



N ALF330
Load Cell

FATIGUE RATED, HIGH STIFFNESS, LOW RANGE LOAD CELL

- Measurement ranges 0 ... 0.5 N to 0 ... 20 N
- Tension / compression
- Non-linearity ± 0.2 % RL
- Output signal 0.6 mV/V or rationalised 0.5 mV/V ± 0.5 %
- Supply voltage 10 VDC max.



The ALF330 low range load cell has been developed to meet a growing need for high resolution, low range force measurement with minimal translational deflection. The high stiffness of these load cells, combined with their robust construction, lends themselves particularly well to dynamic and/or fatigue applications.

The minimum fatigue life of 108 fully reversed RL cycles can be greatly extended if the cycles occur below full rated load.

Both the ALF328 and ALF329 load cell product types offer excellent performance but rely on a comparatively low stiffness strain mechanism. The ALF329 in particular

requires a reduced output sensitivity in order to maintain some level of robustness. The ALF330 on the other hand offers some advantages over both and also benefits from a purely mechanical resistance to sideloads and vectors. Sideloads up to 25% RL can be withstood for as little as 2% RL error. Similarly, misalignment of up to 3° swept 360° around the measurement axis typically yields no more than 1% RL error.

The strain section within the housing is a separate mono-coque structure, allowing repairs to be made quickly and cheaply in comparison to other low range load cells. Other housing designs and fixing arrangements are therefore possible.

SPECIFICATION

Rated load, stat.:	0.5 N / 1 N / 2.5 N / 5 N / 10 N / 20 N
Calibration:	compression, tension, bi-directional
Non-linearity, terminal:	± 0.2 % RL
Hysteresis:	± 0.1 % RL
Creep, 20 min:	± 0.2 % AL
Repeatability:	± 0.02 % RL
Rated output, nom.:	0.6 mV/V
Rated output, rationalised:	0.5 mV/V ± 0.5 % RL Rationalisation tolerance applies to single direction calibrations only
Output symmetry:	± 1.0 % AO
Fatigue life:	10 ⁸ RL cycles
Zero load output:	± 10 % RL
Temperature effect on rated output:	± 0.005 % AL/K
Temperature effect on zero load output:	± 0.02 % 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:	350 Ω
Insulation resistance, minimum at 50 VDC:	500 M Ω



Overload, safe:	150 % RL
Overload, ultimate:	200 % RL
Dynamic load capacity:	70 % RL
Weight without cable:	approx. 35 g
Material:	Aluminium

Rated load	Structural stiffness, nom.	Rated load	Structural stiffness, nom.
0.5 N	1.0 x 10 ⁵ N/m	5 N	5.0 x 10 ⁵ N/m
1 N	2.0 x 10 ⁵ N/m	10 N	8.3 x 10 ⁵ N/m
2.5 N	3.2 x 10 ⁵ N/m	20 N	1.3 x 10 ⁶ N/m

Notes:

1. RL = rated load
2. AL = applied load
3. Temperature coefficients apply over the compensated range.
4. AO = Average of tension and compression outputs for full load.

ELECTRICAL CONNECTIONS

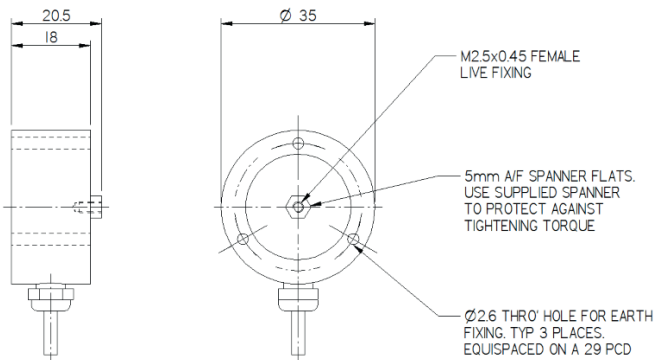
The load cell is fitted with 2 m of PVC insulated 4 core screened cable type 7-1-4C.

Wiring:

+ supply voltage:	red
- supply voltage:	blue
+ output signal:	yellow
- output signal:	green
screen:	orange

The screen is not connected to the load cell body.

DIMENSIONS LOAD CELL



Dimensions in „mm“, approx. values

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

ORDERING CODES

ALF330CF00H0	Compression	ALF330CF00HN	Compression, rationalised
ALF330TF00H0	Tension	ALF330TF00HN	Tension, rationalised
ALF330UF00H0	Bi-directional	ALF330UF00HN	Bi-directional, rationalised

Please add range.

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

The information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. All specifications are subject to change without prior notification.