



E100 SIT - Strain Gauge In Line Torque Transducer

Contents

*Strain Gauge In-Line Torque Transducer [SIT]:
TSE2039R*

*Strain Gauge In-Line Torque Transducer [SIT]
Operating Guide: TSE2039V (Includes Introduction,
Operating Principles & Operating Instructions)*

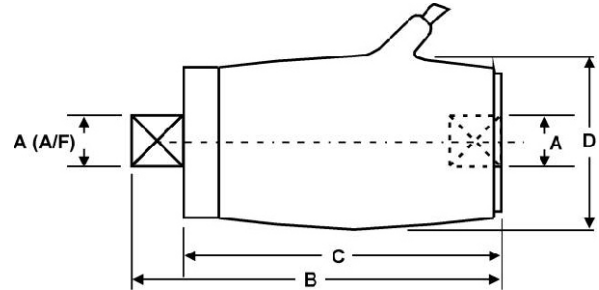
Strain Gauge In-Line Torque Transducer [SIT]

General Description

The E100 SIT (Strain Gauge In-Line) Transducer is ruggedised for industrial applications with a synthetic rubber boot to protect the transducer from abnormal shocks. An In-line cable connector is fitted for safety and quick disconnection.

The transducer is ideal for measurement of reaction torque from 1Nm to 5000 Nm.

Transducers can be used with customers own strain gauge amplifier system, or with our E101/2 Transducer Display interface.



Standard and Mechanical Specifications

Model	Full Scale Deflection			A (square) across flat (in.)	B (mm)	C (mm)	D (mm)
	(Calibration in any of the units below is possible)						
E100SIT	S.I. units	F.P.S units	M.K.S units				
E100SIT-1	0-1 Nm	0-10 lbf.in	0-10 kgf.cm	0.250	64	56	32
E100SIT-2	0-2 Nm	0-20 lbf.in	0-20 kgf.cm	0.250	64	56	32
E100SIT-3	0-5 Nm	0-50 lbf.in	0-50 kgf.cm	0.250	64	56	32
E100SIT-4	0-10 Nm	0-100 lbf.in	0-100 kgf.cm	0.375	67	56	32
E100SIT-5	0-20 Nm	0-200 lbf.in	0-200 kgf.cm	0.375	67	56	32
E100SIT-6	0-50 Nm	0-500 lbf.in	0-500 kgf.cm	0.500	70	56	32
E100SIT-7	0-100 Nm	0-100 lbf.ft	0-10 kgf.m	0.500	106	90	52
E100SIT-8	0-200 Nm	0-200 lbf.ft	0-20 kgf.m	0.750	112	90	52
E100SIT-9	0-500 Nm	0-500 lbf.ft	0-50 kgf.m	0.750	112	90	52
E100SIT-10	0-1000 Nm	0-1000 lbf.ft	0-100 kgf.m	1.000	108	76	89
E100SIT-11	0-2000 Nm	0-2000 lbf.ft	0-200 kgf.m	1.500	138	93	102
E100SIT-12	0-5000 Nm	0-5000 lbf.ft	0-500 kgf.m	1.500	138	93	102

Cable length	2 metres
Outputs	See E101/2 data sheets
Power supply	From E101/2 module ($\pm 5V$)
Accuracy	$\pm 0.5\%$ FSD; $\pm 0.1\%$ to order
Linearity	$\pm 0.5\%$; $\pm 0.1\%$ to order
Temperature range	-10°C to $+50^{\circ}\text{C}$
Temperature coefficient	Less than 0.05% per $^{\circ}\text{C}$.
Hysteresis	Better than 0.1%
Safe mechanical overload	400% of rating
Memory	Embedded non-volatile memory chip contains calibration data



Strain Gauge In-Line Torque Transducer [SIT] Operating Guide

TSE2039V
Rev 1

1. Introduction

The E100 SIT Strain Gauge In Line Transducer, operates in conjunction with the E101 or E102 readout, provides a method of precisely measuring bi-directional torque in mechanical systems.

Any strain gauge transducer in the family is interchangeable with any E101 or E102 readout.

Although the system does not require routine maintenance, we recommend that, for maximum accuracy, the equipment be recalibrated annually.

2. Operating Principles

The transducer measures bi-directional torque using temperature compensated foil Strain Gauges.

The accuracy obtained from the transducer is dependent on the accuracy of the $\pm 4V$ Power Source. The E101 or E102 normally provides this.

Ensure that the transducer is not subject to bending moments and the peak FSD Torque is not exceeded.

3. Operating Instructions

Plug the interconnection lead into E101 / E102 "Transducer" socket. Switch on the E101 / E102 and allow five minutes for the equipment to reach thermal equilibrium. Zero the transducer output using the E101 / E102 "Zero" control. The transducer is now ready for use.

The 25 pin "D" plug carries important calibration history and scaling information, which is reported to the E101 / E102. This ensures that the E101 / E102 displays the correct torque reading.