



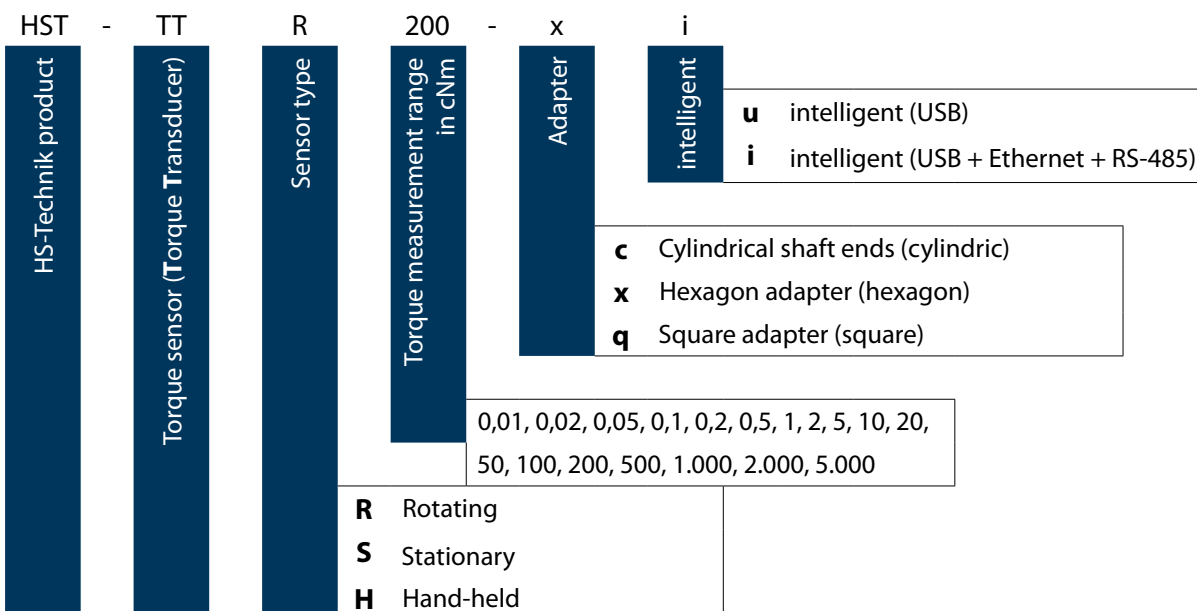
TTR and TTS series

Intelligent torque sensors

- | | |
|--|---|
| <ul style="list-style-type: none"> • strain bauge-based, high precision torque measurement device • All rotating sensors with high-resolution incremental encoders • Ultra-compact construction • USB interface • Ethernet interface • RS-485 interface • Torque window monitoring • Mechanical overload protection (sensors up to 200 cNm) • No external measurement device required | <ul style="list-style-type: none"> • Optional PLC interface • Power supply via USB interface • Measurement, visualization and evaluation software HST-Torq-Analyzer for tablet PC, laptop, netbook android mobile phone and PC
Recording of torque / angle of rotation and torque / time curves or display of the speed across time measurement with up to 2,000 samples per second • 2 threshold value monitoring windows with internal and external trigger possibility • ...and much more |
|--|---|



