

# Online Tension Sensor Model TS2L

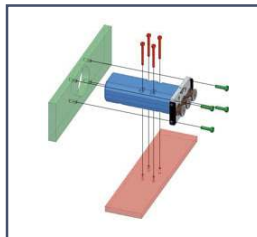
## 5 tension ranges from 0–50 g to 0–1000 g

- Accuracy of 1% Full Scale or better.
- 3-Roller design ensures that the center sensor roller has the same wrap angle at all times, allowing the sensor to be mounted in any position on the line.
- Built-in Signal Conditioner with integrated Zero & Gain Pots allows convenient user calibration for the highest accuracy
- 32 mm diameter, ball-bearing mounted, Delrin plastic or hardcoat anodized Aluminum guide rollers are very lightweight and provide a large bending radius for the gentle transport of sensitive process materials.
- Rugged cast Aluminum housing allows easy installation using thru-holes in housing body or front plate.
- Custom-designs are possible along with special features, such as air fitting to create positive internal pressure in the housing for protection against airborne chemicals or contaminants.

A precision, low-inertia Tension Sensor for measuring sensitive materials such as fine wires, optical fibers, carbon fibers, etc. Sensor can be mounted in any orientation depending upon the material path.

The TS2L tension sensor accurately measures the running tension of fine wires, optical fibers, carbon fibers and similar process material. It is fitted with large, smooth running 32mm diameter guide rollers designed for minimized material deflection. Guide rollers are available in Delrin plastic or hardcoat anodized Aluminum.

The TS2L features a built-in signal conditioner that provides 0-1 V DC analog output (0-10V or 4-20mA, optional) with integrated Zero and Gain Pots on the rear-side of sensor. This minimizes the chance for signal interference and allows convenient calibration by the end-user for highest accuracy.



Supplied with mounting holes in housing body and front plate.

The TS2L can be used for process diagnostics, for continuously monitoring and recording online tensions, or as part of a closed-loop control system with a third-party controller.

**Mounting possibilities:** The TS2L sensor can be mounted on a flat plate using the supplied thru holes in the housing body or fixed using the holes in the front plate, inserted thru a round hole in machine frame or plate.



# Model TS2L Specifications

<b>Accuracy</b>	± 1% Full Scale and 1 digit or better	<b>Temperature Range</b>	50 to 113 °F (10 to 45 °C)
<b>Overload Protection</b>	100% of tension range	<b>Air Humidity</b>	85% RH, max
<b>Measuring Principle</b>	Strain gauge bridge	<b>Power Required</b>	+15 ... 24 V DC, 50 mA (regulated)
<b>Measuring Roller Deflection</b>	0.0197" (0.5mm), max	<b>Housing Material</b>	Aluminum
<b>Output Signal</b>	<b>Standard:</b> 0 - 1 V DC (analog) Option DC: 0 - 10 V DC Option MA: 4-20 mA Option 232: RS-232	<b>Weight (net)</b>	Approx. 1.10 lbs. (340 g)
<b>Damping</b>	Standard: 30 Hz (other values on request)	<b>Cable (optional)</b>	Straight Connector with 6 ft. (2m) cable length with open ends on far side (p/n TS2-CABLE-2M). Other cable lengths & 90-degree connector available.

## Tension Ranges

Model	Range	Measuring Head Width*	Calibration Material**
TS2L-50	0-50 g	150 mm	PA: 0.12 mm
TS2L-100	0-100 g	150 mm	PA: 0.12 mm
TS2L-200	0-200 g	150 mm	PA: 0.12 mm
TS2L-500	0-500 g	150 mm	PA: 0.20 mm
TS2L-1000	0-1000 g	150 mm	PA: 0.30 mm

Other tensions ranges and measuring head widths available on request.  
\* Outside dimensions of front plate \*\* Suitable for 95 % of applications  
PA = Polyamide Monofilament

## Guide Rollers

V-Groove	Line Speed V <sub>max</sub> ...m/min	Roller Material
Standard	4000	Hardened Steel
Code T	4000	Plastic red (PVC)

## Output Signal Mode

<b>Standard</b>	0 - 1 V DC (analog)
Option	Code DC: 0 - 10 V DC
Option	Code MA: 4 - 20 mA
Option	Code 232: RS-232

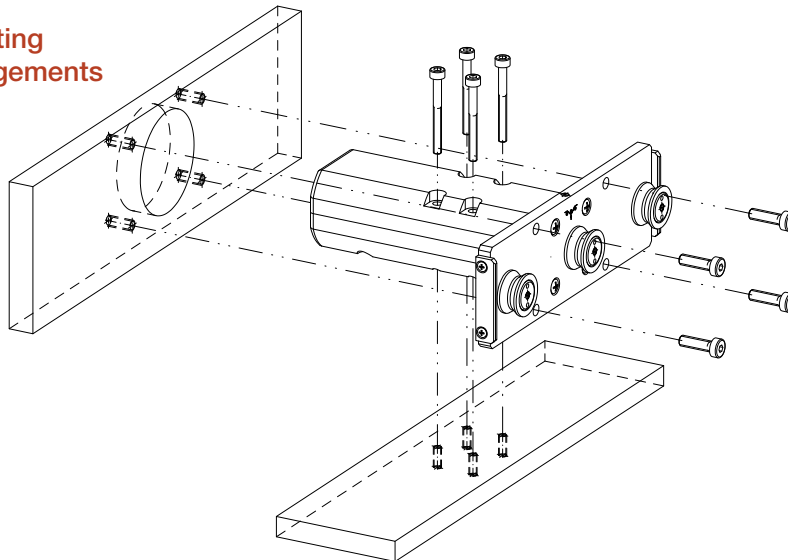
## Related Products



### TD1-TE Tension Indicator

- User-set high & low alarm limits with relays
- Regulated power for sensor
- 4-20 mA and 0-10 VDC analog output for recording and control purpose
- Requires 115V AC power (230V AC optional)

## Mounting Arrangements



**For additional information or to place an order CALL TOLL FREE 1-800-645-4330**

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