

# F318

## Pancake Loadcell

Standard Ranges 1, 2, 5, 10, 20, 50, 100, 200 and 500kN (0.1 to 50tonne)

- ◆ Tension / compression / bi-directional calibration
- ◆ Low profile with recessed centre boss
- ◆ Fatigue rated on ranges 10kN and above
- ◆ Sealed to IP65
- ◆ Hardened stainless steel body



Geometry: Shear web structure with high axial and lateral mechanical stiffness.

The loadcell has good output symmetry between compression and tension operation. All standard bi-directional loadcells are calibrated in both modes.

Ranges up to 20kN have counter bored and tapped outer fixing holes enabling versatile fixing options without loss of the low height advantage.

The F318 pancake loadcell has a recessed boss. If you require a raised boss the F254 may be more suitable. The F254 has standard ranges from 25 to 200kN.

We are happy to design variants of this loadcell to meet your specific requirements. Versions can be manufactured for fully compensated operation up to +250°C. Please consult our engineering department.

Details of our other loadcell families can be found in the Loadcell Specifier Guide. If you require a copy 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.	
F318CFR0K0	Compression, IP65, unrationalised	F318CFR0KN	Compression, IP65, rationalised
F318TFR0K0	Tension, IP65, unrationalised	F318TFR0KN	Tension, IP65, rationalised
F318UFR0K0	Bi-directional, IP65, unrationalised	F318UFR0KN	Bi-directional, IP65, rationalised
Change the F to a P for the connector version.			

## F318 Specification

Parameter	Value	Unit
Non-linearity - Terminal	±0.1	% RL
Hysteresis	±0.1	% RL
Creep - 20 minutes	±0.05	% AL
Repeatability	±0.02	% RL
Rated output - Nominal	2.1	mV/V
Rated output – Rationalised	2.0	mV/V
Rationalisation tolerance (applies to single direction calibrations)	±0.1	% RL
Output symmetry	±0.5	% AO
Fatigue life (ranges 10kN and above)	10 <sup>8</sup>	RL cycles
Zero load output	±4	% RL
Temperature effect on rated output per °C	±0.005	% AL
Temperature effect on zero load output per °C	±0.005	% RL
Temperature range - Compensated	-10 to +50	°C
Temperature range - Safe	-10 to +80	°C
Excitation voltage - Recommended	10	V
Excitation voltage - Maximum	20	V
Bridge resistance	700	Ω
Insulation resistance - Minimum at 50Vdc	500	MΩ
Fixing bolt torque	See detail drawing.	
Overload - Safe	50	% RL
Overload - Ultimate	200	% RL
Sealing	IP65	
Weight - Nominal (excluding cable)	See F318 detail drawing	

All standard ranges are manufactured in stainless steel.

Structural stiffness - Nominal					
Range (kN)	Stiffness (N/m)	Range (kN)	Stiffness (N/m)	Range (kN)	Stiffness (N/m)
1	1.6 x 10 <sup>7</sup>	10	1.6 x 10 <sup>9</sup>	100	4.5 x 10 <sup>9</sup>
2	1.1 x 10 <sup>8</sup>	20	1.3 x 10 <sup>9</sup>	200	9.5 x 10 <sup>9</sup>
5	3.8 x 10 <sup>8</sup>	50	1.9 x 10 <sup>9</sup>	500	1.3 x 10 <sup>10</sup>

### Notes

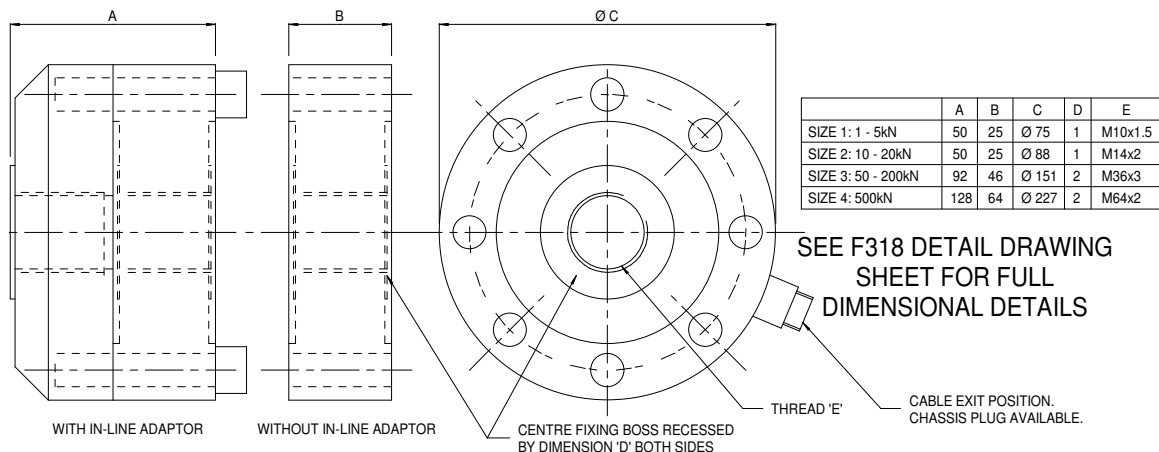
1. AL = Applied load.
2. RL = Rated load.
3. AO = Average of tension and compression outputs for full load.
4. Temperature coefficients apply over the compensated range.

### Connections

The loadcell is fitted with 2 metres of PVC insulated 4 core screened cable type 7-2-4C for ranges up to 20kN. Ranges above 20kN are fitted with 16-2-4C cable. A 4 pin Binder chassis plug option is available instead of the cable. For the ranges up to 20kN the plugs are 712 series, for 50kN and above 723 series are used.

Excitation + = Red or pin 1                      Signal + = Yellow or pin 3                      Screen = Orange  
 Excitation - = Blue or pin 2                      Signal - = Green or pin 4

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

01/2010

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