

MBD2 thru-hole compression force transducer



product description

The MBD2 is a series of miniature force transducers designed for applications in general test and measurement as well as machine monitoring and control.

The low profile, small diameter design enables the MBD2 to be easily embedded into machinery or test equipment – ideal for packaging machinery, assembly machinery or end-of-line test equipment.

Available in a very wide range of standard capacities from 10lb through to 5,000lb; the MBD2 is configured for compression force measurement acting on cylinders, bolts or shafts. A range of internal thru-hole diameters are available. Full-bridge, bonded foil strain gauge technology provides excellent long-term stability and ensures high performance even in applications requiring in excess of 1 million load cycles.

Constructed from stainless steel and protected from moisture with an epoxy bonded cover.

The MBD2 can be supplied with standard cable configurations or with industry standard connectors. As an additional aid to system integrators, the MBD2 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.

available accessories

Comprehensive range of electronic modules available

material

- Stainless steel body and cover
- Polyurethane cable sheath - 1 inch diameter
- PVC cable sheath for other ranges

RoHS

key features

- High accuracy $\pm 0.5\%$
- Low profile
- Small diameter
- Range of internal thru-hole diameters
- Compression force measurement
- Low weight
- Stainless steel construction
- Temperature compensated -15°C - + 71°C
- Environmental protection to IP64

options

- Available in a range of cable lengths
- Cable supplied as flying leads or with end of cable connectors
- TEDS IEEE 1451.4 memory chip
- Multi-point calibration available

approvals

RoHS – lead-free

performance specifications

Parameter	Range
CAPACITY	10, 20, 25, 50, 100, 250, 500, 1000, 2000, 5000 lb
RATED OUTPUT (RO)	0.4mV/V (10lb), 0.8mV/V (20lb), 1mV/V (25lb) 2 mV/V (50-5000lb) nom.
SAFE OVERLOAD	150 % of R.O.
ZERO BALANCE	±2% of R.O.
EXCITATION (VDC OR VAC)	7 MAX
BRIDGE RESISTANCE	700 Ω nom.
NON-LINEARITY	±0.5% of R.O.
HYSTERESIS	±0.5% of R.O.
NONREPEATABILITY	±0.1% of R.O.
TEMP. SHIFT ZERO	±0.005% of R.O./°F (±0.01 of R.O./° C)
TEMP. SHIFT SPAN	±0.005% of LOAD/°F (±0.01 of LOAD/° C)
COMPENSATED TEMP.	5 to 160 °F (-15 to 71 °C)
OPERATING TEMP.	-60 to 200 °F (-51 to 93 °C)
MATERIAL	Stainless Steel
IP RATING	IP64
CALIBRATION TEST EXCITATION	5 VDC
CALIBRATION (STD)	5 pt. COMPRESSION

Model	Weight (Nom)	Deflection (Nom)
MBD2-1 in. dia.	0.13 lb [60 g]	0.002" [0.05mm]
MBD2-1.5 in. dia.	0.22 lb [100 g]	0.002" [0.05mm]
MBD2-2 in. dia.	0.50 lb [227 g]	0.002" [0.05mm]
MBD2-3 in. dia.	1.65 lb [750 g]	0.002" [0.05mm]

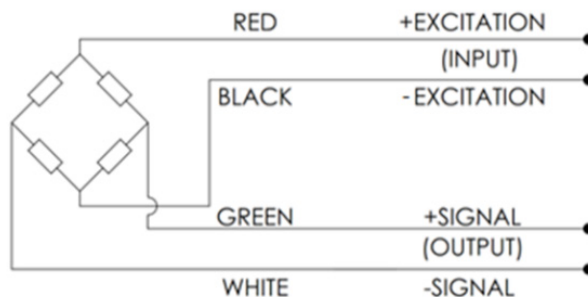
wiring

Model MBD2 (10-1000lb) is provided with a #32 AWG 4-conductor braided shielded cable with outer jacket, 0.086" [2.2 mm] diameter. Model MBD2(100-5000LB) is provided with a #28 AWG 4-conductor braided shielded cable with outer jacket, 0.126" [3.2 mm] diameter. There is 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.

