CHECK•LINE®

Online Tension Sensor
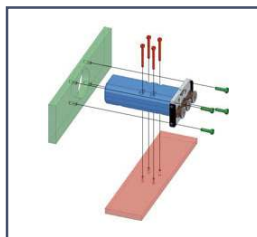## Model TS2H

6 tension ranges from 0–1000 g to 0–50 kg

- 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

- 29.5 mm hardened steel, ball-bearing mounted, V-grooved guide rollers are standard. Optional roller types include U-grooved, larger diameters and more

- Rugged cast Aluminum housing allows easy installation using thru-holes in housing body or front plate.

- Outer roller spacing changes from 40 mm for ranges up to 1000 g, to 100 mm for ranges up to 10 Kg and 200 mm for ranges up to 50 Kg.

- 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 heavy-duty sensor, ideal for wires, cables, tirecord and similar process materials. Sensor can be mounted in any orientation depending upon the material path.

The TS2H tension sensor accurately measures the running tension of wires, cables, tirecord, plastic tubing and similar process materials up to 0.300" diameter (*8mm*). Fitted with 29.5 mm diameter V-Grooved rollers fabricated from hardened steel are suitable for material speeds up to 4000 meters.min.

The TS2H 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 TS2H can be using for process diagnostics, for continuously monitoring and recording online tensions, or as part of a closed-loop control system with a third-party controller.
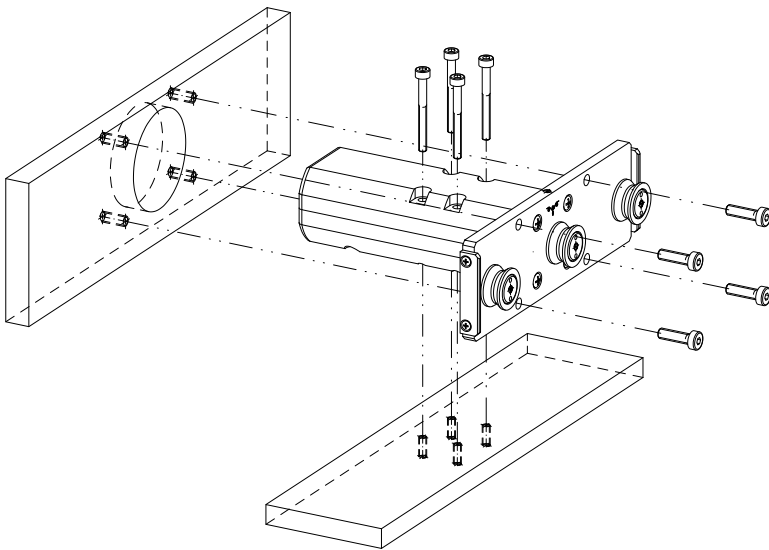
Mounting possibilities: The TS2H sensor can be mounted on a flat plate using the supplied thru holes in the housing body or fixed using the holes in the front plate, inserted thru a round hole in machine frame or plate.

max.1000 grams

Model TS2H Specifications

Accuracy	± 1% Full Scale and 1 digit or better	**Temperature Drift**	Less than ± 0.1% Full Scale / °C
Overload Protection	100% of tension range	**Temperature Range**	50 to 113 °F *(10 to 45 °C)*
Measuring Principle	Strain gauge bridge	**Air Humidity**	85% RH, max
Measuring Roller Defelction	0.0197" *(0.5mm)*, max	**Power Required**	+15 ... 24 V DC, 50 mA (regulated)
		Housing Material	Aluminum
Output Signal	**Standard:** 0 - 1 V DC (analog)	**Weight net**	Approx. 1.10 lbs. *(500 g)*
	Option DC: 0 - 10 V DC	**Cable** (optional)	Straight Connector with 6 ft. *(2m)*
	Option MA: 4-20 mA		cable length with open ends on far
	Option 232: RS-232		side (p/n TS2-CABLE-2M).
Damping	Standard: 30 Hz (other values		Other cable lengths and 90-degree
	on request)		connector available.

Mounting Arrangements

Tension Ranges

Model	Range	Measuring Head Width*	Calibration Material**
TS2H-1K	0–1000 g	150 mm	PA: 0.30 mm
TS2H-2K	0–2000 g	150 mm	PA: 0.50 mm
TS2H-5K	0–5 kg	150 mm	PA: 0.80 mm
TS2H-10K	0–10 kg	200 mm	PA: 1.00 mm
TS2H-20K	0–20 kg	200 mm	PA: 1.50 mm
TS2H-50K	0–50 kg	200 mm	PA: 1.50 mm

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

Guide Rollers

V-Groove	Line Speed V_{max}…m/min	Roller Material
Standard	4000	Hardened Steel
U-grooved Code R1	4000	Hardened Steel (radius 5)
Other roller materials (nickel-Plated steel or plastic) are available upon request.		

Related Product

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)

Output Signal Mode

Standard	0 – 1 V DC (analog)
Option	Code DC: 0 – 10 V DC
Option	Code MA: 4 – 20 mA
Option	Code 232: RS-232