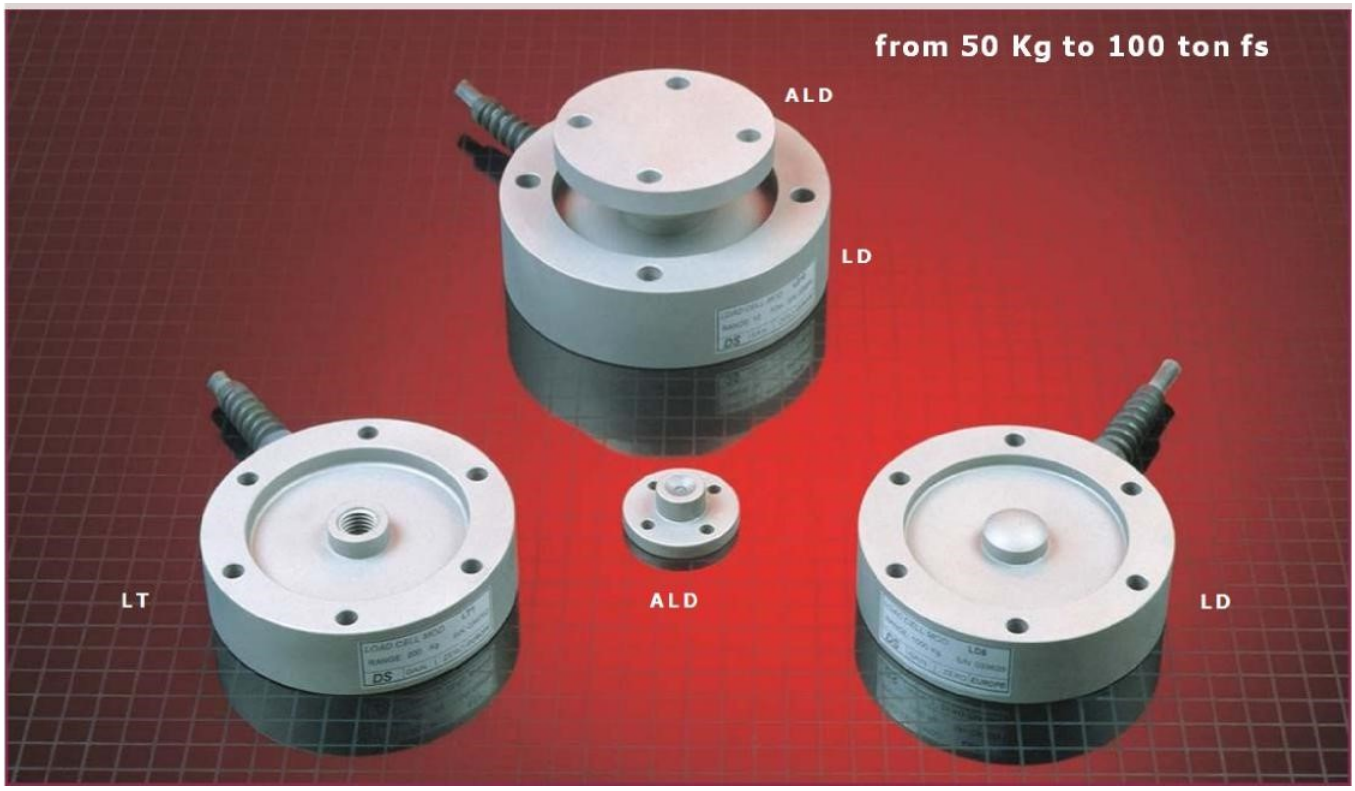
S2 Tech srl

Smart Solutions

LD / LT PANCAKE LOAD CELLS



DESCRIPTION

LD and LT transducers are thin, precise and convenient load cells that find applications in the industry, for mechanical machines, for actuators, for weighing systems, for reservoirs singly installed for load concentrated in a point or in a group of 2 to 4 or more units, distributed on several bearings.
LD load cells are suggested for compression loads, while *LT transducers* are to be used on for tension and compression applications, or tension only applications, when load is precisely aligned with the measurement axis.
Some constructive peculiarities:
Hermetically sealed: the upper body, the most weathered, is a solid metal piece without electrical circuits that, on contrary, are immerged in the lower internal cavity protected by water-repellent silicon filler, which is further protected by the external metal bearing ring of the cell that, at the installation, can be buttered by a gasket sealing rubber.
Number of sensors: distributed on the measuring area, increasing from 4 to 12 with the increase of the diameter and of the capacity (FS) of the cell, to increase the accuracy and the insensitivity to the load position.
Final Test Certificate: supplied for each cell and referred (1) to internal standards periodically calibrated with ACCREDIA certified transducers, or (2) upon request, directly tested using ACCREDIA transducers, as reference.
Compression mounting accessories (for LD): Upper mounting bases (saddles) Series ALD with spherical

Advantages of the internal A/D electronics (optional):
Analog electronics (-A): zero (tare) regulation from outside, insensitivity to the cable length and better insensitivity to the external electrical disturbances.
Digital electronics (-D): all settings are performed by a remote compute, like tare suppression, conversion to mechanical units (Kg, tons, etc.), calibration of the measuring system, possibility to activate linearization on the measurements, up to 32 feasible transducers connected to a digital transmission line, with high immunity from electrical disturbances.
All the internal electronics have *CE certification* for emission and immunity to electromagnetic disturbances and comply with RoSH directive.

