

ELPRT 100SPT

SMART PRESSURE TRANSMITTER

Features

- Piezo Resistive & Capacitive Sensor
- ATEX Certified
- Excellent Long Term Stability
- Two Wire System
- Long Operational Life
- Range-ability 100:1
- LCD Display
- Faster Response Time
- Application flexibility with HART Communication



ELPRT 100SPT



ELPRT 100SPT With Remote Seal

Description

Electronet series ELPRT-100SPT (GP & AP) can accurately measure the pressure of gases, vapors and liquids used in refineries, petrochemicals, oil & gas, power, chemical industries, food processing & pharmaceutical industries. Based on a mechanical and rugged silicon sensor & capacitive sensor, the ELPRT-100SPT (GP & AP) is suitable for Absolute & Gauge Pressure Measurements.

Technical Specifications

Output Signal	
2-Wire-System	4-20mA with super imposed signal for HART protocol, digital communication
Supply Voltage	12.5 - 45 VDC
Signal Range	3.9mA - 20.8mA
Measuring Range	Refer Pressure Range Table
Electrical Protection	
Insulation Resistance	>100 MΩ at 100VDC
Wiring Protection	Protection against Over Voltage & Short Circuit
Reverse Polarity Protection	Available
Temperature Limits	
Ambient Conditions	-20 to 70°C
Storage	-40 to 85°C
Process Temperature	-20 to 125°C
Ingress Protection	IP 66
Electromagnetic Compatibility (EMC)	Compliant with IEC 61000-4-3 and IEC 61000-4-6 Radiated and Conducted Susceptibility

Technical Specifications

Performance		
Accuracy	1) $\pm 0.075\%$ of URL for SPAN ≥ 5 : 1 2) $\pm (0.025 + 0.015 \text{ of } (URL / SPAN))\%$ of SPAN for SPAN < 5 : 1 *In case of remote seal process connection the accuracy will be less than $\pm 1\%$ of URL	
Power Supply Effect	$< \pm 0.005\%$ of calibrated SPAN per volt	
Vibration Effect	$< 0.2\%$ of SPAN/g @ 200Hz	
Installation Position Effect	Zero shifts up to $\pm 0.15\%$ of URL, which can be calibrated out. No SPAN effect.	
Thermal Effect	Range code	Zero error = $\pm 0.3\%$ URL per 280C
	4 to 8	Total error = $\pm 0.3\%$ URL + 0.25% of calibrated span per 280C
	Double the effect for Range code 3, 2	
Turndown Ratio	100:1	
Turn On Time	Less than 5 Sec.	
Response Time	200 ms (without considering electronic damping)	
Damping	0.1 to 30.0 Sec.	
Humidity	5-98% Relative Humidity	
Stability	Less than $\pm 0.2\%$ of URL per Year	
Over Pressure	2 times max. Pressure range	
Burst Pressure	3 times max. Pressure range	

Physical Specifications

Process Connection	$\frac{1}{4}$ " NPT (M/F), $\frac{1}{2}$ " NPT (M/F), $\frac{1}{4}$ " BSP (M/F), $\frac{1}{2}$ " BSP (M/F)
Diaphragm	SS316L / Hastelloy C / With Remote Seal
Seals	Viton / Neoprene / Red silica / EPDM
Wetted Parts	SS304 / SS316 / SS316L / Hastelloy C
MOC Electronic Enclosure	Die Cast Aluminium PU Painted / SS 316
Sight Glass	Laminated Safety Glass
Filling Fluid	Silicon Oil / Inert (for capacitive sensor)
Electrical Connection	M20*1.5 / $\frac{1}{2}$ " NPT (F)
Others	
Display Type	LCD Display
Display Visible Range	32.5 x 22.5mm
Main Display	5-Digit
Digit height	8 mm
Bargraph	51 Segments
Weight	Standard model approx. 3.4 Kg
Certification	CE &  ATEX Certification : ATEX (II 2 GD Ex d IIC T6 Gb -20°C ≤ Ta ≤ +60°C)

Pressure Range Table

Table A : Absolute Pressure Transmitter Ranges

Range Code	Lower Range Limit (LRL)	Upper Range Limit (URL)	Minimum SPAN
4	0	100 kPa (1.000002 Bar)	1 kPa (0.01 Bar)
5	0	250 kPa (2.500005 Bar)	2.5 kPa (0.025 Bar)
6	0	400 kPa (4.000007 Bar)	4 kPa (0.04 Bar)
7	0	600 kPa (6.000011 Bar)	6 kPa (0.06 Bar)

