



Sensor de inclinação N6 static CAN

O sensor de inclinação estático N6 está disponível nas versões 4-20 mA, 0,5-4,5 V, CANopen e SAE J1939. Devido ao seu design robusto e à alta resistência a choques e vibrações, ele é frequentemente usado para medir a inclinação em máquinas de construção, máquinas agrícolas, caminhões industriais e ambientes industriais adversos.

N6 estático – desenvolvido para proporcionar ainda mais segurança, confiabilidade, funcionalidade e flexibilidade.

- Alta precisão em sistemas (quase) estáticos ou com movimento lento da máquina
- Faixa de inclinação de eixo único $\pm 180^\circ$ / eixo duplo $\pm 90^\circ / \pm 180^\circ$
- Vários filtros de software disponíveis para sinais de saída precisos
- Padrões EMC de acordo com os padrões fora de estrada (EN ISO 14982; DIN EN ISO 13766-1; DIN EN 12895)
- Design robusto para longa vida útil: classe de proteção IP6K7 (ISO 20653) / IP6K8 (ISO 20653) / IP6K9K (ISO 20653)
- Faixa de operação -40°C a $+85^\circ\text{C}$
- Tipos de conectores: Deutsch DT04-08PA, 1x M12 de 5 pinos (macho) ou 2x M12 de 5 pinos (macho/fêmea)
- Daisy-Chain – looping através do sinal CAN sem distribuidores T adicionais
- Instalação rápida graças à eficiente montagem em 2 pontos
- Gerenciamento inteligente de variantes graças a um sistema modular inteligente
- Aprovação do tipo E1 para aprovação em estradas
- Conjuntos de parâmetros personalizados de acordo com a aplicação para aumentar o desempenho/precisão (mediante solicitação)

Desenho técnico

IMAGE 1/4

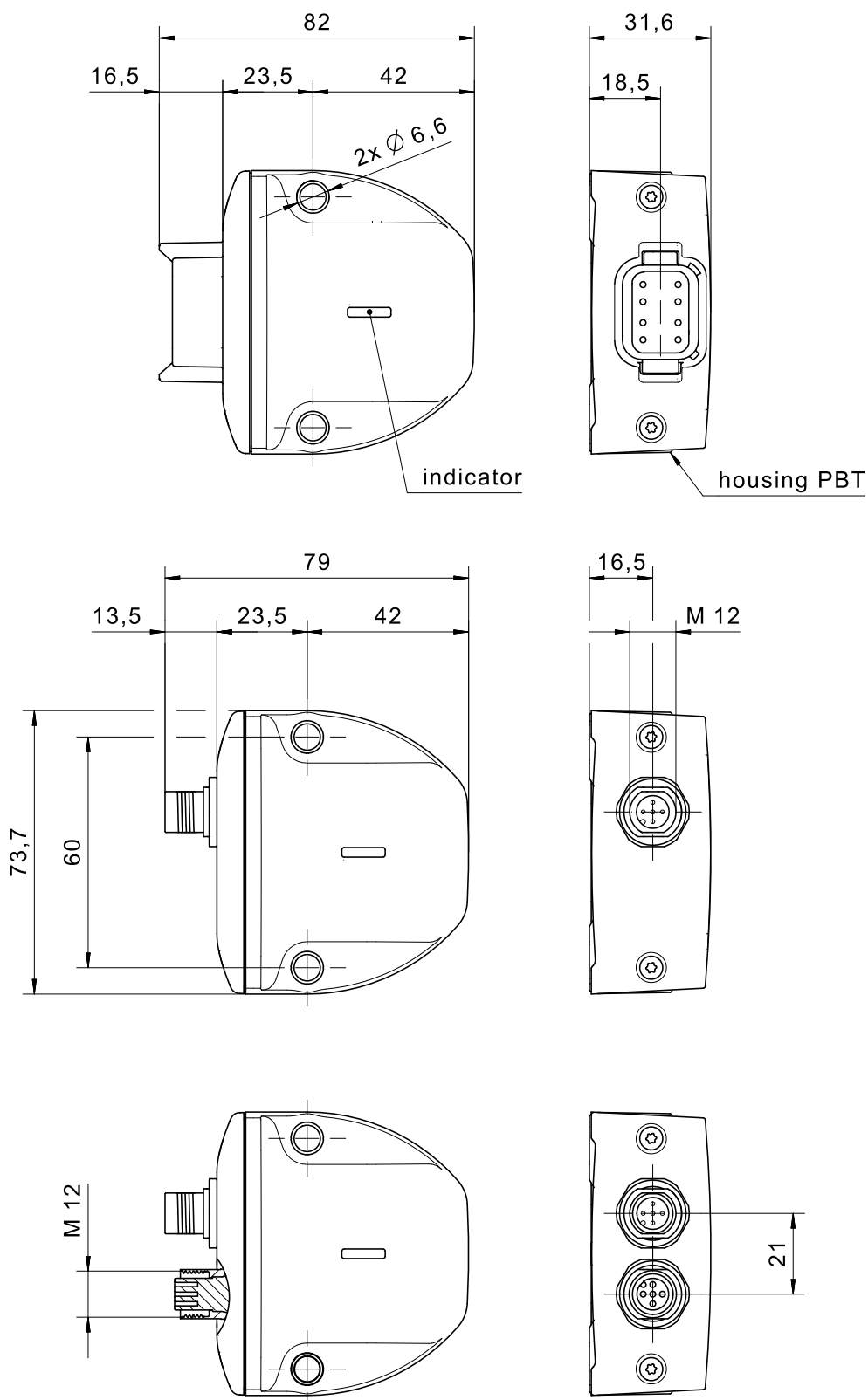
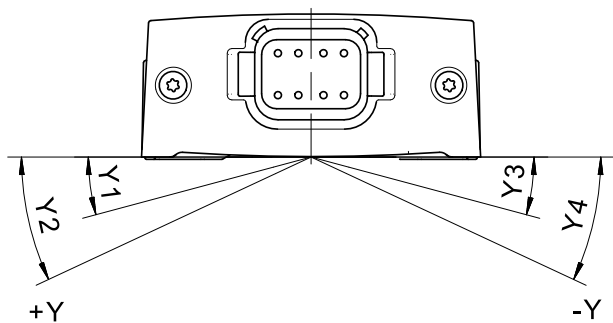


