

3 Intelligent Torque Sensors

- Based on Strain Gauge Technology
- Digital and Analog 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



Torque Sensor Type Nomenclature:

ng-TT□-□ □-□□ □

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

3.6 Stationary Torque Sensors ng-TTS-i

- 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 (sensors up to 200 cNm range)
- Standard USB and Ethernet connectors
- Maintenance free



Article Number	Type	Torque Range cNm	Interface	MOPC	Drive
01-01-00042-01	ng-TTS01-ci	+/- 1	intelligent	✓	3 mm Bore
01-01-00015-01	ng-TTS02-ci	+/- 2	intelligent	✓	3 mm Bore
01-01-00016-01	ng-TTS05-ci	+/- 5	intelligent	✓	3 mm Bore
01-01-00017-01	ng-TTS10-ci	+/- 10	intelligent	✓	3 mm Bore
01-01-00018-01	ng-TTS20-ci	+/- 20	intelligent	✓	3 mm Bore



Article Number	Type	Torque Range cNm	Interface	MOPC	Drive
01-01-00019-01	ng-TTS50-xi	+/- 50	intelligent	✓	1/4" Hexagon
01-01-00020-01	ng-TTS100-xi	+/- 100	intelligent	✓	1/4" Hexagon
01-01-00021-01	ng-TTS200-xi	+/- 200	intelligent	✓	1/4" Hexagon
01-01-00022-01	ng-TTS500-xi	+/- 500	intelligent	-	1/4" Hexagon
01-01-00023-01	ng-TTS1000-xi	+/- 1000	intelligent	-	1/4" Hexagon
01-01-00075-01	ng-TTS2000-xi	+/- 2000	intelligent	-	1/4" Hexagon



Article Number	Type	Torque Range Nm	Interface	MOPC	Drive
01-01-00076-01	ng-TTS5000-qi	+/- 50	intelligent	-	3/8" Square



Article Number	Type	Torque Range Nm	Interface	MOPC	Drive
01-01-00168-02	ng-TTS10000-qi	+/- 100	intelligent	-	1/2" Square
01-01-00437-01	ng-TTS12000-qi	+/- 120	intelligent	-	1/2" Square
01-01-00169-02	ng-TTS20000-qi	+/- 200	intelligent	-	1/2" Square
01-01-00612-01	ng-TTS10000-qis	+/- 100	intelligent	-	1/2" Square
01-01-00613-01	ng-TTS12000-qis	+/- 120	intelligent	-	1/2" Square
01-01-00614-01	ng-TTS20000-qis	+/- 200	intelligent	-	1/2" Square



Article Number	Type	Torque Range Nm	Interface	MOPC	Drive
01-01-00170-01	ng-TTS50000-qi	+/- 500	intelligent	-	3/4" Square
01-01-00320-01	ng-TTS75000-qi	+/- 750	intelligent	-	3/4" Square
01-01-00210-01	ng-TTS100000-qi	+/- 1000	intelligent	-	3/4" Square

3.7 Stationary Torque Sensors ng-TTS-u

- High precision torque sensors based on strain gauges
- USB Interface
- Torque window control with LED
- Mechanical overload protection clutch MOPC (sensors up to 200 cNm range)
- Standard USB connector
- Maintenance free



Article Number	Type	Torque Range cNm	Interface	MOPC	Drive
01-01-00105-01	ng-TTS01-cu	+/- 1	USB	✓	3 mm Bore
01-01-00106-01	ng-TTS02-cu	+/- 2	USB	✓	3 mm Bore
01-01-00107-01	ng-TTS05-cu	+/- 5	USB	✓	3 mm Bore
01-01-00108-01	ng-TTS10-cu	+/- 10	USB	✓	3 mm Bore
01-01-00109-01	ng-TTS20-cu	+/- 20	USB	✓	3 mm Bore
01-01-00110-01	ng-TTS50-xu	+/- 50	USB	✓	1/4" Hexagon
01-01-00111-01	ng-TTS100-xu	+/- 100	USB	✓	1/4" Hexagon
01-01-00112-01	ng-TTS200-xu	+/- 200	USB	✓	1/4" Hexagon
01-01-00113-01	ng-TTS500-xu	+/- 500	USB	-	1/4" Hexagon
01-01-00114-01	ng-TTS1000-xu	+/- 1000	USB	-	1/4" Hexagon
01-01-00115-01	ng-TTS2000-xu	+/- 2000	USB	-	1/4" Hexagon
01-01-00116-01	ng-TTS5000-qu	+/- 5000	USB	-	3/8" Square

