

RTX-PA SERIES - Rotary Position Transducer
RATIOMETRIC VOLTAGE OUTPUT



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

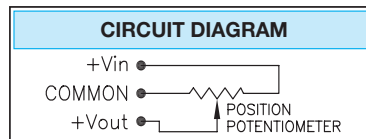
- Sensing Device.....Precision Potentiometer
- Resolution.....Essentially Infinite
- Linearity all ranges.....±0.30% Full Scale
- Repeatability.....±0.02% Full Scale
- Shaft Radial Load4.5 Kg (10 lb.) maximum within length of shaft only
- Weight.....250 gm. (9 oz.)
- Electrical Connection.....Plastic Connector or Bulkhead Fitting with Electrical Cable
- ConstructionAnodized 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 Humidity100% R.H.
- Vibration15 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- 0 1 2 3 4 5 6

BASIC CONFIGURATION (FOR ALL RANGES)

RTX-PA-50-A11-S1C

Designator	Rotation
45D	45°
90D	90°
180D	180°
1	1 Rev.
2	2 Rev.
3	3 Rev.
5	5 Rev.
10	10 Rev.
15	15 Rev.
20	20 Rev.
25	25 Rev.
30	30 Rev.
40	40 Rev.
50	50 Rev.
60	60 Rev.
80	80 Rev.
100	100 Rev.
125	125 Rev.
150	150 Rev.
200	200 Rev.

- 1 HOUSING TYPE**
 - A.....Aluminum Base Servo/Face Mount
 - S.....Corrosion Resistant Servo/Face Mount
- 2 SHAFT DIAMETER**
 - 1.....Ø10 mm
 - 2.....Ø6 mm
 - 3.....Ø0.375 inch
 - 4.....Ø0.25 inch
- 3 POTENTIOMETER VALUE**
 - 1.....1K ohm
 - 4.....10K ohm*

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

- 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

(Bulkhead fitting with electrical cable shown)
- 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 + 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

RTX-P510 SERIES - Rotary Position Transducer
0 to 5, 0 to 10, ±5, ±10 VDC ANALOG OUTPUT



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

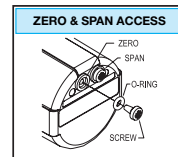
Sensing Device.....Precision Potentiometer
ResolutionEssentially Infinite
Linearity all ranges±0.30% Full Scale
Repeatability±0.015% Full Scale
Shaft Radial Load.....4.5 Kg (10 lb.) maximum within length of shaft only
Weight255 gm. (9 oz.)
Electrical ConnectionPlastic Connector or Bulkhead Fitting with 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 Humidity100% R.H.
Vibration15 G's 0.1 ms max.
Shock50 G's 0.1 ms max.
Ingress ProtectionIP-65 (NEMA 4)

ELECTRICAL

Output0 to 5, 0 to 10, ±5, ±10 VDC
Excitation Voltage.....4.9 to 30 VDC
Excitation Current.....25 mA max.
Output Impedance10Ω max.
Output Load5KΩ min.
ADJUSTMENT RANGE- 0 to 5 or 0 to 10 VDC
Zero0 to 30% of Range
Span80% to 100% of Range
ADJUSTMENT RANGE- ±5 or ±10 VDC
Zero40% to 60% of Range
Span80% to 100% of Longest Possible Travel from Zero Position
Protection.....Reversed Polarity



MODEL NUMBER CONFIGURATION

RTX-P510- 0 - 1 2 3 - 4 5 6

BASIC CONFIGURATION (FOR ALL RANGES)

RTX-P510-50-A10-S1C

0 ROTATIONAL RANGE	
Designator	Rotation
45D	45°
90D	90°
180D	180°
1	1 Rev.
2	2 Rev.
3	3 Rev.
5	5 Rev.
10	10 Rev.
15	15 Rev.
20	20 Rev.
25	25 Rev.
30	30 Rev.
40	40 Rev.
50	50 Rev.
60	60 Rev.
80	80 Rev.
100	100 Rev.
125	125 Rev.
150	150 Rev.
200	200 Rev.

