

# Remote Seal/Smart Gauge/ Absolute Pressure Transmitter RP1002/ 3



Diaphragm: SS316L, Hastelloy C



Capillary Length : 0 - 12 m/ customised



With PVC protective coating capillary



Medium Temperature upto 600°C

# ROCKSENSOR AT A GLANCE (ABOUT US)

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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 the global market landscape and establish our footprints across the globe.



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## **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 Remote Seal Gauge / Absolute Pressure Transmitter is suitable to measure liquid, gas, or steam flow as well as liquid level, density & pressure. Remote Seal Pressure Transmitter is used to prevent the medium in the pipeline from directly entering the pressure sensor component of the pressure transmitter. It uses a filling fluid such as silicone oil to transfer pressure.

### Suitable Industries

- Oil & Gas
- Chemical
- Cement
- Power
- Water
- Metal
- Pulp & Paper
- Agriculture
- Pharmaceutical



**Remote Seal Smart  
Gauge/ Absolute Pressure Transmitter**

### Salient Features (DPT)

- High Stability Silicon Sensor
- Reference Accuracy upto 0.035%
- Excellent Performance for Overload
- Packaged Temperature Sensor inside
- Inbuilt Reverse Polarity Protection
- Inbuilt Surge Protection
- IP67 Grade Protection
- Integrated Push-button
- HART
- ATEX, CE, SIL, Certified

### Salient Features (Remote Seal)

- Isolating Diaphragm: SS316L, Hastelloy C, Gold Plated on SS316L, FEP plated on SS316L, Tantalum
- Filling Fluid: Silicone Oil, High Temperature Silicone Oil, Ultra Temp. Silicone Oil, Vegetable Oil
- High Temperature upto 600°C
- Flange Size: DN50, DN80, DN100
- Flange Rating: ANSI; 150psi to 600psi & DIN: PN1.6MPa ~ PN10MPa
- Capillary Length: 0 ~12m/ Customised
- Housing: Aluminum with epoxy resin coat/ stainless steel
- With PVC protective coating capillary
- With Lighting protection

