



MODEL TW-RW RIBBON TRI-WHEEL™ TENSION LOAD CELL



The Tri-Wheel™ Tension Load Cell (Model TW-RW) is a modular, configurable load cell fixture designed to measure the tension of ribbon and narrow web processes.

The Tri-Wheel™ unit consists of an aluminum mounting plate (easily stacked on extruded aluminum profiles), a cartridge-type load cell and three anodized aluminum wheels. The wheels are available 1 to 4 inches wide, installed at 15, 30, 60, 110 or 180 degree wrap angles to suit a wide

variety of applications. Tension is measured by a dual-cantilevered, high output, semiconductor strain gauge sensing beam, connected in a full wheatstone bridge configuration.

This advanced strain gauge technology operates with less mechanical deflection, while delivering up to 33 times greater signal output than foil gauge designs. Reduced deflection enables robust overload protection, helping to maximize service life and reduce maintenance intervals.

FEATURES & BENEFITS

- Modular design for easy integration
- Flexible wheel configurations, enabling multiple wrap angles and tension ranges
- Long-life hardcoat anodized aluminum wheels
- Compatible with a wide range of ribbon and narrow web materials
- Highly accurate and reliable semiconductor strain gauge technology
- Improves the product quality and efficiency of most narrow web manufacturing processes
- Stainless steel and aluminum construction for excellent durability and corrosion resistance
- Reduce or eliminate mishaps and material waste
- Higher production with less downtime and machine maintenance
- 5 year tension-free warranty

PRODUCT CODE

You may order by description or by specifying the code by matching each labeled place with one of the choices below. **Example: TW-4RW-25L-180DEG-12C**

TW - xRW - xL - xDEG - xC

WHEEL WIDTH (inches)	LOAD RATING (lbs)	WRAP ANGLE (degrees)	CONNECTOR POSITION
1	10	15	6 (6:00)
2	25	30	12 (12:00)
3	50	60	R (Rear)
4	100	110	
	200	180	

TENSION RANGE FOR SELECTED WRAP ANGLE AND LOAD RATING					
WRAP	10 lbs	25 lbs	50 lbs	100 lbs	200 lbs
15 deg	0 - 19 lbs	0 - 48 lbs	0 - 96 lbs	0 - 192 lbs	0 - 384 lbs
30 deg	0 - 9.6 lbs	0 - 24 lbs	0 - 49 lbs	0 - 99 lbs	0 - 199 lbs
60 deg	0 - 5 lbs	0 - 12.5 lbs	0 - 25 lbs	0 - 50 lbs	0 - 100 lbs
110 deg	0 - 3.1 lbs	0 - 7.6 lbs	0 - 15.2 lbs	0 - 30.4 lbs	0 - 61 lbs
180 deg	0 - 2.5 lbs	0 - 6.2 lbs	0 - 12.5 lbs	0 - 25 lbs	0 - 50 lbs

Smaller wrap angles are recommended for thick or rigid materials with bend radius limitations.
Larger wrap angles provide added traction for flexible film and paper substrates.

SPECIFICATIONS

ELECTRICAL

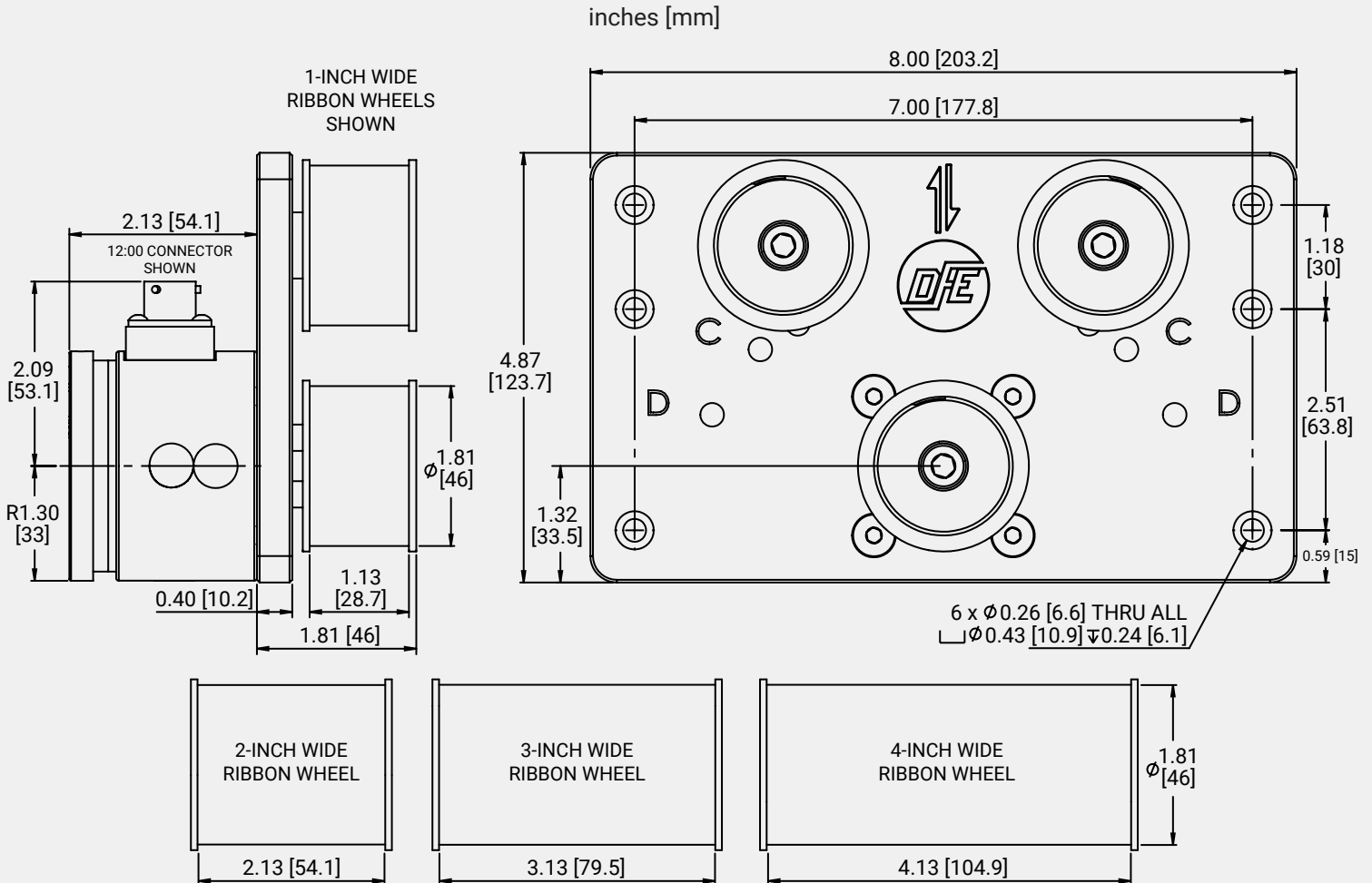
- Excitation:** 5 VDC max
- Output:** 100 mV/V, nominal
- Strain Gages:** Semiconductor, 100 ohms, nominal
- Circuit Configuration:** Full Wheatstone Bridge
- Non-Repeatability:** ±1/4% full span (FS)
- Combined Non-Linearity and Hysteresis:** ±1/2% (FS)
- Temperature Range:** -10°F to 200°F (-23°C to 93°C)
- Temperature Coefficient:** 0.02% FS per °F, typical
(0.036% FS per °C)
- Mating Electrical Connector:** 6 Socket Mil-Spec
- Connector Pin Assignment:**

