

AVAILABLE
with Signature
Calibration
SEE PG. IN-5

Precision Pancake Load Cells

Models 41 and 43

HERMETIC, STAINLESS

5 to 500,000 lb.



Model 41
Tension/Compression



Model 43
Compression Only



Models 41 and 43 are low profile "pancake" type load cells. These bonded foil, strain gage load cells are engineered to measure loads from 5 to 500,000 lb. The tension/compression Model 41 is designed with the threaded hole running completely through the center of the cell. Model 41 utilizes two stabilizing diaphragms, which are welded to the sensing member to reduce off-center and side-loading effects. The compression-only Model 43 has a load button which is fixed as an integral part of the load cell and cannot be removed or changed. Both models achieve impressive non-linearity, hysteresis, and repeatability specifications for such applications as tube mills, extruding processes and weighing. Each unit has a welded construction and can be hermetically sealed for added durability. **Models 41 and 43 are available with optional 0-5VDC or 4-20mA output.**

Dimensions

Note, standard calibration for tension/compression load cells is in tension only.

Model 41 (Order Code AL111)

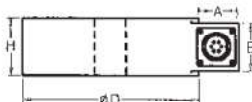
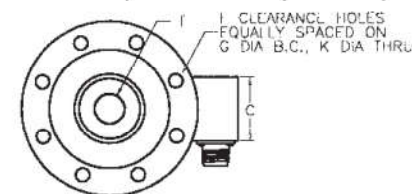
Available Ranges*	D"	H"	F#	G" Dia. B.C.	K" Dia. Thru	T	A"	B"	C"
5; 10; 25 lb.	2.50	0.80	6	2.000	0.19	1/4-28UNF	0.82	0.75	1.25
50; 100; 250; 500; 1,000 lb.	3.00	1.00	6	2.250	0.28	3/8-24UNF	0.82	0.75	1.25
2,000; 3,000; 4,000; 5,000 lb.	3.50	1.00	6	2.625	0.34	1/2-20UNF	0.82	0.75	1.25
7,500; 10,000; 15,000 lb.	5.50	1.80	8	4.500	0.40	1-14UNS	1.25	1.50	2.00
20,000; 30,000; 50,000 lb.	6.00	1.80	8	4.875	0.53	1-1/2-12UNF	1.25	1.50	2.00
75,000; 100,000 lb.	9.00	2.50	12	7.750	0.66	2-12UN	1.25	1.50	2.00
150,000; 200,000 lb.	11.00	2.50	12	9.500	0.78	2-1/2-12UN	1.25	1.50	2.00
300,000; 400,000; 500,000 lb.	14.00	4.25	12	11.750	1.03	3-1/2-8UN	1.25	1.50	**

NOTES: * Stocked ranges are in bold.
** "C" dimension varies on high ranges. Consult SENSOTEC.

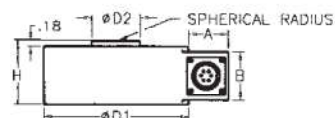
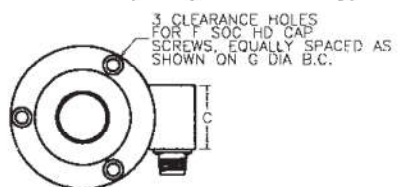
Bolt holes (K) are counter-bored for ranges 15,000 lb. and below.

Models 41 and 43 load cells ≤ 25 lbs do not have overload stops. Consult SENSOTEC for custom cells with overload stops.

Model 41 (Tension/Compression)



Model 43 (Compression Only)



Dimensions in inches

Model 43 (Order Code AL112)

Available Ranges	D1" Dia.	D2" Dia.	H"	F Typ. Dia.	G" B.C.	A"	B"	C"
5; 10; 25 lb.	2.50	0.37	0.98	#8	2.000	0.82	0.75	1.25
50; 100; 250; 500; 1,000 lb.	3.00*	0.56	1.18	1/4	2.250	0.82	0.75	1.25
2,000; 3,000; 4,000; 5,000 lb.	3.50	0.69	1.18	5/16	2.625	0.82	0.75	1.25
7,500; 10,000; 15,000; 20,000; 30,000 lb.	4.50	1.50	2.00	3/8	3.790	1.25	1.50	2.00
50,000; 75,000; 100,000 lb.	4.50	1.50	2.00	3/8	3.790	1.25	1.50	2.00
150,000; 200,000 lb.	5.50	2.00	2.18	3/8	4.812	1.25	1.50	2.00
300,000 lb.	7.00	2.50	2.68	3/8	6.000	1.25	1.50	2.00
400,000 lb.	7.50	2.50	2.68	3/8	6.750	1.25	1.50	2.00
500,000 lb.	11.00	4.75	4.50	3/4	9.500	1.25	1.50	2.00

* 3" diameter has six mounting holes.

