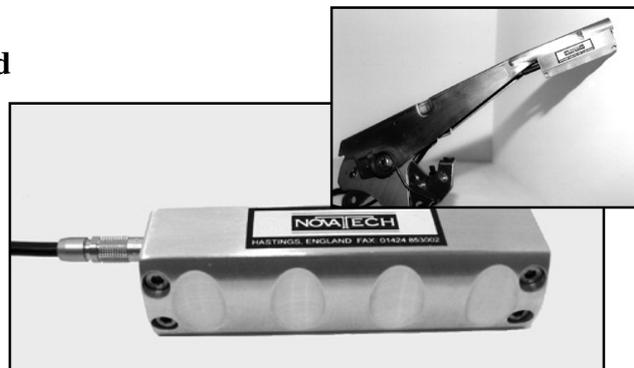


## F319

### Handbrake Loadcell Standard Range 1kN (100kg)

- ◆ 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



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.

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 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.		
F319CFR0HN	Compression, IP65, rationalised		

## F319 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 °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	10	V
Bridge resistance	350	Ω
Insulation resistance - Minimum at 50Vdc	500	MΩ
Structural stiffness - Nominal	1.4 x 10 <sup>7</sup>	N/m
Overload - Safe	50	% RL
Overload - Ultimate	100	% RL
Sealing	IP65	
Weight - Nominal (excluding cable)	100	g

The standard range is manufactured in aluminium.

## 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.

### Notes

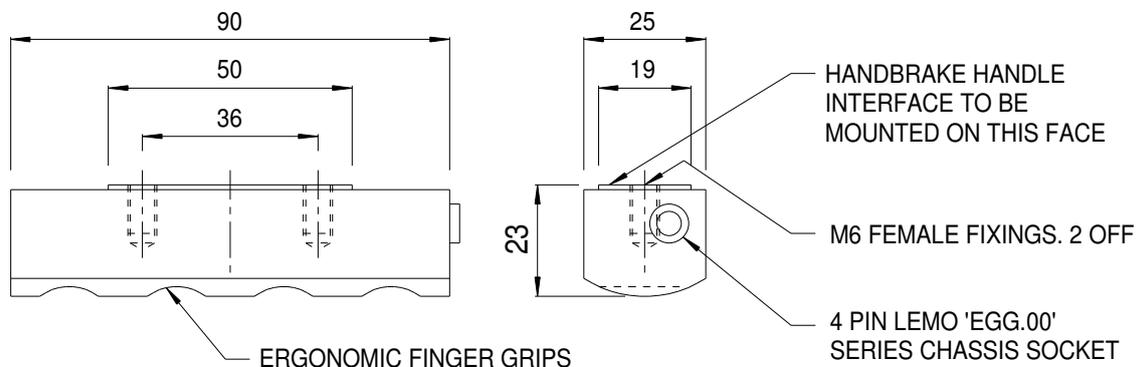
1. AL = Applied load.
2. RL = Rated load.
3. Temperature coefficients apply over the compensated range.

### 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                      Signal + = Yellow                      Screen = Orange  
Excitation - = Blue                      Signal - = Green

The screen is not connected to the loadcell body.



Novatech reserves the right to vary the foregoing details without prior notice

01/2012

## NOVATECH MEASUREMENTS LTD

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