

FEATURES

- Suitable to measure liquid, gas, or steam flow as well as liquid level, density and pressure
- Outputs a 4~20mA DC signal corresponding to the measured pressure
- Quick response
- Remote set-up using communications
- Self-diagnostics
- Optional status output for pressure high/low alarm



PERFORMANCE SPECIFICATIONS

Reference accuracy of calibrated span (includes terminal-based linearity, hysteresis, and repeatability)	: SPT1002-B: $\pm 0.075\%$ SPT1002-C: $\pm 0.1\%$ If TD>10 (TD=URL/SPAN): SPT1002-B: $\pm(0.0075 \times \text{TD})\%$ SPT1002-C: $\pm(0.01 \times \text{TD})\%$
Ambient temperature effects	: -20...65°C: $\pm(0.15 \times \text{TD} + 0.05)\% \times \text{Span}$ Every 10°C is $\pm 0.08\% \times \text{Span}$ (TD=1) -40...-20°C & 65...85°C: $\pm(0.2 \times \text{TD} + 0.05)\% \times \text{Span}$
Overpressure effects	: $\pm 0.05\% \times \text{Span}$
Stability	: $\pm 0.1\% \times \text{Span} / 3$ years
Power supply effects	: $\pm 0.001\% / 10\text{V}$ (12~42V DC)

FUNCTIONAL SPECIFICATIONS

External zero adjustment	: External zero is continuously adjustable with 0.01% incremental resolution of span. Re-range can be done locally using the range setting switch.
Mounting position effects	: Rotation in diaphragm plane has no effect. Tilting up to 90° will cause zero shift up to 0.25kPa which can be corrected by the zero adjustment.
Output	: Two wire 4~20mA DC output with digital communications, linear or square root programmable. HART FSK protocol are superimposed on the 4~20 mA DC signal. Output range: 3.9 mA to 20.5 mA
Failure alarm (the mode can be selected)	: Low Mode (min): 3.7 mA High Mode (max): 21 mA No Mode (hold): Keep the effective value before fault. The standard setting of failure alarm is High Mode.
Response time	: The amplifier damping constant is 0.1 sec; The sensor damping constant is 0.1~1.6 sec, it depends on the range and range compression ratio. Amplifier damping time constant is adjustable from 0.1 to 60 sec by software and added to response time. Up Time < 15s
Ambient temperature limits	: -40 to 85°C -20 to 65°C with LCD display or fluorine rubber sealing

FUNCTIONAL SPECIFICATIONS

Storage and transportation temperature limits	:	-50 to 85°C, -40 to 85°C with LCD display
Working pressure limits (silicone oil)	:	From vacuum to upper range limits
Electromagnetic compatibility (EMC)	:	Look the EMC Performance Table
Explosion protected type	:	ATEX: Ex d II C T6, ATEX: Ex ia II C T4 Amb. Temp.: -40...65°C

Span/ Range Limits		kPa	psi	bar	kgf/cm ²
SPT1002-B/C					
B/R	Span	0.6~6	0.087~0.87	6~60mbar	0.006~0.06
	Range Limits	-6~6	-0.87~0.87	-60~60mbar	-0.06~0.06
C/S	Span	2~40	0.29~5.8	0.02~0.4	0.02~0.4
	Range Limits	-40~40	-5.8~5.8	-0.4~0.4	-0.4~0.4
D	Span	2.5~250	0.3625~36.25	0.025~2.5	0.025~2.5
	Range Limits	-100~250	-14.5~36.25	-1~2.5	-1~2.5
F	Span	30~3000	4.35~435	0.3~30	0.3~30
	Range Limits	-100~3000	-14.5~435	-1~30	-1~30
G	Span	0.1~10MPa	14.5~1450	1~100	1~100
	Range Limits	-0.1~10MPa	-14.5~1450	-1~100	-1~100
H	Span	0.21~21MPa	30.45~3045	2.1~210	2.1~210
	Range Limits	-0.1~21MPa	-14.5~8000	-1~210	-1~210
I	Span	0.4~40MPa	58~5800	4~400	4~400
	Range Limits	-0.1~40MPa	-14.5~5800	-1~400	-1~400
SPT1003-B/C					
L/T	Span	2~40	0.29~5.8	0.02~0.4	0.02~0.4
	Range Limits	0~40	0~5.8	0~0.4	0~0.4
M	Span	2.5~250	0.3625~36.25	0.025~2.5	0.025~2.5
	Range Limits	0~250	0~36.25	0~2.5	0~2.5
O	Span	30~3000	4.35~435	0.3~30	0.3~30
	Range Limits	0~3000	0~435	0~30	0~30

