MINIATURE DC DISPLACEMENT TRANSUDCERS WITH DELRIN® BEARINGS

LD400 Series

±1 to ±5 mm
(±0.04 to ±0.20")

Starts at
$335

High-Output Miniature Transducers
Delrin® Bearings for Precise Motion
Infinite Resolution
Rugged, Low-Mass Construction
Compatible with Standard DC Signal Conditioning Modules and Instruments

The LD400 Series miniature DC to DC transducers can measure displacements up to ±5 mm (±0.20") with very high accuracy and infinite resolution. Their free-guided armature incorporates Delrin® bearings, which provide near-frictionless motion to detect the smallest movement the associated instrumentation is capable of identifying.

These transducers use a precision linear variable differential transformer as the measuring source, along with hybrid ICs, including an oscillator, demodulator, and filter. Together, they make up a self-contained unit that accepts DC input and provides DC output relative to armature position. The unit’s high linearity and low mass of moving parts are ideal for applications in civil, mechanical, chemical, and production engineering.

SPECIFICATIONS

ELECTRICAL

Linearity: 0.3% FS
Sensitivity: (mV/V/mm) see chart below (actual output supplied with each unit)
Excitation: 10 to 24 Vdc regulated
Energizing Current at 10 Vdc:
LD400-1, 10 mA; LD400-2.5, 10 mA; LD400-5, 13 mA
Response Time: LD400-1 and LD400-2.5 = 5 ms; LD400-5 = 3 ms
Frequency Response: 50 Hz for -3 dB
Ripple: <1% FS
Thermal Effect: Zero: LD400-1 <0.02% FS/°C; LD400-2.5 and LD400-5 <0.01% FC/°C; sensitivity: <0.025% FC/°C
Compensated Temperature Range: -20 to 80°C (-4 to 176°F)
Operating Temperature Range: -20 to 80°C (-4 to 176°F)

Electrical Connection: 2.9 m (9') shielded, color-coded cable
Sensitivity and Linearity Data: Provided with a transducer output impedance of 2.4 kΩ into a calibration load of 20 kΩ at 20°C (68°F); variations in these parameters will change performance

MECHANICAL

Threaded Core: M2 thread
Core Material: Ni/Fe—Radio Metal 50
Case Material: 400 Series stainless steel
Weight: See chart, previous page

CONNECTIONS

Electrical Connections:
Red: + Excitation
Blue: – Excitation
White: + Signal*
Green: – Signal
Yellow: No connection
*White and red in phase for positive inward displacement.

To Order (Specify Model Number)

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>STROKE</th>
<th>PRICE</th>
<th>SENSITIVITY</th>
<th>COMPATIBLE METERS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD400-1</td>
<td>±1.0 mm (0.06&quot;)</td>
<td>$335</td>
<td>75 mV/V/mm</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>LD400-2.5</td>
<td>±2.5 mm (0.10&quot;)</td>
<td>365</td>
<td>75 mV/V/mm</td>
<td>DP41-S, DP25B-S</td>
</tr>
<tr>
<td>LD400-5</td>
<td>±5.0 mm (0.20&quot;)</td>
<td>370</td>
<td>54 mV/V/mm</td>
<td>DP41-S, DP25B-S</td>
</tr>
</tbody>
</table>

* See section D for compatible meters.
Ordering Example: LD400-5, stroke of ±5 mm, $370.
MINIATURE DC DISPLACEMENT TRANSDUCERS

DP25B-S, $245, see section C for details.

DP41-S, $545, see section D for details.

LD400-5, $360, shown smaller than actual size.

COMPATIBLE INSTRUMENTS

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>PRICE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP25B-S</td>
<td>$245</td>
<td>Input meter (ratiometric voltage and current) with excitation</td>
</tr>
<tr>
<td>DP41-S</td>
<td>545</td>
<td>115 Vac powered strain gage indicator</td>
</tr>
</tbody>
</table>

ACCESSORY

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>PRICE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH-5667</td>
<td>$110</td>
<td>Reference Book: Handbook of Mass Measurement</td>
</tr>
</tbody>
</table>

Wiring:
- Red = + Supply
- Blue = - Supply
- White = + Signal
- Green = - Signal
- Yellow = N/A

Dimensions: mm (in)

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>LINEAR STROKE</th>
<th>DIMENSIONS*: mm (in)</th>
<th>WEIGHT g (oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm (in)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>LD400-1</td>
<td>±1.0 (0.04)</td>
<td>21.5 (0.85)</td>
<td>37 (1.46)</td>
</tr>
<tr>
<td>LD400-2.5</td>
<td>±2.5 (0.10)</td>
<td>21.5 (0.85)</td>
<td>37 (1.46)</td>
</tr>
<tr>
<td>LD400-5</td>
<td>±5.0 (0.20)</td>
<td>20.5 (0.81)</td>
<td>43 (1.69)</td>
</tr>
</tbody>
</table>

* At electrical zero.
More than 100,000 Products Available!

- **Temperature**

- **Flow and Level**
  Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

- **pH and Conductivity**
  Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

- **Data Acquisition**
  Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485, Ethernet and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

- **Pressure, Strain and Force**
  Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Pressure Transmitters, Strain Gauges, Torque Transducers, Valves

- **Heaters**