IMAGE 2/4

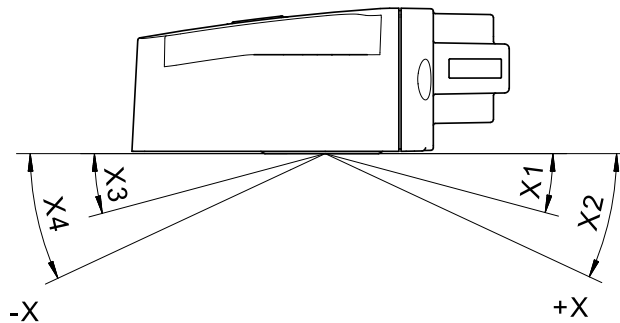
360° ($\pm 180^\circ$) horizontally mounted

Y-axis



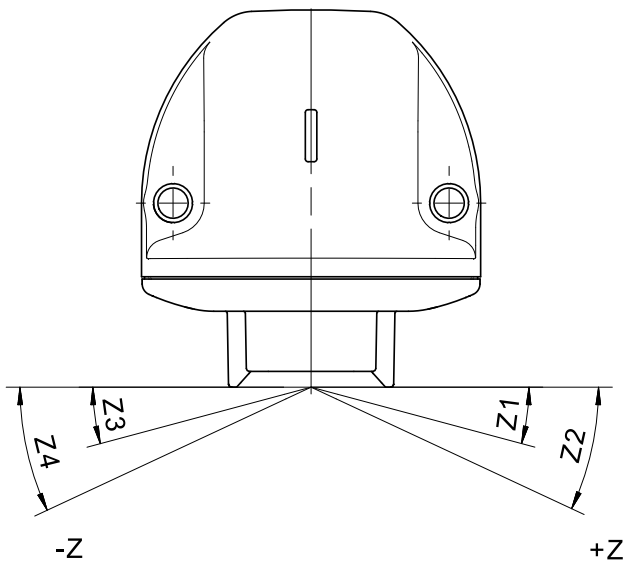
180° ($\pm 90^\circ$) horizontally mounted

