

## F314 2 Axis Loadcell

Ranges 2kN to 10kN (200kgf to 1tonnef)

- ✓ Low cross talk
- ✓ Custom force ranges
- ✓ Simple installation
- ✓ Direct output from each axis without calculation
- ✓ Moment arm immune versions
- ✓ Traceable calibration with certificate included in the standard price
- ✓ Standard 1 year warranty



### Specification

| Parameter                                                            | Value      | Unit               |
|----------------------------------------------------------------------|------------|--------------------|
| Non-linearity - Terminal                                             | ±0.1       | % RL               |
| Hysteresis                                                           | ±0.1       | % RL               |
| Creep - 20 minutes                                                   | ±0.1       | % AL               |
| Repeatability                                                        | ±0.02      | % RL               |
| Maximum cross talk                                                   | ±0.02      | % RL               |
| Maximum cross talk                                                   | 1          | % RL               |
| Rated output - Nominal                                               | 1.2        | 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                                        | 350        | Î©   |
| Insulation resistance - Minimum at 50Vdc                 | 500        | MÎ©  |
| Overload - Safe                                          | 50         | % RL |
| Overload - Ultimate                                      | 100        | % RL |
| Sealing                                                  | IP65       |      |
| Weight - Nominal (excluding cable)                       | 0.3 to 0.8 | kg   |
| All standard ranges are manufactured in stainless steel. |            |      |

## The F314 measures forces in two axes at 90°. Apart from error evaluations, each output is pure and requires no mathematical manipulation.

The loadcell is ideally suited to many industrial and scientific applications, including automotive research. The integral spherical bearing removes the possibility of applying moments to the loadcell. If rigid fixings are required and moments are present the performance specification may be affected, our engineering department would be happy to evaluate performance changes. The loadcell can be manufactured with force ranges to suit the application. Please consult our engineering department about the viability of the required ranges. The example shown in the picture and drawing is a 2kN (200kgf) model; there will be small differences in the dimensions of the fixings for other ranges. We are happy to design variants of this loadcell to meet your specific requirements. Versions can be manufactured for higher temperature operation. Please consult our engineering department. Additional information on specifying a multi-axis loadcell can be found in Engineering Sheet E015.

### Order Codes

| Code                                                                                             | Description |
|--------------------------------------------------------------------------------------------------|-------------|
| Most F314 loadcells are manufactured to special requirements and are given an F314-Zxxxx number. |             |

### Structural Stiffness - Nominal

| Range (kN)    | Stiffness (N/m)       |
|---------------|-----------------------|
| 2 (per axis)  | 1.5 x 10 <sup>7</sup> |
| 10 (per axis) | 8 x 10 <sup>7</sup>   |

## Notes

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

## Connections

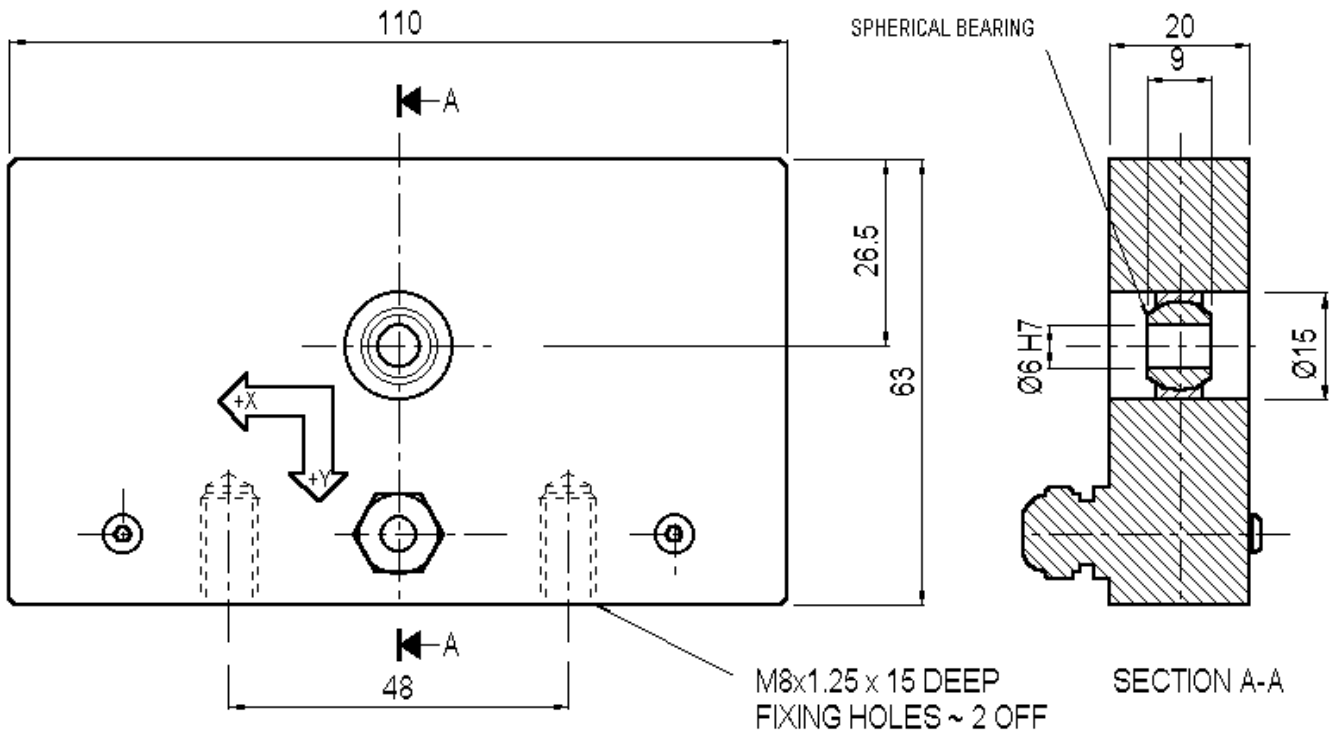
The F314 is fitted with 2 metres of PVC insulated 9 core screened cable type 7-1-9C. The screen is not connected to the loadcell body.

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

## Files

| Type      | Title                   | Download                 |
|-----------|-------------------------|--------------------------|
| STEP File | F314UFR0H0 2kN (200kgf) | <a href="#">Download</a> |

## Outline



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