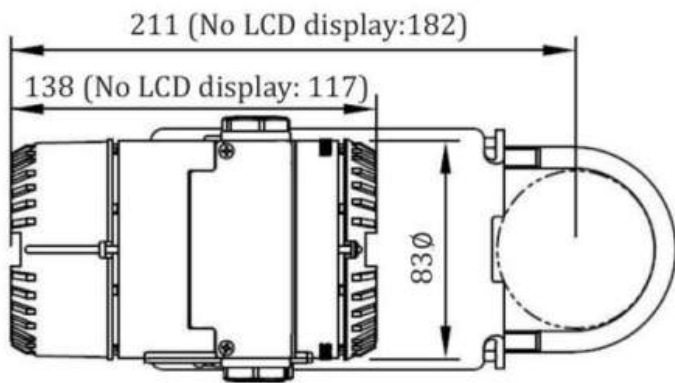
## 2. Technical Specifications

Parameter	Details
Medium	Gas, Steam, Liquid
Measurement Range	0-600Pa ~60MPa
Reference Accuracy	0.06%/ 0.1%
Ambient Temp. Effects	(-)25 ~ 65°C: $\pm(0.075\%*TD + 0.025\%)\% \times \text{Span}$
Over Range Effects	$\pm 0.05\% \times \text{Span}$
Stability	$\pm 0.15\% / 10 \text{ years}$
Power Supply Effects	$\pm 0.001\% / 10 \text{ V (12-36 VDC)}$
Zero Setting	Zero Point and range can be adjusted to any value within the measure range in the form as long as: Calibrating Span $\geq$ Maximum Range
Span & Range	Randomly adjusted between Upper Range and Lower Range
Mounting Position Effects	Tilting up to 90°, Zero shift <0.15 kPa. (This can be adjusted)
Output Options	2 Wire, 4-20 mA HART 7 (std.)
Output Signal Limit	$I_{\min} = 3.9\text{mA}, I_{\max} = 21\text{mA}$
Failure Alarm	NAMUR NE43 Compliant/ Low Mode: 3.6 mA/ High Mode: 21 mA
Response Time	Up to 100 ms; Amplifier damping time constant is adjustable from 0.1 to 60 sec
Turn ON time	<5s
$T_{\text{Ambient}}$	(-)40°C ~ 85°C
	(-)20°C ~ 65°C (With LCD, Fluorine O-ring)
$T_{\text{Process}}$	(-)30°C ~ 120°C; Upto600°C- Option available in Remote seal PT
$T_{\text{Storage/ Transportation}}$	(-)50°C ~ 85°C
	(-)25°C ~ 85°C (With LCD Display)
Pressure Limit	Vacuum to Upper Range Limit
Turn Down Ratio	Min. 10:1/ Max. 100:1
EMC	Compliant to IEC61326-1
Power Supply	24 VDC (9-36 VDC)
Load	$R \leq (U_s - 12\text{V}) / I_{\max} \text{ k}\Omega, I_{\max} = 23\text{mA}$
Overload Range for Digital Communication	230 ~ 600 $\Omega$
Electrical Connection	M20x1.5, suitable for wire cross-section up to 2.5 sq. mm
Process Connection & MOC	Flange: DN 1" / 2" / 3" / 4", MOC: SS304 std. / SS316L(optional)
Isolating Diaphragm MOC	SS316L/ Hastelloy C/ Gold Plated on SS316L/ Tantalum
Capillary Length & MOC	upto 12m length, MOC: SS304 std./ SS316L (optional)
Filling Fluid	Silicone Oil/ Fluorine Oil
Housing	Die Cast Aluminium with Epoxy Resin Coating
	Stainless Steel Housing available as an option
Sealing/Housing Gasket	Perbunan (NBR)
Tag Plate	SS304
Ingress Protection	IP67
Mounting Bracket	Galvanised Carbon steel (Std.)/ SS304 (optional)
Surge Protection	Available
Display	5 <sup>1/2</sup> Digit LCD Backlit Display (Std.)/ OLED
Sensor	Piezoresistive
Reverse Polarity Protection	Yes
Configuration	Though in-built Push-button/ Handheld HART Communicator/ Rocksensor Software
Safety Integrity	SIL3 Certified
Certification	CE certified
Weight	~6Kg (or above as per capillary, flange dimension etc.)
Explosion Proof	Intrinsic safety-II 2 G Ex ia IIC T4/T5/T6 Ga,
	Explosion Proof-II 2 G Ex db IIC T4/T5/T6 Gb,
	Dust Explosion Proof-II 2 D Ex tb IIIC T80°/T90°/T130° Db
Over Protection Range	150%

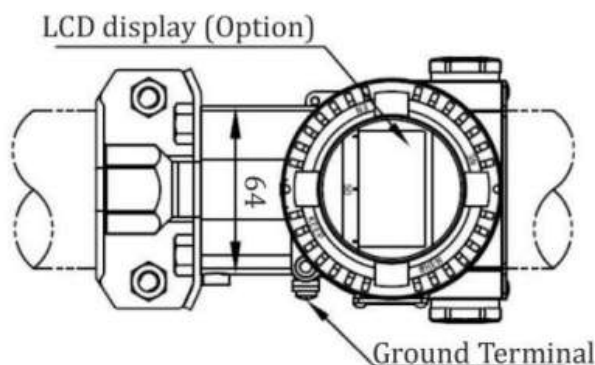
Span & Range

Span / Range		KPa	inH <sub>2</sub> O	mbar	mmH <sub>2</sub> O
B	Span	0.2 ~ 6	0.8 ~ 24	2 ~ 60	20 ~ 600
	Range	(-)6 ~ 6	(-)24 ~ 24	(-)60 ~ 60	(-)600 ~ 600
C	Span	0.4 ~ 40	1.6 ~ 160	4 ~ 400	40 ~ 4000
	Range	(-)40 ~ 40	(-)160 ~ 160	(-)400 ~ 400	(-)4000 ~ 4000
D	Span	2.5 ~ 250	10 ~ 1000	25 ~ 2500	0.25 ~ 25mH <sub>2</sub> O
	Range	(-)250 ~ 250	(-)1000 ~ 1000	(-)2500 ~ 2500	(-)25 ~ 25mH <sub>2</sub> O
F	Span	30 ~ 3000	120 ~ 12000	0.3 ~ 30bar	3 ~ 300mH <sub>2</sub> O
	Range	(-)500 ~ 3000	(-)12000 ~ 12000	(-)50 ~ 30bar	(-)50 ~ 300mH <sub>2</sub> O

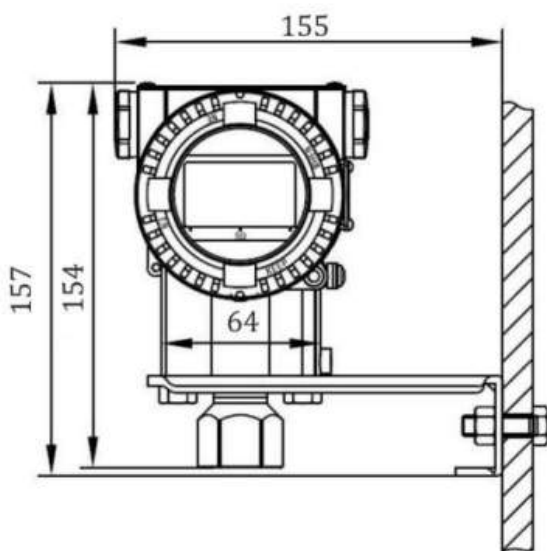
3. Dimensions (Pressure Transmitter)



