N ALF 320

Description

- Measurement ranges 0 ... 5 kN to 0 ... 50 kN
- Tension / Compression
- Non-linearity 0.05 % RL
- Output signal 1.2 mV/V or rationalised 1.0 mV/V ±0.1 %
- Supply voltage 10 VDC, max. 20 VDC

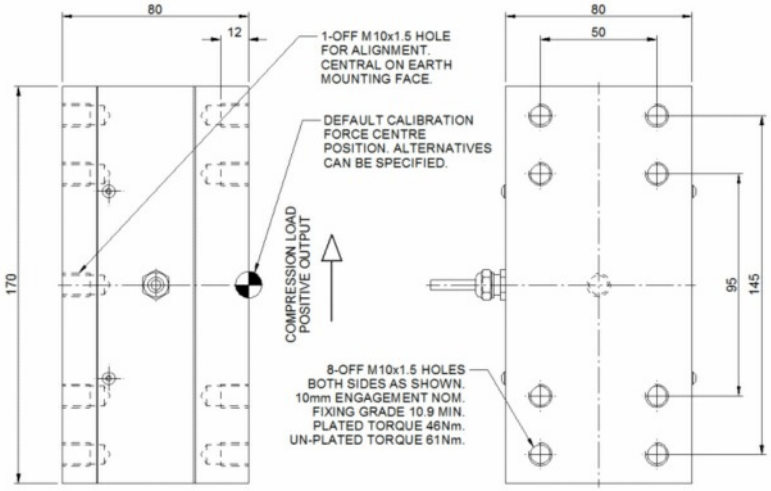
The ALF320 is a heavy duty variant on the binocular bending beam loadcell. It is intended for pure force measurement, but targeted at applications involving large moments/moment arms. The loadcell is designed to be bolted to a large, flat surface and used as a bracket to support a cantilever beam. A cantilever bracket loadcell can be used at both ends to fully support the beam, provided thermal expansion is allowed for somewhere in the system. The ALF320 can also be mounted against a floor or ceiling plate to act as a strut support in much the same way. The ALF320 is able to support large sideloads without effecting measurements.

The binocular bending beam construction has good moment immunity resulting in very small errors for changes in the force application point. This point may vary not only in terms of distance along the cantilever beam, but also in a manner that would apply a small torque around the axis of the beam. Although the loadcell is compensated for induced errors, there is a maximum supported moment for each range. Standard ALF320 loadcells can withstand full rated load at half a metre full cantilever. Further details are given in engineering sheet A037. It is important to contact our engineering department to discuss loadcell selection to suit any load application or range.

Features

- Custom force ranges available
- Simple installation
- Excellent Moment rejection 1 % AL error at 500 mm moment arm
- High structural stiffness
- Traceable calibration with certificate

Dimensions



Dimensions in „mm", approx. values

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

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Specifications

Parameter	Value
Rated load:	5 kN / 10 kN / 20 kN / 50 kN
Non-linearity, terminal:	±0.05 % RL
Hysteresis:	±0.05 % RL
Creep, 20 minutes	±0.05 % AL
Repeatability:	±0.02 % RL
Rated output, nominal:	1.2 mV/V
Rated output, rationalised:	1.0 mV/V ±0.1 % RL (Rationalisation tolerance applies to single direction calibrations only)
Output symmetry:	±0.2 % AO
Fatigue life:	10^8 ±RL cycles
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.:	20 V
Bridge resistance:	700 Ω
Insulation resistance, minimum at 50 VDC:	500 MΩ
Overload (applied at loadcell face), safe:	200 % RL
Overload (applied at loadcell face), ultimate:	300 % RL
Overload (applied 500 mm from loadcell face), safe	125 % RL
Overload (applied 500 mm from loadcell face), ultimate	150 % RL
Dynamic load capacity:	70 % RL
Ultimate sideload capacity:	100 % RL
Sealing:	IP65
Weight (excl. cable):	8.5 kg Material
	stainless steel

Rated load	Structural stiffness, nom.
5 kN	2.3×10^8 N/m
10 kN	5.0×10^8 N/m
20 kN	1.8×10^9 N/m
50 kN	7.1×10^9 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

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

All ranges are fitted with 2 m of PVC insulated 4 core screened cable type 16-2-4C cable.

Reverse the signal connections to obtain a positive signal in tension mode.
The screen is not connected to the loadcell body.

Ordering Codes

ALF320CFR0K0	Compression, IP65	ALF320CFR0KN	Compression, rationalized, IP65
ALF320TFR0K0	Tension, IP65	ALF320TFR0KN	Tension, rationalized, IP65
ALF320UFR0K0	Bi-directional, IP65	ALF320UFR0KN	Bi-directional, rationalized, IP65

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.

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