SMART DIFFERENTIAL

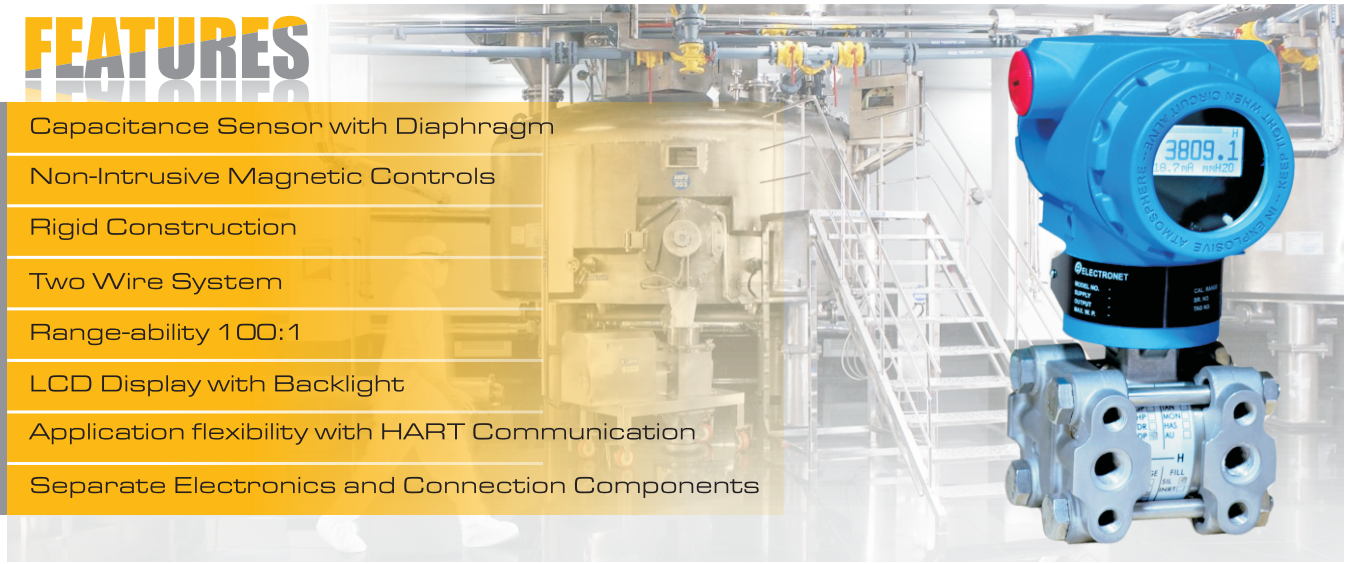
ELPRT-100S DP

PRESSURE TRANSMITTER

ELECTRONET™

www.eeplindia.com

FEATURES



- Capacitance Sensor with Diaphragm
- Non-Intrusive Magnetic Controls
- Rigid Construction
- Two Wire System
- Range-ability 100:1
- LCD Display with Backlight
- Application flexibility with HART Communication
- Separate Electronics and Connection Components

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		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
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
Static Pressure Effect		Zero Error: +/–0.25% of URL per 50 Bar (Zero static pressure effect can be removed by zero trimming at line pressure.)
		Span Error: +/–0.35% of URL per 50 Bar
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
Humidity		5–98%
Static Pressure		30 Bar to 130 Bar, Higher On Request
Stability		Less than +/–0.25% of URL per Year
Transfer Function		Linear or square root

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.

Physical Specifications

Electrical connections	M20 / ½" NPT / ½" BSP / ¾" ET
Process connection	¼" NPT (M/F), ½" NPT (M/F), ¼" BSP (M/F), ½" BSP (M/F), 2 Meter Capillary
Diaphragm	SS316 / SS316L / Hastelloy C
Flange	SS304 / SS316 / SS316L / Hastelloy C / SS304
Drain / Vent Valve	¼" NPT – SS316 / SS304
Media wetted O–ring	Viton, Neoprene, EPDM, Red Silica
Electronic housing	Die–cast aluminum / SS316
Nuts, Bolts	M 10 X 96 mm – SS316 / SS304
Identification Plate	SS304 / Carbon steel with zinc coating
Mounting brackets	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	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. 3.4 Kg

