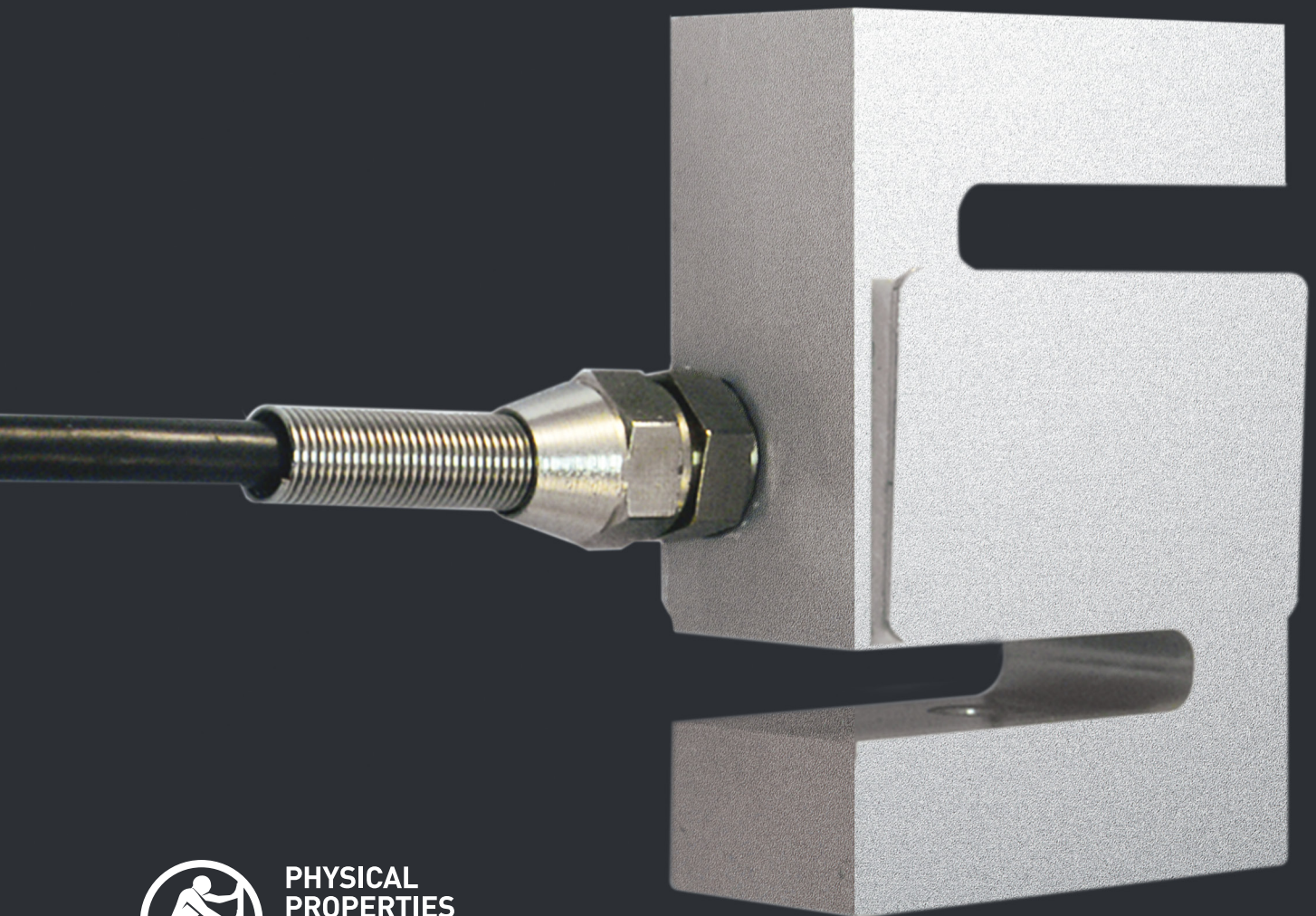




Digital force
and torque sensors
Sales brochure



PHYSICAL
PROPERTIES
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Explore our range of force and torque sensors

Mecmesin provides a wide choice of 'Smart' force and torque sensors for connection to its range of AFG and VFG force gauges plus the dedicated AFTI and VFTI display units.

