



F321

Gear Shift Loadcell

Standard Range $\pm 200\text{N}$ ($\pm 20\text{kg}$)

- ◆ Gear lever actuation forces measured in 3 axes
- ◆ User friendly pure calibrated outputs for each axis
- ◆ Designed for hand or robotic actuation
- ◆ In car ergonomic replication
- ◆ Easily customised



The F321 gear shift loadcell measures gear lever forces required to achieve gear selection. An ergonomically designed gear knob senses the force from a human hand or a mechanical actuator. The three axis force components are represented by three pure loadcell output signals. The gear shift loadcell is supplied calibrated and ready to use, no in-situ calibration or mathematical computation is required.

Easy fitment is achieved with mechanical axis referencing and simple attachment to a male thread or adapter.

The gear shift loadcell, like all our automotive products, can be produced for environmental test chamber temperature requirements of -40 to 80°C .

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 Loadcell Specifier Guide. If you require a copy please contact our sales department or look on our web site at www.novatechloadcells.co.uk.

Ordering Codes:	See the loadcell ordering code sheet for more details. Add range in the required units.		
F321UF0000	Bi-directional, unrationalised		

F321 Specification

Parameter		Value	Unit
Non-linearity - Terminal		±0.5	% RL
Hysteresis		±0.5	% RL
Creep - 20 minutes		±0.1	% AL
Repeatability		±0.02	% RL
Maximum cross talk		3	% RL
Rated output - Nominal		1.0	mV/V
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	X & Y axes	350	Ω
	Z axis	700	Ω
Insulation resistance - Minimum at 50Vdc		500	MΩ
Structural stiffness – Nominal	X & Y axes	2.0 x 10 ⁶	N/m
	Z axis	1.3 x 10 ⁶	N/m
Overload - Safe		50	% RL
Overload - Ultimate		100	% RL
Weight - Nominal (excluding cable)		150	g

The standard range is manufactured in aluminium.

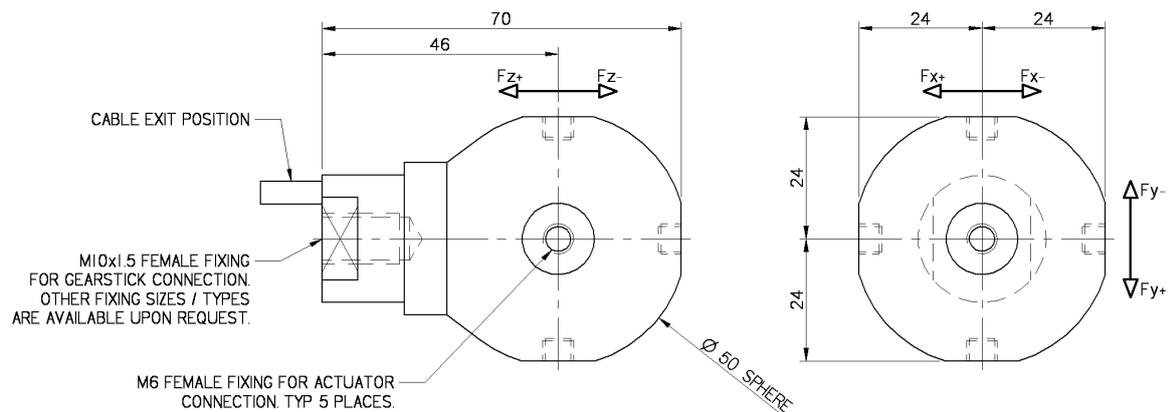
Notes

1. AL = Applied load.
2. RL = Rated load.
3. Temperature coefficients apply over the compensated range.
4. Values apply to all axes unless otherwise specified.

Connections

The F321 is fitted with 2 metres of PVC insulated 12 core screened cable type 7-1-12C. The screen is not connected to the loadcell body.

Function	Wire Colour		
	X axis	Y axis	Z axis
Excitation +	Red	Violet	Orange
Excitation -	Blue	Black	Turquoise
Signal +	Yellow	Brown	Pink
Signal -	Green	White	Grey
Screen	Orange (thick)		



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

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