

Strain Gage Load Cell

Type 4578A...

for Tensile and Compression Forces, 0 ... 0,1 kN up to 0 ... 10 kN

Load cells for tension and compression Type 4578A... can be used in the laboratory and in industrial environments.

- Measuring ranges from 0 ... 0,1 kN to 0 ... 10 kN
- Measuring accuracy better than 0,20 %FSO
- Small
- Stainless steel construction
- Simple mounting

Description

Strain gages are applied to the flexural diaphragms in the load cell are strain gages (DMS) and deliver a bridge output voltage directly proportional to the measurand during concentric load application.

The force being measured must be applied to the thread along the central axis of the Type 4578A... . A force distributing cap or an adapter for the particular application must be used for this purpose, and introduction of shear or torsion avoided.

Lateral forces within $\pm 2,5^\circ$ of the perpendicular force may be neglected. Higher lateral forces must be kept away from the load cell through design measures as shown in the articulated mounting configurations.

The strain gage load cell is available for seven different measuring ranges from 0 ... 100 N to 0 ... 10 kN.

Applications

The standardized rated sensitivity and ease of mounting allow simple retrofitting of existing structures with the load cell. Depending on the particular requirements, static, quasistatic and dynamic tensile and compression forces can be measured.



Technical Data

Direction of measurement		tensile/compression
Measuring ranges	kN	0 ... 0,1 up to 0 ... 10
Maximum working load	%	150
Dynamic load	%	70 (recommended)
Operating temperature range	°C	-20 ... 50
Rated temperature range	°C	15 ... 50
Temperature influence		
on zero	%FSO/K	$\leq \pm 0,02$
on span	%FSO/K	$\leq \pm 0,02$
Weight (without cable)	kg	$\leq 0,5$
Material		stainless steel
Degree of protection (sensor body) (acc. to IEC/EN 60529)		IP42
Bridge resistance		strain gage, full bridge circuit
Input/Output	Ω	350 nominal ¹⁾
Accuracy (Combined value for non-linearity, hysteresis and repeatability with unchanged mounting position)	%FSO	$\leq \pm 0,2$
Reference supply voltage	VDC	≤ 10
Rated sensitivity	mV/V	2,0 \pm 0,005
Zero signal	%FSO	$\leq \pm 3$
Measuring deflection	mm	0,05 ... 0,4

¹⁾ Deviations may occur

Dimensions

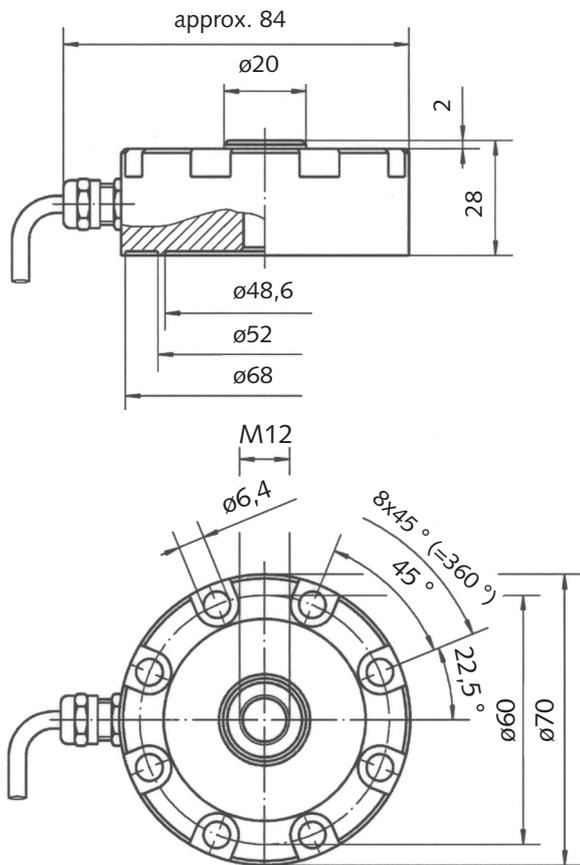
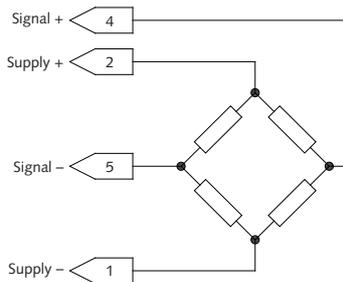
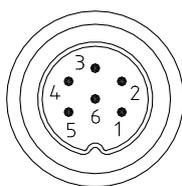


Fig. 1 : Dimensions strain gage load cell Type 4578A...

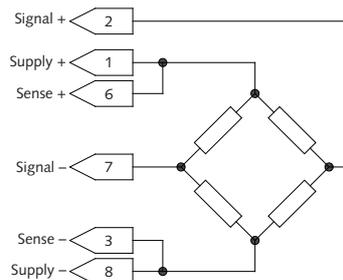
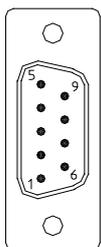
Electrical Connection C1

approx. 3 m shielded, highly flexible cable, 6 pin M16 circular connector



Electrical Connection C3

approx. 3 m shielded, highly flexible cable, 9 pin D-Sub connector



Nom. load	Weight
Type 4578A...	0,5 kg

Nom. load	Measuring deflection
200 N	0,05 mm
500 N	0,11 mm
1 kN	0,10 mm
2,5 kN	0,19 mm
5 kN	0,33 mm
10 kN	0,40 mm

Mounting and Installation Aid

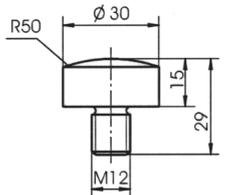


Fig. 2: Force distributing cap Type 4578AZ01

Tightening torque of fixing screws

Type	Size	Tightening torque
4578A...	M6	9 N·m

Mounting Instructions

The load cell must be mounted on a flat surface with uniform load application as free from shear forces as possible.

Optional Accessories

- Force distributing cap

Type

4578AZ01

Included Accessories

- None

Ordering Key

Measuring Range [kN]	Type 4578A	Connector Plug
0,1	0,1	<input type="checkbox"/> <input type="checkbox"/>
0,2	0,2	
0,5	0,5	
1	1	
2	2	
5	5	
10	10	
6 pin M16 circular connector ¹⁾	C1	
9 pin D-Sub connector ²⁾	C3	

Advice for connector plug C1 and C3

¹⁾ C1 connector is applicable for DMF-P family

²⁾ C3 connector is applicable for maXYmos family