



Tilt sensor N4

The robustly designed N4 tilt sensor has a high impact and vibration resistance so is frequently used for tilt measurement in construction machinery, industrial trucks and adverse industrial environments. The dual-axis sensor can be easily programmed and the neutral position adjusted with the corresponding infrared remote control.

Product characteristics

- Long service life and reliability thanks to the mechanics-free MEMS technology
- The analogue output signals can be combined with additional switching points
- Tilt range up to $\pm 60^\circ$
- IP67 protection class
- Operating range from -40°C to $+70^\circ\text{C}$
- Analogue current or voltage output, or volt free switching output via relay
- Depending on the angle, resolution up to $\leq 0.04^\circ$
- Adjustment of the neutral position with remote control
- Selectable switch-on and switch-off delay at the switching output

Article characteristics

| Attribute | N4.A1... | N4.A2... | N4.D0B... | N4.K1B... | N4.K2B... |
|--|---|-----------|---|-----------|-----------|
| Max. switching voltage | - | | 48 V DC | | |
| Max. switching current | - | | 1 A | | |
| Max. switching power | - | | 30 W | | |
| Polarity reversal protection | yes | | | | |
| Output signal min. | - | 0.5 V DC | - | | 0.5 V DC |
| Output signal max. | - | 4.5 V DC | - | | 4.5 V DC |
| Output signal min. | 4 mA | - | | 4 mA | - |
| Output signal max. | 20 mA | - | | 20 mA | - |
| Output signal - centre position/zero position | - | 2.5 V DC | - | | 2.5 V DC |
| Output signal - centre position/zero position | 12 mA | - | | 12 mA | - |
| EMC immunity (Norm) | ISO 11452-5:2000 ISO7637-2:2004 | | | | |
| EMC emission (Norm) | DIN EN 55025:2003 | | | | |
| Operating voltage min. | 10 V DC | | | | |
| Operating voltage max. | 30 V DC | | | | |
| Current consumption | 24 mA | | 56 mA | | |
| Load resistance min. | - | 10000 Ohm | - | | 10000 Ohm |
| MTTF | 29.6 a | 29.3 a | 29.6 a | | 29.3 a |
| Load resistance max. | 200 Ohm | - | | 200 Ohm | - |
| Short-circuit resistance to GND | no | | | | |
| Short-circuit resistance to supply | no | | | | |
| Linearity error | typ. +-1 % | | | | |
| Repeating accuracy | = 25°: 0,2°, >25°: 0,5 ° | | | | |
| Signal update rate | 100 Hz | | | | |
| Technology | MEMS | | | | |
| Number of measurement axes (Number) | 2 | | | | |
| Angle measuring range | (Selectable in 5° increments) ±5°...±60 ° | | | | |
| Initialisation time after power on/start-up time | 500 ms | | | | |
| Switching points | - | | (Selectable in 0.5° increments) ±1.5°...±60 ° | | |
| Zero justification | ±5° | | | | |
| Vibration filter | 40 Hz | | | | |

Article characteristics

| Attribute | N4.A1... | N4.A2... | N4.D0B... | N4.K1B... | N4.K2B... |
|--|------------------------------------|------------|------------|------------------|--------------------|
| Switching output | - | | 2x NO | | |
| Connection type (switching output) | - | | Selectable | | |
| Outputs | 4...20mA | 0,5...4,5V | Relay | 4...20mA + relay | 0,5...4,5V + relay |
| Temperature coefficient | 0.008°/K | | | | |
| Protection class | IP67 DIN EN 60529 | | | | |
| Operating temperature min. | -40 °C | | | | |
| Max. operating temperature | 70 °C | | | | |
| Min. storage temperature | -40 °C | | | | |
| Max. storage temperature | 85 °C | | | | |
| Min. cable temperature range, moving | -5 °C | | -40 °C | | |
| Max. cable temperature range, moving | 80 °C | | | | |
| Min. cable temperature range, fixed installation | -40 °C | | | | |
| Max. cable temperature range, fixed installation | 80 °C | | | | |
| Shock resistance (Norm) | DIN IEC 68 Teil 2-27 | | | | |
| Vibration resistance (Norm) | DIN IEC 68 Teil 2-6 DIN IEC68-2-64 | | | | |
| Impact resistance (Norm) | max. 50 g | | | | |
| ESD insulation resistance (Norm) | ISO 10605:2008 | | | | |
| Torque for fastening screws | 6 N m | | | | |
| Weight | 100 g | | | | |
| Connector type | Deutsch 8 pol. | | | | |
| Cable length | Variable (1m, 3m, 5m, 10m) | | | | |
| Connection | Deutsch, 8-pin / cable outlet | | | | |
| CE label | yes | | | | |