A = Signal Output (-)	D = Signal Output (+)
B = Excitation (+)	E = Excitation (-)
C = Excitation (-)	F = Excitation (+)

MECHANICAL

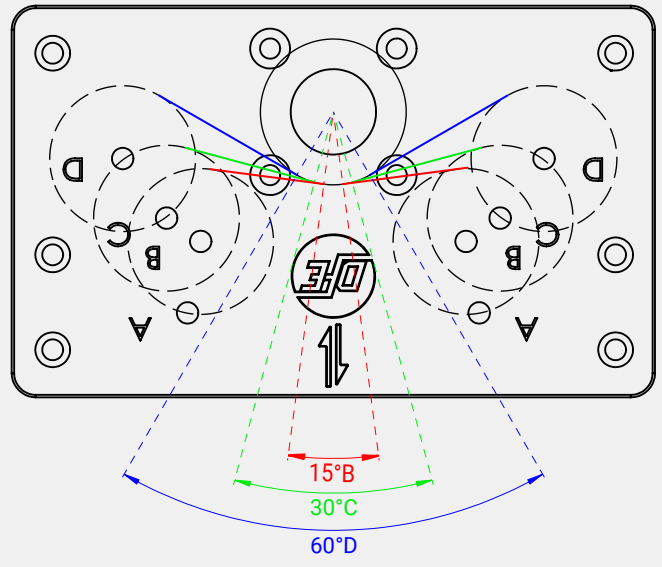
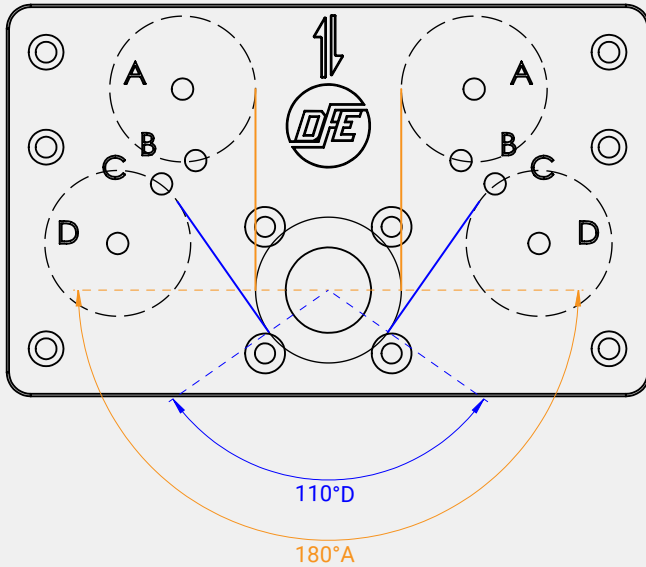
- Overload Capacity:** 1,200 lbs (5,338 N)
- Deflection of Sensor Beam:** 0.005 in. max.
(0.127 mm)
- Materials:** Aluminum; Stainless Steel; Carbon Steel
- Connector Positions:** 6:00, 12:00, Rear
- Load Ratings:** 10, 25, 50, 100, 200 lbs
(44, 111, 222, 445, 890 N)
- Wrap Angles:** 15°, 30°, 60°, 110°, 180°
- Wheel Weight:**
 - 1-Inch Wide Ribbon Wheel: 0.45 lbs (204 g)
 - 2-Inch Wide Ribbon Wheel: 0.56 lbs (255 g)
 - 3-Inch Wide Ribbon Wheel: 0.66 lbs (299 g)
 - 4-Inch Wide Ribbon Wheel: 0.75 lbs (341 g)

DIMENSIONS



MOUNTING ORIENTATIONS & WRAP ANGLES

Recommended mounting orientation for easy calibration at selected wrap angle.



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