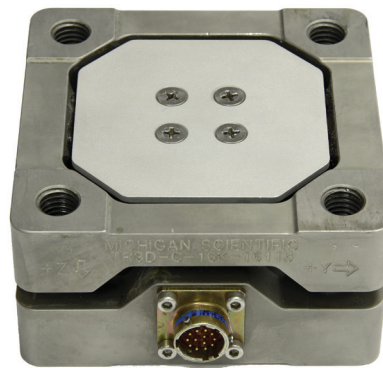


# Square Three Axis Load Cell

## Model TR3D-C-\*

- 10,000 lbf, 16,000 lbf and 40,000 lbf capacities
- Measures forces in three perpendicular directions
- Environmentally protected
- Temperature compensated
- Rugged stainless steel construction



## Description

Michigan Scientific's *TR3D-C-\** Square Three Axis Load Cells are designed for applications that require force measurements in three perpendicular directions. Available in 10,000 lbf, 16,000 lbf and 40,000 lbf capacities, these rugged transducers are ideally suited for both field data acquisition and laboratory testing. The transducers have identical top and bottom mounting surfaces and bolt patterns, and can be easily adapted to an unlimited variety of applications.

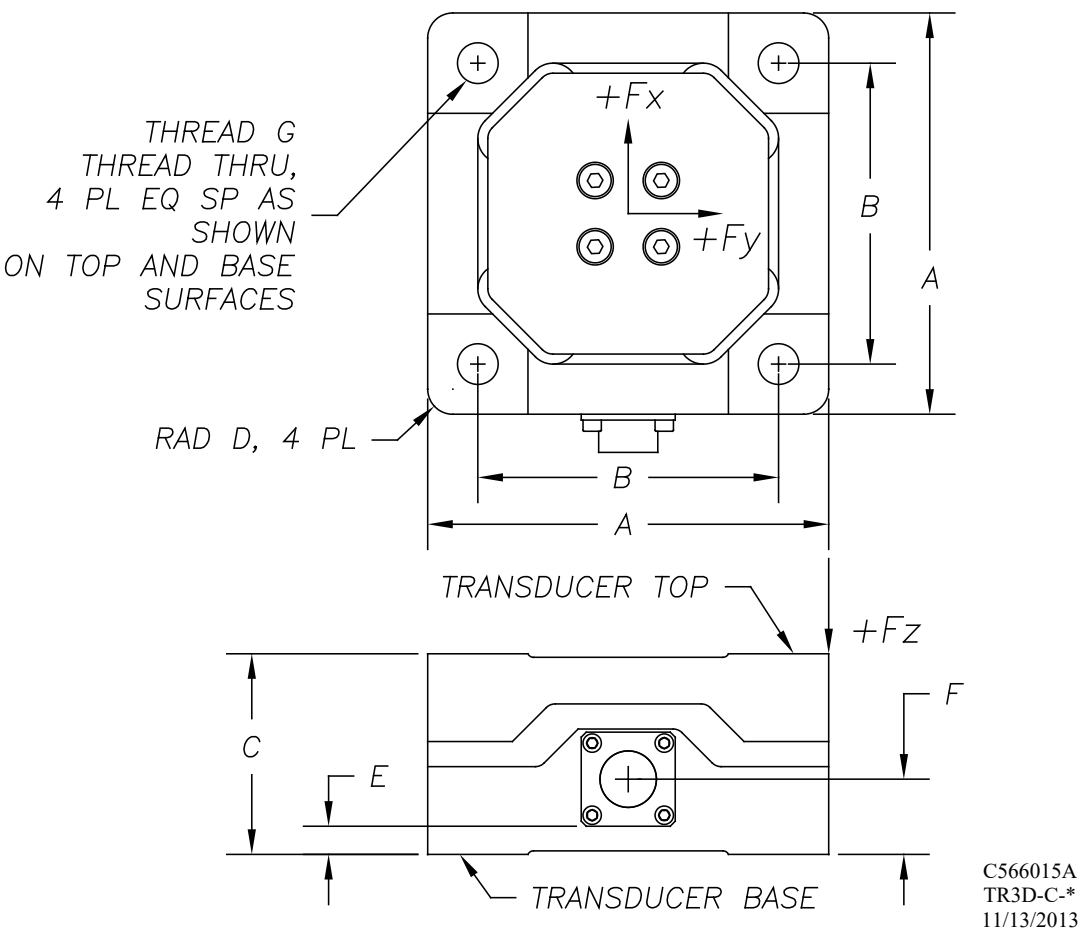
High grade stainless steel material, in addition to weatherproof sealing, combine to provide excellent resistance to corrosion and environmental conditions. Temperature compensation of the transducers ensures stable output throughout a wide temperature range.

