

# Displacement Transducers

# Series DDCP

- **Displacement Ranges**  
 **$\pm 0.10''$  to  $\pm 1.00''$**
- **Cable or Connector Options**
- **Choice of Temperature Ranges**
- **DC Operation +12 or +28 VDC**



The Columbia DDCP Series transducers are completely self-contained displacement measurement systems that operate from a low voltage DC power supply or battery. They permit highly accurate readout and recording of an output signal directly without auxiliary signal conditioning electronics. These sensors combine a unique linear differential transformer sensing system with a miniature solid-state oscillator / demodulator and amplifier in a compact design. The precisely calibrated scale factor provides an accurate, low impedance voltage output which is directly proportional to the linear movement of the shaft assembly relative to the transducer body.

### Electrical Specifications:

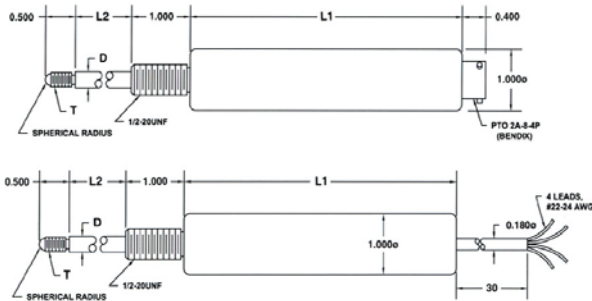
**INPUT VOLTAGE:** +12 VDC Nominal (+11 to +16 VDC) @ 30 mA Max.  
OR +28 VDC Nominal (+22 to +32 VDC) @ 30 mA Max.  
**SIGNAL OUTPUT:**  $\pm 5$  VDC Corresponding to +/- rated displacement  
**OUTPUT CURRENT:**  $\pm 5$  mA DC Maximum @ Full Scale Output  
**OUTPUT IMPEDANCE:** 10 Ohms Nominal

### Environmental Specifications:

**TEMPERATURE RANGE:** -40 Deg F To +200 Deg F w/Integral Electronics  
OR -40 Deg F To +500 Deg F w/Remote Electronics  
**SHOCK:** 30 G, 11 mSec  
**VIBRATION:** 20 G to 2KHz, 0.15" D.A.  
**HUMIDITY:** 98% R.H.. Non-Condensing

### Materials:

**HOUSING & SHAFT:** 18-8 Stainless Steel  
**SHAFT BEARINGS:** Oilite® Bronze Sleeve Bushing

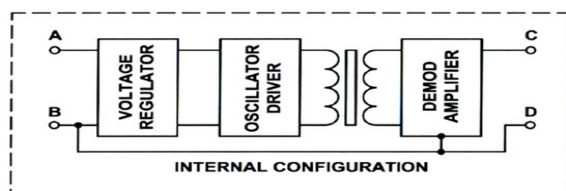


| Model     | Rated Displacement ( Inch ) | Linear Range ( Inch ) | Spring Rate (# Per Inch) | Linearity (% Full Range) | Sensitivity (mV / 0.001") | Accuracy (% Full Range) | Dimensions (Refer to Outline) |                |       |       | Weight (Gm) |
|-----------|-----------------------------|-----------------------|--------------------------|--------------------------|---------------------------|-------------------------|-------------------------------|----------------|-------|-------|-------------|
|           |                             |                       |                          |                          |                           |                         | L1                            | L2 (Full Ext.) | D     | T     |             |
| DDCP-0100 | $\pm 0.10$                  | 0.2"                  | 2.0                      | $\pm 0.25\%$             | 50.0                      | $\pm 0.5\%$             | 4.735                         | 0.45           | 0.187 | 6-32  | 242.4       |
| DDCP-0250 | $\pm 0.25$                  | 0.5"                  | 2.0                      | $\pm 0.5\%$              | 20.0                      | $\pm 1\%$               | 6.215                         | 0.75           | 0.187 | 6-32  | 278.9       |
| DDCP-0500 | $\pm 0.50$                  | 1.0"                  | 2.0                      | $\pm 0.5\%$              | 10.0                      | $\pm 1\%$               | 7.895                         | 1.35           | 0.250 | 10-32 | 331.3       |
| DDCP-1000 | $\pm 1.00$                  | 2.0"                  | 1.5                      | $\pm 0.5\%$              | 5.0                       | $\pm 1\%$               | 10.245                        | 2.50           | 0.250 | 10-32 | 380.6       |

### I/O Termination ID

| Pin Conn | Lead Color | Function        |
|----------|------------|-----------------|
| A        | Red        | + DC Input      |
| B        | Black      | Power Return *  |
| C        | Blue       | Signal Output   |
| D        | Brown      | Signal Return * |

\* Signal and Power Returns are electrically common



### Ordering Information:

DDCP **xxxx** - **x** **x** **x** - **x**

Series

Displacement: +/- **x.xxx** Inch

Input Power = **x**  
**0** = +22 to +32 VDC (+28 VDC Nominal) @ 30 mA Max.  
**2** = +11 to +16 VDC (+12 VDC Nominal) @ 30 mA Max.

Termination = **x**  
**2** = 4-Conductor Cable, 30" Long  
**3** = Connector PT02A-8-4P w/Mating Connector

Temperature = **x**  
**0** = -40 Deg F To +200 Deg F (Standard)  
**T** = -40 Deg F To +500 Deg F w/Remote Electronics

Option Codes  
**"S"** Suffix = Spring-Loaded Shaft Assembly (Standard)  
**"N"** Suffix = No Internal Springs (Optional)

