

## FMT

### Load Washer Cell

#### SPECIFICATIONS

- ◆ High Temperature on Request
- ◆ Washer load cell
- ◆ Range 20 kN to 320 kN [4 klbf to 64 klbf]
- ◆ Ranges compatible with screw dimensions
- ◆ High stiffness

TE CONNECTIVITY's 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 a long standing experience as a designer and manufacturer of sensors, TE CONNECTIVITY often works with customers to design or customize sensors for specific uses and testing environments.

On request, Instruction documents can be provided to ease the selection and use of our sensors and provide helpful tips.

#### FEATURES

- ◆ Screw dimensions
- ◆ Compression
- ◆ For Static and Dynamic Applications
- ◆ Support Washer Provided

#### APPLICATIONS

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

**STANDARD RANGES**

Model	FMT6	FMT8	FMT10	FMT12	FMT14	FMT16	FMT18	FMT20	FMT22	FMT24
<b>Ranges in N (FS)</b>	20k	35k	55k	80k	110k	140k	180k	220k	270k	320k
<b>Ranges in lbf</b>	4k	7k	11k	16k	22k	28k	36k	44k	54k	64k

**PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°C)**

<b>PARAMETERS</b>	
Operating Temperature Range (OTR)	-20 to 80° C [-4 to 176° F]
Compensated Temperature Range (CTR)	0 to 60° C [32 to 140° F]
Thermal Zero Shift in CTR	<0.5% F.S. / 50° C [100° F]
Thermal Sensitivity Shift in CTR	<1% of reading / 50° C [100° F]
<b>Over-Range</b>	
Without Damage	1.5 x F.S.
Without Destruction	3 x F.S.
<b>Accuracy</b>	
Combined Non-Linearity & Hysteresis	From 1-5% F.S.

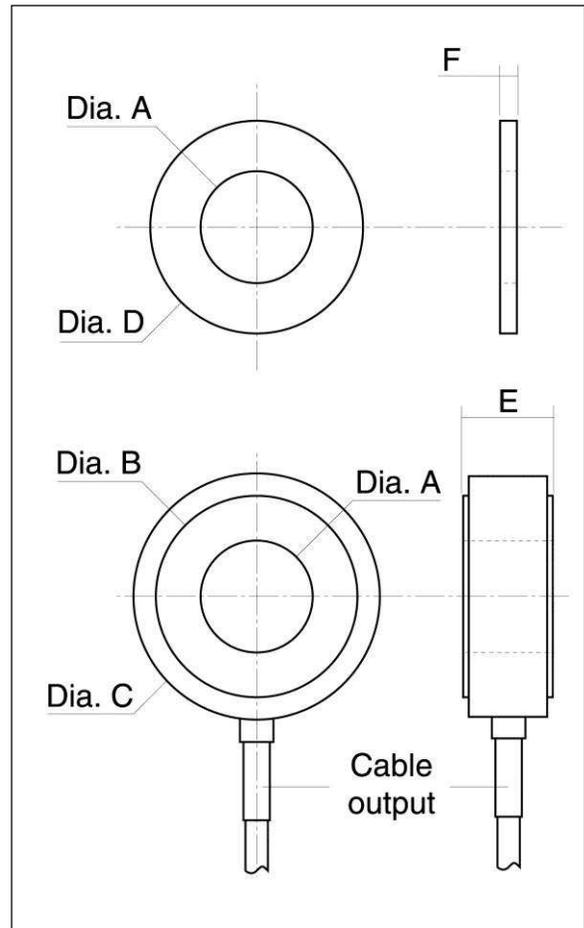
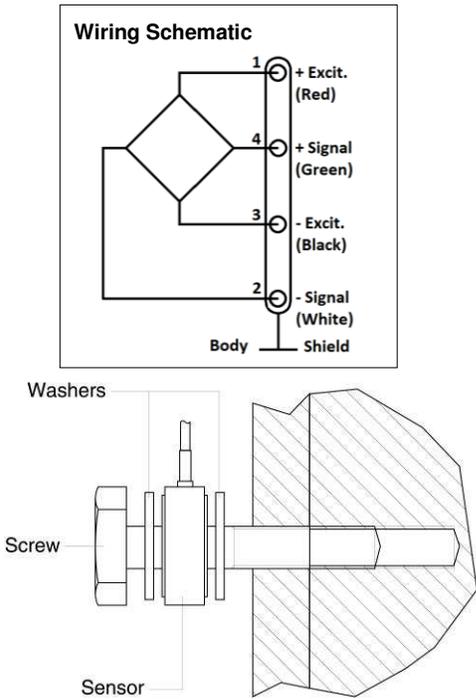
**Electrical Characteristics**

