ROCKSENSOR®

Miniature Pressure Transmitter

RP202S

- Accuracy upto 0.2%
- Pressure Range of upto 60MPa
- Gauge, Absolute Pressure Available
- IP65, IP68 Grade Protection

ROCKSENSOR AT A GLANCE (ABOUT US)

Rocksensor is one of the global leaders specializing in process Instrumentation, Research and Development and Designing of Industrial Automation Equipment. We provide highly precise pressure sensors and transmitters, flow metres, level transmitters & temperature transmitters with a prime focus to help our clients efficiently, safely and economically run complex industrial processes.

Rocksensor headquartered in Germany (originated in Switzerland), has its footprint in various geographical regions such as the US, Russia, South Korea, Italy, Germany, Singapore, Malaysia, China, Taiwan, Australia, UAE, Brazil, and India. Our clients come from some of the major industries such as Oil and Gas, Petrochemicals, Pharmaceuticals, FMCG, Automobiles, Water, Cement, Metal & Mining and mainly from the Power Industry like Nuclear, Thermal, Hydro and Solar.

Rocksensor deals in a wide range of highly accurate industrial automation instruments ensuring that even the complex industrial processes happen efficiently.

To fulfill the needs of our clients we make sure that our instruments work in even the harsh environmental conditions offering accurate recordings and communication.

We, at Rocksensor, believe in creating bonds that last a lifetime and create a success story for each and every client. Rocksensor aims to achieve a perfect fit in global market landscape and establish our footprints across the globe.

ROCKSENSOR

CONTENTS

KEY APPLICATION INDUSTRIES

- Oil and Gas sector
- Cement
- Metal
- Pulp and Paper
- Agriculture
- Textiles
- Chemicals
- Power
- Water
- Pharmaceutical
- Fertilizer
- Plastics and HVAC

1. Introduction

The RP202S use diffused silicon pressure sensors as sensitive components and adopts fully digital circuits. The overall performance is stable and reliable, and can carry out long-distancesignal transmission. All stainless steel structure, easy to install.It has extremely high anti-interference and impact resistance. It's suitable for gas, hydraulic, environmental protection, medical and other industries.

2. Key Applications

- Hydraulics
- Compressor
- Petroleum
- Pumps
- Refrigerator
- Metallurgy
- Constant Pressure Water Supply
- Air Conditioner etc. Machine
- Chemical Industry Process Control

3. Key Features

- Diffusion silicon-filled oil core with stainless 316L Isolation diaphragm
- High accuracy, all Stainless steel structure
- Micro amplifier, voltage and current signal output
- Strong anti-interference, good long-term stability
- Various structures, easy installation and use
- Vibration and shock resistance
- Wide measuring range, can measure absolute pressure, gauge and sealed gauge pressure

4. Standard Pressure Ranges

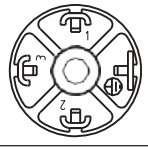
Nominal Pressure	Gauge	Sealed Gauge	Absolute
-1 ~ 0bar	●		
0 ~ 0.1bar	●		
0 ~ 0.2bar	●		
0 ~ 0.35bar	●		●
0 ~ 0.7bar	●		●
0 ~ 1bar	●		●
0 ~ 1.6bar	●		●
0 ~ 2.5bar	●		●
0 ~ 4bar	●		●
0 ~ 6bar	●		●
0 ~ 10bar	●	●	●
0 ~ 16bar	●	●	●
0 ~ 25bar	●	●	
0 ~ 60bar		●	
0 ~ 100bar		●	
0 ~ 250bar		●	
0 ~ 400bar		●	
0 ~ 1000bar		●	

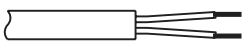
Note : The above table shows which range can be covered in absolute, gauge and sealed transmitterss

