

## F317 High Performance Fatigue Rated Cylindrical Loadcell

Standard Ranges 5, 10, 25, 50, 100, 250, 500 and 1000kN (500kgf to 100tonnef)

- ✓ Good output symmetry
- ✓ High structural load limit
- ✓ Fatigue rated
- ✓ Sealed to IP65
- ✓ Flying lead or connector option
- ✓ Traceable calibration with certificate included in the standard price



### Specification

Parameter	Value	Unit
Non-linearity - Terminal	±0.05	% RL
Hysteresis	±0.1	% RL
Creep - 20 minutes	±0.05	% AL
Repeatability	±0.02	% RL
Rated output - Nominal	1.2	mV/V
Rated output - Rationalised	1.0	mV/V
Rationalisation tolerance (applies to single direction calibrations)	±0.1	% RL
Output symmetry	±0.5	% AO
Fatigue life	108	RL cycles
Zero load output	±4	% RL
Temperature effect on rated output per $\Delta^{\circ}\text{C}$	±0.005	% AL
Temperature effect on zero load output per $\Delta^{\circ}\text{C}$	±0.01	% 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
Overload - Safe	50	% RL
Overload - Ultimate	200	% RL
Sealing	IP65	
All standard ranges are manufactured in stainless steel.		

## **The F317 is a high performance cylindrical loadcell offering a high degree of output symmetry in compression and tension.**

A high slenderness ratio strain section improves all round performance compared to the older design F204. New thread sizes are employed offering more economic sizing of rod end bearings and improved availability. Novatech can supply suitable rod ends. The industry standard fatigue rated loadcell has traditionally been the pancake loadcell, our F254 is a typical example. By restricting the nominal output to a safe strain region the cylindrical loadcell offers the same number of full load reverse cycles as a minimum life expectancy. The cylindrical form offers the advantage of a reduced diameter, often advantageous in actuator applications. Adaptors are not required which are costly and add mechanical interfaces to the load train assembly. 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.

## Order Codes

Code	Description
F317CFR0K0	Compression, IP65, unrationalised
F317TFR0K0	Tension, IP65, unrationalised
F317UFR0K0	Bi-directional, IP65, unrationalised
F317CFR0KN	Compression, IP65, rationalised
F317TFR0KN	Tension, IP65, rationalised
F317UFR0KN	Bi-directional, IP65, rationalised
Change the F to a P for the connector version. Not available on the 0.5tonnef range.	

## Structural Stiffness - Nominal

Range (kN)	Stiffness (N/m)
5	2.3 x 10 <sup>8</sup>
10	2.5 x 10 <sup>8</sup>
25	6.3 x 10 <sup>8</sup>
50	1.3 x 10 <sup>9</sup>
100	1.4x 10 <sup>9</sup>
250	3.5 x 10 <sup>9</sup>
500	5.6 x 10 <sup>9</sup>
1000	1.2 x 10 <sup>10</sup>

## 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.
- AO = Average of tension and compression outputs for full load.

## Connections

The ranges above 5kN are fitted with 2 metres of PVC insulated 4 core screened cable type 16-2-4C or a 4 pin Binder 723 series chassis plug. The 5kN range is fitted with 2 metres of PVC insulated 4 core screened cable type 7-2-4C, the connector option is not available on this range.

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

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

## Files

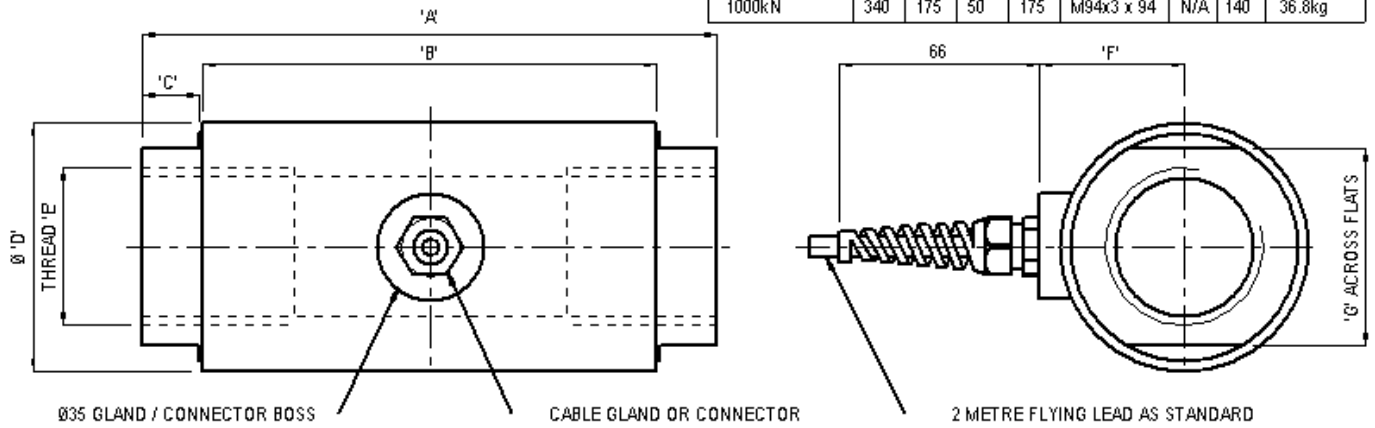
Type	Title	Download
STEP File	F317-T/C/U-FR0K0 5kN (500kgf)	<a href="#">Download</a>
STEP File	F317-T/C/U-FR0K0 10 to 50kN (1 to 5tonnef)	<a href="#">Download</a>
STEP File	F317-T/C/U-FR0K0 100 to 250kN (10 to 25tonnef)	<a href="#">Download</a>
STEP File	F317-T/C/U-FR0K0 500kN (50tonnef)	<a href="#">Download</a>
STEP File	F317-T/C/U-FR0K0 1000kN (100tonnef)	<a href="#">Download</a>
STEP File	F317-T/C/U-PR0K0 10 to 50kN (1 to 5tonnef)	<a href="#">Download</a>
STEP File	F317-T/C/U-PR0K0 100 to 250kN (10 to 25tonnef)	<a href="#">Download</a>
STEP File	F317-T/C/U-PR0K0 500kN (50tonnef)	<a href="#">Download</a>
STEP File	F317-T/C/U-PR0K0 1000kN (100tonnef)	<a href="#">Download</a>

# Outline

**NOTES:**

GLAND / CONNECTOR BOSS FITTED ON RANGES FROM 10 TO 500kN ONLY.  
 CHASSIS CONNECTOR OPTION IS NOT AVAILABLE ON THE 5kN RANGE.  
 A CABLE MOUNTED CONNECTOR CAN BE SPECIFIED ON ALL RANGES.

RANGE	A	B	C	D	E	F	G	WEIGHT
5kN	66	47	9	30	M16x2 x 16	N/A	22	0.2kg
10, 25, 50kN	110	80	13	42	M24x2 x 30	28	32	0.7kg
100, 250kN	190	148	19	82	M52x3 x 50	48	65	4kg
500kN	250	198	24	113	M64x4 x 61	64	90	10.6kg
1000kN	340	175	50	175	M94x3 x 94	N/A	140	36.8kg



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