

## LOAD CELLS-CAS

Load cells are sensors for measuring load or force which are frequently used both in academic studies/ laboratories and in industrial facilities, storage tanks, silos, actuators, pistons. Load Cells consists of models which works in compression only, tension-compression or measuring in special geometries like bending or shear.

The basic principle of operation is based on strain gauges. These small gauges which can measure unit deformations, are adhered in various configurations on a steel with well-known material characteristics. These strain gauges convert the physical deformation which occurs in the elastic region of the stress-strain curve due to the loading of the material, into electrical signals, thus enabling them to be acquired by the data acquisition system. Once the physical deformation data is measured in unit deformation (strain), it is possible to calculate the load being applied using various material specifications (elastic modulus, Poisson ratio etc.) The calibration steps which includes calculations using all these parameters are performed at the factory stage. The load cells are delivered to the researcher with a calibration coefficient which can be used directly to calculate the physical load/force from the measured electrical voltage.

- High Performance-Cost Ratio
- High Quality and Sensitivity
- Reliability Against Lateral Forces and Fatigue
- Air and Water Proof Finishing
- Paint Coated Steel Enclosure
- 4 Wire Shielded Cable
- Compatible with TESTBOX Data Acquisition Systems
- Easy Calibration With EASYTEST Calibration Wizards

### S-Type (Tension-Compression)

Capacity: 50 kgs, 100-200 kgs, 500 kgs,  
1-2 tons, 5 tons



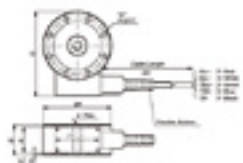
### Pancake (Tension Compression)

Capacity : 2-5 tons, 10 tons, 20 tons,  
30 tons, 50 tons, 100 tons.

### Technical Specifications

	Pancake (LS)- A Grade	Pancake (LS)- B Grade	S Type (SBA)
Capacity	2, 5, 10, 20, 30, 50, 100 tf		50, 100, 200, 500 kgf, 1, 2, 5 tf
Rated Output (mV/V)	2.0±0.005		3.0 ± 0.03
Zero Balance (mV/V)	0±0.05		0 ± 0.03
Accuracy Class	A	B	D3
Combined Error %	0.02	0.05	0.03
Repeatability %	0.01	0.02	0.01
Creep for 30 min. %	0.03	0.03	0.03
Temperature Effect on Zero Value %/10 (oC)	0.03	0.03	0.028
Output Value %/10 (oC)	0.03	0.03	0.014
Excitation Recommended (V)	10		10
Excitation Maximum (V)	15		15
Input Resistance (Ω)	350 ± 3.5		400 ± 25
Output Resistance (Ω)	350 ± 3.5		350 ± 3.5
Insulation Resistance (Ω)	> 2,000		> 2,000
Compensated Temperature Range (°C)	-10 ~ +40		-10 ~ +40
Operating Temperature Range (°C)	-20 ~ +80		-30 ~ +80

Different load cell options are available. Please check [www.tesart.com.tr](http://www.tesart.com.tr) "sensor and test portal" for broader solution options, or contact us.



Model	Capacity	A	B	C	D	E	F	G	H	I	J
LS-2	2tf	112	46	4	1	38	68	141.5	8-6.6	97.2	M16x20
LS-3	3tf	112	46	4	1	38	68	141.5	8-6.6	97.2	M16x2.0
LS-5	5tf	120	46	4	1	38	68	149.5	8-9	103.2	M18x1.5
LS-10	10tf	138	60	11	1	38	68	167.5	8-11	117.6	M24x2.0
LS-20	20tf	184	80	21	1	38	68	213.5	8-14	157.6	M39x2.0
LS-50	50tf	200	60	11	1	38	68	229.5	12-14.3	170	M45x3.0
LS-100	100tf	278	90	31	1	38	68	307.5	16-16.3	229	M70x3.0

## DISPLACEMENT/POSITION SENSORS i-TARGET



### POTENTIOMETRIC

- Cost Effective
- High Accuracy Displacement Measurements
- Civil Engineering Tests
- Material Tests
- Table/Actuator Positioning



### LVDT

- Independent Measurement Rod
- Allows Rotation
- Low-Length Options
- High Repeatability
- Contactless Operation / Long Life