The capacity and calibration parameters of these 'Smart' sensors is hosted within the sensor plug and are automatically recognised by these instruments allowing true plug and play. Each Smart sensor is supplied with its own calibration certificate traceable to national standards.

Smart sensors are available in different types for measuring tension, compression, static torque and rotary torque. For further details on Smart sensors please visit mecmesin.com.



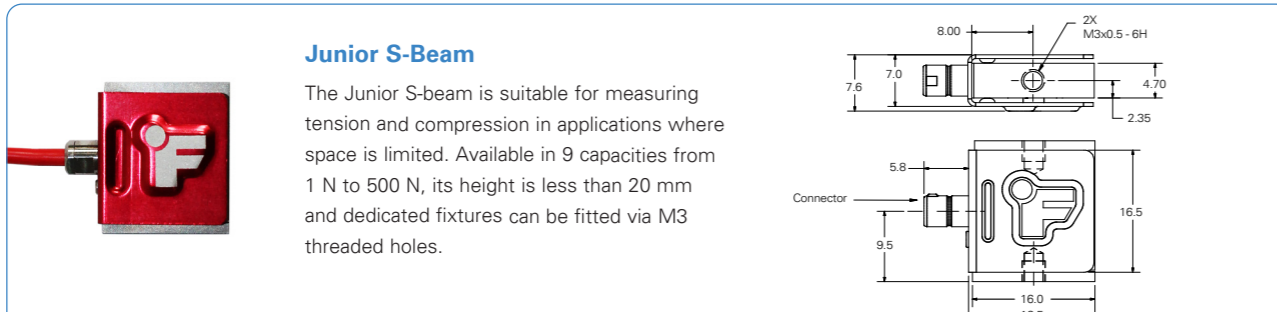
Discover Mecmesin range of sensors online
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Compression sensors

Junior S-Beam

The Junior S-beam is suitable for measuring tension and compression in applications where space is limited. Available in 9 capacities from 1 N to 500 N, its height is less than 20 mm and dedicated fixtures can be fitted via M3 threaded holes.

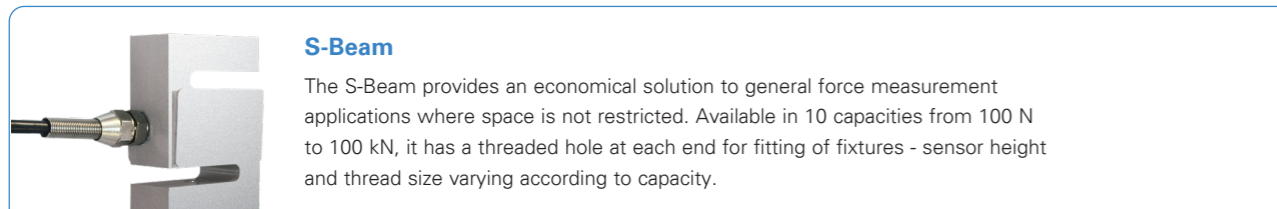


Part No.	Capacity	L (mm)	W (mm)	H (mm)	Thread
870 - 101	1 N	16.5	7.6	19	M3 x 0.5
870 - 102	2.5 N	16.5	7.6	19	M3 x 0.5
870 - 103	5 N	16.5	7.6	19	M3 x 0.5
870 - 104	10 N	16.5	7.6	19	M3 x 0.5
870 - 105	25 N	16.5	7.6	19	M3 x 0.5
870 - 106	50 N	16.5	7.6	19	M3 x 0.5
870 - 107	100 N	16.5	7.6	19	M3 x 0.5
870 - 108	250 N	16.5	7.6	19	M3 x 0.5
870 - 109	500 N	16.5	7.6	19	M3 x 0.5

Accuracy ±0.25% of full scale

S-Beam

The S-Beam provides an economical solution to general force measurement applications where space is not restricted. Available in 10 capacities from 100 N to 100 kN, it has a threaded hole at each end for fitting of fixtures - sensor height and thread size varying according to capacity.