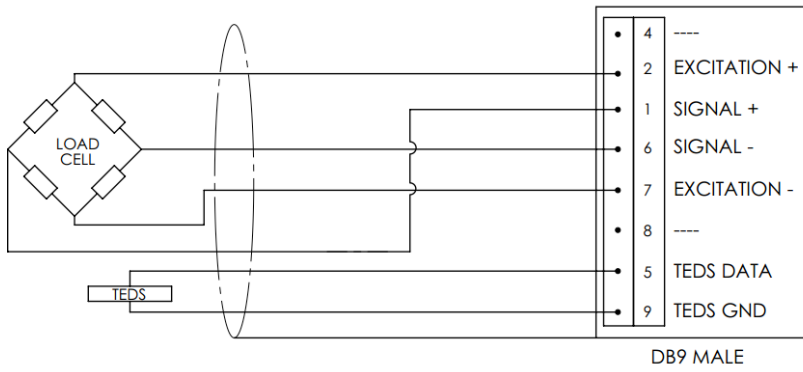
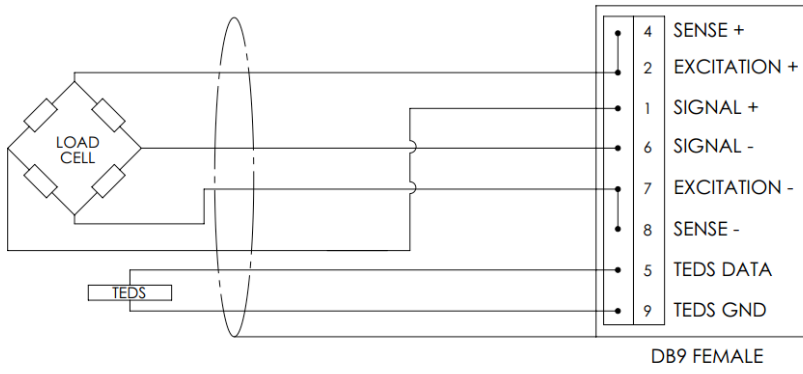
Standard cable length is 1m.

These load washers are offered with DB9 Male, DB9 Female and without connector. See Order Details section.

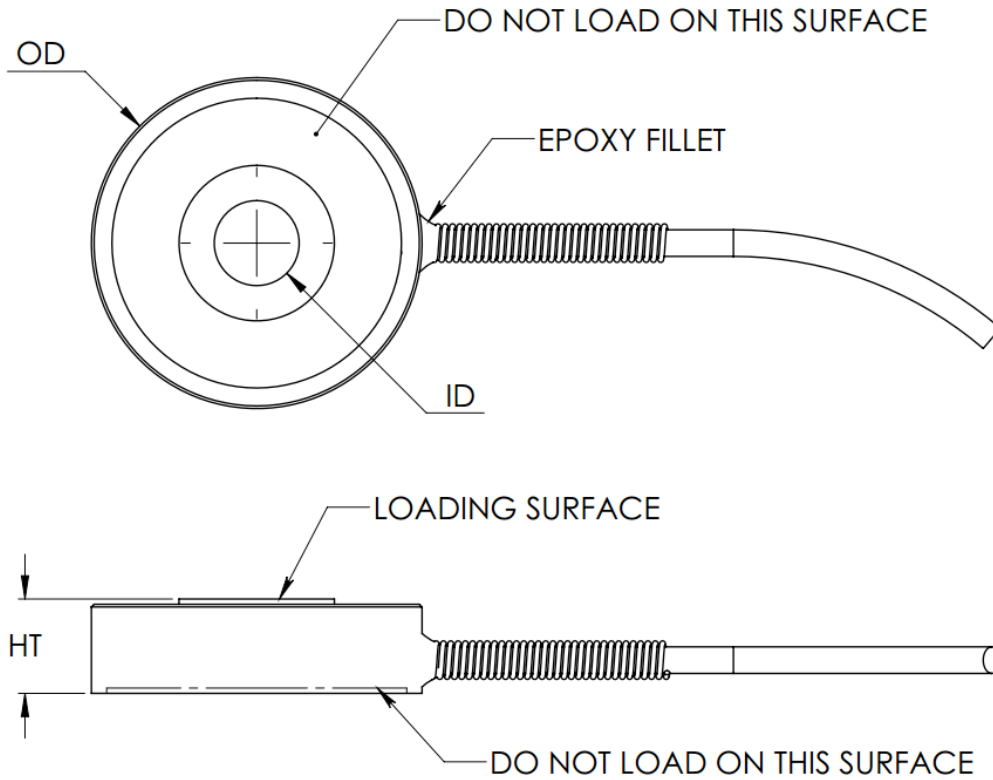
Standard wire configuration as shown below.



For connector versions, pin configuration as shown below.



dimensions (inch)



OD	ID	Screw Size	HT										
				10	25	50	100	250	500	1k	2k	5k	
1	0.136	1/8	0.28										
1	0.201	3/16	0.28										
1	0.266	1/4	0.28										
1	0.332	5/16	0.28										
1	0.397	3/8	0.28										
1.5	0.397	3/8	0.5										
1.5	0.469	7/16	0.5										
1.5	0.531	1/2	0.5										
1.5	0.656	5/8	0.5										
2	0.136	1/8	0.63										
2	0.201	3/16	0.63										
2	0.266	1/4	0.63										
2	0.332	5/16	0.63										
2	0.397	3/8	0.63										
2	0.469	7/16	0.63										
2	0.531	1/2	0.63										
2	0.594	9/16	0.63										
2	0.656	5/8	0.63										
3	0.136	1/8	1										
3	0.201	3/16	1										
3	0.266	1/4	1										
3	0.332	5/16	1										
3	0.397	3/8	1										
3	0.469	7/16	1										
3	0.531	1/2	1										
3	0.594	9/16	1										
3	0.656	5/8	1										
3	0.781	3/4	1										
3	0.906	7/8	1										
3	1.031	1	1										
3	1.281	1 1/4	1										

	Common capacities
	Available on request

