



# TMM88A-PKC090

TMS/TMM88

INCLINATION SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	part no.
TMM88A-PKC090	1073799

Other models and accessories → [www.sick.com/TMS\\_TMM88](http://www.sick.com/TMS_TMM88)

### Detailed technical data

#### Safety-related parameters

<b>MTTF<sub>D</sub> (mean time to dangerous failure)</b>	301 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

<b>Number of axis</b>	2
<b>Measuring range</b>	± 90 °
<b>Resolution</b>	0.01 °
<b>Static measurement accuracy</b>	≤ ± 60 °, typ. ± 0.02 °, max. ± 0.06 ° ≤ ± 70 °, typ. ± 0.04 °, max. ± 0.12 ° ≤ ± 80 °, typ. ± 0.08 °, max. ± 0.24 ° ≤ ± 85 °, typ. ± 0.16 °, max. ± 0.48 °
<b>Compensated cross-sensitivity (2-dimensional)</b>	Typ. ± 0.09 °, max. ± 0.45 °
<b>Temperature coefficient (zero point)</b>	Typ. +0.0088 °/K, -0.0102 °/K <sup>1)</sup>
<b>Limit frequency</b>	0.1 Hz ... 25 Hz, 8. range (with digital filter)
<b>Sampling rate</b>	100 Hz

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

#### Interfaces

<b>Communication interface</b>	Analog / Current
<b>Current output</b>	4 mA ... 20 mA
<b>Load resistance</b>	≤ 850 Ω <sup>1)</sup>
<b>Parameterising data</b>	Measuring range Zeroset Limit frequency Preset value Inverting of counting direction Axis assignment Free adjustable outbound
<b>Programmable/configurable</b>	Over PGT-12-Pro
<b>Initialization time</b>	330 ms

<sup>1)</sup> On Us = 24 V.

## Electronics

<b>Connection type</b>	Male connector, M12, 5-pin
<b>Supply voltage</b>	17 V DC ... 35 V DC
<b>Current consumption</b>	40 mA @ 24 V + Iloop
<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>	IP65 (IEC 60529) IP67 (IEC 60529)
<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 (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>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b>	✓

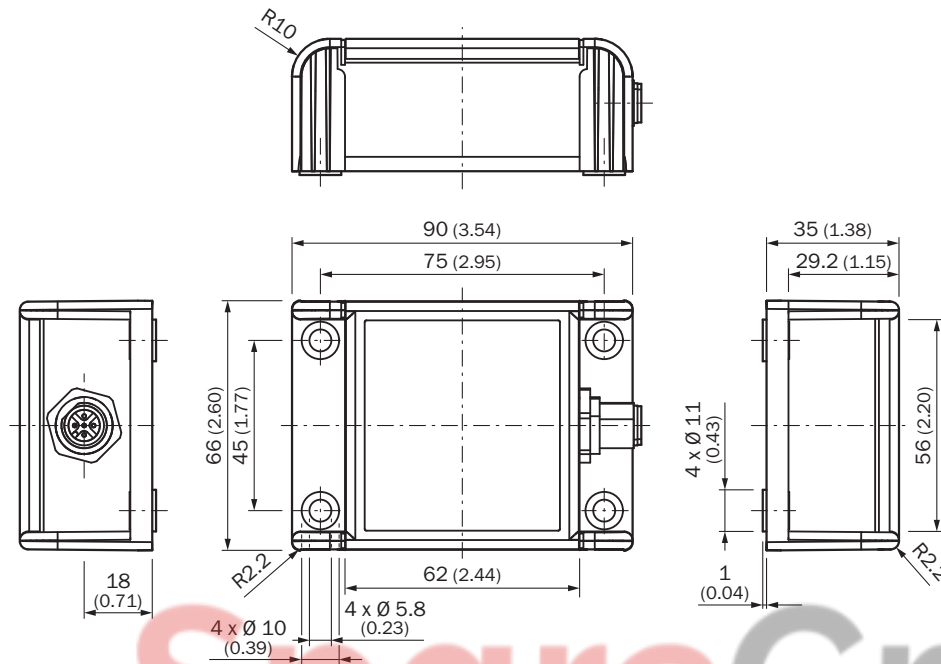
## Classifications

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

UNSPSC 16.0901

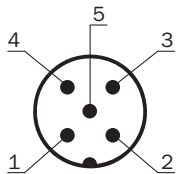
41111613

### TMx88x-PxC



Dimensions in mm (inch)


### Anschlussbelegung



PINPlug, M12, 5-pin	Signal	Description
1	VDC	Supply voltage
2	B-OUT	Sensor output B (default: Y)
3	GND	0V (GND)
4	A-OUT	Sensor output A (default: X)
5	TEACH	Input for Zero point setting

## Recommended accessories

Other models and accessories → [www.sick.com/TMS\\_TMM88](http://www.sick.com/TMS_TMM88)

	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

# SpareCruX

	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, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>	DOS-1205-G	6009719
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> <li>• <b>Note:</b> For field bus technology</li> </ul>	STE-1205-G	6022083
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable, Power</li> <li>• <b>Cable:</b> 1.5 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded, Power</li> </ul>	DOL-1205-W1M5ACSCO	6049455
	<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> Sensor/actuator cable</li> <li>• <b>Cable:</b> 1.5 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A25-015UB6XLEAX	2095833
	<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> Sensor/actuator cable</li> <li>• <b>Cable:</b> 3 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A25-030UB6XLEAX	2095834
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 3 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A25-030UB6XLEAX	2095791
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A25-050UB6XLEAX	2095792
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A25-100UB6XLEAX	2095793
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 0.6 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A25-C60UB6XLEAX	2145612
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 1 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A25-010UB6XLEAX	2145613
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A25-020UB6XLEAX	2145614

## 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)

SpareCruX