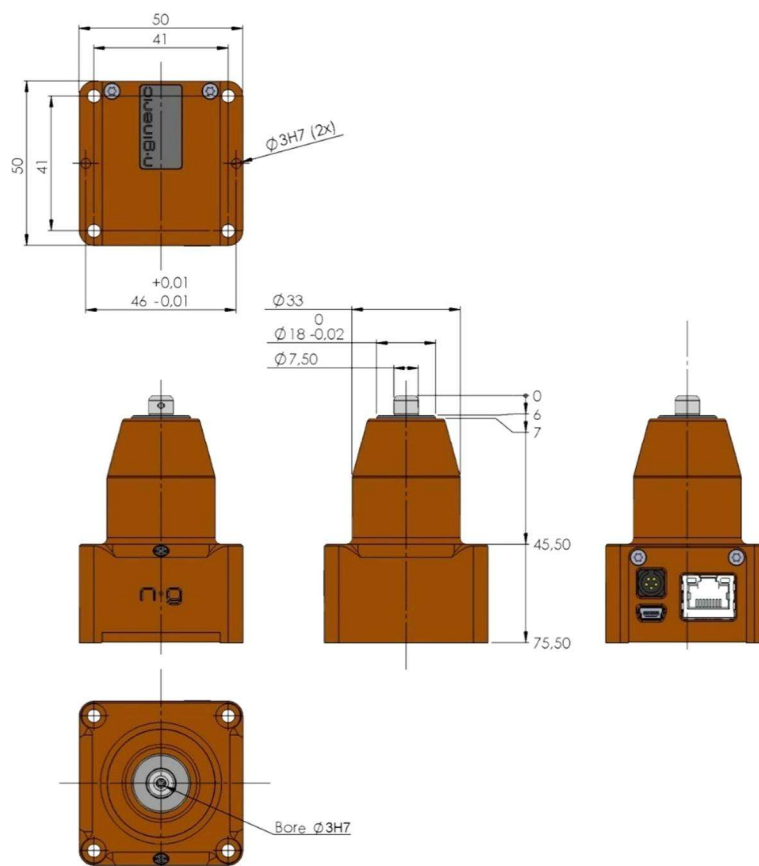


Article Number	Type	Torque Range Nm	Interface	MOPC	Drive
01-01-00171-02	ng-TTS10000-qu	+/- 100	USB	-	1/2" Square

Torque Range	Torque Measurement Accuracy related to full scale value
+/- 1 cNm	1.0
+/- 2 cNm	0.5
+/- 5 cNm	0.2
+/- 10 cNm	0.2
+/- 20 cNm	0.2
+/- 50 cNm	0.2
+/- 1 Nm	0.2
+/- 2 Nm	0.1
+/- 5 Nm	0.1
+/- 10 Nm	0.1
+/- 20 Nm	0.1
+/- 50 Nm	0.1
+/- 100 Nm	0.1
+/- 200 Nm	0.1
+/- 500 Nm	0.1
+/- 1000 Nm	0.2

- Operating Temperature: 0 °C to +40 °C (+32 °F to 104 °F)

