

F319 Handbrake Loadcell

Standard Range 1kN (100kgf)

- ✓ Low profile with finger grip
- ✓ Precise measurement with uneven load distribution
- ✓ Good extraneous load rejection
- ✓ Force measurement unaffected by handbrake lever angle
- ✓ Connector for easy cable replacement
- ✓ Traceable calibration with certificate included in the standard price



Specification

Parameter	Value	Unit
Non-linearity - Terminal	± 0.05	% RL
Hysteresis	± 0.05	% RL
Creep - 20 minutes	± 0.1	% AL
Repeatability	± 0.02	% RL
Rated output - Rationalised	1.0	mV/V
Rationalisation tolerance	± 0.2	% RL
Zero load output	± 4	% RL
Temperature effect on rated output per $\hat{A}^{\circ}\text{C}$	± 0.005	% AL
Temperature effect on zero load output per $\hat{A}^{\circ}\text{C}$	± 0.01	% RL
Temperature range - Compensated	-10 to +50	$^{\circ}\text{C}$
Temperature range - Safe	-10 to +80	$^{\circ}\text{C}$
Excitation voltage - Recommended	10	V
Excitation voltage - Maximum	10	V
Bridge resistance	350	$\hat{I}\text{C}$
Insulation resistance - Minimum at 50Vdc	500	$\text{M}\hat{I}\text{C}$

Structural stiffness - Nominal	1.4 x 10 ⁷	N/m
Overload - Safe	50	% RL
Overload - Ultimate	100	% RL
Sealing	IP65	
The standard range is manufactured in aluminium.		

The F319 handbrake loadcell offers an excellent technical solution to measurement of an ergonomic force.

The double shear web design and rigid low profile finger grip combine to maintain the same precision of measurement along the entire finger grip length. The typical unevenly distributed force applied by the human hand is measured with good repeatability and minimum error in a sense normal to the lever axis. The F319 has been fitted directly to a handbrake lever and also adapted for production tests by using an easy fit socket moulding, as care must be taken to ensure that the hand clamping forces are not measured in addition to the handbrake pull force the moulding used a 'dorsal fin' to ensure hand clamping was avoided. Application Tests Uneven Hand Loading Errors The uneven load distribution of a human hand has been replicated by applying point loads over the length of the loadcell. In the worst case, the extreme ends, the error is limited to <1% of the applied force. Handbrake Angle Vector Errors The F319 handbrake loadcell measures force perpendicular or normal to the handbrake lever. Variations of lever inclination angle can produce angular deviations between the applied force and the loadcell's normal measurement axis. For angular deviations up to 33° to the loadcell's normal axis the load errors are limited to <1% of the applied force.

Order Codes

Code	Description
F319CFR0HN	Compression, IP65, rationalised

Notes

- AL = Applied load.
- RL = Rated load.
- Temperature coefficients apply over the compensated range.

Connections

The F319 loadcell is fitted with 2 metres of PVC insulated 4 core screened cable type 7-1-4C.

The cable is connected to the loadcell with a miniature 4 pin connector so that cable can be easily replaced if it is damaged.

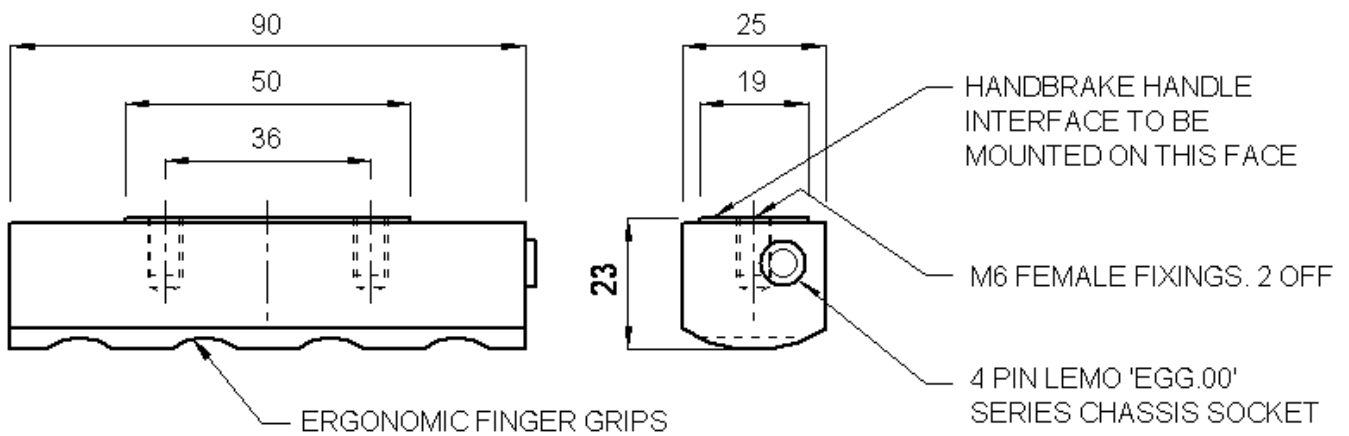
Excitation + = Red, Excitation - = Blue, Signal + = Yellow, Signal - = Green, Screen = Orange.

The screen is not connected to the loadcell body.

Files

Type	Title	Download
STEP File	F319CFR0H0 1kN (100kgf)	Download

Outline



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