



# Pressure absolute M10 Sensor Fluids / Pumps / Brake Sensor SPA100A Version 1.0



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# Introduction.

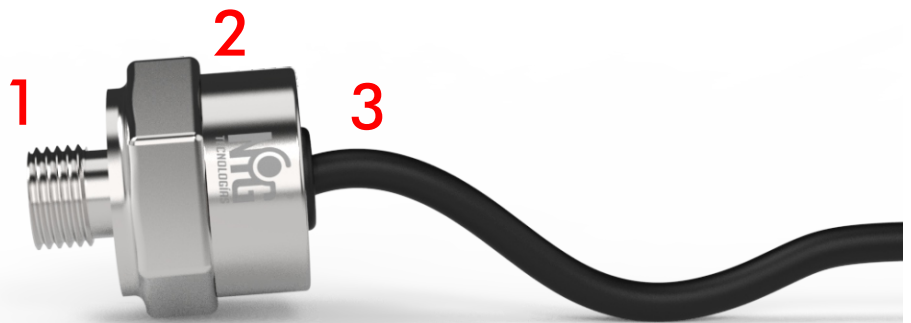
This universal sensor is designed to measure liquid pressures, it can be water, fuel or brake fluids. The signal output is linear from 0.5vdc=0bar to 4.5vdc=100bar. This sensor maintains the best accuracy  $\pm 1.5\%$ , between  $0^{\circ}\text{C}$  and  $80^{\circ}\text{C}$  of temperature. It is very important to feed it with a stabilized signal of 5vdc  $\pm 0.25\text{vdc}$ .

## How does this sensor benefit me?

This sensor can be used to study the shapes of internal dynamic pressure waves in various circuits and the changes in these waves due to temperature. Its main application is in the study of the effective pressures of brake systems as well as the effective regulation of the front and rear brake ratio.

## Description of Parts.

The sensor is mounted inside a robust body, machined from 304 stainless steel, with a customizable thread of your choice. It has a cable termination where the type of electrical connector to be used can also be customized. Below is a description of the parts that make up the sensor.



**SIM8:** Inductive M8 Sensor.

- 1- Installation thread M10x1 and customized options.
- 2- 304 stainless steel body.
- 3- Rubber and cable termination.



# Electrical characteristics.

## ABSOLUTE MAXIMUM RATINGS. (Note 1)

Parameter	Symbol	Value	Unit
Supply voltage Max	VdcMax	5.25	Vdc
Output current	Iout	10	mA
Operating temperature Max	TaMax	135	°C
Storage temperature range, no freezing.	Tstg	-40 to 135	°C
ESD on connector pins (Human body model)		3000	V

Note 1: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Conditions" is not implied. Exposure to "Absolute Maximum Ratings" for extended periods may affect device reliability.

## RECOMMENDED OPERATING CONDITIONS.

Parameter	Symbol	Min	Max	Unit
Supply voltage	VS	5.0	5.25	Vdc
Operating temperature	Top	0	80	°C

## ELECTRICAL FEATURES / OPERATING CHARACTERISTICS.

(TA=25°C, unless otherwise specified.)

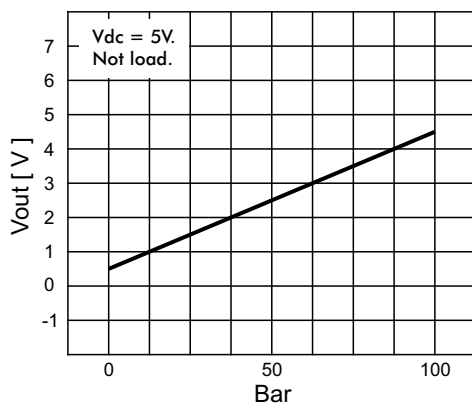
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Working current	Icc	5Vdc		5		mA
Load impedance	Rload	5Vdc		2		kOhm
Output voltage	Vout	5Vdc	10%Vdc		90%Vdc	%
Output type	Otyp			Ratio		
Reverse protection	RBP	5Vdc		-14		Vdc
Over voltage protection	OVP	5Vdc		16		Vdc
Measuring range	MR	5Vdc	0		100	Bar
Overload pressure	Olpres	5Vdc		1.5		Times
Burst pressure	Pbpress	5Vdc		2		Times

