PRESSURE TRANSDUCERS

DS EUROPE

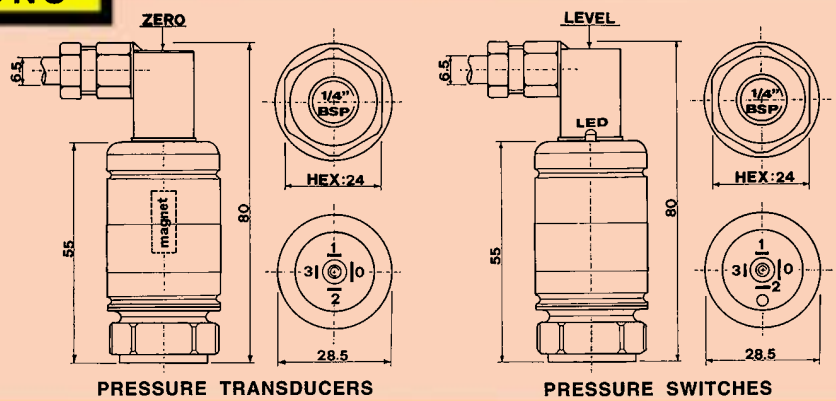
PRESSURE TRANSDUCERS

AMPLIFIED TRANSDUCERS AND PRESSURE SWITCHES SERIES LP650

TECHNICAL SPECIFICATIONS

Measuring ranges:	0 ÷ (2,5 - 5) - 10 - 20 - 50 - 100 - 200 - 250 - 350 - 500 - 700 (-1100 - 1400) bars.
Total error (typical):	for FS : 20 ÷ 1400 bars: ≤ ± 0,2 % FS bsl; for FS : 2,5 ÷ 10 bars: ≤ ± 0,5 % FS bsl.
Temperature variations:	of the zero and sensitivity: ≤ ± 0,03 % FS / ° K in the compensated temperature range.
Overload:	up to 350 bars: 2 times FS; up to 1400 bars: 1500 bars max (limitation: 1/4" BSP thread).
Frequency response:	for not-amplified models: up to 50 bars: 0 ÷ 5 KHz; over 0 ÷ ≥ 50 KHz. for voltage amplified models: 0 ÷ 100 Hz; for current amplifield models 0 ÷ 1000 Hz, (limitation: internal filter).
Temperature ranges:	compensated: -10 ÷ + 85°C. Rh : ≤ 95% operating: for the metal body: -40 ÷ + 120°C; for electronics: -20 ÷ + 85°C.
CE Standards:	for industrial environments: EN 50081-2 (for emission) ; EN 50082-2 (for immunity).
Shocks and vibration tests:	each electronic block is tested, by an amber hammer, by 3 shocks in the 3 directions. Each finished transducer is tested, by a pipe wrench, by 3 shocks in the 2 radial directions; moreover it is shocked in a vertical tube (1 meter high) against a wooden plate. Production samples undergo **vibration** cycles in the 3 directions by an electrodynamic vibration shaker in the range: 5 ÷ 5000 Hz.

OVERALL DIMENSIONS



PRESSURE TRANSDUCERS PRESSURE SWITCHES

• for industry • for oleodynamics • for refrigeration 2,5 ÷ 1400 bars fs

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The pressure transducers Series LP650 are used in oleodynamics, pneumatics and, generally, for industrial applications whenever extreme mechanical ruggedness, reliability and high performance are requested. These requirements are heightened by the metal body and sensitive diaphragm without any welding and by the particular shape of the diaphragm.

Even for the ***CE tests*** the most severe standards for industrial applications have been chosen in accordance with the heavy use of the transducers and of the pressure switches.

The ***operating principle*** is based on the linear pressure deformation of a diaphagm and conseguent unbalance of a strain gauge bridge with 4 active arms (350 ohms). The *strain gauges* are metal films and not semiconductors in order to ensure a high accuracy and insensivity to thermal changes.

The ranges: 2.5 - 5 bars are supplied for all the Series excluded the model PL652 (not amplified).
The safety ranges: 1100 - 1400 bars have to be used only with liquids, with line pressures of 700 ÷ 800 bars max and they allow the use of LP Series even with hammerings of 1400 bars superimposed to the line pressure.

