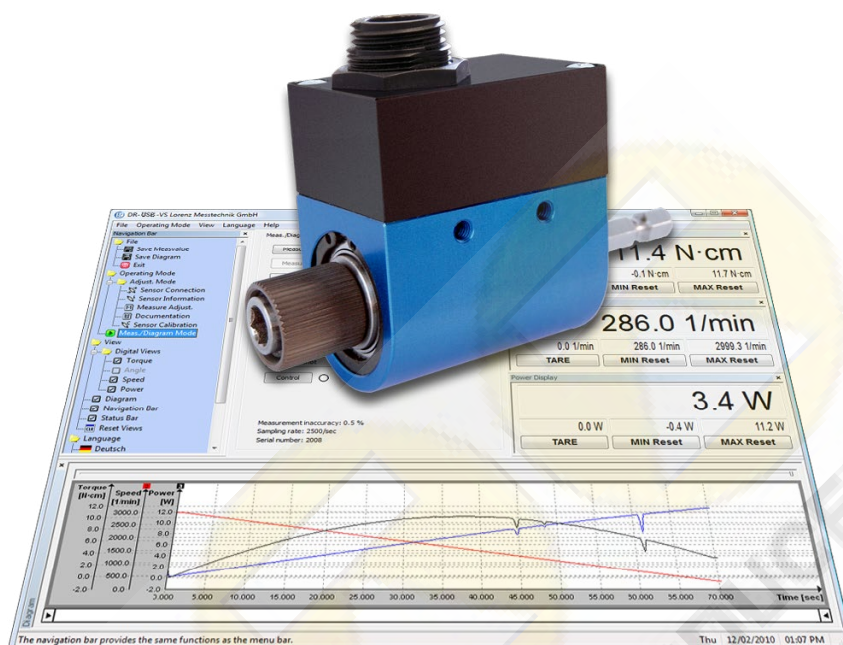


USB-Torque Sensor DR-3003 (contactless) with Rated Torque from 0.1 ... 20 N·m



This sensor has a contactless and digital signal transmission from rotor to stator without signal falsification of the measurement data. It is therefore highly accurate and maintenance-free.

