Sensor Co.,LTD

PRODUCT OVERVIEW

PRESSURE MEASUREMENT

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PF310 Sputtered Thin Film

Pressure Sensor for Construction Machinery

Characteristics

☆0.25%F.S, 0.5%F.S,1%F.S accuracy guaranteed within the temperature range of -40~105℃

☆Integrated pulse buffer offers high level of resistance to cavitation and liquid hammer

☆Advanced anti-interference, anti-surge circuit protection and high insulation and pressure-resistant film materials

☆No thermal instability or leaks thank to oil-free, all-welded stainless steel construction

☆Reliable & durable double gold wire lead technology

☆Wide measuring range from 1MPa to 100MPa

☆Fast response, response time less than 1ms

☆Strain resistance directly sputtered on 17-4PH S/S substrate ensures long-term stability better than±0.1%F.S/year

☆Small hysteresis and good repeatability

☆IP67 high protection class

Applications

☆Cranes

☆Excavators

☆Road headers

☆Rotary excavators

☆Trailer pumps

☆Vehicle pumps

☆Pump trucks

☆Piling machinery

☆Fire safety machinery

☆Road machinery

☆Loaders

☆Shield machines

☆Agricultural machinery

☆Other hydraulic systems of construction machinery

Profiles

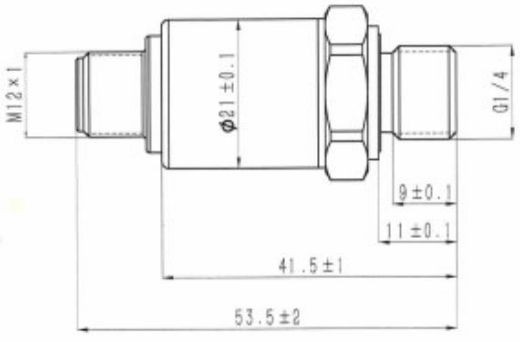
P310 series is a construction machinery pressure sensor. It adopts an all-welded stainless steel compact design, which can effectively protect the sensor under harsh working conditions. Being packaged with metal-based pressure- sensitive chips, it aims at solving the problems that are common in hydraulic system of construction machinery, such as serious cavitation, liquid hammer phenomenon, high peak pressure, large power fluctuation, large vibration interference and harsh environment. It is designed to fully meet the requirements of these working conditions.

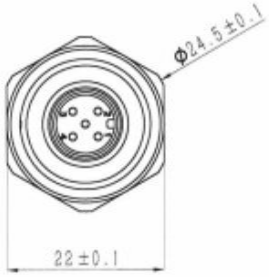
The biggest advantage of this product is impact resistance, high temperature resistance, good long-term stability and high reliability. P310 series has strong internal structure that ensures its normal work in a high vibration environment.