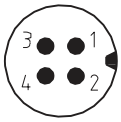
5. Performance Specifications

Characterstics	Parameters
Pressure Range	-0.1MPa ~ 60MPa
Output	4-20mA/ 0~50VDC/ 0~10VDC/ 0.5~4.5VDC (ratiometric)
Power Supply	10~30VDC/ 5VDC
Accuracy	±0.5%F.S./ ±0.2%F.S.
	±0.5%: -0.1MPa~0.1MPa upto 60MPa
	±0.2%: 100KPa~60MPa
Electrical Connection	Hirschmann (DIN43650A/ DIN43650C)/ M12/ Cable
Process Connection	G1/2/ G1/4/ G1/8/ NPT1/2/ NPT1/4 (customized)
Relative Humidity	10% ~80%
Overload	150%
Burst Pressure	250% FS
Long-term Stability	±0.2% F.S./ Year
Compensation Temperature	-20 ~ 80℃ (≧1MPa), 0-70℃ (≧100kPa), 0-50℃ (≦100kPa)
Working Temperature	-20 ~ 80℃
Zero Temperature Shift	±0.02%FS/℃
Full Range Temperature Shift	±0.02%FS/℃
Load Resistance	(U-11.5)/ 0.02Ω, U= Power Supply
Insulation Resistance	≥500MΩ, @500VDC
Housing	SS304/ SS316
Diaphragm	SS316 (Standard)
Seal Ring	Viton or NBR
Oil Filling	Silicone Oil
Protection	IP65 (Standard), IP68 (only for electrical connection cable type)
Vibration	VIbration Resistance: 10g (@20Hz~200Hz) (IEC60068-2-6 standard, resonance condition)

6. Connection Diagrams

Connector DIN43650			
2-wire(current) 3-wire(voltage)			
	Supply+	1	1
	Signal+	2	3
	Gnd	-	2

Cable outlet			
2-wire(current) 3-wire(voltage)			
	Supply+	Red	Red
	Signal+	Yellow	Blue
	Gnd	-	Yellow

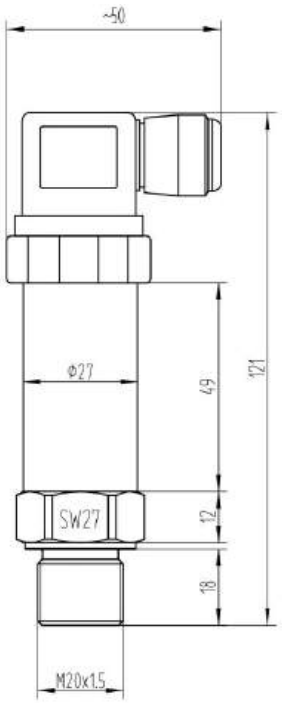
Connector M12x1(4-pin)			
2-wire(current) 3-wire(voltage)			
	Supply+	1 Brown	1 Brown
	Signal+	3 Blue	4 Black
	Gnd	-	3 Blue

7. High Temperature Accessories

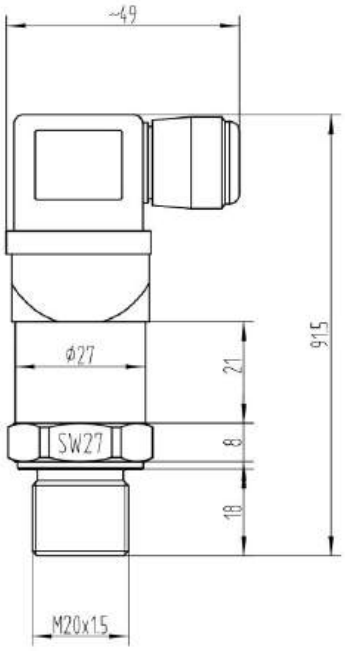
		
H1	H2	H3
Suitable for 0~150℃	Suitable for 0~150℃	Suitable for 0~300℃
Pressure under 10MPa	Pressure under 10MPa	Pressure under 10MPa

Note : The above accessories are applicable only for electrical connection J01, J02, J03.

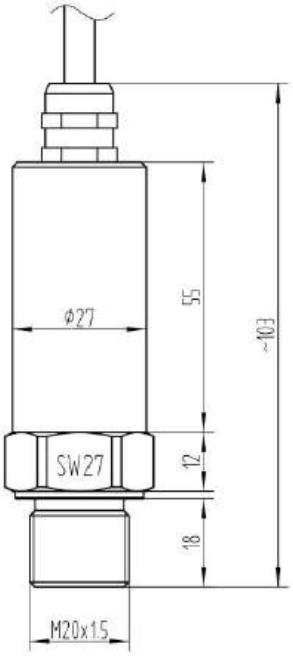
8. Dimensions



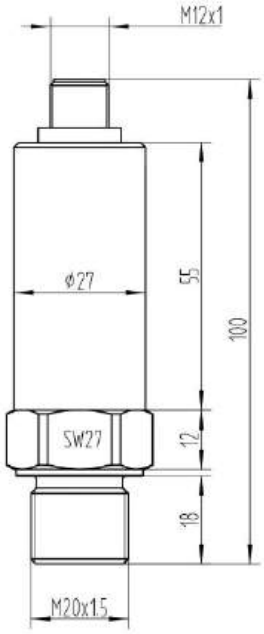
Code J03
(Hirschmann DIN43650A)



