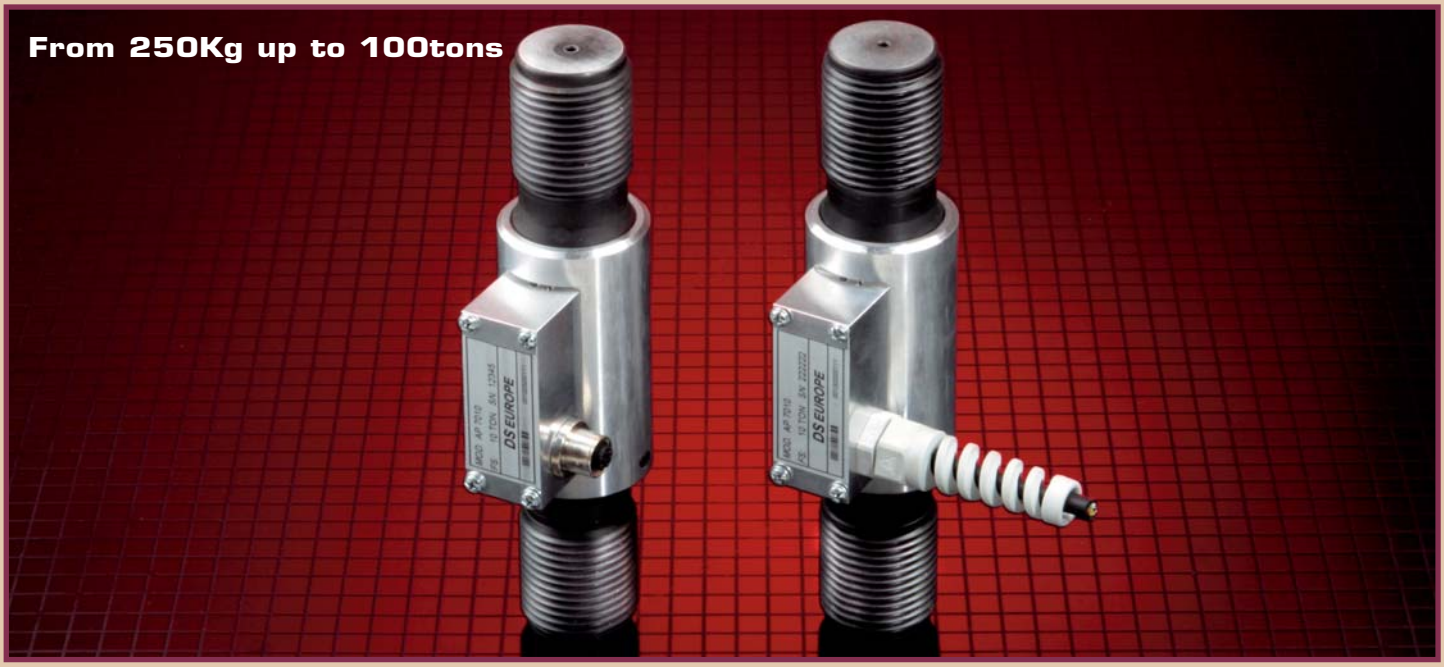
COLUMN LOAD CELLS SERIES AP7000

COMPACT • WITH BUILT-IN ELECTRONICS • RUGGED



TECHINICAL SPECIFICATIONS AND APPLICATIONS:

Strain gauge load cells series AP7000 are applied to measure tension and compression forces on actuators, tie rods, ropes, chains, hooks or for weighing hoppers and tanks below their legs.

Compactness:
Series AP7000 is very compact therefore allowing It to be used where there is not much room left.

High overload capability:
The innovative mechanical measuring principle allows to withstand high overloads (with static and well aligned forces along the measuring axis and screwing til rabbet).

Environment protection:
Series AP7000 can be used in industrial environments with dirtyness, humidity and dusts.

Built-in electronics:
Series AP7000 allows to optionally apply inside the load cell, for measuring ranges 10 up to 100tons, an analog or digital electronics that allows:

- **Cost reductions:**
  Built-in electronics is already factory calibrated together with the load cell and are avoided also the costs of cabling the load cell with an eventuell external electronics that should normally be fixed in a box too. Digital electronics allows to reduce the costs of the electronics that recives the load cell measure (PLC, computer etc.) because It is possible to parallel a lot of digital load cells onto a single digital input gate unlike when many analog load cells are to be connected to a same number of input gates,

- **High resolution:**
  Built-in electronics is shielded by the load cell metal frame and directly connected to the strain gauge bridge therefore reducing the eventuell electrical noise onto the electrical connections from the environment (electrical noise is common in industrial environments from inverters, actuators, motors, switches etc.). Amplified analog signals grants a better signal / noise ratio and a differential digital transmission is shielded against electrical noise on electrical connections.

- **Digital electronics main specifications:**
  – RS422 and RS485 (DSEnet and Modbus protocols):
  24bit A/D converter (= high resolution), high sampling rate (= fast measures are possible), zeroing by means of digital commands, parallel of up to 32 load cells onto a single digital input, digital filtering against noise.
  – CAN Open:
  Like RS485 and RS422 but with also digital alarm levels, automatic error codes (= easy servicing) plug and play connections, up to 100 load cells can be connected in parallel with a single cable and standard worldwide connectors.

