

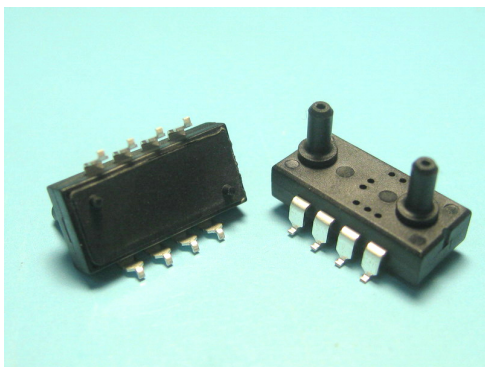
## MIS-3610 series Intelligent Pressure Sensor

### ■ Features

- Differential pressure for 1, 1.45, 5.8, 15, 30 psi range
- SMD package
- Operating temperature range: -40 to 85°C
- Fully calibrated and temperature compensated
- Rail to rail ratiometric analog output

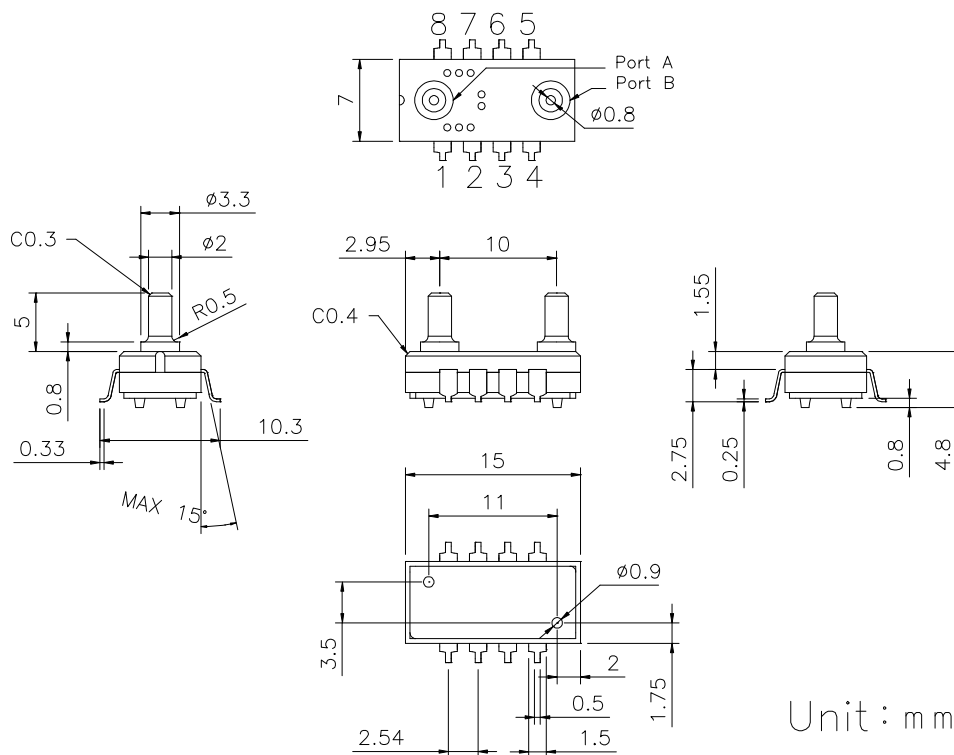
### ■ Applications

- Oxygen concentrators
- Ventilation and air flow monitors
- Sleep apnea monitoring and therapy equipment
- Pneumatic controls
- HVAC, medical OEM applications
- Respiratory machines



The MIS-3610 is a intelligent pressure sensor which consist of a MEMS piezoresistive pressure sensor and a CMOS sensor interface IC. The interface IC enables easy and precise calibration of resistive bridge sensors via EEPROM. It correct digitally offset, gain and both temperature coefficients. All devices were factory calibrated and temperature compensated. The MIS-3610 can provide 3V or 5V rail-to-rail ratiometric analog output.

### ■ Package Outlines



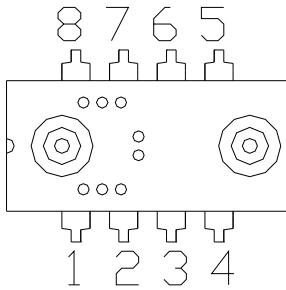
## ■ Specifications

Parameter	Min	Typ	Max	Units	Notes
<b>Absolute Maximum Ratings</b>					
Supply Voltage	-0.3		6.0	V	
Maximum Overpressure			2X	Rated pressure	
Storage Temperature Range	-40		125	°C	
Operating Temperature Range	-40		85	°C	
Operating humidity	0		95	% RH	No condensation
Media Compatibility	Clean, dry air & non-corrosive gases				
<b>Recommended Operating Conditions</b>					
Pressure Range	±1、±1.45、±5.8、±15、±30			psi	2
Supply Voltage					
MIS-3610 series	4.75	5	5.25	V	
MIS-3613 series	2.7	3	3.3		
Supply Current	0.25		2	mAdc	
Power ON Rise Time			100	ms	
Zero Pressure Offset Voltage ( 0 to 85°C )					
MIS-3610 series	1.6	2.5	3.4	V	rail to rail output
MIS-3613 series	0.96	1.5	2.04		
Full Scale Output ( 0 to 85°C )					
MIS-3610 series					
@ -1、-1.45、-5.8、-15、-30 psi	0.16	0.25	0.34		
@ +1、+1.45、+5.8、+15、+30 psi	4.66	4.75	4.84	V	rail to rail output
MIS-3613 series					
@ -1、-1.45、-5.8、-15、-30 psi	0.096	0.15	0.204		
@ +1、+1.45、+5.8、+15、+30 psi	2.796	2.85	2.904		
Accuracy 0 to 50°C	-1		1	%FS	
Sensitivity					
1.00 psi (MPS-3610 / MPS-3613)		2.25 / 1.35			
1.45 psi (MPS-3610 / MPS-3613)		1.5517 / 0.931			
5.80 psi (MPS-3610 / MPS-3613)		0.3879 / 0.2328		V / psi	
15 psi (MPS-3610 / MPS-3613)		0.15 / 0.09			
30 psi (MPS-3610 / MPS-3613)		0.075 / 0.045			
Response time		1		ms	
Warm-up time		20		ms	
Offset stability			±0.25	%FS	
External Capacitance between Vdd and Gnd	100	220	470	nF	
Output load Capacitance		10	15	nF	
Notes :					
1. Unless otherwise specified, measurements were taken with a supply voltage of 5 Vdc at a temperature of 25 ± 3°C and humidity ranging from 25% ~ 85% .					
2. Pressure range was defined as pressure of port A subtracts pressure of port B.					
Metrodyne Microsystem Corp. reserves the right to make changes to the product specification in this publication.					