X-axis



360° ($\pm 180^\circ$) vertically mounted

Z-axis



180° ($\pm 90^\circ$) vertically mounted

X-axis

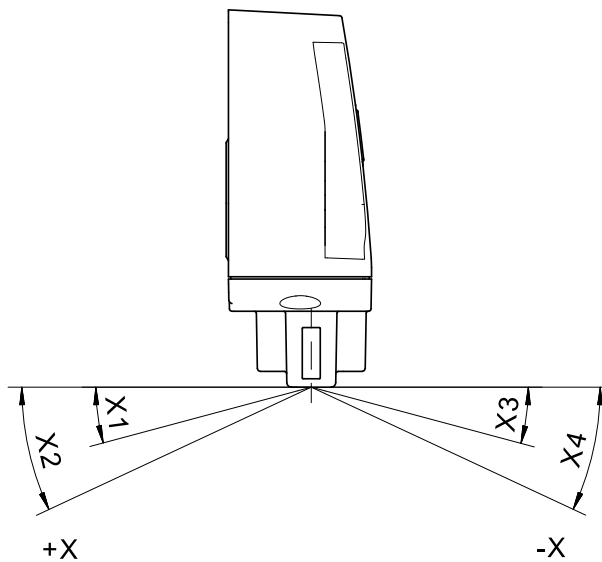
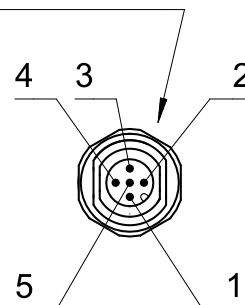


IMAGE 3/4

M12 - analog

| pin | configuration | specification |
|-----|----------------|-------------------|
| 1 | U _B | operating voltage |
| 2 | Out1 | output 1 |
| 3 | GND | ground |
| 4 | Out2 | output 2 |
| 5 | n. c. | not connected |

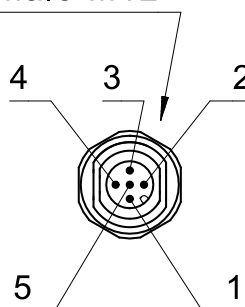
male M12



M12 - CAN

| pin | configuration | specification |
|-----|----------------|-------------------|
| 1 | n. c. | not connected |
| 2 | U _B | operating voltage |
| 3 | GND | ground |
| 4 | CAN_H | signal line CAN |
| 5 | CAN_L | signal line CAN |

male M12



2x M12 - CAN

| pin | configuration | specification |
|-----|----------------|-------------------|
| 1 | n. c. | not connected |
| 2 | U _B | operating voltage |
| 3 | GND | ground |
| 4 | CAN_H | signal line CAN |
| 5 | CAN_L | signal line CAN |

male M12

female M12

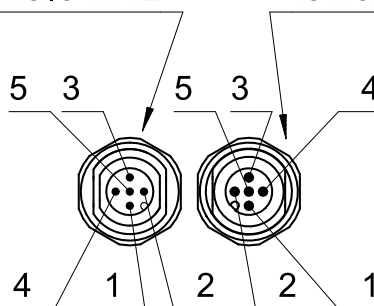
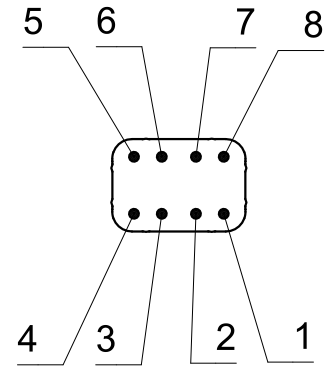


IMAGE 4/4

Deutsch DT04-08PA - analog

| pin | configuration | specification |
|-----|----------------|-------------------|
| 1 | U _B | operating voltage |
| 2 | GND | ground |
| 3 | Out1 | output 1 |
| 4 | Out2 | output 2 |
| 5 | Relay1 | switch output 1 |
| 6 | Relay1 | switch output 1 |
| 7 | Relay2 | switch output 2 |
| 8 | Relay2 | switch output 2 |

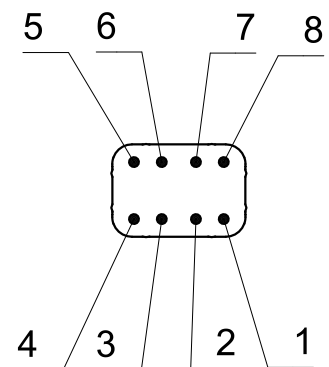
Deutsch DT04-08PA



Deutsch DT04-08PA - CAN

| pin | configuration | specification |
|-----|----------------|-------------------|
| 1 | U _B | operating voltage |
| 2 | GND | ground |
| 3 | CAN_L | signal line CAN |
| 4 | CAN_H | |
| 5 | Relay1 | switch output 1 |
| 6 | Relay1 | switch output 1 |
| 7 | Relay2 | switch output 2 |
| 8 | Relay2 | switch output 2 |

