

# F251

## Miniature Diaphragm Loadcell

Standard Ranges 100, 200, 400 and 800N, 1.6 and 3.2kN (10 to 320kgf)

- ◆ Tension / compression / bi-directional calibration
- ◆ Easy installation
- ◆ Standard 2 year warranty
- ◆ Sealed to IP65
- ◆ Hardened stainless steel body
- ◆ Traceable calibration with certificate included in the standard price



Geometry: Very small loadbutton cell for force measurement in confined spaces. Used in compression and/or tension on a wide range of OEM or end-user applications.

With bi-directional versions there is a small difference between the output signal for compression and tension. All standard bi-directional loadcells are calibrated in both modes and the output for each direction is stated on the test / calibration certificate.

The F251 is ideally suited to force measurements in confined spaces in both tension and compression for control of critical parameters in all kinds of industrial processes. Their versatility is such that they are also applied in a great number of important fields of scientific and engineering test work, mobile as well as workshop, static and dynamic.

We are happy to design variants of this loadcell to meet your specific requirements. Please consult our engineering department.

Details of our other loadcell families can be found in the Product List and the Loadcell Specifier Guide. If you require copies please contact our sales department or look on our web site at [www.novatechloadcells.co.uk](http://www.novatechloadcells.co.uk).

<b>Ordering Codes:</b>		See the loadcell ordering code sheet for more details. Add range in the required units.	
F251CFR0H0	Compression, IP65, unrationalised	F251CFR0HN	Compression, IP65, rationalised
F251TFR0H0	Tension, IP65, unrationalised	F251TFR0HN	Tension, IP65, rationalised
F251UFR0H0	Bi-directional, IP65, unrationalised	F251UFR0HN	Bi-directional, IP65, rationalised
Change the C to a D for compression with thread fitting.			

## F251 Specification

Parameter	Value	Unit
Non-linearity - Terminal	±0.5	% RL
Hysteresis	±0.5	% RL
Creep - 20 minutes	±0.1	% AL
Repeatability	±0.1	% RL
Rated output - Nominal	1.6	mV/V
Rated output - Rationalised	1.0	mV/V
Rationalisation tolerance (applies to single direction calibrations)	±0.5	% RL
Zero load output	±4	% RL
Temperature effect on rated output per °C	±0.005	% AL
Temperature effect on zero load output per °C	±0.03	% RL
Temperature range - Compensated	-10 to +50	°C
Temperature range - Safe	-10 to +80	°C
Excitation voltage - Recommended	10	V
Excitation voltage - Maximum	10	V
Bridge resistance	350	Ω
Insulation resistance - Minimum at 50Vdc	500	MΩ
Overload - Safe	50	% RL
Overload - Ultimate	100	% RL
Sealing	IP65	
Weight - Nominal (excluding cable)	8 to 11	g

Ranges up to 200N (20kgf) are manufactured in aluminium. All other standard ranges are stainless steel.  
When this loadcell is rationalised the resistors are housed in a capsule located in the loadcell cable 100mm from the free end. Capsule dimensions are Ø10mm by 57mm.

Structural stiffness - Nominal					
Range (N)	Stiffness (N/m)	Range (N)	Stiffness (N/m)	Range (kN)	Stiffness (N/m)
100	$3.7 \times 10^6$	400	$1.5 \times 10^7$	1.6	$6.0 \times 10^7$
200	$7.3 \times 10^6$	800	$3.0 \times 10^7$	3.2	$1.2 \times 10^8$

### Notes

- AL = Applied load.
- RL = Rated load.
- Temperature coefficients apply over the compensated range.
- The load must be applied directly through the central loading axis.

### Connections

The loadcell is fitted with 2 metres of PVC insulated 4 core screened cable type 7-1-4C.

Excitation + = Red

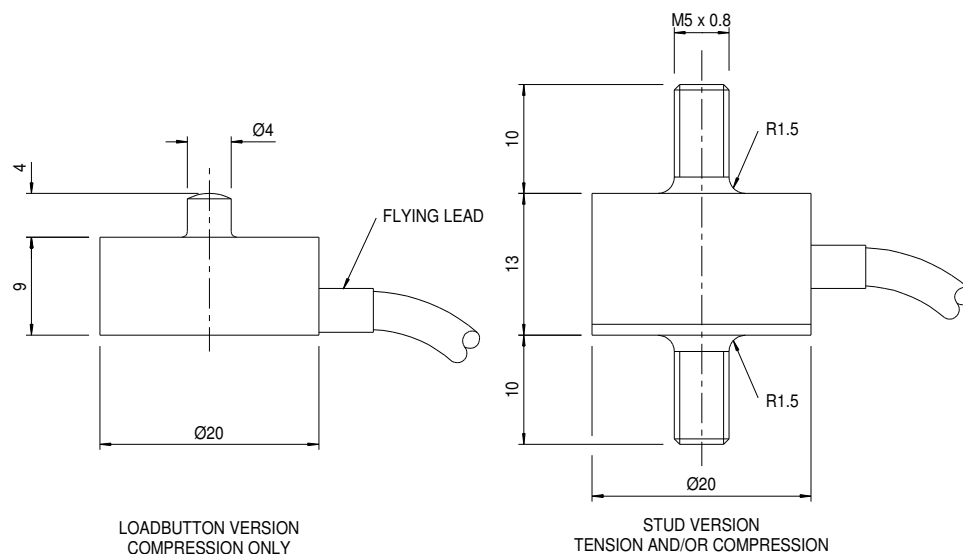
Signal + = Yellow

Screen = Orange

Excitation - = Blue

Signal - = Green

Reverse the signal connections to obtain a positive signal in tension mode. The screen is not connected to the loadcell body.



Novatech reserves the right to vary the foregoing details without prior notice

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## NOVATECH MEASUREMENTS LTD

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