The UniMeasure RTX-PA Series rotary position transducer with analog voltage output is primarily for use in moderate duty applications in wet or dry environments. The chemical resistant thermoplastic case of the transducer provides IP-65 (NEMA 4) ingress protection for applications where exposure to washdown, rain, oil and other liquids may occur. The sealed case is achieved through the use of o-rings and a shaft seal. Electrical connection options include a body mounted sealed plastic connector with mating connector or a sealed bulkhead fitting and multi conductor electrical cable of user specified length. Alternatively, the mating connector may be ordered with electrical cable as a separate item. As an installation convenience, end mounted or radial mounted connection locations are offered.

### SPECIFICATIONS

**GENERAL**
- Sensing Device: Precision Potentiometer
- Resolution: Essentially Infinite
- Linearity all ranges: ±0.30% Full Scale
- Repeatability: ±0.02% Full Scale
- Shaft Radial Load: 4.5 Kg (10 lb.) maximum within length of shaft only
- Weight: 250 gm. (9 oz.)
- Electrical Connection: Plastic Connector or Bulkhead Fitting with Electrical Cable
- Construction: Anodized Aluminum or Stainless Steel Base & Thermoplastic Cover

**ENVIRONMENTAL**
- Operating Temperature: -40°C to 95°C
- Storage Temperature: -55°C to 95°C
- Operating Humidity: 100% R.H.
- Vibration: 15 G's 0.1 ms max.
- Shock: 50 G's 0.1 ms max.
- Ingress Protection: IP-65 (NEMA 4)

**ELECTRICAL**
- Input Impedance: 1000 Ω ±15% Standard
- Output Impedance: 0 to 1000 Ω
- Output Voltage: Approx. 97% of input voltage

### MODEL NUMBER CONFIGURATION

**RTX-PA-**

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<table>
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<tr>
<th><strong>HOUSING TYPE</strong></th>
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<tbody>
<tr>
<td>A. .. Aluminum Base</td>
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<tr>
<td>S. .. Corrosion Resistant</td>
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<tr>
<th><strong>SHAFT DIAMETER</strong></th>
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<tbody>
<tr>
<td>1..Ø10 mm</td>
</tr>
<tr>
<td>2..Ø6 mm</td>
</tr>
<tr>
<td>3..Ø0.375 inch</td>
</tr>
<tr>
<td>4..Ø0.25 inch</td>
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<tr>
<th><strong>POTENTIOMETER VALUE</strong></th>
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<tr>
<td>1.. 1K ohm</td>
</tr>
<tr>
<td>4.. 10K ohm*</td>
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</table>

*Only available in ranges from 25 turns to 200 turns.

**RTX-PA-50-A11-S1C**

**BASE CONFIGURATION**

**OUTPUT VOLTAGE POLARITY**
- S.. Clockwise Increasing
- R.. Counter Clockwise Increasing
  (When viewed from shaft end of unit)

**ELECTRICAL CONNECTION EXIT LOCATION**
- 1.. End
- 2.. Slide

**ELECTRICAL CONNECTION**
- C.. Connector with Mating Connector
- K.. Connector with No Mating Connector—Electrical cable with mating connector may be ordered separately as item number 10246-xM where 'x' is the required length in meters.
- P.. Bulkhead Fitting + 150 mm (6") Pigtail
  1.. Bulkhead Fitting + 1 m (3") Electrical Cable
  2.. Bulkhead Fitting + 2 m (6.5") Electrical Cable
  3.. Bulkhead Fitting + 3 m (10") Electrical Cable
  4.. Bulkhead Fitting + 4 m (13.5") Electrical Cable
  5.. Bulkhead Fitting + 5 m (16.5") Electrical Cable
  6.. Bulkhead Fitting + 6 m (20") Electrical Cable
  7.. Bulkhead Fitting + 7 m (23") Electrical Cable
  8.. Bulkhead Fitting + 8 m (26") Electrical Cable

