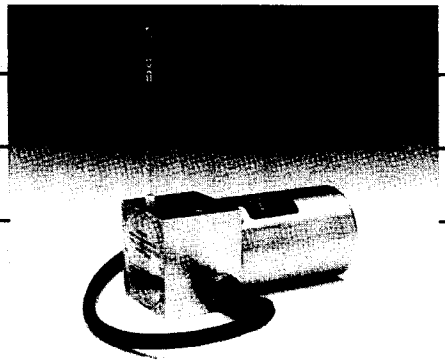
PT801

Underwater Position (Displacement) Transducer



For use in hostile environments.

The PT801 is a position or displacement transducer for use underwater or in extremely hostile environments. It is frequently used in liquid food processing and paper mills. Designed for linear measurements up to 150 inches, it provides a voltage output by means of a precision potentiometer. AC or DC can be used for excitation. The PT801 can be used at depths up to 300 feet (130 psi). It is available in anodized aluminum or stainless steel to resist constant exposure to corrosive elements or prolonged use in salt water.

FEATURES:

- 0.1% accuracy standard (most ranges)
- Resolution of 0.002 inch range dependent
- Ranges from 0-2 to 0-150 inches full scale
- "A" circuit full scale output approximates input
- 4 to 20 ma output available[4]

Measurement Range	Position Trans. "A" Circuit Output	Approx. Cable Tension	Max. Cable Acceleration	
Inches	MV/V/Inch	Ounces	Ext. G's	Ret.
2	468.5	27	37	25
5	188.5	11	7	5
10	94.75	27	37	25
15	62.55	18	15	10
20	47.38	27	37	25
25	38.18	11	7	5
30	31.32	18	15	10
40	24.64	14	12	8
50	19.09	11	7	5
75	13.19	8	5	3
100	9.887	25	7	5
150	6.176	25	7	5

Specifications:

PERFORMANCE

- **Range**[1] ..... 0-2 to 0-150
- **Resolution:**
  - **2 and 5 inch ranges** ..... 0.08% F.S. max.
  - **10 inch and greater** ..... 0.008% F.S. max.
- **Accuracy:**[2]
  - **2 and 5 inch ranges** ..... ±0.25% F.S. typical
  - **10 and 15 inch ranges** ..... ±0.15% F.S. typical
  - **20 inch and greater** ..... ±0.10% F.S. typical
- **Thermal Coeffecient of Sensing Element**[3]**:**
  - **Span** ..... 83 P.P.M./°F
  - **Zero** ..... 83 P.P.M./°F
- **Sensitivity** ..... See Specification Table

ELECTRICAL CHARACTERISTICS

- **Input Resistance: For 2" & 5" units contact factory**
  - **"A" Circuit** ..... 500 ohms std. Other options available
- **Output Resistance: For 2" & 5" units contact factory**
  - **"A" Circuit** ..... 138 ohms max. Other options available
- **Excitation Voltage** ..... 25 volts max., AC or DC

PHYSICAL

- **Weight**[5] ..... 20 ounces Aluminum, 50 ounces steel
- **Case Material** ..... Aluminum (PT 801A) Stainless Steel (PT 801S)
- **Electrical Connection** ..... 36 inch cable (EM 21897 underwater connector and other connectors or cable leads optional)

