

SMART DIFFERENTIAL

ELPRT-100S DP

PRESSURE TRANSMITTER



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ELECTRONET™



ELPRT-100S DP



ELPRT-100S DP
With Remote Seal



FEATURES

- Capacitive Sensor with Diaphragm
- ATEX Certified
- Rigid Construction
- Two Wire System
- Range-ability 100:1
- LCD Display
- Application flexibility with HART Communication
- Non-Intrusive Magnetic Controls



Electronet series ELPRT-100S DP micro-controller based design which has capacitive type pressure sensing element. ELPRT100S DP is suitable for Differential Pressure measurements. It is used for various industrial applications. It can be used for Liquid, Gas & Vapor pressure measurements. It is having wide ranges of pressure with high accuracy & linearity output in the form of electrical signal 4–20 mA DC with HART communication.

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
Ingress Protection	IP 67

Performance



Accuracy	1) $\pm 0.075\%$ of URL for SPAN $\geq 5:1$ 2) $\pm (0.05 + 0.03 \text{ of } (\text{URL} / \text{SPAN}))\%$ of SPAN for SPAN $< 5:1$
Static Pressure Effect	Zero Error: $\pm 0.25\%$ of URL per 50 Bar (Zero static pressure effect can be removed by zero trimming at line pressure.) Span Error: $\pm 0.35\%$ of URL per 50 Bar
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 $\leq \pm 0.15\%$ of URL, which can be calibrated out. No SPAN effect.
Thermal Effect	Range code 4 to 8 Zero error = $\pm 0.3\%$ URL per 28°C Total error = $\pm 0.3\%$ URL + 0.25% of calibrated span per 28°C Double the effect for Range code 3, 2
Humidity	5–98%
Static Pressure	30 Bar to 130 Bar, Higher On Request
Stability	Less than $\pm 0.2\%$ of URL per Year
Transfer Function	Linear or square root
Over Pressure	2 times max. Pressure range
Burst Pressure	3 times max. Pressure range

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.

Physical Specifications

Electrical connections	M20 x 1.5 / 1/2" NPT / 1/2" BSP / 3/4" ET
Process connection	1/4" NPT (M/F), 1/2" NPT (M/F), 1/4" BSP (M/F), 1/2" BSP (M/F), 5 Meter Capillary
Diaphragm	SS316 / SS316L / Hastelloy C / With Remote Seal
Flange	SS304 / SS316 / SS316L / Hastelloy C / SS304
Drain / Vent Valve	1/4" NPT – SS316 / SS304
Media wetted O-ring	Viton, Neoprene, EPDM, Red Silica
MOC Electronics Enclosure	Die Cast Aluminium PU Painted / SS316
Nuts, Bolts	M 10 X 96 mm – SS316 / SS304
Identification Plate	SS304 / Carbon steel with zinc coating
Mounting brackets	MS / Carbon steel with zinc coating or with painting / SS304 / SS316 / SS316L
Sight glass	Laminated safety glass
Filling Fluid	Silicon Oil / Inert
Electromagnetic Compatibility (EMC)	Compliance with IEC 61000-4-3 and IEC 61000-4-6 Radiated and Conducted Susceptibility

Others

Display Type	LCD Display
Display Visible Range	32.5 x 22.5mm
Main Display	5-Digit
Digit height	8 mm
Bar graph	51 Segments
Weight	Standard model approx. 3.4 Kg
Certification	
	 ATEX Certification : ATEX (II 2 GD Ex d IIC T6 Gb -20°C ≤ Ta ≤ +60°C)

Pressure Range Table

Range Code	Lower Range Limit (LRL)	Upper Range Limit (URL)	Minimum SPAN
2	-0.1885psi [-0.013 Bar]	0.1885psi [0.013 Bar]	0.00188psi [0.00013 Bar]
3	-1.160psi [-0.080 Bar]	1.160psi [0.080 Bar]	0.0116psi [0.0008 Bar]
4	-5.801psi [-0.400 Bar]	5.801psi [0.400 Bar]	0.0580psi [0.0040 Bar]
5	-29.007psi [-2.0 Bar]	29.007psi [2.0 Bar]	0.290psi [0.0200 Bar]
6	-100psi [-6.895 Bar]	100psi [6.895 Bar]	1psi [0.0689 Bar]
7	-300psi [-20.684 Bar]	300psi [20.684 Bar]	3psi [0.2068 Bar]
8	-1000psi [-68.948 Bar]	1000psi [68.948 Bar]	10psi [0.6894 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)	B
5	Combination wave surge Immunity (on Mains)	IEC61000-4-5	1KV(Line to Line) (1.2/50us)	B
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)	B
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
mA√	Square Root

