

Compact Online Tension Sensor

TSC Series For Limited Space Access

5 Tension Ranges
from 0–50 g to 0–1000 g

2 Material Paths

2 Roller Diameters

- Strain gauge-based sensor provides accuracy of 2% Full Scale or better. Sensor can be mounted in any orientation depending upon the material path.
- Built-in signal conditioner provides 0-1 V DC analog output (0-10V or mv/V, optional) with Integrated Zero and Gain Pots on rear-side of sensor allowing for convenient calibration by the end-user for highest accuracy.
- Ball-bearing mounted, hardcoat anodized aluminum V-grooved guide rollers standard. Hardened steel, ceramic, flat cylindrical and U-Grooved roller options available.
- 3-Roller design ensures that the center sensor rollers has the same wrap angle at all times which allows the sensor to be mounted in any position on the line.
- Sensor can be mounted on a flat plate using the supplied thru holes on the underside of the housing body or fixed on the optional rail allowing for quick, easy installation and allows for multiple sensors mounted adjacent to one another with minimal spacing

The TSC Series is a purpose-built online tension sensor for the continuous measurement of running line tensions of yarns, fibers, thin wires and similar process materials.

The TSC Series has a precision-machined housing that allows several sensors to be installed in close-proximity to one another when end-to-end spacing of the process material is limited. Multiple sensors can be placed adjacent to each other or fixed to a single rail for quick, easy mounting. Built-in signal conditioning with Zero and Span pots provide a high-level, analog output to minimize the chance for signal interference.

The TSC Series can be using for process diagnostics or for continuously monitoring and recording of online tensions. The TSC Tension Sensor can be used as part of a closed-loop control system with third-party controller. It can also be used together with TD-1-TE Digital Tension Indicator or with user-supplied electronics (requires 15-24 V DC regulated power), chemicals or contaminants.



Mounting possibilities: Sensor can be mounted on a flat plate using the supplied thru holes on the underside of the housing body or fixed on the optional rail allowing for quick, easy installation and allows for multiple sensors mounted adjacent to one another with minimal spacing.

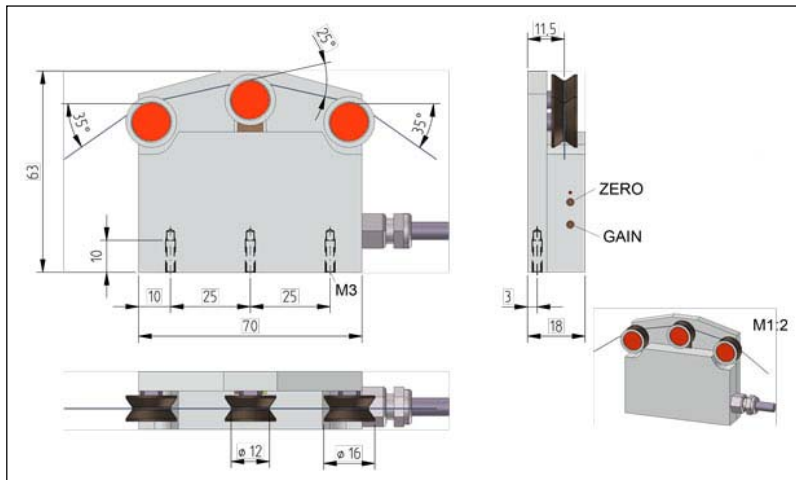
Two Material Path Alternatives



TSC Series Specifications

Accuracy	±2% full scale and ±1 digit
Overload protection	100% of tension range
Measuring principle	Strain gauge full bridge
Measuring roller deflection	max. 0.5 mm
Signal processing	Analog
Output signal	<i>Standard:</i> 0-1 V DC (analog) <i>Option:</i> 0-10 V DC (Option "DC") or mV/V direct strain gauge output (Option "A10")
Cable	Integrated shielded cable 6.5 ft. (2m) with open ends
Damping (fg)	30 Hz Standard (analog)
Temperature drift	Better ± 0.05% FS/ °C
Temperature range	50 to 113 °F (10 to 45 °C)
Air humidity	85% RH, max.
Power supply	+15 ... 24 V DC, 21 mA (regulated)
Housing	Aluminium, with threaded mounting holes on underside (M3 Thread)
Housing dimensions (L x W x H)	2.76 x 2.16 x .67 in. (70 x 55 x 17mm)
Weight, net	Approx. 3.52 oz. (100 g)

Dimensions



Tension Ranges

Model	Range	Measuring Head Width*	Roller Diameter**
TSCA-ZD-50	0-50 g	70 mm	Ø 16
TSCA-ZD-100	0-100 g	70 mm	Ø 16
TSCA-ZD-200	0-200 g	70 mm	Ø 16
TSCA-ZD-500	0-500 g	70 mm	Ø 16
TSCB-ZD-1000	0-1000 g	70 mm	Ø 16
TSCA-ZF-50	0-50 g	70 mm	Ø 10
TSCA-ZF-100	0-100 g	70 mm	Ø 10
TSCA-ZF-200	0-200 g	70 mm	Ø 10
TSCA-ZF-500	0-500 g	70 mm	Ø 10
TSCB-ZD-50	0-50 g	70 mm	Ø 16
TSCB-ZD-100	0-100 g	70 mm	Ø 16
TSCB-ZD-200	0-200 g	70 mm	Ø 16
TSCB-ZD-500	0-500 g	70 mm	Ø 16
TSCB-ZD-1000	0-1000 g	70 mm	Ø 16
TSCB-ZF-50	0-50 g	70 mm	Ø 10
TSCB-ZF-100	0-100 g	70 mm	Ø 10
TSCB-ZF-200	0-200 g	70 mm	Ø 10
TSCB-ZF-500	0-500 g	70 mm	Ø 10

cN units also available. * Outside dimensions of housing. ** Outside dimensions of the roller.

Guide Rollers

V-Groove	Line Speed V _{max} ...m/min	Roller Material
Standard	900	Hardcoated aluminum
Code K	2000	Hardcoated aluminum

Output Signal Mode

Standard	0 – 1 V DC (analog)
Option	Code DC: 0 – 10 V DC
Option	Code A10: Direct strain gauge output signal mV/V without amplifier