## Specifications

|                                       | TR3D-C-10K                                                           | TR3D-C-16K                | TR3D-C-40K                   |
|---------------------------------------|----------------------------------------------------------------------|---------------------------|------------------------------|
| Maximum Load Capacity (per channel)   | 10,000 lbf (44 kN)                                                   | 16,000 lbf (71 kN)        | 40,000 lbf (177 kN)          |
| Maximum Moment Capacity (per channel) | 900 lbf · ft (1.2 kN·m)                                              | 1,500 lbf · ft (2.0 kN·m) | 8,000 lbf · ft (10.8 kN · m) |
| Weight                                | 2.3 lb (1.0 kg)                                                      | 4.8 lb (2.2 kg)           | 16.5 lb (7.5 kg)             |
| Full Scale Output                     | 1.5 mV/V, nominal, all channels                                      |                           |                              |
| Sensor                                | 3 four-arm strain gauge bridges                                      |                           |                              |
| Nonlinearity                          | ≤ 1 % of full scale for X and Y axes; < 2 % of full scale for Z axis |                           |                              |
| Hysteresis                            | ≤ 0.5 % of full scale output                                         |                           |                              |
| Temperature Range, Usable             | -40 °F to 300 °F (-40 °C to 149 °C)                                  |                           |                              |
| Excitation Voltage, Maximum           | 10 Vdc or Vac rms                                                    |                           |                              |
| Standard Cable Length                 | 10 ft (3.05 m) shielded, open-ended leads                            |                           |                              |

# Square Three Axis Load Cell

## TR3D-C-\* Configuration



| Model        | A                       | B                       | C                      | D                      | E                      | F                      | THRD G       |
|--------------|-------------------------|-------------------------|------------------------|------------------------|------------------------|------------------------|--------------|
| TR3D-C-10K** | 3.000 in<br>(76.20 mm)  | 2.250 in<br>(57.15 mm)  | 1.650 in<br>(41.91 mm) | 0.1875 in<br>(4.76 mm) | NA                     | 0.615 in<br>(15.62 mm) | (M10 x 1.5)  |
| TR3D-C-16K   | 4.000 in<br>(101.60 mm) | 3.000 in<br>(76.20 mm)  | 2.000 in<br>(50.80 mm) | 0.250 in<br>(6.35 mm)  | 0.281 in<br>(7.14 mm)  | 0.750 in<br>(19.05 mm) | (M12 x 1.75) |
| TR3D-C-40K   | 6.000 in<br>(152.40 mm) | 4.500 in<br>(114.30 mm) | 3.000 in<br>(76.20 mm) | 0.375 in<br>(9.53 mm)  | 0.656 in<br>(16.66 mm) | 1.125 in<br>(28.58 mm) | (M20 x 2.5)* |

Dimensions are inch (mm); all tolerances are  $\pm 0.005$  in [ $\pm 0.13$  mm], unless specified otherwise.  
Positive outputs result when the transducer top is displaced relative to the transducer base, in the directions indicated.  
\*\*TR3D-C-10K features a recessed connector  
\*Thread size changed from M18x1.5 to M20x2.5 on 2-11-2011

## Ordering Options

Individual bridge connectors and optional cable length may be specified by the customer.  
Contact Michigan Scientific for information on transducer applications and mounting.

8500 Ance Road  
Charlevoix, MI 49720  
Tel: 231-547-5511  
Fax: 231-547-7070  
03-7-22  
Rev. A

**MICHIGAN SCIENTIFIC**  
corporation  
<http://www.michsci.com>  
Email: [mscinfo@michsci.com](mailto:mscinfo@michsci.com)

321 East Huron Street  
Milford, MI 48381  
Tel: 248-685-3939  
Fax: 248-685-5406