

### 3 Intelligent Torque Sensors

- Based on Strain Gauge Technology
- Digital and Anlog Interfaces

- Rotary Torque/Angle Sensors
- Stationary Torque Sensors

Nominal Measurement Ranges:

+/- 0.01 Nm

...

+/- 1,000 Nm

- Handheld Torque Sensors

+/- 0.01 Nm

...

+/- 2 Nm



smart tools  
smart assembly

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Torque Sensor Type Nomenclature:

ng-TT□-□ □-□□ □

- = intelligent (USB + Ethernet + *ng-Link*)
- = intelligent (USB)
- = analog
- = hexagon drive
- = cylindric shafts
- = square drive
- Torque measurement range (cNm)
- R = Rotary
- S = Stationary
- H = Handheld
- TT = Torque Transducer
- ng = n·gineric Product

### 3.10 Handheld Torque Sensors ng-TTHi

- High precision torque sensors based on strain gauges
- USB Interface
- Ethernet Interface
- *ng-Link* Interface
- Torque window control with LED
- Mechanical overload protection clutch MOPC
- Standard USB and Ethernet connectors
- Maintenance free

Sensor nomenclature: see page 33



| Article Number | Type        | Torque Range<br>cNm | Interface   | MOPC | Drive     |
|----------------|-------------|---------------------|-------------|------|-----------|
| 01-01-00030-01 | ng-TTH01-ci | +/- 1               | intelligent | ✓    | 3 mm Bore |
| 01-01-00031-01 | ng-TTH02-ci | +/- 2               | intelligent | ✓    | 3 mm Bore |
| 01-01-00032-01 | ng-TTH05-ci | +/- 5               | intelligent | ✓    | 3 mm Bore |
| 01-01-00033-01 | ng-TTH10-ci | +/- 10              | intelligent | ✓    | 3 mm Bore |
| 01-01-00034-01 | ng-TTH20-ci | +/- 20              | intelligent | ✓    | 3 mm Bore |



| Article Number | Type         | Torque Range<br>cNm | Interface   | MOPC | Drive        |
|----------------|--------------|---------------------|-------------|------|--------------|
| 01-01-00043-01 | ng-TTH50-xi  | +/- 50              | intelligent | ✓    | 1/4" Hexagon |
| 01-01-00044-01 | ng-TTH100-xi | +/- 100             | intelligent | ✓    | 1/4" Hexagon |
| 01-01-00045-01 | ng-TTH200-xi | +/- 200             | intelligent | ✓    | 1/4" Hexagon |

### 3.11 Handheld Torque Sensors ng-TTH-u

- High precision torque sensors based on strain gauges
- USB Interface
- Torque window control with LED
- Mechanical overload protection clutch MOPC
- Standard USB connector
- Maintenance free



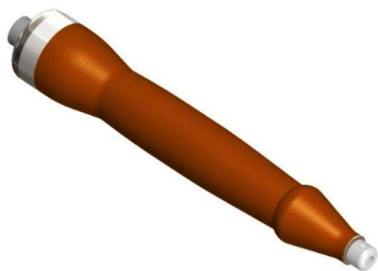
| Article Number | Type        | Torque Range<br>cNm | Interface | MOPC | Drive      |
|----------------|-------------|---------------------|-----------|------|------------|
| 01-01-00118-01 | ng-TTH01-cu | +/- 1               | USB       | ✓    | 3 mm Shaft |
| 01-01-00119-01 | ng-TTH02-cu | +/- 2               | USB       | ✓    | 3 mm Shaft |
| 01-01-00120-01 | ng-TTH05-cu | +/- 5               | USB       | ✓    | 3 mm Shaft |
| 01-01-00121-01 | ng-TTH10-cu | +/- 10              | USB       | ✓    | 3 mm Shaft |
| 01-01-00122-01 | ng-TTH20-cu | +/- 20              | USB       | ✓    | 3 mm Shaft |



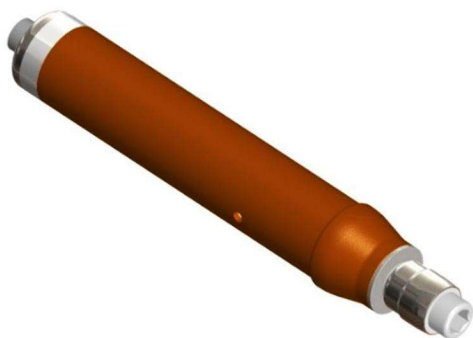
| Article Number | Type         | Torque Range<br>cNm | Interface | MOPC | Drive        |
|----------------|--------------|---------------------|-----------|------|--------------|
| 01-01-00123-01 | ng-TTH50-xu  | +/- 50              | USB       | ✓    | 1/4" Hexagon |
| 01-01-00124-01 | ng-TTH100-xu | +/- 100             | USB       | ✓    | 1/4" Hexagon |
| 01-01-00125-01 | ng-TTH200-xu | +/- 200             | USB       | ✓    | 1/4" Hexagon |

