

ESS3 OEM PRESSURE SENSOR **[2023]**

General Instruction and Datasheet

 Eastsensor™ Technology



■ Range: 0~100MPa ■ Overload Pressure: 150%~300% ■ Accuracy: 0.2%/FS ■ Φ12mm~19mm Standard OEM Pressure Sensor

Description

ESS3 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.

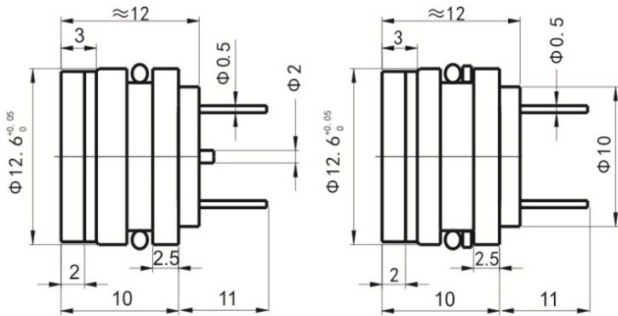
ESS3 Series OEM Pressure Sensor is available all pressure ranges from -100KPa to 100MPa. Also the different dimension can be chosen: diameter from 12 mm to 19 mm, height from 5 mm to 15 mm. Pressure type including Gauge, Differential, Absolute and Sealed Gauge are all available.

ES3 Series Key Features

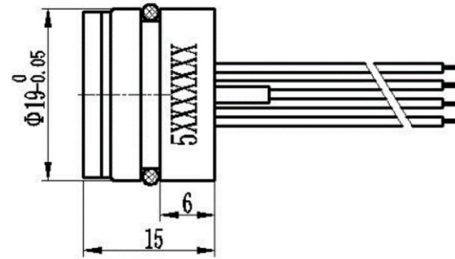
Model		Range	Diameter	Type	Accuracy/FS	Input	Output
ESS312	Compact Size Pressure Sensor	0-10bar-1000bar	12.6mm	G/A/S	0.1%-0.2%	1.5mA	≤150mV
ESS319	Universal OEM Pressure Sensor	-1bar-0.1bar-1000bar	19mm	G/A/S	0.1%-0.2%	1.5mA/5V/10V	≤150mV
ESS319-I2C	Digital Output Pressure Sensor	-1bar-0.1bar-1000bar	19mm	G/A	0.3%-0.5%	3.3V/5V	≤150mV
ESS319T	Pressure & Temperature Sensor	0.1bar-30bar	19mm	G/A/S	0.25%	1.5mA/5V/10V	≤150mV
		-104°F -185°F			0.50%		
ESS319I	Analog Output Pressure Sensor	-1bar-0.1bar-1000bar	19mm	G/A/S	0.20%	10-30V	6V
ESS320	Differential Pressure Sensor	0-0.35bar-35bar	19mm	D	0.1%-0.2%	1.5mA/5V/10V	≤150mV
ESS322	All Welded Pressure Sensor	-1bar-0.1bar-1000bar	28mm	G/A/S	0.1%-0.2%	1.5mA/5V/10V	≤150mV
ESS323	Welded Joint Type Pressure Sensor	-1bar-100bar	19mm	G/A/S	0.1%-0.2%	1.5mA/5V/10V	≤150mV
ESS331	High Temperature Pressure Sensor	0-5bar-100bar	29.5mm	G/A/S	0.1%-0.2%	1.5mA/5V/10V	≤150mV
ESS332	Flat Base Pressure Sensor	-1bar-0.1bar-35bar	19mm	G/A/S	0.1%-0.2%	1.5mA/5V/10V	≤150mV
ESS350	Flat Diaphragm Pressure Sensor	0-0.35bar-60bar	50mm	G/A/S	0.20%	1.5mA/5V/10V	≤150mV