Table B : Gauge Pressure Transmitter Ranges

Range Code	Lower Range Limit (LRL)	Upper Range Limit (URL)	Minimum SPAN
3	-7.997 kPa (-0.080 Bar)	70 kPa (0.7 Bar)	0.7 kPa (0.007 Bar)
4	-39.99 kPa (-0.400 Bar)	100 kPa (1 Bar)	1 kPa (0.01 Bar)
5	-101.35 kPa (-1.013 Bar)	250 kPa (2.5 Bar)	2.5 kPa (0.025 Bar)
6	-101.35 kPa (-1.013 Bar)	400 kPa (4 Bar)	4 kPa (0.04 Bar)
7	-101.35 kPa (-1.013 Bar)	600 kPa (6 Bar)	6 kPa (0.06 Bar)
8	-101.35 kPa (-1.013 Bar)	1000 kPa (10 Bar)	10 kPa (0.10 Bar)
9	-101.35 kPa (-1.013 Bar)	1600 kPa (16 Bar)	16 kPa (0.16 Bar)
10	-101.35 kPa (-1.013 Bar)	2500 kPa (25 Bar)	25 kPa (0.25 Bar)
11	-101.35 kPa (-1.013 Bar)	4000 kPa (40 Bar)	40 kPa (0.40 Bar)
12	-101.35 kPa (-1.013 Bar)	6000 kPa (60 Bar)	60 kPa (0.60 Bar)
13	-101.35 kPa (-1.013 Bar)	10000 kPa (100 Bar)	100 kPa (1.0 Bar)
14	-101.35 kPa (-1.013 Bar)	16000 kPa (160 Bar)	160 kPa (1.6 Bar)
15	-101.35 kPa (-1.013 Bar)	25000 kPa (250 Bar)	250 kPa (2.5 Bar)
16	-101.35 kPa (-1.013 Bar)	40000 kPa (400 Bar)	400 kPa (4.0 Bar)
17	-101.35 kPa (-1.013 Bar)	60000 kPa (600 Bar)	600 kPa (6.0 Bar)
18	-101.35 kPa (-1.013 Bar)	100000 kPa (1000 Bar)	1000 kPa (10.0 Bar)

EMI/EMC Tests

No.	Tests	Basic Standards	Test Conditions	Performance Level
1	Conducted Emission (Mains)	CISPR11	150KHz-30MHz	A
2	Radiated Emission (in GTEM)	IEC61000-4-20	30MHz-1000MHz	A
3	Conducted Radio Frequency Immunity (Mains)	IEC61000-4-6	150KHz-80MHz	A
4	Electrical Fast Transient/Burst (EFT/B) Immunity (on Mains)	IEC61000-4-4	1KV(5/50nSec,5KHz)	A
5	Combination wave surge Immunity (on Mains)	IEC61000-4-5	1KV(Line to Line) (1.2/50us)	A
6	Immunity to Radiated Electromagnetic Fields (Amplitude Modulated)	IEC61000-4-3	80MHz - 1000MHz (10V/M)	A
7	Damped Oscillatory surge Immunity (on Mains)	IEC61000-4-18	1KV(Line to Ground) 0.5KV(Line to Line)	A
8	Electrostatic Discharge (ESD) Immunity	IEC61000-4-2	6KV(Contact) 8KV(Air)	A

Menu Function

LCD Display Unit

Display mode	Details
PV	Process value shown on main screen
mA	Current shown on main screen
%	Percentage shown on main screen
Progress Bar	Progress bar shown on main screen top side

Analog Output Type

Parameters	Output Type
mA LINER	Linearity
mA√	Square Root

Transmission Module Type

Output Signal	Local Control	Remote Control
4-20mA + HART	LCD/2 Buttons on Body	HART
4-20mA	LCD/2 Buttons on Body	-