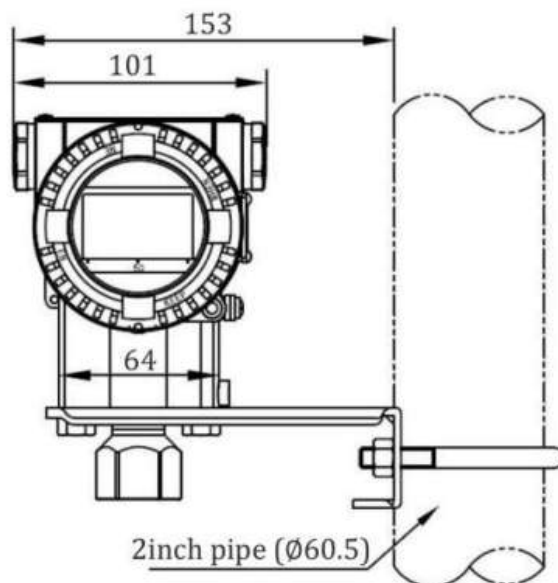
Horizontal Piping Connection Type (Side)



Horizontal Piping Connection (Front)



Wall Mounting Connection Type



Vertical Piping Connection Type

### 4. Dimensions (Remote Seal)

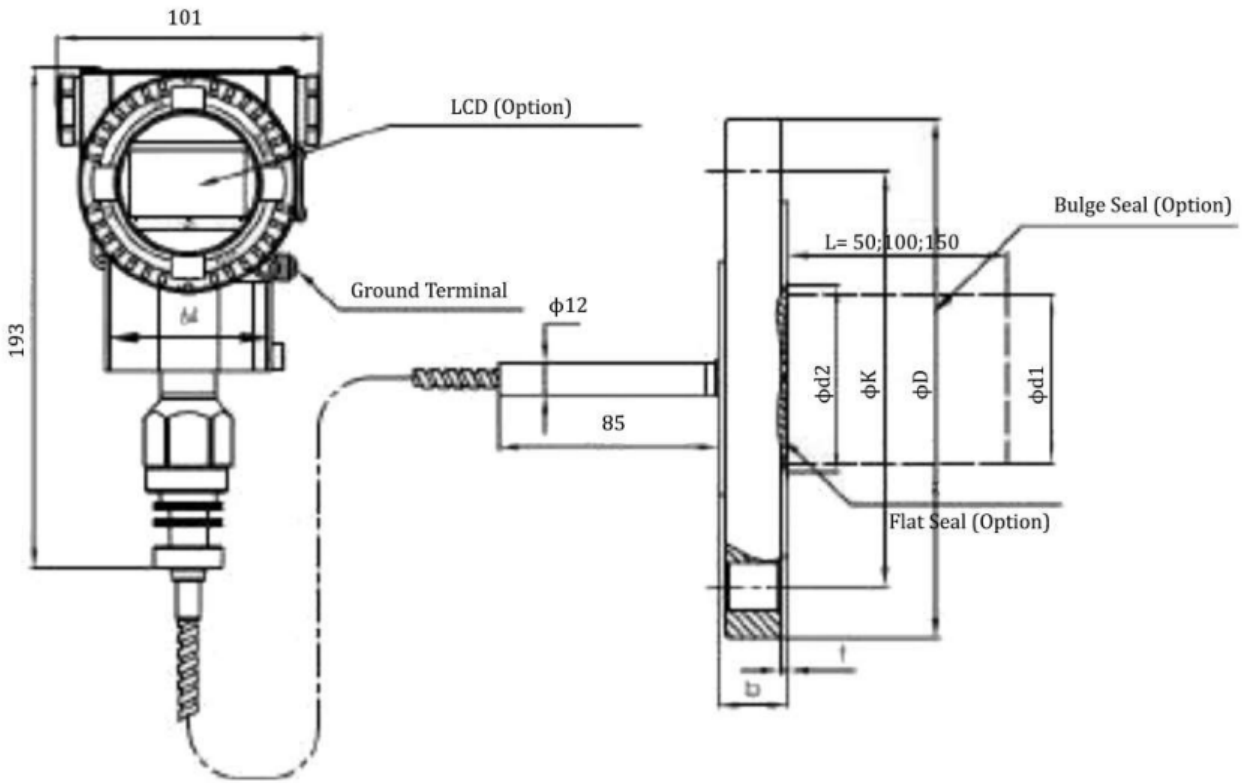


Figure 1. Gauge/ Absolute Remote Seal Device (RS Type)

