

Key Features:

- Capacities 50kg to 6000kg
- For sub-50kg Capacities see DBBSM)
- Sealed to IP67
- Robust Construction
- Output: 2mV/V
- Accuracy: $\leq \pm 0.05\%$ /RC
- Simple Installation
- High Performance
- Optional ATEX Certificate on DBBW Model to II 1 GD EEx ia IIC T6
- Robust Construction
- 3 Year Warranty



Use in Tension and /or Compression for Force and Load Measurement

The DBB series of S-Beam load cells are designed for use in tension and compression and lend themselves to both force measurement and weighing applications alike.

There are two versions available covering the standard range which are the DBBE and the DBBWAS. The DBBE is a dual bending beam design sealed to IP67 covering ranges from 50kg to 1000kg, and the DBBWAS is a lower cost alloy steel version of the DBBW covering capacities from 1500kg to 5000kg.

Both the dual bending beam and the shear web design offer high accuracy performance of better than $\pm 0.05\%$ of the rated capacity.

Their ease of mounting makes them very attractive for use as a general purpose load cell.

Options:

- Equivalents to Other Manufacturers Available
- Spherical Rod End Bearings
- Load Buttons
- Different Cable Lengths
- Mounting Hardware
- ATEX Certification (DBBW only)
- TEDS (Transducer Electronic Data Sheet)
- TEDS Allows Plug & Play with TEDS Enabled Instrumentation.
- USB Versions (via DSC-USB)
- Single or Multi-Channel PC-Based Monitoring & Data Logging System
- Wireless Version (via T24 instrumentation)

Applications:

- Force & Load Measurement Applications
- Suspended Hoppers
- Geotechnical Test Equipment
- Tensile Testing Machines
- Materials Testing
- Bag Fillers
- Conversion of Mechanical Scales to Digital
- Dynamometers

For pricing or any further information, please contact Omni Instruments Ltd.

Specification:

	DBBE	DBBWAS	UNITS
Rated Capacity (RC)	0-50, 0-100, 0-150, 0-200, 0-300, 0-500, 0-1000	0-1500, 0-2000, 0-3000, 0-5000, 0-6000	kg
Operating Modes	Tension/Compression / Tension & Compression		
Sensitivity (RO)	2.0±0.1%		mV/V
Zero Balance/Offset	<0.2		±mV/V
Total Error	<0.05		±%/Rated Output
Zero Return after 30 mins	<0.05		±%/Applied Load
Output Symmetry (tension vs. compression)	<0.2 typical		±%/Rated Output
Temperature Effect on Zero	<0.01		±%/Rated Load/°C
Temperature Effect on Sensitivity	<0.003		±%/Applied Load/°C
Input Resistance	400 ±20		Ohms
Output Resistance	350 ±3		Ohms
Insulation Resistance	>2000		Megohms @ 50Vdc
Excitation Voltage	10 recommended (2-15 acceptable)		Volts AC or DC
Operating Temperature Range	-30 to +70		°C
Compensated Temperature Range	-10 to +40		°C
Storage Temperature Range	-30 to +70		°C
Safe Overload	150		% of Rated Capacity
Ultimate Overload	300		% of Rated Capacity
Deflection @ Rated Capacity	<0.4		mm
Fundamental Resonant Frequency*	200 to 1000 typical depending on capacity		Hz
IP Rating (Environmental Protection)	IP67		
Weight (excluding cable)	0.7		kg
Fatigue Life	10 ⁸ cycles typical (10 ⁹ cycles on fatigue-rated version)		
Cable Length (as standard)	6		metres
Cable Type	6-core screened, PVC sheath, Ø6.3		
Construction	Nickel Plated Alloy Steel		
Resolution:	1 part in 250,000 (with appropriate instrumentation)		
*The resonant frequency is calculated with the body of the load cell attached to a large plate, ensuring that only the sensing element oscillates: This is vital to achieve the highest natural frequency and subsequent frequency response.			

Wiring Diagram:

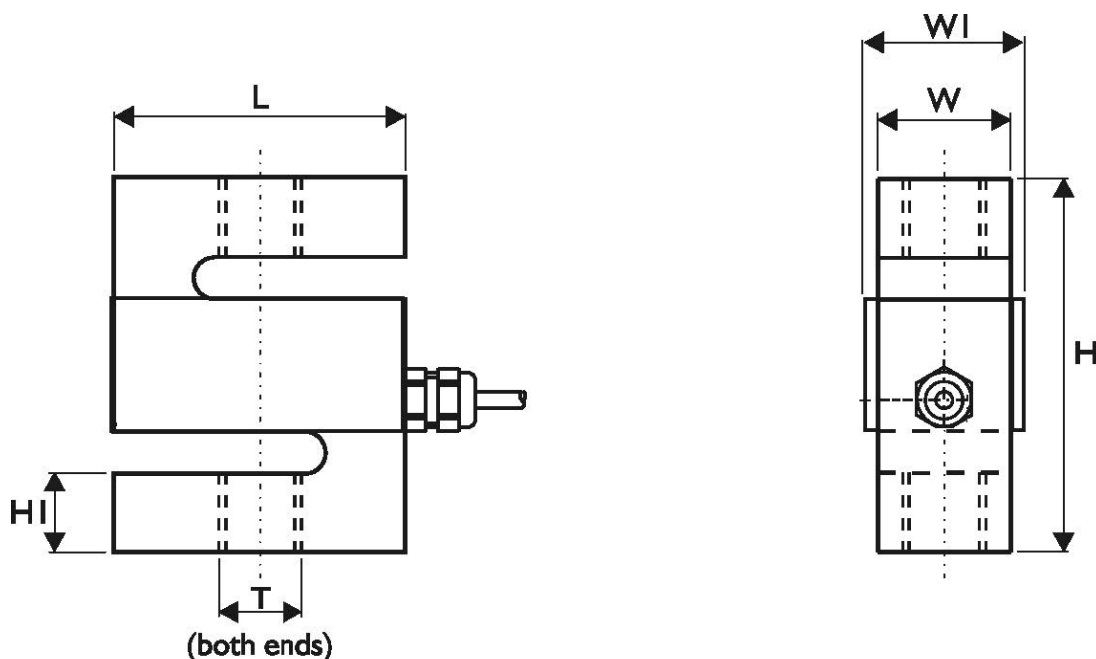
DBBE/DBBWAS Wiring:

Wire	Designation
 Red	+ve excitation
 Black	+ve sense
 Blue	-ve excitation
 White	-ve sense
 Green	+ve signal (tension)
 Yellow	-ve signal

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Dimensions (mm):

Model	Capacity (kgf)	H	L	W	WI	HI	Threads T
DBBE	0-50 to 0-1000	80	62.1	18	22	15	M12 x 1.75
DBBWAS	0-1500, 0-2000	90	70	32	36	19	M16 x 2.0
DBBWAS	0-3000	120	100	45	45	26	M24 x 2.0
DBBWAS	0-5000	120	100	45	45	26	M24 x 2.0
DBBWAS	0-6000	120	100	45	45	26	M24 x 2.0



Ordering Codes:

Core Product	Capacity (inc Engineering Units)	Cable Length (m)	Specials Code	Example Result
DBBE	50kg	006	000	DBBE-50kg-006-000
DBBE	100kg	006	000	DBBE-100kg-006-000
DBBE	150kg	006	000	DBBE-150kg-006-000
DBBE	200kg	006	000	DBBE-200kg-006-000
DBBE	300kg	006	000	DBBE-300kg-006-000
DBBE	500kg	006	000	DBBE-500kg-006-000
DBBE	1000kg	006	000	DBBE-1000kg-006-000
DBBWAS	1500kg	006	000	DBBWAS-1500kg-006-000
DBBWAS	2000kg	006	000	DBBWAS-2000kg-006-000
DBBWAS	3000kg	006	000	DBBWAS-3000kg-006-000
DBBWAS	5000kg	006	000	DBBWAS-5000kg-006-000

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Associated Products:



TR150 Handheld Indicator



T24 Wireless Telemetry Range



Intuitive4-L Panel-Mount Indicator



DSC-USB USB Signal Digitiser



ICA Miniature Strain Gauge Amplifier



SGA Signal Conditioner/Amplifier

Mounting and Installation Accessories:

Helping You Get The Best Possible Performance From Your Load Cell.

Load Buttons and Rod End Bearings

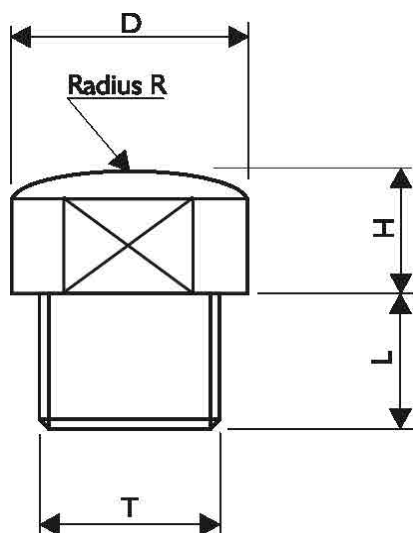
Designed to align forces through the principle axis of the load cell thus reducing the effects of extraneous forces, hence offering improved performance from the cell.

Load buttons are used where compressive forces are applied.

Rod End Bearings are used where tensile forces are being applied.