TYPE	POTENTIOMETRIC			LVDT		DRAW-WIRE
MODEL	Straight - KTC	Spring - KTR	Spring/Small Scale -KSP	Spring- SDVB	Independent Rod- SDVG	MPS
MEASURING RANGE (mm)						
2.5				•	•	
5			•	•	•	
10			•	•	•	
15			•	•	•	
25		•	•	•	•	
50		•	•	•	•	
75	•	•				
100	•	•		•	•	
125	•					
150	•					
200	•					
250	•				•	
350	•					
400	•					
500	•				•	•
600	•					•
1250	•					•
1500						•
2000						•

Different types/strokes of displacement sensors from above table are available. Please check [www.tesart.com.tr](http://www.tesart.com.tr) "sensor and test portal" for broader solution options, or contact us.

## MAGNETOSTRICTIVE (Embedded Measurement Applications)

This series, which allows rotation, is a non-contact, long life, durable solution, ideal for internal positioning within actuators and machines and embedded measurement applications,



## STRAIN GAUGES

- Cost Effective
- Compatible with TESTBOX Series Data Acquisition Systems
- 16 - 24 Bit Static/ Dynamic Measurements
- Innovative Q-Cable Solution
- Practical Quarter/ Half/ Full Bridge Measurements
- 3-Wire Connection - Shunt Calibration Option
- Integrated Rosette Calculation
- Easy Calibration and Real Time Calculation With EASYTEST Software

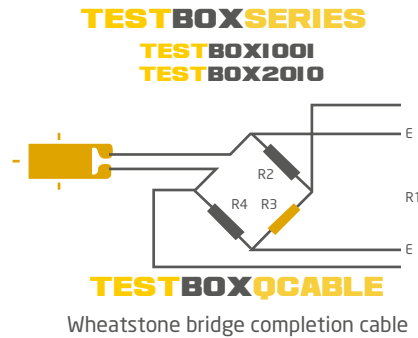
Strain gauges can be used both for the direct measurement of deformation or load in laboratories/surveys/academic research, and in a number of different types of sensors as the fundamental measuring element.

The main working principle is based on the electrical measurement of the difference in the resistance of a metal induced by the change in the length of the metal. Actually, strain gauges are specially designed and manufactured resistors. 120Ω and 350Ω models are frequently used.

In order the measurement to be completed, a Wheatstone bridge is needed. Wheatstone bridge includes 4 strain gauges. While a voltage is applied to the bridge, the voltage change is measured due to the change in length and the resistance of the measuring gauge(s). For full bridge measurement 4 strain gauges are needed. Half and quarter bridge measurements are also possible. Only 1 or 2 strain gauges exist in this case. For half or quarter bridge measurements, the missing bridge resistors are completed by exterior resistors. The exterior completion resistors must be highly linear. All measurement devices, tools and software are developed and included in TESTBOX Series data acquisition hardware and EASYTEST series software.

TDG offers high quality strain gauges for the researchers with an important cost advantage. New opportunities and promotions are continuously offered in order to ensure the usage of these important expendable sensing elements in researches, experiments and laboratories at adequate quantities.

TDG(Technical Support Group) is a group which has expertise on strain gauge measurement. All data acquisition solutions & software required for strain gauge measurement are manufactured by TDG.



### BASIC ACCESSORIES

CN Adhesive  
Connection Terminal  
Cable



	BF-120-10AA	BF-120-30AA	BF-120-6AA
Measurement Grid Dimensions (mm)	10x2,5	30x2,0	6x2,2
Base Dimensions (mm)	16,7x5,0	36,1x5,0	12,5x4,3
Resistance (Ω)	120	120	120
Approximate Gauge Factor	2	2	2
Strain Limit	%3	%3	%3
Fatigue Life (Cycles)	106	106	106
Operating Temperature (°C)	-20 ~ +80	-20 ~ +80	-20 ~ +80



STRAIN GAUGES

LOAD CELLS

DISPLACEMENT  
POSITION  
SENSORS

1328. Sokak 5/6 Aşağı Öveçler 06460 Çankaya / Ankara / TURKEY

Tel: +90 312 473 97 91-92 - Fax: +90 312 473 97 93

info@teknikdestek.com.tr - www.teknikdestek.com.tr



For broad options and detailed information:

[www.testart.com.tr](http://www.testart.com.tr)  
Sensor and Test Portal