N ALF 254

Description

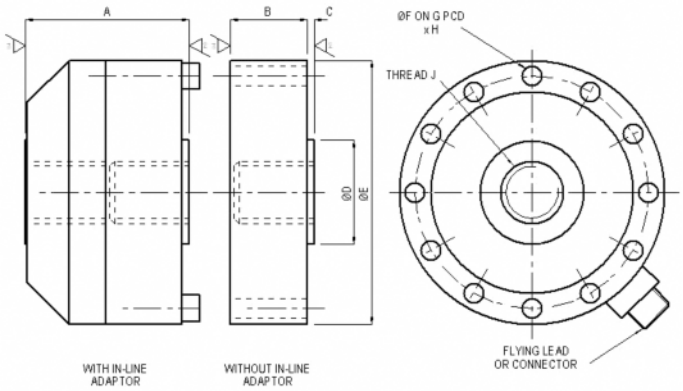
- Measurement ranges 0 ... 25 kN to 0 ... 200 kN
- Tension / compression
- Non-linearity ±0.1 % RL
- Output signal 2.1 mV/V or rationalised 2.0 mV/V ±0.5 %
- Supply voltage 10 VDC, max. 20 VDC
- Optional with integrated electronics

The ALF254 is designed for high levels of cyclic loading and is readily adapted to series mechanical connection within actuator rods or pistons by using our 'in-line' adapter. Geometry: Shear web structure with vertical and lateral mechanical stiffness. The load cell has good output symmetry between compression and tension operation. All standard bi-directional load cells are calibrated in both modes. If you require a recessed boss the ALF318 pancake load cell may be more suitable. The ALF318 has standard ranges from 1 to 500 kN.

Features

- Tension / compression / bi-directional calibration
- Low profile
- Sealed to IP65
- Hardened stainless steel body
- Traceable calibration with certificate

Dimensions



Dimensions	Size 1 [25 kN]	Size 2 [50 kN, 100 kN, 200 kN]
A	66	94
B	30	44
C	4	4
Ø D	34	60
Ø E	125	152
Ø F	8.2	11 Ø
G (PCD)	107	134
H (Number of holes on PCD)	8	12
Thread J	M20 x 1.5	M36 x 3

Note:
The fixing bolts on PCD should be tightened with a torque of approx. 48 Nm (25 kN models with 10 Nm).
Bolt grade 8.8

Load cell and in-line adapter mounting faces are surface ground to flatness of ±0.005 mm. To maintain datasheet performance, components in contact with the load cell mounting faces should have a corresponding flatness.

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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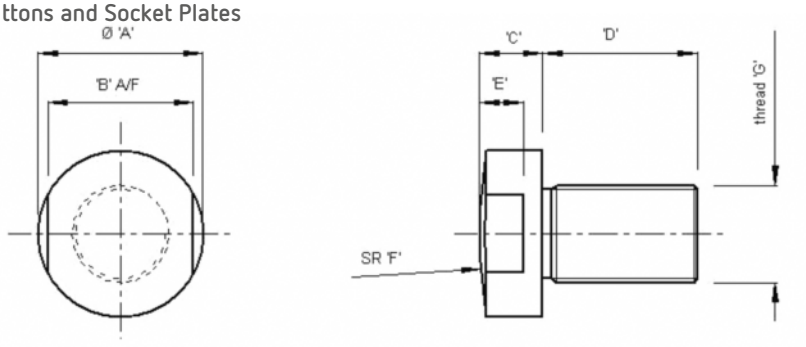
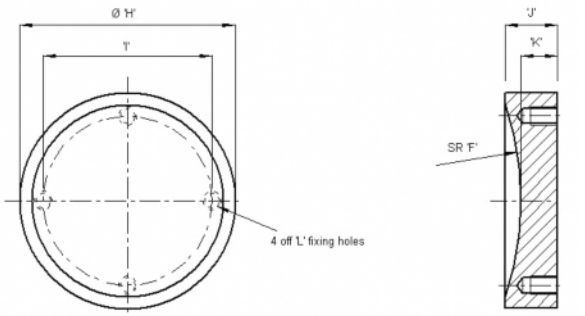
Dimensions (continued)