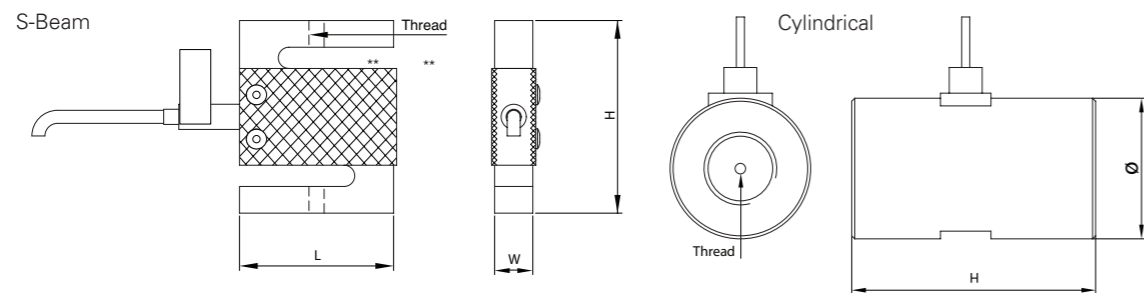


Part No.	Capacity	L (mm)	W (mm)**	H (mm)	Thread
870 - 002	100 N	51	13	64	M6 x 1
870 - 004	200 N	51	13	64	M6 x 1
870 - 009	500 N	51	19	76	M6 x 1
870 - 001	1000 N	51	19	76	M10 x 1.5
870 - 006	2500 N	51	25	76	M12 x 1.75
870 - 008	5000 N	51	25	76	M12 x 1.75
870 - 003	10 kN	51	25	76	M12 x 1.75
870 - 007	25 kN	76	25	108	M16 x 2

Cylindrical

Part No.	Capacity	Ø (mm)	H (mm)	Thread
870 - 011	*50 kN	70	120	M36 x 3
870 - 010	*100 kN	70	120	M36 x 3

Accuracy ±0.25% of full scale * Uni-directional calibration (please specify tension or compression)

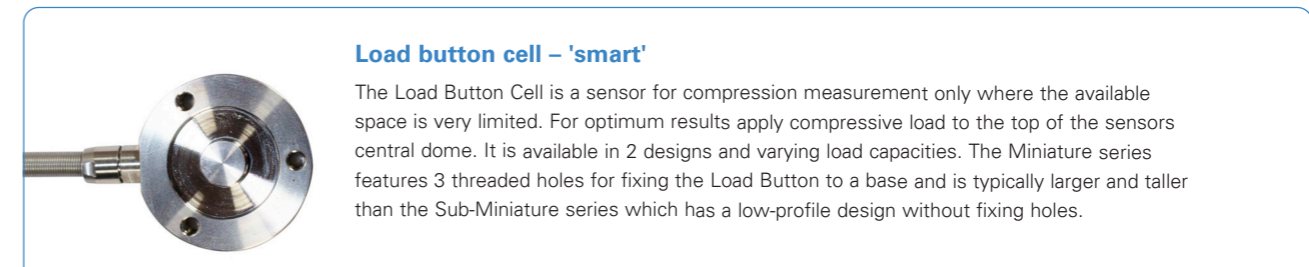


** 6mm added to the overall width of the central portion due to the protective cover

Compression only sensors

Load button cell - 'smart'

The Load Button Cell is a sensor for compression measurement only where the available space is very limited. For optimum results apply compressive load to the top of the sensors central dome. It is available in 2 designs and varying load capacities. The Miniature series features 3 threaded holes for fixing the Load Button to a base and is typically larger and taller than the Sub-Miniature series which has a low-profile design without fixing holes.



