



The **SA SERIES Pressure sensor** is designed for the industrial/hydraulic markets. **SA SERIES** is manufactured to work with all liquids and gases that are compatible with the wetted materials. The sensor features a number of configurable options including wetted materials, process connections, and pressure ranges.

It is a ratiometric pressure device based on a piezoresistive ceramic technology.

Optimized design and economical advantage. **MADE IN ITALY**

APPLICATIONS: HVAC-T (PORTABLE APPLICATIONS and transportation: bus, truck, ships, trains...) - Oil system pressure
 Fuel system pressure - HVAC after market - industrial automation - Process monitoring – hydraulic systems – potable water monitoring – fluids monitoring – methan gas control.

PERFORMANCES: resistant to extreme temperatures, excellent hysteresis, high accuracy, fast response time and excellent surge resistance

COMPATIBILITY: Suitable for HVAC-R refrigerant gases, also for new gas HFO 1234ze, R1234yf, R407c, and related oil.

RESISTANCE: suitable for critical applications, with aggressive fluids

COMPLIANCE: compliant with Rohs and Reach regulation- UL and TS certified

- ▶ RANGE: 0-700 (psi) / 0 -46 (bar)
- ▶ TYPE: absolute
- ▶ MEDIA: air, gases, liquids

Pressure range [bar (abs)]	Pressure [psia]		Pressure [bar (abs)]		Version	Material	Over pressure		Burst pressure	
	10% Vdd	90% Vdd	10% Vdd	90% Vdd			psi	bar	psi	bar
0 ÷ 5,2	0	75.42	0	5,2	Female	Brass	363	25	1595	110
0 ÷ 10,3	0	149.39	0	10,3	Female	Brass	435	30	1595	110
0 ÷ 13,8	0	200.15	0	13,8	Female	Brass	551	38	1595	110
1 ÷ 18,3	14.5	265.42	1	18,3	Female	Brass	783	54	1595	110
1 ÷ 21,7	14.5	314.73	1	21,7	Female	Brass	900	62	1595	110
1 ÷ 35,5	14.5	514.88	1	35,5	Female	Brass	1015	70	2494	110
1 ÷ 46	14.5	667.17	1	46	Female	Brass	1320	91	2494	172

VOLTAGE OUTPUT OPERATION : SA SERIES requires a 5 VDC power supply.

An electrical power supply delivering 5 VDC with minimum current capability of 10 mA. Shielded cable is recommended when wiring.

Service: Compatible gases and liquids.

Wetted Materials: Brass, aluminum, or 316 SS.

Accuracy: $\pm 1.2\%$ F.S. (linearity, hysteresis, repeatability and calibration).

Static error band @ 25° C, 5.0 VDC supply voltage.

Cycle Life: 10 million F.S. cycles.

Storage Temperature: -40° to 302°F (-40° to 150°C). Operating Temperature: -40° to 275°F (-40° to 135°C).

Thermal Effect: $\pm 0.013\%$ FS/°C.

Output Signal: 0.5-4.5 VDC ratiometric.

Response Time: 10 ms typical.

Output Load: 20 k Ω min. (pull-up or pull-down).

Current Consumption: < 10 mA @ 5.5 VDC (8.5 mA typical).

Electrical Connection: Packard connection.

Process Connection: 7/16" 20 UNF (female) or 1/4" NPT (female).

Enclosure Rating: IP67 (with IP67 plug).

Mounting Orientation: Mount in any position.

Weight: 1.1 oz (30 g).

Vibration: IEC 60068 -2-64: 2008 : FREQUENCY RANGE 10-1000Hz / Acceleration RMS 27,8 m/s²

Duration of test: 12h for axis / Vibration class V2

Climatic profile: max temperature 135°C – min -40°C / Duration of cycle 12h

SHOCK: IEC 60068-2-27:2008: Peak acceleration :+/- 500 m/s²

Pulse duration: 6ms

Number of shock per each axis: 10 positive and 10 negative

Operational informations

Upon final installation of the **SA SERIES** sensor, no routine maintenance is required. Is not possible to repair the unit. Field repair should not be attempted and may void warranty.

