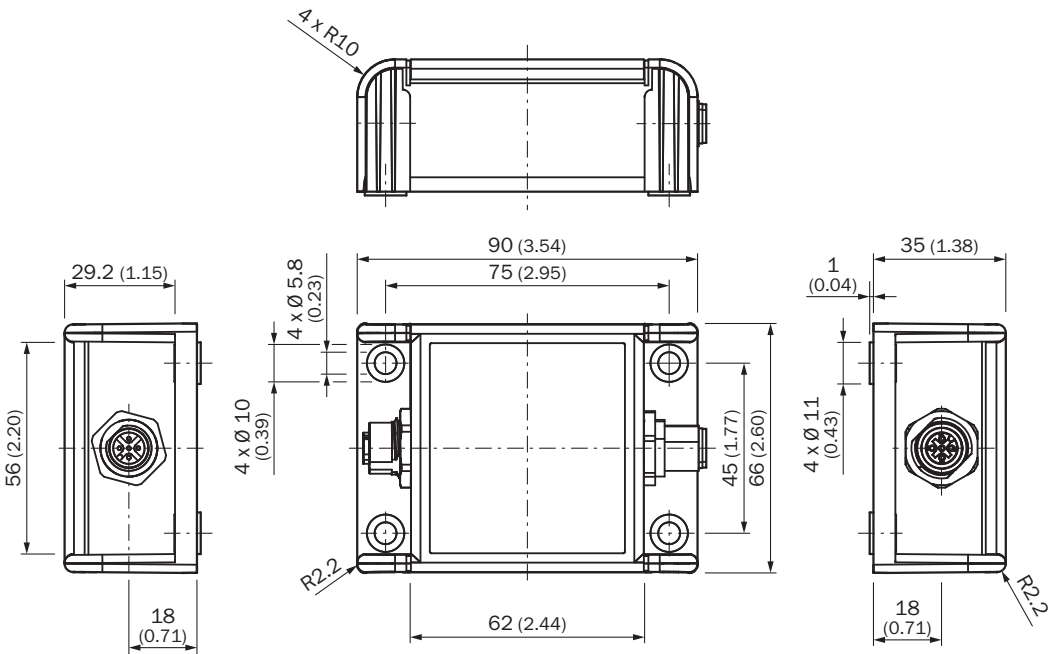
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>EAC certificate / DoC</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27270790
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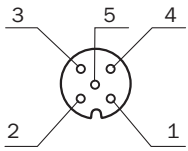
ECLASS 5.1.4	27270790
ECLASS 6.0	27270790
ECLASS 6.2	27270790
ECLASS 7.0	27270790
ECLASS 8.0	27270790
ECLASS 8.1	27270790
ECLASS 9.0	27270790
ECLASS 10.0	27271101
ECLASS 11.0	27271101
ECLASS 12.0	27271101
ETIM 5.0	EC001852
ETIM 6.0	EC001852
ETIM 7.0	EC001852
ETIM 8.0	EC001852
UNSPSC 16.0901	41111613

TMx88x-PxI



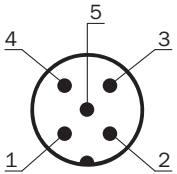
Dimensions in mm (inch)

## PIN assignment



PINFemale 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


## PIN assignment










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

## Recommended accessories

Other models and accessories → [www.sick.com/TMS\\_TMM88\\_Dynamic](http://www.sick.com/TMS_TMM88_Dynamic)

	Brief description	Type	part no.
programming devices			
	<ul style="list-style-type: none"> <li><b>Product segment:</b> Programming devices</li> <li><b>Product family:</b> PGT-12 Pro</li> <li><b>Description:</b> Hand-held programming device for the programmable SICK AHS/AHM36 CANopen encoders, TMS/TMM61 CANopen inclination sensors, TMS/TMM88 CANopen, TMS/TMM88 Analog, and wire draw encoders with AHS/AHM36 CANopen. Compact dimensions, low weight, and intuitive operation.</li> <li><b>Items supplied:</b> 1 x PGT-12-Pro standalone programming tool, 4 x 1.5 V (AA) alkaline mignon batteries</li> </ul>	PGT-12-Pro	1076313

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight</li> <li><b>Connection type head B:</b> Female connector, D-Sub, 9-pin, straight</li> <li><b>Signal type:</b> CANopen</li> <li><b>Description:</b> CANopen, shielded</li> <li><b>Note:</b> Programming adapter cable for programming tool PGT-12-Pro</li> </ul>	DDL-2D05-G0M5BC9	2083805
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Fieldbus, CANopen, DeviceNet™</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Fieldbus, shielded, CANopen, DeviceNet™</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YF2A15-020C1BXLEAX	2106283
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Fieldbus, CANopen, DeviceNet™</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Fieldbus, shielded, CANopen, DeviceNet™</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YF2A15-050C1BXLEAX	2106284
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Fieldbus, CANopen, DeviceNet™</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Fieldbus, shielded, CANopen, DeviceNet™</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YF2A15-100C1BXLEAX	2106286
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Signal type:</b> Fieldbus, CANopen, DeviceNet™</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Fieldbus, shielded, CANopen, DeviceNet™</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YF2A15-020C1B-M2A15	2106279
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Signal type:</b> Fieldbus, CANopen, DeviceNet™</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Fieldbus, shielded, CANopen, DeviceNet™</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YF2A15-050C1B-M2A15	2106281
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Signal type:</b> Fieldbus, CANopen, DeviceNet™</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Fieldbus, shielded, CANopen, DeviceNet™</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YF2A15-100C1B-M2A15	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.

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](http://www.sick.com)