OEM Pressure Sensor

Product Selection Guide





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Model NPS19



Product Overview

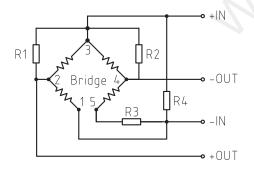
NPS19 is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS19 is temperature compensated and zero correction by using resistance technology. The temperature drift of sensor is within 1.5%FS.

NPS19 pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Ship and marine systems

Constant current schematic diagram



Features

- 100mbar to 1000bar (1.45psi to 14500psi)
- Absolute, gauge and sealed gauge
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Standard configurations include:19 mm diameter x 14 mm long
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Ranges

Nominal pressure	gauge	sealed gauge	ahsolute
-10bar	gaage	seared gauge	absolute
-0.350bar			
-0.20bar			
	-		
00.1bar	•		
00.2bar	•		
00.35bar	•		•
00.7bar	•		
01bar	•		•
01.6bar	•		
02.5bar	•		•
04bar	•		•
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar	•	•	
060bar		•	
0100bar		•	
0250bar		•	
0400bar		•	
0600bar		•	
01000bar		•	

Performance Specifications

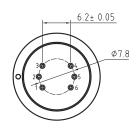
Parameter	Value			Units		Notes	
General							
Pressure Range	-1-0,,0-0.1,	.,1000		bar		1bar=14.	5psi
Overpressure	1.5xFS			bar			
Environmental							
Operating Temperature Range	-40 to +125			°C		-40°F to 2	257°F
Compensated Temperature Range	0 to +70			°C		32°F to 1	58°F
Storage Temperature Range	-40 to +125			°C		-40°F to 2	257°F
Vibration	10			g		20 to 200	0Hz
Shock	100			g		10ms	
Cycles	10x10 ⁶			cycles			
Electrical @25°C(77°F)							
Excitation Current	1.5			mA			
Excitation Voltage	5			Vdc			
Bridge Resistance	2600 to 6000			Ω			
Insulation Resistance	100			$M\Omega$		@100Vd	С
Physical Specifications							
Media Compatibility	All media comp	atible with 316	SL stainless s	teel			
Housing	316L stainless	steel					
Diaphragm	316L stainless	steel					
Seal Ring	Viton or NBR						
Oil Filling	Silicone oil						
Electrical Connection	Silicon rubber f	lexible wire or	kovar pin				
Net Weight	Approx.18g						
Parameter	Minimum	Typical	Maxim	um	Units		Notes
Performance							
Zero Output	-2	±1	2		mV		1
Full Scale Output	50	100			mV		1
Non-linearity	±0.1	±0.2	±0.3		%FSC)	1, 2
Hysteresis	-0.05	±0.03	0.05		%FSC)	1
Repeatability	-0.05 ±0.03 0.05			%FSC)	1	
Temp Coeff - Zero	-1.5	±0.75	1.5		%FSC)	3
Temp Coeff - Span	-1.5	±0.75	1.5		%FSC)	3
Long-Term Stability		±0.2	±0.3		%FSC)/year	1

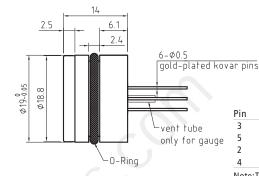
Notes

- 1. All values measured at 25°C(77°F) and at 1.5mA.
- 2. Best fit straight line(BFSL).
- 3. 0° C to 70° C(32°F to 158°F) with reference to 25°C(77°F).

Dimensions (in mm)

Pressure Range≤100bar

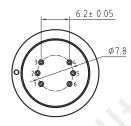


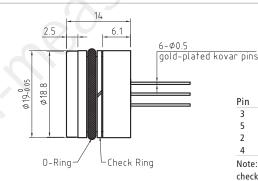


Pin	Connection	Wire color
3	+IN	Red
5	- IN	Blue
2	+OUT	Yellow
4	- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

Pressure Range>100bar





Pin	Connection	Wire color
3	+IN	Red
5	- IN	Blue
2	+OUT	Yellow
4	- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1:	Model					
NPS19	Piezore	sistive O	EM Press	sure Senso	or	
	Option	2: Press	ure Ran	ge		
	N001	-10b	ar		0040	04bar 6000 0600bar
	N002	-0.35	0bar		0060	06bar 1001 01000bar
	N003	-0.2	0bar		0100	010bar Cxxx Customized range
	0001	00.1	bar		0160	016bar
	0003	00.3	5bar		0250	025bar
	0007	00.7	bar		0600	060bar
	0010	01ba	ar		1000	0100bar
	0016	01.6	bar		2500	0250bar
	0025	02.5	bar		4000	0400bar
		Option				
		G	gauge			
		Α	absolu	ite		
		S	sealed	gauge		
			Optio	n4: Excit	ation	
			I	1.5mA	Constan	nt Current Excitation
			V	5Vdc C	onstant	t Voltage Excitation
				Option	5: Elec	ctrical Interface
				F	4 colo	or silicon rubber wires, length=100mm
				P	gold-	-plated kovar pins(only for 1.5mA Constant Current Excitation)
			on6: Compensation			
					T	0 to 70°C
					NA	No temperature compensation
NPS19	0010	G		F	T	Examples of Ordering Code: NPS19-0010-G-I-F-T



Volltel Measurement Technology co., Ltd No.8, Wuxing Road, Lianhu District, Xi'an 710002, China

Model NPS19L



Product Overview

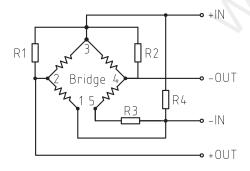
NPS19L is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS19L is temperature compensated and zero correction by using resistance technology. The temperature drift of sensor is within 1.5%FS.

NPS19L pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Ship and marine systems

Constant current schematic diagram



Features

- 100mbar to 100bar (1.45psi to 1450psi)
- Absolute, gauge and sealed gauge
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Standard configurations include:19 mm diameter x 11.5 mm long
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Ranges

Nominal pressure	gauge	sealed gauge	absolute
-10bar			
-0.350bar	•		
-0.20bar	•		
00.1bar	•		
00.2bar	•		
00.35bar	•		
00.7bar	•		
01bar	•		•
01.6bar	•		
02.5bar	•		•
04bar	•		•
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar		•	
060bar		•	
0100bar		•	

Performance Specifications

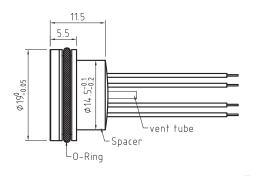
Parameter	Value			Units	Notes	
General						
Pressure Range	-1-0,,0-0.1,	.,100		bar	1bar=1	4.5psi
Overpressure	2xFS			bar		
Environmental						
Operating Temperature Range	-40 to +125			°C	-40°F to	257°F
Compensated Temperature Range	0 to +70			°C	32°F to	158°F
Storage Temperature Range	-40 to +125			°C	-40°F to	257°F
Vibration	10			g	20 to 20	100Hz
Shock	100			g	10ms	
Cycles	10x10 ⁶			cycles		
Electrical @25°C(77°F)						
Excitation Current	1.5			mA		
Excitation Voltage	5			Vdc		
Bridge Resistance	2600 to 6000			Ω		
Insulation Resistance	100			MΩ	@100V	dc
Physical Specifications						
Media Compatibility	All media comp	atible with 316	L stainless s	teel		
Housing	316L stainless	steel				
Diaphragm	316L stainless	steel				
Seal Ring	Viton or NBR					
Oil Filling	Silicone oil					
Electrical Connection	Silicon rubber f	lexible wire or k	ovar pin			
Net Weight	Approx.16g					
Parameter	Minimum	Typical	Maxim	um U	nits	Notes
Performance						
Zero Output	-2	±1	2	m	IV	1
Full Scale Output	50	100		m	iV	1
Non-linearity	±0.1	±0.2	±0.3	%	FSO	1, 2
Hysteresis	-0.05	±0.03	0.05	%	FSO	1
Repeatability	-0.05	±0.03	0.05	%	FSO	1
Temp Coeff - Zero	-1.5				FSO	3
Temp Coeff - Span	-1.5	±0.75	1.5	%	FSO	3
Long-Term Stability		±0.2	±0.3	%	FSO/year	1

Notes

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0° C to 70° C(32°F to 158°F) with reference to 25°C(77°F)
- 4. Consult factory for vacuum applications

Dimensions (in mm)

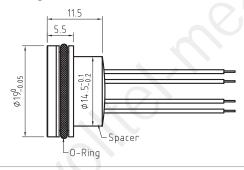
For Gauge Pressure



3 +IN Red 5 -IN Blue 2 +OUT Yellow	Pin	Connection	Wire color
2 +OUT Yellow	3	+IN	Red
	5	- IN	Blue
Λ - OUT White	2	+OUT	Yellow
4 - OOT WITTE	4	- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

