

SMART

ELPRT-100S PT

PRESSURE TRANSMITTER



FEATURES

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



Electronet series ELPRT-100S (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-100S (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	Protect against Over Voltage & Short Circuit
Reverse Polarity Protection	Yes

Temperature Limits

Ambient	-40 to 85°C (without display), -20 to 70°C (with display)
Storage	-40 to 85°C
Ingress Protection	IP 67
Electromagnetic Compatibility (EMC)	Compliance with IEC 61000-4-3 and IEC 61000-4-6 Radiated and Conducted Susceptibility

Performance

Accuracy	1) +/-0.075% of URL for turndown ratio ≤ 10:1	
	2) +/- (0.075 + 0.0075 of (URL / SPAN))% of SPAN for turndown ratio > 10:1	
Power Supply Effect	< ±0.005% of calibrated SPAN per volt	
Vibration Effect	< 0.2% of SPAN/g @200Hz	
Installation Position Effect	Zero shifts up to ≤ +/- 0.15% of URL, which can be calibrated out. No SPAN effect.	
Thermal Effect	Range code 4 to 8	Zero error = +/-0.3% URL per 28°C
		Total error = +/-0.3% URL +0.25% of calibrated span per 28°C
	Double the effect for Range code 3, 2	
Turndown Ratio	100:1	
Turn On Time	Less than 5 Sec.	
Response Time	150 ms (without considering electronic damping)	
Damping	0.1 to 30.0 Sec.	
Humidity	5-98% Relative Humidity	

Physical Specifications

Process Connection	1/4" NPT (M/F), 1/2" NPT (M/F), 1/4" BSP (M/F), 1/2" BSP (M/F), M20 X 1.5 (M/F)
Diaphragm	SS316 / SS316L / Hastelloy C
Seals	Viton / Neoprene / Red silica / EPDM
Wetted Parts	SS304 / SS316 / SS316L / Hastelloy C
Electronic Enclosure	Die-cast aluminum / SS 316
Sight Glass	Laminated Safety Glass
Filling Fluid	Silicon Oil / Inert (for capacitive sensor)
Electrical Connection	M20 / 1/2" NPT / 1/2" BSP / 3/4" ET

Others

Display Type	128 x 64mm COG
Display Visible Range	32.5 x 22.5mm
Main Display	5-Digit
Digit Height	8 mm
Bar-graph	51 Segments
Weight	Standard model approx. 1.3 Kg
Certification	

Measuring Range

Table A : Absolute Pressure Transmitter Ranges

Range Code	Lower Range Limit (LRL)	Upper Range Limit (URL)	Minimum SPAN
4	0	5.801psi (0.400 Bar)	0.0580 psi (0.0040 Bar)
5	0	29.007psi (2.0 Bar)	0.290 psi (0.0200 Bar)
6	0	100psi (6.895 Bar)	1 psi (0.0689 Bar)
7	0	300psi (20.684 Bar)	3 psi (0.2068 Bar)

Table B : Gauge Pressure Transmitter Ranges

Range Code	Lower Range Limit (LRL)	Upper Range Limit (URL)	Minimum SPAN
3	-1.160psi (-0.080 Bar)	1.160 psi (0.080 Bar)	0.0116 psi (0.0008 Bar)
4	-5.801psi (-0.400 Bar)	5.801 psi (0.400 Bar)	0.0580 psi (0.0040 Bar)
5	-14.7 psi (-1.013 Bar)	29.007 psi (2.0 Bar)	0.290 psi (0.0200 Bar)
6	-14.7 psi (-1.013 Bar)	100 psi (6.895 Bar)	1 psi (0.0689 Bar)
7	-14.7 psi (-1.013 Bar)	300 psi (20.684 Bar)	3 psi (0.2068 Bar)
8	-14.7 psi (-1.013 Bar)	1000 psi (68.948 Bar)	10 psi (0.6894 Bar)
9	-14.7 psi (-1.013 Bar)	3000 psi (206.843 Bar)	30 psi (2.0684 Bar)
10	-14.7 psi (-1.013 Bar)	6000 psi (413.685 Bar)	60 psi (4.1368 Bar)
11	-14.7 psi (-1.013 Bar)	10000 psi (689.47 Bar)	100 psi (6.8947 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 Field (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

