



## NM1-IP-4L

### Single axis tilt measuring system

- Measuring range  $\pm 3^\circ$  up to  $\pm 60^\circ$  or  $0 \dots 90^\circ$
- Accuracy  $\pm 0,1^\circ$  (up to  $\pm 15^\circ$ ), 0,5% of measuring range (up to  $\pm 60^\circ$ )
- Analogue output  $0 \dots (\pm)10 \text{ V}$  or  $0(4) \dots 20 \text{ mA}$  (4-wire-technology)
- Supply voltage  $10 \dots 18 \text{ VDC}$  or  $18 \dots 30 \text{ VDC}$



### Description

The single axis industrial tilt measuring system NM1-IP-4L is the combination of a non-contact inclination and sensor adapted electronics. The measuring system is designed for precise tilt measurement in one axis and intended for side assembly. Available tilt measuring ranges are  $\pm 3^\circ$  to  $\pm 60^\circ$  or  $0 \dots 10^\circ$  to  $0 \dots 90^\circ$ . The electrical wiring is realised in 4-wire-technology. For further evaluation of the measured inclination there are different standard analogue output signals available, depending on the ordered type.

The tilt measuring system is built into a robust EMC-safe die-cast aluminium enclosure (IP66), which is well suited for applications in rough and industrial environments.

### Specifications

Number of measuring axis:	1
Supply voltage:	$10 \dots 18 \text{ VDC}^*$ , $18 \dots 30 \text{ VDC}^*$ , electronic is protected against voltage reversal
Voltage insulation between supply voltage and analogue output:	Galvanic isolation between supply voltage and analogue output, 200 V, higher voltage insulation on request
Power consumption:	ca. 3 W
Analogue output / burden:	$0 \dots 10 \text{ V} / \pm 10 \text{ V}$ , max. 1 mA (short-time short-circuit proof) $0 \dots 20 \text{ mA}$ , $4 \dots 20 \text{ mA}$ , max. 500 $\Omega$
Frequency range (-3 dB):	2 Hz
Preferred measuring range:	$\pm 3^\circ$ , $\pm 5^\circ$ , $\pm 10^\circ$ , $\pm 15^\circ$ , $\pm 20^\circ$ , $\pm 30^\circ$ , $\pm 45^\circ$ , $\pm 60^\circ$ $0 \dots 10^\circ$ , $0 \dots 30^\circ$ , $0 \dots 45^\circ$ , $0 \dots 60^\circ$ , $0 \dots 90^\circ$ other measuring ranges on request
Accuracy at 23°C:	Up to $\pm 15^\circ$ : $\pm 0,1^\circ$ Up to $\pm 60^\circ$ : 0,5% of measuring range Up to $\pm 65^\circ$ : on request
Cross-sensitivity:	< 1% up to $\pm 60^\circ$
Electrical connection:	M16 x 1,5 EMC cable glands on internal spring-cage terminal blocks
Enclosure:	EMC-safe aluminium die-cast enclosure
Protection class:	IP66
Dimensions (W x H x D):	175 x 80 x 57 mm (without EMC cable glands)
Weight:	1.000 g
Temperature, storage:	$-20 \dots +60 \text{ }^\circ\text{C}$
Temperature, operating:	$-20 \dots +60 \text{ }^\circ\text{C}$

**\*Note:** A internal self-restoring „Polyswitch-Resetable®“- fuse, according to the supply voltage, is used to protect the electronics. It is recommended to use a power supply with at least 10 Watt and a slow current limit.