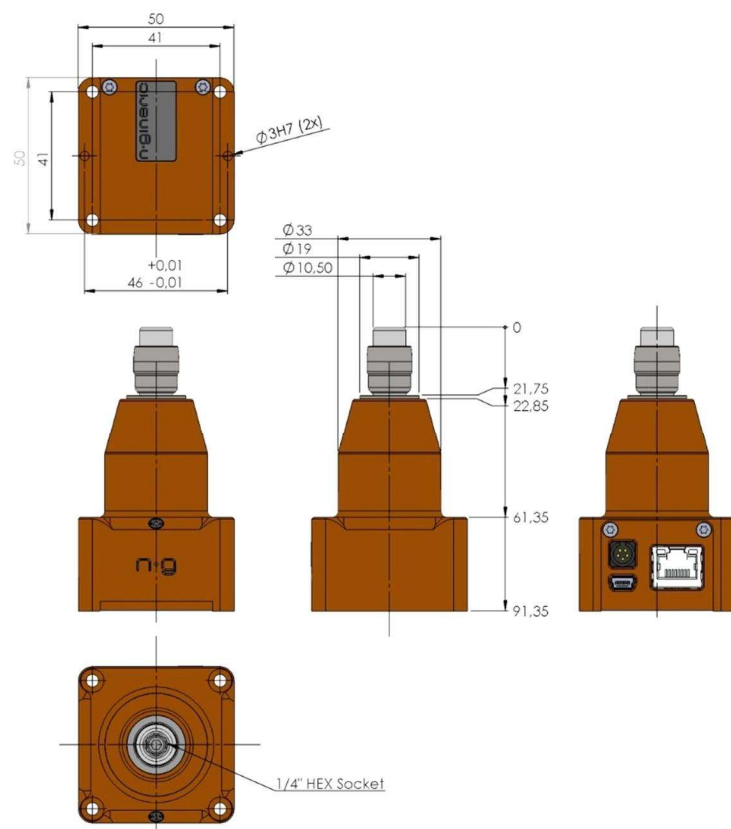
Dimensions and Weighth:



