

DSBT Strain gauge base mounted torque transducers with dual and three range option

STL 2b
Issue 3

A range of precision transducers specifically designed for the measurement of static or reaction torque, which can be applied in either direction, and read out on the D3A/B Transducer Display Module. A substantial, easily mounted body houses the shaft and strain gauge assembly, and also the signal conditioning amplifier. The shaft is mounted on its outer end in a ball race, ensuring accurate torque transmission. A chuck accommodates simple adaptors which can be supplied having standard square dimensions (see table), or machined to suit a specific application. Additional blank adaptors are available on request.

The built-in signal conditioning amplifier ensures that all transducers in the range have an identical output for full scale, and are therefore completely interchangeable with others

in the strain gauge series. A set zero control is incorporated, mounted in the transducer body.

Dual & Three Range Option. Transducers can be supplied with either a dual or a three range option. The basic transducer which must be the size needed for maximum torque required, will then give full scale readings for 100%, 50% or 20% of its range, depending on the position selected by a rotary switch mounted on the top of the transducer. Thus a DSBT 6 with the Three Range option will give full scale readings of three consecutive ranges, say 0-1Nm, 0-2Nm or 0-5Nm, with an accuracy of 1% of f.s.d. The range selected is indicated at the rotary switch by illuminated LEDs.

Cable Length. 2 metres standard.

Power Supply. Provided by the D3A/B Torque Display Module.

Output. ± 1 volt d.c. for full scale deflection, the polarity depending on direction of torque applied.

Accuracy. $\pm 1\%$ of full scale, when readout on D3A Module. $\pm 0.5\%$ of full scale to order using D3B Module.

Linearity. Better than 0.25% of f.s.d.

Resolution. Better than 1% analogue (D3A) $\pm 0.25\%$ digital (D3B).

Safe Overload. 150%.

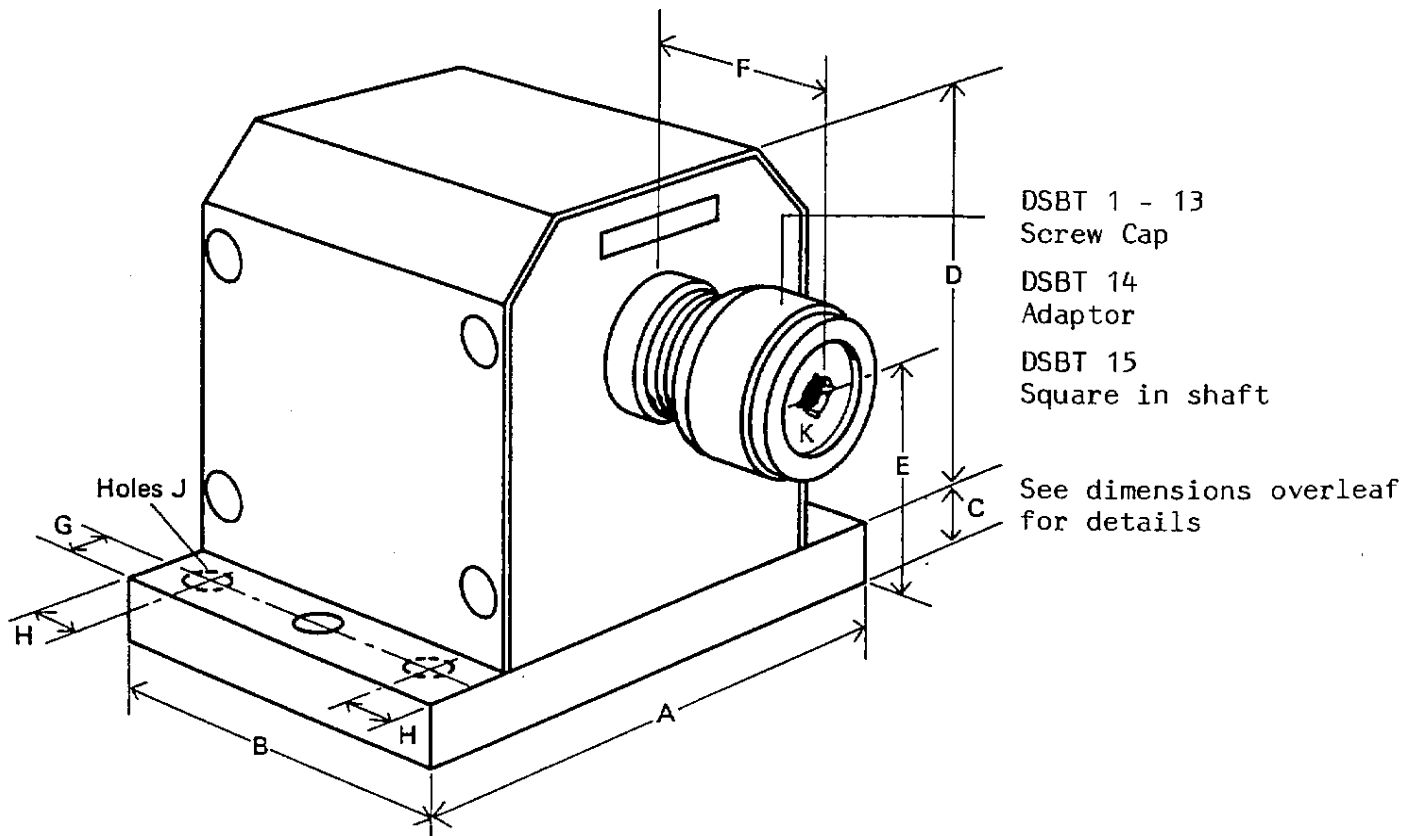
Max. Overload. 300%.

