

- Fully fatigue resistant shear web design
- Small diameter
- Deflection less than 0.002 inch
- Tension plate & load button (optional)
- SAE 4340 alloy steel construction with satin nickel finish
- Supplied with mating connector

The F140, F141, and F142 are suitable for use in material testing machines, airframe test fixtures, vessel and silo weighing, level control of tanks holding liquid and bulk materials, and any application requiring a load cell that has a low profile, a small diameter, a high degree of stiffness, fatigue rating, and resistance to the negative effects of extraneous forces. For universal or tension only applications, the F140, F141, and F142 are usually bolted to a surface or plate that is flat and parallel within ± 0.0002 inch. For compression only applications, a load button with a spherical loading surface and with threads that will engage the threads found in the center-loading hole of the F140, F141, and F142 should be used. SensorData will supply a tension plate and spherical load button as options.

Specifications

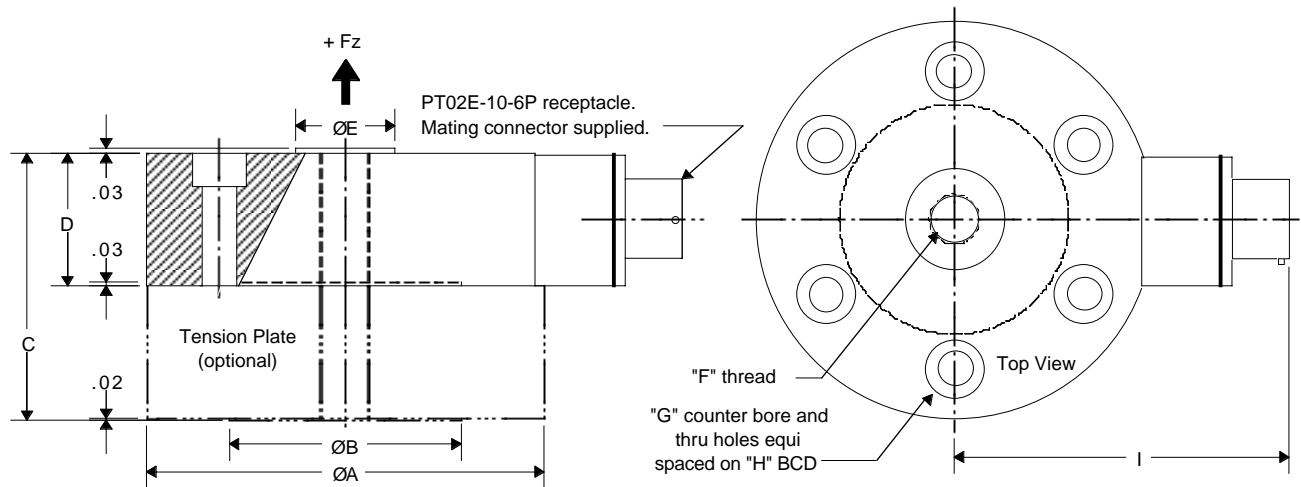
(Subject to change without notice)

Rated Fatigue Capacity	250, 500, 1K (F140); 2K, 3K, 5K (F141); 10K, 20K (F142) lbs
Nonlinearity	0.10% of rated output
Hysteresis	0.10% of rated output
Nonrepeatability	0.03% of rated output
Rated Output, typical	2 mV/V
Zero Balance	+/-1% of rated output
Temperature Range, operating	-65 to +200 F
Temperature Range, compensated	+70 to +170 F
Temperature Effect on Output	0.002% of load/F
Temperature Effect on Zero	0.002% of rated output/F
Input Impedance, minimum	750 ohms
Output Impedance	700 +/-5 ohms
Excitation Voltage, typical	10 VDC or VAC rms
Excitation Voltage, maximum ⁽¹⁾	20 VDC or VAC rms
Insulation Resistance	>5000 megohms at 50 VDC
Maximum Load, safe ⁽²⁾	150% of rated capacity
Maximum Load, ultimate ⁽³⁾	300% of rated capacity
Deflection at Rated Capacity, typical	0.002 in
Fatigue Rating, full fatigue capacity tension to full fatigue capacity compression load	10 ⁸ cycles
Number of Bridges	1
Weight	0.7 lb (F140); 1 lb (F141); 4.5 lb (F142)
Construction	SAE 4340 alloy steel with satin nickel finish

⁽¹⁾ Temperature gradients caused by higher excitation voltages may effect performance.

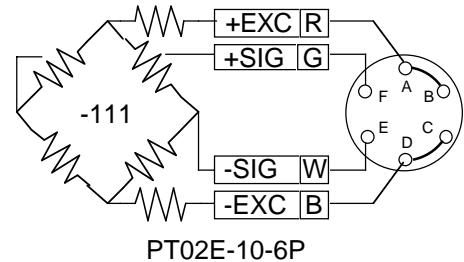
⁽²⁾ With load centered, maximum load that can be applied without producing a permanent shift in performance characteristics.

⁽³⁾ With load centered, maximum load that can be applied without physical damage.



Model	A	B	C	D	E	Loading Thread F	Counter Bored Hole G	H	I
F140	3.000	1.750	2.000	1.000	0.750	3/8 - 24 UNF	0.250 drill thru 0.437 dia x 0.255 dp	6 holes on 2.250 BCD	2.25
F141	3.500	2.000	2.000	1.000	1.110	1/2 - 20 UNF	0.340 drill thru 0.530 dia x 0.340 dp	6 holes on 2.650 BCD	2.80
F142	5.500	3.625	3.300	1.800	1.750	1.0 - 14 UNF	0.400 drill thru 0.625 dia x 0.406 dp	8 holes on 4.500 BCD	3.25

It is recommended that the F140, F141, and F142 be mounted on the optional tension plate available from SensorData. If this is not practical, the F140, F141, and F142 should be mounted on a surface flat to 0.0002 inch and rigid enough not to deform under a load equal to 100% of load cell's rated capacity. Mounting bolts should be grade 8 or better. Request FAQ 9907/Q053 for a copy of Installation Information that applies to SensorData Shear Web Load Cells.



ORDERING INFORMATION

- F140-111-Capacity Standard, capacity 250, 500, and 1K lb, and supplied with PT02E-10-6P receptacle and mating connector.
- F141-111-Capacity Standard, capacity 2K, 3K, and 5K lb, and supplied with PT02E-10-6P receptacle and mating connector.
- F142-111-Capacity Standard, capacity 10K and 20K lb, and supplied with PT02E-10-6P receptacle and mating connector.
- Tension Plate Options Add T to Standard; e.g., F140-111-Capacity-T.
- Load Button Options Add L to Standard; e.g., F140-111-Capacity-L.
- Tension Plate and Load Button Options Add T and L to Standard; e.g., F140-111-Capacity-T-L.
- Cable Assembly Optional; 10 ft, color coded, shielded, mating connector sensor end, customer supplied connector instrument end.
- Cable Assembly Optional; 10 ft, color coded, shielded, mating connector sensor end, leads stripped and tinned instrument end.

IMPORTANT NOTICE

Dimensions above are in inches unless otherwise noted. Manufacturer not responsible for any modification to product, fixtures, or accessories made by user or third party. User should request certified drawings before designing mountings or fixtures. Manufacturer reserves right to modify or change design, dimensions, specifications, and features of this product without prior written notice. Changes to NOTICE must be in writing and accepted by manufacturer.