



APPLIED MEASUREMENTS LTD.
Transducer Specialists...

+44 (0) 118 981 7339

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<https://appmeas.co.uk>

DBEP Load Measuring Pin / Shear Pin Load Cell

Key Features:

- Standard Capacities 0-2.5t to 0-50t
- Special Capacities 0-200kg up to 0-1500t Available
- Sealed to IP67 (IP68 available)
- Robust Construction
- Output 1.5mV/V nominal
- Custom Design Versions Available
- Anti-Rotation Plates Available
- 3 Year Warranty



For Measuring Bi-Directional Forces in General Applications

The [DBEP shear pin load cells](#) are designed for the measurement of both tension and compression forces in general applications such as process monitoring, offshore, civil engineering, industrial and marine to name a few. They are environmentally sealed to IP67 as standard which can be enhanced to IP68 for fully submersible applications in sea water of 6500 metres or more.

We can integrate either analogue or digital signal conditioning to provide an output compatible with any existing monitoring or control system.

We can offer standard versions or fully customised versions for a direct replacement of the existing load pin. The DBEP can be supplied as 'pin only' or with our extensive range of instrumentation for a complete system setup, please [contact our technical sales team](#).

Options:

- IP68 Submersible Versions
- Special Sizes and Ranges Available
- Anti-Rotation Plate Available
- Hose Protected Cable
- Dual Strain Gauge Bridge for Redundancy
- Integrated Analogue or Digital Signal Conditioning
- Dual Axis Version for Fx/Fy Measurements
- High Temperature Versions
- Single or Multi-Channel PC-Based Monitoring & Data Logging System
- TEDS (Transducer Electronic Data Sheet)
- TEDS Allows Plug & Play with TEDS Enabled Instrumentation.
- USB Version (via DSC-USB)
- Wireless Version (via T24 instrumentation)

Applications:

- Process Monitoring
- Offshore Applications
- Civil Engineering
- Industrial
- Marine
- Crane/Lifting Applications
- General Bi Directional Force Applications
- Subsea Load Monitoring
- ROV Applications



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Specification:

Rated Capacity (RC)	tonnes	0-0.5, 0-1, 0-2.5, 0-3.5, 0-6.5, 0-15, 0-25, 0-50, 0-100, 0-250, 0-500, 0-750, 0-1000, 0-1500
Operating Modes	Tension/Compression / Tension & Compression	
Sensitivity (RO)	mV/V	1 – 1.5 nominal (dependent on range)
Zero Balance/Offset	±%/Rated Output	<1.0
Symmetry (tension vs. compression)	±%/Rated Output	<1 typical
Non-Linearity	±%/Rated Capacity	<0.5 to 2
Hysteresis	±%/Rated Output	<0.5 to 2 typical
Repeatability	±%/Rated Capacity	1 typical *
Temperature Effect on Zero	±%/Rated Output/ °C	<0.010
Temperature Effect on Sensitivity	±%/Applied Load/ °C	<0.010
Input Resistance	Ohms	375 nominal
Output Resistance	Ohms	350 nominal
Insulation Resistance	Megohms	>5000 @ 50Vdc
Excitation Voltage	Volts AC or DC	10 recommended (2-15 acceptable)
Operating Temperature Range	°C	-20 to +70
Compensated Temperature Range	°C	-10 to +50
Storage Temperature Range	°C	-20 to +70
Safe Overload	% of Rated Capacity	150
Ultimate Overload	% of Rated Capacity	300
IP Rating (Environmental Protection)		IP67 (IP68 submersible options)
Weight (excluding cable)		See dimension table
Fatigue Life		10 ⁸ cycles typical (10 ⁹ cycles on fatigue-rated version)
Cable Length (as standard)	metres	3
Cable Type		4-core screened, PUR sheath, Ø5
Construction Material		Stainless Steel
Resolution		1 part in 250,000 (with appropriate instrumentation)

*Note: Due to varying load pin geometry, which is governed by the location and application, non-linearity and non-repeatability performance may vary.

Wiring Diagram:

Wire	Designation
Red	+ve excitation
Blue	-ve excitation
Green	+ve signal
Yellow	-ve signal
Screen	To ground - not connected to load cell body



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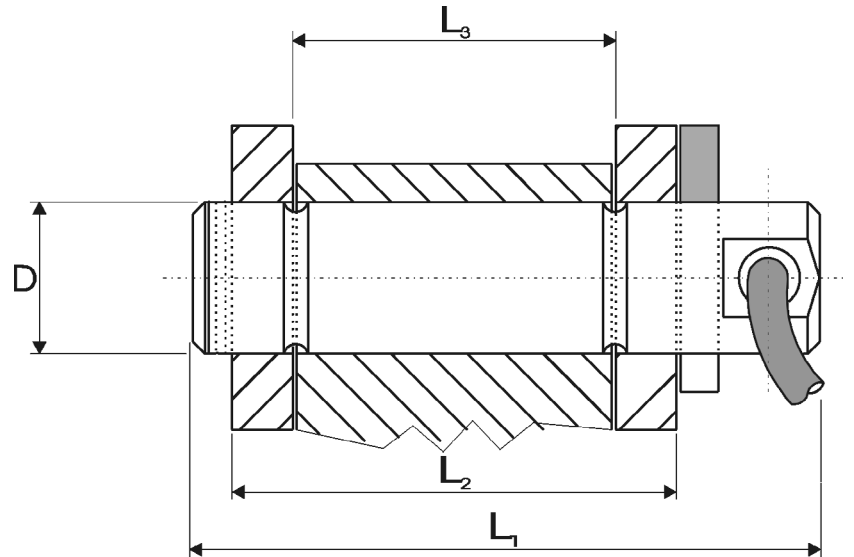
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Dimensions (mm):

CAPACITY (tonnes)	D	L ¹	L ²	L ³	WEIGHT (kg)
0-2.5	25	100	70	45	0.4
0-3.5	30	105	75	50	0.6
0-6.5	40	125	95	63	1.3
0-15	50	150	114	75	2.5
0-25	63	195	152	89	4.9
0-50	75	225	178	102	8.0



Ordering Codes:

Core Product	Capacity (inc Engineering Units)	Cable Length (m)	Specials Code	Example Result
DBEP	1t	003	000	DBEP-1t-003-000
DBEP	2.5t	003	000	DBEP-2.5t-003-000
DBEP	3.5t	003	000	DBEP-3.5t-003-000
DBEP	6.5t	003	000	DBEP-6.5t-003-000
DBEP	15t	003	000	DBEP-15t-003-000
DBEP	25t	003	000	DBEP-25t-003-000
DBEP	50t	003	000	DBEP-50t-003-000

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](#)



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Associated Case Studies:

Creating 1000 Times More Power with Submersible Load Measuring Pins



Measuring the strut force in Deep Green's underwater tidal energy kite assembly. The measuring device needed to withstand permanent underwater submersion. [Read more...](#)

Shear Pin Load Cells and Draw Wire Sensors Deliver Flawless Results in Sub-Zero Temperatures



Using customised DBEP shear pin load cells, the RICE team were able to successfully extract a 763m deep ice core from an ice cap on Roosevelt Island. [Read more...](#)