OVERLOAD PRESSURE LIMITS

Span	40kPa		250kPa (D/M)	3MPa (F/O)
	(C)	(S)		
OPL	1MPa	7MPa	4MPa	15MPa
Span	10MPa(G)		21MPa(H)	40MPa(I)
OPL	20MPa		50MPa	50MPa

INSTALL

Supply & load requirements	:	24V DC supply, $R \leq (U_s - 12V) / I_{max}$ k Ω , $I_{max} = 23$ mA. Maximum voltage limited: 42V DC, Minimum voltage limited: 12V DC, 15V DC (with LCD display) 230 Ω to 600 Ω for digital communication
Electrical connection	:	The electrical connection is made via cable entry M20x1.5 The screw terminals are suitable for wire cross-sections up to 2.5mm ²
Process connection	:	Default Process Connection: 1/2" NPT (F) thread, it can be changed to 1/2" NPT, G1/2", M20x1.5 (M) thread and KF16 vacuum Connection.

PHYSICAL SPECIFICATIONS

Isolating diaphragm	:	316L stainless steel/Hastelloy C
Process connector	:	316 stainless steel
Fill fluid	:	Silicone oil/Fluorinated oil
Amplifier housing	:	Aluminum with epoxy resin coat
Housing gasket	:	Perbunan (NBR)
Name plate and tag	:	304 stainless steel
Weight	:	1.6kg
Degrees of protection	:	IP67

EMC PERFORMANCE TABLE

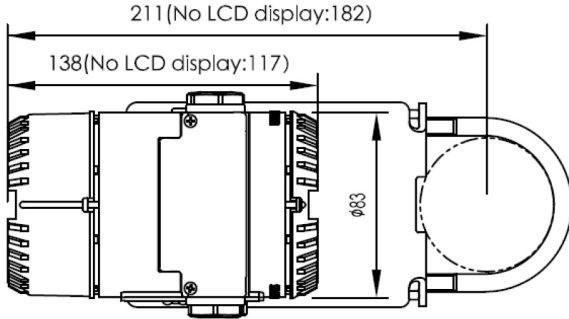
Items	Test items	Basic standards	Test conditions	Performance Level
1	Radiated interference (Housing)	GB/T 9254-2008	30MHz~1000MHz	OK
2	Conducted interference(DC power port)	GB/T 9254-2008	0.15MHz~30MHz	OK
3	Electrostatic Discharge (ESD) Immunity	GB/T 17626.2-2006	4kV(Line) 8kV(Air)	B
4	RF electromagnetic field immunity	GB/T 17626.3-2006	10V/m (80MHz~1GHz)	A
5	Frequency magnetic field immunity	GB/T 17626.8-2006	30A/m	A
6	Electrical Fast Transient Burst Immunity	GB/T 17626.4-2008	2kV(5/50ns,5kHz)	B
7	Surge Immunity	GB/T 17626.5-2008	0.5kV (line to line) 1kV (line to ground) (1.2us/50us)	B
8	Conducted interference immunity induced by RF field	GB/T 17626.6-2008	3V (150KHz~80MHz)	A

NOTES

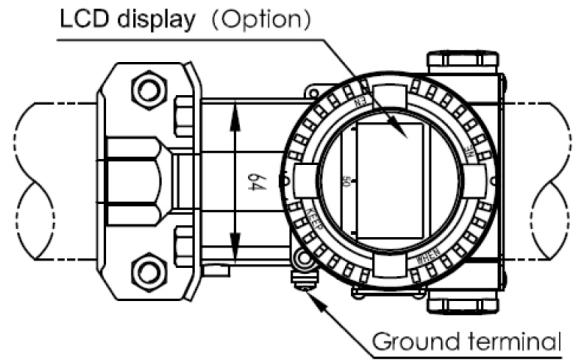
1. Performance level A description: The technical specifications within the limits of normal performance.
2. Performance level B description: Temporary reduction or loss of functionality or performance, it can restore itself. The actual operating conditions, storage, and data will not be changed.