Sensor nomenclature



TTR series



Measurement: Torque-time-angle + speed or performance

Order no.	Measurement range in Nm	Interface	Overload protection	Accuracy*	Adapter
HST-TTR01-ci	+/- 0.01	intelligent	yes	1.0 %	3 mm shaft
HST-TTR02-ci	+/- 0.02	intelligent	yes	1.0 %	3 mm shaft
HST-TTR05-ci	+/- 0.05	intelligent	yes	0.5 %	3 mm shaft
HST-TTR10-ci	+/- 0.1	intelligent	yes	0.5 %	5 mm shaft
HST-TTR20-ci	+/- 0.2	intelligent	yes	0.2 %	5 mm shaft
HST-TTR50-ci	+/- 0.5	intelligent	yes	0.2 %	8 mm shaft
HST-TTR100-ci	+/- 1.0	intelligent	yes	0.2 %	8 mm shaft
HST-TTR200-ci	+/- 2.0	intelligent	yes	0.2 %	8 mm shaft
HST-TTR500-ci	+/- 5.0	intelligent	-	0.1 %	8 mm shaft
HST-TTR1000-ci	+/- 10.0	intelligent	-	0.1 %	8 mm shaft
HST-TTR2000-ci	+/- 20.0	intelligent	-	0.1 %	8 mm shaft
HST-TTR50-xi	+/- 0.5	intelligent	yes	0.2 %	1/4" hexagon
HST-TTR100-xi	+/- 1.0	intelligent	yes	0.2 %	1/4" hexagon
HST-TTR200-xi	+/-2.0	intelligent	yes	0.2 %	1/4" hexagon
HST-TTR500-xi	+/- 5.0	intelligent	-	0.1 %	1/4" hexagon
HST-TTR1000-xi	+/- 10.0	intelligent	-	0.1 %	1/4" hexagon
HST-TTR2000-xi	+/- 20.0	intelligent	-	0.1 %	1/4" hexagon
HST-TTR5000-qi	+/- 50.0	intelligent	-	0.1 %	3/8" square
HST-TTR10000-qi	+/- 100.0	intelligent	-	0.1 %	1/2" square
HST-TTR20000-qi	+/- 200.0	intelligent	-	0.1 %	3/4" square

- Temperature conditions
0° C to 40° C (32° F to 114° F)
- Rotation of angle resolution
0.1°

- Rotation of angle accuracy
0.5°
- max. rpm 5,000

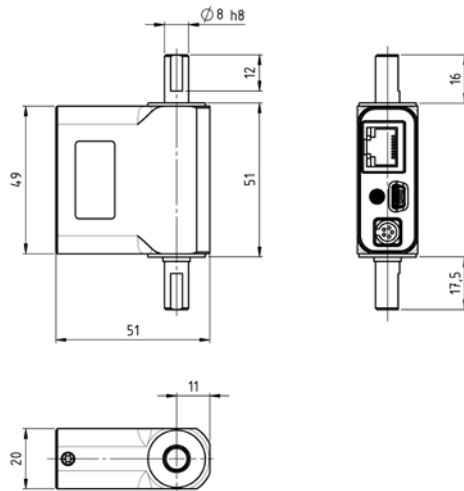
* The accuracy is shown in percent of full scale (sensor with a torque range of 1.0 Nm = deviation 0.002 Nm or 0.2 cNm)