Dimensions in mm:

Load Buttons for Compression Use



THREAD T	M12 x 1.75	M16 x 2	M24 x 2
D	22	32	26
H	6	10	14
L	12	16	26
R	150	180	200

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Rod End Bearings for Tension Use

Key Features:

- Supports radial loads in a tensile or compressive direction.
- Transmit slow movements with small or moderate swivel angles.
- Suitable for unilateral loads - can support alternating loads and alternating loads in combination with bearing GE..UK-2RS.
- Zinc plated for corrosion resistance.
- Are maintenance-free.
- Sealed maintenance-free rod ends use lip seals to protect against contaminants and water spray.
- Fitted with radial spherical plain bearings GE..UK
- Hard chromium/PTFE composite sliding contact surfaces.
- Right hand or left hand internal or external thread.
- Enables compact adjacent construction thanks to its thin walled design of the eye housing.



GAR..UK
(right hand thread)

GAL..UK
(left hand thread)

- To ISO 12 240-4, dimension series E, type M
- Shank with external thread
- For shaft diameters from 6mm to 30mm

Maintenance-free

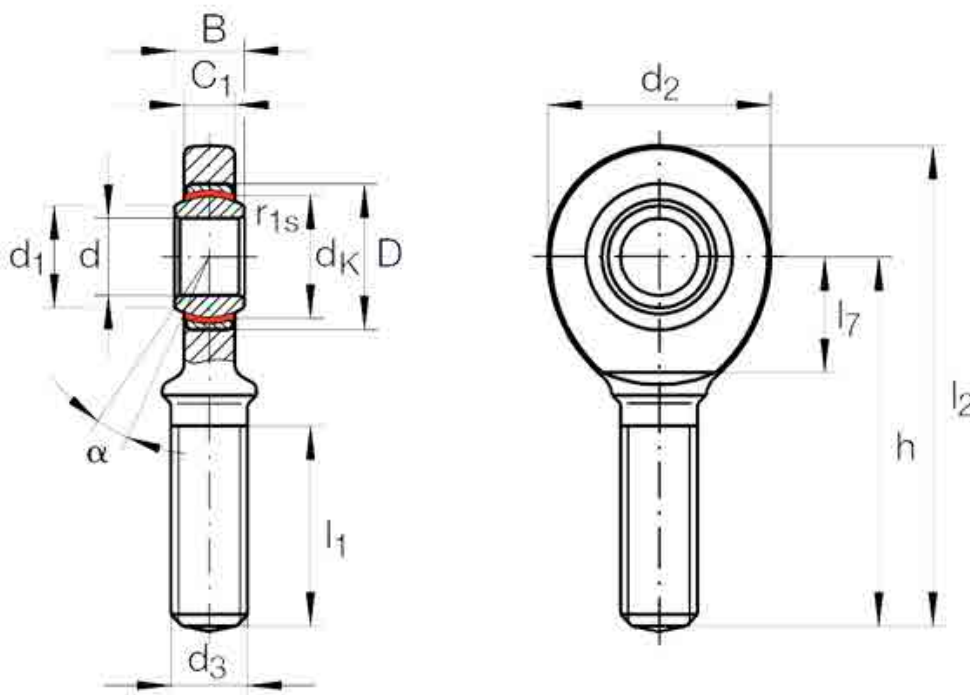
ISO 12 240-4, dimension series E, type M

Sliding contact surface: hard chromium/PTFE

Series GAR..UK

Sliding material: PTFE composite

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TYPE	SHAFT DIAMETER	DESIGNATION ¹⁾		MASS ≈ kg	DIMENSIONS						
		WITHOUT SEALS	WITH SEALS		d	D	B	dk	d ₁	d ₂	d ₃
DBBE-50-500kg	12	GAR 12 UK	-	0.086	12 _{-0.008}	22	10 _{-0.12}	18	14.9	34	M12
DBBW-500kg	12	GAR 12 UK	-	0.086	12 _{-0.008}	22	10 _{-0.12}	18	14.9	34	M12
DBBW-1000kg	17	GAR 17 UK	-	0.19	17 _{-0.008}	30	14 _{-0.12}	25	20.7	46	M16
DBBW-2000kg	17	GAR 17 UK	-	0.19	17 _{-0.008}	30	14 _{-0.12}	25	20.7	46	M16
DBBW-5000kg	25	GAR 25 UK	-	0.56	25 _{-0.01}	42	20 _{-0.12}	35.5	29.3	64	M24 x 2

TYPE			Degrees				Chamfer Dimension	Basic Load Ratings		Radial Internal Clearance	Shaft Diameter
	h	C ₁	α	l ₁	l ₂	l ₇	r1s min.	dyn. Cr N	stat. C _{0r} N		d
DBBE-50-500kg	54	8	11	28	71	18	0.3	11 400	30 100	0 - 0.032	12
DBBW-500kg	54	8	11	28	71	18	0.3	11 400	30 100	0 - 0.032	12
DBBW-1000kg	69	11	10	36	92	23	0.3	22 400	56 500	0 - 0.04	17
DBBW-2000kg	69	11	10	36	92	23	0.3	22 400	56 500	0 - 0.04	17
DBBW-5000kg	94	17	7	53	126	32	0.6	51 000	104 000	0 - 0.05	25

1) For a left hand thread, the R is replaced by an L (example: GAL.).

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