ES3 Series Portfolio

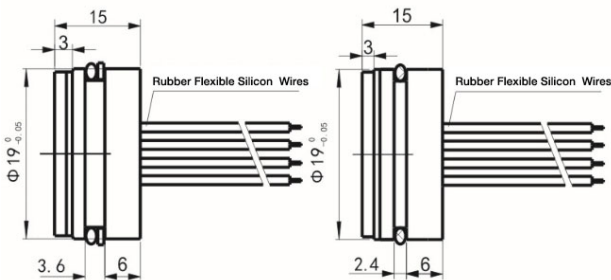
ESS312 Compact Size Φ 12 Piezoresistive OEM Sensor
Range: 1Mpa~100Mpa



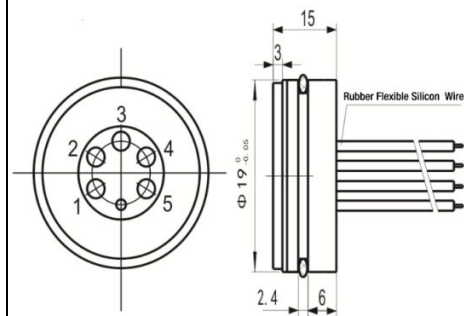
ESS319-7 Pressure Sensor
Range: 0Kpa~7Kpa



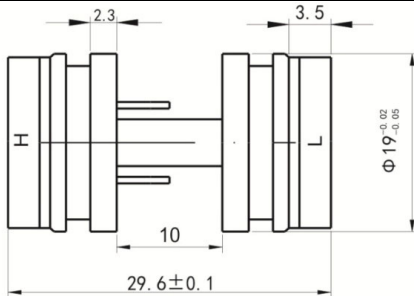
ESS319 High Stable Universal Piezoresistive OEM Sensor
Range: -100Kpa~10Kpa~100Mpa



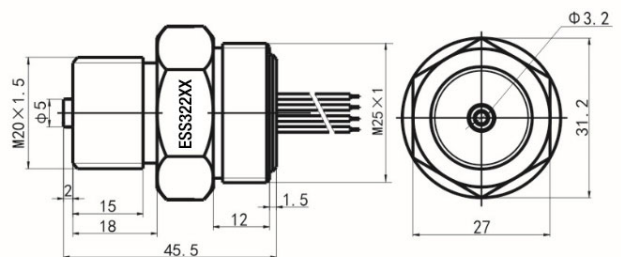
ESS319P Flush Diaphragm Piezoresistive Pressure Sensor
Range: -100Kpa~10Kpa~3.5Mpa



ESS320 Piezoresistive OEM Differential Pressure Sensor
Range: 10Kpa~3Mpa



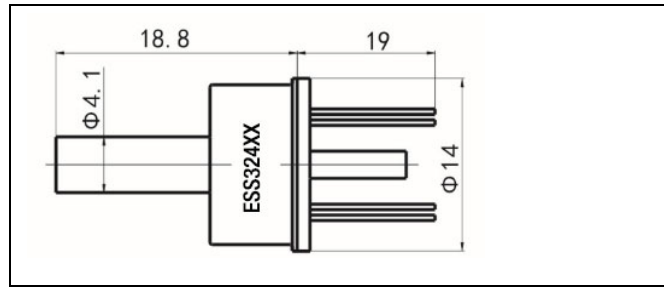
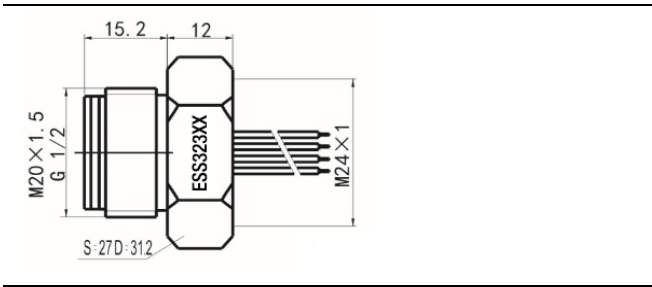
ESS322 Welded Piezoresistive Pressure Sensor
Range: -100Kpa~10Kpa~100Mpa