### 3.12 Handheld Torque Sensors ng-TTH-a

- High precision torque sensors based on strain gauges
- Mechanical overload protection MOPC
- Analog torque output signal options:
  - 0 to 5 V, zero point at 2.5 V
  - 0 to 10 V, zero point at 5 V
- Power supply 12 V DC  $\pm$  5 %, 150 mA
- External measuring device required
- Maintenance free



| Article Number | Type        | Torque Range<br>cNm | Interface | MOPC | Drive     |
|----------------|-------------|---------------------|-----------|------|-----------|
| 01-01-00025-01 | ng-TTH01-ca | $\pm$ 1             | analog    | ✓    | 3 mm Bore |
| 01-01-00026-01 | ng-TTH02-ca | $\pm$ 2             | analog    | ✓    | 3 mm Bore |
| 01-01-00027-01 | ng-TTH05-ca | $\pm$ 5             | analog    | ✓    | 3 mm Bore |
| 01-01-00028-01 | ng-TTH10-ca | $\pm$ 10            | analog    | ✓    | 3 mm Bore |
| 01-01-00029-01 | ng-TTH20-ca | $\pm$ 20            | analog    | ✓    | 3 mm Bore |



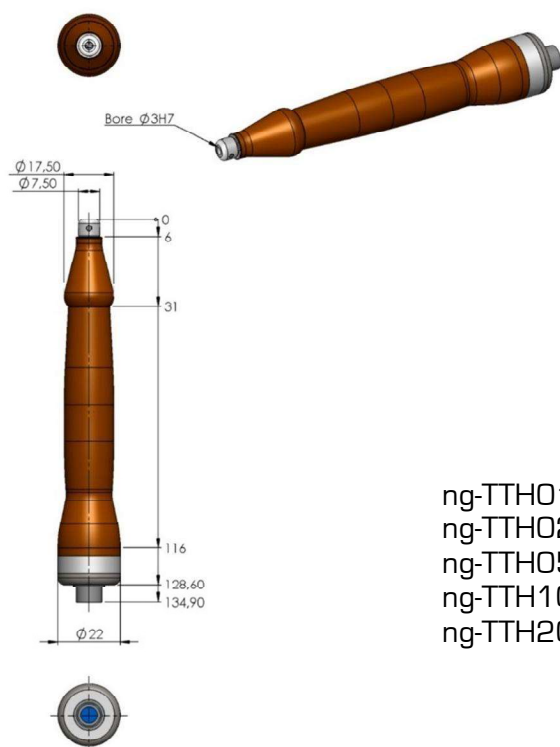
| Article Number | Type         | Torque Range<br>cNm | Interface | MOPC | Drive        |
|----------------|--------------|---------------------|-----------|------|--------------|
| 01-01-00069-01 | ng-TTH50-xa  | $\pm$ 50            | analog    | ✓    | 1/4" Hexagon |
| 01-01-00070-01 | ng-TTH100-xa | $\pm$ 100           | analog    | ✓    | 1/4" Hexagon |
| 01-01-00071-01 | ng-TTH200-xa | $\pm$ 200           | analog    | ✓    | 1/4" Hexagon |

#### Accessories

Sensor cable for analog interface, with single-sided connector, 1.5 meters

|                |                |
|----------------|----------------|
| Article Number | 01-90-00021-01 |
|----------------|----------------|

## Dimensions and Weight:

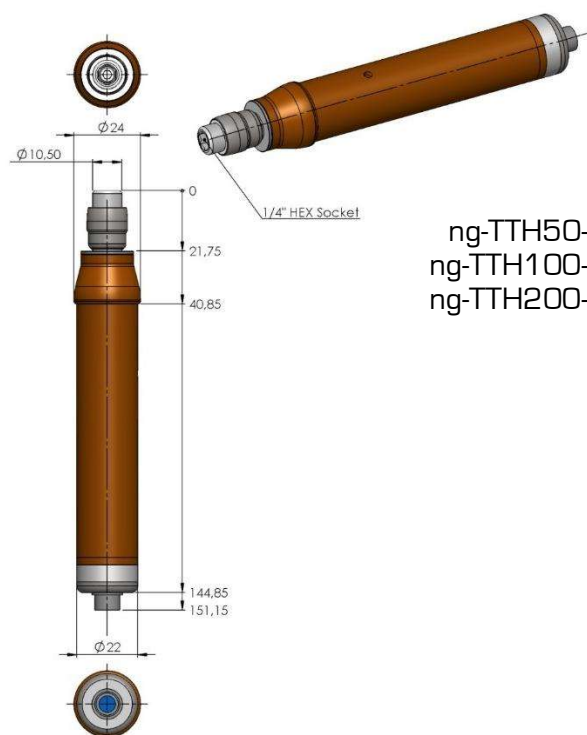


ng-TTH01-ci  
ng-TTH02-ci  
ng-TTH05-ci  
ng-TTH10-ci  
ng-TTH20-ci

ng-TTH01-cu  
ng-TTH02-cu  
ng-TTH05-cu  
ng-TTH10-cu  
ng-TTH20-cu

ng-TTH01-ca  
ng-TTH02-ca  
ng-TTH05-ca  
ng-TTH10-ca  
ng-TTH20-ca

Weight Handpiece: 0,05 kg

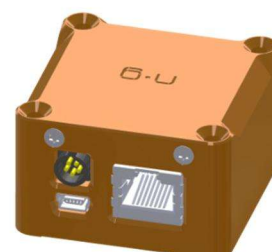


ng-TTH50-xi  
ng-TTH100-xi  
ng-TTH200-xi

ng-TTH50-xu  
ng-TTH100-xu  
ng-TTH200-xu

ng-TTH50-xa  
ng-TTH100-xa  
ng-TTH200-xa

Weight Handpiece: 0,05 kg



The **ng-TTH-ci** sensors are supplied with the interface electronics **ng-TC-ai**.