# Performance characteristics.

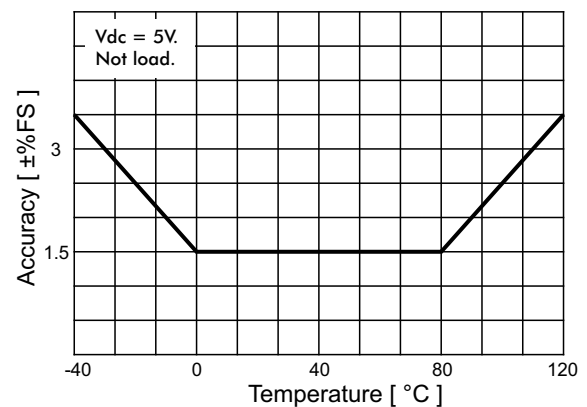
## MECHANICAL CHARACTERISTICS.

Parameter	Symbol	Value	Unit
Protection class		65	IP
Pressure connector	Pcon	10x1	Metric

Output characteristics



Temperature characteristics

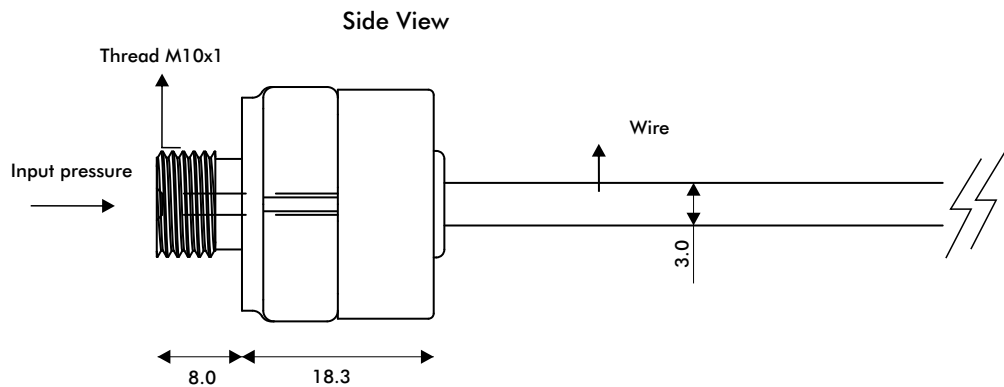
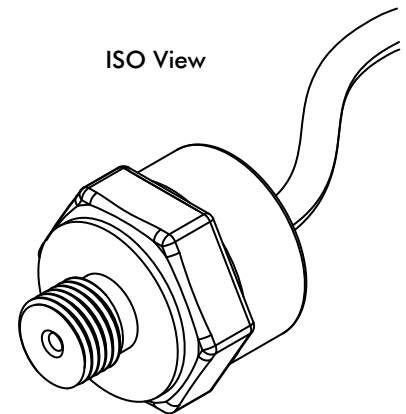
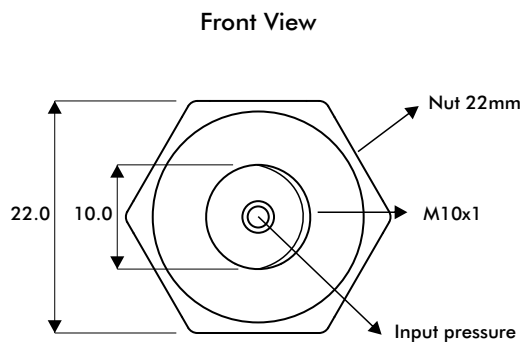


## Installation.



# Dimensions.

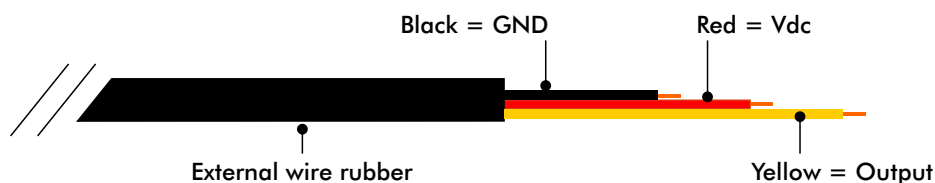
SPA100A. (Dimensions in mm).



## Pinout

Below is the pinout of the sensor SPA100A with the colors of the cable that is provided. The pinout of the connector will depend on the connector with which you want to assemble the sensor.

Pinout from wires colours.



## Customization options

The sensor customization options are:

- Type of connector.
- Type of cable.
- Dimensions and material of the body.
- Type of output signal.
- Range of power supply.