

## FMT

### Load Washer Cell

#### SPECIFICATIONS

- High Temperature on Request
- Washer load cell
- Range 20 kN to 320 kN [4.5 klbf to 71.9 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

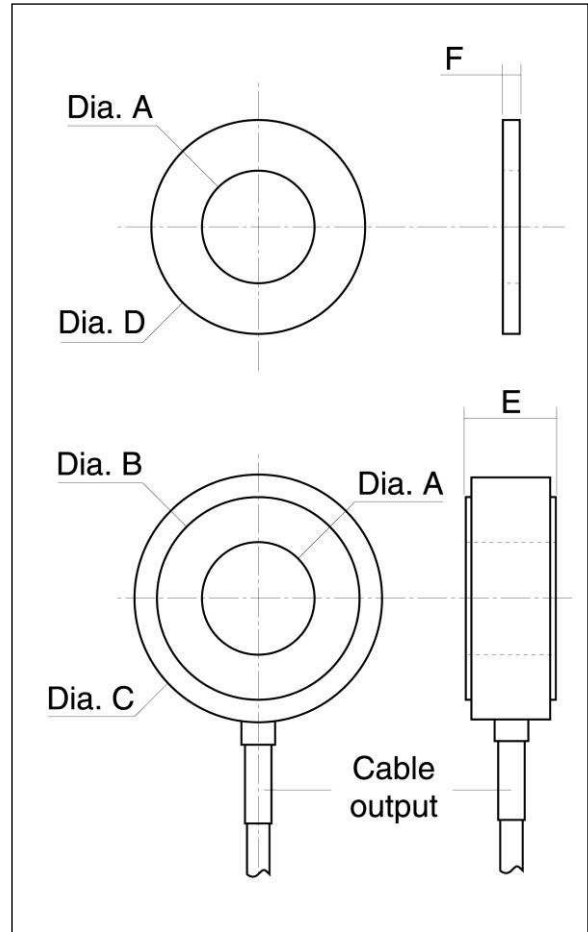
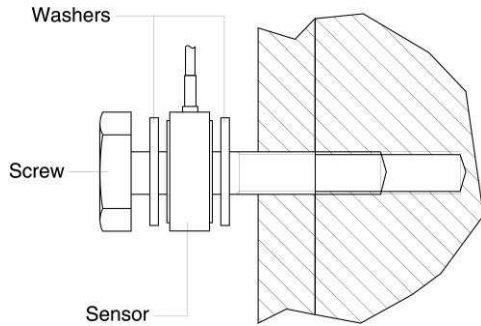
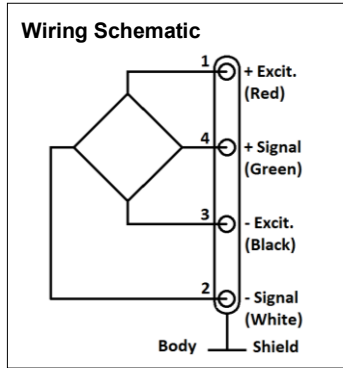
## PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°C)

Model	FMT6	FMT8	FMT10	FMT12	FMT14	FMT16	FMT18	FMT20	FMT22	FMT24
Ranges (FS) (N)	20k	35k	55k	80k	110k	140k	180k	220k	270k	320k
Ranges (lbf)	4.50 k	7.87 k	12.4 k	18.0 k	24.7 k	31.5 k	40.5 k	49.5 k	60.7 k	71.9 k
Overrange Without Damage	1.5x FS									
Material	Stainless steel									
Stiffness (N/m)	2.1E+09	2.3E+09	3.3E+09	4.8E+09	6.0E+09	7.1E+09	8.0E+09	9.2E+09	1.1E+10	1.1E+10
Stiffness (lbf/ft)	1.4E+08	1.6E+08	2.3E+08	3.3E+08	4.1E+08	4.9E+08	5.5E+08	6.3E+08	7.4E+08	7.8E+08
Specifications										
Power supply	10Vdc									
Sensitivity (FSO)	20 mV									
Offset	<±1 mV									
Input Impedance	700 ohms									
Output Impedance	700 ohms									
Linearity & hysteresis	< ±1 à 5% FS (following assembly precautions)									
Operating Temperature Range (OTR)	-20°C to +80°C (-4 to 176°F)									
Compensated Temperature Range (CTR)	0°C to +60°C (32 to 140°F)									
Thermal Zero Shift in CTR	< 0.5% FS/50°C									
Thermal Sensitivity Shift in CTR	< 1%/50°C									
Insulation	> 1000 Mohms									
Protection Index	IP50									

**Notes.**

1. Signal goes negative in compression with standard wiring configuration
2. Electrical Termination: Shielded cable, standard length 2 m [6.5 ft] with strain relief spring
3. Materials: Body in stainless steel, cover in aluminium alloy
4. Support Washer: Steel
5. 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	20k	35k	55k	80k	110k	140k	180k	220k	270k	320k
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**

Z04	CTR -40°C to +90°C (-40°F to 194°F) (OTR -40°C to +90°C)
L05M , L10M , L15M	Special cable length (ex : L05M = 5m length) (Standard cable length 2m )

**ORDERING INFO**