



Pancake Load Cell

Code: 012345

Product Group: N/A

Key Features:

- Capacities 0-5kN up to 0-1000kN
- Output: 2mV/V
- Stainless Steel Construction
- High-Frequency Response
- High Accuracy $\leq \pm 0.05\%$ /Rated Capacity
- Low Profile Shear Design
- Low Deflection
- Excellent Rejection of Extraneous Forces
- Simple Installation
- Shunt Calibration Facility

For Tension and/or Compression and Force and Load Measurement Applications.

The pancake load cells are designed for weighing and force measurement applications and can operate in both tension and compression. They are perfectly suited for material and component fatigue testing applications where a high accuracy, low-profile device is required and forces are applied axially. The pancake load cells high-frequency response makes it ideal for dynamic force and load measurement applications such as crash test walls.

Can be entirely customised to suit your specific application, with alternative threads, custom dimensions, counterbored mounting holes, protection ratings of IP67 and IP68 submersible and higher capacities in excess of 5000kN possible.

Rated Capacity (RC)

kN

$\pm 5, \pm 10, \pm 25, \pm 50, \pm 100, \pm 200, \pm 250, \pm 300, \pm 500, \pm 1000$

Sensitivity (RO)

mV/V

2.0 (up to 200kN) / 2.7 nominal (250kN upwards)

Zero Balance/Offset

$\pm\%/ \text{Rated Output}$

< 1.0

Output Symmetry (tension vs. compression)

%/Rated Load

<0.25 (0.8 typical on 250kN)

Non-Linearity

±%/Rated Output

<0.05

Hysteresis

±%/Rated Output

<0.05

Repeatability

±%/Rated Output

<0.05

Temperature Effect on Zero

±%/Rated Capacity/ °C

<0.005

Temperature Effect on Sensitivity

±%/Applied Load/ °C

<0.005

Effect of Eccentricity

%/Rated Output/25mm

<0.25 typical

Effect of Side Load

%

0.25 typical

Input Resistance

Ohms

700 nominal

Output Resistance

Ohms

700 nominal

Insulation Resistance

Megohms @ 50 Vdc

>5000

Excitation Voltage

Volts AC or DC

10 recommended (2-15 acceptable)

Operating Temperature Range

°C

-20 to +80

Compensated Temperature Range

°C

0 to +70

Storage Temperature Range

°C

-20 to +80

Safe Overload

% of Rated Capacity

150

Ultimate Overload

% of Rated Capacity

>250

Maximum Safe Side Load ** (Fx or Fy)

% of Rated Capacity

40

Maximum Safe Torque/Bending Moment (Mx, My or Mz) **

See dimensions table

Deflection @ Rated Capacity

mm (nominal) at Rated Load

0.05 (>50kN) / 0.1 (100-250kN) / 0.13 (300-1000kN)

Fundamental Resonant Frequency*

See dimensions table

IP Rating (Environmental Protection)

IP65

Weight (excluding cable)

See dimensions table

Cable Length (as standard)

metres

3

Cable Type

6-Pin Amphenol Connector + Mating Half Fitted with 4 core screened cable, PUR sheath, Ø5

Construction

Stainless Steel

Resolution

1 part in 250,000 (with appropriate instrumentation)

Fatigue Life

Fully Reversed Cycles

Standard Versions: 30-50 million typical

Fatigue-Rated Versions: 500 million

Versions rated to 1 billion+ on request

*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.

**Extraneous load ratings (Fx, Fy, Mx, My, Mz) are based on application of only one at any time in addition to force in the primary measurement axis (Fz). Contact our engineering department if multi extraneous loads will occur simultaneously.

Wiring Diagram:

Wire

Designation

Red

+ve excitation

Blue

-ve excitation

Green

+ve signal (compression)

Yellow

-ve signal

Screen

To ground - not connected to load cell body

3 Mercury House Calleva Park Aldermaston Berkshire
RG7 8PN Issue: 30 January 2017

APPLIED MEASUREMENTS LTD.

Transducer Specialists...

☎ +44 (0) 118 981 7339

✉ info@appmeas.co.uk

🌐 www.appmeas.co.uk

Specification:

Alternatives



Bench-Mounting Mixer 5 Litre Capacity Complete with Bowl Beater and Whisk. 220-240V 50Hz 1Ph.

Code: [23-6191/01](#)