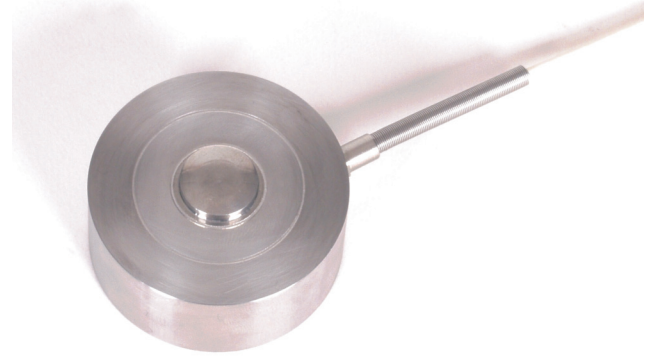


Compressive-Force Load Cell

Type 4577A... (108526)

Type 4577A...



Application

A high price/performance ratio and robust design characterize the compressive-force load cell even in the high measuring ranges.

Their small dimensions allow these load cells to be used for measuring static and dynamic forces in restricted spaces.

Force sensors of this type have a hermetically sealed body, allowing it to be used even under dirty and corrosive industrial conditions.

These sensors are used as measuring elements mainly in

- device manufacture,
- production lines,
- measurement and control systems,
- manufacture of fixtures and special machines and
- geological applications

Special features

- Measuring ranges from 0 ...100 N to 0 ...200 kN
- Small dimensions and high measuring ranges
- For static and dynamic measurements
- Made of stainless steel
- Protection class IP 64
- Standardised output 1mV/V

Description

This force sensor type is designed as a flat, circular disc. The load application knob for receiving compressive forces is an integral part of the sensor.

The measuring element inside the body carries a strain gauge full bridge which outputs a voltage directly proportional to the measurement variable on the application of a force.

The measurement force must be applied centrally and without any transverse vectors. Ensure that the sensor is mounted on a smooth and even surface.

Ordering Key

Measuring range in N	
100	0,1
200	0,2
500	0,5
1000	1
2000	2
5000	5
10000	10
20000	20
50000	50
100000	100
200000	200

