

ELPRT 100SDP

SMART DIFFERENTIAL PRESSURE TRANSMITTER

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



ELPRT 100SDP



ELPRT 100SDP
With Remote Seal

Description

Electronet series ELPRT-100SDP micro-controller based design which has capacitive type pressure sensing element. ELPRT100SDP 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
Process Temperature	-20 to 125°C
Ingress Protection	IP 66
Accuracy	1) +/-0.075% of URL for SPAN ≥ 5: 1
	2) +/- (0.05 + 0.03 of (URL / SPAN))% of SPAN for SPAN < 5: 1

Technical Specifications

Performance

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 $\pm 0.15\%$ of URL, which can be calibrated out. No SPAN effect.	
Thermal Effect	Range code 2 to 9	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 (F) / $\frac{1}{2}$ " NPT (F)
Process connection	Refer ordering code
Diaphragm	SS-316L / Hastelloy C / With Remote Seal
Flange	SS-316/ Hastelloy C
Drain / Vent Valve	$\frac{1}{4}$ " NPT - SS316 / SS304
Media wetted O-ring	Buna -N, Ethylene -Propylene, Teflon, Viton
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 / SS-316
Sight glass	Laminated safety glass
Filling Fluid	Silicon Oil
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	CE &  ATEX Certification : ATEX (II 2 GD Ex d IIC T6 Gb $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$)

Pressure Range Table

Range Code	Lower Range Limit (LRL)	Upper Range Limit (URL)	Minimum SPAN
2	0 kPa (0 Bar)	1.5 kPa (0.015 Bar)	0.125 kPa (0.00125 Bar)
3	0 kPa (0 Bar)	7.5 kPa (0.075 Bar)	1.3 kPa (0.013 Bar)
4	0 kPa (0 Bar)	40 kPa (0.4 Bar)	6.2 kPa (0.062 Bar)
5	0 kPa (0 Bar)	186 kPa (1.86 Bar)	31 kPa (0.31 Bar)
6	0 kPa (0 Bar)	690 kPa (6.9 Bar)	117 kPa (1.17 Bar)
7	0 kPa (0 Bar)	2068 kPa (20.68 Bar)	345 kPa (3.45 Bar)
8	0 kPa (0 Bar)	6000 kPa (60 Bar)	1170 kPa (11.70 Bar)
9	0 kPa (0 Bar)	20000 kPa (200 Bar)	3480 kPa (34.80 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