Specifications

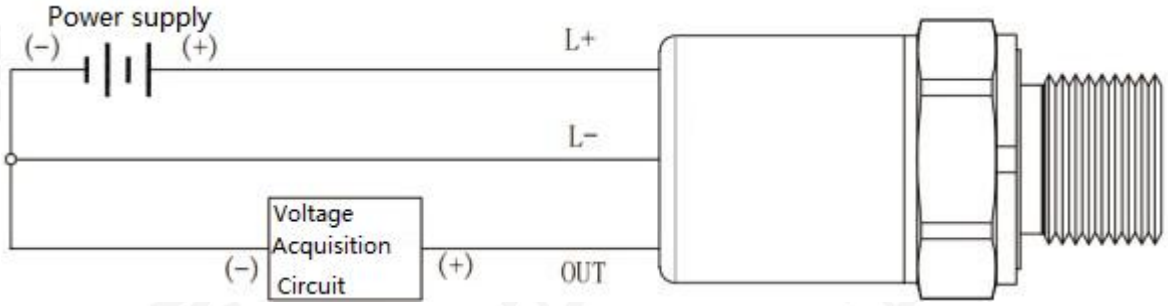
Parameter	PF310 Series			
Measuring range(MPa)	1-10	16-40	60	70-100
Overload pressure	300%	300%	250%	200%
Burst pressure	4000%	1000% and ≤400MPa	≤400MPa	
Accuracy	±0.25%F.S,±0.5%F.S ,±1%F.S			
Long-term stability	±0.2%F.S/year			
Output	4-20mA,0.5-4.5V,0.5-4.5V(ratiometric),0-10V			
Power Supply	8-32VDC			
Zero point temperature drift	±0.1%F.S/10℃			
Full range temperature drift	±0.3%F.S/10℃			
Response time	≤1ms			
Durability	10^8 pressure circles			
Insulation resistance	≥1000MΩ/500VDC			
Sensitive component material	17-4PH			
IP rating	IP67			
Medium temperature range	-40~+80℃(0.25%F.S),-40~+105℃(0.5%F.S,1%F.S)			
Ambient temperature range	-40~+105℃			
Storage temperature range	-40~+105℃			
Random vibration	20g, GB/T2423.56-2006			
Sinusoidal vibration	14.1g,GB/T2423.10-2008			
Shock	50g,11ms, GB/T2423.5-1995			
EMC-electromagnetic field radiation immunity	GB/T 17626.3-2016			
EMC-electrostatic discharge immunity	GB/T 17626.2-2018			

Dimensions

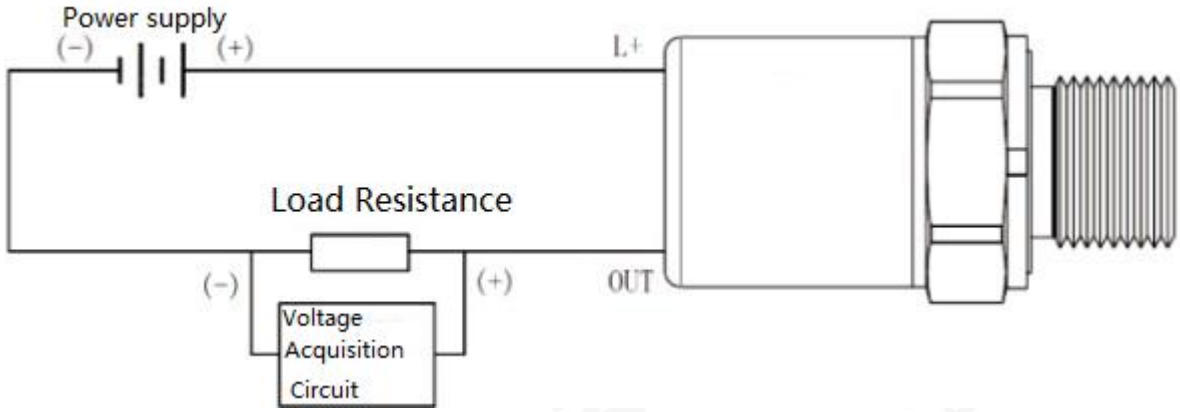




Wiring

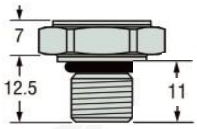
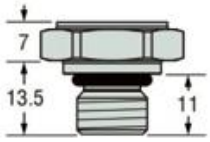
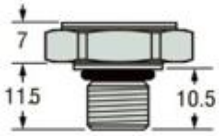
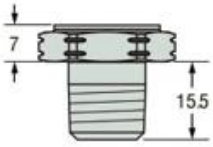
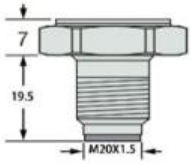
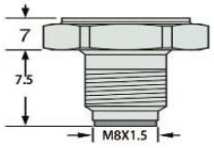
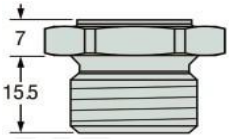
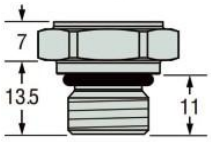
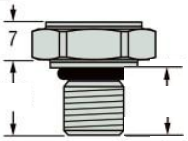