(Bulkhead fitting with electrical cable shown)
The UniMeasure RTX-P510 series rotary position transducer offers a voltage output with wide adjustability to give a 0 to 5, 0 to 10, ±5 or ±10 VDC output. The device may be powered with any voltage in the range of 4.9 to 30 VDC. With the zero position set anywhere within the first 30% of total travel, the span may be adjusted to give a full 0 to 5 or 0 to 10 VDC output with the span set anywhere within the last 20% of travel. Alternatively, the zero position may be set anywhere between 40% and 60% of full travel to give an output of ±5 or ±10 VDC with the span set between 80% to 100% of the longest travel from the zero position. The RTX-P510 series shares similar traits of other RTX series rotary transducers including chemical resistant thermoplastic case, IP-65 (NEMA 4) ingress protection, body mounted electrical connector or bulkhead fitting with length of electrical cable, and side or end mounted electrical connection location.

SPECIFICATIONS

GENERAL
Sensing Device: Precision Potentiometer
Resolution: Essentially Infinite
Linearity all ranges: ±0.30% Full Scale
Repeatability: ±0.015% Full Scale
Shaft Radial Load: 4.5 Kg (10 lb.) maximum within length of shaft only
Weight: 255 gm. (9 oz.)
Electrical Connection: Plastic Connector or Bulkhead Fitting with Electrical Cable
Construction: Anodized Aluminum or Stainless Steel Base & Thermoplastic Cover
Life: 50,000,000 Revolutions Minimum
Shaft Breakaway Torque: 3 oz-in (0.021 N·m) Maximum

ENVIRONMENTAL
Operating Temperature: -40°C to 85°C
Storage Temperature: -55°C to 95°C
Operating Humidity: 100% R.H.
Vibration: 15 G's 0.1 ms max.
Shock: 50 G's 0.1 ms max.
Ingress Protection: IP-65 (NEMA 4)

ELECTRICAL
Output Voltage: 0 to 5, 0 to 10, ±5, ±10 VDC
Excitation Voltage: 4.9 to 30 VDC
Excitation Current: 25 mA max.
Output Impedance: 100 max.
Output Load: 5KΩ min.

ADJUSTMENT RANGE– 0 to 5 or 0 to 10 VDC
Zero: 0 to 30% of Range
Span: 80% to 100% of Range

ADJUSTMENT RANGE– ±5 or ±10 VDC
Zero: 40% to 60% of Range
Span: 80% to 100% of Longest Possible Travel from Zero Position

Protection: Reversed Polarity

MODEL NUMBER CONFIGURATION

RTX-P510-...-...-...-...-...-...

<table>
<thead>
<tr>
<th>ROTATIONAL RANGE</th>
<th>HOUSING TYPE</th>
<th>SHAFT DIAMETER</th>
<th>OUTPUT VOLTAGE POLARITY</th>
<th>ELECTRICAL CONNECTION</th>
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<tbody>
<tr>
<td>0</td>
<td>A. Aluminum Base</td>
<td>0.010 mm</td>
<td>S. Clockwise Increasing</td>
<td>C. Connector with Mating Connector</td>
</tr>
<tr>
<td>1</td>
<td>B. Servo/Face Mount</td>
<td>0.06 mm</td>
<td>R. Counter Clockwise Increasing</td>
<td>P. Bulkhead Fitting + 150 mm (6&quot;) Pigtail</td>
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<tr>
<td>2</td>
<td>B. Servo/Face Mount</td>
<td>0.0375 inch</td>
<td>(When viewed from shaft end)</td>
<td>1. Bulkhead Fitting + 1 m (3') Electrical Cable</td>
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<tr>
<td>3</td>
<td></td>
<td>0.025 inch</td>
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<td>2. Bulkhead Fitting + 2 m (6.5') Electrical Cable</td>
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<td>3. Bulkhead Fitting + 3 m (10') Electrical Cable</td>
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<td>4. Bulkhead Fitting + 4 m (13.5') Electrical Cable</td>
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<td>5. Bulkhead Fitting + 5 m (16.5') Electrical Cable</td>
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<td>6. Bulkhead Fitting + 6 m (20') Electrical Cable</td>
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<td>7. Bulkhead Fitting + 7 m (23') Electrical Cable</td>
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<td>8. Bulkhead Fitting + 8 m (26') Electrical Cable</td>
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BASIC CONFIGURATION (FOR ALL RANGES)