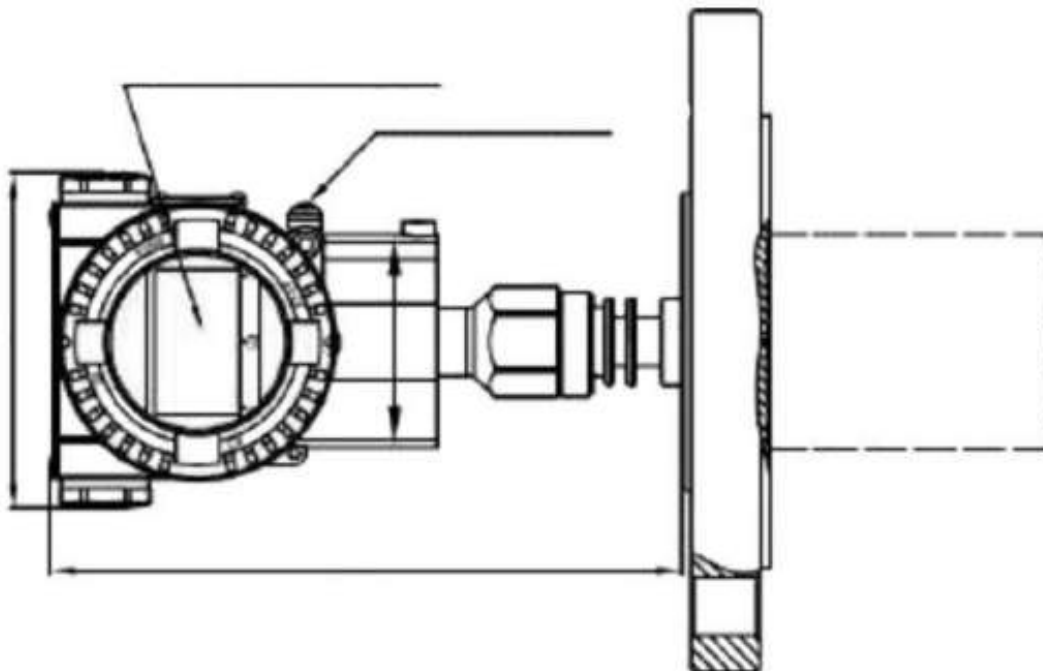
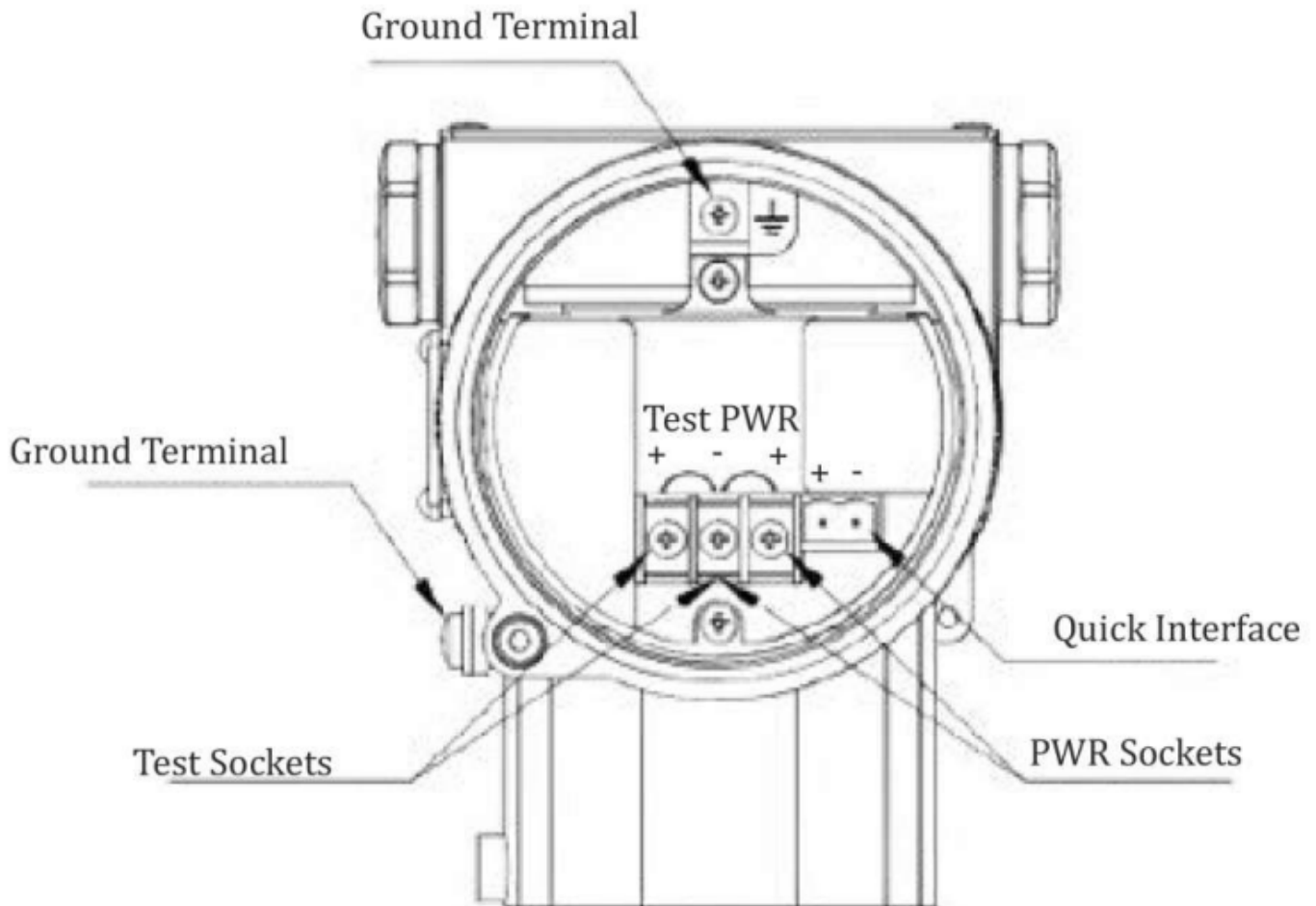