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

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	-

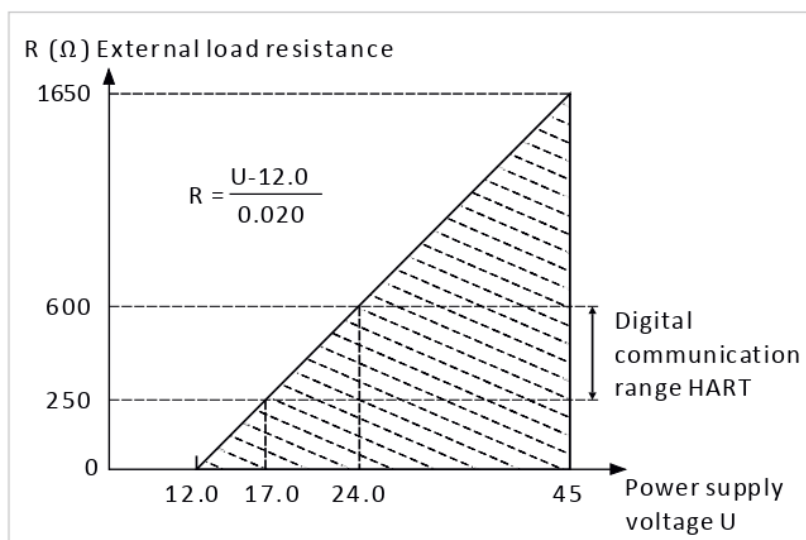
Measuring Menu

Mark	State
URL	Upper Range Limit
LRL	Lower Range Limit

Analog Output Type

Parameters	Output Type
mA LINER	Linearity
mA√	Square Root

Power Supply & Load Requirements



Assembly Overview

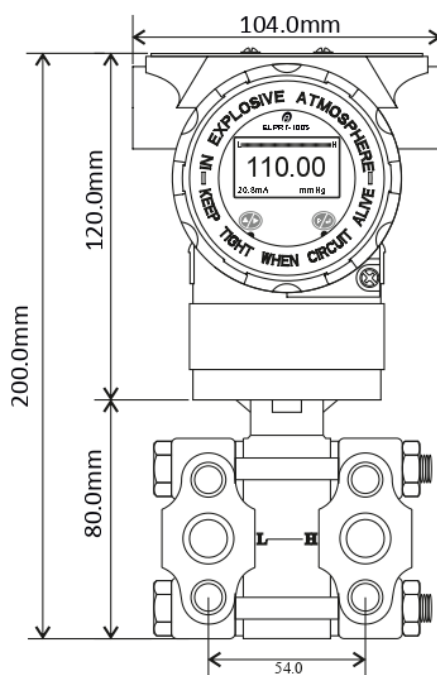


Fig.1 Front View

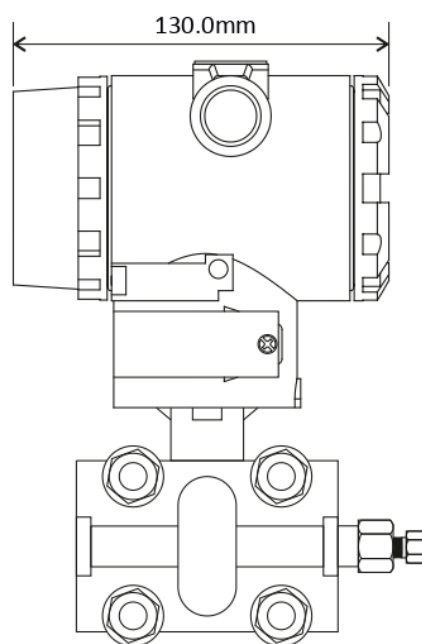


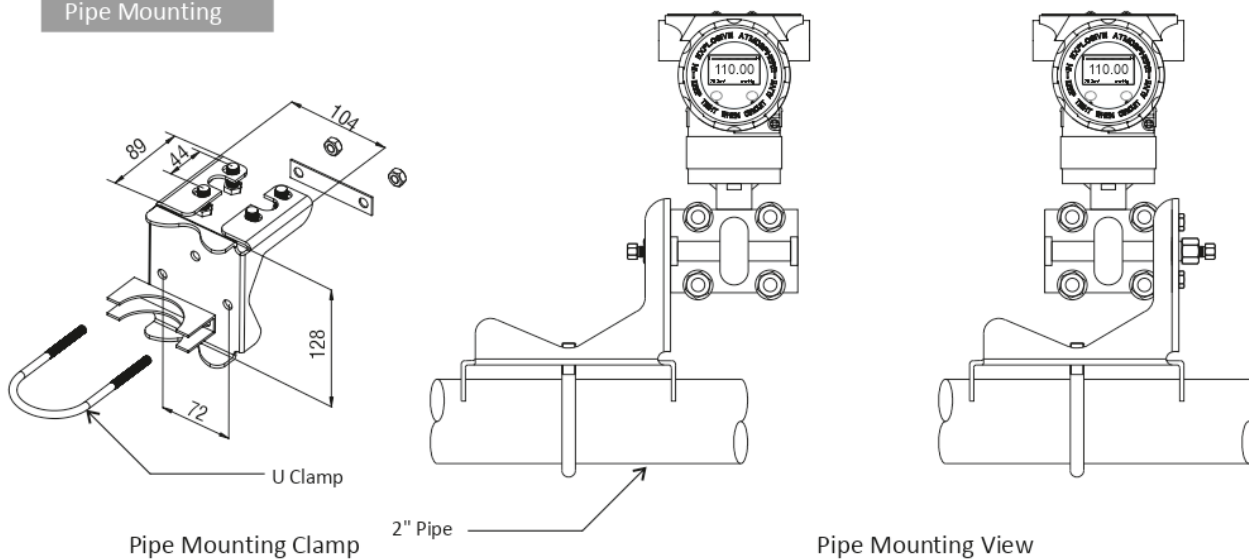
Fig.2 Side View

ELPRT 100SDP

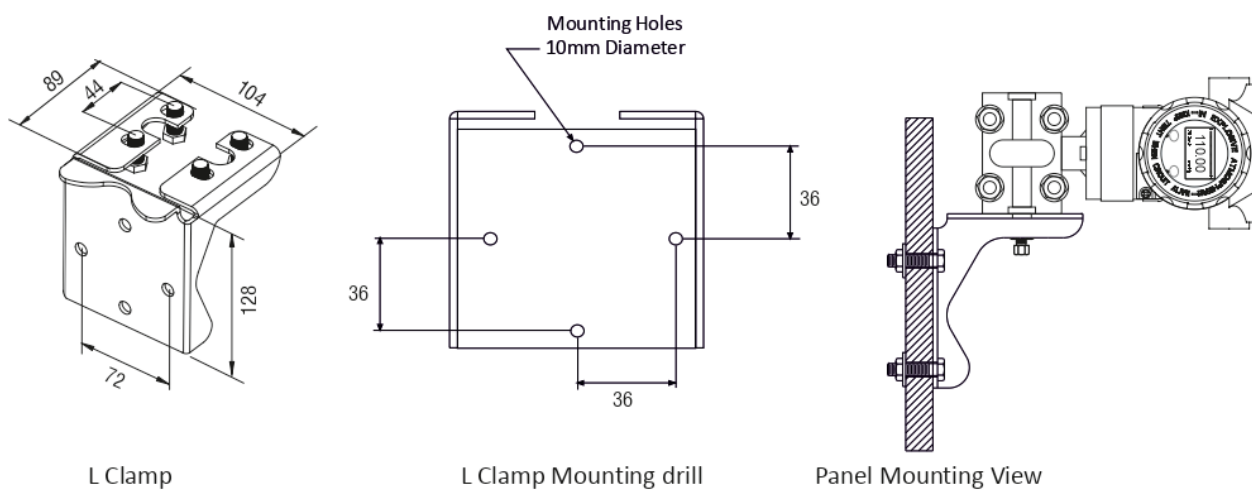
SMART DIFFERENTIAL PRESSURE TRANSMITTER

Installation Drawing & Dimensions

Pipe Mounting



Wall Mounting



Measuring Medium

Liquid, Gas or Steam

Field of Application

Pressure, Level,
Differential Pressure & Flow

Approvals

CE

ELPRT 100SDP

SMART DIFFERENTIAL PRESSURE TRANSMITTER



Ordering Information

Sample Order Code : ELPRT 100SDP-A1-B2-C1-D1-E1-F1-G1-H1-I1-J1-K1-L1

Parameter		Code	Description	Parameter		Code	Description
A	Measurement Type	A1	DP	I	MOC of Sensor, Flange, Adapter & Drain Vent Valve	I1	SS-316
		NA	GP			I2	Hastelloy C
		NA	AP			IY	Other
		A4	HP				
B	Pressure Range	B2	1.5 kPa	J	O Ring Material	J1	Buna - N
		B3	7.5 kPa			J2	Ethylene - Propylene
		B4	40 kPa			J3	Teflon
		B5	186 kPa			J4	Viton
		B6	690 kPa	K	Process Connection (In SS-316)	K1	¼" NPT (M)
		B7	2068 kPa			K2	½" NPT (M)