For Sealed Gauge Pressure or Absolute Pressure



Pin	Connection	Wire color
3	+IN	Red
5	- IN	Blue
2	+OUT	Yellow
4	- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1:	Model								
NPS19L	Piezore	sistive O	EM Press	ure Senso	or				
	Option	2: Press	ure Ran	ge					
	N001	-10b	ar		0040	04bar			
	N002	-0.35	0bar		0060	06bar			
	N003	-0.2	0bar		0100	010bar			
	0001	00.1	bar		0160	016bar			
	0003	00.3	5bar		0250 025bar				
	0007	00.7	'bar		0600	060bar			
	0010	01ba	ar		1000	0100bar			
	0016	01.6	bar		Cxxx	Customized range			
	0025	02.5	02.5bar						
		Option3: Pressure Type							
		G	gauge						
		Α	absolu	te					
		S	sealed	gauge	gauge				
			Optio	n4: Excit	ation	6/10			
			I	1.5mA	1.5mA Constant Current Excitation				
			V	5Vdc C	onstant	Voltage Excitation			
				Option	5: Elec	trical Interface			
				F	4 colo	r silicon rubber wires, length=100mm			
				Р	gold-	plated kovar pins(only for 1.5mA Constant Current Excitation)			
					Optio	n6: Compensation			
					T	0 to 70°C			
					NA	No temperature compensation			
NPS19L	0010	G	1	F	T	Examples of Ordering Code: NPS19L-0010-G-I-F-T			



Volltel Measurement Technology co., Ltd No.8, Wuxing Road, Lianhu District, Xi'an 710002, China

Model NPS19C



Product Overview

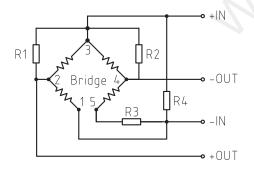
NPS19C is made from silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS19C is temperature compensated and zero correction by using resistance technology. The sensor has a smaller thickness. The smaller volume is suitable for limited space.

NPS19C pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Ship and marine systems

Constant current schematic diagram



Features

- 100mbar to 100bar (1.45psi to 1450psi)
- Absolute, gauge and sealed gauge
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Standard configurations include:19 mm diameter x 7 mm long
- Solid state, high reliability
- Low cost

Standard Pressure Ranges

Nominal pressure	gauge	sealed gauge	absolute
-10bar			
-0.350bar	•		
-0.20bar	•		
00.1bar	•		
00.2bar	•		
00.35bar	•		
00.7bar	•		
01bar	•		•
01.6bar	•		
02.5bar	•		•
04bar	•		•
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar		•	
060bar		•	
0100bar		•	

Performance Specifications

Parameter	Value			Units	Notes	
General						
Pressure Range	-1-0,,0-0.1,	.,100		bar	1bar=14	4.5psi
Overpressure	2xFS			bar		
Environmental						
Operating Temperature Range	-40 to +125			°C	-40°F to	257°F
Compensated Temperature Range	0 to +70			°C	32°F to	158°F
Storage Temperature Range	-40 to +125			°C	-40°F to	257°F
Vibration	10			g	20 to 20	00Hz
Shock	100			g	10ms	
Cycles	10x10 ⁶			cycles		
Electrical @25°C(77°F)						
Excitation Current	1.5			mA		
Excitation Voltage	5			Vdc		
Bridge Resistance	2600 to 6000			Ω		
Insulation Resistance	100			МΩ	@100Vd	dc
Physical Specifications						
Media Compatibility	All media comp	atible with 316	L stainless s	teel		
Housing	316L stainless	steel				
Diaphragm	316L stainless	steel				
Seal Ring	Viton or NBR					
Oil Filling	Silicone oil					
Electrical Connection	Silicon rubber f	lexible wire or k	ovar pin			
Net Weight	Approx.13g					
Parameter	Minimum	Typical	Maxim	um U	nits	Notes
Performance						
Zero Output	-2	±1	2	m	V	1
Full Scale Output	50	100		m	V	1
Non-linearity	±0.1 ±0.2 ±0.3		%	FSO	1, 2	
Hysteresis	-0.05 ±0.03 0.05		%	FSO	1	
Repeatability	-0.05 ±0.03 0.05		%	FSO	1	
Temp Coeff - Zero	-1.5	±0.75	1.5	%	FSO	3
Temp Coeff - Span	-1.5	±0.75	1.5	%	FSO	3
Long-Term Stability		±0.2	±0.3	%	FSO/year	1

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to $70^{\circ}\text{C}(32^{\circ}\text{F}$ to $158^{\circ}\text{F})$ with reference to $25^{\circ}\text{C}(77^{\circ}\text{F})$

Pin	Connection	Wire color
3	+IN	Red
5	- IN	Blue
2	+OUT	Yellow
4	- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

NPS19C Option2: Pressure Range	Option1:	Model								
N001	NPS19C	Piezore	sistive O	EM Press	√l Pressure Sensor					
N002		Option	2: Press	ure Ran	ge					
N003		N001	-10b	ar		0040	04bar			
0001 00.1bar 0160 016bar		N002	-0.35	.0bar		0060	06bar			
0003 00.35bar 0250 025bar		N003	-0.20	Obar		0100	010bar			
0007 00.7bar 0600 060bar 0010 01bar 1000 0100bar 0016 01.6bar Cxxx Customized range 0025 02.5bar Option3: Pressure Type G gauge A absolute S sealed gauge Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins (only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation		0001	00.1	bar		0160	016bar			
0010 01bar 1000 0100bar 0016 01.6bar Cxxx Customized range 0025 02.5bar Option3: Pressure Type G gauge A absolute S sealed gauge Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins (only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation		0003	00.3	5bar		0250	025bar			
0016 01.6bar Cxxx Customized range 0025 02.5bar Option3: Pressure Type G gauge A absolute S sealed gauge Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins(only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation		0007	00.7	bar		0600	060bar			
Option3: Pressure Type G gauge A absolute S sealed gauge Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins(only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation		0010	01ba	ar		1000	0100bar			
Option3: Pressure Type G gauge A absolute S sealed gauge Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins (only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation		0016	01.6	bar	ar Cxxx Customized range					
G gauge A absolute S sealed gauge Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins (only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation		0025	02.5	bar						
A absolute S sealed gauge Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins(only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation			Option	13: Press	3: Pressure Type					
S sealed gauge Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins (only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation			G	gauge						
Option4: Excitation I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins (only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation			Α	absolu	te					
I 1.5mA Constant Current Excitation V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins (only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation			S	sealed	gauge	gauge				
V 5Vdc Constant Voltage Excitation Option5: Electrical Interface F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins (only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation				Optio	n4: Excit	4: Excitation				
Option5: Electrical Interface F				I	1.5mA	Constan	t Current Excitation			
F 4 color silicon rubber wires, length=100mm P gold-plated kovar pins(only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation				V						
P gold-plated kovar pins(only for 1.5mA Constant Current Excitation) Option6: Compensation T 0 to 70°C NA No temperature compensation					Option					
Option6: Compensation T 0 to 70°C NA No temperature compensation					F	4 cold	or silicon rubber wires, length=100mm			
T 0 to 70°C NA No temperature compensation					P					
NA No temperature compensation						Optio	on6: Compensation			
						T	0 to 70°C			
NPS19C 0010 G I F T Examples of Ordering Code: NPS19C-0010-G-I-F-T						NA	No temperature compensation			
	NPS19C	0010	G		F_	I	Examples of Ordering Code: NPS19C-0010-G-I-F-T			



Volltel Measurement Technology co., Ltd No.8, Wuxing Road, Lianhu District, Xi'an 710002, China

Model NPS16



Product Overview

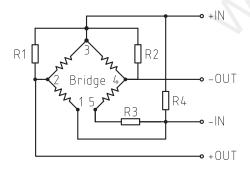
NPS16 is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS16 is temperature compensated and zero correction by using resistance technology. The temperature drift of sensor is within 1.5%FS.

