

## F321 Gear Shift Loadcell

### Standard Range 200N (20kgf)

- ✓ 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
- ✓ Traceable calibration with certificate included in the standard price



### 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 $\hat{A}^{\circ}\text{C}$	±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 X & Y axis	350	$\hat{\text{I}}\text{C}$
Z axis	700	$\hat{\text{I}}\text{C}$

Insulation resistance - Minimum at 50Vdc	500	MÎ©
Structural stiffness - Nominal - X & Y axis	2.0 x 10 <sup>6</sup>	N/m
Z axis	1.3 x 10 <sup>6</sup>	N/m
Overload - Safe	50	% RL
Overload - Ultimate	100	% RL
Weight - Nominal (excluding cable)	150	g

## 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.

### Order Codes

Code	Description
F321UF0000	Bi-directional, unrationalised

### Notes

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

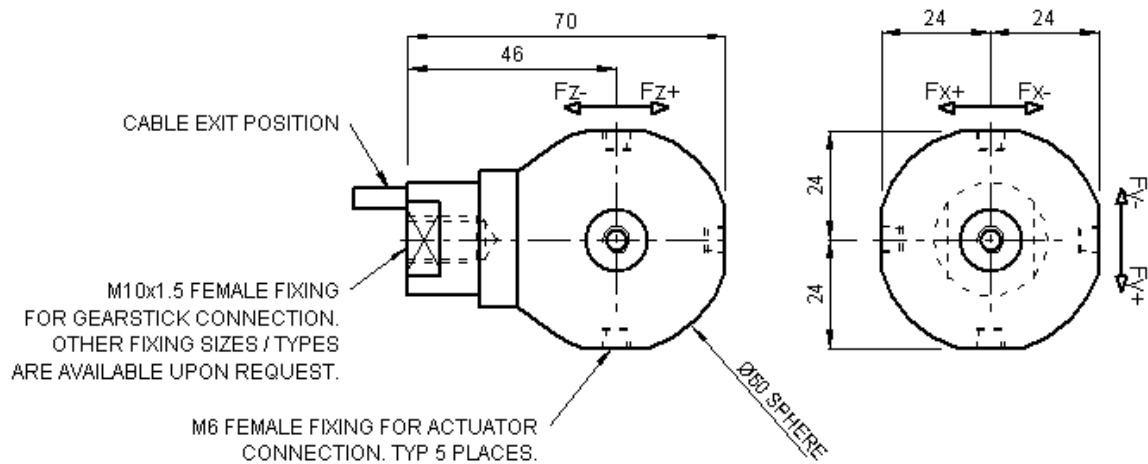
Function	Wire Colour
----------	-------------

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

## Files

Type	Title	Download
STEP File	F321UF0000 200N (200kgf)	<a href="#">Download</a>

## Outline



## Novatech Measurements Limited

83 Castleham Road, St Leonards on Sea, East Sussex, TN38 9NT, England.

**Telephone:** +44 (0)1424 852744

**Fax:** +44 (0)1424 853002

**E-mail:** [info@novatechloadcells.co.uk](mailto:info@novatechloadcells.co.uk)