Miniature Series

Part No.	Capacity	ØD1 (mm)	ØD2 (mm)	ØD3 (mm)	H1 (mm)	H2 (mm)	T
878 - 008	100 N	25	5	19	8	1.3	4/40UNC
878 - 009	250 N	25	5	19	8	1.3	4/40UNC
878 - 010	500 N	31	8	25	10	1.3	6/32UNC
878 - 011	1000 N	31	8	25	10	1.3	6/32UNC
878 - 012	2500 N	31	8	25	10	1.3	6/32UNC
878 - 013	5000 N	31	8	25	10	1.3	6/32UNC
878 - 014	10 kN	31	8	25	10	1.3	6/32UNC
878 - 015	20 kN	38	11	32	16	2	6/32UNC
878 - 016	50 kN	38	11	32	16	2	6/32UNC

Accuracy ±1% of full scale

Sub-miniature Series

Part No.	Capacity	ØD1 (mm)	ØD2 (mm)	H1 (mm)	H2 (mm)
878 - 002	100 N	19	5	6.4	0.6
878 - 003	250 N	19	5	6.4	0.6
878 - 004	500 N	19	5	6.4	0.6
878 - 005	1000 N	19	5	6.4	0.6
878 - 006	5000 N	19	5	6.4	0.6

Accuracy ±1% of full scale

Dimensions are approximate. Detailed drawings available upon request

Static torque sensors

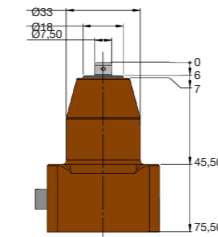


TT-ST Torque Transducer 'Smart'

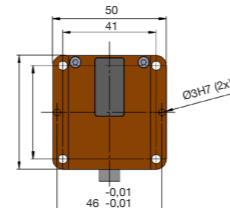
The TT-ST Torque Transducer is a sensor for static torque measurement below 2 N.m in clockwise (CW) and counter-clockwise (CCW) directions. Available in 5 capacities, the torque is applied via a 3mm diameter bore hole or 1/4" hex socket. Fixing holes in the sensor body allow it to be mounted to a bench or integrated into a test rig.

Model	Part No.	Capacity	Drive	H (mm)	W (mm)	D (mm)
TT-ST0.05	872 - 030	50 mN.m 500 gf.cm 7 ozf.in	Bore Ø3 H7	75	50	50
TT-ST0.20	872 - 032	200 mN.m 2000 gf.cm 28 ozf.in	Bore Ø3 H7	75	50	50
TT-ST0.50	872 - 033	500 mN.m 5 kgf.cm 4.5 lbf.in	1/4" HEX Socket	91	50	50
TT-ST1	872 - 034	1 N.m 10 kgf.cm 9 lbf.in	1/4" HEX Socket	91	50	50
TT-ST2	872 - 035	2 N.m 20 kgf.cm 18 lbf.in	1/4" HEX Socket	91	50	50

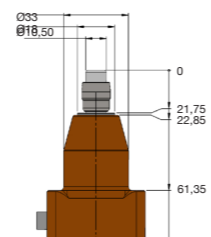
Accuracy ±0.5% of full scale



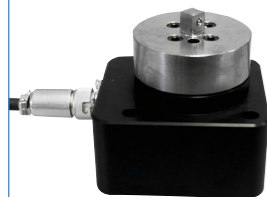
Side view of TT-ST0.05 and TTST0.20 (Ø3 H7 bore)