NPS16 pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Ship and marine systems

Constant current schematic diagram



Features

- 2.5bar to 250bar
- Absolute, gauge and sealed gauge
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Standard configurations include:15.8 mm diameter x 10 mm long
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Ranges

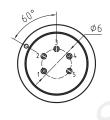
Nominal pressure	gauge	sealed gauge	absolute
02.5bar			•
04bar	•		•
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar	•	•	
060bar		•	
0100bar		•	
0100bar		•	

Performance Specifications

Parameter	Value			Units	Notes	
General						
Pressure Range	0-2.5,,250			bar	1bar=14	4.5psi
Overpressure	1.5xFS			bar		
Environmental						
Operating Temperature Range	-40 to +125			°C	-40°F to	257°F
Compensated Temperature Range	0 to +70			°C	32°F to	158°F
Storage Temperature Range	-40 to +125			°C	-40°F to	257°F
Vibration	10			g	20 to 20	00Hz
Shock	100			g	10ms	
Cycles	10x10 ⁶			cycles		
Electrical @25°C(77°F)						
Excitation Current	1.5			mA		
Excitation Voltage	5			Vdc		
Bridge Resistance	2600 to 6000			Ω		
Insulation Resistance	100			МΩ	@100Vd	dc
Physical Specifications						
Media Compatibility	All media comp	atible with 316I	stainless s	teel		
Housing	316L stainless	steel				
Diaphragm	316L stainless	steel				
Seal Ring	Viton or NBR					
Oil Filling	Silicone oil					
Electrical Connection	Silicon rubber f	lexible wire or k	ovar pin			
Net Weight	Approx.17g					
Parameter	Minimum	Typical	Maxim	um Uı	nits	Notes
Performance						
Zero Output	-2	±1	2	m	V	1
Full Scale Output	50	100		m	V	1
Non-linearity	±0.1	±0.1 ±0.2 ±0.3		%	FSO	1, 2
Hysteresis	-0.05 ±0.03 0.05		%	FSO	1	
Repeatability	-0.05 ±0.03 0.05		0.05	%	FSO	1
Temp Coeff - Zero	-1.5 ±0.75 1.5			%FSO		3
Temp Coeff - Span	-1.5	±0.75	1.5	%	FSO	3
Long-Term Stability	±0.2 ±0.3			%FSO/year 1		1

Notes

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to 70°C(32°F to 158°F) with reference to 25°C(77°F)
- 4. Consult factory for vacuum applications



Pin	Connection	Wire color
3	+IN	Red
1or5	- IN	Blue
2	+OUT	Yellow
4	- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1	: Model								
NPS16	Piezore	sistive OE	stive OEM Pressure Sensor						
	Option	2: Pressu	ire Rang	je					
	0025	02.5bar							
	0040	04ba	04bar						
	0060	06ba	06bar						
	0100	010b	ar						
	0160	016b	ar						
	0250	025b	ar						
	0600	060b	ar						
	1000	0100	bar						
	1600	0160	bar						
	2500	0250	0250bar						
	Cxxx		Customized range						
		Option	Option3: Pressure Type						
		G	gauge						
		Α	absolu						
		S	sealed						
			Option	14: Excita					
			I			Current Excitation			
			V			oltage Excitation			
				_		rical Interface			
				F		silicon rubber wires, length=100mm			
				P		lated kovar pins(only for 1.5mA Constant Current Excitation)			
					_	n6: Compensation			
					T	0 to 70°C			
					NA	No temperature compensation			
NPS16	0025	G		F	T	Examples of Ordering Code: NPS16-0010-G-I-F-T			



Volltel Measurement Technology co., Ltd No.8, Wuxing Road, Lianhu District, Xi'an 710002, China

Model NPS15



Product Overview

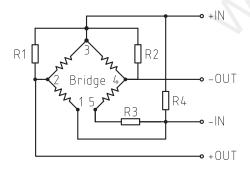
NPS15 is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS15 is temperature compensated and zero correction by using resistance technology. The temperature drift of sensor is within 1%FS.

NPS15 pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Ship and marine systems

Constant current schematic diagram



Features

- 3.5bar to 600bar (50psi to 8700psi)
- Absolute, gauge and sealed gauge
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Standard configurations include:15 mm diameter x 15 mm long
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

Nominal pressure	gauge	sealed gauge	absolute
03.5bar			•
07bar	•		•
010bar	•		•
020bar	•		•
035bar	•	•	•
070bar		•	
0100bar		•	
0200bar		•	
0350bar		•	
0600bar		•	

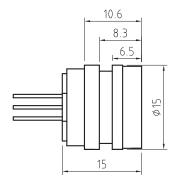
Performance Specifications

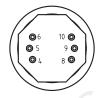
Parameter	Value			Units	Notes	
General						
Pressure Range	0-3.5,,600			bar	1bar=1	4.5psi
Overpressure	1.5xFS			bar		
Environmental						
Operating Temperature Range	-20 to +80			°C	-4°F to 2	257°F
Compensated Temperature Range	0 to +70			°C	32°F to	158°F
Storage Temperature Range	-40 to +125			°C	-40°F to	257°F
Vibration	10			g	20 to 20	000Hz
Shock	100			g	10ms	
Cycles	10x10 ⁶			cycles		
Electrical @25°C(77°F)						
Excitation Current	1.5			mA		
Excitation Voltage	5			Vdc		
Bridge Resistance	2600 to 6000			Ω		
Insulation Resistance	100			МΩ	@100V	dc
Physical Specifications						
Media Compatibility	All media comp	atible with 316I	stainless s	teel		
Housing	316L stainless	steel				
Diaphragm	316L stainless	steel				
Seal Ring	Viton or NBR					
Oil Filling	Silicone oil					
Electrical Connection	Silicon rubber f	lexible wire or k	ovar pin			
Net Weight •	Approx.15g					
Parameter	Minimum	Typical	Maxim	um Uı	nits	Notes
Performance						
Zero Output	-2	±1	2	m	V	1
Full Scale Output	50	100		m	V	1
Non-linearity	±0.1 ±0.2 ±0.3		%	FSO	1, 2	
Hysteresis	-0.05 ±0.03 0.05		%	FSO	1	
Repeatability	-0.05 ±0.03 0.05		0.05	%	FSO	1
Temp Coeff - Zero	-1	±0.75	1	%FSO		3
Temp Coeff - Span	-1	±0.75	1	%	FSO	3
Long-Term Stability	±0.2 ±0.3			%	FSO/year	1

Notes

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0° C to 70° C(32°F to 158°F) with reference to 25°C(77°F)
- 4. Consult factory for vacuum applications

Dimensions (in mm)





Pin	Connection	Wire color
5	+IN	Red
6	- IN	Yellow
4	+OUT	Blue
10	- OUT	Green

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1								
NPS15	Piezore	sistive O	stive OEM Pressure Sensor					
			ure Rang	ge				
	0035	03.5bar						
	0070	07ba	ar					
	0100	010b	oar					
	0200	020b	ar					
	0350	035b	oar					
	0700	070b	oar					
	1000	0100)bar					
	2000	0200)bar					
	3500	0350)bar					
	6000	0600	0600bar					
	Cxxx	Custon	Customized range					
		Option3: Pressure Type						
		G	G gauge					
		Α	absolu	te				
		S	sealed					
			Option	14: Excit				
			I			Current Excitation		
			V			oltage Excitation		
						rical Interface		
				F		silicon rubber wires, length=100mm		
				P	P gold-plated kovar pins(only for 1.5mA Constant Current Excitation)			
					-	n6: Compensation		
					T	0 to 70°C		
					NA	No temperature compensation		
NPS15	0035	G		F	T	Examples of Ordering Code: NPS15-0035-G-I-F-T		



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Model NPS13



Product Overview

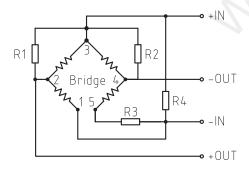
NPS13 is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS13 is temperature compensated and zero correction by using resistance technology. The temperature drift of sensor is within 1.5%FS.