ng-TTS01-ci
ng-TTS02-ci
ng-TTS05-ci
ng-TTS10-ci
ng-TTS20-ci

ng-TTS01-cu
ng-TTS02-cu
ng-TTS05-cu
ng-TTS10-cu
ng-TTS20-cu

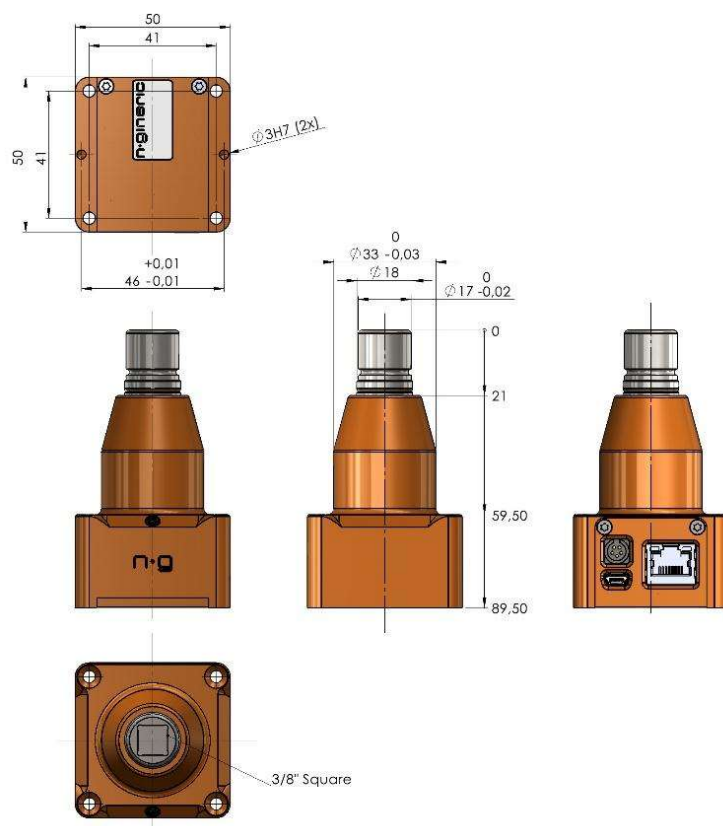
Weight: 0,22 kg



ng-TTS50-xi
ng-TTS100-xi
ng-TTS200-xi
ng-TTS500-xi
ng-TTS1000-xi
ng-TTS2000-xi

ng-TTS50-xu
ng-TTS100-xu
ng-TTS200-xu
ng-TTS500-xu
ng-TTS1000-xu
ng-TTS2000-xu

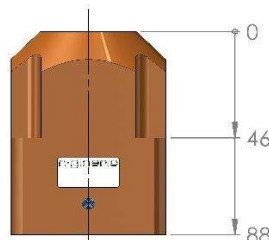
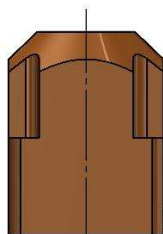
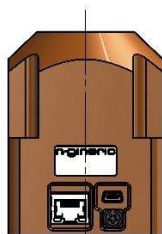
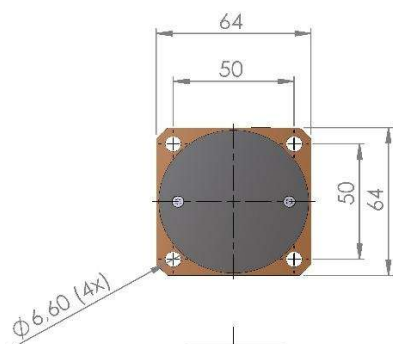
Weight: 0,25 kg



ng-TTS5000-qi

ng-TTS5000-qu

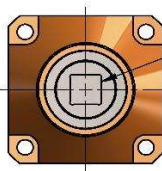
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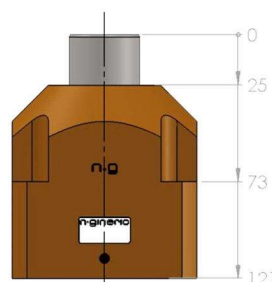
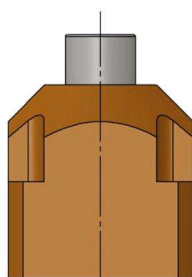
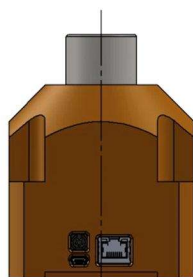
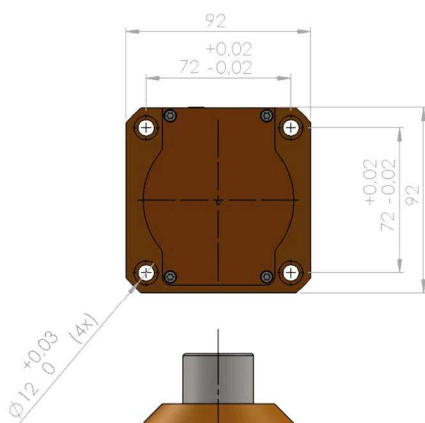
ng-TTS10000-qi
ng-TTS10000-qis
ng-TTS12000-qi
ng-TTS12000-qis
ng-TTS20000-qi
ng-TTS20000-qis

ng-TTS10000-qu

Weight: 0,77 kg

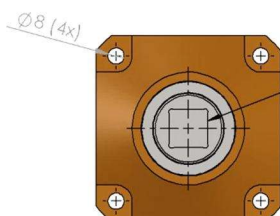


ng-TTS10000-qi2: 1/2" Square



ng-TTS50000-qi
ng-TTS75000-qi
ng-TTS100000-qi

Weight: 2,26 kg



ng-TTS10000-qi: 1/2" Square
ng-TTS20000-qi: 3/4" Square
ng-TTS50000-qi: 3/4" Square

3.8 Stationary Torque Sensors ng-eTTS-u

Torque sensors with robust design for the production floor

- High precision torque sensors based on strain gauges
- Compact size
- USB Interface
- Optional *ng-Link* Interface
- Torque window control with LED
- Maintenance free
- Driver $\frac{3}{8}$ " internal and external square drive
- Measurement accuracy 0.2 % refer to the measurement range

