

# Y1 in-line threaded force transducer



## product description

The Y1 is a series of miniature force transducers designed for applications in general test and measurement as well as machine monitoring and control.

The threaded construction enables the Y1 to be easily assembled into equipment under test where both tension and compression forces require monitoring.

Available in a range of standard capacities from 50N through to 5000N; the Y1 is a full-bridge, bonded foil strain gauge transducer that provides excellent long-term stability and ensures high performance even in applications requiring in excess of 1 million load cycles. Constructed from high grade stainless steel and protected from moisture with an epoxy bonded cover, ensuring excellent long-term performance in harsh environments.

The Y1 can be supplied with standard cable configurations or with industry standard connectors. As an additional aid to system integrators, the Y1 can be supplied as a TEDS (Transducer Electronic Data Sheet) enabled smart transducer this provides an on-board memory chip storing manufacturing and calibration data.

Comprehensive range of electronic modules available

## applications

General test and measurement as well as machine monitoring and control. Ideal for packaging machinery, assembly machinery or end-of-line test equipment.

## key features

Capacity range of 50N to 5kN

Stainless steel construction

Environmental protection to IP64

High accuracy  $\pm 0.25\%$

Compact, low-weight design

Temperature compensated from  $-15^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

## options

Range of cable lengths

Flying leads or cable connectors

TEDS IEEE 1451.4 memory chip



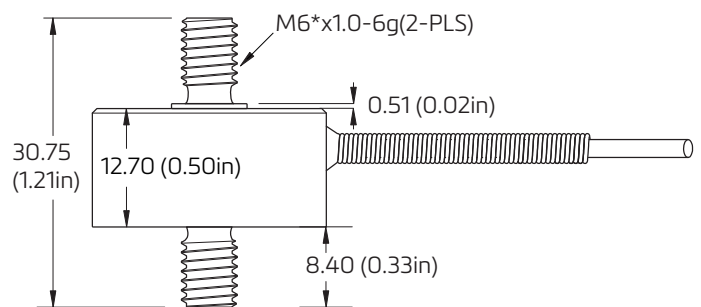
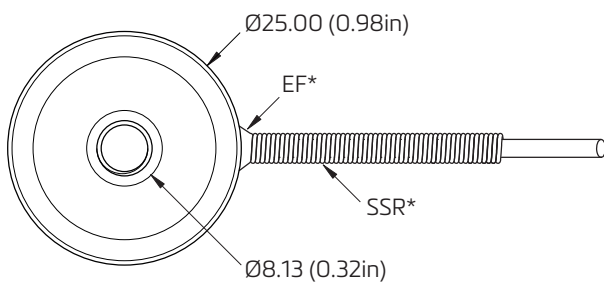
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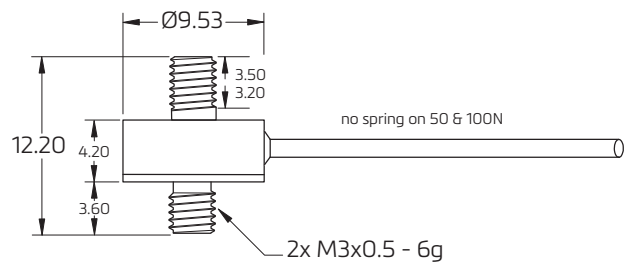
## specifications

Capacity	N	50 & 100	200, 500, 1,000, 2,000 & 5,000
Rated Output (RO)	mV/V	2 nom.	
Excitation voltage (VDC OR VAC)	V	5 (recommended), 7 (max)	5 (recommended), 10 (max)
Allowable maximum load	% full scale	150	
Non-linearity	% of RO max	± 0.5	± 0.25
Hysteresis	% of RO max	± 0.5	± 0.25
Repeatability	% of RO max	± 0.1	
Zero balance	% of RO max	10	5
Zero temp coefficient	% FS/°C	0.036	0.01
Span temp coefficient	% FS/°C	0.036	0.02
Compensated temp range	°C	-15 to +70	
Operating temp range	°C	-20 to +80	
IP Rating	-	IP64	
Bridge resistance	Ω	350 nom.	700 nom.

## product dimensions (mm)



### 50 & 100N dimensions



### key

M6\* - Metric threads come as standard

EF\* - Epoxy fillet

SSR - Spring strain relief

## wiring

The sensor is provided with a 36AWG for 50N-100N, 32AWG for 200N-5000N, 4-conductor braided shielded cable.

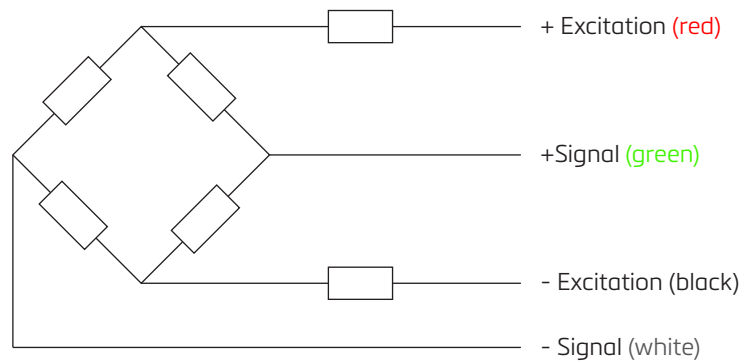
Outer jacket diameter: 36AWG - 1.16mm, 32AWG - 2.20mm.

Cable length: 1.5m (5ft)

Cable sheath: Teflon

No connection between the shield and the sensor body.

For additional protection, the cable is contained within a stainless-steel spring for strain relief purposes for the first 25mm (1"). Note, no spring for the 50N and 100N models.



## optional connector

The sensor can be supplied with an optional DB9 connector with integrated TEDS chip. Wiring configuration for the connector is shown below.