DIMENSIONAL DRAWING

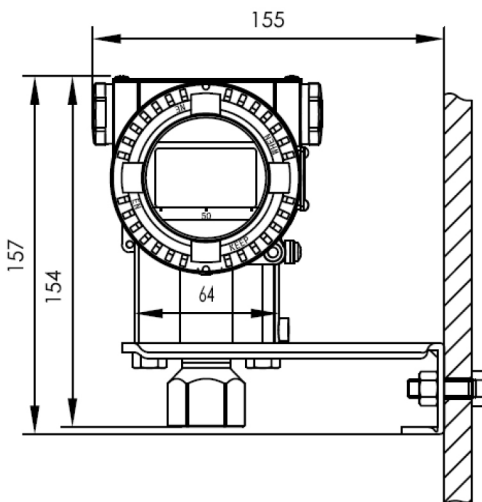
Horizontal Impulse Piping Type(side face)



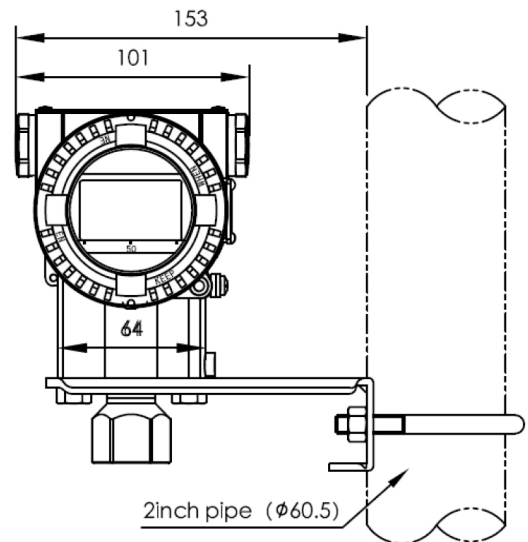
Horizontal Impulse Piping Type(front side)



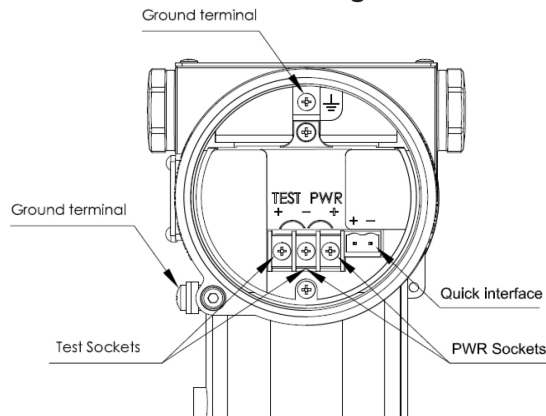
Horizontal Impulse Wall mounting Type



Vertical Impulse Piping Type

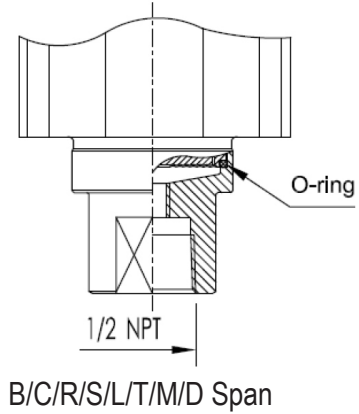
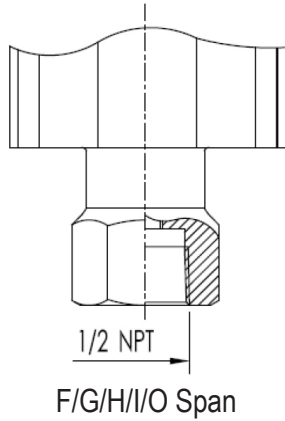
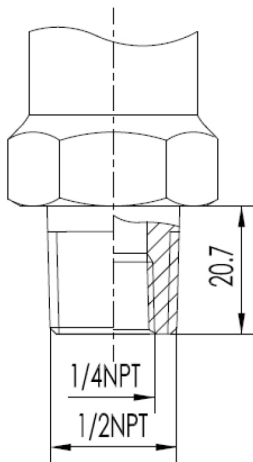
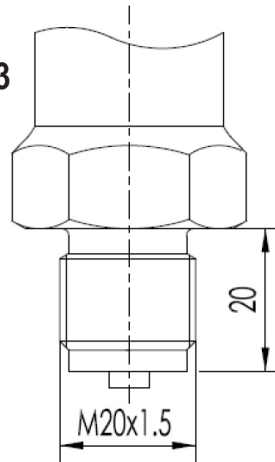
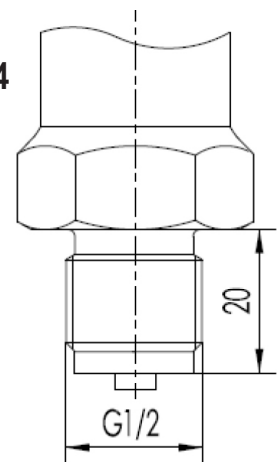
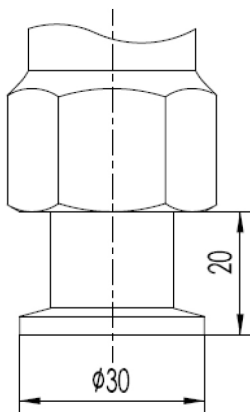
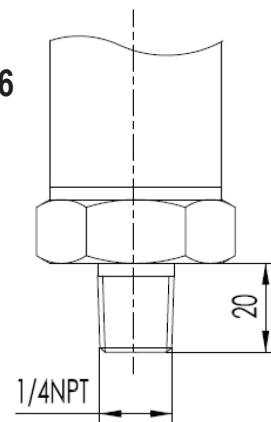


Terminal Configuration



All dimensions are in mm.

