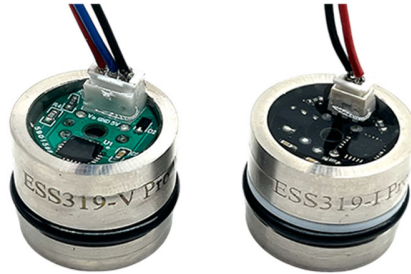


ESS319-I/V Pro Analog Output Pressure Sensor



▪ **Range:** 0~0.1bar~1000bar ▪ **Overload:** 150%~300% ▪ **Accuracy:** 0.25%/FS | 0.5%/FS ▪ **Power Supply:** 5-30Vdc (24Vdc default)

Description

ESS319-I/V Pro, which integrated the pcb + sensor cell together, is the upgraded version of ESS319-I-V, no additional wires and pcb connection job but maintain the same dimension size of 19mm*15mm.

Like its previous type, ESS319-I/V Pro also incorporate signal conditioning and amplification circuitry directly into the sensor housing or package. This integrated circuitry takes the millivolt-level signal from the sensing elements and amplifies it to a higher-level, standardized output signal, such as 0-5V or 4-20mA.

ESS319-I/V Pro is kind of the All-in-One & Integrated solution that easy for connection and transmitter build, it is also designed to produce 4-20mA (ESS319-I Pro) or 0-5V/0.5-4.5V(ESS319-V Pro) analog output signal, as well as digital I2C (ESS319-IIC), pressure range from 0.1bar to 1000bar/G/S/A.

Key Features & Benefits

- Pressure range 0~10KPa~100MPa
- Pressure Type: G/A/S
- Constant current/Voltage power supply
- Isolated construction, measure various media
- Φ19mm OEM Pressure Sensor
- Full Stainless Steel 316
- Wide temperature compensation -10°C~80°C
- Long-term stability ±0.25%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
0~35K Pa	300%	55~80	70	G/A
0~70K Pa	300%	55~80	60	G/A
0~100 KPa	300%	60~85	75	G/A
0~200 KPa	300%	65~85	75	G/A
0~400 KPa	300%	60~80	70	G/A
0~1.0 MPa	300%	80~120	100	G/A
0~2.0 MPa	200%	50~70	60	G/A
0~3.5 MPa	200%	100~120	110	G/S/A

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	±1	±2	mV DC
FS Output	100		mV DC
Input/ Output Impedance	2.6	3.8	kΩ
Zero Temp. Drift*	±0.15	±0.8	%FS, @25°C
Sensitivity Temp. Drift*	±0.2	±0.7	%FS, @25°C
Long-term Stability	0.1		%FS/year

ESS319-I/V Pro GID-3-EV03.3.1

0~7.0 MPa	200%	120~150	135	S/A
0~10 MPa	200%	180~230	200	S/A
0~25 MPa	200%	140~170	150	S/A
0~40 MPa	200%	230~280	250	S/A
0~60 MPa	200%	100~160	130	S/A
0~100 MPa	150%	100~150	120	S/A

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



Packing Medium: Silicon Oil
Net weight: 75~80g

Construction Performance



Diaphragm: Stainless Steel 316L
Housing: Stainless Steel 316L
Pressure leading tube: Stainless Steel 316L
O Ring: $\Phi 16 \times 1.8\text{mm}$ (nitrile rubber or viton)
Measuring Medium: Which is compatible with SS316L, viton, nitrile rubber

Drawing

Electric & Environment Performance

Power supply: 5-30Vdc (24Vdc default)
Output: 4-20mA or 0-5V or 0.5-4.5V (ratio)
Load Resistance: $\leq (U-12) / 0.02 \Omega$
Overpressure: 1.5~3 times FS
Vibration (20~500Hz): 20G
Useful Time (25°C): >1*100 Million Times @ Pressure Circulation(80%FS)
Response Time: $\leq 1\text{ms}$
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)

ESS319-I-V Pro Analog Output Pressure Sensor Range: 0Kpa~25Mpa

Range < 7Mpa	Range > 7Mpa

Ordering Procedure

ESS3	High Stable OEM Piezoresistive Sensor									
	Code	Model								
	19	High Stable Universal Piezoresistive OEM Sensor								
	19P	Flush Diaphragm Piezoresistive Pressure Sensor								
	19T	Pressure & Temperature Sensor								
	19-I2C	Digital Pressure Sensor								
	19-I/V	Pressure Sensor with Analog Output (signal amplified)								
	19-I/V Pro	Pressure Sensor with Analog Output (Integrated solution)								
		Code	Span	Cod	Span	Cod	Span			
		R01	0~10KPa	R07	0~1.0MPa	R13	0~40 MPa			
		R02	0~35KPa	R08	0~2.0Mpa	R14	0~60 MPa			
		R03	0~70KPa	R09	0~3.5 MPa	R15	0~100 MPa			
		R04	0~100KPa	R10	0~7.0 MPa					
		R05	0~200KPa	R11	0~10.0 MPa					
		R06	0~400KPa	R12	0~25 MPa					
		Code	Pressure Type							
		G	Gauge							
		A	Absolute							
		S	Sealed Gauge							
		Code	Accuracy							
		0.25	0.25%							
		0.5	0.5%							
		Code	Power Supply							
		E1	5V							
		E2	10-30V							
		E3	24V							
		Code	Output							
		I	4-20mA							
		V1	0.5-4.5V							
		V2	0-5V							
		V3	0-10V							
		Code	PCB Shape							
		RD	Roundness							
		RT	Rectangular							
		Code	Pressure connection							
		0	O-ring -NBR							
		1	O-ring -Viton							
		Code	Electric connection							
		1	Kovar pin							
		2	Rubber flexible teflon wires (10cm)							
ESS3	19-I/V Pro	R10	G	0.25	E1	V1	RD		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