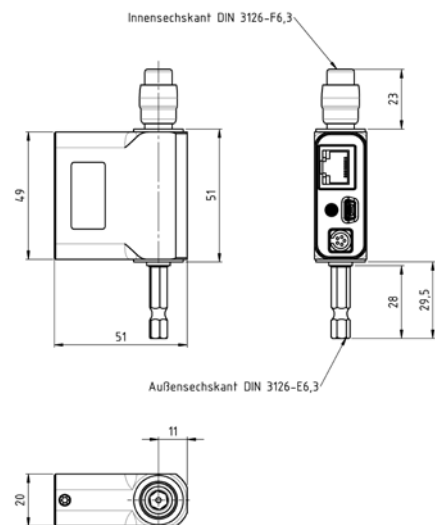
TTR series

Technical Data

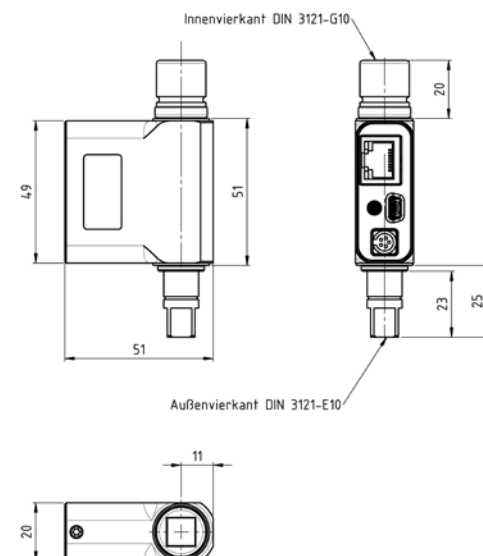
HST-TTRxxxx-ci



HST-TTRxxxx-xi



HST-TTRxxxx-qi



Dimensions in mm

TTS series



Measurement: Torque-time

Order no.	Measurement range in Nm	Interface	Overload protection	Accuracy*	Adapter
HST-TTS01-ci	+/- 0.01	intelligent	yes	1.0 %	3 mm bore
HST-TTS02-ci	+/- 0.02	intelligent	yes	1.0 %	3 mm bore
HST-TTS05-ci	+/- 0.05	intelligent	yes	0.5 %	3 mm bore
HST-TTS10-ci	+/- 0.1	intelligent	yes	0.5 %	3 mm bore
HST-TTS20-ci	+/- 0.2	intelligent	yes	0.2 %	3 mm bore
HST-TTS50-xi	+/- 0.5	intelligent	yes	0.2 %	1/4" hexagon
HST-TTS100-xi	+/- 1.0	intelligent	yes	0.2 %	1/4" hexagon
HST-TTS200-xi	+/- 2.0	intelligent	yes	0.2 %	1/4" hexagon
HST-TTS500-xi	+/- 5.0	intelligent	-	0.1 %	1/4" hexagon
HST-TTS1000-xi	+/- 10.0	intelligent	-	0.1 %	1/4" hexagon
HST-TTS2000-xi	+/- 20.0	intelligent	-	0.1 %	1/4" hexagon
HST-TTS5000-qi	+/- 50.0	intelligent	-	0.1 %	3/8" square
HST-TTS10000-qi	+/- 100.0	intelligent	-	0.1 %	1/2" square
HST-TTS20000-qi	+/- 200.0	intelligent	-	0.1 %	3/4" square



Compatible fidaptors with different adapters you'll find on page 132.

- Temperature conditions
0°C to 40°C (32°F to 114°F)
- Rotation of angle resolution
0.1°
- Rotation of angle accuracy
0.5°
- max. rpm 5,000

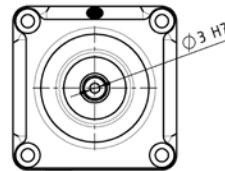
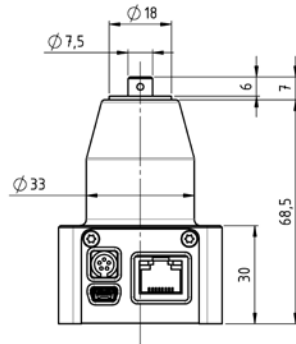
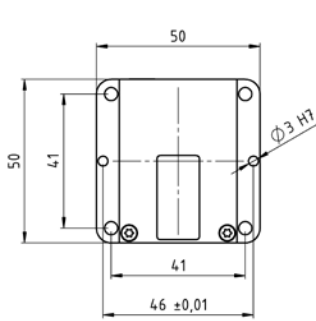
* The accuracy is shown in percent of full scale (sensor with a torque range of 1.0 Nm = deviation 0.002 Nm or 0.2cNm)



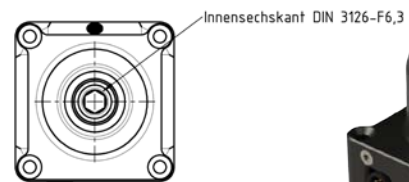
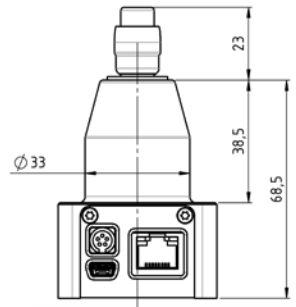
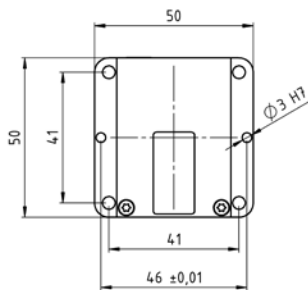
TTS series