Figure 2. Gauge/ Absolute Remote Seal Device Without Capillary

## 5. Remote Seal Descriptions

Nominal Diameter	Working Pressure	$\phi$ D	$\phi$ K	$\phi$ d1 Plug-in	$\phi$ d2 Flat	$\phi$ d3	t	b	Required Bolt	
									Quantity	Thread
DN 50 (Sealing DIN 2526E) (Flange DIN 2501)	PN 1.6/4MPa	165	125	48.3	57	102	3 <sup>+0.5</sup>	20	4	M16
	PN 6.4MPa	180	135	48.3	57	102	3 <sup>+0.5</sup>	26	4	M20
	PN 10MPa	195	145	48.3	57	102	3 <sup>+0.5</sup>	28	4	M24
DN 80 (Sealing DIN 2526E) (Flange DIN 2501)	PN 1.6/4MPa	200	160	76	75	138	3 <sup>+0.5</sup>	24	8	M16
	PN 6.4MPa	215	170	76	75	138	3 <sup>+0.5</sup>	28	8	M20
	PN 10MPa	230	180	76	75	138	3 <sup>+0.5</sup>	32	8	M24
DN 100 (Sealing DIN 2526E) (Flange DIN 2501)	PN 1/6MPa	220	180	89	110	158	3 <sup>+0.5</sup>	22	8	M16
	PN 2.5/4MPa	235	190	89	110	162	3 <sup>+0.5</sup>	26	8	M20
DN 2" (ANSI B 16.5 RF)	150psi	152.4	120.6	48.3	57	92.1	3 <sup>+0.5</sup>	17.4	4	M16
	300psi	165.1	127.0	48.3	57	92.1	3 <sup>+0.5</sup>	20.6	8	M16
	600psi	165.1	127.0	48.3	57	92.1	6.35	31.75	8	M16
DN 3" (ANSI B 16.5 RF)	150psi	190.5	152.4	76	75	127	3 <sup>+0.5</sup>	22.2	4	M16
	300psi	209.5	168.3	76	75	127	3 <sup>+0.5</sup>	27.0	8	M20
	600psi	209.5	168.3	76	75	127	6.35	38.05	8	M20
DN 4" (ANSI B 16.5 RF)	150psi	229	191	89	89	157	3 <sup>+0.5</sup>	30	8	M16
	300psi	255	200	89	89	157	3 <sup>+0.5</sup>	32	8	M20

