

## ALF232 | ALF233

### Dual or triple axis load cell

- Measurement ranges  $\pm 100$  N to  $\pm 5$  kN
- Tension / compression
- Non-linearity 0.5 % RL
- Output signal 1.2 mV/V
- Supply voltage 10 VDC

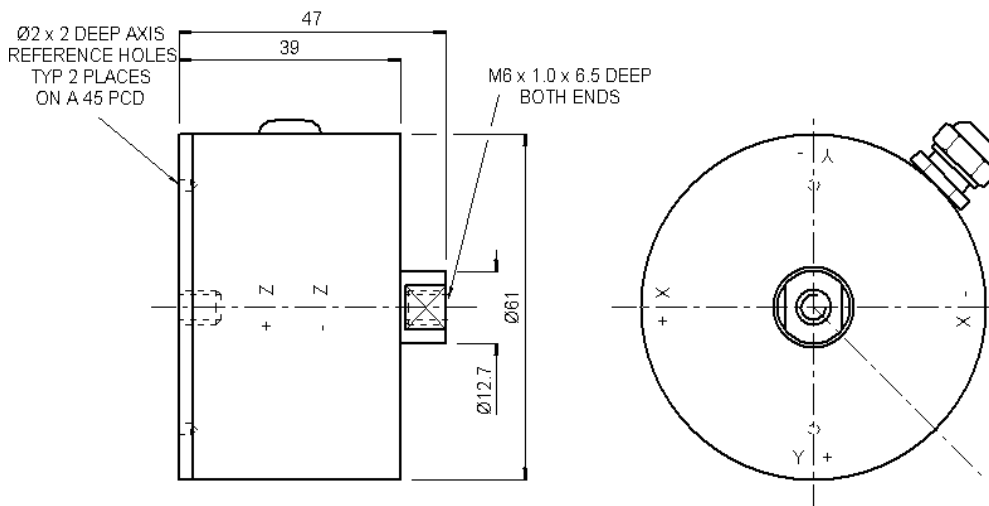


The ALF232 measures forces in two axes at 90° and the ALF233 measures forces in 3 mutually perpendicular axes. Apart from error evaluations, each output is pure and requires no mathematical manipulation. The load cell is moment sensitive requiring calibration to be carried out at a specified force centre. The standard centre is specified in the specification. If this is not suitable for your application please consult our engineering department about alternative calibrations.

The ALF232/3 is ideally suited to many industrial and scientific applications, including automotive and medical research.

The load cell can be manufactured with force ranges to suit the application. The Z axis can have a different force range from the X and Y axes. Please consult our engineering department about the viability of the required ranges. The example shown in the picture and drawing is a  $\pm 500$  N model; there will be small differences in the dimensions for other ranges.

#### ■ Dimensions



Model with 500 N rated load (example)

Dimensions in „mm“, approx. values

These drawings are for information only and not intended for construction purpose. Please contact us for detailed drawings.

## ■ Specification

Rated load:	±100 N to ±5 kN	
Calibration:	compression, tension or compression/tension	
Non-linearity, terminal:	±0.5 % RL	
Hysteresis:	±0.5 % RL	
Creep, 20 min:	±0.1 % AL	
Repeatability:	±0.02 % AL	
Maximum cross talk	3 % RL	
Calibration force center:	x = 0, y = 0, z = -4.5 mm	
Rated output, nominal:	1.2 mV/V	
Zero load output:	±4 % RL	
Temperature effect on rated output:	±0.005 % AL/K	
Temperature effect on zero load output:	±0.01 % RL/K	
Compensated temperature range:	-10 ... +50 °C	
Operating temperature range:	-10 ... +80 °C	
Supply voltage, recommended:	10 V	
Supply voltage, max.:	10 V	
Bridge resistance:	X and Y axis:	350 Ohm
	Z axis:	700 Ohm
Insulation resistance, minimum at 50 VDC:	500 MOhm	
Overload, safe:	150 % RL	
Overload, ultimate:	200 % RL	
Weight (excl. cable):	approx. 200 g	
Material:	Aluminium or stainless steel, depending on load range	

Rated load	Structural stiffness, nom.	Rated load	Structural stiffness, nom.
100 N (per axis)	4.3 x 10 <sup>6</sup> N/m	5 kN (per axis)	2.1 x 10 <sup>8</sup> N/m

### Notes:

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

## ■ Electrical Connections

The ALF232 is fitted with 2 m of PVC insulated 9 core screened cable type 7-1-9C. The ALF233 is fitted with 2 m of PVC insulated 12 core screened cable type 7-1-12C.

### Wiring:

Function	X axis	Y axis	Z axis
+ supply voltage	red	violet	orange
- supply voltage	blue	black	turquoise
+ output signal	yellow	brown	pink
- output signal	green	white	grey
screen	orange (thick)		
The screen is not connected to the load cell body.			

## ■ Ordering Codes

<b>ALF232-Zxxxx</b>	2 axis loadcell	<b>ALF233-Zxxxx</b>	3 axis loadcell
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Most ALF232/3 load cells are manufactured to special requirements and are given an ALF232-Zxxxx or ALF233-Zxxxx number. Please add range in the required units.

### Safety note:

When using the load cell in tension mode it is essential to provide additional safety precautions like safety chains etc. for catching the load in a breakage, which cannot be excluded completely.

Due to continual product development, ALTHEN and partners reserve the right to vary the foregoing details without prior notice.