ESS323 Welded Flush Diaphragm Piezoresistive Sensor
Range: -100Kpa~10Kpa~10Mpa

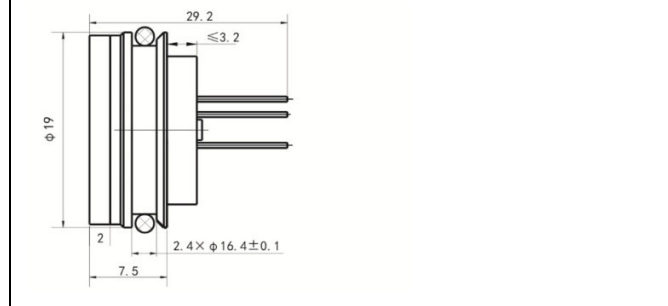
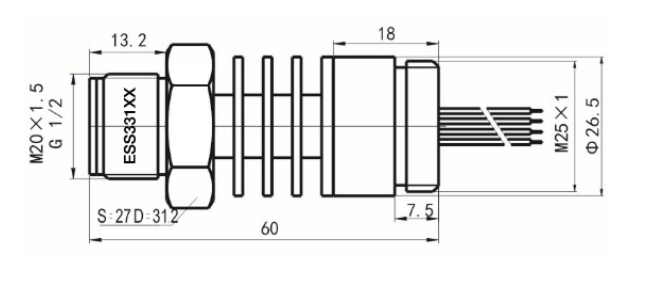
ESS324 TO-8 Housing Piezoresistive Pressure Sensor
Range: 5Kpa~600Kpa

ESS3 GID-3-EV03.3



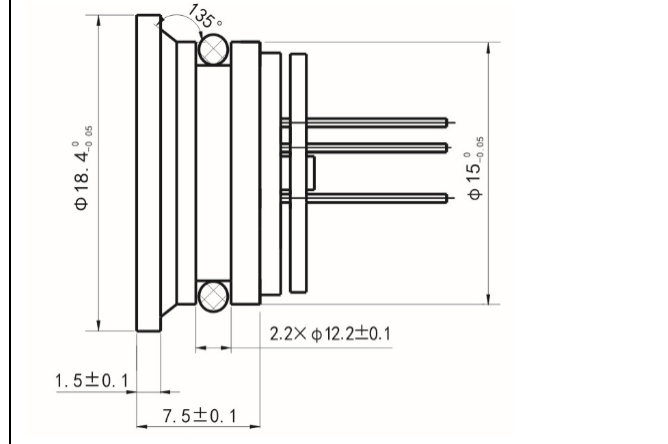
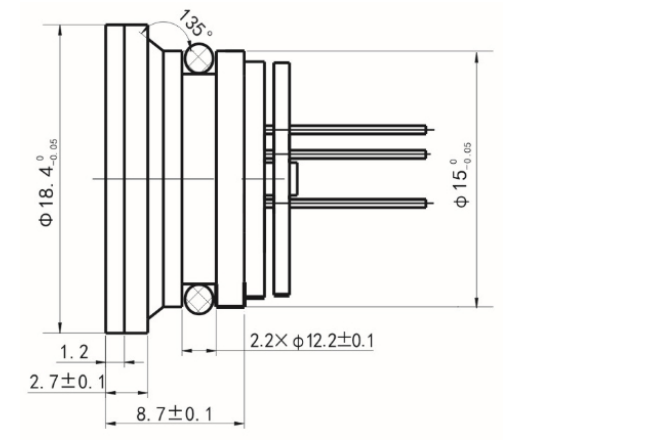
ESS331 High Temperature Piezoresistive Pressure Sensor
Range: 35Kpa~10Mpa

ESS332 Welded Flat Base Piezoresistive Pressure Sensor
Range: -100Kpa~10Kpa~3.5Mpa



