

FMT Load Washer Cell



- Washer Load Cell
- 20 to 320 kN [4 to 64 kLbf]
- Ranges Compatible with Screw Dimensions
- High Stiffness
- High Temperature on Request

DESCRIPTION

Measurement-Specialties' washer load cell, model FMT, is designed to measure clamping and screwing forces. The sensor design reduces the hysteresis and sensitivity variations associated with torque generated by friction during tightening. The FMT has a high stiffness and can be used in static and dynamic applications.

With many years of experience as a designer and manufacturer of sensors, Measurement-Specialties often works with customers to design or customize sensors for specific uses and testing environments.

To meet your needs we also offer complete turnkey systems. The matched components (sensor, power, amplifier and digital display) are formatted, calibrated and ready for immediate use.

FEATURES

- Full Scale Range: from 20 to 320 kN (4 to 64 kLbf)
- Compression
- For Static and Dynamic Applications
- Support Washer Provided

APPLICATIONS

- Monitoring Bolt Clamping for Bridges
- Process Control Equipment
- Robotics and Effectors
- Laboratory and Research
- Monitoring Bolt Clamping for Bridges

STANDARD RANGES

Model	FMT6	FMT8	FMT10	FMT12	FMT14
F.S. Ranges in N	20K	35K	55K	80K	110K
F.S. Ranges in Lbf	4K	7K	11K	16K	22K

FMT Load Washer Cell

PERFORMANCE SPECIFICATIONS

Ambient Temperature: 20±1°C (unless otherwise specified)

PARAMETERS

Operating Temperature Range (OTR)	-20 to 80 °C [-4 to 176 °F]
Compensated Temperature Range (CTR)	0 to 60 °C [32 to 140 °F]
Zero Shift in CTR	<0.5% F.S. / 50°C [100 °F]
Sensitivity Shift in CTR	<2.10 ⁻⁴ / °C of reading [<1.10 ⁻⁴ / °F of reading]
Range (F.S.)	0-20 kN to 320 kN [4 klbf to 64 klbf]

Over-Range

Without Damage	1.5 x F.S.
Without Destruction	3 x F.S.

Accuracy

Combined Non-Linearity & Hysteresis	From 1-5% F.S.
-------------------------------------	----------------

Electrical Characteristics

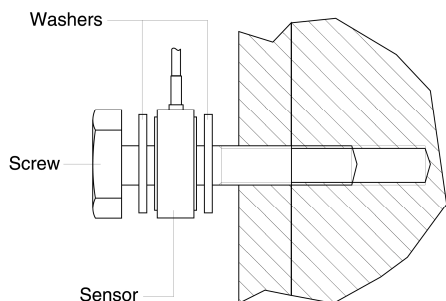
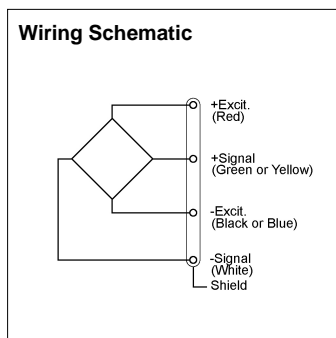
Model	FMT
Supply Outage	10Vdc
F.S. Output	1.5 - 2mV/V
Zero Offset	±5% F.S.
Input Impedance/Consumption	700Ω
Output Impedance	700Ω
Insulation under 50Vdc	≥100MΩ

Notes

1. Electrical Termination: Shielded cable, standard length 2 m [6.5 ft] with strain relief spring
2. Materials: Body in stainless steel cover in aluminium alloy
3. Support Washer: Steel

