FIL CONTROL

Tension Sensor

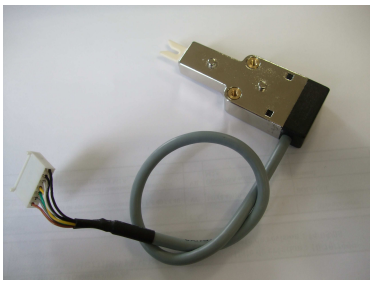
Device for tension measurement

Description

Application : This sensor is design for measuring the dynamical tension in a moving thread. This thread should run in a backward and forward motion.

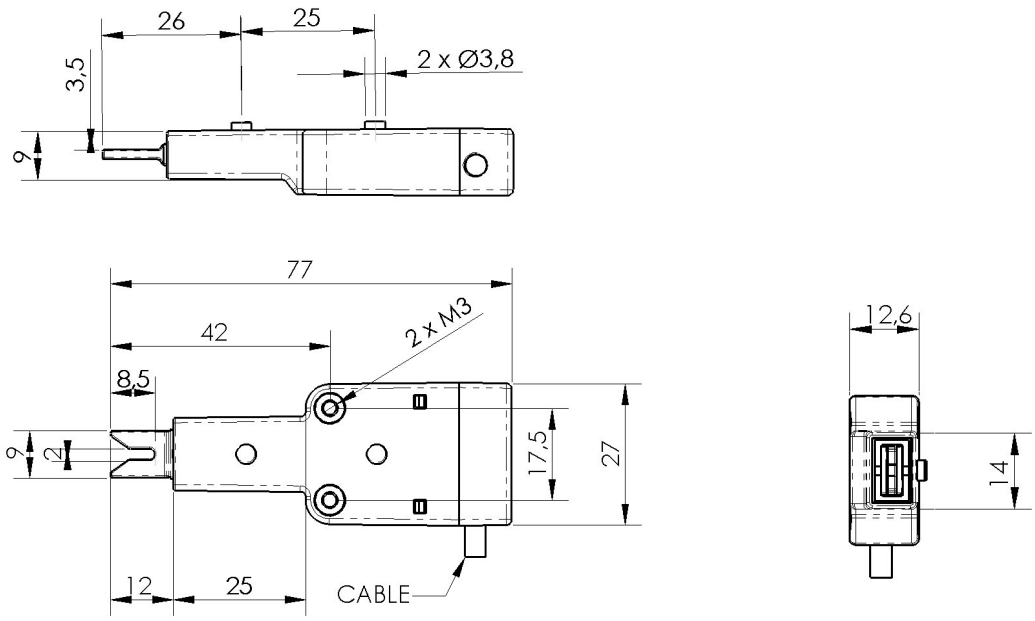
Principle: This sensor is a dynamical sensor. The main element of this sensor is a piezoelectric element mounted on a flexible beam. The output voltage of the sensor is linked to the force on the ceramic. The frequency of this voltage is due to the frequency of the backward and forward motion of the thread. Some filters are used to cut-off the unused frequencies. This sensor is design for regulated the tension of the thread on a winding machine.

Calibration of the sensors: The sensors are calibrated to supply all sensors in a range of 16% of dispersion.



- Dynamical tension device.
- 4 range of tension.
- High measurement precision.

Dimension (mm)



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Electrical characteristics

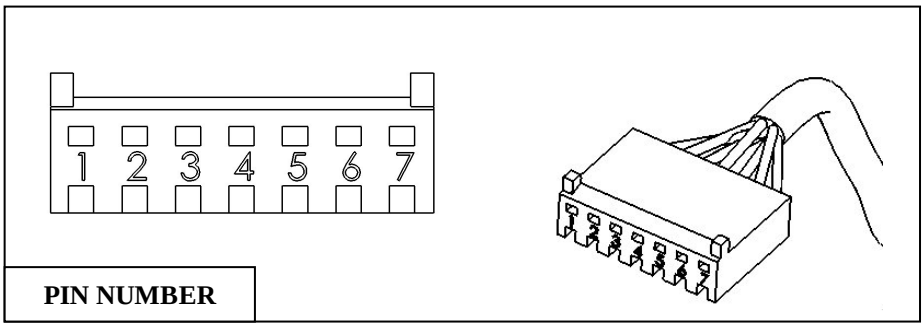
Parameters	Conditions	Min	Typ	Max
Power supply (V)		4.5	5	5.5
Temperature (°C) Storage Operating		 -10 10		 +60 +40
Humidity relative (%)				80%
Dynamical tension on the ceramic (en g)		1		20
Static force(g)				100
Calibration voltage mV (CAG1=0 and CAG2=0)	for 10g on the ceramic at 18 Hz.	327	355	385
Frequency (Hz)	Ripple lower than 1dB in bandpass	3		45
Calibration (%)		-8	0	+8
RMS voltage (V)		0		1.4

Connections

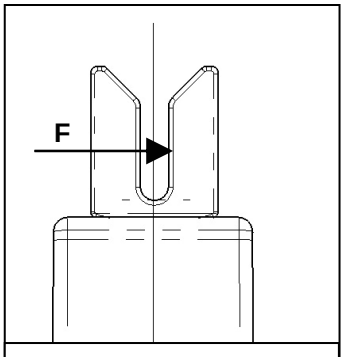
Sensor's pin number	***Function***
1	Shielding
2	GND
3	Vout
4	For factory calibration - Do not use $\overline{CS}$
5	$\overline{U/D}$ or CAG2
6	$\overline{INC}$ or CAG1
7	+5V

Mechanical tension range.

CAG1	CAG2	Mechanical force on the ceramic (**F**)
Ground	Ground	0 à 20 g
+5V	Ground	0 à 10 g
Ground	+5V	0 à 5 g
+5V	+5V	0 à 2.5 g



PIN NUMBER



F = Mechanical force on the ceramic

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