NPS13 pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Ship and marine systems

Constant current schematic diagram



Features

- 10bar to 600bar (145psi to 8700psi)
- Absolute, gauge and sealed gauge
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Standard configurations include:12.6 mm diameter x 9 mm long
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

Nominal pressure	gauge	sealed gauge	absolute
010bar		•	•
016bar	•	•	•
025bar	•	•	
060bar		•	
0100bar		•	
0160bar		•	
0250bar		•	
0400bar		•	
0600bar		•	

Performance Specifications

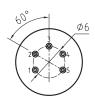
Parameter	Value			Units	Notes	
General						
Pressure Range	0-10,,600	0-10,,600				1.5psi
Overpressure	1.5xFS			bar		
Environmental						
Operating Temperature Range	-40 to +125			°C	-40°F to	257°F
Compensated Temperature Range	0 to +70			°C	32°F to	158°F
Storage Temperature Range	-40 to +125			°C	-40°F to	257°F
Vibration	10			g	20 to 20	00Hz
Shock	100			g	10ms	
Cycles	10x10 ⁶			cycles		
Electrical @25°C(77°F)						
Excitation Current	1.5			mA		
Excitation Voltage	5			Vdc		
Bridge Resistance	2600 to 6000			Ω		
Insulation Resistance	100			MΩ @100		lc
Physical Specifications						
Media Compatibility	All media comp	atible with 316I	stainless s	teel		
Housing	316L stainless	steel				
Diaphragm	316L stainless	steel				
Seal Ring	Viton or NBR					
Oil Filling	Silicone oil					
Electrical Connection	Silicon rubber f	lexible wire or k	ovar pin			
Net Weight	Approx.9g					
Parameter	Minimum	Typical	Maxim	um Un	its	Notes
Performance			·			
Zero Output	-2	±1	2	m۱		1
Full Scale Output	50	100		m\	/	1
Non-linearity	±0.1	±0.1 ±0.2 ±0.3		%F	SO	1, 2
Hysteresis	-0.05	-0.05 ±0.03 0.05		%F	SO	1
Repeatability	-0.05	±0.03	0.05	0.05 %FS		1
Temp Coeff - Zero	-1.5	±0.75	1.5	%F	SO	3
Temp Coeff - Span	-1.5	±0.75	1.5	%F	SO	3
Long-Term Stability		±0.2	±0.3	3 %FSO/yea		1

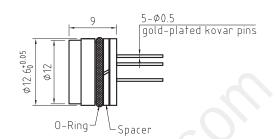
Notes

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0° C to 70° C(32°F to 158°F) with reference to 25°C(77°F)
- 4. Consult factory for vacuum applications

Dimensions (in mm)

NPS13L

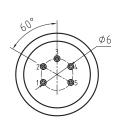


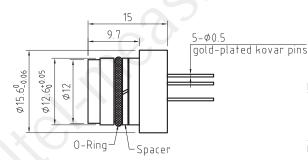


Pin	Connection	Wire color
3	+IN	Red
1or5	- IN	Blue
2	+OUT	Yellow
4	- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

NPS13H





Pin	Connection	Wire color
3	+IN	Red
1or5	- IN	Blue
2	+OUT	Yellow
4	- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1:	Model										
NPS13L	Dimens	mension see NPS13L									
NPS13H	Dimens	ension see NPS13H									
	Option	2: Press	ssure Range								
	0100	010	oar								
	0160	016	oar								
	0250	025	oar								
	0600	060	oar								
	1000	0100	Obar								
	1600	0160	Obar								
	2500	0250	Obar								
	4000	0400	100bar								
	6000	0600	Dbar								
	Cxxx	Custor	mized rar	nge							
		Option	n3: Pres	ure Type							
		G	gauge								
		Α	absolu	ıte							
		S	sealed	gauge							
			Optio	n4: Excit	ation						
			I	1.5mA	Constant	t Current Excitation					
			V	5Vdc C	onstant V	/oltage Excitation					
				Option		rical Interface					
				F	4 color	r silicon rubber wires, length=100mm					
				Р	gold-p	lated kovar pins(only for 1.5mA Constant Current Excitation)					
					Option	n6: Compensation					
					T	0 to 70°C					
					NA	No temperature compensation					
NPS13L	0100	G	1_1_	F	T	Examples of Ordering Code: NPS13L-0100-G-I-F-T					



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Model NPS20



Product Overview

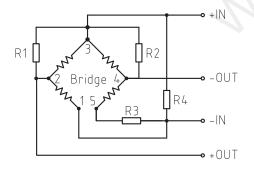
NPS20 is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip and PT100 temperature sensor are packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. It can measure pressure and temperature at the same time.

NPS20 pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level and temperature measurement
- Ship and marine systems

Constant current schematic diagram



Features

- Pressure measuring range:100mbar to 1000bar
- Temperature measuring range:-50°C to +125°C
- Absolute, gauge and sealed gauge
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Standard configurations include:19 mm diameter x 12.4 mm long
- Temperature sensor: PT100
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

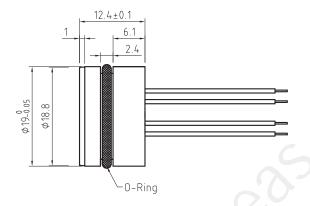
Manainal muasarus			ماريد
Nominal pressure	gauge	sealed gauge	absolute
-10bar			
-0.350bar	•		
-0.20bar	•		
00.1bar	•		
00.2bar	•		
00.35bar	•		•
00.7bar	•		
01bar	•		•
01.6bar	•		
02.5bar	•		•
04bar	•		•
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar	•	•	
060bar		•	
0100bar		•	
0250bar		•	
0400bar		•	
0600bar		•	
01000bar		•	

Performance Specifications

Parameter	Value				Units		Notes		
General									
Pressure Range	-1-0,,0-0.1,		bar		1bar=14.5	Spsi			
Overpressure	1.5xFS			bar					
Temperature Range	-50 to +125			°C		Temperatu	re sensor=PT100		
Environmental									
Operating Temperature Range	-40 to +125			°C		-40°F to 2	57°F		
Compensated Temperature Range	0 to +70			°C		32°F to 15	8°F		
Storage Temperature Range	-40 to +125			°C		-40°F to 2	57°F		
Vibration	10			g		20 to 2000)Hz		
Shock	100			g		10ms			
Cycles	10x10 ⁶			cycles					
Electrical @25°C(77°F)									
Excitation Current	1.5			mA					
Excitation Voltage	5		Vdc						
Bridge Resistance	2600 to 6000			Ω					
Insulation Resistance	100			МΩ		@100Vdc			
Physical Specifications									
Media Compatibility	All media compa	atible with 316L s	tainless s	teel					
Housing	316L stainless s	teel							
Diaphragm	316L stainless s	teel							
Seal Ring	Viton or NBR								
Oil Filling	Silicone oil								
Electrical Connection	Silicon rubber fl	exible wire							
Net Weight	Approx.18g								
Parameter	Minimum	Typical	Maxim	um	Units	/1	Notes		
Performance									
Zero Output	-2	±1	2	mV			1		
Full Scale Output	50	100		mV			1		
Non-linearity	±0.1	±0.2	0.2 ±0.3		%FSC)	1, 2		
Hysteresis	-0.05	±0.03	0.03		%FSC)	1		
Repeatability	-0.05	±0.03	0.05		%FSC)	1		
Temp Coeff - Zero	-1.5	±0.75	1.5		%FSO		3		
Temp Coeff - Span	-1.5	±0.75	1.5		%FSC)	3		
Long-Term Stability		±0.2	±0.3		%FSC)/year	1		

Notes

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to 70°C(32°F to 158°F) with reference to 25°C(77°F)
- 4. Consult factory for vacuum applications



Connection	Wire color
+IN	Red
- IN	Blue
+OUT	Yellow
- OUT	White
TEMP	Green
TEMP	Green

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1	: Model									
NPS20	Piezore	sistive O	EM Press	Pressure and Temperature Sensor						
			ure Ran							
	N001	-10b			0040	04bar				
	N002	-0.35			0060	06bar				
	N003	-0.2(0100	010bar				
	0001	00.1			0160	016bar				
	0003	00.3			0250	025bar				
	0007	00.7			0600	060bar				
	0010	01ba			1000	0100bar				
	0016	01.6			Cxxx	Customized range				
	0025	02.5								
	Option3: Pressure Type			sure Type	2					
		G	gauge							
		Α	absolu							
		S		gauge						
						e range/Temperature sensor type				
			P			C / PT100				
			Т	Custor						
				Optio		itation				
				V		A Constant Current Excitation				
				V		Constant Voltage Excitation on6: Electrical Interface				
					F	silicon rubber wires, length=100mm				
						Option7: Compensation				
						T 0 to 70°C				
						NA No temperature compensation				
NPS20	0010	G	P		E	T Examples of Ordering Code: NPS20-0010-G-P-I-F-T				
NP3ZU	0010	G	r	T		Lxamples of Ordering Code. Nr 320-0010-0-1-1-1-1				



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Model NPS19F



Product Overview

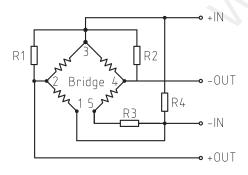
NPS19F is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS19F is temperature compensated and zero correction by using resistance technology. It is flush membrane configuration and easy to clean. It can be used for food industry.