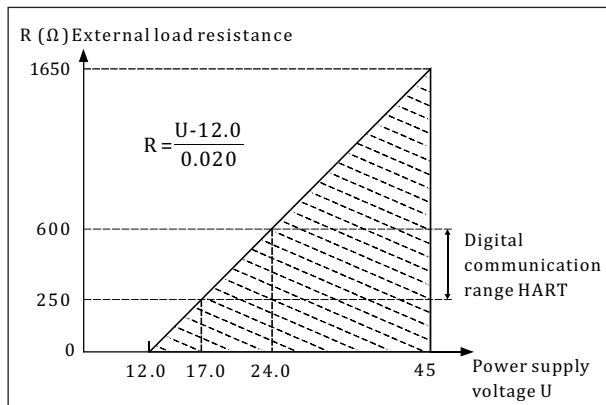
LCD Display Unit

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/cm ²	Kilogram per square centimeter
kPa	Kilopascal
mmHg	Millimeter of mercury @ 0°C
psi	Pounds per square inch
inH2O	Inch of Water

Power Supply & Load Requirements



Product Drawing & Dimensions

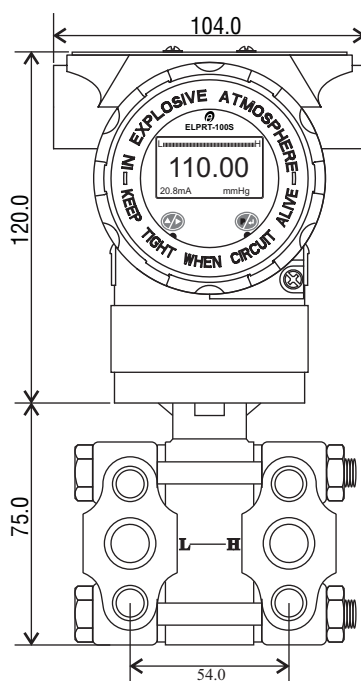


Fig.1 Front View

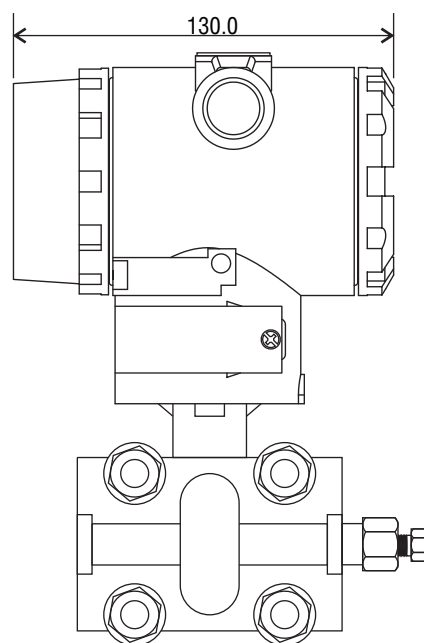
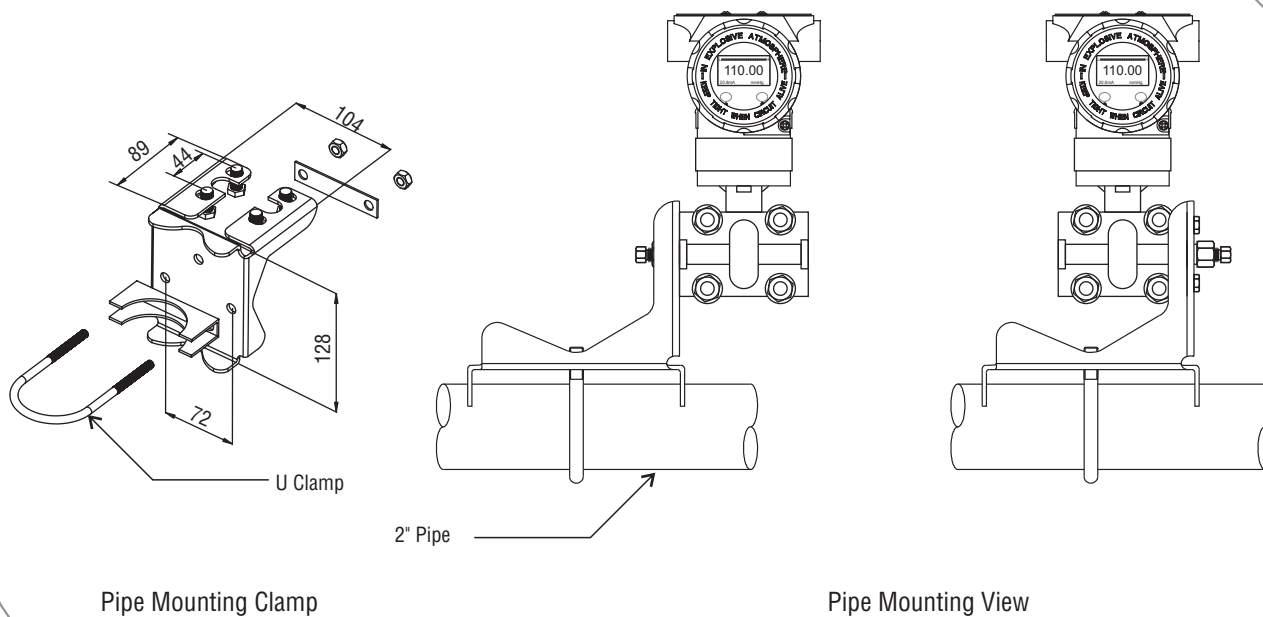