Type 4577A

Order example

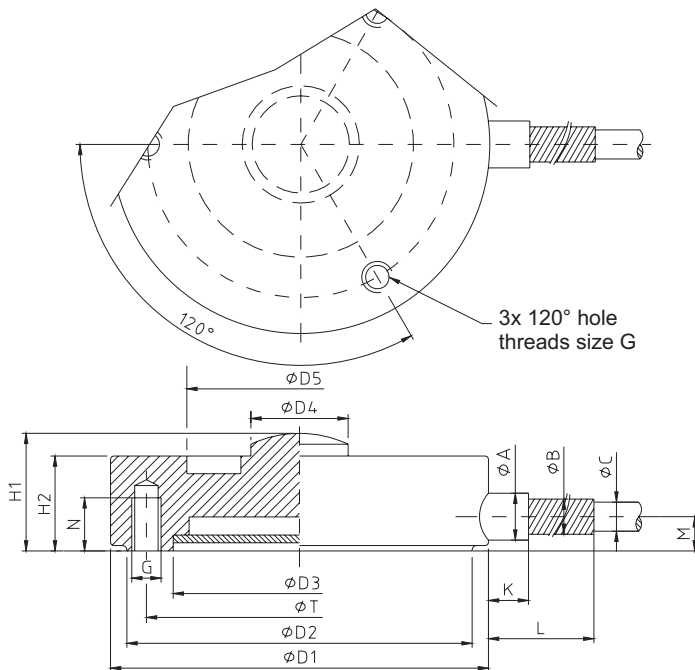
Type **4577A100**

Compressive-Force Load Cell Type **4577A**,
 Measuring range **100 N**

4577A data sheet 108526

Dimensions and Technical Data

Measuring Range	Part#															3 hole Thread size	Bridge resistance	
		ØD1	ØD2	ØD3	ØD4	ØD5	H1	H2	ØT	N	ØA	ØB	ØC	K	L	M	G	[Ω]
0 ... 100 N	129151	31,8	29,4	(20,6)	8,1	19,0	9,9	8,1	25,5	3	-	3	2	-	40	2,5	M 2,5	350
0 ... 200 N	129671	31,8	29,4	(20,6)	8,1	19,0	9,9	8,1	25,5	3	-	3	2	-	40	2,5	M 2,5	350
0 ... 500 N	129161	31,8	29,4	(20,6)	8,1	19,0	9,9	8,1	25,5	3	-	3	2	-	40	2,5	M 2,5	350
0 ... 1 kN	129681	31,8	29,4	(20,6)	8,1	19,0	9,9	8,1	25,5	3	-	3	2	-	40	2,5	M 2,5	350
0 ... 2 kN	129171	31,8	29,4	(20,6)	8,1	19,0	9,9	8,1	25,5	3	-	3	2	-	40	2,5	M 2,5	350
0 ... 5 kN	129691	31,2	29,4	(20,6)	8,1	21,1	9,9	8,1	25,4	3	7,1	4,8	3,1	10,4	30,7	3,8	M 2,5	700
0 ... 10 kN	129181	31,2	29,4	(20,6)	8,1	21,1	9,9	8,1	25,4	3	7,1	4,8	3,1	10,4	30,7	3,8	M 2,5	700
0 ... 20 kN	129701	37,6	35,0	(28,0)	10,7	27,4	16,0	14,0	31,5	3	7,1	4,8	3,8	10,4	30,7	3,8	M 2,5	700
0 ... 50 kN	129191	37,6	35,0	(28,0)	10,7	27,4	16,0	14,0	31,5	3	7,1	4,8	3,8	10,4	30,7	3,8	M 2,5	700
0 ... 100 kN	129711	50,3	48,0	(36,0)	15,2	34,8	25,4	22,4	42,0	6	7,1	4,8	3	10,4	30	4,8	M 4	700
0 ... 200 kN	129201	76,2	74,0	(46,0)	20,0	45,0	38,1	33,5	60,0	6	7	4,5	3	11	46	6	M 4	350



Assembly instruction:

Height:	approx. sensor height
area of support	
Hardness:	60 HRC
Evenness:	< 5 µm
Parallelism:	< 30 µm

Mounting:

Bottom side with three 3 mm (M 2.5) or 6 mm (M 4) deep mounting holes on diameter T, sharing 120°, see table.

Overload safe:	150 % over capacity
Dynamic performance:	
recommended	50 % of capacity
permitted	70 % of capacity

Material: High-grade stainless steel.

Electrical connection:

Measuring range ÷ 0 ... 10 kN screened, teflon-insulated cable ø 2 mm, length 2 m, at sensor body 40 mm anti-kink coil, bending radius ÷ 25 mm min, with connection plug Tuchel 6-poles.

Measuring range ÷ 0 ... 20 kN to 0 ... 50 kN screened, teflon-insulated cable ø 3 mm, length 2 m, at sensor body 40 mm anti-kink coil, bending radius ÷ 30 mm min, with connection plug Tuchel 6-poles.

Measuring range ÷ 0 ... 100 kN screened, teflon-insulated cable ø 3 mm, length 2 m, at sensor body 40 mm anti-kink coil, bending radius ÷ 30 mm min, with connection plug Tuchel 6-poles.

Electrical specifications

Bridge resistance: full bridge, foil-type strain gauge 350 / 700 $\bar{\Omega}$, nominal*

Excitation:

Measuring range 0 ... 1 kN max.	5 V DC
Measuring range 0 ... 2 kN max.	10 V DC
Output: 1,0 mV/V, nominal*	

* Deviations from the stated value are possible.

Environmental conditions

Operating temperature:	- 20 °C ... + 100 °C
Compensated temperature:	+ 15 °C ... + 70 °C

Temperature effect

Temperature effect zero:	± 0,02 % f.s./K
Temperature effect span:	± 0,03 % f.s./K

Mechanical specifications

Non-linearity:

Measuring range 0 ... 1 kN	< 0,25 % f.s.
Measuring range 0 ... 2 kN	< 0,5 % f.s.

Hysteresis

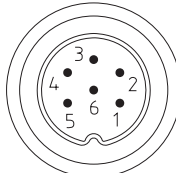
Measuring range 0 ... 1 kN	< 0,15 % f.s.
Measuring range 0 ... 2 kN	< 0,5 % f.s.

Repeatability:

Point zero tolerance:	< 0,1 % f.s.
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3 % f.s.

Pin connection:

	Pin	signal
	1	excitation -
	2	excitation +
	3	shield
	4	signal output +
	5	signal output -

overview pin connection