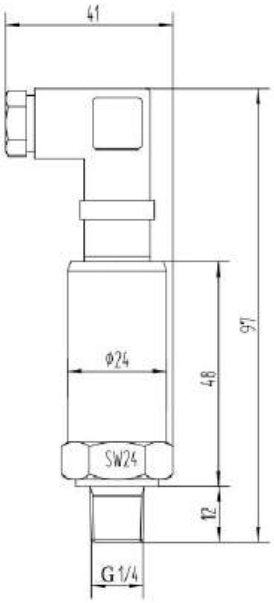
Code J04
(Mini Diagram)



Code J01
(Cable Outlet)

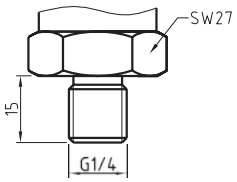


Code J02
(M12x1, 4-pin)

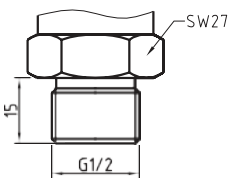


Code J05
Mini Hirschmann (DIN43650C)

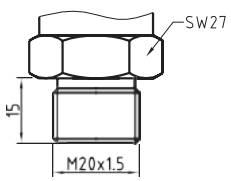
Mechanical Connection in (mm)



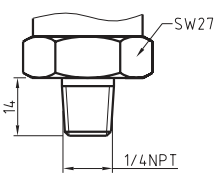
G1/4



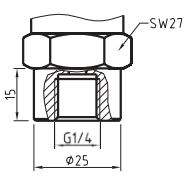
G1/2



M20x1.5



1/4NPT



G1/4(F)

5. Model Selection Table

RP202S	Miniature Press. Transducer									
Code	1	2	3	4	5	6	7	8	9	10

Pressure Range	10
0 ~ 0.1bar	1
0 ~ 0.35bar	2
0 ~ 0.7bar	3
0 ~ 1bar	4
0 ~ 1.6bar	5
0 ~ 2.5bar	6
0 ~ 4bar	7
0 ~ 6bar	8
0 ~ 10bar	9
0 ~ 16bar	10
0 ~ 25bar	11
0 ~ 60bar	12
0 ~ 100bar	13
0 ~ 250bar	14
0 ~ 400bar	15
0 ~ 600bar	16
Negative pressure range (from -1 bar to positive range)	17
Customizable (*Special cases to be discussed)	18
Negative pressure range can be selected in Code 17	

Accuracy	20
0.2%	D
0.5%	E

Pressure Type	30
Gauge	G
Absolute (only positive)	A

Powe Supply	40
24VDC	1
5VDC (0.5~4.5v output only)	2
Note: 24VDC supply has output S1, S2, S3, S4, S5 but 5VDC supply only has output 0.5~4.5 V	

Output	50
Analog 4-20 mA	S1
0-10V	S2
1-5V	S3
0-5V	S4
0.5-4.5V	S5

100	Input Pressure
H1 (Siphon)	High Temperature 0 ~ 150℃ (Pressure <10MPa)
H2 (Cooling Fins)	High Temperature 0 ~ 150℃ (Pressure <100MPa)
H3 (Cooling Fins)	High Temperature 0 ~ 300℃ (Pressure <100MPa)
Note: The above accessories are applicable only for electrical connection J01, J02, J03.	

90	Input Pressure
P	Positive Pressure Only
N	Negative Pressure
C	Compound Pressure (Negative to Positive)

80	Electrical Connection
J01	Cable outlet with PVC cable Length - 1.5m
J02	M12x1, 4-pin
J03	Hirschmann (DIN43650A)
J04	Mini Diaphragm
J05	Mini Hirschmann (DIN43650C)
J0X	Custimizable (*special cases to be discussed)

70	ProcessConnection
C01	G1/8(M)
C02	G1/4(M)
C03	G1/2(M)
C04	NPT1/8(M)
C05	NPT1/4(M)
C06	NPT1/2(M)
C09	Custimizable (*special cases to be discussed)

60	Diaphragm Material
1	SS316L
2	Hastelloy C
3	Customizable (*Special cases to be discussed

Example: RP202S-1DG1S11C01J01PH1 (Siphon)

RP202S - Miniature Pressure Transducer

1 - Pressure Range : 0 ~ 0.1bar
D - Accuracy : 0.2%
G - Pressure Type : Gauge
1 - Power Supply : 24VDC
S1 - Analog 4-20mA
1 - Diaphragm Material : SS316L
C01 - Process Connection : G1/8 (M)
J01 - Electrical Connection : Cable outlet with PVC cable length - 1.5m
P - Input Pressure : Positive Pressure Only
H1 (Siphon) - High Temperature 0 ~ 150°C (Pressure <10MPa)

