



TMM88D-AJI090

TMS/TMM88 Dynamic

DYNAMIC INCLINATION SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|---------------|----------|
| TMM88D-AJI090 | 1098671 |

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

Detailed technical data

Safety-related parameters

| | |
|--|--|
| MTTF_D (mean time to dangerous failure) | 619 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.

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 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⁾ Referring to the temperature of 25 °C.

Interfaces

| | |
|---|---|
| Communication interface | SAE J1939 |
| Address setting | 0...253 (Address Claiming: 0...240), default: 128 |
| Data transmission rate (baud rate) | 250 kbit/s ... 500 kbit/s, default: 250 kbit/s |
| Status information | Via status LED |
| Bus termination | Via external terminator |

| | |
|----------------------------------|--|
| Parameterising data | Zerose Limit frequency Interference suppression time Sensor fusion Preset value Inverting of counting direction |
| Programmable/configurable | Over PGT-12-Pro |
| Initialization time | 120 ms |

Electronics

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

Mechanics

| | |
|-------------------------|-----------------------|
| Dimensions | 58 mm x 90 mm x 31 mm |
| Weight | 200 g |
| Housing material | Aluminum |

Ambient data

| | |
|------------------------------------|--|
| EMC | EN 61326-1, EN ISO 14982, EN ISO 13309 |
| Enclosure rating | IP67 (IEC 60529) IP69K |
| Operating temperature range | -40 °C ... +80 °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) |

Certificates

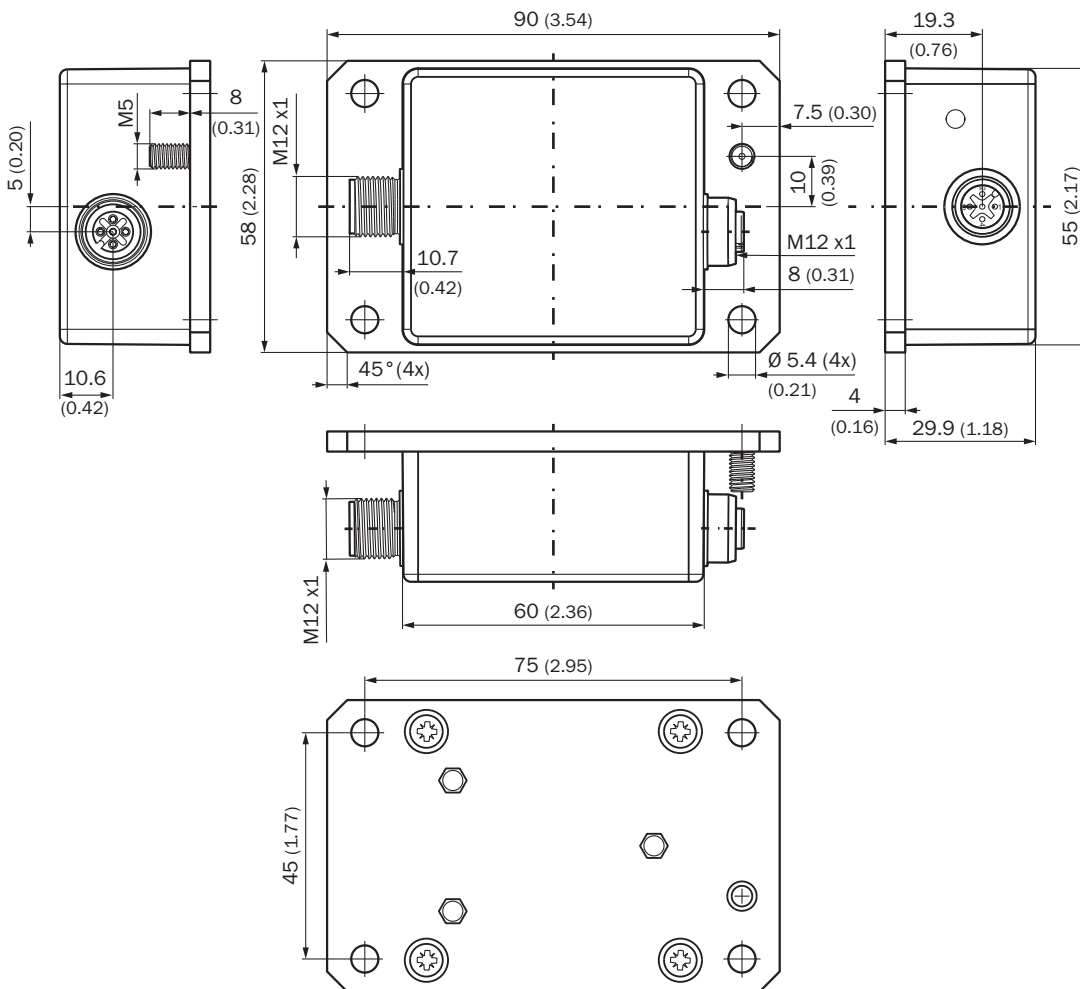
| | |
|--|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| China RoHS | ✓ |
| EAC certificate / DoC | ✓ |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓ |

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 |

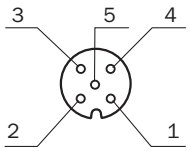
| | |
|-----------------------|----------|
| ECLASS 9.0 | 27270790 |
| ECLASS 10.0 | 27271101 |
| ECLASS 11.0 | 27271101 |
| ECLASS 12.0 | 27271101 |
| ETIM 5.0 | EC001852 |
| ETIM 6.0 | EC001852 |
| ETIM 7.0 | EC001852 |
| ETIM 8.0 | EC001852 |
| UNSPSC 16.0901 | 41111613 |

Dimensional drawing TMx88D-Axxxxx



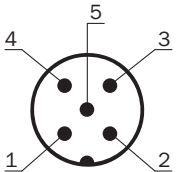
Dimensions in mm (inch)

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

| | Brief description | Type | part no. |
|---|---|---------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-020C1BXLEAX | 2106283 |
|  | <ul style="list-style-type: none"> 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-050C1BXLEAX | 2106284 |
|  | <ul style="list-style-type: none"> 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-100C1BXLEAX | 2106286 |
|  | <ul style="list-style-type: none"> 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-020C1B-M2A15 | 2106279 |
|  | <ul style="list-style-type: none"> 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-050C1B-M2A15 | 2106281 |
|  | <ul style="list-style-type: none"> 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-100C1B-M2A15 | 2106282 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight Connection type head B: Female connector, D-Sub, 9-pin, straight Signal type: CANopen Description: CANopen, shielded Note: Programming adapter cable for programming tool PGT-12-Pro | DDL-2D05-G0M5BC9 | 2083805 |
| programming devices | | | |
|  | <ul style="list-style-type: none"> Product segment: Programming devices Product family: PGT-12 Pro Description: 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. Items supplied: 1 x PGT-12-Pro standalone programming tool, 4 x 1.5 V (AA) alkaline mignon batteries | PGT-12-Pro | 1076313 |

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