WARRANTY/RETURN: Emailing to sales@sensaggio.com to receive a Return Goods Authorization number before shipping the product back for replacement. Be sure to include a brief description of the problem plus any additional application notes and the part number showed on the body.

Installation

- Location: Select a location where the temperature of the transmitter will be between -40° to 275°F (-40° and 135°C). The length of pipe connecting the transmitter to the pressure source can be any length necessary. However, the proximity to the pressure source may affect response time.
- Position: The transmitter is not position sensitive and can be installed in any orientation in order to best fit application requirements.
- Pressure Connection: Use a small amount of suitable sealant to prevent leaks. Be sure the pressure passage inside the port is not blocked.
- Electrical Connections: Wire Length - The maximum length of wire connecting the transmitter and receiver is a function of wire size and receiver resistance. Wiring should not contribute more than 10% of the receiver resistance to the total loop resistance.

SA SERIES - Datasheet

GENERAL FEATURES	
Pressure ranges	0 to 5.2 bar (abs), through 1 to 46 bar (abs) (other pressure range and transfer function available on request)
Over pressure	25 to 91 bar (abs) typical
Burst pressure	Brass, min 110 bar (abs)
Pressure connection	7/16" 20UNF (other connections available on request)
Pressure connection material	Brass (other materials available on request)
Tightening torque	Brass, 12 to 16 Nm
Electrical connection	Packard connector (other connections available on request)
Electrical connection material	PBT GF30
ELECTRICAL FEATURES	
Power supply (Vdd)	5Vdc \pm 10%. (Protected against polarity inversion and short circuit)
Supply current (Idd)	< 10 mA @ 5.5Vdc (8,5 mA typical)
Output voltage (Vout)	10% Vdd to 90% Vdd typical
Output current (Iout)	5mA typical
Output load	20 K Ω min. (Pull-up or Pull-down)
Insulation resistance	1 G Ω @ 50Vdc
Output response time	10 ms typical
Power supply overvoltage	18Vdc
Reverse voltage	-14Vdc
PERFORMANCE FEATURES	
Operating temperature	-40°C to 135°C
Storage temperature	-40°C to 150°C
Accuracy	\pm 1,2% F.S. (linearity, hysteresis, repeatability and calibration) Static error band @ 25°C, 5.0Vdc
Temperature error	\pm 0,013% F.S./°C
Cycle life	10 millions F.S. cycles
IP code	IP67 (with connector female IP67 plugged)
Fluids compatibility	HVAC refrigerants, new HFO 1234ze refrigerant and associated oils. (other fluids compatibilities available on request)
Vacuum pressure (referred to refrigerant circuit)	0 bar (abs)
Drop (any axis)	1,5m
Vibration: IEC 60068-2-64:2008	12g (rms)
Shock: IEC 60068-2-27:2008	50g, 6ms
Weight	30 grams typical
EMC FEATURES (standards CEI EN 61326-1:2013 and CEI EN 61326-2-3:2014)	
Electrostatic discharge: CEI EN 61000-4-2:2011	\pm 4KV contact \pm 8KV air
Radiated immunity: CEI EN 61000-4-3:2007	3V/m (80 MHz \pm 1 GHz) 3V/m (1,4 GHz \pm 2GHz) 1V/m (2 GHz \pm 2,17 GHz)
Electrical fast transient/Burst: CEI EN 61000-4-4:2013	\pm 1KV
Surge: CEI EN 61000-4-5:2007	\pm 1KV
Conducted immunity: CEI EN 61000-4-6:2014	3V (0,15 \pm 80 MHz)



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OUR SENSORS MUST NOT BE USED IN HVAC STATIONARY APPLICATIONS



PIEZORESISTIVE CERAMIC TECHNOLOGY

MADE IN ITALY | IATF - UL CERTIFIED | ROHS AND REACH COMPLIANT | EXCELLENT PERFORMANCES |
HIGH MECHANICAL RESISTANCE | BEST QUALITY/COST RATIO FLEXIBILITY | LINEAR PRESSURE - CUSTOMIZABLE