Deutsch DT04-08PA



Características do artigo

| Attribute | N6SCC000H2-001 | N6SCC0D2H2-001 | N6SCC0D2V2-002 | N6SCC000V2-001 | N6SCC001H2-001 | N6SCC001V2-001 |
|--|----------------|---|--|----------------|----------------|----------------|
| Technology | MEMS | | | | | |
| Supply voltage | +8..+36 V DC | | | | | |
| Polarity reversal protection | -36 V DC | | | | | |
| Short-circuit protection | ISO 16750-2 | | | | | |
| Current consumption | 100 mA | | | | | |
| Output signal | CANopen | CANopen + 2x relay (NC) | | CANopen | | |
| Contact form | - | NC | | - | | |
| Limit frequency | 20Hz | | | | | |
| Protocol | CANopen | | | | | |
| UDS ISO 14229 capability | yes | | | | | |
| Baud rate | 250 kBit/s | | | | | |
| Cycle time | 10 ms | | | | | |
| Node ID / Source Address | 32 | | | | | |
| Bus terminating resistor | no | | | | | |
| Connection type (switching output) | - | Relay 1 = X1/X3 Y1/Y3 (Z1/Z3) / Relay 2 = X2/X4 Y2/Y4 (Z2/Z4) | | - | | |
| Switching points | - | X1/X3 = 5 X2/X4 = 10 Y1/Y3 = 5 Y2/Y4 = 10 ° | X1/X3 = 5 X2/X4 = 10 Z1/Z3 = 5 Z2/Z4 = 10 ° | - | | |
| Turn-on delay | - | 0s | 0,5s | - | | |
| Turn-off delay | - | 0s | 0,5s | - | | |
| Hysteresis | - | ±0,1° | | - | | |
| Max. switching voltage | - | 36 V DC | | - | | |
| Max. switching current | - | 1 A | | - | | |
| Max. switching power | - | 30 W | | - | | |
| Measuring range acceleration max. | ±8 g | | | | | |
| Resolution | 0,01 ° | | | | | |
| Repeating accuracy | typ. ±0,2 ° | | | | | |
| Temperature coefficient | max. ±0,015°/K | | | | | |
| Sensing rate | 100 Hz | | | | | |
| Initialisation time after power on/start-up time | 500 ms | | | | | |

| Attribute | N6SCC000H2-001 | N6SCC0D2H2-001 | N6SCC0D2V2-002 | N6SCC000V2-001 | N6SCC001H2-001 | N6SCC001V2-001 |
|---|---|-------------------|-------------------------------|---|---|-------------------------------|
| Installation | horizontal | | vertically | | horizontal | vertically |
| Zero justification | ±60° | | | | | |
| Number of measurement axes tilt | 2 | | | | | |
| Measuring principle | (quasi-) static (non-moving applications / slow movements) | | | | | |
| Measuring range | ±90° X-Achse ±180° Y-Achse | | ±90° X-Achse ±180° Z-Achse | | ±90° X-Achse ±180° Y-Achse | ±90° X-Achse ±180° Z-Achse |
| NMT autostart | not active | | | | | |
| MTTF | 92 a | | | | | |
| Connector type | 1xM12 5-polig (male) | Deutsch DT04-08PA | | 1xM12 5-polig (male) | 2xM12 5-polig (male/female) | |
| Weight | 113 g | 108 g | | 113 g | 123 g | |
| Housing material | PBT | | | | | |
| Torque for fastening screws | 10 Nm | | | | | |
| Storage temperature | -40..+85 °C | | | | | |
| Protection class | IP6K7 ISO 20653, IP6K9K ISO 20653 | | | | | |
| Vibration resistance (Norm) | EN 60068-2-64 (random vibration 7,99g , 5-500Hz, 20,1mm displacement) | | | | | |
| Shock resistance (Norm) | EN 60068-2-27 (shock 51g, 11ms) | | | | | |
| Operating temperature | -40..+85 °C | | | | | |
| Salt spray test | DIN EN 60068-2-11 (salt spray mist for 96h at 35°C) | | | | | |
| EMC Agricultural and forestry machines (Norm) | EN ISO 14982, Load dump Pulse B with Us = 85V, Cranking ISO 16750-2 Level 1-4 | | | EN ISO 14982, Load dump Pulse B with Us = 85V, Cranking ISO 16750-2 Level 1-4 | EN ISO 14982, Load dump Pulse B with Us = 85V, Cranking ISO 16750-2 Level 1-4 | |
| EMC Earth-moving and building construction machinery (Norm) | DIN EN ISO 13766-1, Load dump Pulse B with Us = 85V, Cranking ISO 16750-2 Level 1-4 | | | | | |
| EMC Industrial trucks (Norm) | DIN EN 12895 | | | | | |
| E1 type approval | UN ECE Regulation No. 10 No. 10R06/01 9376 00 | | | | | |
| CE | yes | | | | | |