NOTE: Quick interface functionally equivalent to the signal terminal.

PROCESS CONNECTIONS DESCRIPTION**Default Process Connection (Code 1):****Other forms of Process Connection:****Code 2
(Male)****Code 3
(Male)****Code 4
(Male)****Code 5*****Code 6
(Male)**

*Vacuum Connection DIN 28403 KF16 / ISO 2861

ORDERING CODES

1. ACCURACY

B	Reference Accuracy±0.075%	B
C	Reference Accuracy±0.1%	

2. SPAN

Gauge Pressure SPT1002-		
B	0-0.6kPa~6kPa /(0-60~600 mmH ₂ O)/(0-6~60mbar)	
C	0-2kPa~40kPa /(0-200~4000 mmH ₂ O)/(0-20~400mbar)	C
D	0-2.5kPa~250kPa /(0-0.25~25 mH ₂ O)/(0-25~2500mbar)	
F	0-30kPa~3MPa /(0-3~300 mH ₂ O)/(0-0.3~30bar)	
G	0-0.1MPa~10MPa /(0-1~100bar)	
H	0-0.21MPa~21MPa /(0-2.1~210 bar)	
I	0-0.4MPa~40MPa /(0-4~400 bar)	
R	0-0.6kPa~6kPa /(0-60~600 mmH ₂ O)/(0-6~60mbar) [Overload protection 7MPa]	
S	0-2kPa~40kPa /(0-200~4000 mmH ₂ O)/(0-20~400mbar) [Overload protection 7MPa]	
Absolute Pressure SPT1003-		
L	0-2kPa~40kPa /(0-200~4000 mmH ₂ O)/(0-20~400mbar)	
M	0-2.5kPa~250kPa /(0-25~2500mbar)	
O	0-30kPa~3MPa /(0-0.3~30bar)	
T	0-2kPa~40kPa /(0-200~4000 mmH ₂ O)/(0-20~400mbar) [Overload protection 7MPa]	

3. DIAPHRAGM FILL FLUID

A	316L stainless steel	Silicone oil	A
B	316L stainless steel	Fluorinated oil	
C	Hastelloy C	Silicone oil	
D	Hastelloy C	Fluorinated oil	

4. PROCESS CONNECTOR ACCESSORY

1	½" NPT (F)	1
2	½" NPT (M) (Containing ¼" NPT (F) thread)	
3	M20x1.5 (F)	
4	G½" (F)	
5	Vacuum Connection DIN 28403 KF16 / ISO 2861 ²	
6	¼" NPT (M)	
R	Remote Seal	

5. SPECIAL FUNCTION

N	None	
0	Degrease cleansing treatment(Oxygen measurement must be with fluorinated oil) filled capsule, Viton (FKM) gasket, <6MPa ,<60°C)	
P	Anti-lightning function	P

6. MOUNTING BRACKET

N	None	
1	304 stainless steel	1
2	Carbon steel galvanized	

7. INTEGRAL INDICATOR

N	None	
1	LCD display	1
2	Backlit LCD display	

8. EXPLOSION PROTECTED TYPE

N	None	N
A	Intrinsically safe	
D	Flameproof	
B	Intrinsically safe Approval for ATEX	
E	Gas Flameproof Approval for ATEX	
G	Dust Flameproof Approval for ATEX	
H	Gas & Dust Flameproof Approval for ATEX	

9. TAG NAME PLATE

N	None	
1	Position number marked on the nameplate	1
2	Hanging stainless steel plate	

10. MANUAL

C	Chinese	C
E	English	

11. ADDITIONAL OPTIONS APPLY ONLY TO THE RANGE R/S/T³

N	Perbunan(NBR)	N
F	Viton (FKM)	
P	Teflon (PTFE)	

Ordering Example : SPT1002-B-C-A-1-P-1-1-N-1-C-N

NOTES

- SPT1002 corresponding to select gauge pressure range code, SPT1003 corresponding to select absolute pressure range code.
- Vacuum Connection DIN 28403 KF16 / ISO 2861, applies only to the range of less than 2,5 bar.
- Additional options apply only to the range R/S/T, need to choose a suitable O-ring material according to the measuring medium, the default option is NBR.