Torque Sensor Type Nomenclature:

ng-eTTS-□ □-□□ □

- ng = n·gineric Product
- e = economy
- TT = Torque Transducer
- S = stationary
- Torque Range in cNm
- q = square drive
- u = intelligent (USB)
- r = intelligent (USB + *ng-Link*)



Article Number	Type	Torque Range Nm	USB	ng-Link	Drive
01-01-00314-01	ng-eTTS500-qu	+/- 5	✓	-	$\frac{3}{8}$ " Square
01-01-00313-01	ng-eTTS1000-qu	+/- 10	✓	-	$\frac{3}{8}$ " Square
01-01-00312-01	ng-eTTS2000-qu	+/- 20	✓	-	$\frac{3}{8}$ " Square
01-01-00309-01	ng-eTTS5000-qu	+/- 50	✓	-	$\frac{3}{8}$ " Square

Accessories

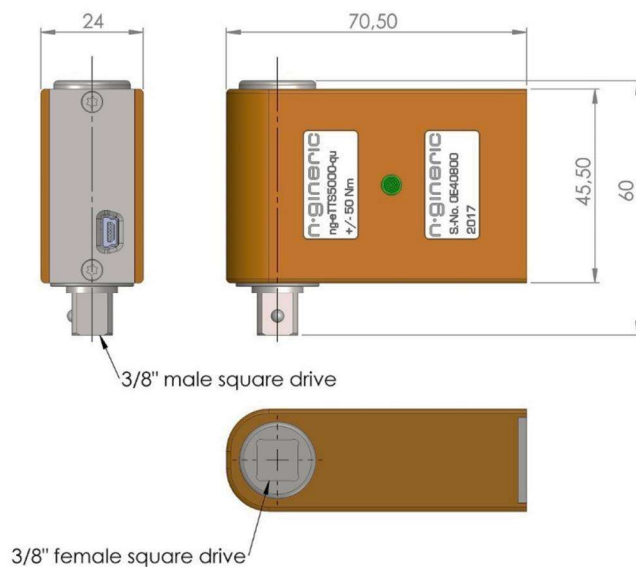


Sensor Shaft Detent 3/8" Square

Article Number 01-92-00037-01

Torque Range	Torque Measurement Accuracy related to full scale value
+/- 2 Nm	0.2
+/- 5 Nm	0.2
+/- 10 Nm	0.2
+/- 20 Nm	0.2
+/- 50 Nm	0.2

- Operating Temperature: 0 °C to +40 °C (+32 °F to 104 °F)



ng-eTTS500-qu
ng-eTTS1000-qu
ng-eTTS2000-qu
ng-eTTS5000-qu

Weight: 0,19 kg

3.9 Stationary Torque Sensors ng-TTS-a

- High precision torque sensors based on strain gauges
- Mechanical overload protection clutch MOPC (sensors up to 200 cNm range)
- 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 cNm	Interface	MOPC	Drive
01-01-00062-01	ng-TTS01-ca	$\pm$ 1	analog	✓	3 mm Bore
01-01-00063-01	ng-TTS02-ca	$\pm$ 2	analog	✓	3 mm Bore
01-01-00035-01	ng-TTS05-ca	$\pm$ 5	analog	✓	3 mm Bore
01-01-00002-01	ng-TTS10-ca	$\pm$ 10	analog	✓	3 mm Bore
01-01-00065-01	ng-TTS20-ca	$\pm$ 20	analog	✓	3 mm Bore