Operating Temperature Range. 0-50°C.

Temperature Coefficient. Better than 0.1% per °C.

Hysteresis. Less than 0.5%.

DSBT	Torque range F.P.S.	M.K.S.	S.I.	K Interchangeable sample disc A/F	
1	0-20 oz.f.in.	0-2000 g.f.cm.	200 mNm.	.250 in.	Non standard or blank discs to order.
2	0-50 oz.f.in.	0-5000 g.f.cm.	500 mNm.	.250 in.	
3	0-100 oz.f.in.	----	----	.250 in.	
4	0-10 lb.f.in.	0-10 kg.f.cm.	0-1 Nm.	.250 in.	
5	0-20 lb.f.in.	0-20 kg.f.cm.	0-2 Nm.	.250 in.	
6	0-50 lb.f.in.	0-50 kg.f.cm.	0-5 Nm.	.250 in.	
7	0-100 lb.f.in.	0-100 kg.f.cm.	0-10 Nm.	.375 in.	
8	0-200 lb.f.in.	0-200 kg.f.cm.	0-20 Nm.	.375 in.	
9	0-500 lb.f.in.	0-500 kg.f.cm.	0-50 Nm.	.500 in.	
10	0-100 lb.f.ft.	0-10 kg.f.m.	0-100 Nm.	.500 in.	
11	0-200 lb.f.ft.	0-20 kg.f.m.	0-200 Nm.	.750 in.	
12	0-500 lb.f.ft.	0-50 kg.f.m.	0-500 Nm.	.750 in.	
13	0-1000 lb.f.ft.	0-100 kg.f.m.	0-1000 Nm.	1 in.	
14	0-2000 lb.f.ft.	0-200 kg.f.m.	0-2000 Nm.	1.500 in.	
15	0-5000 lb.f.ft.	0-500 kg.f.m.	0-5000 Nm.	1.500 in.*	*Socket is part of main shaft - not interchangeable.



SIZE DIMENSIONS IN MM

DSBT	A	B	C	D	E	F	G	H	J
1-9	127	76 (101*)	13	78	51	32	9.50	--	8mm dia. (Two holes)
10-13	146	124	16	106	70	51	13	24	13mm dia. (Four holes)
14	146	124	16	106	70	84	13	24	13mm dia. (Four holes)
15	305	152.5	25	180	127	51	13	51	19mm dia. (Four holes)

*For units fitted with dual or multi range options.