6. Pressure Conversion Table

	psi	atms	"H_2O	mm H_2O	cm H_2O	oz/in^2	Kg/cm^2	"Hg	mmHg (Torr)	cmHg	mbar	bar	Pa (N/m^2)	kPa	MPa
psi	1	0.0681	27.71	703.8	70.38	16	0.0704	2.036	51.715	5.17	68.95	0.0689	6,895	6.895	0.0069
atms	14.7	1	407.2	10,343	1,034.3	235.1	1.033	29.92	760	76	1013	1.013	101,325	101.3	0.1013
"H_2O	0.0361	0.00246	1	25.4	2.54	0.5775	0.00254	0.0735	1.866	0.187	2.488	0.00249	248.8	0.249	0.00025
mm H_2O	0.001421	0.000097	0.0394	1	0.1	0.0227	0.0001	0.00289	0.0735	0.00735	0.098	0.000098	9.8	0.0098	0.00001
cm H_2O	0.01421	0.000967	0.3937	10	1	0.227	0.001	0.0289	0.735	0.0735	0.98	0.00098	98	0.098	0.0001
oz/in^2	0.0625	0.00425	1.732	43.986	4.40	1	0.0044	0.1273	3.232	0.3232	4.31	0.00431	431	0.431	0.00043
Kg/cm^2	14.22	0.968	394.1	100,010	1,001	227.6	1	28.96	735.6	73.56	980.7	0.981	98,067	98.07	0.0981
"Hg	0.4912	0.03342	13.61	345.7	34.57	7.858	0.0345	1	25.4	2.54	33.86	0.0339	3,386	3.386	0.00339
mmHg	0.01934	0.001316	0.536	13.61	1.361	0.310	0.00136	0.0394	1	0.1	1.333	0.001333	133.3	0.1333	0.000133
cmHg	0.1934	0.01316	5.358	136.1	13.61	3.10	0.0136	0.394	10	1	13.33	0.01333	1,333	1.333	0.00133
mbar	0.0145	0.000987	0.4012	10.21	1.021	0.2321	0.00102	0.0295	0.75	0.075	1	0.001	100	0.1	0.0001
bar	14.504	0.987	401.9	10,210	1021	232.1	1.02	29.53	750	75	1,000	1	100,000	100	0.1
Pa	0.000145	0.00001	0.00402	0.102	0.0102	0.00232	0.00001	0.000295	0.0075	0.00075	0.01	0.00001	1	0.001	0.000001
kPa	0.14504	0.00987	4.019	102.07	10.207	2.321	0.0102	0.295	7.5	0.75	10	0.01	1,000	1	0.001
MPa	145.04	9.869	4019	102,074	10,207	2321	10.2	295.3	7500	750	10,000	10	1,000,000	1,000	1

ROCKSENSOR®

Sensing beyond the Vision

Field Instrumentation Range

Pressure Measurement

- Smart Differential Pressure Transmitter
- Smart Gauge Pressure Transmitter
- Smart Absolute PressureTransmitter
- Miniature Pressure Transducer without display
- Sanitary Gauge/ Absolute Pressure Transmitter
- Submersible Pressure Transmitter
- Remote Seal Differential P.T. with capillary
- Remote Seal Differential P.T. Direct Mount
- Remote Seal Gauge/Absolute P.T. with capillary
- Remote Seal Gauge/Absolute P.T. Direct Mount

Flow Measurement

- Coriolis Mass Flowmeter
- Thermal Gas Mass Flowmeter
- Positive Displacement Flowmeter
- Electromagnetic Flowmeter
- Vortex Flowmeter
- Turbine Flowmeter
- Variable Area Flowmeter
- Clamp On Ultrasonic Flowmeter
- Inline Ultrasonic Flowmeter
- Portable Ultrasonic Flowmeter

Level Measurement

- RADAR Level Transmitter Horn Antenna
- Compact RADAR Level Transmitter
- RADAR Level Transmitter Sanitary
- RADAR Level Transmitter
- Guided Wave RADAR Level Transmitter
- Guided Wave RADAR Level Transmitter
- RADAR Level Transmitter Lens Antenna
- RADAR Level Transmitter Rod Antenna
- Ultrasonic Level Transmitter
- Microwave Barrier Level Switch
- Admittance Level Switch Series
- Vibrating Rod Level Switch Series
- Tuning Fork Level Switch Series

Temperature Measurement

- Head Mount Temperature Transmitter
- Temperature Transmitter for Sanitary Applications
- DIN Rail Temperature Transmitter
- Field Mount Temperature Transmitter

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