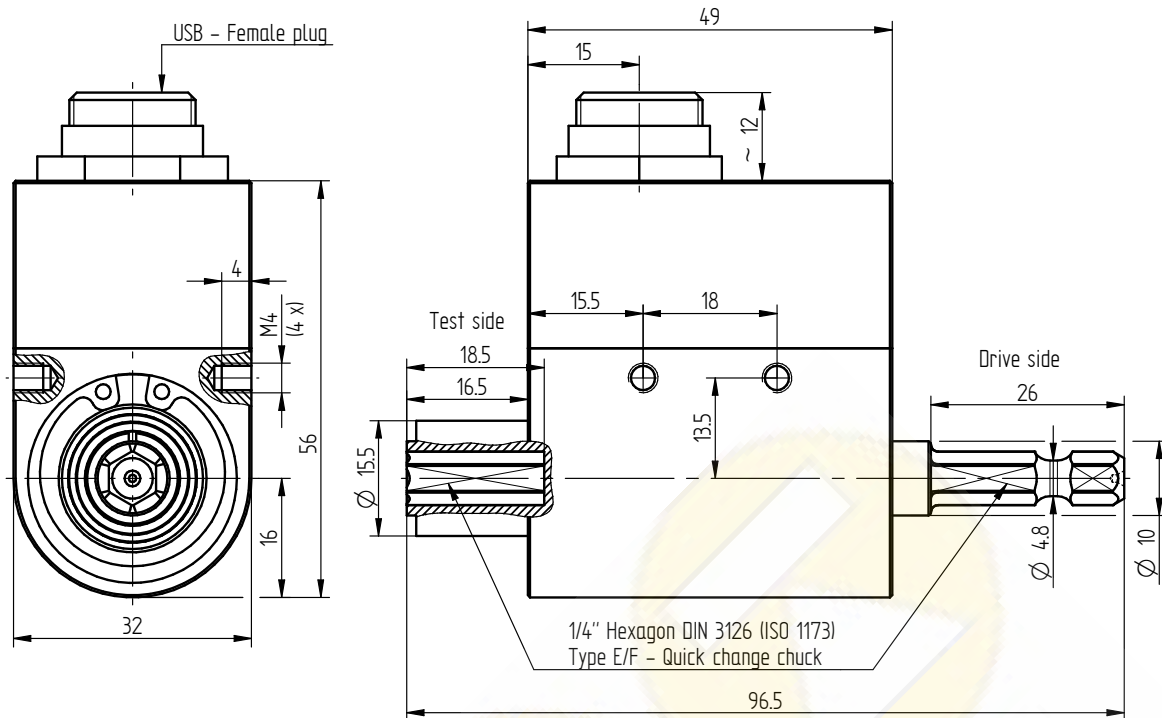
Performance Features

- USB-Torque sensor for screw driving systems with configuration and evaluation software
- High accuracy
- Integrated speed/angle measurement
- Up to 2500 measurements/s per measuring channel
- Speed up to 4000 min⁻¹
- Very short axial length
- Feed-in from USB without external power supply
- Calibration parameter lodged in sensor
- Performance calculation via software
- Simple handling and assembly
- Special versions on request

Application

- Assembly technology
- Process measuring and control technology
- Automotive industry
- Measuring and control devices
- Tool engineering
- Special mechanical engineering

Dimensions of DR-3003 in mm



Rated Torque [N·m]	Hexagon Drive	Weight [kg]
0.1/0.2/0.5/1/2/5/10/15/20	1/4"	0.2

Technical Data acc. to VDI/VDE/DKD 2639

USB-Torque Sensor DR-3003

Rated torque M_{nom}	N·m	0.1 ... 20
Accuracy class	% M_{nom}	0.1
Speed resolution	min ⁻¹	1
Speed accuracy		1 % full scale ±1 digit
Angle of rotation resolution	degree	0.25
Relative repeatability error in unchanged mounting position b'	% M_{nom}	±0.02
Feed-in from USB	VDC	4 ... 6
Current consumption	mA	≤250
Output signal torque	digits	±25000
Output signal speed/angle of rotation	digits	±32511
Control signal excitation		per software
Sample rate	kSample/s	2.5
Electrical connection		Mini-USB-B-Socket IP68, incl. 3 m connection cable to PC
Reference temperature T_{ref}	°C	23
Rated temperature range	°C	5 ... 45
Operating temperature range	°C	0 ... 60
Storage temperature range	°C	-10 ... 70
Temperature effect on zero signal TK_0	% $M_{nom}/10 K$	±0.2
Temperature effect on characteristic value TK_C	% $M_{nom}/10 K$	±0.1
Maximum operating torque M_G (static)	% M_{nom}	150
Torque limit M_{max} (static)	% M_{nom}	200
Breaking torque M_B (static)	% M_{nom}	>300
Permissible oscillation stress when subjected to torque M_{df}	% M_{nom}	70 (peak-to-peak)
Level of protection		IP50

Technical Data acc. to VDI/VDE/DKD 2639 (continued)