Measuring Menu

Mark	State
URL	Upper Range Limit
LRL	Lower Range Limit

Menu Function

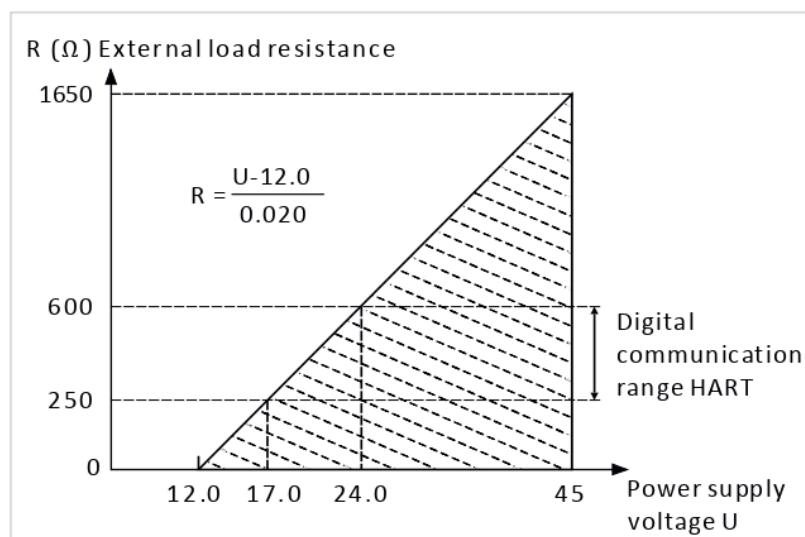
Units

Unit	Defination
bar	bar
mbar	Millibar
mmH2O	Millimeter of water @ 4° C
kg/cm ²	Kilogram per square centimeter

Unit

Unit	Defination
kPa	Kilopascal
mmHg	Millimeter of mercury @ 0° C
psi	Pounds per square inch
inH2O	Inch of Water

Power Supply & Load Requirements



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Assembly Overview

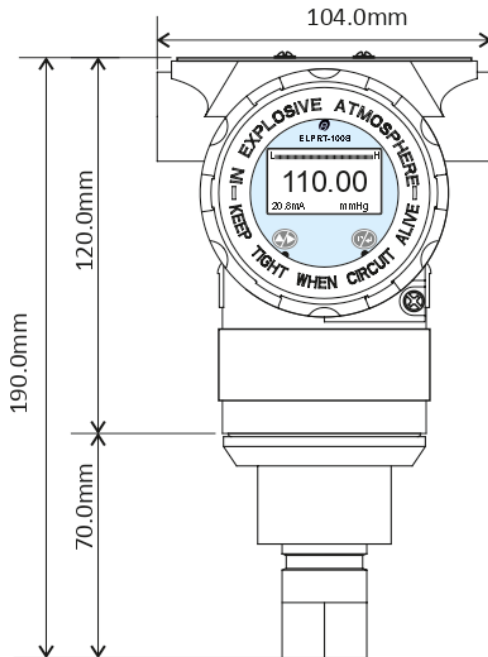


Fig.1 Front View

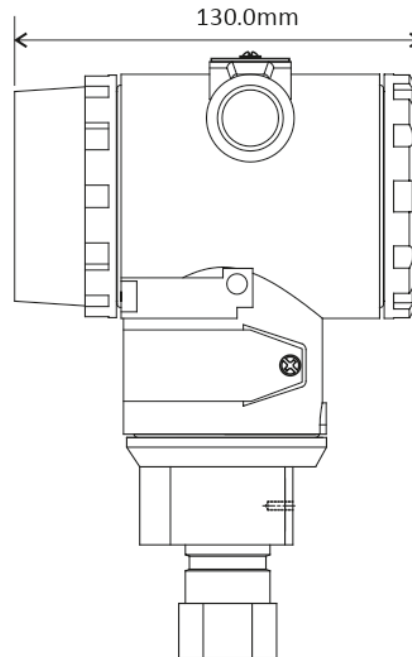
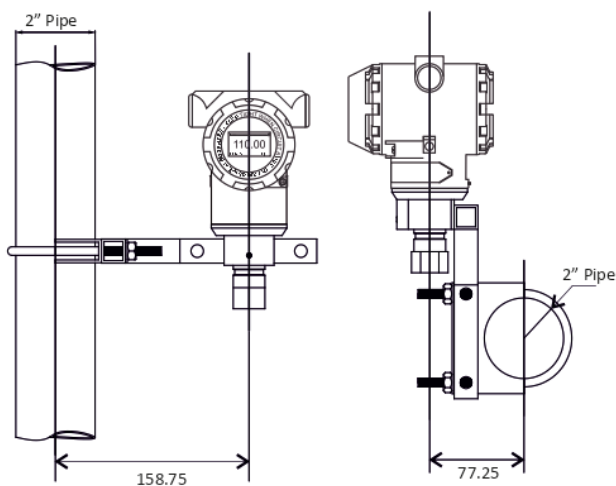


