

Model NPS19A

Piezoresistive pressure sensor with I2C or SPI digital interface
100mbar to 35bar/3.3 to 5VDC power supply

Materontek
Sensing and Internet of Things

Features

- ❑ Piezoresistive pressure chip encapsulated in an oil-filled metal housing
- ❑ Measuring ranges from 100mbar to 35bar
- ❑ I2C or SPI digital interface
- ❑ Gauge pressure, absolute pressure
- ❑ Low power option
- ❑ Ø19mm



Application

- ❑ OEM
- ❑ Laboratory
- ❑ Water treatment
- ❑ IoT pressure measurement

Technical data

Performance	
Pressure Accuracy*	±0.5 %FS(typ.) *Linearity (best straight line) + Hysteresis + Repeatability
Temperature Accuracy	±1.5 °C (typ.)
Linearity	±0.2 %FS(typ.), ±0.3 %FS(max.)
Hysteresis	±0.03 %FS(typ.), ±0.05 %FS(max.)
Repeatability	±0.03 %FS(typ.), ±0.05 %FS(max.)
Operating temperature	-20 to 80°C
Compensated temperature range	-10 to 50 °C
Temperature coefficient zero	±0.75 %FS(typ.), ±1.5 %FS(max.) * (Pressure >0.1 bar)
Temperature coefficient sensitivity	±0.75 %FS(typ.), ±1.5 %FS(max.)
Vibration	10 g RMS(20 to 2000Hz)
Shock	100 g(10ms)
Cycles	10x10 ⁶
Overpressure	200 %FS
Long term stability	±0.5 %FS(typ.)

Electrical @25°C	
Zero output (10%~90%)	666(typ.) * Count Hex
Zero output (5%~95%)	333(typ.) * Count Hex
Full scale output (10%~90%)	399A(typ.) * Count Hex
Full scale output (5%~95%)	3CCB(typ.) * Count Hex
Excitation	3.3±0.1VDC, 5±0.1VDC
Supply current	2.5mA(typ.)
Pressure resolution	14 bits
Temperature resolution	11 bits
Standby current	5µA
Start Time to Data Ready	8.4ms
Insulation resistance	50 MΩ@50VDC

Physical Specifications	
Housing	316L stainless steel
Diaphragm	316L stainless steel
Oil Filling	Silicone oil
Weight	~20g

The listed specifications and dimensions are subject to change without prior notice

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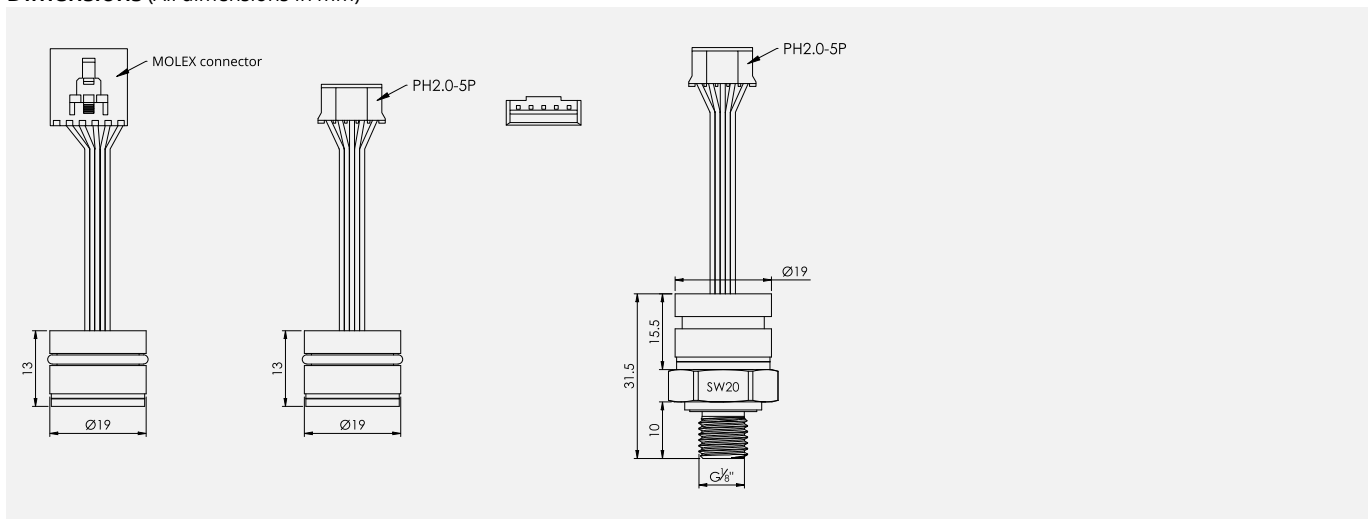
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Standard pressure range

Code	Nominal pressure [bar]	Gauge	Absolute
01	0...0.1	✓	
02	0...0.2	✓	
03	0...0.35	✓	✓
04	0...0.7	✓	✓
05	0...1	✓	✓
06	0...1.6	✓	✓
07	0...2.5	✓	✓
08	0...4	✓	✓
09	0...6	✓	✓
10	0...10	✓	✓
11	0...16	✓	✓
12	0...20	✓	✓
13	0...35	✓	
14	-0.1...+0.1	✓	
15	-0.2...+0.2	✓	
16	-0.5...+0.5	✓	
17	-1...0	✓	

Code	Nominal pressure [bar]	Gauge	Absolute
18	-0.1...+0.1	✓	
19	-0.2...+0.2	✓	
20	-0.5...+0.5	✓	
21	-1...0	✓	
22	0...-1	✓	
23	-1...+1	✓	
24	-1...+1.6	✓	
25	-1...+2.5	✓	
26	-1...+4	✓	
27	-1...+6	✓	
28	-1...+9	✓	
29	-1...+10	✓	
30	-1...+16	✓	
31	-1...+25	✓	
32	0.8...2	✓	✓

Dimensions (All dimensions in mm)



Ordering code

Model	Range	Type	Interface	Output	Supply Voltage	Electrical Connection	Pressure interface
NPS19A	code	G gauge	I I ² C	A 10~90%	3 3.3VDC	F Silicon rubber wires(L=80mm)	0 without
		A absolute	S SPI	B 5~95%	5 5VDC	U UL2651 ribbon cable 26AWG(L=80mm)	1 G1/4 male
						M MOLEX_5057-9406 connector	2 1/4NPT male
						L PH2.0-5P connector	3 G1/8 male