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SCHMIDT
control instruments

Tension Meter

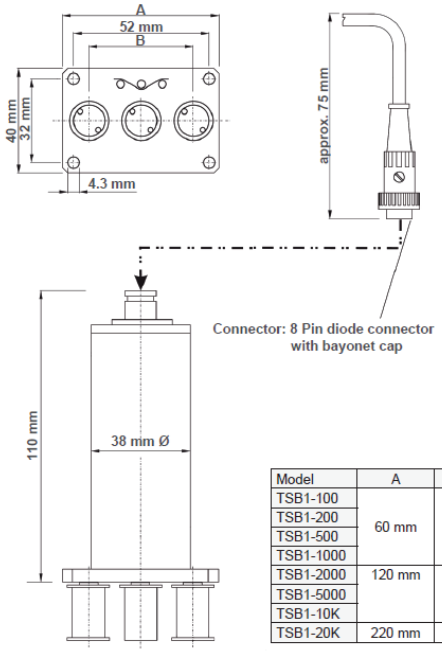
8 Tension ranges available
from 0 - 100 cN up to 0 - 20 daN

Tension Sensor TSB1

Specifications

Calibration:	According to SCHMIDT factory procedure
Accuracy:	±1 % full scale and ±1 digit other calibration material: ±3 % full scale or better
Overload protection:	100 % of tension range
Measuring principle:	Strain gauge bridge
Measuring roller deflection:	Max. 0.5 mm
Natural frequency:	Approx. 500 Hz, depending on tension range
Signal processing:	Analog
Temperature drift:	Less than ±0.05 % full scale/ºC
Output signal:	Standard: 0 – 1 V DC (analog) impedance: ≥ 5 kΩ
Option: 0 – 10 V DC (analog), 4 – 20 mA (current) or mV/V (DMS)	
Damping (fg):	Standard: 30 Hz (other values on request)
Temperature range:	10 – 45 ºC
Air humidity:	85 % RH, max.
Power supply:	+15…24 V DC, 21 mA regulated
Code A3:	max. 50 mA regulated
Code A10:	max. +5 V DC, max. 20 mA regulated
Housing material:	Aluminium
Dimensions:	See dimensions
Weight, net (gross):	Up to model TSB1-1000 approx. 250 g (approx. 400 g) model TSB1-2000 up to TSB1-10K approx. 280 g (approx. 430 g) model TSB1-20K approx. approx. 330 g (approx. 500 g)

Tension Sensor Model TSB1



Model	A	B
TSB1-100	60 mm	40 mm
TSB1-200		
TSB1-500		
TSB1-1000		
TSB1-2000	120 mm	100 mm
TSB1-5000		
TSB1-10K		
TSB1-20K	220 mm	200 mm

Dimensions

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Special Features

- Small, compact housing
- Tension sensor TSB1 with integrated measuring amplifier and high accuracy of 2 % FS
- Typical material path – warping the 3 rollers
- Various roller widths from 7 mm up to 20 mm, according to the application are available. The roller width must correspond with the width of the material to be measured
- Various output signals are available:

– analog: 0 – 1 V DC (standard), 0 – 10 V DC (optional)
– digital (optional): USB, RS-232, RS-422 – see model MZB1-422
– current: 4 – 20 mA (optional)

- Universal mounting possibility – easy to install, even afterwards, on existing machines:
- The sensor can be mounted using the two threads at the underside of the housing body. Alternative it can be fixed on two flanges on the side of the unit.
- Easy calibration to customized material by operator – zero and gain calibration is required
- Measuring principle – load cell with high quality strain gauge bridge

Standard Features

- Tension sensor with zylindrical tape roller, ball-bearing mounted
- Tension sensor TSB1 with rugged aluminum housing
- Required power supply +15…24 V DC (regulated)
- Certificate of Compliance with the order 2.1 according EN 10204 is included
- Optionally available: Inspection Certificate 3.1 according EN 10204 with calibration report

Available Models

Model	Tension Range*	Measuring Head Width**	Roller Width
TSB1-100	0 – 100 cN	60 mm	7, 10, 15, 20 mm
TSB1-200	0 – 200 cN	60 mm	7, 10, 15, 20 mm
TSB1-500	0 – 500 cN	60 mm	7, 10, 15, 20 mm
TSB1-1000	0 – 1000 cN	60 mm	7, 10, 15, 20, 30 mm
TSB1-2000	0 – 2000 cN	120 mm	7, 10, 15, 20, 30 mm
TSB1-5000	0 – 5000 cN	120 mm	7, 10, 15, 20, 30 mm
TSB1-10K	0 – 10 daN	120 mm	7, 10, 15, 20 mm
TSB1-20K	0 – 20 daN	220 mm	7, 10, 15, 20 mm