

## ALF328

### Low Force Universal Loadcell

- Measurement ranges from 0 ... 10 N to 0 ... 500 N
- Tension / compression
- Non-linearity 0.15 % RL
- Output signal 1.2 mV/V or rationalised 1.0 mV/V  $\pm 0.5$  %
- Supply voltage 10 VDC, max. 20 VDC



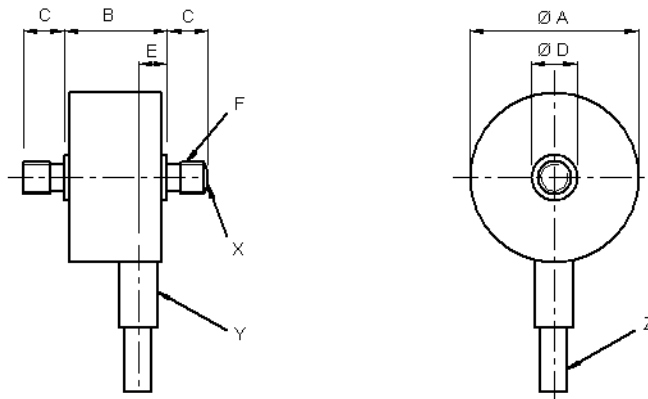
The ALF328 is an axial low force universal load cell with quantified extraneous load and moment rejection. Its high resistance 5000 Ohm strain gauge bridge makes this load cell ideal for battery powered applications such as a laptop computer with a DSC USB load cell digitiser or a hand held TR150 loadmeter.

The strain system exploits a laminated structure producing excellent extraneous force and moment rejection together with minimal translational deflection. The errors present with combinations of side load and associated induced moments have been quantified in Engineering Application Sheet E034.

#### Further Features

- Totally passive design
- Foil strain gauges
- High temperature stability
- Traceable calibration with certificate
- Extraneous load rejection for vectors up to 30° off axis

#### Dimensions



- X Domed loadbutton on live stud
- Y Nominal Ø ,G' rigid cable exit tube
- Z Cable fitted with a Ø10 x 57mmcapsule positioned 100 mm from the free end

Rated load	A	B $\pm 0.3$	C	D	E	Thread F	G
10 to 50 N	Ø24	14.7	6.3	Ø5.5	4.5	M4 x 0.7	Ø5
100 to 500 N	Ø26	16	6.3	Ø7	4.5	M5 x 0.8	Ø6

Dimensions in „mm“, approx. values

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

## ■ Specifications

Parameter	Value
Rated load:	10 N / 20 N / 50 N / 100 N / 200 N / 500 N
Non-linearity, terminal:	±0.15 % RL
Hysteresis:	±0.15 % RL
Repeatability:	±0.05 % RL
Rated output, nominal:	1.2 mV/V
Rated output, rationalised:	1.0 mV/V ±0.5 % RL
Zero load output:	±10 % 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:	5000 Ω
Insulation resistance, minimum at 50 VDC:	500 MΩ
Overload, safe:	150 % RL
Overload, ultimate:	200 % RL
Dynamic load capacity:	70 % RL
Weight (excl. cable):	approx. 9 to 29 g
Material	aluminium (ranges: 10 to 50 N) stainless steel (ranges: 100 to 500 N)

Rated load	Structural stiffness, nom.	Rated load	Structural stiffness, nom.
10 N	$5.3 \times 10^5$ N/m	100 N	$2.2 \times 10^6$ N/m
20 N	$1.0 \times 10^6$ N/m	200 N	$4.3 \times 10^6$ N/m
50 N	$2.6 \times 10^6$ N/m	500 N	$1.1 \times 10^7$ N/m

### Notes:

1. RL = rated load
2. AL = applied load
3. Temperature coefficients apply over the compensated range.
4. This loadcell has compensation components 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.

The screen is not connected to the load cell body.

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

## ■ Ordering Codes

ALF328TF00B0	Tension	ALF328TF00BN	Tension, rationalised
ALF328DF00B0	Compression	ALF328DF00BN	Compression, rationalised
ALF328UF00B0	Bi-directional	ALF328UF00BN	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 continual product development, ALTHEN and partners reserve the right to vary the foregoing details without prior notice.