NOVATECH

F331

Fatigue Rated, High Stiffness, Low Range Loadcell
Standard Ranges 0.5, 1, 2.5, 5, 10 and 20N (50gf to 2kgf)

♦ **High stiffness / Minimal deflection**

♦ **Deflection is 100% translational**

♦ **Resistant to sideloads and force vectors**

♦ **High thermal stability**

♦ **Fatigue rated**

♦ **Standard 2 year warranty**

The F331 low range loadcell has been developed to meet a growing need for high resolution, low range force measurement with minimal translational deflection. The high stiffness of these loadcells, combined with their robust construction, lends themselves particularly well to dynamic and/or fatigue applications.

The minimum fatigue life of 10^8 fully reversed RL cycles can be greatly extended if the cycles occur below full rated load.

Both the F328 and F329 loadcell product types offer excellent performance but rely on a comparatively low stiffness strain mechanism. The F329 in particular requires a reduced output sensitivity in order to maintain some level of robustness. The F331 on the other hand offers some advantages over both and also benefits from a purely mechanical resistance to sideloads and vectors. Sideloads up to 25% RL can be withstood for as little as 2% RL error. Similarly, misalignment of up to 3° swept 360° around the measurement axis typically yields no more than 1% RL error.

The strain section within the housing is a separate monocoque structure, allowing repairs to be made quickly and cheaply in comparison to other low range loadcells. Other housing designs and fixing arrangements are therefore possible. The F330 offers the same ranges and performance in a circular housing.

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.

Ordering Codes:	See the loadcell ordering code sheet for more details. Add range in the required units.		
F331CF00H0	Compression, unrationalised	F331CF00HN	Compression, rationalised
F331TF00H0	Tension, unrationalised	F331TF00HN	Tension, rationalised
F331UF00H0	Bi-directional, unrationalised	F331UF00HN	Bi-directional, rationalised

F331 Specification

Parameter	Value	Unit
Non-linearity - Terminal	±0.2	% RL
Hysteresis	±0.1	% RL
Creep - 20 minutes	±0.2	% AL
Repeatability	±0.02	% RL
Rated output - Nominal	0.6	mV/V
Rated output - Rationalised	0.5	mV/V
Rationalisation tolerance (applies to single direction calibrations)	±0.5	% RL
Output symmetry	±1.0	% AO
Fatigue Life	10^8	RL cycles
Zero load output	±10	% RL
Temperature effect on rated output per ºC	±0.005	% AL
Temperature effect on zero load output per ºC	±0.02	% RL
Temperature range - Compensated	-10 to +50	ºC
Temperature range - Safe	-10 to +80	ºC
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
Weight - Nominal (excluding cable)	35	g

All standard ranges are manufactured in aluminium.

Structural stiffness - Nominal					
Range (N)	Stiffness (N/m)	Range (N)	Stiffness (N/m)	Range (N)	Stiffness (N/m)
0.5	1.0×10^5	5	5.0×10^5		
1	2.0×10^5	10	8.3×10^5		
2.5	3.2×10^5	20	1.3×10^6		

Notes

1. AL = Applied load.
2. RL = Rated load.
3. Temperature coefficients apply over the compensated range.
4. AO = Average of tension and compression outputs for full load.

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	

The screen is not connected to the loadcell body.