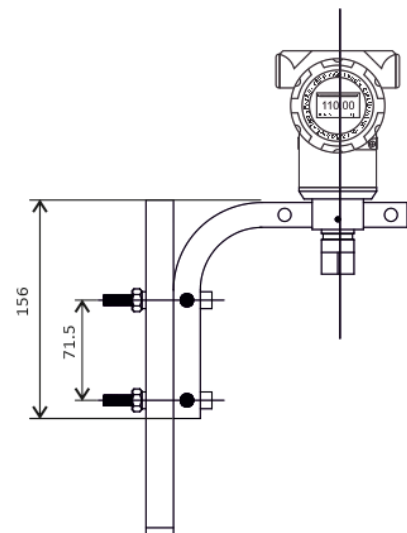
Fig.2 Side View

Installation Drawing & Dimensions

Pipe Mounting



Panel Mounting



Measuring Medium

Liquid, Gas or Steam

Field of Application

Pressure & Level

Approvals



ELPRT 100SPT

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Ordering Information

Sample Order Code : ELPRT 100SPT-A1-B1-C1-D1-E1-F1-G1-H1-I1-J1-K1-L1

Parameter		Code	Description
A	Measurement Type	A1	AP
		A2	GP
B	Pressure Range	B1	10 kPa
		B2	35 kPa
		B3	70 kPa
		B4	100 kPa
		B5	250 kPa
		B6	400 kPa
		B7	600 kPa
		B8	1000 kPa
		B9	1600 kPa
		B10	2500 kPa
		B11	4000 kPa
		B12	6000 kPa
		B13	10000 kPa
		B14	16000 kPa
		B15	25000 kPa
		B16	40000 kPa
		B17	60000 kPa
		B18	100000 kPa
C	Cerification	C1	Weather Proof IP-67
		C2	ATEX (II 2 GD Ex d IIC T6 Gb -20°C ≤ Ta ≤ +60°C)
		C3	Flameproof (CMRI IIA IIB Certified)
D	MOC Electronics Enclosure	D1	Aluminium Die Cast PU Painted
		D2	SS-316
E	Electrical Connection	E1	M 20 x 1.5 (F)
		E2	½” NPT (F)
		EY	Other
F	Output	F1	4 to 20 mA
		F2	4 to 20 mA with HART

Parameter		Code	Description
G	Diaphragm Material	G1	SS-316L
		G2	Hastelloy C
		GY	Other
H	Sensor Fill Fluid	H1	Silicon Oil
		HY	Other
I	MOC of Sensor, Flange, Adapter & Drain Vent Valve	I1	SS-316
		I2	Hastelloy C
		IY	Other
J	O Ring Material	J1	Buna - N
		J2	Ethylene - Propylene
		J3	Teflon
		J4	Viton
K	Process Connection (In SS-316)	K1	¼” NPT (M)
		K2	½” NPT (M)
		K3	¼” BSP (M)
		K4	½” BSP (M)
		K5	¼” NPT (F)
		K6	½” NPT (F)
		K7	¼” BSP (F)
		K8	½” BSP (F)
		K9	Flush Diaphragm (Triclover)
		K10	Flush Diaphragm (1" BSP)
		K11	Diaphragm Seal 1" (SS-316)
		K12	Diaphragm Seal 2" (SS-316)
		K13	Diaphragm Seal 3" (SS-316)
		K14	5 Mtr Capillary (1" Flange)
		K15	5 Mtr Capillary (2" Flange)
		K16	5 Mtr Capillary (3" Flange)
KY	Other		
L	Mounting Bracket	L1	MS
		L2	SS-316

Note :

- Due to our continuous product revisions, design specification and model numbers are subject to change without notice.
- Accuracy defined at Lab Conditions.
- For other requirement please consult factory.
- This product is meant for laboratory/Process application only and not for custody transfer application.

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