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

Analog Output Type

Parameters	Output Type
mA LINER	Linearity

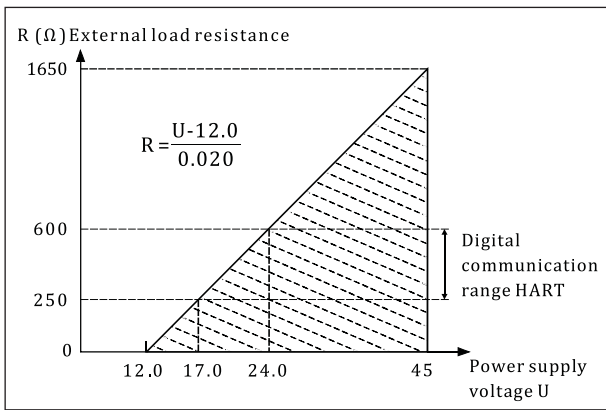
LCD Display Unit

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

Units

Unit	Defination
BAR	Bar
mBAR	Millibar
mmH2O	Millimeter of water @ 4° C
Kg/cm2	Kilogram per square centimeter
Kpa	Kilopascal
mmHg	Millimeter of mercury @ 0° C
PSI	Pounds per square inch

Power Supply & Load Requirements



Product Drawing & Dimensions

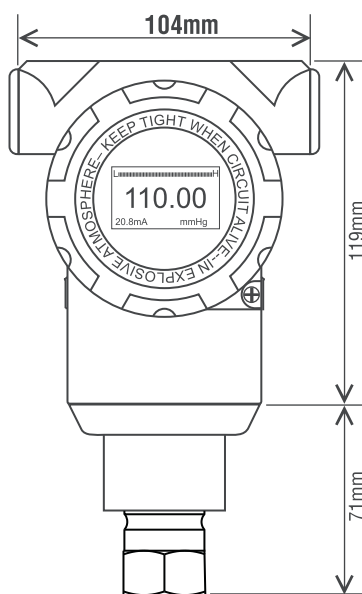


Fig 1 Front View

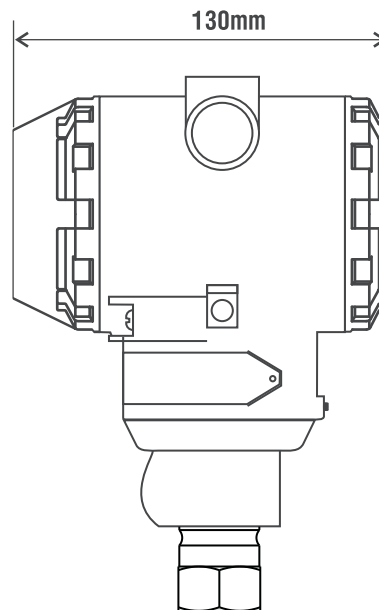
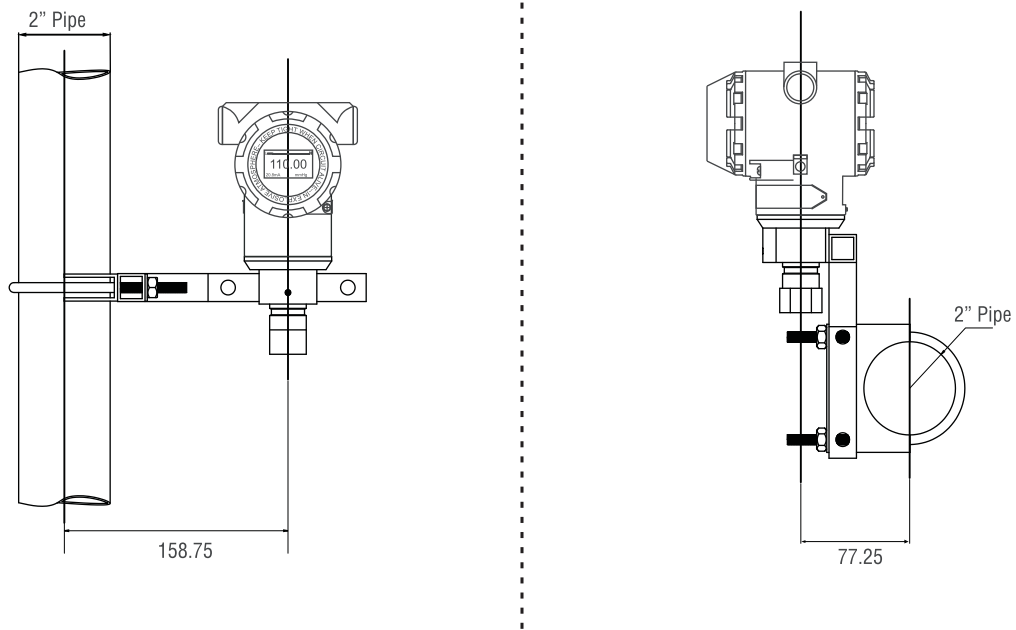