Top View of all TT models

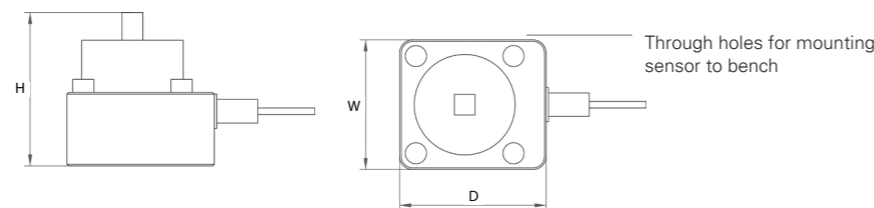


Side view of TT-ST0.50, TT1 and TT-ST2 (1/4" HEX Socket)



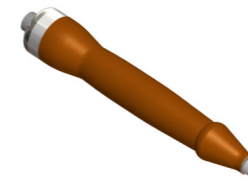
Static Torque Transducer - 'Smart' (mid & high-torque)

The ST Torque Transducer is a sensor for static torque measurement in clockwise (CW) and counter-clockwise (CCW) directions. Available in 9 capacities from 1.5 N.m to 1,000 N.m, for mounting to a bench or integrating into a complete test rig. Equipped with male square drive for easy fitting of adaptors.



Model	Part No.	Capacity	Sq Drive Male	H (mm)	W (mm)	D (mm)
ST1.5	872 - 001	1.5 N.m 15 kgf.cm 13 lbf.in	3/8"	87	80	90
ST6	872 - 009	6 N.m 60 kgf.cm 53 lbf.in	3/8"	87	80	90
ST10	872 - 004	10 N.m 100 kgf.cm 90 lbf.in	3/8"	87	80	90
ST15	872 - 006	15 N.m 150 kgf.cm 133 lbf.in	3/8"	87	80	90
ST60	872 - 008	60 N.m 600 kgf.cm 530 lbf.in	3/8"	87	80	90
ST100	872 - 003	100 N.m 1000 kgf.cm 870 lbf.in	1/2"	93	80	90
ST150	872 - 005	150 N.m 1500 kgf.cm 1300 lbf.in	1/2"	93	80	90
ST600	872 - 007	600 N.m 6000 kgf.cm 5200 lbf.in	3/4"	113.5	78.7	100
ST1000	872 - 002	1000 N.m 10000 kgf.cm 8850 lbf.in	1"	124	78.7	100

Accuracy ±0.5% of full scale

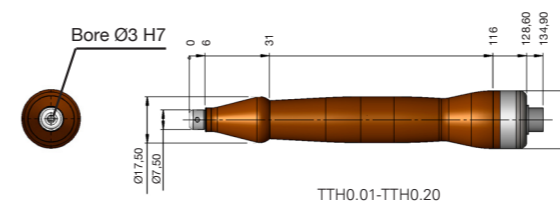


TTH 'Mini' Torque Screwdriver - 'Smart'

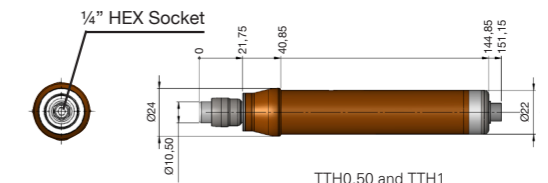
The TTH Mini Torque Screwdriver is designed for hand-held applications requiring the measurement of very fine static torque below 1 N.m. Available in 6 capacities, the torque is applied via a 3mm diameter bore hole or 1/4" hex socket.

