

ESCP-MIS1

Medium Isolated MEMS Capacitive Pressure Sensors



ES Systems has developed a series of medium isolated pressure sensors suitable for applications with harsh environmental conditions where resistance to corrosive fluids or gases is required. Each sensor integrates a MEMS capacitive pressure sensor die, and a CMOS ASIC for the signal conditioning. The MEMS pressure sensor dies are underpinned by ES's innovative microfabrication process for silicon capacitive sensors.

The capacitive pressure sensor dies integrated into the medium isolated pressure systems provide state-of-the-art accuracy and resolution, excellent long-term stability combined with very good repeatability and hysteresis. The total overall error including thermal offsets is lower than $\pm 0.25\%$ FS.

The ESCP-MIS1 is a family of pressure sensors in the standard $\text{Ø}19$ stainless steel 316L capsule. In this type of sensors, the pressure is transferred hydrolically to the hermetically sealed sensing element through the Silicon Oil used to fill the cavity between the sensing element and the stainless-steel diaphragm. The pressure capsule interface is either I²C or analog. The sensors are provided calibrated and compensated at various temperature and pressure ranges from 1 bara to 400 bara. Custom materials like Hastelloy or Titanium are available upon request.



48 Konstantinoupoleos str.
19441 Koropi - Athens, Greece

T +30 216 2000500

F +30 216 2000555

info@esenssys.com

www.esenssys.com



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Medium Isolated
MEMS Capacitive Pressure Sensors



Specifications

Pressure Type	Absolute
Pressure Range	Up to 400 bar
Power Supply	+3.3V
Current Consumption, full operation	< 1mA
Total Error	< ±0,25%FS
Operating Temperature	-20°C ... +85°C
Compensation Temperature	0°C ... +60°C, -20°C ... +85°C
Digital Output	Calibrated Pressure & Temperature
Analog Output	Calibrated Pressure
Output	I ² C, Analog, PWM
Overpressure Tolerance	Up to 100x
Media Compatibility	Gases, Liquids
Material Options	SS 316 L, Hastelloy, Titanium

Ordering Information

ESCP-MIS1 – NNNNN – NN – NN – N – NN

Pressure Range	Material
Absolute Full Scale	01 SS 316 L
002BA 2 bar	02 Hastelloy
010BA 10 bar	03 Titanium
015BA 15 bar	
030BA 30 bar	Temperature Sensor
050BA 50 bar	Y Yes
150BA 150 bar	N No
250BA 250 bar	Compensation Temperature
300BA 300 bar	01 0°C to 60°C
350BA 350 bar	02 -20°C to 85°C
400BA 400 bar	
	Output Type
	01 I ² C (address 0x28) 05 Analog
	02 I ² C (address 0x29)
	03 I ² C (address 0x2A)
	04 I ² C (address 0x2B)



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