Article Number	Type	Torque Range cNm	Interface	MOPC	Drive
01-01-00066-01	ng-TTS50-xa	$\pm$ 50	analog	✓	1/4" Hexagon
01-01-00067-01	ng-TTS100-xa	$\pm$ 100	analog	✓	1/4" Hexagon
01-01-00068-01	ng-TTS200-xa	$\pm$ 200	analog	✓	1/4" Hexagon
01-01-00013-01	ng-TTS500-xa	$\pm$ 500	analog	-	1/4" Hexagon
01-01-00014-01	ng-TTS1000-xa	$\pm$ 1000	analog	-	1/4" Hexagon
01-01-00144-01	ng-TTS2000-xa	$\pm$ 2000	analog	-	1/4" Hexagon

Article Number	Type	Torque Range Nm	Interface	MOPC	Drive
01-01-00145-01	ng-TTS5000-qa	$\pm$ 50	analog	-	3/8" Square

Accessories

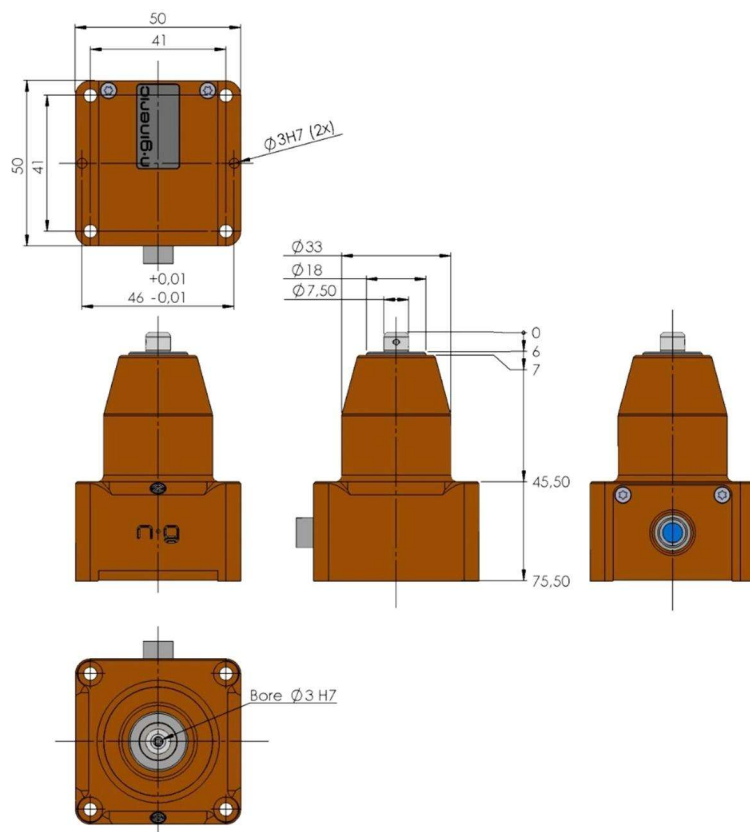
Sensor cable for analog interface, with single-sided connector, 1.5 meters

Article Number	01-90-00021-01
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Torque Range	Torque Measurement Accuracy related to full scale value
+/- 1 cNm	1.0
+/- 2 cNm	0.5
+/- 5 cNm	0.2
+/- 10 cNm	0.2
+/- 20 cNm	0.2
+/- 50 cNm	0.2
+/- 1 Nm	0.2
+/- 2 Nm	0.1
+/- 5 Nm	0.1
+/- 10 Nm	0.1
+/- 20 Nm	0.1
+/- 50 Nm	0.1
+/- 100 Nm	0.1
+/- 200 Nm	0.1
+/- 500 Nm	0.1
+/- 1000 Nm	0.2