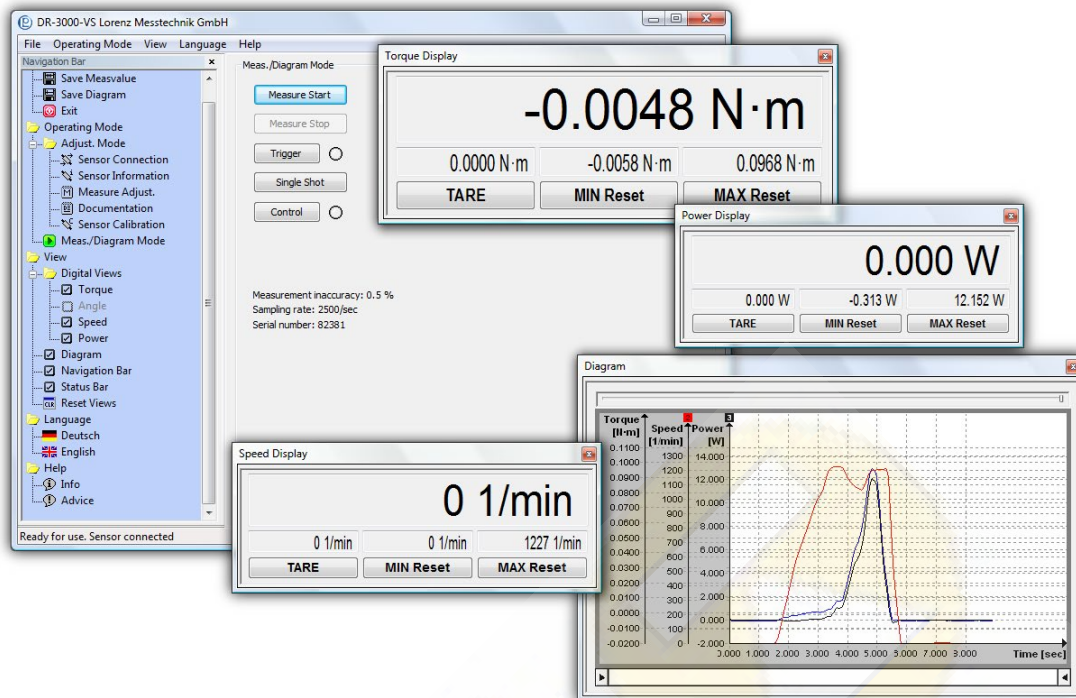
Article-No.	Rated Torque [N·m]	Limit Speed [min ⁻¹]	Springrate [N·m/rad]	Mass Moment of Inertia [kg·m ²]		Axial Force Limit [N] ¹	Lateral Force Limit [N] ¹
				Drive Side	Test Side		
112831	0.1	3000	18	2.6E-06	3.9E-07	43	1.2
112832	0.2	3000	18	2.6E-06	3.9E-07	58	1.6
112833	0.5	3000	112	2.6E-06	3.9E-07	185	1.6
112834	1	4000	112	2.6E-06	3.9E-07	260	2.6
112828	2	4000	285	2.6E-06	3.9E-07	480	6.6
112835	5	4000	457	2.6E-06	4.0E-07	865	17
112836	10	4000	516	2.6E-06	4.2E-07	1150	24
112837	15	4000	516	2.6E-06	4.2E-07	1150	24
112838	20	4000	516	2.6E-06	4.2E-07	1150	24

Calibrations

Article-No.	Description	
400676	Linearity diagram in accordance to factory standard	25 % steps
400664	Linearity diagram in accordance to factory standard	10% steps
400961	Proprietary calibration acc. to VDI/VDE 2646	3 steps
400700	Proprietary calibration acc. to VDI/VDE 2646	5 steps
400688	Proprietary calibration acc. to VDI/VDE 2646	8 steps
401023	Proprietary calibration for the angle of rotation acc. to VDI/VDE 2648-1	
	DAkKS-Calibration/Standard on request	

¹ Unsupported shaft

Configuration and Evaluation Software DR-USB-VS



The configuration and evaluation software serves for easy evaluation and graphical visualisation of torque/speed/power or torque/angle of rotation on PC.

The software allows direct read in of measured data into a text file in CSV-format through the USB-port of a PC. This enables further analyses with a commercially available spreadsheet program at any time.

Technical data

Type	DR-USB-VS
Interface	USB
Protocol	Lorenz Standard Protocol
System Requirements	Windows® 7 - 10 32/64 Bit ² Dual-Core from 1.8 GHz (with diagram)

Highlights at a glance

Conversion in physical values	✓
Simultaneous storage of up to 3 physical values	✓
Simultaneous measuring	1 Sensor
Automatic scaling of y-axis	✓
Graphical visualisation of a physical value	✓
Automatic or manual storage in a CSV and BMP file	✓
Mathematical computation of the mechanical power	✓
Calibration function	✓
Resettable minimum value memory for each measured value	✓
Resettable maximum value memory for each measured value	✓
Variable average determination	✓
Tare for each measured value	✓

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