NPS19F pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Food and the beverage industry

Constant current schematic diagram



Features

- 100mbar to 100bar (1.45psi to 1450psi)
- Absolute, gauge and sealed gauge
- Flush membrane configuration
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Standard configurations include:19 mm diameter x 12.4 mm long
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

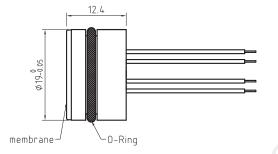
Standard Pressure Range

Nominal pressure	gauge	sealed gauge	absolute
00.1bar			
00.2bar	•		
00.35bar	•		
00.7bar	•		
01bar	•		•
01.6bar	•		•
02.5bar	•		•
04bar	•		
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar	•	•	
060bar		•	
0100bar		•	

Performance Specifications

Parameter	Value			Units	Notes		
General							
Pressure Range	0-0.1,,100			bar	1bar=14	1.5psi	
Overpressure	1.5xFS			bar			
Environmental							
Operating Temperature Range	-40 to +125			°C	-40°F to	257°F	
Compensated Temperature Range	0 to +70			°C	32°F to	158°F	
Storage Temperature Range	-40 to +125			°C	-40°F to	257°F	
Vibration	10			g	20 to 20	00Hz	
Shock	100			g	10ms		
Cycles	10x10 ⁶			cycles			
Electrical @25°C(77°F)							
Excitation Current	1.5			mA			
Excitation Voltage	5			Vdc			
Bridge Resistance	2600 to 6000			Ω			
Insulation Resistance	100			МΩ	@100Vd	dc	
Physical Specifications							
Media Compatibility	All media comp	atible with 316	L stainless s	teel			
Housing	316L stainless	steel					
Diaphragm	316L stainless	steel					
Seal Ring	Viton or NBR						
Oil Filling	Silicone oil						
Electrical Connection	Silicon rubber f	lexible wire or k	ovar pin				
Net Weight •	Approx.18g						
Parameter	Minimum	Typical	Maxim	um Un	nits	Notes	
Performance							
Zero Output	-2	±1	2	m\	/	1	
Full Scale Output	50	100		m\	/	1	
Non-linearity	±0.1	±0.2	±0.3	%	FSO	1, 2	
Hysteresis	-0.05	±0.03	0.05	%1	FSO	1	
Repeatability	-0.05	±0.03	0.05	%	FSO .	1	
Temp Coeff - Zero	-1.5	±0.75	1.5	%	FSO .	3	
Temp Coeff - Span	-1.5	±0.75	1.5	%	FSO	3	
Long-Term Stability		±0.2	±0.3	%FSO/year 1		1	

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to $70^{\circ}\text{C}(32^{\circ}\text{F}$ to $158^{\circ}\text{F})$ with reference to $25^{\circ}\text{C}(77^{\circ}\text{F})$
- 4. Consult factory for vacuum applications



Connection	Wire colo
+IN	Red
- IN	Blue
+OUT	Yellow
- OUT	White

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1:	Model									
NPS19F	Piezore	sistive Ol	tive OEM Pressure Sensor							
	Option2: Pressure Range									
	0001	00.1k	oar	010bar						
	0002	00.21	oar		0160 016bar					
	0003	00.35	5bar	0250 025bar						
	0007	00.7k	oar		0600 060bar					
	0010	01ba	r			0100bar				
	0016	01.6k	oar		Cxxx	Customized range				
	0025	02.5l	oar							
	0040	04ba	r							
0060 06bar										
		Option3: Pressure Type								
		G	gauge							
		Α	absolu	te						
		S	sealed	gauge						
			Option	n4: Excita	ation					
			I	1.5mA (Constant	t Current Excitation				
			V			/oltage Excitation				
						rical Interface				
				F		r silicon rubber wires,length=100mm				
				P	gold-plated kovar pins(only for 1.5mA Constant Current Excitation)					
					Optio	n6: Compensation				
					T	0 to 70°C				
					NA	No temperature compensation				
NPS19F	0010	G		F	T	T Examples of Ordering Code: NPS19F-0010-G-I-F-T				



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Model NPS30F



Product Overview

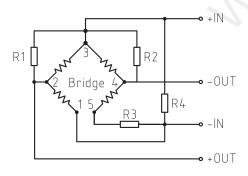
NPS30F is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS30F is temperature compensated and zero correction by using resistance technology. It is flush membrane configuration and easy to clean. It can be used for food industry.

NPS30F pressure sensor are designed for thread connection mounting. Various pressure interface available.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Food and the beverage industry

Constant current schematic diagram



Features

- 100mbar to 100bar (1.45psi to 1450psi)
- Absolute, gauge and sealed gauge
- Flush membrane configuration
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Various pressure interface available
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

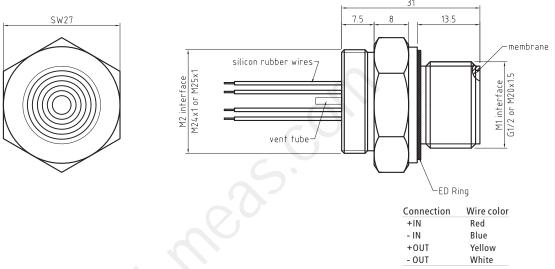
Nominal pressure	gauge	sealed gauge	absolute
00.1bar			
00.2bar	•		
00.35bar	•		
00.7bar	•		
01bar	•		•
01.6bar	•		•
02.5bar	•		•
04bar	•		
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar	•	•	
060bar		•	
0100bar		•	

Performance Specifications

Parameter	Value			Units	Notes		
General							
Pressure Range	0-0.1,,100			bar	1bar=1	4.5psi	
Overpressure	1.5xFS			bar			
Environmental							
Operating Temperature Range	-40 to +85			°C	-40°F to	-40°F to 185°F	
Compensated Temperature Range	0 to +70			°C	32°F to	158°F	
Storage Temperature Range	-40 to +125			°C	-40°F to	257°F	
Vibration	10			g	20 to 20	000Hz	
Shock	100			g	10ms		
Cycles	10x10 ⁶			cycles			
Electrical @25°C(77°F)							
Excitation Current	1.5			mA			
Excitation Voltage	5			Vdc			
Bridge Resistance	2600 to 6000			Ω			
Insulation Resistance	100			MΩ	@100V	dc	
Physical Specifications							
Media Compatibility	All media comp	oatible with 316	SL stainless s	teel			
Housing	316L stainless	steel					
Diaphragm	316L stainless	steel					
Seal	welding						
Oil Filling	Silicone oil						
Electrical Connection	Silicon rubber f	lexible wire or	kovar pin				
Net Weight	Approx.60g						
Parameter	Minimum	Typical	Maxim	um U	nits	Notes	
Performance				,			
Zero Output	-2	±1	2	m	V	1	
Full Scale Output	50	100		m	V	1	
Non-linearity	±0.1	±0.2	±0.3	%	FSO	1, 2	
Hysteresis	-0.05	±0.03	0.05	%	FSO	1	
Repeatability	-0.05	±0.03	0.05	%	FSO	1	
Temp Coeff - Zero	-1.5	±0.75	1.5	%	FSO	3	
Temp Coeff - Span	-1.5	±0.75	1.5	%FSO 3		3	
Long-Term Stability		±0.2 ±0.3				1	

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to $70^{\circ}\text{C}(32^{\circ}\text{F}$ to $158^{\circ}\text{F})$ with reference to $25^{\circ}\text{C}(77^{\circ}\text{F})$
- 4. Consult factory for vacuum applications

Dimensions (in mm)



Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1:	Model							
NPS30F	Piezore	sistive O	EM Press	ure Senso	r			
	Option	2: Press	ure Rang	je				
	0001	00.1	bar		0100	010bar		
	0002	00.2	bar		0160	016bar		
	0003	00.3	5bar		0250	025bar		
	0007	00.7	bar		0600	060bar		
	0010	01ba	ar		1000	0100baı	ſ	
	0016	01.6			Cxxx	Customize	ed range	
	0025	02.5						
	0040	04ba						
	0060	06ba						
			13: Press	ure Type				
		G	gauge					
A absolute								
		S	sealed					
			Option	14: Excita				
			I			Current E		
			V			oltage Exc		
				_		rical Inte		
				F				s,length=100mm
				P				y for 1.5mA Constant Current Excitation)
					-	16: M1 Int	ertace	
					C1	G1/2	_	
					C2	M20x1.	-	
							7: M2 Int	еттасе
						B1	M24x1	
						B2	M25x1). C
							Options	3: Compensation 0 to 70°C
							NA	
	0010			F .	C1	D.1		No temperature compensation
NPS30F	0010	G		F	C1	B1	T	Examples of Ordering Code: NPS30F-0010-G-I-F-C1-B1-T



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Model NPS31F



Product Overview

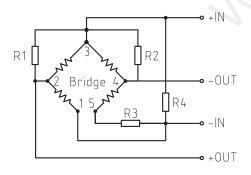
NPS31F is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS31F is temperature compensated and zero correction by using resistance technology. It is flush membrane configuration and easy to clean. It can be used for food industry.

