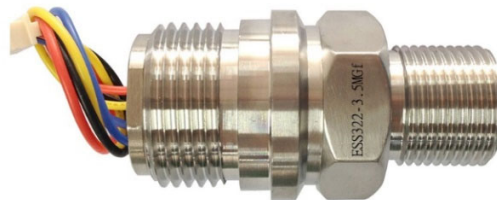


## ESS322 All Welded OEM Piezoresistive Pressure Sensor



Range: 0~100MPa ■ Overload Pressure: 150%~300% ■ Accuracy: 0.1-0.2%/FS ■ All Welded OEM Pressure Sensor

### Description

ESS322 Series OEM Pressure Sensor uses a high-sensitivity piezoresistive silicon die as sensing component, which is protected against ambient influences by SS316 housing sealed with a concentrically corrugated diaphragm. Inside the housing, the filled silicone oil assures the measured pressure can be transmitted onto silicon die and then transform the pressure to electric signal.

ESS322 All Welded Series OEM Pressure Sensor is available all pressure ranges from -100kpa to 100MPa.

### Key Features & Benefits

- Pressure range -100kpa~100MPa
- Gauge, Differential, Absolute, Sealed gauge
- Constant Current/Voltage power supply
- Isolated construction, measure various media
- Welded OEM Pressure Sensor
- Full Stainless Steel 316
- Wide temperature compensation -10°C~80°C
- Long-term stability  $\pm 0.1\%$ FS/year

### Application

- Industrial process control
- Level measurement
- Gas, liquid pressure measurement
- Pressure checking meter
- Pressure calibrator
- Liquid pressure system and switch
- Cooling equipment & A/C system
- Aviation and navigation inspection
- Pneumatics and hydraulics systems

### Standard Range

Range	Overload	Output/F.S (mV)	Typical Value(mV)	Pressure Type
0~10KPa	300%	35~60	45	G
0~20KPa	300%	70~110	90	G/A
0~35KPa	300%	55~80	70	G/A/D
0~70KPa	300%	55~80	60	G/A/D
0~100KPa	300%	60~85	75	G/A/D
0~200KPa	300%	60~85	75	G/A/D
0~400KPa	300%	60~80	70	G/A/D
0~600KPa	200%	90~120	100	G/A/D
0~1.0 MPa	200%	125~185	150	G/A/D

### Technical Parameters

Parameters	Typ.	Max.	Unit
Nonlinearity	0.2	0.5	%FS
Hysteresis	0.05	0.1	%FS
Repeatability	0.05	0.1	%FS
Zero Output	$\pm 1$	$\pm 2$	mV DC
FS Output	100		mV DC
Input/ Output Impedance	2.6	3.8	k $\Omega$
Zero Temp. Drift*	$\pm 0.15$	$\pm 0.8$	%FS, @25°C
Sensitivity Temp. Drift*	$\pm 0.2$	$\pm 0.7$	%FS, @25°C
Long-term Stability	0.1		%FS/year

ESS322 GID-3-EV03.3.1

0~1.6 MPa	200%	80~120	100	G/A/D
0~2.0 MPa	200%	50~70	60	G/A/D
0~3.5 MPa	200%	100~120	110	G/A/D
0~7.0 MPa	200%	120~150	135	G/A
0~10 MPa	200%	180~230	200	G/A
0~25 MPa	150%	140~170	150	S
0~40 MPa	150%	230~280	250	S
0~60 MPa	150%	100~160	130	S
0~100 MPa	150%	100~150	120	S

**Notes:** G for Gauge pressure; A for Absolute pressure; D for Differential pressure; S for Sealed gauge.

Range -100kPa~100MPa  
 \*The typical value of 0~10kPa and 0~20kPa's zero temperature drift and sensitivity temperature drift is 0.4%FS@25°C, max value is 1.6%FS@25°C



