

AVAILABLE  
with Signature  
Calibration  
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# Precision Pancake Load Cells

## Models 41 and 43

**HERMETIC, STAINLESS**

**5 to 500,000 lbs.**



**CENELEC**  
APPROVED



APPROVED  
INTRINSICALLY  
SAFE AMP



**Model 41**  
Tension/Compression



**Model 43**  
Compression Only

SENSOTEC's 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 lbs. 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

#### Model 41 (Order Code AL111)

Available Ranges*	D"	H"	F#	G" Dia. B.C.	K" Dia. Thru	T	A"	B"	C"
5; 10; 25 lbs.	2.50	.80	6	2.000	.19	1/4-28UNF	.82	.75	1.25
<b>50; 100; 250; 500; 1000 lbs.</b>	3.00	1.00	6	2.250	.28	3/8-24UNF	.82	.75	1.25
<b>2000; 3000; 4000; 5000 lbs.</b>	3.50	1.00	6	2.625	.34	1/2-20UNF	.82	.75	1.25
7500; <b>10,000</b> ; 15,000 lbs.	5.50	1.80	8	4.500	.40	1-14UNS	1.25	1.50	2.00
<b>20,000; 30,000; 50,000 lbs.</b>	6.00	1.80	8	4.875	.53	1-1/2-12UNF	1.25	1.50	2.00
75,000; 100,000 lbs.	9.00	2.50	12	7.750	.66	2-12UN	1.25	1.50	2.00
150,000; 200,000 lbs.	11.00	2.50	12	9.500	.78	2-1/2-12UN	1.25	1.50	2.00
300,000; 400,000; 500,000 lbs.	14.00	4.25	12	11.750	1.03	3-1/2-8UN	1.25	1.50	**

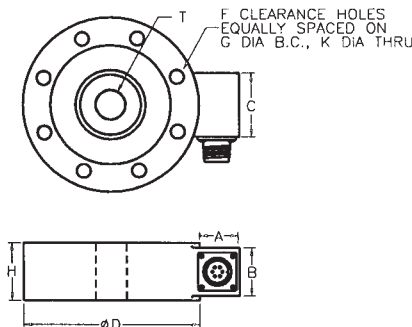
**NOTES:** \* Stocked ranges are in bold.

\*\* "C" dimension varies on high ranges. Consult SENSOTEC.

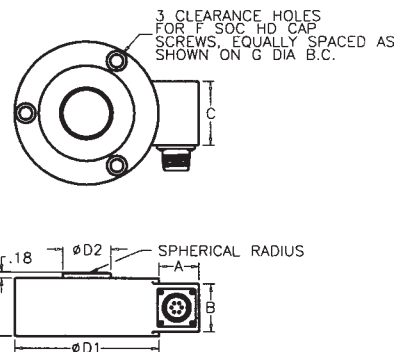
Bolt holes (K) are counter-bored for ranges 15,000 lbs. and below.

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)



#### Model 43 (Order Code AL112)

Available Ranges	D1" Dia.	D2" Dia.	H"	F Typ. Dia.	G" B.C.	A"	B"	C"
5; 10; 25 lbs.	2.50	.37	.98	#8	2.000	.82	.75	1.25
50; 100; 250; 500; 1000 lbs.	3.00*	.56	1.18	1/4	2.250	.82	.75	1.25
2000; 3000; 4000; 5000 lbs.	3.50	.69	1.18	5/16	2.625	.82	.75	1.25
7500; 10,000; 15,000; 20,000; 30,000 lbs.	4.50	1.50	2.00	3/8	3.790	1.25	1.50	2.00
50,000; 75,000; 100,000 lbs.	4.50	1.50	2.00	3/8	3.790	1.25	1.50	2.00
150,000; 200,000 lbs.	5.50	2.00	2.18	3/8	4.812	1.25	1.50	2.00
300,000 lbs.	7.00	2.50	2.68	3/8	6.000	1.25	1.50	2.00
400,000 lbs.	7.50	2.50	2.68	3/8	6.750	1.25	1.50	2.00
500,000 lbs.	11.00	4.75	4.50	3/4	9.500	1.25	1.50	2.00

\* 3" diameter has six mounting holes.

1-800-848-6564

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## 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 lbs.), 2b (Model 41 50 lbs.), 2c, 2j, 2q; 3a, 3c; 6a ( 5000 lbs.), 6e, 6f, 6g, 6h, 6i, 6j ( 7500 lbs.); 9a, 9b; Intrinsically safe amp 2n.

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

	<b>Model 41</b> (Tension/Compression) Order Code AL111	<b>Model 43</b> (Compression only) Order code AL112	
<b>PERFORMANCE</b>	Load Ranges.....	5 to 500,000 lbs.	5 to 500,000 lbs.
	Non-Linearity (max)		
	5 to 25 lbs. ....	±0.2% F.S.	±0.2% F.S.
	50 to 500,000 lbs. ....	±0.1% F.S.	±0.1% F.S.
	Hysteresis (max)		
	5 to 25 lbs. ....	±0.1% F.S.	±0.1% F.S.
	50 to 500,000 lbs. ....	±0.08% F.S.	±0.08% F.S.
	Non-Repeatability (max)		
	5 to 25 lbs. ....	±0.1% F.S.	±0.1% F.S.
	50 to 500,000 lbs. ....	±0.03% F.S.	±0.03% F.S.
Output (standard)			
5 to 25 lbs. ....	2mV/V	2mV/V	
50 to 500,000 lbs. ....	3mV/V	3mV/V	
Resolution .....	Infinite	Infinite	
<b>ENVIRONMENTAL</b>	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) .....	.002% F.S./° F	.002% F.S./° F
	- Span (max) .....	.002% Rdg./° F	.002% Rdg./° F
<b>ELECTRICAL</b>	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 5000 lbs .....	PTIH-10-6P or equiv. (Hermetic stainless)	PTIH-10-6P or equiv. (Hermetic stainless)
	7500 to 500,000 lbs .....	MS3102E-14S-6P or equiv.	MS3102E-14S-6P or equiv.
Mating Connector (not incl.)			
5 to 5000 lbs .....	PT06A-10-6S or equiv.	PT06A-10-6S or equiv.	
7500 to 500,000 lbs .....	MS3106A-14S-6S or equiv.	MS3106A-14S-6S or equiv.	
<b>MECHANICAL</b>	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.....	.003"	.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
<b>INTERNALLY AMPLIFIED UNITS*</b> (Optional)	Outputs Available.....	±5VDC, 4-20mA	0-5VDC, 4-20mA

**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 lbs. ("H" dimension <1.80") may increase height. Using an in-line amplifier will avoid this height increase.

### ALLOWABLE EXTRANEEOUS FORCE WITHOUT DAMAGE (% of load capacity)

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

## General Information

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