NPS31F pressure sensor are designed for thread connection mounting. Various pressure interface available.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Food and the beverage industry

Constant current schematic diagram



Features

- 350mbar to 200bar (5psi to 2900psi)
- Absolute, gauge and sealed gauge
- Flush membrane configuration
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Various pressure interface available
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

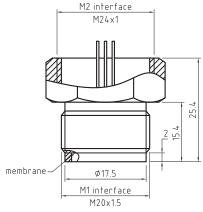
Nominal pressure	gauge	sealed gauge	absolute
00.35bar			
00.7bar	•		•
01bar	•		•
02bar	•		•
03.5bar	•		•
07bar	•		•
010bar	•		•
020bar	•		•
035bar	•	•	•
070bar		•	
0100bar		•	
0200bar		•	

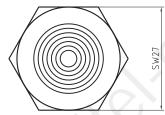
Performance Specifications

Parameter	Value			Units		Notes	
General							
Pressure Range	0-0.35,,200			bar		1bar=14.	5psi
Overpressure	1.5xFS			bar			
Environmental							
Operating Temperature Range	-20 to +80			°C		-4°F to 176°F	
Compensated Temperature Range	0 to +70			°C		32°F to 1!	58°F
Storage Temperature Range	-40 to +125			°C		-40°F to 2	257°F
Vibration	10			g		20 to 200	0Hz
Shock	100			g		10ms	
Cycles	10x10 ⁶			cycles			
Electrical @25°C(77°F)							
Excitation Current	1.5			mA			
Excitation Voltage	10			Vdc			
Bridge Resistance	2600 to 6000			Ω			
Insulation Resistance	100			МΩ		@100Vd	
Physical Specifications							
Media Compatibility	All media comp	atible with 316	L stainless s	teel			
Housing	316L stainless	steel					
Diaphragm	316L stainless	steel					
Seal	welding						
Oil Filling	Silicone oil						
Electrical Connection	Silicon rubber f	lexible wire or l	kovar pin				
Net Weight	Approx.50g						
Parameter	Minimum	Typical	Maxim	um	Units	<()	Notes
Performance							
Zero Output	-2	±1	2		mV		1
Full Scale Output	50	100			mV		1
Non-linearity	±0.1	±0.2	±0.3		%FSO		1, 2
Hysteresis	-0.05	±0.03	0.05		%FSO		1
Repeatability	-0.05	±0.03	0.05		%FSO	1	1
Temp Coeff - Zero	-1.5	-1.5 ±0.75 1.5			%FSO		3
Temp Coeff - Span	-1.5	-1.5 ±0.75 1.5			%FSO		3
Long-Term Stability		±0.2 ±0.3			%FSO/year 1		1

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to $70^{\circ}\text{C}(32^{\circ}\text{F}$ to $158^{\circ}\text{F})$ with reference to $25^{\circ}\text{C}(77^{\circ}\text{F})$
- 4. Consult factory for vacuum applications

Dimensions (in mm)





excitation=1.5mA Electrical connection



PIII	,	conne	CLIOII	wire co	101
5		+IN		Red	
6		- IN		Yellow	1
4		+OUT		Blue	
10		- OUT		Green	

Note:The actual electric connection metho, please check the parameter label enclosed with products

excitation=10Vdc Electrical connection



PIN	Connection	wire color
1	+IN	Red
2	- IN	Yellow
3	+OUT	Blue
4	- OUT	Green

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1:		1									
NPS31F				ure Senso	r						
	Option		ure Rang	ge							
	0003	00.3)70bar					
	0007	00.7)100ba	-				
	0010	01ba		2000 0200bar							
	0020	02ba	ar Cxxx Customized range								
	0035	03.5	bar								
	0070	07ba									
	0100	010b									
	0200	020b									
	0350	035b									
	Option3: Pressure Type G gauge										
A absolute											
		S	sealed								
			Option	14: Excit							
			I			Current E					
			V			Voltage E					
				_		ical Inte					
				F				s,length=100mm			
				Р				ly for 1.5mA Constant Current Excitation)			
						6: M1 In	terface				
					C1	G1/2					
					C2	M20x1.	-				
							7: M2 In	terface			
					B1 M24x1						
								8: Compensation			
							T	0 to 70°C			
							NA	No temperature compensation			
NPS31F	0010	G	1	F	C1	B1	T	Examples of Ordering Code: NPS30F-0010-G-I-F-C1-B1-T			



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Model NPS32F



Product Overview

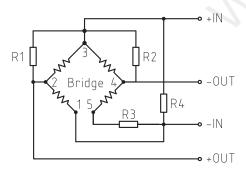
NPS32F is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS32F is temperature compensated and zero correction by using resistance technology. It is flush membrane configuration and easy to clean. It can be used for food industry.

NPS32F pressure sensor are designed for clamp connection mounting. Various pressure interface available.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Food and the beverage industry

Constant current schematic diagram



Features

- 100mbar to 100bar (14.5psi to 1450psi)
- Absolute, gauge and sealed gauge
- Flush membrane configuration
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Various pressure interface available
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

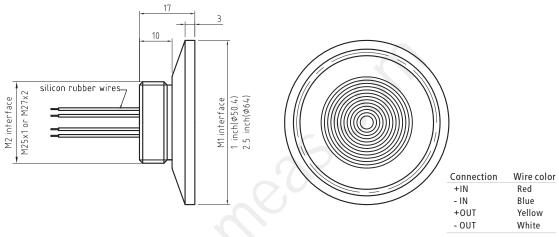
Nominal pressure	gauge	sealed gauge	absolute
00.1bar			
00.2bar	•		
00.35bar	•		
00.7bar	•		
01bar	•		•
01.6bar	•		•
02.5bar	•		•
04bar	•		
06bar	•		•
010bar	•	•	•
016bar	•	•	•
025bar	•	•	
060bar		•	
0100bar		•	

Performance Specifications

Parameter	Value	Value				Notes	
General							
Pressure Range	0-0.1,,100			bar		1bar=14.	5psi
Overpressure	1.5xFS			bar			
Environmental							
Operating Temperature Range	-40 to +85 opti	on -40 to +125		°C		-40°F to 185°F	
Compensated Temperature Range	0 to +70			°C		32°F to 1	58°F
Storage Temperature Range	-40 to +125			°C		-40°F to 2	257°F
Vibration	10			g		20 to 200	0Hz
Shock	100			g		10ms	
Cycles	10x10 ⁶			cycles			
Electrical @25°C(77°F)							
Excitation Current	1.5			mA			
Excitation Voltage	10			Vdc			
Bridge Resistance	2600 to 6000			Ω			
Insulation Resistance	100	100 N					С
Physical Specifications							
Media Compatibility	All media comp	atible with 316	L stainless s	teel			
Housing	316L stainless	steel					
Diaphragm	316L stainless	steel					
Oil Filling	Silicone oil						
Pressure Connection	Clamp						
Electrical Connection	Silicon rubber f	lexible wire or	kovar pin				
Net Weight	Approx.110g						
Parameter	Minimum	Typical	Maxim	um	Units		Notes
Performance							
Zero Output	-2	±1	2		mV		1
Full Scale Output	50	100			mV		1
Non-linearity	±0.1	±0.2	±0.3		%FSO)	1, 2
Hysteresis	-0.05	±0.03	0.05		%FSO)	1
Repeatability	-0.05	±0.03	0.05		%FSO)	1
Temp Coeff - Zero	-1.5	-1.5 ±0.75 1.5			%FSO		3
Temp Coeff - Span	-1.5	±0.75	1.5	%FSO 3		3	
Long-Term Stability		±0.2	±0.3	%FSO/year 1			1

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to $70^{\circ}\text{C}(32^{\circ}\text{F}$ to $158^{\circ}\text{F})$ with reference to $25^{\circ}\text{C}(77^{\circ}\text{F})$
- 4. Consult factory for vacuum applications

Dimensions (in mm)



Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1:	Model										
NPS32F	Piezore	sistive Ol	EM Press	ure Senso	r						
	Option	2: Pressi		ge							
	0001	00.11	bar		0160	016bar					
	0002	00.21	bar		0250	025bar					
	0003	00.3									
	0010	01ba	•	1000 0100bar							
	0016	01.6	bar	Cxxx Customized range							
	0025	02.51	bar								
	0040	04ba									
	0060	06ba	•								
	0100	010b									
			3: Press	Pressure Type							
		G	gauge	e							
		Α	absolu					A V J			
		S	sealed								
			Option	14: Excita							
			I			Current E					
			V			Voltage E					
				-		rical Inte					
				F				es,length=100mm			
				P				ly for 1.5mA Constant Current Excitation)			
					_	n6: M1 In					
					C1	2 inch c					
					C2	2.5 incl					
							7: M2 In				
						B1		(standard)			
						B2	M27x2				
							_	8: Compensation			
							Т	0 to 70°C			
							NA	No temperature compensation			
NPS32F	0010	G		F	C1	B1	Т	Examples of Ordering Code: NPS32F-0010-G-I-F-C1-B1-T			



Volltel Measurement Technology co., Ltd No.8, Wuxing Road, Lianhu District, Xi'an 710002, China

Model NPS40



Product Overview

NPS40 is made from high-quality silicon piezoresistive pressure sensor. Put general NPS19 pressure sensor into the housing with standard or special thread, and weld sensor with housing together, no O-ring for sealing. NPS40 is temperature compensated and zero correction by using resistance technology.