| Attribute | N6SCC002H2-001 | N6SCC002V2-001 | N6SCJ0D2H2-001 | N6SCJ0D2V2-001 | N6SCJ000H2-001 | N6SCJ000V2-001 |
|--|----------------|----------------|---|--|----------------|----------------|
| Technology | MEMS | | | | | |
| Supply voltage | +8..+36 V DC | | | | | |
| Polarity reversal protection | -36 V DC | | | | | |
| Short-circuit protection | ISO 16750-2 | | | | | |
| Current consumption | 100 mA | | | | | |
| Output signal | CANopen | | J1939 + 2x relay (NC) | | J1939 | |
| Contact form | - | | NC | | - | |
| Limit frequency | 20Hz | | | | | |
| Protocol | CANopen | | J1939 | | | |
| UDS ISO 14229 capability | yes | | | | | |
| Baud rate | 250 kBit/s | | | | | |
| Cycle time | 10 ms | | | | | |
| Node ID / Source Address | 32 | | 226 | | | |
| Bus terminating resistor | no | | | | | |
| Connection type (switching output) | - | | Relay 1 = X1/X3 Y1/Y3 (Z1/Z3) / Relay 2 = X2/X4 Y2/Y4 (Z2/Z4) | | - | |
| Switching points | - | | X1/X3 = 5 X2/X4 = 10 Y1/Y3 = 5 Y2/Y4 = 10 ° | X1/X3 = 5 X2/X4 = 10 Z1/Z3 = 5 Z2/Z4 = 10 ° | - | |
| Turn-on delay | - | | 0s | | - | |
| Turn-off delay | - | | 0s | | - | |
| Hysteresis | - | | ±0,1° | | - | |
| Max. switching voltage | - | | 36 V DC | | - | |
| Max. switching current | - | | 1 A | | - | |
| Max. switching power | - | | 30 W | | - | |
| Measuring range acceleration max. | ±8 g | | | | | |
| Resolution | 0,01 ° | | | | | |
| Repeating accuracy | typ. ±0,2 ° | | | | | |
| Temperature coefficient | max. ±0,015°/K | | | | | |
| Sensing rate | 100 Hz | | | | | |
| Initialisation time after power on/start-up time | 500 ms | | | | | |
| Installation | horizontal | vertically | horizontal | vertically | horizontal | vertically |

| Attribute | N6SCC002H2-001 | N6SCC002V2-001 | N6SCJ0D2H2-001 | N6SCJ0D2V2-001 | N6SCJ000H2-001 | N6SCJ000V2-001 |
|---|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Zero justification | ±60° | | | | | |
| Number of measurement axes tilt | 2 | | | | | |
| Measuring principle | (quasi-) static (non-moving applications / slow movements) | | | | | |
| Measuring range | ±90° X-Achse ±180° Y-Achse | ±90° X-Achse ±180° Z-Achse | ±90° X-Achse ±180° Y-Achse | ±90° X-Achse ±180° Z-Achse | ±90° X-Achse ±180° Y-Achse | ±90° X-Achse ±180° Z-Achse |
| NMT autostart | not active | | | | | |
| MTTF | 92 a | | | | | |
| Connector type | Deutsch DT04-08PA | | | | 1xM12 5-polig (male) | |
| Weight | 108 g | | | | 113 g | |
| Housing material | PBT | | | | | |
| Torque for fastening screws | 10 Nm | | | | | |
| Storage temperature | -40..+85 °C | | | | | |
| Protection class | IP6K7 ISO 20653, IP6K9K ISO 20653 | | | | | |
| Vibration resistance (Norm) | EN 60068-2-64 (random vibration 7,99g , 5-500Hz, 20,1mm displacement) | | | | | |
| Shock resistance (Norm) | EN 60068-2-27 (shock 51g, 11ms) | | | | | |
| Operating temperature | -40..+85 °C | | | | | |
| Salt spray test | DIN EN 60068-2-11 (salt spray mist for 96h at 35°C) | | | | | |
| EMC Agricultural and forestry machines (Norm) | EN ISO 14982, Load dump Pulse B with Us = 85V, Cranking ISO 16750-2 Level 1-4 | | | | | |
| EMC Earth-moving and building construction machinery (Norm) | DIN EN ISO 13766-1, Load dump Pulse B with Us = 85V, Cranking ISO 16750-2 Level 1-4 | | | | | |
| EMC Industrial trucks (Norm) | DIN EN 12895 | | | | | |
| E1 type approval | UN ECE Regulation No. 10 No. 10R06/01 9376 00 | | | | | |
| CE | yes | | | | | |