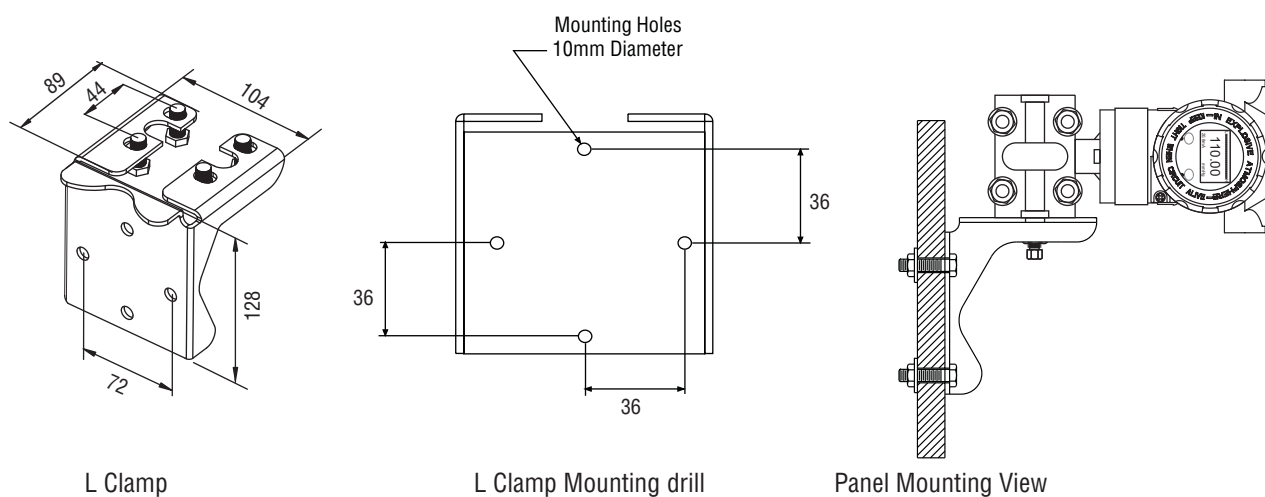
Fig.2 Side View

Installation Drawing & Dimensions

Pipe Mounting



Wall Mounting



Measuring Medium

Liquid, Gas or Steam

Field of Application

Pressure, Level,
Differential Pressure & Flow

Approvals



Ordering Information

Sample Order Code : A3 B2 C2 D4 F2 G2 H3 ST 1 L1 M2 N2 O3 P6 Q1

Parameter		Code	Description
A	Measurement Type	A3	DP
B	Pressure Range	B1	0.1885 psi
		B2	1.16 psi
		B3	5.801 psi
		B4	29.007 psi
		B5	100 psi
		B6	300 psi
		B7	1000 psi
C	Area Classification	C2	Field Mount Weather Proof IP67
		C3	ATEX
D	Power Supply	D4	24V DC Two Wire Loop Powered
F	MOC Electronics Enclosure	F1	Aluminium Die Cast
		F2	SS316
G	Electrical Connection	G1	M 20 x 1.5 (F)
		G2	½” NPT (F)
		GY	Other
H	Output (Any one)	H1	4 to 20 mA
		H3	4 to 20 mA with HART
ST	Sensor Type	ST 1	Capacitive Sensor
		ST 2	Piezo Resistive Sensor
L	Diaphragm Material	L1	SS316L
		L2	Hastelloy C
		LY	Other

Parameter		Code	Description
M	Fill Fluid	M1	Silicon Oil
		M2	Inert
		MY	Other
N	MOC of Sensor, Flange, Adapter & Drain Vent Valve	N1	SS316
		N2	Hastelloy C
		NY	Other
O	O Ring Material	O1	Buna – N
		O2	Ethylene – Propylene
		O3	Teflon
		O4	Viton
P	Process Connection	P1	¼” NPT (M)
		P2	½” NPT (M)
		P3	¼” BSP (M)
		P4	½” BSP (M)
		P5	¼” NPT (F)
		P6	½” NPT (F)
		P7	¼” BSP (F)
		P8	½” BSP (F)
		P14	5 Mtr Capillary (1" Flange)
		P15	5 Mtr Capillary (2" Flange)
		P16	5 Mtr Capillary (3" Flange)
		PY	Other
Q	Mounting Bracket	Q1	MS
		Q2	SS316

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.

Applications

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

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