NPS40 pressure sensor are designed for thread connection mounting. Various pressure interface available.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Food and the beverage industry

Features

- 100mbar to 350bar (1.45psi to 5000psi)
- Absolute, gauge and sealed gauge
- Welding configuration
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Piezoresistive sensor design
- Various pressure interface available
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

Nominal pressure	gauge	sealed gauge	absolute
-10bar			
-0.350bar	•		
-0.20bar	•		
00.1bar	•		
00.2bar	•		
00.35bar	•		
00.7bar	•		•
01bar	•		•
02bar	•		•
03.5bar	•		•
07bar	•		•
010bar	•	•	•
020bar	•	•	•
035bar	•	•	•
070bar	•	•	
0100bar		•	
0200bar		•	
0350bar		•	

Performance Specifications

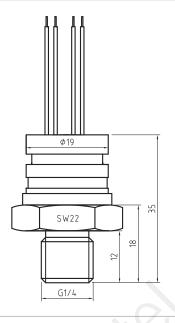
Parameter	Value			Units	Notes	
General						
Pressure Range	0-0.1,,350			bar	1bar=1	4.5psi
Overpressure	1.5xFS			bar		
Environmental						
Operating Temperature Range	-20 to +80			°C	-4°F to	176°F
Compensated Temperature Range	0 to +70			°C	32°F to	158°F
Storage Temperature Range	-40 to +125			°C	-40°F to	257°F
Vibration	10			g	20 to 20	00Hz
Shock	100			g	10ms	
Cycles	10x10 ⁶			cycles		
Electrical @25°C(77°F)						
Excitation Current	1.5			mA		
Excitation Voltage	10			Vdc		
Bridge Resistance	2600 to 6000			Ω		
Insulation Resistance	100			$M\Omega$	@100Vd	dc
Physical Specifications						
Media Compatibility	All media comp	oatible with 316	L stainless s	teel		
Housing	316 stainless s	teel				
Diaphragm	316L stainless	steel				
Seal	welding					
Oil Filling	Silicone oil					
Electrical Connection	Silicon rubber	flexible wire or k	covar pin			
Net Weight	Approx.80g					
Parameter	Minimum	Typical	Maxim	um U	nits	Notes
Performance						
Zero Output	-2	±1	2	m	٦V	1
Full Scale Output	50	100		m	٦V	1
Non-linearity	±0.1	±0.2	±0.3	9/	6FSO	1, 2
Hysteresis	-0.05	±0.03	0.05	9/	6FSO	1
Repeatability	-0.05	±0.03	0.05	9/	6FSO	1
Temp Coeff - Zero	-1.5	±0.75	1.5	9/	6FSO	3
Temp Coeff - Span	-1.5	±0.75	1.5	9/	%FSO	3
Long-Term Stability		±0.2	±0.3	9/	6FSO/year	1

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to $70^{\circ}\text{C}(32^{\circ}\text{F}$ to $158^{\circ}\text{F})$ with reference to $25^{\circ}\text{C}(77^{\circ}\text{F})$
- 4. Consult factory for vacuum applications

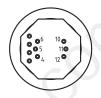
Pin

6

Dimensions (in mm)



excitation=1.5mA, Electrical connection



4 +OUT Blue 10 - OUT Green Note:The actual electric connection metho, please

Connection

- IN

check the parameter label enclosed with products

Wire color Red

Yellow



excitation=10Vdc, Electrical connection

rin	Connection	wire color
1	+IN	Red
2	- IN	Yellow
3	+OUT	Blue
4	- OUT	Green

Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option	1: Model								
NPS40			EM Press		r				
			ure Rang	je					
	N001	-10b			0035	03.5bar Cxxx Customized range			
	N003	-0.35			0070	07bar			
	N002	-0.20			0100	010bar			
	0001	00.1			0200	020bar			
	0002	00.2			0350	035bar			
	0003	00.3			0700	070bar			
	0007	00.7			1000	0100bar			
	0010	01ba			2000	0200bar			
	0020	02ba			3500	0350bar			
			3: Press	ure Type					
		G	gauge						
		A	absolut						
	S sealed gauge								
		Option4: Excitation 1 1.5mA Constant Current Excitation							
			V						
			V			nt Voltage Excitation ctrical Interface			
				F		or silicon rubber wires, length=100mm			
				P		-plated kovar pins (only for 1.5mA Constant Current Excitation)			
				'		on6: Pressure Interface			
					G1				
					G2				
					M1				
					M2				
						Option7: Compensation			
						T1 0 to 70°C			
						NA No temperature compensation			
NPS40	0010	G		F	G1	·			



Volltel Measurement Technology co., Ltd No.8, Wuxing Road, Lianhu District, Xi'an 710002, China

Model NPC18



Product Overview

The NPC18 is piezoresistive pressure sensor based on ceramic. Be manufactured by thick film technology. The bridge circuit is directly printed at the back of ceramic diaphragm. The other side of the diaphragm can measure pressure media.

NPC18 is temperature compensated and zero correction by using laser trimming resistance technology.

NPS18 pressure sensor is designed for O-ring seal mounting. This is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Air compressor
- Pressure transmitter

Features

- 2bar to 400bar (1.45psi to 5000psi)
- Gauge type
- Thick film technology
- Mono-block structure
- Calibrated and temperature compensated
- Gas or dilute liquid compatible with ceramic
- Standard configurations include:
 18 mm diameter x 6.35 mm long
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

Nominal pressure	gauge	sealed gauge	absolute
02bar			
05bar	•		
010bar	•		
016bar	•		
020bar	•		
025bar	•		
030bar	•		
040bar	•		
050bar	•		
0100bar	•		
0250bar	•		
0400bar	•		

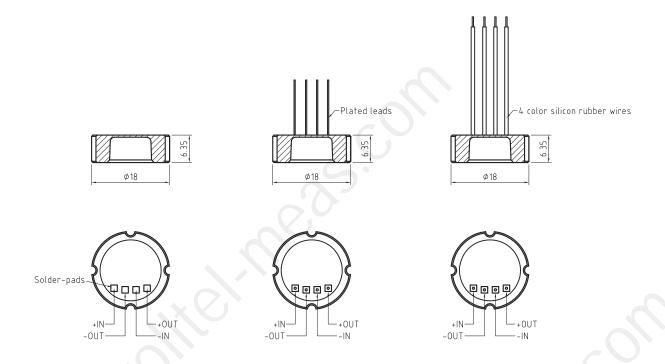
Performance Specifications

Parameter	Value			Units	Notes	
General						
Pressure Range	0-2,,400			bar	1bar=14.	5psi
Overpressure	2xFS(P≤250bar) 1.5xFS(P>2!	50bar)	bar		
Environmental						
Operating Temperature Range	-40 to +125			°C	-40°F to 2	:57°F
Compensated Temperature Range	0 to +70			°C	32°F to 15	58°F
Storage Temperature Range	-40 to +125			°C	-40°F to 2	:57°F
Vibration	10			g	20 to 200	0Hz
Shock	100			g	10ms	
Cycles	10x10 ⁶			cycles		
Electrical @25°C(77°F)						
Excitation Voltage	5 to 25			Vdc		
Bridge Resistance	8 to 12			kΩ		
Insulation Resistance	100			МΩ	@100Vdc	;
Physical Specifications						
Media Compatibility	All media comp	atible with ceran	nic			
Housing	Ceramic(96%Al	203)				
Diaphragm	Ceramic(96%Al	1203)				
Seal	O-Ring					
Electrical Connection	(F)4-color silico	n rubber flexible	wire,(P)P	lated leads,(S)Solder-pad	S
Net Weight	Approx.4g					
Parameter	Minimum	Typical	Maxim	um Un	its	Notes
Performance						\supset
Zero Output	-2	±1	2	m۷		1
Output Sensitivity	2	3		m۷	'/V	1
Non-linearity	±0.1	±0.2	±0.3	% F	SO	1, 2
Hysteresis	-0.1	±0.05	0.1	%F	SO	1
Repeatability	-0.1	±0.05	0.1	%F	SO	1
Temp Coeff - Zero	-0.05	±0.02	0.05	%F	SO/°C	3
Temp Coeff - Span	-0.05	±0.02	0.05	%F	SO/°C	3
Long-Term Stability		±0.2	±0.3	%F	SO/year	1