Model	Part No.	Capacity	Drive	L1 (mm)	Ø (mm)
TTH0.01	871 - 100	10 mN.m 100 gf.cm 1 ozf.in	Bore Ø3 H7	135	22
TTH0.05	871 - 101	50 mN.m 500 gf.cm 7 ozf.in	Bore Ø3 H7	135	22
TTH0.10	871 - 102	100 mN.m 1000 gf.cm 14 ozf.in	Bore Ø3 H7	135	22
TTH0.20	871 - 105	200 mN.m 2000 gf.cm 28 ozf.in	Bore Ø3 H7	135	22
TTH0.50	871 - 103	500 mN.m 5 kgf.cm 4.5 lbf.in	1/4" HEX Socket	151	22
TTH1	871 - 104	1 N.m 10 kgf.cm 9 lbf.in	1/4" HEX Socket	151	22

Accuracy ±0.5% of full scale



TTH0.01-TTH0.20

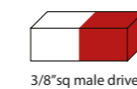


TTH0.50 and TTH1

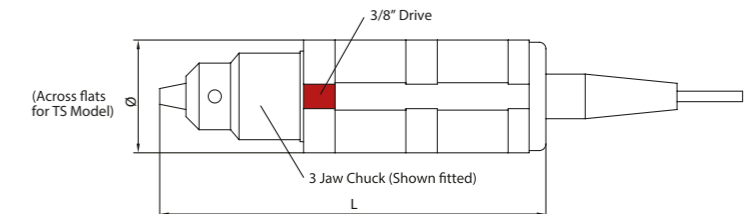


TS Torque Screwdriver - 'Smart'

The TS Torque Screwdriver is designed for hand-held applications or may be mounted in a bench stand for stationary use. Available in 5 capacities from 0.3 N.m to 10 N.m, the torque is applied via a male square drive or an interchangeable 3-jaw chuck.



3/8" sq male driver



Model	Part No.	Capacity	Drive	L (mm)	Ø (mm)	Weight (g)
TS0.3	871-004	0.3 N.m 3 kgf.cm 2.6 lbf.in	3/8" sq male/3 jaw chuck	143	43	660
TS1.5	871-002	1.5 N.m 15 kgf.cm 13 lbf.in	3/8" sq male/3 jaw chuck	143	43	660
TS3	871-003	3 N.m 30 kgf.cm 26 lbf.in	3/8" sq male/3 jaw chuck	143	43	660
TS6	871-005	6 N.m 60 kgf.cm 53 lbf.in	3/8" sq male/3 jaw chuck	143	43	660
TS10	871-001	10 N.m 100 kgf.cm 90 lbf.in	3/8" sq male/3 jaw chuck	143	43	660

Supplied as standard with both 3/8" sq male drive & 3/8" opening 3 jaw chuck
Part No 432-113 1/2" opening Chuck Assembly for use with 'TS' Torque Screwdriver (optional extra)