Exceptional features standardized in all the Series ; advisable also for extreme applications in oleodynamics :

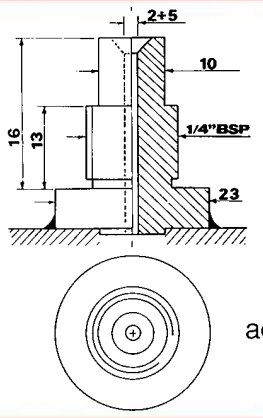
High strength stainless steel remelted by consumable process (more expensive): as for MIL-STD-2154 class A (including ultrasonic tests): to reduce chemical impurities and occlusions. **Metal body** in an only piece without brazing undergone chemical corrosion. **Hardening treatment** (done by only few Manufacturers): optimized for the best elasticity and impact strength at low temperatures (needed for refrigeration applications). **Special profile of the peripherical edge of the diaphragm:** to avoid fatigue yeldings. **Upper enclosure** in stainless steel resistant to chemical attacks. **Hydraulic connection:** 1/4" BSP (= G 1/4"): for screw threads cylindrical and sealing conic. **Test certificate:** supplied with each transducer. **Environmental degree of protection** (with connector plugged): sealed IP 65.

Operational peculiarities for all the amplified models (the calibration by external magnet is an only DS Europe peculiarity !) .

Internal calibrator: by an internal reed contact switchable by an external proximity magnet (supplied with the transducer): this calibration allows an electrical simulation of the precise value of the pressure (listed in the "final test certificate") that can be done by the Operator without any electrical connection during the first installation or during the periodical controls of the measuring chain.
Zero regulation (for all the amplified models) : by a multiturn potentiometer adjustable from outside through the central hole of the connector locking screw (with connector plugged and transducer on too).
Internal negative voltage generator : to cancel the constant pedestal of non-zero due to the integrated modules.
Internal voltage stabilizer: for a wide range of supply voltages.

Function	Model	Internal electronics	N° of wires	Supply voltage	Signal output	Zero Regulation	Connector pin connessions 0	1	2	3
PRESSURE TRANSDUCERS	LP652	without electronics	4	up to 20 V dc/ac	2 m V/V FS	zero unbalance ±2%FS	supply 0	output	output	supply +
	LP655	Voltage amplifiers	3	0 ÷ 10,5 up to 28 V	0 ÷ 5 V	± 10% FS min	earth	output	common	supply +
	LP651			0 ÷ 18 up to 28 V	0 ÷ 10 V					
	LP654	Current amplifier	2	0 ÷ 12 up to 28 V	4÷20 mA	± 10% min. of 4 mA	earth	—	common	4÷20 mA
			3	0 ÷ 17 up to 28 V	1÷5 V			1 ÷ 5 V		supply +
PRESSURE SWITCH	LP659	One level discriminator	4	0 ÷ 10,5 up to 28 V	N/O=make contact	10÷100%FS level regulation	supply 0	reed contact	reed contact	supply +

The main advantages of the electronic pressure switches mod. LP 659, compared to the *mechanical pressure switches,* are: high accuracy constant on all the measuring range; wide choice of measuring ranges (from 10 bars to 1400 bars full scale); level settings along all the measuring range; prefixed and constant hysteresis; no moving parts submitted to wear; high reliability; insensivity of the threshold level to vibrations; all the wet parts in stainless steel; compactness; price convenience.



adapter

TEST CERTIFICATE

FINAL TEST CERTIFICATE

Model: LP 655 S/N: 6460
Rated capacity (=FS): 700 bar.
Full scale output signal: 5.01 V.
Calibration equivalent pressure value: 456.0479 bar.
(Approach the magnet to the point at the side of the transducer)
Test room temperature: 20 Centigrades. Signature:

Electrical connections:
LP 655: excitation: 3; output signal: 1; common: 2; earth: 0.

Date: 23*01*97

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sale department


printing and advertising department


meeting and demonstration room

DS - EUROPE = HIGH QUALITY + CONVENIENT PRICES + FAST DELIVERIES + GOOD SERVICE


a bench for compensation of off-centre errors


a bench for final test certification of pressure transducers


a bench for final test certification of load cells


a bench for mechanical cycling of pressure transducers


a climatic chamber: −85 ÷ +180 °C for MIL-OIML-ECC tests


a hardening furnace in controlled atmosphere. Stab: ±1 °C

Specifications and prices may change without notice

DS EUROPE SRL

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