

Tensile Force Sensor Series M 120, M130

Series **M120** is a compact system to measure tensile forces. (tension)
 By means of its smooth and in **precise ball - bearing running measuring- and guiding elements**, as well very less tension on elastic yarns can be measured.

Series **M130** is a compact system to measure tensile forces. (tension)
 By means of its **ceramic thread guiding elements**, it is suited to measure as well on fast running material.



The shiftable device makes threading very easy.

By means of the outer guiding elements, the material is guided in a defined angle around the measuring-roller. Due to the deviation - the resulting radialforce - is measured by the sensor. It is proportional to the tensile force.

Application M120: measuring tension on : filaments, threads, elastic yarns, finest wires
 measurement by hand or fixed in the machine as well for labs

Application M130: measuring tension on : filaments, yarns, threads
 measurement by hand or fixed in the machine as well for labs

Advantages: it is suited to measure very less tensile forces

Nominal loads: **10 cN, 20 cN, 30 cN, 50 cN, 1 N, 2 N, and 3 N**

Measuring principle: capacitive
 the sensor transforms the, on the measuring-roller active radial force, into a proportional electric outputsignal.

Roller – material: **M120:** Aluminium alloy; **M130:** Alsint

Material speeds: **M120:** up to 1200 m/min. **M130:** up to 6000m/min

Option: without shiftable device

Remark: Series M 120 / M130 needs an external Tensometric amplifier.
 Series M 320 / M330 is equipped with a built-in amplifier.
 Series M 320 / M330 needs a service voltage of 5 V, 12 V, 24 V, or $\pm 15V$
 and supplies an outputsignal of 0 - 10 V corresponding to 0 - 100 %
 of the nominal load of the sensor.

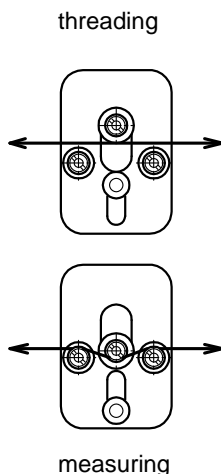
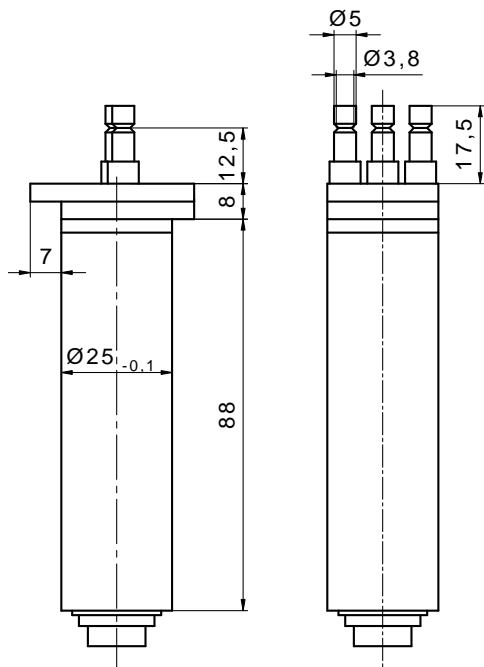
Accessories available: Connection cable, amplifier with or without display

Technical data :

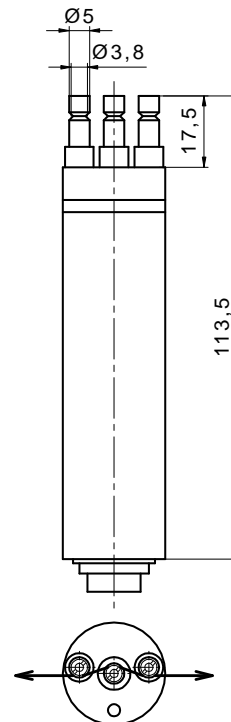
Tensile Force Sensor Series M 120

Dimensions:

- with shiftable device :



- without shiftable device :



M 120, M130

<i>Nominal loads:</i>	10 cN, 20 cN, 30 cN, 50 cN, 1 N, 2N, 3N
<i>Measuring range:</i>	approx. 5 % up to 100 % of the nom. load
<i>Error of the meas.system:</i>	< 1%
<i>Measuring principle:</i>	capacitive
<i>Natural frequency:</i>	150 Hz up to 300 Hz depending on the nom.load
<i>Overload protection:</i>	min. 10 times - for nom.loads up to 1 N min. 5 times - for nom.loads higher than 1 N
<i>Angle of contact around the measuring roller:</i>	30 °
<i>Charact. range of temp.:</i>	+ 10°...+ 35°C
<i>Coef. of temperature:</i>	< ± 0,1 % / °C
<i>Protection:</i>	IP 40

Included in delivery: Sensor with 5 pol. female-connector, instruction manual

M 320 (M 120 with built-in amplifier)

Technical data same as M 120, but the tube is approx. 40 mm longer.
The connection cable is fixed, 3 m long.

<i>Service voltages:</i>	5 V, 12 V, 24 V or ± 15V
<i>Outout signal:</i>	0 - 10 V, corresponding to 0 - 100 % of the nominal load
<i>Calibration:</i>	Potentiometer to adjust the electrical ZERO and the GAIN are accessible at the connection-cable - side by means of a screw-driver.

Included in delivery: Sensor with fixed cable, instruction manual