Rotary Torque Sensors

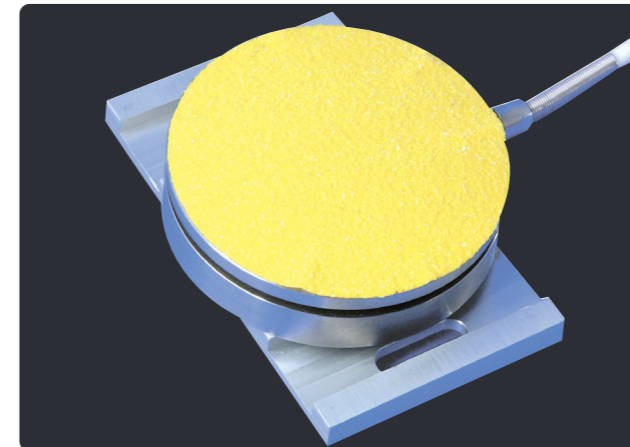
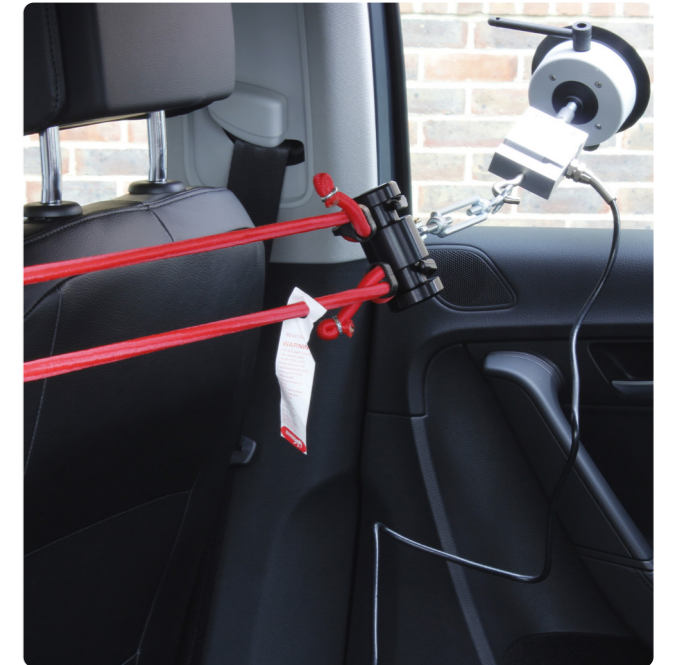
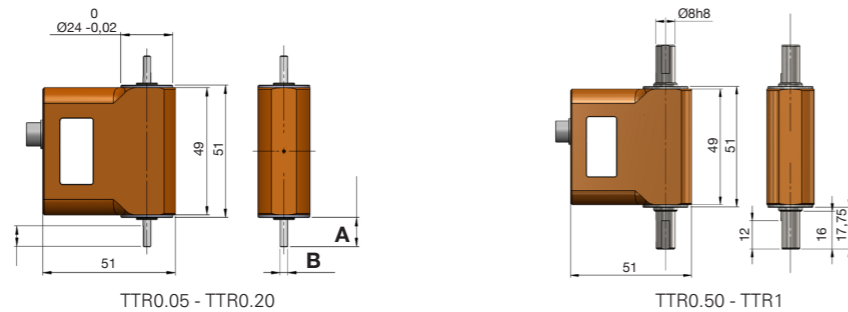


TTR 'Mini' Rotary Torque Transducers – 'Smart'

The TTR range of Torque Transducers is designed for applications requiring the measurement of very fine rotary torque below 1 N.m. Available in 5 capacities, the outer housing should be held allowing the central round shaft to rotate as torque is applied. Suitable for applications with multiple revolutions (eg cassette spool mechanism, fine gears) typically up to speeds of 5000 rpm.

Model	Part No.	Capacity	A Shaft Length (mm)	B Shaft Ø (mm)
TTR0.05	877 - 030	50 mN.m 500 gf.cm 7 ozf.in	11.2	Ø 3h8
TTR0.10	877 - 031	100 mN.m 1000 gf.cm 14 ozf.in	10.4	Ø 5h8
TTR0.20	877 - 032	200 mN.m 2000 gf.cm 28 ozf.in	10.4	Ø 5h8
TTR0.50	877 - 033	500 mN.m 5 kgf.cm 4.5 lbf.in	17.75	Ø 8h8
TTR1	877 - 034	1 N.m 10 kgf.cm 9 lbf.in	17.75	Ø 8h8

Accuracy ±0.5% of full scale



FAST Rotary Torque Transducers – 'Smart'

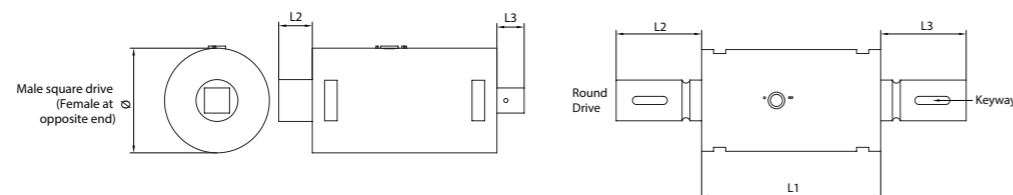
The FAST range of Torque Transducers is designed for applications requiring the measurement of rotary torque from 2 N.m to 150 N.m. The outer housing should be held allowing the central shaft to rotate as torque is applied. Shaft fittings are either round or square-drive. Suitable for torque applications with multiple revolutions typically up to speeds of 5000 rpm.



