

TLP200

INCLINATION SENSOR

MEMS technology with High resolution



DATASHEET - Rev.3- 18012018



CHARACTERISTICS

- MEMS technology
- High protection level IP67 and wide temperature range from -40°C ... +85°C
- Stable accuracy over whole temperature range
- Resolution up to 0,01°
- Single axis 0° to 360°
- Output 4 ... 20 mA



ADVANTAGES

- Simple selection and fast installation
- High accuracy at economic prices
- Long service life for outdoor applications
- Cost, space and installation work saving
- High shock resistance
- Customized solution on request



High protection level



Shock/vibration resistant



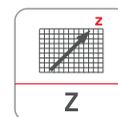
Reverse polarity protection



Wide range temperature



MEMS sensors technology



Vertical version



Analog output



Directive 2011/65/EU



EU conformity

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PRODUCT DESCRIPTION

TLP200 inclinometer working principle is based on a micro machined silicon capacitive transducer developed with MEMS technology.

Typically designed for mobile machine application: compact design, easy installation and integration, very strong solution, no mechanical moving part, able to tolerate high intensity mechanical shock.

Typical applications are cranes, knuckle boom cranes, access platforms, motor ladders, excavators, concrete pumps, drilling machines, everywhere is requested reliability and vibrations resistance.



PRODUCT CODE

TLP200. a b c d e f ← ORDER CODE

a	Power supply
2	← = 9 ... 30 V DC

c	Range
XXX	← = FS angle deg for single axis*

e	Type of connection
1	← = Male connector M12x5, PUR cable 30cm
14	← = AMP Superseal 4P 282106-1 with Schlemmer case (7807771 and scabbard 19260691), 10cm included connector

b	Measurement direction
V	← = Single axis

d	Output
7	← = 4 ... 20 mA

f	Version output
S	← = Single

* = value of 360 means range 0° to 360°

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TECHNICAL SPECIFICATION

Measuring range	0° to 360° for vertical version
Linearity	< ±0,5 °
Resolution	0.01°
Temperature coefficient	±0,008 °/°C
Protection	IP67
Temperature range	-40°C ... +85°C [-40°F ...+185°F]
Material housing	PA6
Weight	approx. 50 g [1.76 oz]
Shock resistance	acc. to EN 60068-2-27 30 G, 11 ms
Vibration resistance	acc. to EN 60068-2-6 10 ... 500 Hz

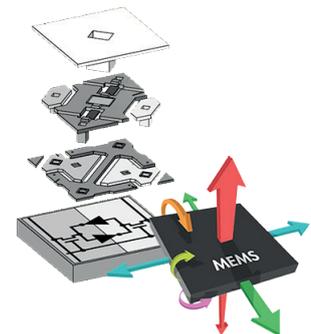
ELECTRICAL CHARACTERISTICS

Power supply	9 ... 30 V DC
Reverse polarity protection	YES
Electromagnetic compatibility	acc. to EN 61000-6-2, EN 61000-6-4
CE compliant	acc. to EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

OPERATING PRINCIPLE

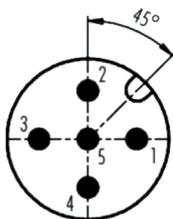
Operating principle

MEMS (acronym for Micro Electro Mechanical Systems) technology enables both electronic circuits and opto-mechanical devices to incorporate on the same silicon substrate, using manufacturing technologies similar to those used for the implementation of integrated circuits.



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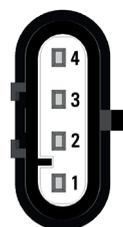
ELECTRICAL CONNECTION M12 X 5 PINS



Pinout

1	+Vin
2	n.c.*
3	GND
4	I out Z
5	n.c.*

ELECTRICAL CONNECTION AMP SUPERSEAL VERSION 4 PIN



Pinout

1	+Vin
2	GND
3	I out Z
4	n.c.*

* = ITEMS MARKED n.c. SHOULD NOT BE CONNECTED

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DIRECTION AXES

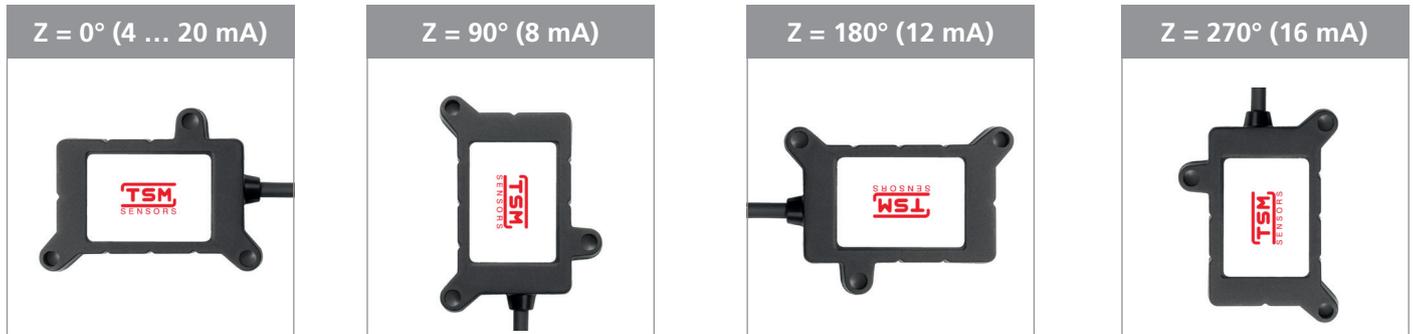
Single axis

TSM single axis TLP200 inclination sensor



The 1-dimensional inclination sensor must be installed with its Z-axis in line with the force of gravity, as illustrated below.

The 1-dimensional sensor default position is 0° as shown in the following illustration.



- *Optional (on request):
- CCW counting direction
- custom Zero point



DIMENSIONS [mm]