Fig 2 Side View

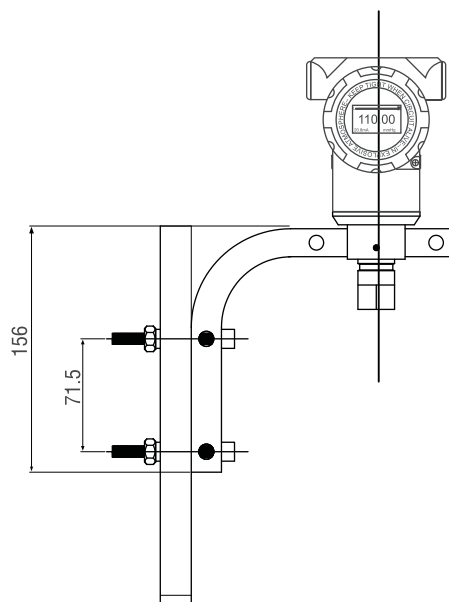
Installation Drawing & Dimensions

Pipe Mounting



Installation Drawing & Dimensions

Panel Mounting



Measuring Medium

Liquid, Gas or Steam

Field of Application

Pressure & Level

Approvals



Ordering Information

Sample Order Code : 03A-07B-13C-14E-18A-21D-22B-49A-65C-66K-67D-77A-78B-91B

Parameter	Code	Value	Parameter	Code	Value
03 Measurement Type	03A	Absolute Pressure	49 Output	49A	4 to 20mA
	03B	Gauge Pressure		49B	4 to 20mA with HART
07 Area Classification	07A	Weather Proof	65 Wetted Parts Material	65A	SS316
	07B	Flame Proof		65B	SS316L
13 Pressure Range FOR AP	13B	5.801 psi		65C	SS304
	13C	29.007 psi		65D	Hastelloy C
	13D	100 psi	66 Process Connection	66G	¼" NPT (M)
	13E	300 psi		66H	½" NPT (M)
	13Z	NA		66I	¼" BSP (M)
14 Pressure Range FOR GP	14A	1.16 psi		66J	½" BSP (M)
	14B	5.801 psi		66K	Flush Diaphragm
	14C	29.007 psi	66L	2 Meters Capillary	
	14D	100 psi	66R	¼" NPT (F)	
	14E	300 psi	66S	½" NPT (F)	
	14H	1000 psi	66T	¼" BSP (F)	
	14I	3000 psi	66U	½" BSP (F)	
	14J	6000 psi	67 * MOC Flange	67C	SS316
	14K	10000 psi		67D	SS304
14Z	NA	67F		SS316L	
67G	Hastelloy C				
18 Certification	18A	ATEX	77 Sensor Type	77A	Piezo Resistive
	18Z	NA		77B	Capacitive
21 Electrical Connection	21A	M20 X 1.5 (F)	78 Fill Fluid	78A	Silicon Oil
	21B	½" NPT (F)		78B	Inert
	21D	¾" ET	91 Mounting Bracket	91A	CS
	21E	½" BSP (F)		91B	SS
22 MOC Electronics Enclosure	22A	Die Cast Aluminium	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.		
	22B	SS316			

Applications

Food Industry	Chemical Industry	Atomic Energy	Manufacturing Industry
Automation Industry	Thermal Power Energy	Process Industry	Water Treatment Industry

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