

## SM-DF2

## DIFFERENTIAL PRESSURE TRANSMITTER

DIFFERENTIAL pressure transmitters of these series distinguish themselves for high reliability and long-term stability of mechanical and electrical features.

The sensitive part, in contact with pressure, is entirely made of 17-4 PH corrosion-proof stainless steel.

High vacuum thermal treatments which stainless steel is subjected to, ensure the correct functioning even when highly dynamic stresses are involved. Monolithic execution of measuring element, without any assembling via tight rings or gaskets, guarantees a high long-term stability, with negligible hysteresis and zero drift. Pressure is internally detected by two strain gauge full bridges, that guarantee the maintenance of performances even when dynamic stresses are involved.

Electronic section, realised via SMD technology, consists of a high precision instrumental amplifier and a stable supplier, protected against short circuits and polarity inversion.

Every pressure transmitter is entirely LASER welded and completely resin-encapsulated, to ensure insensitivity and a high degree of hermetic tight.

During production cycle, pressure transmitters are thermally compensated, tested and individually calibrated with the use of completely automated stations that analyse and record data.

These features make their use ideal in several industrial fields, as: pneumatic, hydraulic, food process control and, generally, whenever checking the difference between two exerted pressures is necessary.

They are installed on test benches, material testing machines, and used in research and development laboratories.



SM-DF2

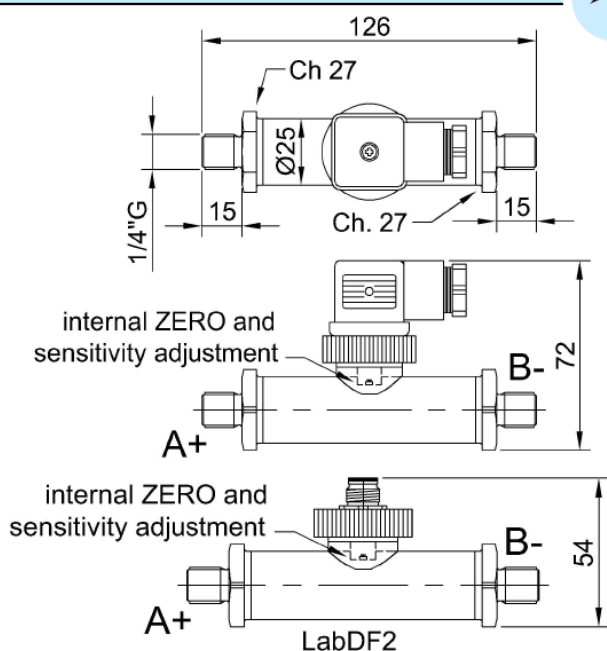
LabDF2

**≤ ± 0.20%**  
Linearity - Hysteresis

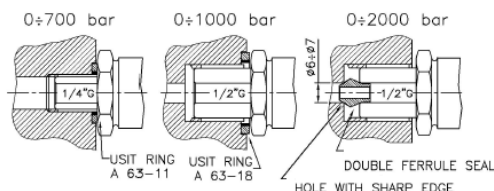
**≤ ± 0.05%**  
Linearity - Hysteresis



### Dimensions [mm]



### Typical installation



### SENSEL MEASUREMENT

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S.A.R.L au capital de 7500 Euros - SIRET 502 277 908 00013 - APE 7490 - N° TVA : FR40502277908

## Technical Data



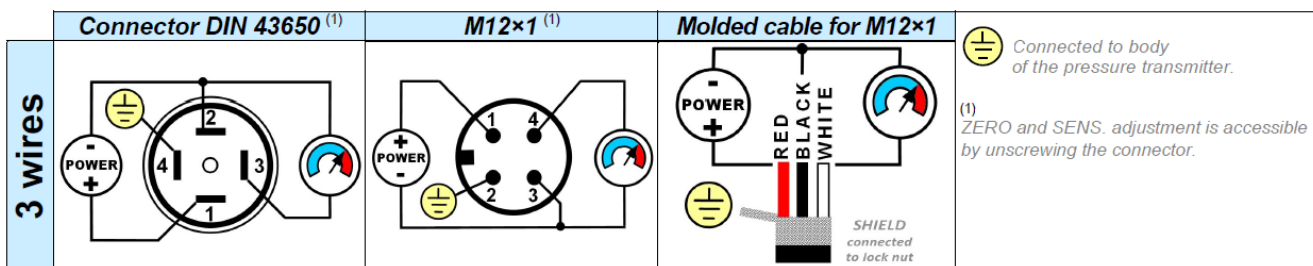
TYPE	SM-DF2	SM-LabDF2
RELATIVE PRESSURE (R) Zero at atmospheric pressure	0.5 - 1 - 2.5 bar 5 - 10 - 20 bar	10 - 20 bar
ABSOLUTE PRESSURE (A) Zero at pressure to absolute vacuum	50 - 100 - 250 - 350 - 500 - 700 bar *1000 - *1500 - *2000 bar	
LINEARITY and HYSTERESIS	≤ ± 0.20 %	≤ ± 0.05 %
TEMPERATURE EFFECT (1°C) a) on zero b) on sensitivity		≤ ± 0.015% ≤ ± 0.015%
NOMINAL SENSITIVITY		4-20mA (3 wires) ± 5 V, ± 10 V
CALIBRATION TOLERANCE		≤ ± 0.1%
NOMINAL POWER SUPPLY		4-20mA and ±5V → 12-24Vdc ±10V → 15-24Vdc
MAX. POWER SUPPLY MAX. ABSORPTION a) 3 wires LOADING RESISTANCE: a) tension b) current INSULATION RESISTANCE ZERO BALANCE DIFFERENTIAL VARIABLE SENSITIVITY RESPONSE FREQUENCY		28Vdc  30mA  min. 3KΩ from 0 to 470Ω >2 GΩ ± 10% ADJ. ± 75% ADJ. from 0.5 to 1 kHz
LIMIT MECHANICAL VALUES REFERRED TO NOMINAL PRESSURE : a) service pressure b) max. permissible pressure c) breaking pressure d) highly dynamic pressure		100% 150% >300% 75%
REFERENCE TEMPERATURE WORKING TEMPERATURE RANGE STORAGE TEMPERATURE RANGE		+23°C -10/+70°C -20/+80°C
PROCESS COUPLING TIGHTENING WRENCH TIGHTENING TORQUE PROTECTION CLASS (EN 60529) SENSOR EXECUTION MATERIAL ELECTRICAL CONNECTION		1/4" Gas (*1/2" Gas) Maschio / BSP Male 27 mm 28 Nm IP65 INOX 17-4 PH DF2: Connector DIN 43650 A/ISO 4400 LabDF2: M12×1 + 4 poles 3m shielded cable

### Functioning example

\*In the version with mA output, when pressure increases in the port B-, the signal decreases down to 0.8mA then stops even if pressure continues to increase.

Port	Pressure	SIGNAL OUTPUT		
		4-20mA*	±5V	± 10 V
A + B -	0 0	4 mA	0	0
A + B -	FS 0	20 mA	+ 5V	+ 10V
A + B -	0 FS	max 0.8 mA	- 5V	- 10V
A + B -	FS FS	4 mA	0	0

## Electrical connections



### SENSEL MEASUREMENT