## 6. Terminal Configurations (Pressure Transmitter)





### 7: Model Selection Table

RP1002	Gauge Pressure Transmitter														
RP1003	Absolute Pressure Transmitter														
Code	1	2	3	4	5	6	7	8	9	10	11	...	15		
<b>Accuracy</b>															
±0.06% of span	B														
±0.1% of span	C														
<b>Sensor Type</b>															
Piezo-resistive Silicone Sensor	1														
<b>Output</b>															
4-20mA with HART7	B														
<b>Span</b>															
<b>Gauge Pressure RP1002</b>															
0-0.6kPa~6kPa/ (0-60~600 mmH <sub>2</sub> O)/ (0-6~ 60mbar)	B														
0-2kPa~40kPa/ (0-200~4000mmH <sub>2</sub> O) / (0-20~400mbar)	C														
0-2.5kPa ~ 250kPa/ (0-0.25 ~ 25 mH <sub>2</sub> O)/ (0-25 ~ 2500mbar)	D														
0-30kPa ~ 3MPa/ (0-3 ~ 300mH <sub>2</sub> O) / (0-0.3 ~ 30bar)	F														
0-0.1Mpa ~ 10MPa/ (0-1 ~ 100bar)	G														
0-0.21Mpa~21MPa/ (0-2.1~210 bar)	H														
0-0.4Mpa ~ 40MPa/ (0-4 ~ 400 bar)	I														
0-0.6Mpa ~ 60MPa/ (0-6 ~ 600 bar)	J														
<b>Absolute Pressure RP1003</b>															
0-10kPa~ 40kPa/ (0-1000 ~ 4000 mmH <sub>2</sub> O)/ (0-20 ~ 400mbar)	L														
0-2.5kPa~250kPa/ (0-25~2500mbar)	M														
0-0-30kPa~3MPa / (0-0.3~30bar)	O														
<b>Diaphragm Material</b>															
SS316L	S														
Hastelloy C	H														
Gold plated on SS316L	G														
Tantalum, (Silicone oil)	T														
<b>Filling Fluid</b>															
Silicone oil	S														
Fluorine oil	F														
<b>Integral Indicator</b>															
N	None														
2	Backlit LCD Display														
<b>Mounting Bracket</b>															
N	None														
1	SS304														
2	Carbon steel galvanized														
<b>Special Function</b>															
N	None														
O	Degrease cleansing treatment (Oxygen measurement must be with fluorinated oil filled capsule, Viton (FKM) gasket, <6MPa, <60°C														
P	Anti-lightning Function														
<b>Gaskets (Sealing Material)</b>															
N	Perbunan (NBR)														
<b>Process Connections</b>															
1	1/2-NPT Female Thread (Std.)														
2	1/2-NPT Male Thread (Containing 1/4-NPT Female Thread)														
3	M20x1.5 Female Thread														
4	G1/2 Female Thread														
5	Vacuum Connection DIN 28403 KF16 / ISO 2861														
6	1/4-NPT Male Thread														
7	1/4-NPT Female Thread														
9	High temperature heat dissipation connection, 1/2"NPT Female Thread														
L	G1 Threaded pulp connection seal														
M	M44*1.25 Threaded pulp connection seal														
S	ø25.8 Insert Pulp pulp connection seal														
R	Remote Seal														

<b>RP1002</b>	<b>Gauge Pressure Transmitter</b>					
<b>RP1003</b>	<b>Absolute Pressure Transmitter</b>					
<b>Code</b>	1	...	12	13	14	15

<b>Explosion-Proof Option</b>	
None	N
Intrinsic Safety (Exia) - ATEX	I1
Intrinsic Safety (Exia)- IECEx	I2
Isolated Explosion/ Flameproof(Exd) - ATEX	D1
Isolated Explosion/ Flameproof(Exd) - IECEx	D2
Intrinsically Safe & Flameproof - ATEX	E1
Intrinsically Safe & Flameproof - IECEx	E2

<b>Additional Options</b>	
N	None
A	Exd Cable Entry (Ex-Proof Cable Gland)
E	Hanging Stainless Steel Tag Plate

<b>Enclosure Material</b>	
A1	Die Cast Aluminum
S2	SS316

<b>Electrical Connection</b>	
M	M20*1.5
N	1/2" NPT

### 8. Electromagnetic Comptability (EMC) - Pressure Transmitter

No.	Test Items	Basic Standard	Test Conditions	Performance Level
1	Radiated Interference (Housing)	IEC61000-4-20, EN61326-1	30MHz ~ 1000MHz	Qualified
2	Conducted Interference (DC power port)	CISPR:11:2009+A1, EN61326-1	0.15MHz ~ 30MHz	Qualified
3	Electrostatic Discharge (ESD) Immunity	IEC61000-4-2, EN61326-1	4kV(Line), 8kV(Air)	B
4	RF Electromagnetic Field Immunity	IEC61000-4-3, EN61326-1	10V/m (80MHz ~ 1GHz)	A
5	Frequency Magnetic Field Immunity	IEC61000-4-8, EN61326-1	30A/m	A
6	Electrical Fast Transient Burst Immunity	IEC61000-4-4, EN61326-1	2kV (5/50ns, 5kHz)	B
7	Surge Immunity	IEC61000-4-5, EN61326-1	500V (line to line 1kV (line to ground, 1.2us/50us)	B
8	Conducted Interference Immunity induced by RF field	IEC61000-4-20, EN61326-1	3V (150KHz ~ 80MHz)	A

A: No degradation of performance or loss of function is allowed below a minimum performance level specified by the manufacturer (or what the user may reasonably expect) when the equipment is used as intended.