Notes

- 1. All values measured at 25°C(77°F) and at 10Vdc
- 2. Best fit straight line(BFSL)
- 3. 0° C to 70° C(32°F to 158°F) with reference to 25°C(77°F)
- 4. Consult factory for vacuum applications

Dimensions (in mm)



Ordering Information

Option1:	Model				
NPC18	Ceramio	. Pressure	Sensor		
	Option	2: Pressu	ıre Rang	e	
	0020	02ba	r	1000	0100bar
	0050	05ba	r	2500	0250bar
	0100	010b	ar	4000	0400bar
	0160	016b	ar	Cxxx	Customized range
	0200	020b	ar		
	0250	025b	ar		
	0300	030b	ar		
	0400	040b	ar		
	0500	050b			
		Option	2: Pressi	ıre Type	
		G	gauge		
			Option	3: Electrical Int	
			F		rubber wires, length=100mm
			P	Plated leads	
			S	Solder-pads	
			FC	Flat cable	
NPC18	0100	G	F	Examples of Or	rdering Code: NPC18-0100-G-F



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Model NPS19D



Product Overview

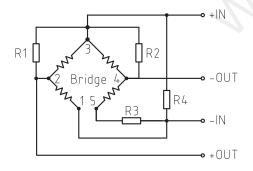
NPS19D is made from high-quality silicon piezoresistive sensor chip. The piezoresistive sensor chip is packaged in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and housing. NPS19D is temperature compensated and zero correction by using resistance technology. The temperature drift of sensor is within 1.5%FS.

NPS19D differential pressure sensor are designed for floating O-ring seal mounting. This not only can avoid housing induced stress, but also is easy for installation.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Pharmaceutical engineering
- Level measurement
- Ship and marine systems

Constant current schematic diagram



Features

- 200mbar to 25bar (3psi to 350psi)
- Piezoresistive differential pressure sensor
- ±0.25% static accuracy
- Calibrated and temperature compensated
- Rugged 316L stainless steel isolated package
- Standard configurations include:19 mm diameter x 27.6 mm long
- Solid state, high reliability
- Custom configurations and other pressure ranges available. Please consult the factory.

Standard Pressure Range

Nominal pressure	Overpressure	
00.2bar	300%FS	
00.35bar	300%FS	
00.7bar	200%FS	
01bar	200%FS	
02.5bar	200%FS	
04bar	200%FS	
06bar	200%FS	
010bar	200%FS	
016bar	200%FS	
025bar	200%FS	
04bar	200%FS	
06bar	200%FS	
010bar	200%FS	
016bar	200%FS	
025bar	150%FS	

Performance Specifications

Parameter	Value			Units		Notes	
General							
Pressure Range	0-0.2,,25			bar		1bar=14.	5psi
Overpressure	3xFS(P≤0.35bar	2xFS(P>0.35	bar)	bar			
Environmental							
Operating Temperature Range	-40 to +125			°C		-40°F to 2	57°F
Compensated Temperature Range	0 to +70			°C		32°F to 15	58°F
Storage Temperature Range	-40 to +125			°C		-40°F to 2	57°F
Vibration	10			g		20 to 200	0Hz
Shock	100			g		10ms	
Cycles	10x10 ⁶			cycles			
Electrical @25°C(77°F)							
Excitation Current	1.5			mA			
Bridge Resistance	2600 to 6000			Ω			
Insulation Resistance	100			MΩ		@100Vdc	;
Physical Specifications							
Media Compatibility	All media compa	atible with 316L s	tainless s	teel			
Housing	316L stainless s	teel					
Diaphragm	316L stainless s	teel					
Seal Ring	Viton or NBR						
Oil Filling	Silicone oil						
Electrical Connection	Silicon rubber fl	exible wire					
Net Weight Net Weight	Approx.36g						
Parameter	Minimum	Typical	Maxim	um	Units		Notes
Performance						$\sim 10^{\circ}$,
Zero Output	-2	±1	2		mV		1
Full Scale Output	50	100			mV		1
Non-linearity	±0.1	±0.2	±0.3		%FSC)	1, 2
Hysteresis	-0.05	±0.03	0.05		%FSC)	1
Repeatability	-0.05	±0.03	0.05		%FSC)	1
Temp Coeff - Zero	-1.5	±0.75	1.5		%FSC)	3
Temp Coeff - Span	-1.5	±0.75	1.5		%FSC)	3
Long-Term Stability		±0.2	±0.3		%FSC)/year	1

Notes

- 1. All values measured at 25°C(77°F) and at 1.5mA
- 2. Best fit straight line(BFSL)
- 3. 0°C to 70°C(32°F to 158°F) with reference to 25°C(77°F)
- 4. Consult factory for vacuum applications

_	
Connection	Wire color
+IN	Red
- IN	Blue
+OUT	Yellow
- OUT	White

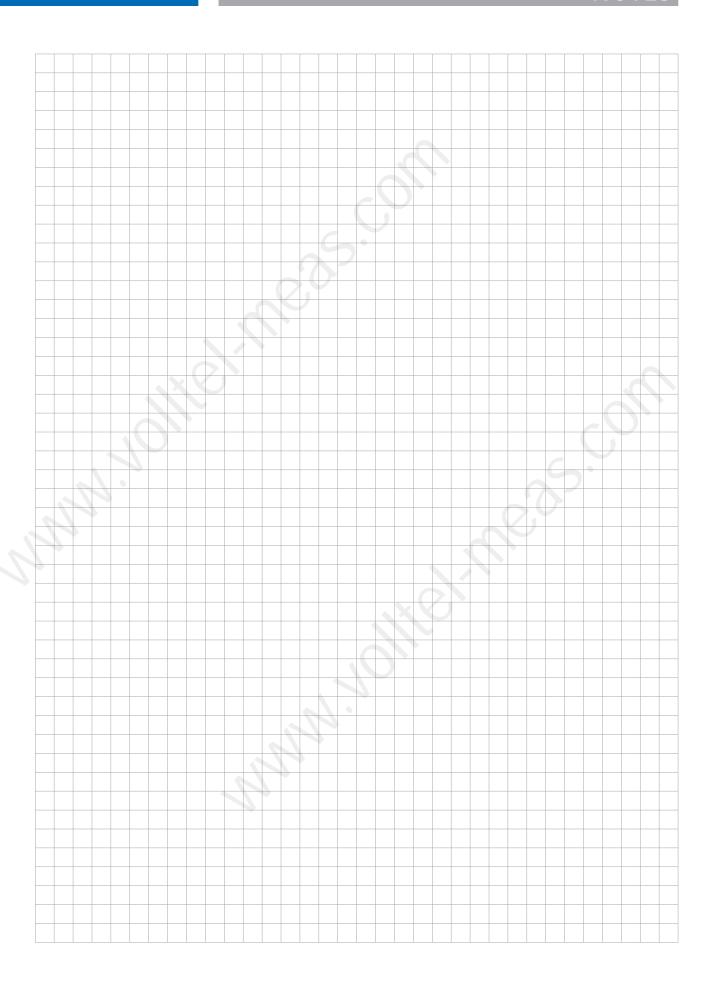
Note:The actual electric connection metho, please check the parameter label enclosed with products

Ordering Information

Option1:	Model									
NPS19D	Piezore	sistive Di	fferenti	al Pressure	e Sensor					
	Option	2: Pressu	ure Ran	ge						
	0002	00.2b	oar		0250	025bar				
	0003	00.35	bar		Cxxx	Customized range				
	0007	00.7b	oar							
	0010	01ba	r							
	0025	02.5b	oar							
	0040	04ba	r							
	0060	06ba	6bar							
	0100	010b	10bar							
	0160	016b	ar							
		Option	3: Pres	sure Type						
		D	differe							
			Optio	ion4: Excitation						
			I			t Current Excitation				
				•		trical Interface				
				F		silicon rubber wires,length=100mm				
					Optio	n6: Compensation				
					Т	0 to 70°C				
					NA	No temperature compensation				
NPS19D	0010	D		F	T	Examples of Ordering Code: NPS19D-0010-D-I-F-T				



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