Model	Part No.	Capacity	Drive	L1 (mm)	L2 (mm)	L3 (mm)	Ø (mm)	Max rpm
FAST 2 N.m sq	877 - 020	2 N.m 20 kgf.cm 18 lbf.in	1/4" square	70	16	10	40	1000
FAST 2 N.m rd	877 - 021	2 N.m 20 kgf.cm 18 lbf.in	Ø 9mm round*	70	28	28	40	5000
FAST 6 N.m sq	877 - 022	6 N.m 60 kgf.cm 53 lbf.in	1/4" square	70	16	10	40	1000
FAST 6 N.m rd	877 - 023	6 N.m 60 kgf.cm 53 lbf.in	Ø 9mm round*	70	28	28	40	5000
FAST 15 N.m sq	877 - 024	15 N.m 150 kgf.cm 133 lbf.in	1/4" square	70	16	10	40	1000
FAST 15 N.m rd	877 - 025	15 N.m 150 kgf.cm 133 lbf.in	Ø 9mm round*	70	28	28	40	5000
FAST 60 N.m sq	877 - 026	60 N.m 600 kgf.cm 530 lbf.in	3/8" square*	70	24	13	50	1000
FAST 60 N.m rd	877 - 027	60 N.m 600 kgf.cm 530 lbf.in	Ø 14mm round*	70	28	28	50	5000
FAST 150 N.m sq	877 - 028	150 N.m 15.3 kgf.m 111 lbf.ft	1/2" square	70	35	19	50	1000
FAST 150 N.m rd	877 - 029	150 N.m 15.3 kgf.m 111 lbf.ft	Ø 19mm round*	70	55	55	50	5000

• Maximum axial force is 40 N • Maximum lateral radial force is 50 N

• Accuracy ±1% of full scale
* fitted with keyway



In addition to Mecmesin's standard range of Smart force and torque sensors, we can also supply custom sensors for more challenging applications - contact our sales engineers for advice



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VFTI

touchscreen force & torque indicator

The VFTI Touchscreen Force & Torque Indicator is a high specification touchscreen display unit, with all the features and benefits of the VFG, for use with Mecmesin 'Smart' force and torque sensors. These 'plug and play' sensors connect to the VFTI via a 'Smart' adapter enabling the calibration parameters of the sensor to be automatically recognised without the need for any operator input.

This versatility make the VFTI ideal for a variety of test applications requiring force or torque sensors.



Discover Mecmesins VFTI online
visit mecmesin.com/vfti

All Mecmesin Smart Sensors are 'plug and play' for use with the AFG and VFG range of digital force gauges (containing their own internal loadcell). Alternatively they can be used with the AFTI and VFTI digital displays (no loadcell inside). Take advantage of Mecmesin's latest VFG and VFTI touchscreen instruments to get the best out of your Smart sensors.

Force

Torque

Sensors
Choose from a range of interchangeable 'Smart' force and torque sensors. The VFTI automatically recognises calibration data

Battery life
Fast-charging lithium-ion battery for more testing and less charging (compared with NiMH batteries)

Alarms
Enhanced alarm configurations - including a 'pre-alert' warning for operators as load is applied

Statistics
Use onboard statistics to save peak readings and perform basic statistical analysis onscreen

Visualisation
Powerful data analysis with live graphing and configurable values - pinch or drag to zoom or pan test result graphs

Touchscreen
Easy to use icons and customisable interfaces - swipe or press and hold to access menus and options

Connectivity
USB-C connectivity for charging. RS232 interfacing with VectorPro Lite data capture and analysis, external printers and data loggers

Expansion
Up to 32GB external storage with dynamic data logging via Micro-SDHC card. All data points are saved in CSV format to suit common applications e.g. Excel



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