



FLF317

High Performance Fatigue Rated Cylindrical Loadcell

Standard Ranges 0.5, 1, 2.5, 5, 10, 25, 50 and 100tonne (5 to 1000kN)

- Good output symmetry
- High structural load limit
- Fatigue rated
- Sealed to IP65
- Flying lead or connector option



The FLF317 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 FLF204. New thread sizes are employed offering more economic sizing of rod end bearings and improved availability. Altheris can supply suitable rod ends.

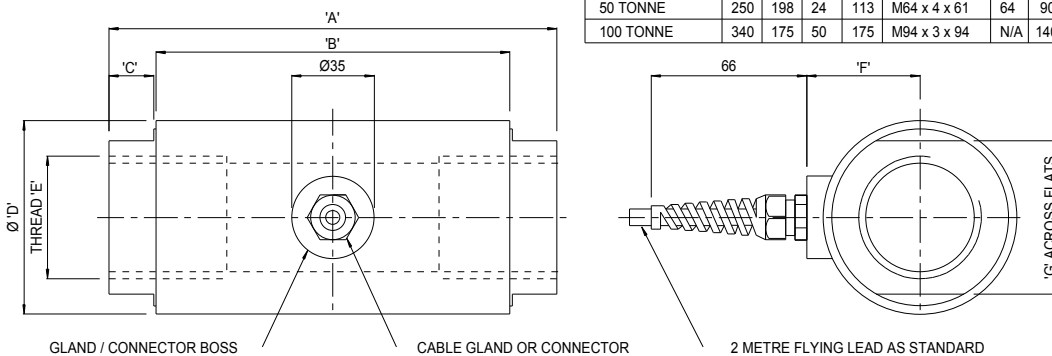
The industry standard fatigue rated loadcell has traditionally been the pancake loadcell, our FLF254 is a typical example. By restricting the nominal output to a safe strain region the cylindrical loadcell offers the same number of full load reverse cycles as a minimum life expectancy. The cylindrical 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.

NOTES:

GLAND / CONNECTOR BOSS FITTED ON RANGES FROM 1 TO 50 TONNES ONLY.
 CHASSIS CONNECTOR OPTION IS NOT AVAILABLE ON THE 0.5 TONNE RANGE.
 A CABLE MOUNTED CONNECTOR CAN BE SPECIFIED ON ALL RANGES.

RANGE	A	B	C	D	E	F	G
0.5 TONNE	66	47	9	30	M16 x 2 x 16	N/A	22
1, 2.5, 5 TONNE	110	80	13	42	M24 x 2 x 30	28	32
10, 25 TONNE	190	148	19	82	M52 x 3 x 50	48	65
50 TONNE	250	198	24	113	M64 x 4 x 61	64	90
100 TONNE	340	175	50	175	M94 x 3 x 94	N/A	140



■ Specifications

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	±0.1	% RL
Output symmetry	±0.2	% AO
Fatigue life	10 ⁸	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	±0.01	% 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	
Weight - Nominal (excluding cable)	0.2 to 33.2	kg

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)
5	2.3 x 10 ⁸	50	1.3 x 10 ⁹	500	5.6 x 10 ⁹
10	2.5 x 10 ⁸	100	1.4 x 10 ⁹	1000	1.2 x 10 ¹⁰
25	6.3 x 10 ⁸	250	3.5 x 10 ⁹		

■ Notes

- AL = Applied load.
- RL = Rated load.
- AO = Average of tension and compression outputs for full load.
- Temperature coefficients apply over the compensated range.
- The load must be applied directly through the central loading axis.

■ Connections

The ranges above 0.5tonne 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 0.5tonne 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 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.

■ Connections

See the loadcell ordering code sheet for more details. Add range in the required units.			
FLF317CFR0K0	Compression, IP65, unrationalised	FLF317CFR0KN	Compression, IP65, rationalised
FLF317TFR0K0	Tension, IP65, unrationalised	FLF317TFR0KN	Tension, IP65, rationalised
FLF317UFR0K0	Bi-directional, IP65, unrationalised	FLF317UFR0KN	Bi-directional, IP65, rationalised
Change ..FR0K0 to ..PR0K0 or ..FR0KN to ..PR0KN for the connector version. Not available on the 0.5tonne range			

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