		B8	6000 kPa			K3	¼" BSP (M)
		B9	20000 kPa			K4	½" BSP (M)
C	Cerification	C1	Weather Proof IP-67			K5	¼" NPT (F)
		C2	ATEX (II 2 GD Ex d IIC T6 Gb -20°C ≤ Ta ≤ +60°C)			K6	½" NPT (F)
		C3	Flameproof (CMRI IIA IIB Certified)			K7	¼" BSP (F)
D	MOC Electronics Enclosure	D1	Aluminium Die Cast PU Painted			K8	½" BSP (F)
		D2	SS-316			K9	Flush Diaphragm (Triclover)
E	Electrical Connection	E1	M 20 x 1.5 (F)			K10	Flush Diaphragm (1" BSP)
		E2	½" NPT (F)			K11	Diaphragm Seal 1" (SS-316)
		EY	Other			K12	Diaphragm Seal 2" (SS-316)
F	Output	F1	4 to 20 mA			K13	Diaphragm Seal 3" (SS-316)
		F2	4 to 20 mA with HART			K14	5 Mtr Capillary (1" Flange)
G	Diaphragm Material	G1	SS-316L	K15	5 Mtr Capillary (2" Flange)		
		G2	Hastelloy C	K16	5 Mtr Capillary (3" Flange)		
		GY	Other	KY	Other		
H	Sensor Fill Fluid	H1	Silicon Oil	L	Mounting Bracket	L1	MS
		HY	Other			L2	SS-316

Note :

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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.

ELECTRONET EQUIPMENTS PVT. LTD.

Registered Office:

Plot No. 84, 85, 86, Tiny Industrial Estate,
Kondhwa Budruk,
Pune-411 048, Maharashtra, India.

Factory Address:

Plot No. 8, (SEZ) Phase 1, Kesurdi MIDC,
Khandala, Dist.- Satara
Pin: 412 801, Maharashtra, India.



+91-20-26931476
+ 91 99229 31722
+ 91 99224 42183



ho@electronet.co.in
enquiries@electronet.co.in



www.eeplindia.com