Model	FMT
Supply Voltage	1 to 10 dc
Sensitivity "FSO" <sup>12</sup>	1.5mV/V
Zero Offset	±1mV
Input Impedance	700Ω
Output Impedance	700Ω
Insulation under 50Vdc	≥100MΩ

**Notes**

1. Sensors are calibrated with 10Vdc power supply as standard.
2. Signal goes negative in compression with standard wiring configuration
3. Electrical Termination: Shielded cable, standard length 2 m [6.5 ft] with strain relief spring
4. Materials:Body in stainless steel, cover in aluminium alloy
5. Support Washer: Steel
6. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



**Safe practice:**

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 TESS) 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.

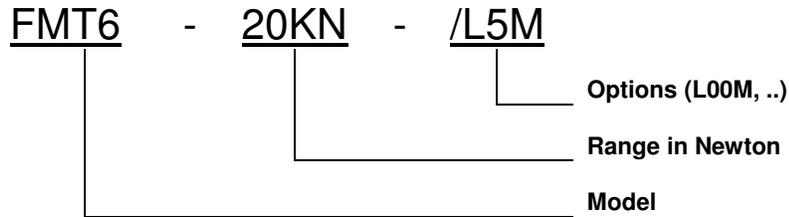
**Dimensions in mm [inch]**

Model	FMT6	FMT8	FMT10	FMT12	FMT14	FMT16	FMT18	FMT20	FMT22	FMT24
Ranges in N [in lbf]	20k [4k]	35k [7k]	55k [11k]	80k [16k]	110k [22k]	140k [28k]	180k [36k]	220k [44k]	270k [54k]	320k [64k]
A	6.1 [0.24]	8.1 [0.32]	10.1 [0.40]	12.1 [0.48]	14.1 [0.56]	16.1 [0.63]	18.1 [0.71]	20.1 [0.79]	22.1 [0.87]	24.1 [0.95]
B	11 [0.43]	14.5 [0.57]	18 [0.71]	22 [0.87]	25.5 [1.00]	29 [1.14]	32.5 [1.28]	36 [1.42]	40 [1.57]	43.5 [1.71]
C	18 [0.71]	21 [0.83]	25 [0.98]	29 [1.14]	32 [1.26]	36 [1.42]	39 [1.54]	43 [1.69]	48 [1.89]	50 [1.97]
D	12.7 [0.50]	19 [0.75]	22 [0.87]	25 [0.98]	28 [1.10]	32 [1.26]	34 [1.34]	38 [1.50]	44 [1.73]	48 [1.89]
E	6.5 [0.26]	10 [0.39]	11 [0.43]	11.5 [0.45]	12.5 [0.49]	13.5 [0.53]	15 [0.59]	16 [0.63]	17 [0.67]	19 [0.75]
F	1.5 [0.06]	1.5 [0.06]	2 [0.08]	2 [0.08]	2 [0.08]	3.2 [0.13]	3.2 [0.13]	3.2 [0.13]	3.2 [0.13]	3.2 [0.13]

**OPTIONS**

**V00** : Non-standard power supply calibration, replace "00" with value in Volt (standard 10Vdc)

**L00M** : special cable length, replace "00" with total length in meters.

**ORDERING INFO****SUPPLIED ACCESSOIRES**

Two soft metal flat washers

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