Load Buttons and Socket Plates



Load Button



Socket Plate

	Size 1	Size 2
Part no. Load Button	254-606	318-612
Part no. Socket Plate	254-607	318-616
A	34	60
B	30	50
C	13	23
D	32	42
E	9	15
F	100	150
G	M20 x 1.5	M36 x 3
H	70	89
I	55	75
J	17	19
K	12	13
L	M6 x 1	M8 x 1.25

Dimensions in „mm", approx. values

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

Specifications

Rated load:	25 kN, 50 kN, 100 kN, 200 kN
Non-linearity, terminal:	±0.1 % RL
Hysteresis:	±0.1 % RL
Creep, 20 min:	±0.05 % AL
Repeatability:	±0.02 % RL
Rated output, nominal:	2.1 mV/V
Rated output, rationalised:	2 mV/V ±0.5 % RL, rationalisation tolerance applies to single direction calibrations only
Output symmetry:	±0.2 % AO (note 3)
Fatigue life:	10^8 RL cycles at 100 % rated load
Zero load output:	±4 % RL
Temperature effect on rated output:	±0.005 % AL/K
Temperature effect on zero load output:	±0.005 % 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 Ohm
Insulation resistance, minimum at 50 VDC:	500 MOhm

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Specifications (continued)

Fixing bolt torque (bolt grade 8.8)	range 25 kN: other ranges:	10 Nm 48 Nm
Overload, safe:	150 % RL	
Overload, ultimate:	300 % RL	
Dynamic load capacity:	70 % RL	
Environmental sealing:	IP65	
Weight (excl. cable):	approx. 1.9 kg (range 25 kN); approx. 4.2 kg (all other ranges)	
Material:	stainless steel	

Rated load	Structural stiffness, nom.	Rated load	Structural stiffness, nom.
25 kN	1.3 x 10^9 N/m	100 kN	1.7 x 10^9 N/m
50 kN	2.6 x 10^9 N/m	200 kN	3.4 x 10^9 N/m

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

Electrical Connections

The load cell is fitted with 2 m of PVC insulated 4 core screened cable type 16-2-4C or a 4 pin Binder 723 series chassis plug.

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

Wiring:		
+ supply voltage:	red	Pin 1
- supply voltage:	blue	Pin 2
+ output signal:	yellow	Pin 3
- output signal:	green	Pin 4
screen:	orange	

Option: Integrated Electronics

The amplifier is built onto the load cell in an additional housing. The dimensions of the load cell will change.

Integrated amplifier with 4 ... 20 mA output 2-wire, supply voltage 24 VDC (20 ... 36 VDC)

Integrated amplifier with 4 ... 20 mA output 3-wire, supply voltage 12 VDC (11.5 ... 12.5 VDC)

Integrated amplifier with 4 ... 20 mA output 3-wire, supply voltage 24 VDC (15 ... 30 VDC)

Integrated amplifier with voltage output ±10 V, supply voltage 14 ... 27 VDC (0 ... 10 V for uni-directional load cells, ±10 V for bi-directional load cells)

Ordering Codes

ALF254CFR0K0	Compression, cable, IP65	ALF254CFR0KN	Compression, cable, IP65, rationalized
ALF254TFR0K0	Tension, cable, IP65	ALF254TFR0KN	Tension, cable, IP65, rationalised
ALF254UFR0K0	Bi-directional, cable, IP65	ALF254UFR0KN	Bi-directional, cable, IP65, rationalised

Change the second F to a P for the connector version.
Please add range in the required units.
Option integrated amplifier: a special order no. ALF254-Zxxx will be created

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.

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