RTX-P510-50-A10-S1C

<table>
<thead>
<tr>
<th>OUTPUT VOLTAGE POLARITY</th>
<th>ELECTRICAL CONNECTION</th>
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<tbody>
<tr>
<td>S. Clockwise Increasing</td>
<td>C. Connector with Mating Connector</td>
</tr>
<tr>
<td>R. Counter Clockwise Increasing</td>
<td>P. Bulkhead Fitting + 150 mm (6&quot;) Pigtail</td>
</tr>
<tr>
<td>(When viewed from shaft end)</td>
<td>1. Bulkhead Fitting + 1 m (3') Electrical Cable</td>
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<tr>
<td></td>
<td>2. Bulkhead Fitting + 2 m (6.5') Electrical Cable</td>
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<td></td>
<td>3. Bulkhead Fitting + 3 m (10') Electrical Cable</td>
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<td>4. Bulkhead Fitting + 4 m (13.5') Electrical Cable</td>
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<td>5. Bulkhead Fitting + 5 m (16.5') Electrical Cable</td>
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<td></td>
<td>6. Bulkhead Fitting + 6 m (20') Electrical Cable</td>
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<tr>
<td></td>
<td>7. Bulkhead Fitting + 7 m (23') Electrical Cable</td>
</tr>
<tr>
<td></td>
<td>8. Bulkhead Fitting + 8 m (26') Electrical Cable</td>
</tr>
</tbody>
</table>

Unimeasure, Inc.
4175 SW Research Way, Corvallis, Oregon 97333 U.S.A. | Tel: 541-757-3158 | Fax: 541-757-0858 | Email: sales@unimeasure.com
The UniMeasure RTX-P420 Series rotary position transducer with 4 to 20 mA current output is primarily for use in moderate duty applications in wet or dry environments. The chemical resistant thermoplastic case of the transducer provides IP-65 (NEMA 4) ingress protection for applications where exposure to washdown, rain, oil and other liquids may occur. The sealed case is achieved through the use of o-rings and a shaft seal. Electrical connection options include a body mounted sealed plastic connector with mating connector or a sealed bulkhead fitting and multi conductor electrical cable of user specified length. Alternatively, the mating connector may be ordered with electrical cable as a separate item. As an installation convenience, end mounted or radial mounted connection locations are offered.

**SPECIFICATIONS**

**GENERAL**
Sensing Device.................Precision Potentiometer
Resolution..........................Essentially Infinite
Linearity all ranges..................±0.30% Full Scale
Repeatability.........................±0.02% Full Scale
Shaft Radial Load.................4.5 Kg (10 lb.) maximum within length of shaft only
Weight..........................255 gm. (9 oz.)
Electrical Connection...........Plastic Connector or Bulkhead Fitting with Electrical Cable
Construction....................Anodized Aluminum or Stainless Steel Base & Thermoplastic Cover
Life..................................50,000,000 Revolutions Minimum
Shaft Breakaway Torque...............3 oz-in (0.021 N-m) Maximum

**ENVIRONMENTAL**
Operating Temperature.............-40°C to 95°C
Storage Temperature..................-55°C to 95°C
Operating Humidity..................100% R.H.
Vibration..........................15 G's 0.1 ms max.
Shock..............................50 G's 0.1 ms max.
Ingress Protection...............IP-65 (NEMA 4)

**ELECTRICAL**
Output..................................4 to 20 mA
Load Resistance (Total Loop)......See Graph Below
Excitation Voltage..................9 to 35 VDC
Minimum Supply Voltage...........(0.02 X Load Res.) +9 VDC
Zero Adjustment Range.............0 to 30% of Total Range
Span Adjustment Range.............80% to 100% of Range
Protection........................Fused & Reversed Polarity