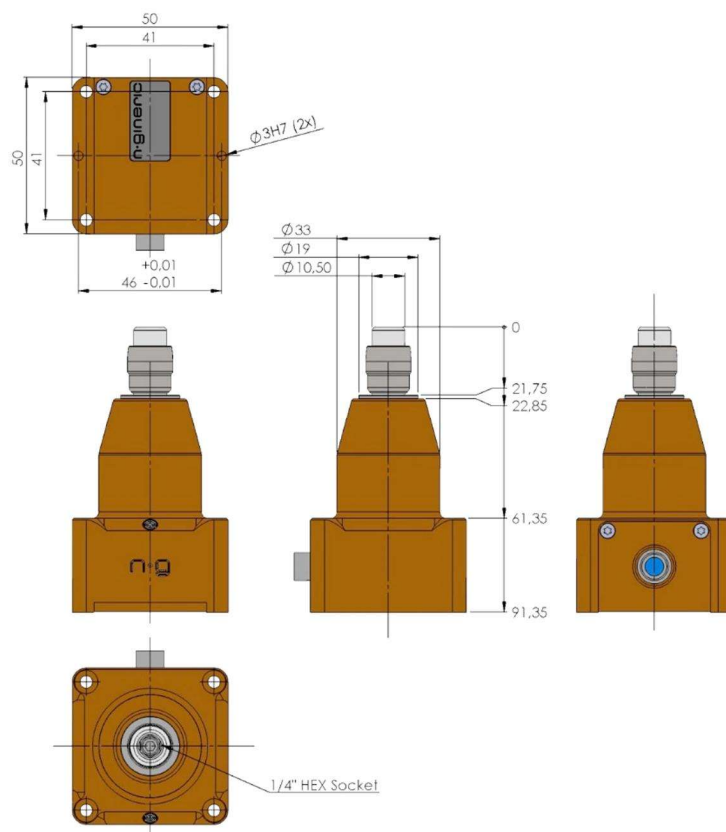
- Operating Temperature: 0 °C to +40 °C (+32 °F to 104 °F)

Dimensions and Weighth:



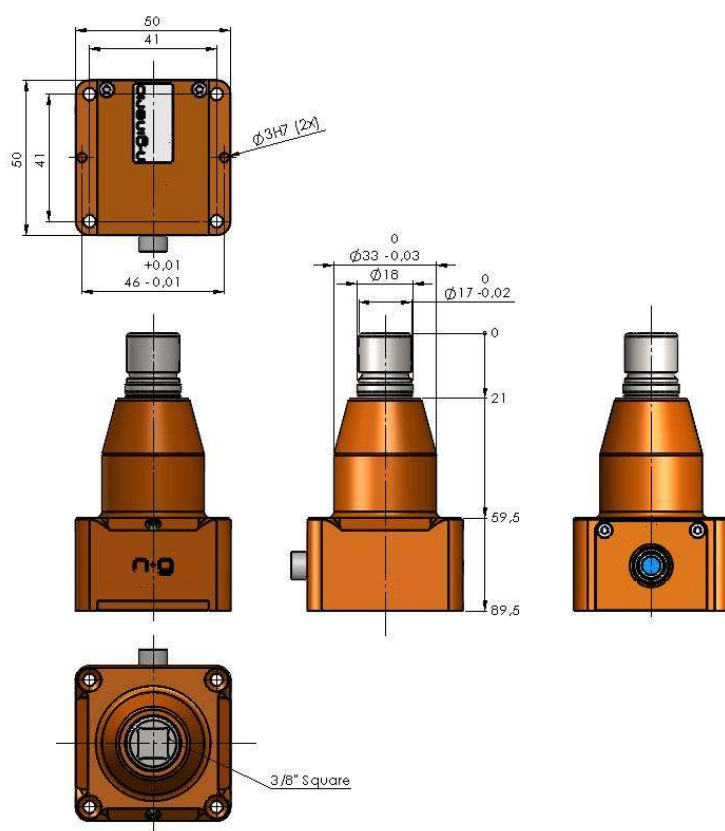
ng-TTS01-ca
ng-TTS02-ca
ng-TTS05-ca
ng-TTS10-ca
ng-TTS20-ca

Weight: 0,22 kg



ng-TTS50-xa
ng-TTS100-xa
ng-TTS200-xa
ng-TTS500-xa
ng-TTS1000-xa
ng-TTS2000-xa

Weight: 0,25 kg



ng-TTS5000-qa

Masse: 0,25 kg