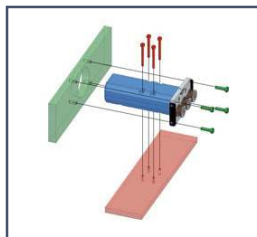# Tension Sensor
Model TS2P

Precision, textile tension sensor for measuring hi-speed textiles, fibers and similar process materials. The sensor can be mounted in any orientation depending upon the material path.

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 sensing 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 and Gain Pots allows convenient user calibration for the highest accuracy.

- Non-rotating, exchangeable ceramic pins for line speed up to max. 6000 m/min.

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

- Can be used together with the TD-1-TE Digital Tension Indicator or with user-supplied electronics requires 15-24 V DC regulated power)

- 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.

The TS2P It is fitted with non-rotating ceramic pins. It features 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.

The TS2P 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.

Thru holes in the the housing body and front plate allow the TS2P to be mounted in any orientation depending upon the material path.

Supplied with mounting holes in housing body and front plate.

max. 500 grams

Accuracy	± 1% Full Scale and 1 digit or better
Overload Protection	100% of tension range
Measuring Principle	Strain gauge bridge
Measuring Roller Defelction	0.0197" (0.5mm), max
Output Signal	**Standard:** 0 - 1 V DC (analog) Option DC: 0 - 10 V DC Option MA: 4-20 mA Option 232: RS-232
Damping	Standard: 30 Hz (other values on request)
Temperature Drift	Less than ± 0.1% Full Scale / °C
Temperature Range	50 to 113 °F (10 to 45 °C)
Air Humidity	85% RH, max
Power Required	+15 ... 24 V DC, 50 mA (regulated)
Housing Material	Aluminum
Weight (net)	Approx. 0.48 lbs. (220 g)
Cable (optional)	Straight Connector with 6 ft. (2m) cable length with open ends on far side (p/n TS2-CABLE-2M). Other cable lengths and 90-degree connector available.

Tension Ranges

Model	Range	Measuring Head Width*	Calibration Material**
TS2P-50	0–50 g	64 mm	PA: 0.12 mm
TS2P-100	0–100 g	64 mm	PA: 0.12 mm
TS2P-200	0–200 g	64 mm	PA: 0.12 mm
TS2P-500	0–500 g	64 mm	PA: 0.20 mm
TS2P-1000	0–1000 g	64 mm	PA: 0.30 mm

Other tensions ranges and measuring head widths available on request.
* Outside dimensions of front plate
** with running filament approx. 300 m/min. Suitable for 95 % of applications
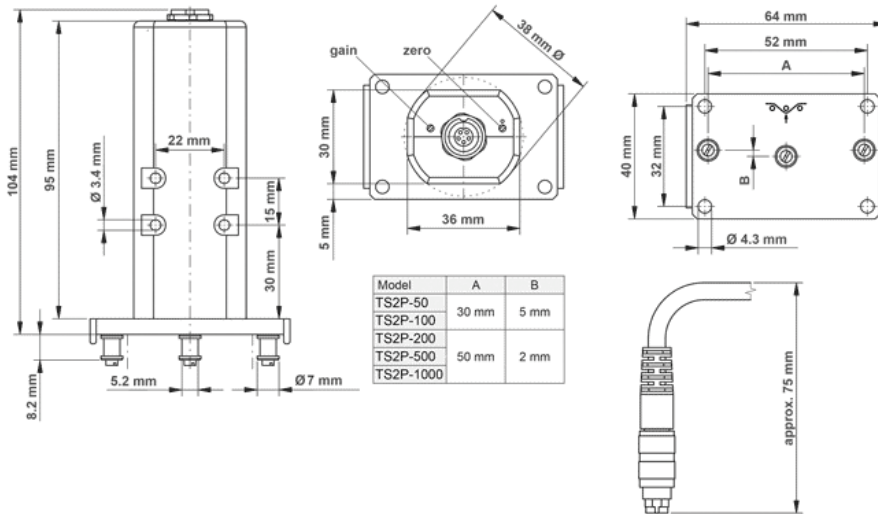PA = Polyamide Monofi lament

Guide Pins

V-Groove	Line Speed V_{max}…m/min	Roller Material
Standard	6000	Oxid Ceramic $\varnothing$ 5.2mm

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

Dimensions

Model	A	B
TS2P-50	30 mm	5 mm
TS2P-100		
TS2P-200		
TS2P-500	50 mm	2 mm
TS2P-1000		

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)

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

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