

N ALF 313

Description

- Measurement ranges 0 ... 10 kN to 0 ... 200 kN
- Compression
- Non-linearity 0.5 % RL
- Output signal 1.3 mV/V or rationalised 1.0 mV/V ± 0.5 %
- Supply voltage 10 VDC

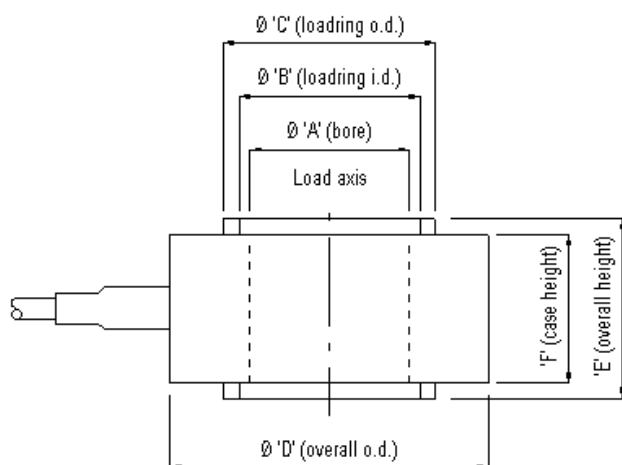


The ALF313 is ideally suited to engineering force measurements. It is designed for easy installation, usually between two flat faces bearing on its loading rings, either unattached or with retaining spigots positioned in the centre hole. Alternatively tensile load transfer can be achieved via a tie rod assembly through the centre hole. In this way the load cell can indirectly measure tensile loads in a "fail-safe" mode.

Features

- Low profile with centre hole
- Ranges to suit bolt sizes from M6 tom M36
- Stainless steel construction
- Sealed to IP65
- Traceable calibration with certificate

Dimensions



Rated load	Bolt size	A	B	C	D	E	F
10 kN	M6	6.1	7.1	8.9	18	15	11
20 kN	M8	8.1	9.5	12.3	22	15	11
40 kN	M10	10.2	12.3	16.5	28	16	11
80 kN	M12	12.2	15.4	21.9	38	20	14
100 kN	M16	16.3	19.6	26.2	42	24	18
120 kN	M24	24.3	27.3	33.3	50	29	23
160 kN	M30	30.5	33.8	40.3	60	35	28
200 kN	M36	36.5	40	46.9	75	36	28

Dimensions in „mm“, approx. values

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

Specifications

	Model 1	Model 2
Rated load:	10 kN	20 / 40 / 80 / 100 / 120 / 160 / 200 kN
Non-linearity, terminal:	±0.5 % RL	±0.5 % RL
Hysteresis:	±0.5 % RL	±0.5 % RL
Creep, 20 min:	±0.1 % AL	±0.1 % AL
Repeatability (excluding rotational effects):	±0.1 % RL	±0.1 % RL
Rated output, nominal:	1.3 mV/V	1.3 mV/V
Rated output, rationalised:	1.0 mV/V ±0.5 % RL	1.0 mV/V ±0.5 % RL
Zero load output:	±4 % RL	±4 % RL
Temperature effect on rated output:	±0.005 % AL/K	±0.005 % AL/K
Temperature effect on zero load output:	±0.03 % RL/K	±0.03 % RL/K
Compensated temperature range:	-10 ... +50 °C	-10 ... +50 °C
Operating temperature range:	-10 ... +80 °C	-10 ... +80 °C
Supply voltage, recommended:	10 V	10 V
Supply voltage, max.:	10 V	20 V
Bridge resistance:	350 Ω	700 Ω
Insulation resistance, minimum at 50 VDC:	500 MΩ	500 MΩ
Overload, safe:	150 % RL	150 % RL
Overload, ultimate:	400 % RL	400 % RL
Dynamic load capacity:	70 % RL	70 % RL
Environmental sealing:	IP65	IP65
Weight (excl. cable):	approx. 15 g	approx. 20 g to 260 g
Material:	Stainless steel	Stainless steel

Rated load	Structural stiffness, nom.	Rated load	Structural stiffness, nom.	Rated load	Structural stiffness, nom.
10 kN	1.1 x 10 ⁹ N/m	80 kN	8.8 x 10 ⁹ N/m	160 kN	8.0 x 10 ⁹ N/m
20 kN	2.2 x 10 ⁹ N/m	100 kN	7.7 x 10 ⁹ N/m	200 kN	1.0 x 10 ¹⁰ N/m
40 kN	4.4 x 10 ⁹ N/m	120 kN	7.1 x 10 ⁹ N/m		

Notes:

1. RL = rated load
2. AL = applied load
3. Temperature coefficients apply over the compensated range.
4. The load must be applied directly through the central loading axis.
5. When this load cell is rationalised the resistors are housed in a capsule located in the load cell cable 100 mm from the free end. Capsule dimensions are Ø10 mm by 57 mm.

Electrical Connections

For ranges up to 40 kN the load cell is fitted with 2 m of PVC insulated 4-core screened cable type 7-1-4C. Ranges above 40 kN are fitted with 7-2-4C cable.

The screen is not connected to the load cell body.

Wiring:

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

Ordering Codes

ALF313CFR0K0-xx	Compression, IP65, xx = rated load (20 kN and above)	ALF313CFR0KN-xx	Compression, IP65, rationalised, xx = rated load (20 kN and above)
ALF313CFR0H0-10kN	Compression, IP65, rated load 10 kN	ALF313CFR0HN-10kN	Compression, IP65, rationalised, rated load 10 kN

If a non-standard cable length is required add this to the description and change the F to B. If bottom cable entry is required add this information to the description.

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.

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