Certification	CE

Measuring Range

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

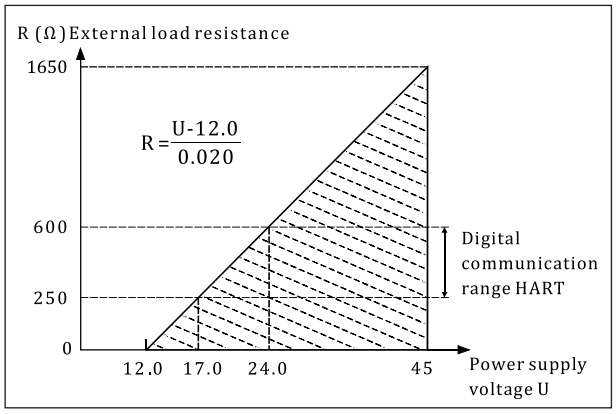
LCD Display Unit

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/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

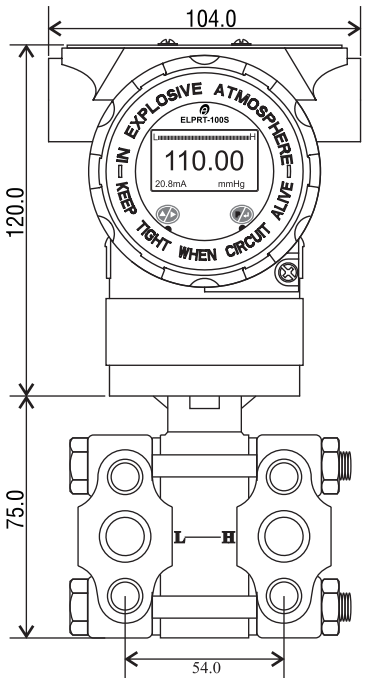


Fig.1 Front View

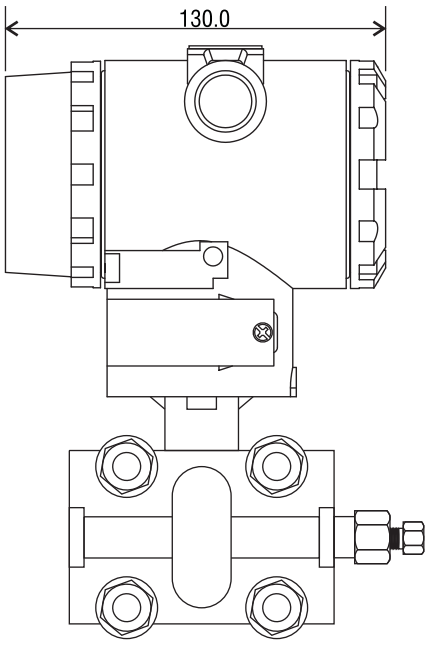
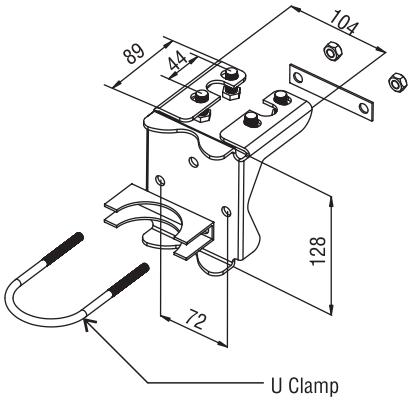


