

ALF259

Miniature Diaphragm Load Cell

- Measurement ranges 0 ... 250 N to 0 ... 1000 N
- Tension / compression
- Non-linearity ± 0.5 % RL
- Output signal 1.6 mV/V or rationalised 1.0 mV/V ± 0.5 %
- Supply voltage 5 VDC, max. 10 VDC



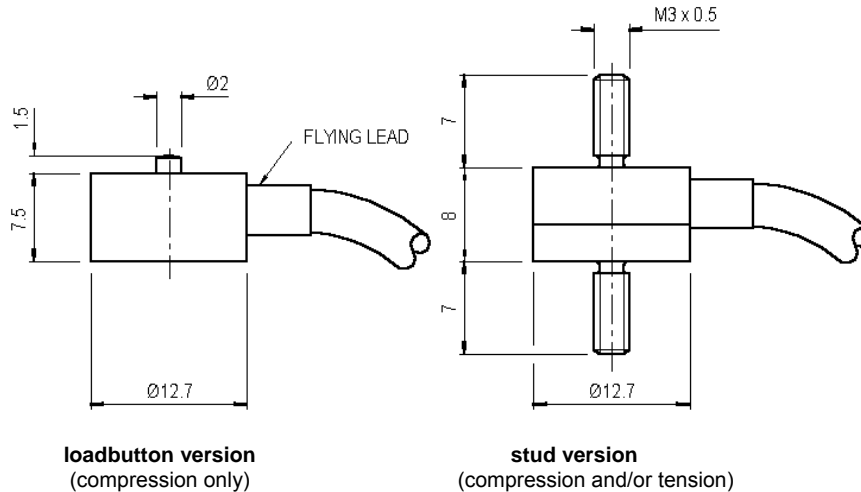
The ALF259 is ideally suited to force measurements in confined spaces in both tension and compression for control of critical parameters in all kinds of industrial processes. Their versatility is such that they are also applied in a great number of important fields of scientific and engineering test work, mobile as well as workshop, static and dynamic.

Geometry:

Very small loadbutton cell for force measurement in confined spaces. Used in compression and/or tension on a wide range of OEM or end-user applications.

With bi-directional versions there is a small difference between the output signal for compression and tension. All standard bi-directional load cells are calibrated in both modes and the output for each direction is stated on the test / calibration 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.

■ Specification

Rated load:	250 N / 500 N / 1000 N
Non-linearity, terminal:	±0.5 % RL
Hysteresis:	±0.5 % RL
Creep, 20 min:	±0.2 % AL
Repeatability:	±0.1 % RL
Rated output, nominal:	1.6 mV/V
Rated output, rationalised:	1.0 mV/V ±0.5 % RL
Zero load output:	±4 % RL
Temperature effect on rated output:	±0.005 % AL/K
Temperature effect on zero load output:	±0.03 % RL/K
Compensated temperature range:	-10 ... +50 °C
Operating temperature range:	-10 ... +80 °C
Supply voltage, recommended:	5 V
Supply voltage, max.:	10 V
Bridge resistance:	350 Ω
Insulation resistance, minimum at 50 VDC:	500 MΩ
Overload, safe:	150 % RL
Overload, ultimate:	200 % RL
Dynamic load capacity:	70 % RL
Sealing:	IP65
Weight (excl. Cable):	approx. 6 g to 7.5 g
Material:	Stainless steel

Rated load	Structural stiffness, nom.	Rated load	Structural stiffness, nom.	Rated load	Structural stiffness, nom.
250 N	1.3 x 10 ⁷ N/m	500 N	2.6 x 10 ⁷ N/m	1000 N	4.7 x 10 ⁷ N/m

Notes:

1. AL = applied load
2. RL = rated load
3. Temperature coefficients apply over the compensated range.
4. The load must be applied directly through the central 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

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

Reverse the signal connections to obtain a positive signal in tension mode. T

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

ALF259CFR0H0	Compression, IP65, loadbutton	ALF259CFR0HN	Compression, IP65, rationalised, loadbutton
ALF259DFR0H0	Compression, IP65, stud	ALF259DFR0HN	Compression, IP65, rationalised, stud
ALF259TFR0H0	Tension, IP65	ALF259TFR0HN	Tension, IP65, rationalised
ALF259UFR0H0	bi-directional, IP65	ALF259UFR0HN	bi-directional, IP65, rationalised

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.

Our policy is to improve specification of our products continuously, so technical and production details can be changed without any notice.