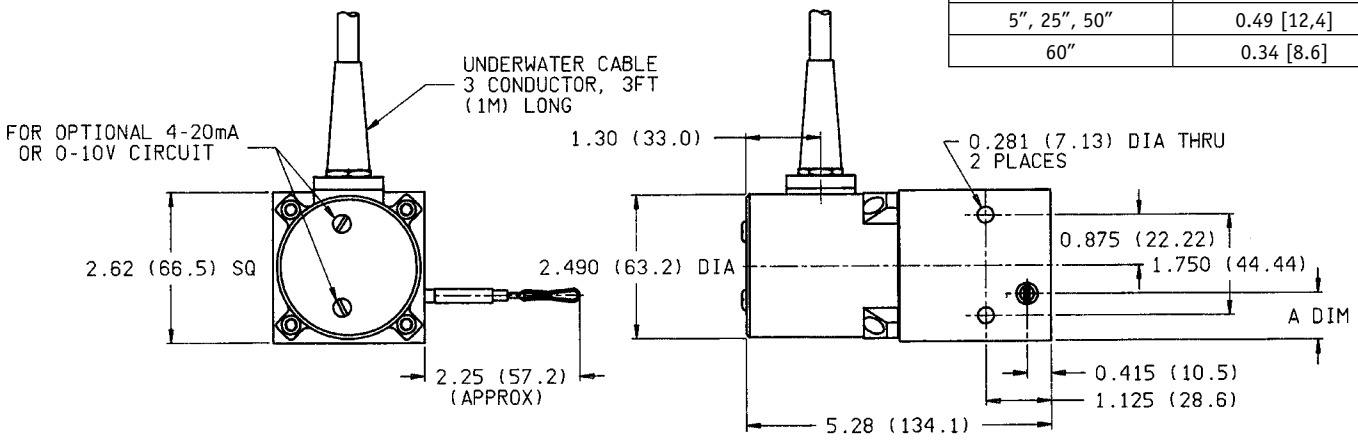
ENVIRONMENTAL

- **Temperature** ..... 0° F to +200° F (-65° F to +250° F available)
- **Humidity** ..... 100% RH at 90° F
- **Vibration** ..... up to 10 G's to 2000 Hz.

NOTES:

1. See Table for standard ranges.
2. Repeatability and best fit straight line errors combined R.S.S.
3. Over temperature range from 0°F to 200°F.
4. When ordering 4-20 ma option, specify circuit as −420 in ordering information.
5. Weight specified is for 50 inch range or less.

Range (IN)	A DIM
2", 10", 20"	0.97 [24,6]
15", 30"	0.80 [20,3]
40"	0.67 [17,0]
5", 25", 50"	0.49 [12,4]
60"	0.34 [8.6]



PT801 Ordering Information

PT801- _____ - 6 1 ___ - ___ ___ 1 ___
order code: Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

Sample Model Number:

PT801 - 0030 - 611 - 1111

Ⓡ	range:	30 inches
Ⓐ	enclosure:	stainless steel
Ⓒ	O-ring material:	nitrile
Ⓓ	sensing circuit:	500 ohm potentiometer
Ⓔ	output:	potentiometric
Ⓖ	electrical cable length:	3 feet

R - Full Stroke Range

0002 = 2 inches
0005 = 5 inches
0010 = 10 inches
0020 = 20 inches
0025 = 25 inches
0030 = 30 inches
0040 = 40 inches
0050 = 50 inches
0060 = 60 inches

A - Enclosure Material

6 = Stainless Steel

C - O-ring Material

1 = Nitrile, standard
2 = Ethylene Propylene
3 = Silicone
4 = Fluorocarbon (Viton)

D - Sensing Circuit

1 = 500 ohm potentiometer
2 = 1K ohm potentiometer
3 = 5K ohm potentiometer
4 = 10K ohm potentiometer

E - Output

1 = potentiometric or bridge output
2 = 4-20 mA, output increasing with cable extension*
3 = 20-4 mA, output increasing with cable retraction*
4 = 0-10 VDC, output increasing with cable extension*
5 = 0-5 VDC, output increasing with cable extension*
6 = 10-0 VDC, output increasing with cable retraction*
7 = 5-0 VDC, output increasing with cable retraction*

** Note! available only when D = 1*

G - Electrical Cable Length

1 = 3 ft. cable
2 = 6 ft. cable
3 = 7 ft. cable
4 = 10 ft. cable
5 = 12 ft. cable
6 = 15 ft. cable
7 = 20 ft. cable
8 = 25 ft. cable
B = 50 ft. cable
C = 75 ft. cable
D = 100 ft. cable
E = 200 ft. cable