## Ordering information

Part No.	Pressure type	Pressure range	Supply voltage
MIS-3610-001D	Differential	-1~1 psi	5V
MIS-3610-D15D		-1.45~1.45 psi	
MIS-3610-006D		-5.8~5.8 psi	
MIS-3610-015D		-15~15 psi	
MIS-3610-030D		-30~30 psi	
MIS-3613-001D	Differential	-1~1 psi	3V
MIS-3613-D15D		-1.45~1.45 psi	
MIS-3613-006D		-5.8~5.8 psi	
MIS-3613-015D		-15~15 psi	
MIS-3613-030D		-30~30 psi	

## Pin Configuration and Function Descriptions



Pin No.	Pin Name	Description
1	VDD	Power Supply
2	VOUT	Analog Voltage Output
3	GND	Ground
4	NC	No connection
5	NC	No connection
6	NC	No connection
7	NC	No connection
8	NC	No connection

## Transfer Function

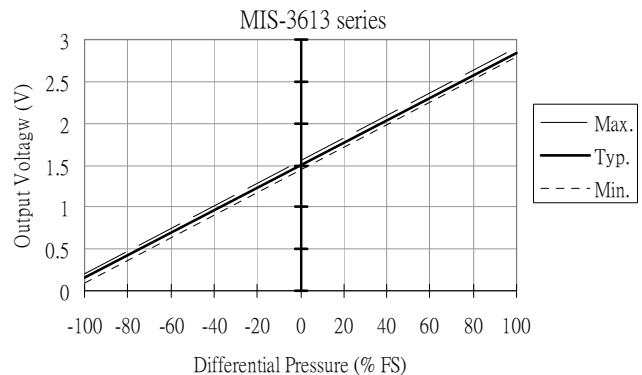
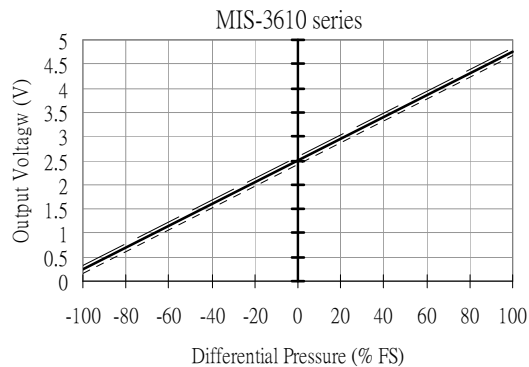
$$P = \frac{(V_{out} - V_{off})}{Sen.}$$

P : Applied pressure value (psi)

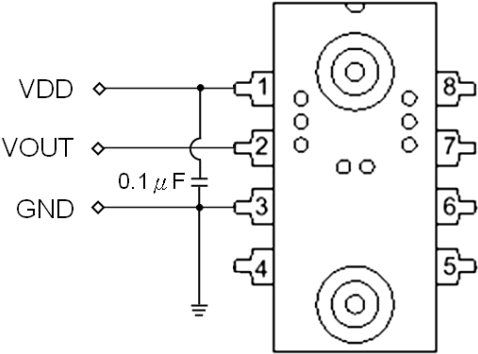
$V_{off}$  : Zero pressure offset voltage, the output voltage of sensor without pressure applying

$V_{out}$  : The output voltage of sensor when pressure applied

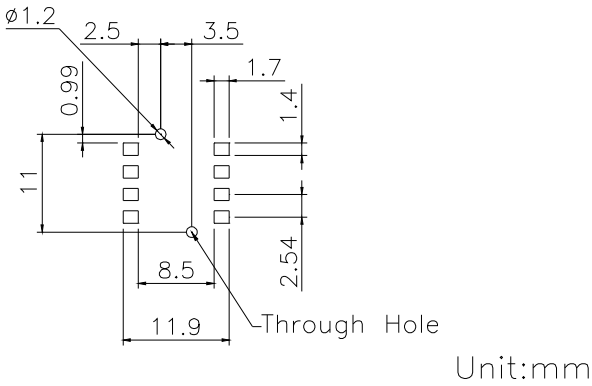
Sen. : Sensitivity of pressure sensor ( Please refer to the data listed in page2 )



Application Circuit example



Recommended footprint



**Metrodyne Microsystem Corp.**  
10, Prosperity Rd. II, Science-Based Industrial Park, Hsin-Chu 300, Taiwan, R.O.C.  
Tel:886-3-5632161 Fax:886-3-5632509  
E-mail:sales@metrodyne.com.tw <http://www.metrodynemems.com/>