1 HOUSING TYPE	
A	Aluminum Base
	Servo/Face Mount
S	Corrosion Resistant
	Servo/Face Mount

2 SHAFT DIAMETER	
1	Ø10 mm
2	Ø6 mm
3	Ø0.375 inch
4	Ø0.25 inch

3	
0	Required Designator

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

(Bulkhead fitting with electrical cable shown)

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 + 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



RTX-P420 SERIES - Rotary Position Transducer
4 to 20 mA CURRENT OUTPUT

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

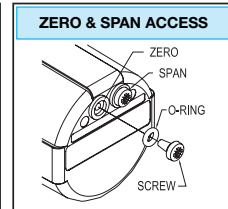
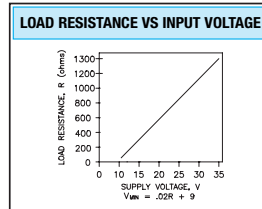
Sensing Device.....Precision Potentiometer
 Resolution.....Essentially Infinite
 Linearity all ranges.....±0.30% Full Scale
 Repeatability.....±0.02% Full Scale
 Shaft Radial Load.....4.5 Kg (10 lb.) maximum within length of shaft only
 Weight.....255 gm. (9 oz.)
 Electrical Connection.....Plastic Connector 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-



BASIC CONFIGURATION (FOR ALL RANGES)

RTX-P420-50-A10-S1C

0 ROTATIONAL RANGE	
Designator	Rotation
45D	45°
90D	90°
180D	180°
1	1 Rev.
2	2 Rev.
3	3 Rev.
5	5 Rev.
10	10 Rev.
15	15 Rev.
20	20 Rev.
25	25 Rev.
30	30 Rev.
40	40 Rev.
50	50 Rev.
60	60 Rev.
80	80 Rev.
100	100 Rev.
125	125 Rev.
150	150 Rev.
200	200 Rev.

1 HOUSING TYPE	
A	Aluminum Base
	Servo/Face Mount
S	Corrosion Resistant
	Servo/Face Mount

2 SHAFT DIAMETER	
1	Ø10 mm
2	Ø6 mm
3	Ø0.375 inch
4	Ø0.25 inch

3	
0	Required Designator

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

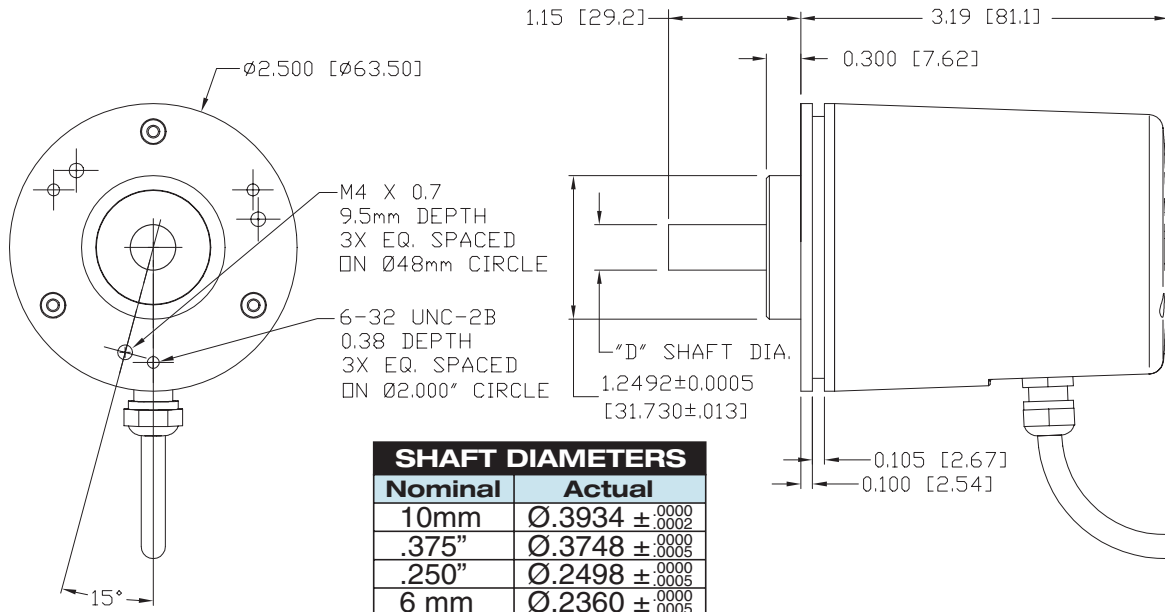
(Bulkhead fitting with electrical cable shown)

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 + 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

RTX SERIES - Rotary Position Transducer
SUPPLEMENTAL DATA

DIMENSIONAL INFORMATION

RTX Series — ALL RANGES



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**



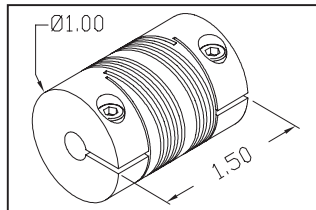
10350 – SERVO CLEAT KIT (Metric)

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.



ORDER No.	COUPLING SIZE
10388	10 mm to 6 mm
10389	10 mm to 0.250"
10390	10 mm to 0.375"
10391	10 mm to 10 mm
10392	10 mm to 0.500"

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