**MODEL NUMBER CONFIGURATION**

**RTX-P420-** - - 0 1 2 3 4 5 6

1. **HOUSING TYPE**
   - A............Aluminum Base
   - S............Servo/Face Mount

2. **SHAFT DIAMETER**
   1. 010 mm
   2. 06 mm
   3. 00.375 inch
   4. 00.25 inch

3. **SHOCK - REQUIRED DESIGNATOR**
   - 0

**RTX-P420-50-A10-S1C**

4. **OUTPUT VOLTAGE POLARITY**
   - S............Clockwise Increasing
   - R............Counter Clockwise Increasing
   *(When viewed from shaft end of unit)*

5. **ELECTRICAL CONNECTION EXIT LOCATION**
   - 1............End
   - 2............Side

6. **ELECTRICAL CONNECTION**
   - C............Connector with Mating Connector
   - K............Connector with No Mating Connector—Electrical cable with mating connector may be ordered separately as item number 10248-xM where ‘x’ is the required length in meters.
   - P............Bulkhead Fitting + 1 m (3') Electrical Cable
   - 1............Bulkhead Fitting + 1 m (3') Electrical Cable
   - 2............Bulkhead Fitting + 2 m (6.5') Electrical Cable
   - 3............Bulkhead Fitting + 3 m (10') Electrical Cable
   - 4............Bulkhead Fitting + 4 m (13.5') Electrical Cable
   - 5............Bulkhead Fitting + 5 m (16.5') Electrical Cable
   - 6............Bulkhead Fitting + 6 m (20') Electrical Cable
   - 7............Bulkhead Fitting + 7 m (23') Electrical Cable
   - 8............Bulkhead Fitting + 8 m (26') Electrical Cable

Unimeasure, Inc. 4175 SW Research Way, Corvallis, Oregon 97333 U.S.A. | Tel: 541-757-3158 | Fax: 541-757-0858 | Email: sales@unimeasure.com
RTX SERIES - Rotary Position Transducer

SUPPLEMENTAL DATA

DIMENSIONAL INFORMATION

RTX Series — ALL RANGES

<table>
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<th>Nominal</th>
<th>Actual</th>
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<tr>
<td>.375&quot;</td>
<td>Ø.3748 ±.0005</td>
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<td>.250&quot;</td>
<td>Ø.2498 ±.0005</td>
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<tr>
<td>6 mm</td>
<td>Ø.2360 ±.0005</td>
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Dimensions in brackets are millimeters

ACCESSORIES

10349 – SERVO CLEAT KIT

10349 – Servo Cleat Kit – 4-40 screws
Includes 3 each servo cleats with 4-40 x 0.37 long screws. Order no.: 10349

10350 – SERVO CLEAT KIT (Metric)

10350 – Servo Cleat Kit – M3 screws
Includes 3 each servo cleats with M3 x 10mm long screws. Order no.: 10350

HELICAL BEAM COUPLINGS

A number of helical beam couplings are available to adapt the standard 10mm shaft of the RTX to other popular shaft sizes. The couplings accommodate axial misalignment and offer zero backlash. Coupling material is aluminum. Order by number shown.

10248-xM – MATING CONNECTOR WITH ELECTRICAL CABLE

10248-xM – Mating connector with electrical cable. Electrical cable is 3 conductor, shielded cable with drain wire. Replace ‘x’ in part number with the required length in meters to nearest whole meter.
Order no.: 10248-xM, where ‘x’ = length required in meters.
RTX Series

ROTARY POSITION TRANSDUCER

Featuring:

- Absolute Rotary Position
- Voltage or 4 to 20 mA Output
- 19 Rotary Ranges—45° to 200 Turns
- Servo Cleat or Face Mounting
- Shaft Diameters .375, .25, 10 mm, 6 mm
- NEMA 4 Ingress Protection
- Connector or Instrumentation Cable
- Compact Thermoplastic Housing