

## F310 Axial Force And Torque Transducer

### Range 50N and 2Nm

- ✓ Low cross talk
- ✓ Custom ranges
- ✓ Simple installation
- ✓ Direct outputs without calculation
- ✓ Traceable calibration with certificate included in the standard price
- ✓ Standard 1 year warranty



### Specification

| Parameter  | Value      | Unit               |
|--|------------|--------------------|
| Non-linearity - Terminal   | ±0.05      | % RL               |
| Hysteresis   | ±0.05      | % RL               |
| Creep - 5 minutes  | ±0.1       | % AL               |
| Repeatability  | ±0.05      | % RL               |
| Maximum cross talk   | 1          | % RL               |
| Rated output - Nominal   | 0.6        | mV/V               |
| Rated output - Rationalised  | 0.5        | mV/V               |
| Rationalisation tolerance (applies to single direction calibrations) | ±0.5       | % 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 $\hat{A}^{\circ}\text{C}$ | ±0.02      | % 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 | $\hat{I}\odot$  |
| Insulation resistance - Minimum at 50Vdc         | 500 | $M\hat{I}\odot$ |
| Overload - Safe                                  | 50  | % RL            |
| Overload - Ultimate                              | 300 | % RL            |
| Weight - Nominal (excluding cable)               | 250 | g               |
| The standard range is manufactured in aluminium. |     |                 |

## Geometry: Monocoque strain structure with no moving parts.

The F310 depicted measures force and torque in the same axis with minimal cross talk providing user friendly outputs for direct measurement without mathematical manipulation. Each channel may be calibrated bi-directionally. The version of the transducer depicted was developed for an OEM producing texture analyser machines (rheometers) for use in the food process industry. We are happy to design variants of this loadcell to meet your specific requirements. Variants may include different combinations of force and moment axis e.g.  $F_xM_z$ ,  $F_yM_x$ ,  $F_zM_y$  etc. Additional information on specifying a multi-axis loadcell can be found in Engineering Sheet E015.

### Order Codes

| Code   | Description |
|--|-------------|
| Most F310 loadcells are manufactured to special requirements and are given an F310-Zxxxx number. |             |

### Notes

- AL = Applied load.
- RL = Rated load.
- Temperature coefficients apply over the compensated range.
- Values apply to force and moment in all load combinations.
- Extraneous forces or torques other than those calibrated may create moment errors.

### Connections

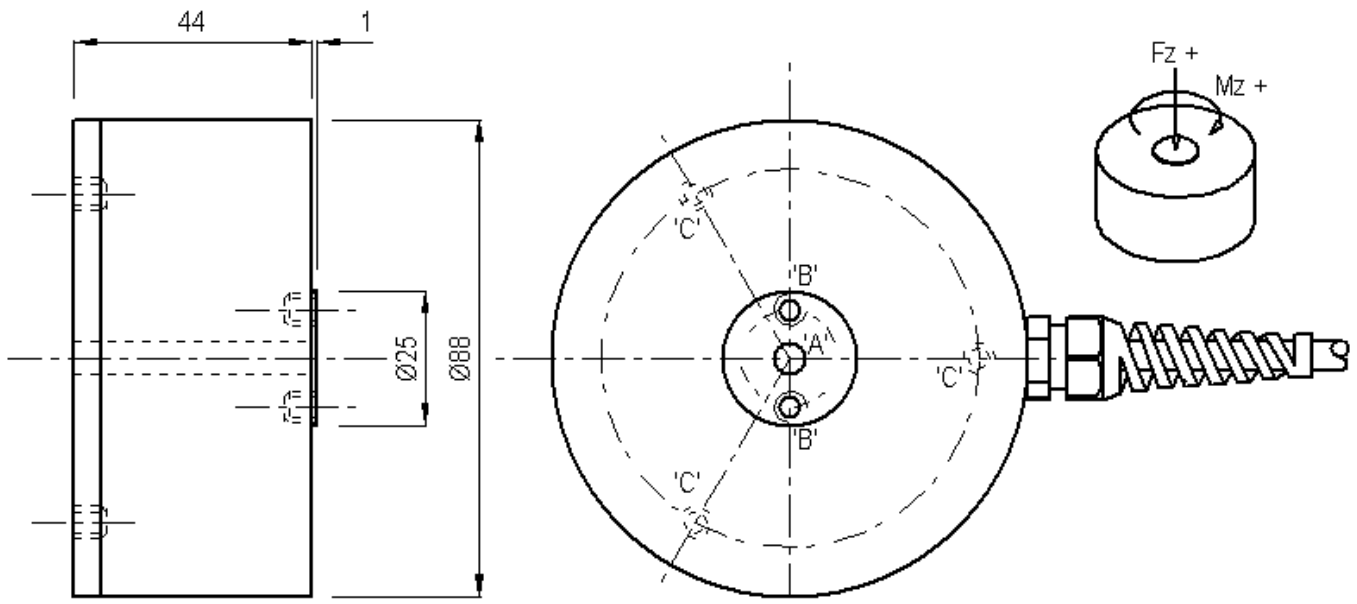
The F310 is fitted with 2 metres of PVC insulated 9 core screened cable type 7-1-9C. The screen is not connected to the loadcell body.

| Function     | Wire Colour |
|--------------|-------------|
| Excitation + | Red         |
| Excitation - | Blue        |
| Signal +     | Yellow      |
| Signal -     | Green       |
| Screen       | Orange      |

## Files

| Type      | Title                          | Download                 |
|-----------|--------------------------------|--------------------------|
| STEP File | F310UF00H0 All standard ranges | <a href="#">Download</a> |

## Outline



'A' Ø6 THRO. 'B' M6x1 ON A 18 PCD - 2 OFF. 'C' M6x1 EQUI SPACED ON A 70 PCD - 3 OFF

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