

Square Three Axis Load Cell

Model TR3D-B-*

- 250 lb to 16,000 lb capacities
- Measures forces in three perpendicular directions
- Environmentally protected
- Temperature compensated
- Rugged construction



Description

Michigan Scientific *TR3D-B-** Square Three Axis Load Cells are ideal for applications that require force measurements in three perpendicular directions. Available in 250 lb to 16,000 lb capacities, these compact transducers are configured for easy adaptation to a variety of applications.

High grade stainless steel or aluminum material, in addition to weatherproof sealing, combine to provide excellent resistance to corrosion and environmental conditions. Temperature compensation of the transducers ensures stable output throughout a wide temperature range.

Specifications

	TR3D-B-250	TR3D-B-1K	TR3D-B-4K	TR3D-B-4500	TR3D-B-5/5/10K	TR3D-B-16K
Maximum Load Capacity (per channel)	250 lbs (1.1 kN)	1,000 lbs (4.4 kN)	4,000 lbs (17.8 kN)	4,500 lbs (20 kN)	X&Y 5,000 lbs (22 kN) Z 10,000 lbs (44 kN)	16,000 lbs (71 kN)
Maximum Moment Capacity (per channel)	12 lb-ft (16 N.m)	48 lb-ft (65 N.m)	165 lb-ft (220 N.m)	165 lb-ft (220 N.m)	385 lb-ft (520 N.m)	1300 lb-ft (1.7 kN.m)
Full Scale Output	3.5 mV/V, nominal, all channels	4.5 mV/V, nominal, all channels		3.0mV/V nominal, Fx,Fy 4.0mV/V nominal, Fz	2.0mV/V nominal, Fx,Fy 4.0mV/V nominal, Fz	4.5 mV/V, nominal, all channels
Sensor	3 Four-arm strain gage bridges					
Nonlinearity	<0.5% of full scale output					
Hysteresis	< 0.5% of full scale output					
Temperature Range, Compensated	75°F to 200°F (24°C to 93°C)					
Temperature Effect on Zero	<0.2% full scale					
Temperature Range, Useable	-40°F to 300°F (-40°C to 149°C)					
Excitation Voltage, Maximum	10V DC or AC rms					
Standard Cable Length	10 ft (3.05 m) shielded, open-ended leads			20 ft (6.1 m) shielded, open-ended leads	10 ft(3.05 m)shielded, open-ended leads	

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Rev. A

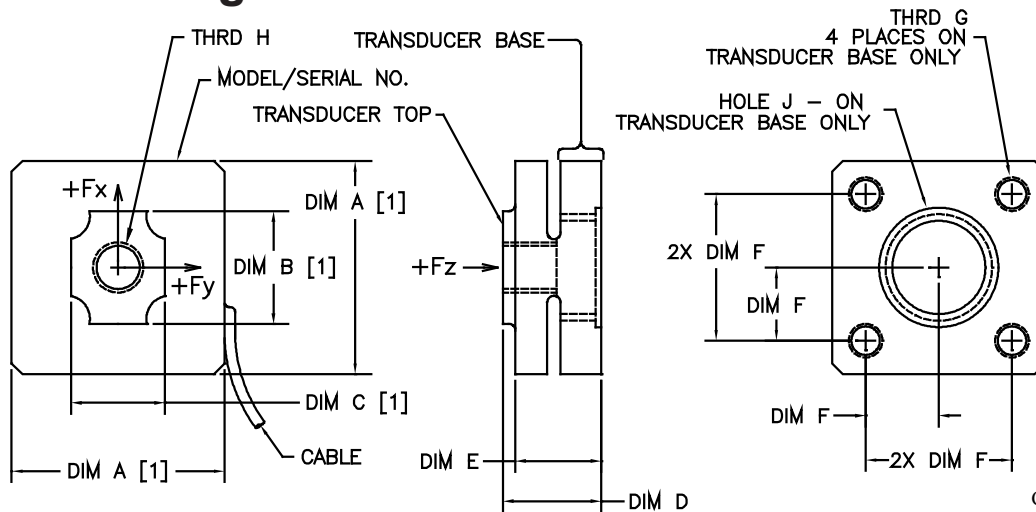
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Square Three Axis Load Cell

TR3D-B-* Configuration



C566014A
TR3D-B-
03/19/2013

Model	DIM A	DIM B	DIM C	DIM D	DIM E	DIM F
TR3D-B-250 TR3D-B-1K	0.999/1.000 [25.36/25.39]	0.529 [13.43]	0.440 [11.17]	0.499/0.500 [12.66/12.69]	0.403 [10.23]	0.344 [8.74]
TR3D-B-4K	1.997/1.999 [50.72/50.77]	1.057 [26.84]	0.880 [22.34]	0.917/0.920 [23.28/23.36]	0.805 [20.44]	0.6872 [17.45]
TR3D-B-4500	1.996/2.000 [50.70/50.77]	1.057 [26.84]	0.850 [21.59]	0.997/1.000 [25.32/25.40]	0.805 [20.44]	1.200 [17.46]
TR3D-B-5/5/10K	1.699/1.701 [43.15/43.21]	0.935 [23.75]	0.808 [20.52]	1.062/1.064 [26.97/27.03]	0.965 [24.51]	0.600 [15.24]
TR3D-B-16K	3.994/3.998 [101.45/101.55]	2.113 [53.67]	1.759 [44.68]	1.834/1.839 [46.59/46.72]	1.609 [40.87]	1.374 [34.91]

Model	THRD G	THRD H	HOLE J
TR3D-B-250 TR3D-B-1K	M4 x 0.7	M6 x 1.0	M14 x 1.50 THRD; 0.220[5.59] DEPTH; 0.650[16.51] DIA C'BORE, 0.035[0.89] DEEP
TR3D-B-4K	M8 x 1.25	M12 x 1.75	1-14 THRD; 0.420[10.67] DEPTH; 1.120[28.45] DIA C'BORE, 0.050[1.27] DEEP
TR3D-B-4500	M8 x 1.25	M12 x 1.75	1-14 THRD; 0.420[10.67] DEPTH; 1.120[28.45] DIA C'BORE, 0.050[1.27] DEEP
TR3D-B-5/5/10K	M8 x 1.25	5/8-18	5/8-18 THRD; 0.420[10.67] DEPTH;
TR3D-B-16K	M16 x 2.00	M24 x 3.00	2.000[50.8] DIA HOLE; 0.840[21.34] DEPTH

Dimensions are inch [mm]; all tolerances are ± 0.005 in [± 0.13 mm] unless otherwise specified.

Pilot surfaces: [1]; Maximum recommended pilot depths: 250 and 1K = 0.020 in [0.51 mm]; 4K = 0.030 in [0.76mm];

TR3D-B-4500=0.030 in [0.76 mm] for base, 0.100 in [2.54 mm] for top; 5/5/10K = 0.030 in [0.76mm]

16K = 0.100 in [2.54 mm] for both the top and the base of the transducer.

Positive outputs result when the transducer top is displaced relative to the transducer base in the directions indicated.

Ordering Options

Connectors and optional cable length may be specified by the customer

Contact Michigan Scientific for information on transducer applications and mounting.

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