B: No degradation of performance or loss of function is allowder, after the application of the phenomena below a performance level specified by the manufacturer (or what the user my reasonably expect) when the equipment is used as intended.

### 9. Model Selection Table (Remote Seal)

<b>RP1002/ 3</b>	<b>Remote Seal Pressure transmitter</b>							
<b>Code</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>

<b>Basic type Gauge/ Absolute pressure remote transmitter sealing device</b>	
Direct Mount, without capillary	<b>RN</b>
With Capillary	<b>RS</b>

<b>Process Connection</b>			
	Nominal Diameter	Sealing Surface Form	Diaphragm/ Sealing Surface Material
<b>A</b>	DN50 DIN2501	E DN2526	SS316L
<b>B</b>	DN50 DIN2501	E DN2526	Hastelloy C
<b>C</b>	DN50 DIN2501	E DN2526	Tantalum(temp±200°C)
<b>H</b>	DN80 DIN2501	E DN2526	SS316L
<b>I</b>	DN80 DIN2501	E DN2526	Hastelloy C
<b>G</b>	DN80 DIN2501	E DN2526	Tantalum(temp±200°C)
<b>R</b>	DN100 DIN2501	E DN2526	SS316L
<b>S</b>	DN100 DIN2501	E DN2526	Hastelloy C
<b>T</b>	DN100 DIN2501	E DN2526	Tantalum(temp±200°C)
<b>D</b>	DN2"ANSI B16.5	RF ANSI B16.5	SS316L
<b>E</b>	DN2"ANSI B16.5	RF ANSI B16.5	Hastelloy C
<b>F</b>	DN2"ANSI B16.5	RF ANSI B16.5	Tantalum(temp±200°C)
<b>K</b>	DN3"ANSI B16.5	RF ANSI B16.5	SS316L
<b>L</b>	DN3"ANSI B16.5	RF ANSI B16.5	Hastelloy C
<b>M</b>	DN3"ANSI B16.5	RF ANSI B16.5	Tantalum(temp±200°C)
<b>N</b>	DN4"ANSI B16.5	RF ANSI B16.5	SS316L
<b>O</b>	DN4"ANSI B16.5	RF ANSI B16.5	Hastelloy C
<b>P</b>	DN4"ANSI B16.5	RF ANSI B16.5	Tantalum(temp±200°C)

<b>Working Pressure</b>		
	Working Pressure	Material
<b>1</b>	PN 1MPa/4MPa	DIN 2501
<b>2</b>	PN 6.4MPa	DIN 2501
<b>3</b>	PN 10MPa	DIN 2501
<b>6</b>	Class 150	ANSI B 16.5
<b>7</b>	Class 300	ANSI B 16.5
<b>8</b>	Class 600 ANSI B 16.5	(excluding DN4" ANSI B16.5)
<b>4</b>	PN 1MPa/ 1.6MPa (DN100)	DIN 2501
<b>5</b>	PN 2.5MPa/ 4MPa (DN100)	DIN 2501

<b>Connection Type</b>	
<b>F</b>	Flat
<b>H</b>	Bulgesealing, SS316L, extended diaphragm seal 50mm
<b>I</b>	Bulgesealing, SS316L, extended diaphragm seal 100mm
<b>G</b>	Bulgesealing, SS316L, extended diaphragm seal 150mm
<b>L</b>	Bulge sealing, HastelloyC, extended diaphragm seal 50mm
<b>M</b>	Bulge sealing, HastelloyC, extended diaphragm seal 100mm
<b>N</b>	Bulge sealing, HastelloyC, extended diaphragm seal 150mm

<b>Filling Fluid</b>		
	Fluid	Temperature Range
<b>S</b>	Silicon Oil	-30° ~ 200°C
<b>H</b>	High Temp. Silicon Oil	-10°~350°C
<b>V</b>	Vegetable Oil	0~250°C
<b>F</b>	Fluorine Oil	-30°~260°C
<b>L</b>	Ultra-low temp. filling solution	-100°~100°C(not applicable to RN type)
<b>Z</b>	Ultra high temp. filling solution	-10°~600°C (not applicable to RN type)

