







Torque Sensors, Torque Transducers

Rotating with Slipping

Image	Type	Measuring Range [N·m]	Accuracy Class	Speed/Angle Measurement	Mechanical Connection
	DR-2	1..500	0.1	-	Cylindrical Shaft with Keyway
	DR-20	1..500	0.1	✓ Standard	Cylindrical Shaft with Keyway

Sensors for Screw Driving Systems

Image	Type	Measuring Range [N·m]	Accuracy Class	Speed/Angle Measurement	Mechanical Connection
	DR-1	1..5000	0.1	-	Male Square Drive / Female Square Drive
	DR-12	1..5000	0.1	✓ Standard	Male Square Drive / Female Square Drive
	DR-2291	1..20	0.1	-	1/4" Hexagon Drive / Quick Change Chuck
	DR-2335	1..20	0.1	✓ Standard	1/4" Hexagon Drive / Quick Change Chuck

Rotating Contactless









Image	Type	Measuring Range [N·m]	Accuracy Class	Speed/Angle Measurement	Mechanical Connection
	DR-3000	0.5..5000 USB Torque Sensor, inclusive Configuration- and Evaluation-Software	0.1	✓ Standard	Cylindrical Shaft
	DR-2643	0.5..5000	0.1	✓ Option	Cylindrical Shaft
	DR-2112 DR-2412	0.1..20000	0.1	✓ Option	Cylindrical Shaft

Image	Type	Measuring Range [N·m]	Accuracy Class	Speed/Angle Measurement	Mechanical Connection
	DR-2112-R DR-2412-R	0.1..1000	0.2	✓ Option	Cylindrical Shaft
	DR-2212 DR-2512	0.1..20000	0.1	✓ Option	Cylindrical Shaft
	DR-2212-R DR-2512-R	0.1..1000	0.2	✓ Option	Cylindrical Shaft
	DR-2477	0.2..200	0.25	-	Cylindrical Shaft
	DR-2500 DR-2600	0.005..150 Miniature Torque Sensor without Bearings	0.1	✓ Option (only Speed Measurement)	Cylindrical Shaft
	DR-2554	50..1000 Bearingless	0.1	✓ Option (only Speed Measurement)	Clamping Ring Hub / Radial Clamping Hub Keyway
	MR-12	20..5000 Sensor for Belt- Pulleys	0.1	✓ Option	Mounting-Hole with Keyway
	DR-2481	260	0.5	-	External / Internal Spline Drive

Dual Range Sensor	Type	Measuring Range [N·m]	Accuracy Class	Speed/Angle Measurement	Mechanical Connection
	DR-2208 DR-2508	0.5 / 5..2000 / 20000 Dual Range Sensor	0.1	✓ Option	Cylindrical Shaft
	DR-2531 DR-2831	0.5 / 5..2000 / 20000 Dual Range Sensor	0.1	✓ Option	Cylindrical Shaft

Sensors for Screw Driving Systems	Type	Measuring Range [N·m]	Accuracy Class	Speed/Angle Measurement	Mechanical Connection
	DR-3001	0.1..5000 USB Torque Sensor, inclusive Configuration- and Evaluation-	0.1	✓ Standard	Male Square Drive / Female Square Drive

		Software				
	DR-2113 DR-2413	0.1..5000	0.1	✓ Option	Male Square Drive / Female Square Drive	
	DR-2493	0.1..5000	0.25	✓ Option	Male Square Drive / Female Square Drive	
	DR-3003	0.1..20 USB Torque Sensor, inclusive Configuration- and Evaluation- Software	0.1	✓ Standard	1/4" Hexagon Drive / Quick Change Chuck	
	DR-2153 DR-2453	0.1..20	0.1	✓ Option	1/4" Hexagon Drive / Quick Change Chuck	
	DR-2494	0.1..20	0.25	✓ Option	1/4" Hexagon Drive / Quick Change Chuck	
	DR-2114 DR-2414	0.1..20	0.1	✓ Option	1/4" Hexagon Drive / Quick Change Chuck	
	DR-1986 DR-1987 DR-1988 DR-2124	1..500	0.3	✓ Standard	Male Square Drive / Female Square Drive External / Internal Spline Drive	

Non-Rotating (Static)