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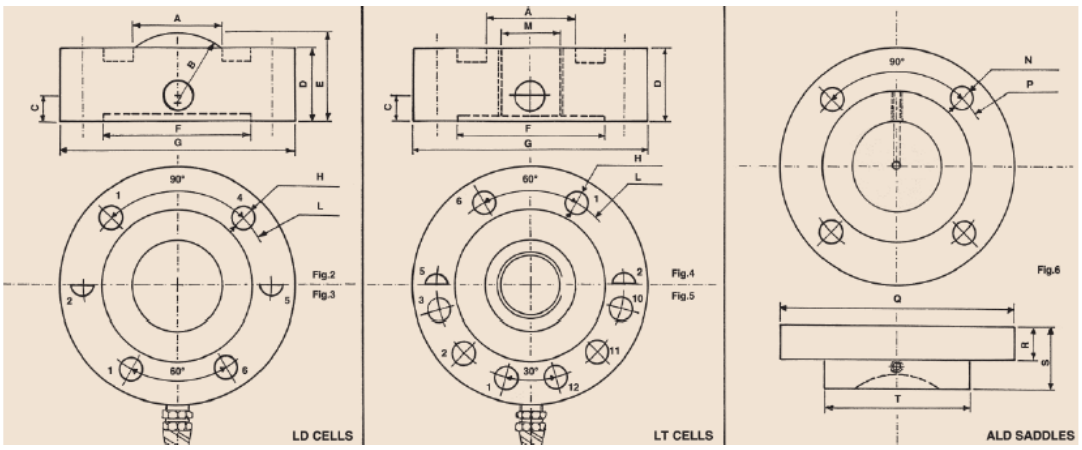
ISO 9001:2015 - Cert. n.6687

TECHNICAL CHARACTERISTICS

Measuring ranges:
LD (compression): from 0 to 50 - 100 - 200 - 500 Kg 1 - 2 - 5 - 10 - 20 - 50 - 100 Ton
LT (tension and compression): from 0 to ± 50 - 100 - 200 - 500 - Kg 1 - 2 - 3 - 5 - 10 - 20 - 30 - 50 Ton
N° of sensors, impedance (typical), Max dc excitation voltage:
LD 1 - 5 - 10 LT 05-1-5 = n°4 (8 optional) 350 ohm, 20 Vdc
LD 100 LT 50 = n°8 700 ohm, 40 Vdc
Sensitivity: 2 mV/V, typical (20 mV FS excitation 10 V; 40 mV FS with 20 V; 60 mV with 30 V)
Total error (non-linearity+hysteresis+temperature effect on sensitivity): <±0,2% FS, typical
Environmental protection: IP65
Creep: <±0,1% FS during 4 hours test at FS
Zero output return: <±0,07% FS, after 30 min. at FS
Zero unbalance:<±2% FS
Insulating resistance: >5000 Mohms
Overload: from 140 to 200% FS
Ultimate load limit: about 2 times FS, with load on weighing axis
NOTE: for dynamic loads, with shocks and vibrations, difficult to estimate, the max load allowed must be reduced to avoid yielding and ruptures.

Analog amplifier:
Voltage: A5 = supply from 10,5 to 28 Vdc; output 0-5 V
A1 = supply from 18 to 28 Vdc; output 0-10 V
Current: A4 = supply from 18 to 40 Vdc; output 4-20 mA
Digital electronics:
Digital outputs: D21=RS485; D41=CAN
Protocols: D21=Modbus; D41=CANopen
A/D converter 24 bit max
Bandwidth: from 0 to 1,94 Hz up to 390 Hz (-3 dB), depending on A/D update frequency
Baud rate: from 1200 to 115.000 baud (RS485) or 1 Mbit max for CAN
Operating temperature: from -20°C to +70°C; Rh <95%

OVERALL DIMENSIONS



MODEL	RANGES	HOLES		MODEL	RANGES	HOLES		LD - LT SIZES (mm)										MODEL	ALD SIZES (mm) Fig. 6					
LD CELLS		N°	Fig.	LT CELLS		N°	Fig.	A	B	C	D	E	F	G	H	L	M	SADDLE	N	P	Q	R	S	T
LD1	50-100-200-500-1000 Kg	4	2	LT05	50-100-200-500 Kg	4	4-2	10	r 7	9,5	27	29,1	63,5	78	4,5	r 34,5	M6	ALD1	4,5	27	38	6	15	16
LD5	1-2-5 Ton	6	3	LT1	200-500-1000 Kg	6	4	20	r 15	9,5	27	30,8	74,8	99	6,5	r 42,5	M12x1,75	ALD5	8,5	60	78	10	25	40
LD10	5-10 Ton	4	2	LT5	1-2-3-5-6,5 Ton	6	4	30	r 20	9,5	35	41,7	88,8	118	8,5	r 49	M20x1,5	ALD10	8,5	60	78	10	25	40
LD100	20-50-100 Ton	4	2	LT50	5-10-20-30-50 Ton	12	5	72	r 40	13 (LD100) 13,6 (LT50)	55 (LD100) 53 (LT50)	77,6	128	177	16,5	r 74,5	M56x4	ALD100	16,5	149	177	17	50	110