FMT Load Washer Cell

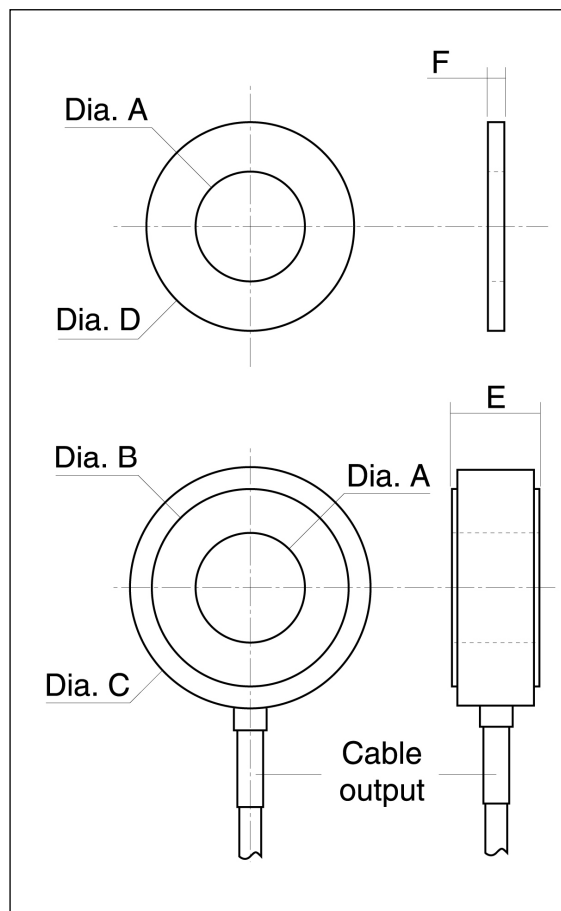
DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Tightening Torque:

Due to the FMT's small size and stiffness, a certain number of mounting precautions should be observed during installation:

- The force should be uniformly distributed over the surface of the sensor.
- Surfaces in contact with the sensor should be uniform and parallel.
- We recommend that washers (supplied by MEAS) be mounted between the surfaces and the sensor so that the washers are crushed during tightening. This helps to distribute the force more evenly. Linearity response is function of this caution.



Dimensions in mm [inch]

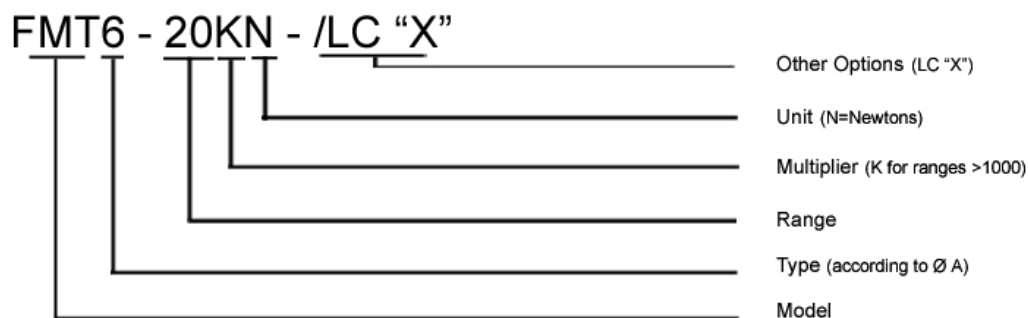
F.S. Ranges in N [Lbf]	Model	A	B	C	D	E	F
20K [4K]	FMT-6	6.1 [0.24]	11 [0.43]	18 [0.71]	12.7 [0.50]	6.5 [0.26]	1.5 [0.06]
35K [7K]	FMT-8	8.1 [0.32]	14.5 [0.57]	21 [0.83]	19 [0.75]	10 [0.39]	1.5 [0.06]
55K [11K]	FMT-10	10.1 [0.40]	18 [0.71]	25 [0.98]	22 [0.87]	11 [0.43]	2 [0.08]
80K [16K]	FMT-12	12.1 [0.48]	22 [0.87]	29 [1.14]	25 [0.98]	11.5 [0.45]	2 [0.08]
110K [22K]	FMT-14	14.1 [0.56]	25.5 [1.00]	32 [1.26]	28 [1.10]	12.5 [0.49]	2 [0.08]
140K [28K]	FMT-16	16.1 [0.63]	29 [1.14]	36 [1.42]	32 [1.26]	13.5 [0.53]	3.2 [0.13]
180K [36K]	FMT-18	18.1 [0.71]	32.5 [1.28]	39 [1.54]	34 [1.34]	15 [0.59]	3.2 [0.13]
220K [44K]	FMT-20	20.1 [0.79]	36 [1.42]	43 [1.69]	38 [1.50]	16 [0.63]	3.2 [0.13]
270K [54K]	FMT-22	22.1 [0.87]	40 [1.57]	48 [1.89]	44 [1.73]	17 [0.67]	3.2 [0.13]
320K [64K]	FMT-24	24.1 [0.95]	43.5 [1.71]	50 [1.97]	48 [1.89]	19 [0.75]	3.2 [0.13]

FMT Load Washer Cell

OPTIONS

LC "x" : Additional cable length in m (Note: "x" is customer input value)

ORDERING INFO



The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.