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# Q1 smart low-profile force transducer



## product description

The Q1 series is a full-bridge, bonded foil strain-gauge force sensor with an amplified output that offers electronic adjustment of the zero and span signals.

This robust and accurate transducer has a multi-beam internal design ensuring repeatable, high accuracy sensing even in the presence of unwanted side forces. The design and construction of the Q1 smart transducer make it an ideal choice for a broad range of test and measurement tasks either as a stand-alone sensor or embedded in production/assembly machinery.

Available in a range of standard capacities of 200N to 5000N, the Q1 is designed for both tension and compression force measurement. Complete stainless-steel construction and hermetic sealing ensures long-term stability and ensures high performance even in applications requiring in excess of 1 million load cycles. The Q1 is available with an 8-pin, M12 male connector that offers IP68 levels of environmental sealing.

## 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

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Capacities from 200N to 5000N

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Stainless steel construction

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Environmental protection to IP68

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High accuracy  $\pm 0.1\%$

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4-20mA output

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User adjustable gain and offset (zero and span) to 50% of RO

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Low profile design

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Temperature compensated from  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$

## accessories

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Comprehensive range of electronic modules available



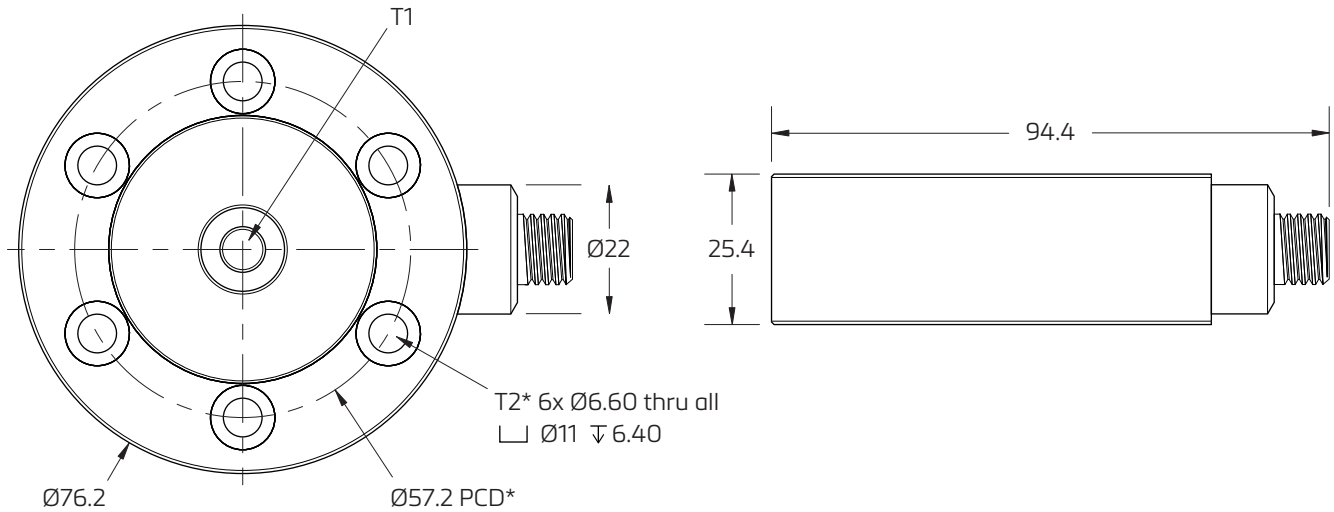
RoHS  
compliant



## specifications

Rated load	N	200 / 500 / 1000 / 2000 / 5000
Proof load	% of RO	150
Ultimate load	% of RO	200
Deflection	mm	<0.05
Natural frequency	Hz	>1,000
Output at rated load (RO)	mA	4-20
Excitation voltage (VDC OR VAC)	V	5 (recommended), 10 (max)
Non-linearity	% of RO	≤ 0.1
Hysteresis	% of RO	≤ 0.1
Repeatability	% of RO	≤ 0.03
Creep over 20 minutes	% of RO	≤ 0.05
Output (span) tolerance	% of RO	factory setting ±0.1% range ±50 Adjustable via electronic interface. See user manual for details.
Offset (zero balance)	% of RO	factory setting ±1.0% range ±50 Adjustable via electronic interface. See user manual for details.
Output (span) temp coefficient	% RO / °C	±0.005
Offset (zero) temp coefficient	% RO / °C	±0.005
Compensated temp range	°C	-10°C to +50
Operating temp range	°C	-40 to +85
Power supply	VDC	12 to 24, <40mA
Insulation resistance	GΩ	≥5 @ 50 VDC
Connector	-	Analog O/P: 8-pin M12 male, hermetic ESD safe, EMC compliant with EN61326-2-3:2006, CE marked.
Protection class	-	IP68 (Fully stainless-steel construction, laser welded.)
Weight	g	750

## product dimensions (mm)



### key

PCD\* - Pitch circle diameter

T2\* - 6 holes of 6.60mm diameter drilled through, on a pitch circle diameter of 57.2mm. Counterbored with 11mm diameter to a depth of 6.4mm.

Capacity (N)	T1	T2
200 / 500	M8x1.25	M6 Socket Head Screw
1000 / 2000 / 5000	M12 x1.75	

## wiring

Pin	Current Output
1	Supply (+)
2	Supply (-), TEDS GND
3	Current loop (+)
4	Current loop (-)
5	TEDS DATA/ Shunt calibration (Optional)
6	Calibration interface A
7	Calibration interface B
8	Calibration interface C