### Construction Performance

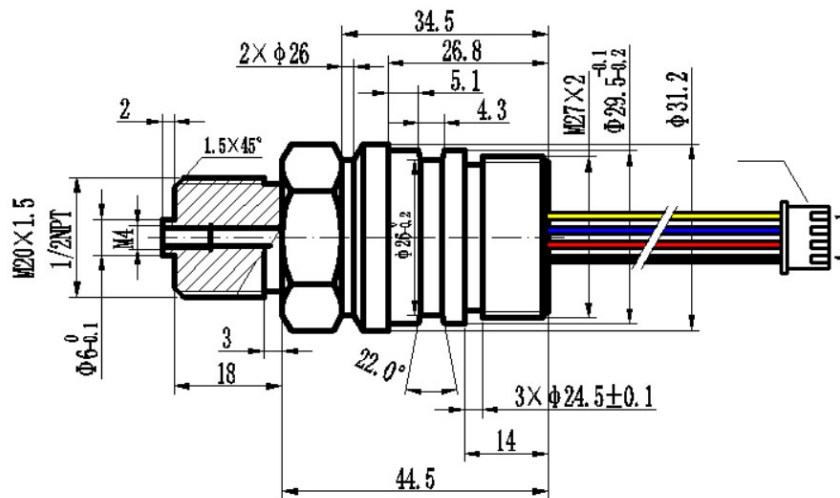
- Diaphragm:** Stainless Steel 316L
- Housing:** Stainless Steel 316L
- Pressure leading tube:** Stainless Steel 316L
- O Ring:** Φ16\*1.8mm (nitrile rubber or viton)
- Measuring Medium:** Which is compatible with SS316L, viton, nitrile rubber
- Packing Medium:** Silicon Oil
- Net weight:** 180g

### Electric & Environment Performance

- Power supply:** 1.5mA/5V(optional) (Max input voltage is 10VDC)
- Insulation Resistance:** 500M @500VDC
- Overpressure:** 1.5~3 times FS
- Vibration (20~500Hz):** 20G
- Useful Time (25°C):** >1\*100 Million Times @Pressure Circulation(80%FS)
- Response Time:** ≤1ms
- Storage Temp.:** -40~+125°C
- Operating Temp.:** -40~+85°C
- Compensation Temp.:** 0~50°C; -10~80°C @ 0~70 (7kPa,20 kPa,35 kPa)

### Drawing

ESS322 All Welded Piezoresistive OEM Sensor Range: -100kpa~100Mpa



## Ordering Procedure

ESS3	High Stable OEM Piezoresistive Sensor									
	Code	Model								
	22	Welded Piezoresistive Pressure Sensor								
	22I	Welded Piezoresistive Pressure Sensor with amplified analog signal								
	23	Welded Flush Diaphragm Piezoresistive Sensor								
	23I	Welded Flush Diaphragm Piezoresistive Sensor with amplified analog signal								
		Code	Span	Code	S	Code	Span			
		R01	0~10KPa	R07	0	R13	0~7.0 MPa			
		R02	0~20KPa	R08	0	R14	0~10 MPa			
		R03	0~35KPa	R09	0	R15	0~25 MPa			
		R04	0~70KPa	R10	0	R16	0~40 MPa			
		R05	0~100KPa	R11	0	R17	0~60 MPa			
		R06	0~200KPa	R12	0	R18	0~100 MPa			
		Code	Pressure Type							
		G	Gauge							
		D	Differential							
		A	Absolute							
		S	Sealed Gauge							
		Cod	Power Supply							
		M	1.5mA							
		V	5V							
		Code	Output Signal							
		1	Mv							
		2	IIC							
		3	0.5-4.5v							
		Code	Thread Connection							
		M10	M10x1 Male							
		M12	M12x1 Male							
		M20	M20x1.5 Male							
		M25	M25x1 Male							
		M27	M27x2 Male							
		Code	Pressure connection							
		0	O-ring -NBR							
		1	O-ring -Viton							
		Code	Electric connection							
		1	Kovar pin							
		2	Rubber flexible silicon wires (10cm)							
ESS3	22	R10	G	M	1	M12	0	2		

**Note:** ① Extremely attention must be paid to sensor installation process to avoid any miss conduction that affect the sensor performance, ② please protect the diaphragm and the compensated board carefully to prevent any damage. ③ Please contact us if your requested working temperature lower than -20 °C