TECHNICAL SPECIFICATIONS:

Measuring ranges:	AP7001S-250Kg;	AP7001S-500 Kg;	AP7001-1tons;
	AP7003-3tons;	AP7005-5tons;	AP7010-10tons;
	AP7025-25tons;	AP7050-50tons;	AP7100-100tons

Sensitivity of strain gauge bridge:	1mV/V typ.
Total error: (non linearity+ hysteresys+sensitivity thermal drift): < ±0,2%FS.	
Zero thermal drift:	within 5°K < ±0,1%FS
Creep:	< ±0,15%FS after 4hours at FS.
Zero return from FS:	< ±0,07%FS after 30 min. at FS.
Environment protection:	IP65.
Electrical connection:	by means of cable and gland (connector available under request).

TECHNICAL SPECIFICATIONS OF BUILT-IN ELECTRONICS (OPTIONS):

• **Analog:**

Voltage amplifiers:	**- A5** = power supply 10,5 to 28Vdc;		0 to ±5 V output.
	- A10 = power supply 18 to 28Vdc;		0 to ±10V output.
Current amplifiers:	**- A4** = power supply 18 to 40Vdc;		4-20mA (2 wires) output.

• **Digital:**

- *Power supply*:	6 to 28Vdc; 20mA typical at 24Vdc.
- *Digital outputs:*	**-D20** = RS485 and RS422 with DSEnet protocol.
	-D21 = RS485 and RS422 with Modbus protocol.
	-D41 = CAN Open with DSP406 profile.
- *A/D converter:*	24bit sigma delta.
- *Bandwidth:*	0 to 1,94Hz up to 390Hz (-3db) depending on A/D refresh rate.
- Sampling rate:	da 7,5 fino a 1920Hz (disponibile con CAN).
- Baud rate:	settable from 1200 up to 115200baud (RS485/422); 1Mbit max. for CAN.
- Analog output (optional):	digital electronics can have an optional 0 to +5V analog output (12bit D/A converter).
- Working temperature:	-20 ÷ +70°C; **Rh** < 95 %.

OVERALL DIMENSIONS

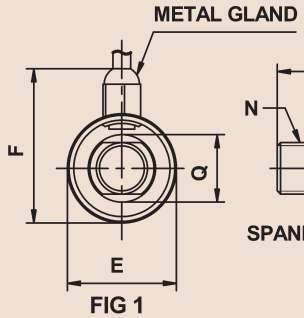


FIG 1

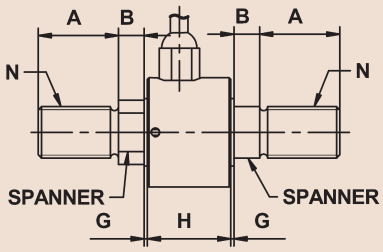


FIG 1

FIG 2

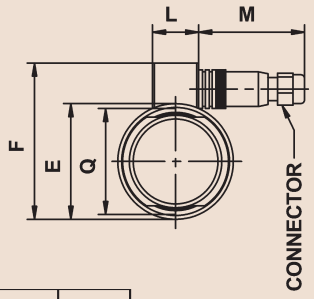
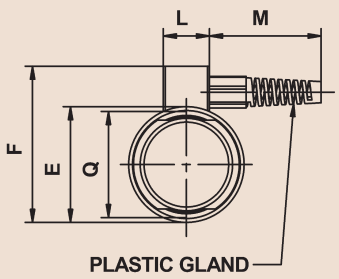


FIG 2



MODEL	AP 7001- S	AP 7001	AP 7003	AP 7005	AP 7010	AP 7025	AP 7050	AP 7100
A	16	25	25	25	57	66	88	101
B	7	8	8	10	18	24	18	31
C					75	75	74	76
D	74	94	94	96	210	240	270	330
E	32	34	34	42	45	60	75	100
F	40	48	48	48	66	81	96	121
G	4	1	1	1	4.5	5.5	5	6
H	19	26	26	24	64	64	64	64
I					6.5	5.5	5	6
L					25	25	25	25
M					55	55	55	55
N	M 10 x 1	M 16 x 1.5	M 16 x 1.5	M 18 x 1.5	M 36 x 3	M 48 x 3	M 64 x 4	M 90 x 4
P					3	9	2	17
Q	16	20	20	24	40	55	75	100
Spanner	13	16	16	18	34	46	65	90
Safe overload	2	2	2	2	3	3	3	3
Destructive load	2.5	2.5	2.5	2.5	5	5	5	5
drawing number	FIG 1	FIG 1	FIG 1	FIG 1	FIG 2	FIG 2	FIG 2	FIG 2

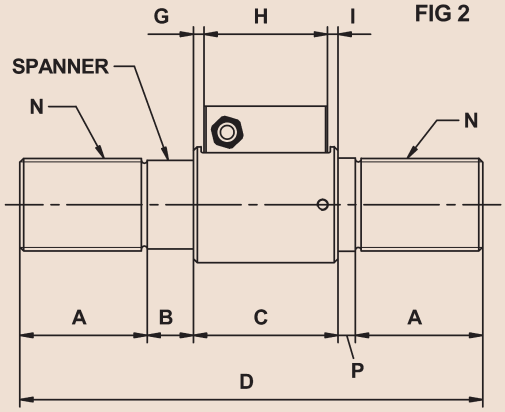


FIG 2

Technical specifications and prices may change without notice.

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