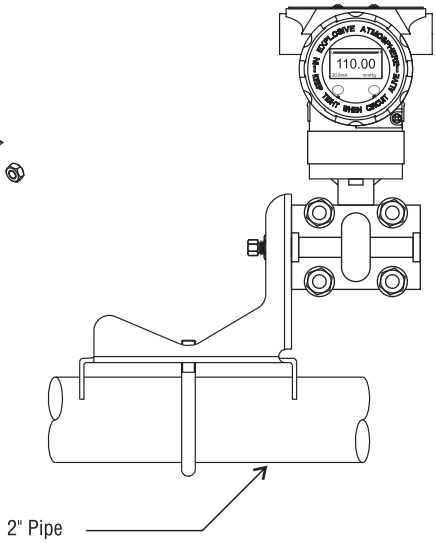
Fig.2 Side View

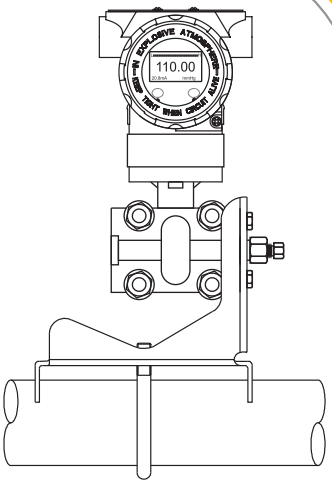
Installation Drawing & Dimensions

Pipe Mounting



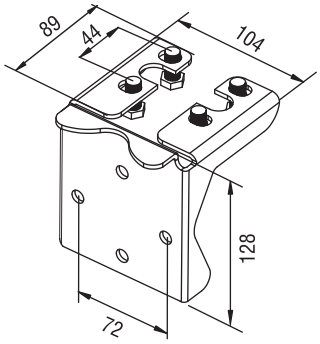
Pipe Mounting Clamp



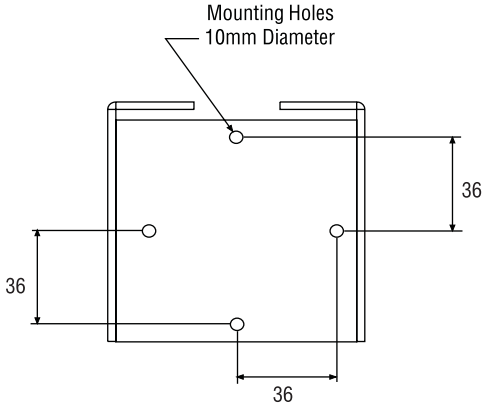


Pipe Mounting View

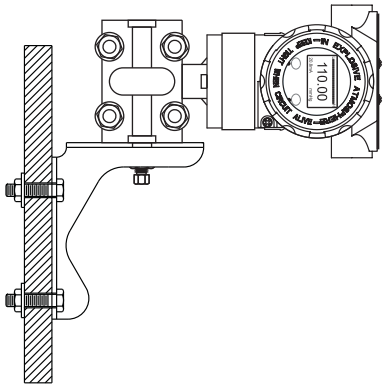
Wall Mounting



L Clamp



L Clamp Mounting drill



Panel Mounting View

Measuring Medium	Field of Application	Approvals
Liquid, Gas or Steam	Pressure, Level, Differential Pressure & Flow	CE HART COMMUNICATION PROTOCOL

Ordering Information

Sample Order Code : 03A–07B–18A–21D–22B–49A–65C–66T–67D–77A–78B–91B

Parameter		Code	Value
05	Pressure Range	05A	0.1885 psi
		05B	1.16 psi
		05C	5.801 psi
		05D	29.007 psi
		05E	100 psi
		05F	300 psi
		05G	1000 psi
07	Area Classification	07A	Weather Proof
		07B	Flame Proof
		07Y	None
18	Certification	18A	ATEX
		18Z	NA
21	Electrical Connection	21A	M20 X 1.5 (F)
		21B	½" NPT (F)
		21D	¾" ET
		21E	½" BSP (F)
22	MOC Electronics Enclosure	22A	Die Cast Aluminium
		22B	SS316
49	Output	49A	4 to 20mA
		49B	4 to 20mA with HART
65	Wetted Parts Material	65A	SS316
		65B	SS316L
		65C	SS304
		65D	Hastelloy C

Parameter		Code	Value
66	Process Connection	66G	¼" NPT (M)
		66H	½" NPT (M)
		66I	¼" BSP (M)
		66J	½" BSP (M)
		66L	2 Meters Capillary
		66R	¼" NPT (F)
		66S	½" NPT (F)
		66T	¼" BSP (F)
		66U	½" BSP (F)
		66AA	Diaphragm Seal 1"
		66AB	Diaphragm Seal 1½"
		66AC	Diaphragm Seal 2"
		66X	Other
67	MOC Flange	67C	SS316
		67D	SS304
		67F	SS316L
		67G	Hastelloy C
77	Sensor Type	77A	Piezo Resistive
		77B	Capacitive
78	Fill Fluid	78A	Silicon Oil
		78B	Inert
91	Mounting Bracket	91A	CS
		91B	SS

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

ELECTRONET EQUIPMENTS PVT. LTD.

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