<b>Diaphragm Protection (Multiple Choice)</b>	
<b>N</b>	None
<b>22</b>	DN50/2" coated PFA (perfluoroalkylate) (temperature≤260°C)
<b>23</b>	DN80/3" coated PFA (perfluoroalkylate) (temperature≤260°C)
<b>24</b>	DN100/4" coated PFA (perfluoroalkylate) (temperature≤260°C)
<b>32</b>	DN50/2" posted diaphragm PTFE film (polytetrafluoroethylene film) (temp.≤200°C)
<b>33</b>	DN80/3" posted diaphragm PTFE film (polytetrafluoroethylene film) (temp.≤200°C)
<b>34</b>	DN100/4" posted diaphragm PTFE film (polytetrafluoroethylene film) (temp.≤200°C)
<b>52</b>	DN50/2" SS316L coated with PFA (perfluoroalkylate) (temperature≤260°C) (only for plug-in)
<b>53</b>	DN80/3" SS316L coated with PFA (perfluoroalkylate) (temperature≤260°C) (only for plug-in)
<b>54</b>	DN100/4" SS316L coated with PFA (perfluoroalkylate) (temperature≤260°C) (only for plug-in)
<b>6</b>	Vacuum Treatment (temperature-120°C, working pressure-50KPa abs)
<b>72</b>	Gold plating on DN50/2"SS316L
<b>73</b>	Gold plating on DN80/3"SS316L
<b>74</b>	Gold plating on DN100/4"SS316L
<b>8</b>	Degrease Cleaning Treatment

<b>Capillary Component Charactersticks (Multiple Choices)</b>	
<b>N</b>	None
<b>P</b>	With PVC protective coating capillary

<b>Capillary length</b>	
<b>00</b>	None Capillary-direct mount (RN type)
<b>01</b>	1m
<b>02</b>	2m
<b>03</b>	3m
<b>04</b>	4m
<b>05</b>	5m
<b>06</b>	6m
<b>07</b>	7m
<b>08</b>	8m
<b>10</b>	10m
<b>11</b>	11m
<b>12</b>	12m
<b>....</b>	.....

**Example: RP1002 - C1BFSS1NN12E1MA1N + RS-D6FS05NN**

C - Accuracy:  $\pm 0.1\%$  of span

1 - Sensor Type: Piezo-resistive Silicone Sensor

B - Output: 4-20mA with HART7

F - Span: 0-30KPa ~ 3 MPa/ (0-3 ~ 300mH2O)/ (0-0.3 ~ 30bar)

S - Diaphragm Material: SS316L

S - Filling Fluid: Silicone Oil

1 - Process Connections: 1/2-NPT Female (std.)

N - Gaskets (Sealing Material): Perbunan (NBR)

N - Special Function: None

1 - Mounting Bracket: SS304

2 - Integral Indicator: Backlit LCD Display

E1 - Explosion-Proof option: Intrinsically Safe & Flameproof-ATEX

M - Electrical Connection: M20\*1.5

A1 - Enclosure Material: Die Cast Aluminium

N - Additional Options: None

RS - Basic type Gauge/ Absolute pressure remote transmitter sealing device: With Capillary

D - Process Connection: DN2"ANSI B16.5/ RF ANSI B16.5/ SS316L

6 - Working Pressure: Class 150/ ANSI B 16.5

F - Connection Type: Flat

S - Filling Fluid: Silicon Oil/  $-30^{\circ} \sim 200^{\circ}\text{C}$

05 - Capillary Length: 5m

N - Capillary Component Charactersticks (Multiple Choices): None

N - Diaphragm Protection (Multiple Choice): None

**Notes:**

Note1. When selecting the basic type of gauge/absolute pressure remote flange sealing device, the selection of RP1002/3 gauge/absolute pressure transmitter should be completed first.

Note2. The PTFE membrane (F4 membrane) posted on the diaphragm, which is not suitable for negative pressure measurement, but only for flat liquid level flanges.

Note3. When measuring pressure <50kPa (absolute pressure), option 6 should be selected (Vacuum Treatment) to ensure performance.

Note4. The minimum range of the remote seal transmitter should be the larger of the minimum range in tables 1 & 2. The adjusted range must not be less than the minimum range. In order to optimize the performance of the remote transmitter, the range ratio should be <10:1.

**10. Pressure Conversion table**

	psi	atms	"H <sub>2</sub> O	mm H <sub>2</sub> O	cm H <sub>2</sub> O	oz/in <sup>2</sup>	Kg/cm <sup>2</sup>	"Hg	mmHg (Torr)	cmHg	mbar	bar	Pa (N/m <sup>2</sup> )	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 <sub>2</sub> O	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 <sub>2</sub> O	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 <sub>2</sub> O	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 <sup>2</sup>	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 <sup>2</sup>	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

## Field Instrumentation Range



### Pressure Measurement

- Smart Differential Pressure Transmitter
- Smart Gauge Pressure Transmitter
- Smart Absolute Pressure Transmitter
- 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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