For voltage output

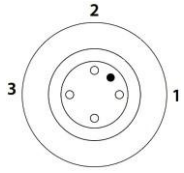
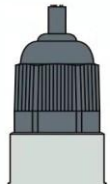
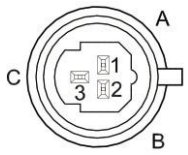
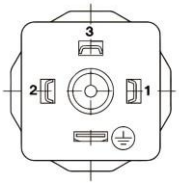
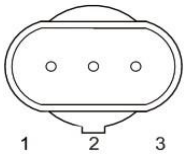
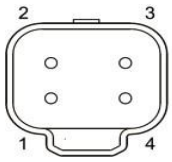
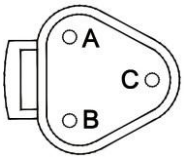
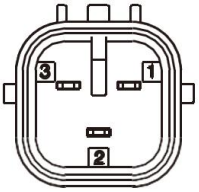


For current output

Pressure Connections

Code	G2	M3	G1	G5	M6
Overall dimensions	 G1/4-19	 M12x1.5	 G1/8	 G1/4-19A	 M20X1.5
Code	M1	G4	M4	N2	G3
Overall dimensions	 M8X1.25 female	 G1/2	 M14X1.5	 NPT1/4	 G3/8

Electrical Connections

Code	01		02		03		04	
Port form	M12X1 		Direct cable outlet 		Packard 		Hirschmann 	
Pin definition	Current	Voltage	Current	Voltage	Current	Voltage	Current	Voltage
	1:Power + 2:Loop 3:/ 4:/	1:Power 2:Signal 3:GND	Red:Power Black:Loop	Red:Power Black:GND Blue: Signal+	A: Loop B: Power + C:/	A: GND B: Power + C:Signal	1:Power + 2:Loop- 3:/ 4:/	1:Power+ 2:GND 3: Signal 4:/
Code	**05**		**07**		**08**		**12**	
Port form	AMP 		Deutsch DT04-4P 		Deutsch DT04-3P 		Sumitomo 6189-0131 	
Pin definition	Current	Voltage	Current	Voltage	Current	Voltage	1:Power + 2:Signal 3: GND	
	1:/ 2:Loop 3:Power+	1:Signal 2:GND 3:Power+	1:Loop- 2:Power + 3:/ 4:/	1:GND 2:Power+ 3:/ 4:Signal	A:Power+ B:Loop C:/	A:Power + B:GND C:Signal		
Code	**13**							
Port form	SUMITOMO 6189-6907 							
Pin definition	1:Power+ 2:Signal 3:GND							

Order Information

Item \ PF310 (Model)	05	A	S26	G2	105	1
Electrical Connection	01=M12X1 02=Direct cable outlet 03=Packard connector 04=Hirschmann connector 05=AMP connector 07=Deutsch DT04-4P 08=Deutsch DT04-3P 12=SUMITOMO 6189-0131 13=SUMITOMO 6189-6907					
Output	A= 4-20mA B=0.5-4.5V C=0.5-4.5V ratiometric G=0-10V					
Power Supply	S26=8~32Vdc					
Pressure connection	G2=G1/4-19 N2=NPT 1/4 M6=M20X1.5 M3=M12X1.5 G1=G1/8 G5=G1/4-19A G4=G1/2 M4=M14X1.5 M1=M8X1.25 female G3=G3/8					
Pressure Measurement	105=1 MPa 165=1.6 MPa 255=2.5 MPa 046=4 MPa 056=5 MPa 066=6 MPa 106=10 MPa 166=16 MPa 256=25 MPa 406=40 MPa 506=50 MPa 606=60 MPa 706=70 MPa 107=100 MPa					
Accuracy	0=1%F.S 1=0.5%F.S 2=0.25%F.S					

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