Technical Data

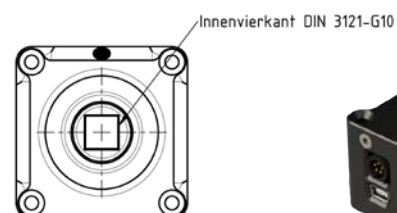
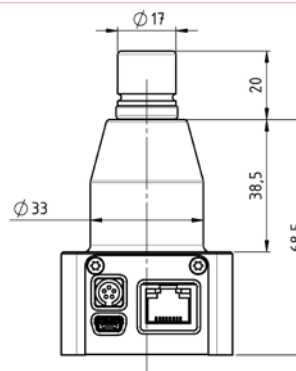
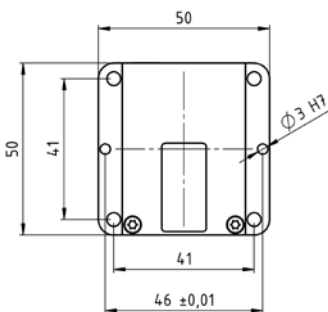
HST-TTSxxxx-ci



HST-TTSxxxx-xi



HST-TTSxxxx-qi



Dimensions in mm

Software - function overview



Version comparison

Functions	HST-TORQ-ANALYZER-BA Basic-Version	HST-TORQ-ANALYZER PRO-Version
Graphical process illustration of		
Torque over time		
Torque over angle		
Force over time		
Force over travel		
Automatic sensor identification at connecting		
Curve illustration with up to 2,000 samples per second		
Supports different physical units		
2 limit value monitoring windows with internal or external trigger option		
Adjustable lowpass filter (10 Hz up to 500 Hz)		
Filter for eliminating of current hum, with chooseable frequenz (50/60 Hz)		
Compare with a reference graphic		
Excel-export of the graphic		
Listing of measurement results with direct transfer to Excel, with statistic evaluation (c_{mk} -calculation)		
Supported operating systems: Windows 7, Windows 8, Windows 10		
Direct connectivity of the sensors via USB or ethernet		
Grafical process illustration of		
Speed over time		
Speed over angle		
Power over time		
Power over angle		
Force over travel		
Cursor function with display of single values		
Second free configurable measurement display window		
Barcode reader support for recurring measurements		
Screw joint analysis to set the final torque*		

* More information you'll find on our webpage



Software - HST-TORQ-ANALYZER

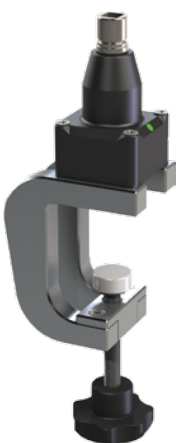
Compatible with Windows 7, Windows 8, Windows 10



App for Android systems HST-TORQ-ANALYZER-DI

- Mobile phone or tablet as „Measurement device“
- With current and peak value display
- Automatical sensor identification at connecting
- Supports different physical units
- 2 limit value monitoring windows with internal or external trigger option
- Requirement:
Android 3.2 or higher,
USB Master or OTG
- Direct connectivity of the sensors via USB

More accessories



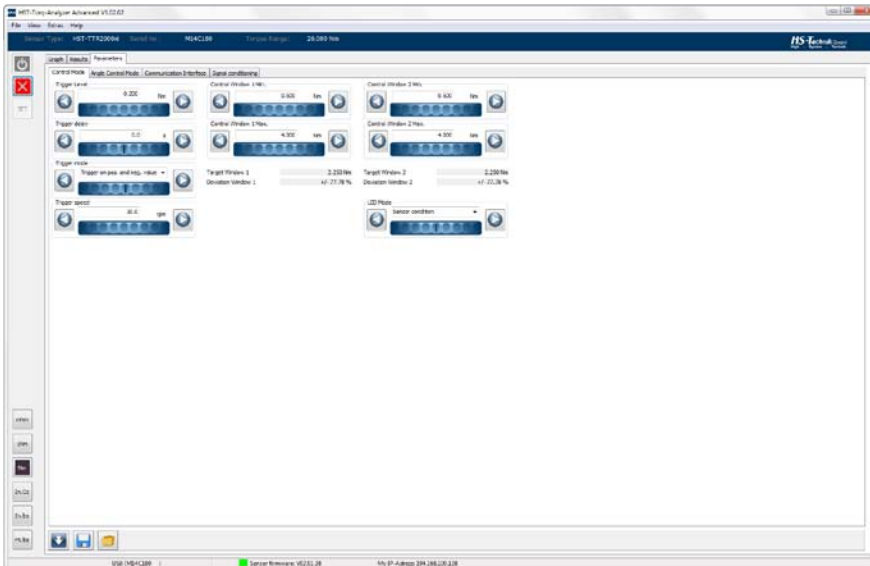
HST-TTS-MOUNT
The shown
TTS sensor is not
included in the
delivery content