Image	Type	Measuring Range [N·m]	Accuracy Class	Range of Application	Mechanical Connection
	D-2452	0.005..20000	0.1	Reaction Torque Measurement, e.g. Extruder	Cylindrical Shaft
	DK-15	1..100	0.1..0.2	Reaction Torque Measurement, e.g. Test Stands	Cylindrical Shaft with Keyway
	DV-14	2..5000	0.1..0.2	Survey of Assembly Tools for Screws and Nuts	Male Square Drive / Female Square Drive
	D-2431	0.2..20	0.1	Survey of Assembly Tools for Screws and Nuts	1/4" Hexagon Drive / Quick Change Chuck
	DH-15	0.005..20	0.1..0.2	For Very Small Ranges	Flange with Spigot / Cylindrical Shaft

Image	Type	Measuring Range [N·m]	Accuracy Class	Range of Application	Mechanical Connection
	DFW-25	5..1000	0.1..0.2	Compact Design	Flange with Center Hole / Cylindrical Shaft with Keyway
	DFW-35	2..2000	0.1..0.2	Survey of Assembly Tools for Screws and Nuts	Flange with Center Hole / Square
	D-2223	2..5000	0.1..0.2	Survey of Assembly Tools for Screws and Nuts	Flange with Center Hole / Square Socket
	D-2209	1..5	0.2	Compact Design	Flange with Spigot
	D-2553	10..200	0.1	Compact Design	Flange with Large Through Hole and Center Counter Bore
	DF-30	10..20000	0.05..0.1	Compact Design	Flange with Center Hole
	D-2268	100..5000	0.1	Short Design	Flange

Force Sensors - Force Transducers

Compression and Tension Force







Image	Type	Measuring Range	Accuracy Class	Range of Application
	K-11	0.5..2000 kN	0.05..1.0	E.g. Material Testing Machines, Press-In Force Measurement, Roll Force Applications ..
	K-1563	100..2 kN	0.15..0.3	E.g. Material Testing or Rope Force Measuring
	K-12	0.5..1000 kN	0.1..0.25	E.g. Tension/Compressive Testing Machines or Survey of Actuating Forces
	K-2145	0.5..200 kN	0.1..0.25	E.g. Material Testing or Spring Force Measuring
	K-25	0.02..50 kN	0.1..0.2	E.g. Tension/Compressive Testing Machines

Image	Type	Measuring Range	Accuracy Class	Range of Application
	K-1427	0.5..200 kN	0.1..0.25	E.g. Material Testing Machines or Press-In Force Measurement

Dual-Range Force Transducer



Type	Measuring Range	Accuracy Class	Range of Application
K-1882	Dual-Range Force Transducer 1 / 10 kN 15 / 150 kN	0.2	E.g. Monitoring of Assembly Forces in the Automobile Industry

Special Accessories



Type	Range of Application
EF, EM, EF42, ED, E2, E3	Force Transmissions, Thrust Pieces and Mounting Flanges

Compressive Force Sensors












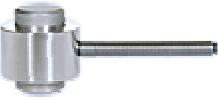


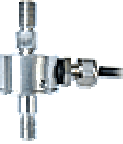
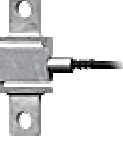

Image	Type	Measuring Range	Accuracy Class	Range of Application
	K-13 K-13B	0.01..100 kN	0.5	E.g. Press-In Force Survey, Tablet Presses ..
	K-14	0.05..100 kN	0.5	E.g. Press-In Force Survey
	K-2528	0.2..10 kN	1	E.g. Press-In Force Survey
	K-2529	0.5..20 kN	1	E.g. Press-In Force Survey
	K-18	5..5000 kN	0.5	Small Measured Displacement < 0.1 mm, e.g. for Press-In Force Survey
	K-22	0.05..2 kN	0.5	Miniature Transducer for Shear Force and Press-In Force Measurement
	K-180	15..500 kN	1..3	E.g. Preload Measurement of Screws
	K-450	1..1000 kN	0.1..0.3	Universal Compression Sensor, e.g. Survey of Surface Pressure Plates or Press-In Force
	K-1250	2..100 kN	0.5	E.g. Survey of Press-In Force
	K-1613	0.1..50 kN	0.5	Miniature Transducer, e.g. Survey of Press-In Force
	K-2071	5..15 kN	0.3	Miniature Transducer, e.g. for Industrial Process Control for Press Fitting, Riveting, Clinching, Stamping ..