Options (See Appendix)

Temperature compensated 1b, 1c, 1d, 1e, 1f; Int. shunt cal 8a; Special calibration (Model 41) 30a, 30b; Signature calibration 53e

Premium Options: 1i; 2a (Model 43 >=50 lb.), 2b (Model 41 >=50 lb.), 2n or 2N intrinsically safe amp see page AP-6; 2q; 3a, 6a (>=5000 lb.), 6e, 6f, 6g, 6h, 6i, 6j (>=7500 lb.); 9a, 9b;

Accessories: Mating connectors and connector/cable assemblies; Pull plates; Load buttons.

	Model 41 (Tension/Compression) Order Code AL111	Model 43 (Compression only) Order code AL112
PERFORMANCE		
Load Ranges.....	5 to 500,000 lb.	5 to 500,000 lb.
Non-Linearity (max)		
5 to 25 lb.....	±0.2% F.S.	±0.2% F.S.
50 to 500,000 lb.....	±0.1% F.S.	±0.1% F.S.
Hysteresis (max)		
5 to 25 lb.....	±0.1% F.S.	±0.1% F.S.
50 to 500,000 lb.....	±0.08% F.S.	±0.08% F.S.
Non-Repeatability (max)		
5 to 25 lb.....	±0.1% F.S.	±0.1% F.S.
50 to 500,000 lb.....	±0.03% F.S.	±0.03% F.S.
Output (standard)		
5 to 25 lb.....	2mV/V	2mV/V
50 to 500,000 lb.....	3mV/V	3mV/V
Resolution	Infinite	Infinite
ENVIRONMENTAL		
Temperature, Operating.....	-65° F to 250° F	-65° F to 250° F
Temperature, Compensated	60° F to 160° F	60° F to 160° F
Temperature Effect		
- Zero (max)	0.002% F.S./° F	0.002% F.S./° F
- Span (max)	0.002% Rdg./° F	0.002% Rdg./° F
ELECTRICAL		
Strain Gage Type.....	Bonded foil	Bonded foil
Excitation (calibration).....	10VDC	10VDC
Excitation (acceptable).....	Up to 15VDC or AC	Up to 15VDC or AC
Insulation Resistance.....	5000 megohms @ 50VDC	5000 megohms @ 50VDC
Bridge Resistance.....	350 ohms	350 ohms
Shunt Calibration Data.....	Included	Included
Wiring Code (std).....	#2 (See P. AP-8)	#2 (See Pg. AP-8)
Electrical Termination (std)		
5 to 5,000 lbs	PTIH-10-6P or equiv. (Hermetic stainless)	PTIH-10-6P or equiv. (Hermetic stainless)
7,500 to 500,000 lbs	MS3102E-14S-6P or equiv.	MS3102E-14S-6P or equiv.
Mating Connector (not incl.)		
5 to 5,000 lbs	PT06A-10-6S or equiv.	PT06A-10-6S or equiv.
7,500 to 500,000 lbs	MS3106A-14S-6S or equiv.	MS3106A-14S-6S or equiv.
MECHANICAL		
Static Overload Capacity	50% over capacity	50% over capacity
Thread Size.....	See "T" Dimension Info	N/A
Maximum Extraneous Forces without damage.....	See table below	See table below
Deflection—Full Scale.....	0.003"	0.003"
Casing Material		
5 to 200,000 lbs	17-4PH Stainless	17-4PH Stainless
300,000 to 500,000 lbs	4340 Painted	17-4PH Stainless
INTERNALLY AMPLIFIED UNITS* (Optional)		
Outputs Available.....	±5VDC, 4-20mA	0-5VDC, 4-20mA

LOAD
PRECISION

NOTES: *Standard calibration for tension/compression load cells is in tension only. Internal amplifiers are available for all ranges. Internal amplification for ranges <5,000 lb. ("H" dimension <1.80") may increase height. Using an in-line amplifier will avoid this height increase.

ALLOWABLE EXTRANEIOUS FORCE WITHOUT DAMAGE (% of load capacity)

Ranges	Side Load (lb.)	Bending (in-lb)	Torque (in-lb)	Total Extraneous Force
5; 10; 25; 50; 100; 250; 500 lb.	50%	40%	25%	100%
1000; 2000; 3000; 4000; 5000 lb.	30%	25%	25%	100%
10,000; 15,000; 20,000; 30,000; 50,000 lb.	20%	20%	15%	100%
100,000; 150,000; 200,000; 300,000; 400,000; 500,000 lb.	20%	20%	10%	100%

General Information

How to order (See Pg. AP-19)
Load cell selection flow chart (see Pg. LO-1)