Order no.	Description
HST-TORQ-ANALYZER	Mesurement software for tablet and PC
HST-TORQ-ANALYZER-BA	Mesurement software for tablet and PC basic version
HST-TORQ-ANALYZER-DI	Mesurement software for Android 3.2 or higher
HST-TT _x	Interface extension
HST-TT-90003	Cable sensor / interface extension
HST-TT-90002	Cable USB-A / USB-Mini-B 1.8 m
HST-TT-90006	Cable USB-A / USB-Mini-B 5.0 m
HST-TT-90005	USB-Range-Extender 12 m
HST-TT-90001	Cabel sensor analogous 1.5 m
HST-TT-91001	Power adapter 24V DC 1A
HST-TT-03123	5-Pin connector for power supply
HST-TT-KOFFER	Suitcase for HST-TTR & -TTS-torque sensors
HST-TTS-MOUNT	Table installation set for HST-TTS-torque sensors



Software - HST-TORQ-ANALYZER

Compatible with Windows 7, Windows 8, Windows 10

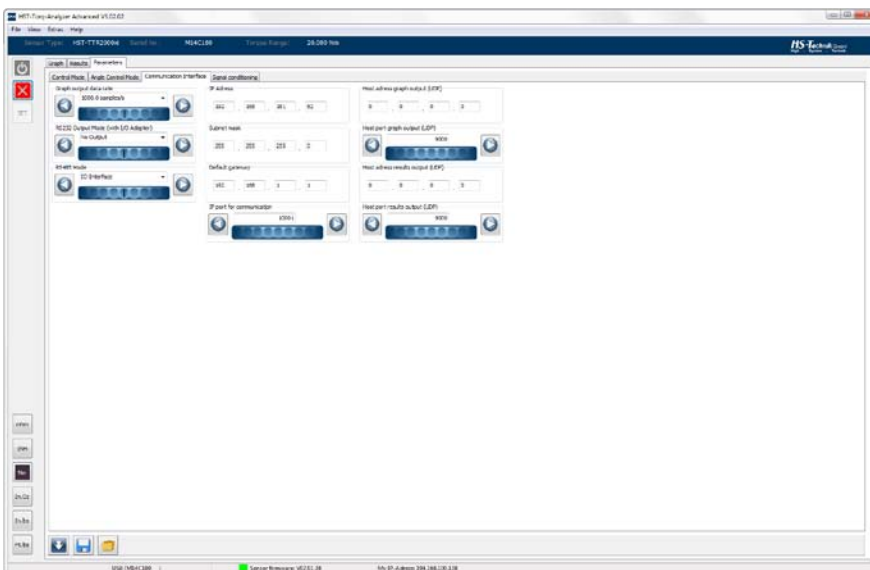


Through internal and external trigger options each measurement can be adjusted perfectly.

Direct connectivity of the sensor with the computer via USB or Ethernet. Large filter options from 10 - 500 Hz.

The software is compatible with the operating systems Windows 7, Windows 8 and Windows 10.

No need of Com-Port adjustments thanks to the automatic connection of the HST-TORQ-ANALYZER.



Extended window:
The extended window shows detailed speed (rpm) and power results of the last measurement.

Results	0.0 rpm
Max. Speed	380.7 rpm
Min. Speed	0.0 rpm
Avg. Speed	150.2 rpm
Power	0.000 W
Max. Power	148.769 W
Min. Power	0.000 W
Avg. Power	35.319 W
Clamping Angle	