Image	Type	Measuring Range	Accuracy Class	Range of Application
	K-2283	50..150 kN	1	Miniature Transducer, e.g. for Pressing Tools, Impact Measurements, Crash Testing, Punch, Stamping ..
Special Accessories	Type			Range of Application
	EF, EM, EF42, ED, E2, E3			Force Transmissions, Thrust Pieces and Mounting Flanges

Tension Force Sensors

Image	Type	Measuring Range	Accuracy Class	Range of Application
	K-100	1..100 kN	0.3	E.g. Solar Wing Control or Rope Force Measurement
	K-1107	10..200 N	0.2	Miniature Sensor, e.g. Survey of Rope Force or Force Determination of a Bowden Wire
	K-1368	10..200 N	0.2	Miniature Transducer, e.g. Force Determination of Belt Tensioners
Special Accessories	Type			Range of Application
	EF, EM, EF42, ED, E2, E3			Force Transmissions, Thrust Pieces and Mounting Flanges

Special Sensors and Accessories



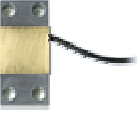




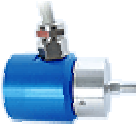






Image	Type	Measuring Range	Accuracy Class	Range of Application
	K-1661	20..400 kN	1	Load Measuring Pin, e.g. Load Measurement in Deflector Rolls
	K-2148	1 or 2 kN	0.5	E.g. for Tension Measurement of Belt Conveyors in the Paper Industry
	DZ-1	60 N/mm ²	0.5	Stress Sensor, e.g. Survey of Press-In Force, Material Stress or Liquid Level Monitoring


Image	Type	Measuring Range	Accuracy Class	Range of Application
	K-2565	1500 N	0.1	Force Sensor for Hand Force Measurement (Medical Load Cell)
	K-1509	2..20 N	0.2	Force Sensor , e.g. for Measurement of Ball Bearing Friction
	K-2618	30..300 kN	1	Force Sensor , e.g. for Measurement of Tension Forces in Lathe Chucks
	EF, EM, EF42, ED, E2, E3	-	-	Force Transmissions, Thrust Pieces and Mounting Flanges

Multi-Component Sensors

Torque static / Force Sensors

Image	Type	Measuring Range	Accuracy Class	Range of Application
	M-2416	0.1 N·m / 20 N 0.5 N·m / 50 N	0.2 (F); 0.2 (Mt)	E.g. the Optimization of the Granulation of Abrasives
	M-1902	100 N·m / 100 N·m / 100 kN	0.2	Screw Testing: Thread Friction Torque, Screw Head Friction Torque and Preload
	M-2230	100 N·m / 100 N·m / 100 kN	0.2	Screw Testing: Thread Friction Torque, Screw Head Friction Torque and Preload
	M-1983	60 N·m / 60 N·m / 40 kN	0.5	Screw Testing: Thread Friction Torque, Screw Head Friction Torque and Preload
	M-2396	0,5 kN / 5 N·m; 0,5 kN / 50 N·m; 1 kN / 10 N·m; 1 kN / 30 N·m; 20 kN / 20 N·m; 2 kN / 50 N·m	0.3 (F) 0.2 (Mt)	E.g. Optimization of the Cutting Force of Drills
	M-2025	10 kN / 10 N·m 20 kN / 20 N·m	0.2 (F) 0.2 (Mt)	E.g. Survey of the Characteristics of Elastomers
	M-2354	10 kN / 10 N·m	0.2 (F) 0.2 (Mt)	E.g. Survey of the Bearing Friction of Ball Bearings

Torque Rotary / Force

Image	Type	Measuring Range	Accuracy Class	Speed/Angle Measurement	Range of Application
	M-2371	2 N·m / 100N...5 N·m / 500 N	0.4 (F) 0.2 (Mt)	✓ Option	Torque -, Force -, Speed-, and Angle of Rotation Measurement; e.g. for Continuous Stress Test of Pumps and Master Key Systems