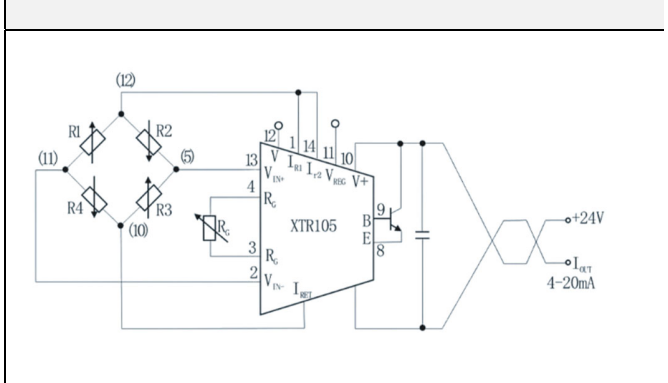
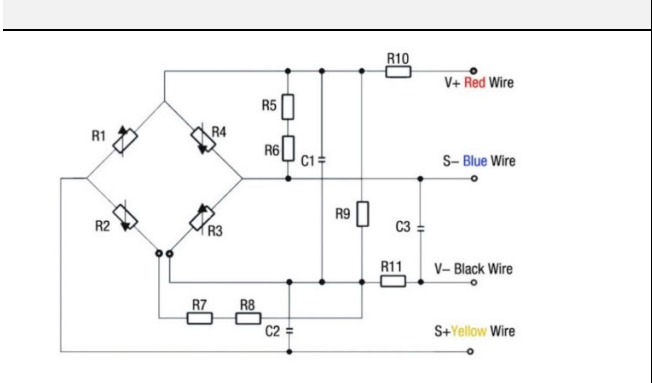
ESS333 Flush Diaphragm Flat Base Piezoresistive Sensor
Range: -100Kpa~10Kpa~10Mpa

ESS333P Flush Diaphragm Flat Base Piezoresistive Sensor
Range: -100Kpa~10Kpa~10Mpa



Piezo-resistive Wheatstone Bridge

ESS319I Amplified-PCB to Convert mv into Analog Signal



Ordering Procedure

ESS	High Stable OEM Pressure Sensor						
	Code	Model					
	312	Compact Size Φ 12 Piezoresistive OEM Sensor					
	319	High Stable Universal Piezoresistive OEM Sensor					
	319-IIC	Digital Output Pressure Sensor					
	319-7	Low Range (0-7kpa) Piezoresistive OEM Sensor					
	319I	Analog Output Pressure Sensor Module (4-20mA; 0.5-4.5V)					
	319T	Pressure & Temperature Pressure Sensor					
	319P	Flush Diaphragm Type Pressure Sensor					
	320	Piezoresistive OEM Differential Pressure Sensor					
	322	Welded Piezoresistive Pressure Sensor					
	323	Welded Flush Diaphragm Piezoresistive Sensor					
	331	High Temperature Piezoresistive Pressure Sensor					
	332	Welded Flat Base Piezoresistive Pressure Sensor (19mm*7.5mm)					
	333	Flush Diaphragm Flat Base Piezoresistive Sensor					
	350	Flat Diaphragm Pressure Sensor					
	501	Ceramic Piezo-Resistive Pressure Sensor					
	501I	Ceramic Piezo-Resistive Pressure Sensor Module (4-20mA)					
	501V	Ceramic Piezo-Resistive Pressure Sensor Module (0.5-4.5V)					
	601	Encapsulated Ultra-Low Pressure Sensor					
	01	MCS Pressure Sensor					
		Code	Span	Code	Span	Code	Span
		R01	0~10KPa	R07	0~400KPa	R13	0~7.0 MPa
		R02	0~20KPa	R08	0~600KPa	R14	0~10 MPa
		R03	0~35KPa	R09	0~1.0 MPa	R15	0~25 MPa
		R04	0~70KPa	R10	0~1.6 MPa	R16	0~40 MPa
		R05	0~100KPa	R11	0~2.0 MPa	R17	0~60 MPa
		R06	0~200KPa	R12	0~3.5 MPa	R18	0~100 MPa
		Code	Pressure Type				
		G	Gauge				
		D	Differential				
		A	Absolute				
		S	Sealed Gauge				
		Code	Power Supply				
		M	1.5mA				
		V5	5V				
		V10	10V				
		Code	Pressure connection				
		0	O-ring -NBR				
		1	O-ring -Viton				
		Code	Electric connection				
		1	Kovar pin				
		2	Rubber flexible silicon wires (10cm)				
ESS	319	R10	G	M	0	2	

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