| Attribute | N6SCJ001H2-001 | N6SCJ001V2-001 | N6SCJ002H2-001 | N6SCJ002V2-001 |
|--|--|----------------|----------------|----------------|
| Technology | MEMS | | | |
| Supply voltage | +8..+36 V DC | | | |
| Polarity reversal protection | -36 V DC | | | |
| Short-circuit protection | ISO 16750-2 | | | |
| Current consumption | 100 mA | | | |
| Output signal | J1939 | | | |
| Contact form | - | | | |
| Limit frequency | 20Hz | | | |
| Protocol | J1939 | | | |
| UDS ISO 14229 capability | yes | | | |
| Baud rate | 250 kBit/s | | | |
| Cycle time | 10 ms | | | |
| Node ID / Source Address | 226 | | | |
| Bus terminating resistor | no | | | |
| Connection type (switching output) | - | | | |
| Switching points | - | | | |
| Turn-on delay | - | | | |
| Turn-off delay | - | | | |
| Hysteresis | - | | | |
| Max. switching voltage | - | | | |
| Max. switching current | - | | | |
| Max. switching power | - | | | |
| Measuring range acceleration max. | ±8 g | | | |
| Resolution | 0,01 ° | | | |
| Repeating accuracy | typ. ±0,2 ° | | | |
| Temperature coefficient | max. ±0,015°/K | | | |
| Sensing rate | 100 Hz | | | |
| Initialisation time after power on/start-up time | 500 ms | | | |
| Installation | horizontal | vertically | horizontal | vertically |
| Zero justification | ±60° | | | |
| Number of measurement axes tilt | 2 | | | |
| Measuring principle | (quasi-) static (non-moving applications / slow movements) | | | |

| Attribute | N6SCJ001H2-001 | N6SCJ001V2-001 | N6SCJ002H2-001 | N6SCJ002V2-001 |
|---|---|-------------------------------|-------------------------------|-------------------------------|
| Measuring range | ±90° X-Achse ±180° Y-Achse | ±90° X-Achse ±180° Z-Achse | ±90° X-Achse ±180° Y-Achse | ±90° X-Achse ±180° Z-Achse |
| NMT autostart | not active | | | |
| MTTF | 92 a | | | |
| Connector type | 2xM12 5-polig (male/female) | | Deutsch DT04-08PA | |
| Weight | 123 g | | 108 g | |
| Housing material | PBT | | | |
| Torque for fastening screws | 10 Nm | | | |
| Storage temperature | -40..+85 °C | | | |
| Protection class | IP6K7 ISO 20653, IP6K9K ISO 20653 | | | |
| Vibration resistance (Norm) | EN 60068-2-64 (random vibration 7,99g , 5-500Hz, 20,1mm displacement) | | | |
| Shock resistance (Norm) | EN 60068-2-27 (shock 51g, 11ms) | | | |
| Operating temperature | -40..+85 °C | | | |
| Salt spray test | DIN EN 60068-2-11 (salt spray mist for 96h at 35°C) | | | |
| EMC Agricultural and forestry machines (Norm) | EN ISO 14982, Load dump Pulse B with Us = 85V, Cranking ISO 16750-2 Level 1-4 | | | |
| EMC Earth-moving and building construction machinery (Norm) | DIN EN ISO 13766-1, Load dump Pulse B with Us = 85V, Cranking ISO 16750-2 Level 1-4 | | | |
| EMC Industrial trucks (Norm) | DIN EN 12895 | | | |
| E1 type approval | UN ECE Regulation No. 10 No. 10R06/01 9376 00 | | | |
| CE | yes | | | |