

# 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..... $\pm 0.30\%$  Full Scale  
Repeatability..... $\pm 0.02\%$  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

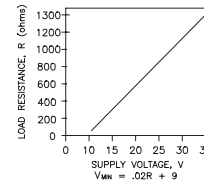
#### ENVIRONMENTAL

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)

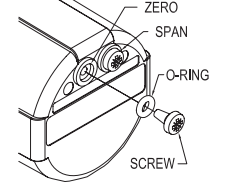
#### ELECTRICAL

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

LOAD RESISTANCE VS INPUT VOLTAGE



ZERO & SPAN ACCESS



### MODEL NUMBER CONFIGURATION

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

#### BASIC CONFIGURATION (FOR ALL RANGES)

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

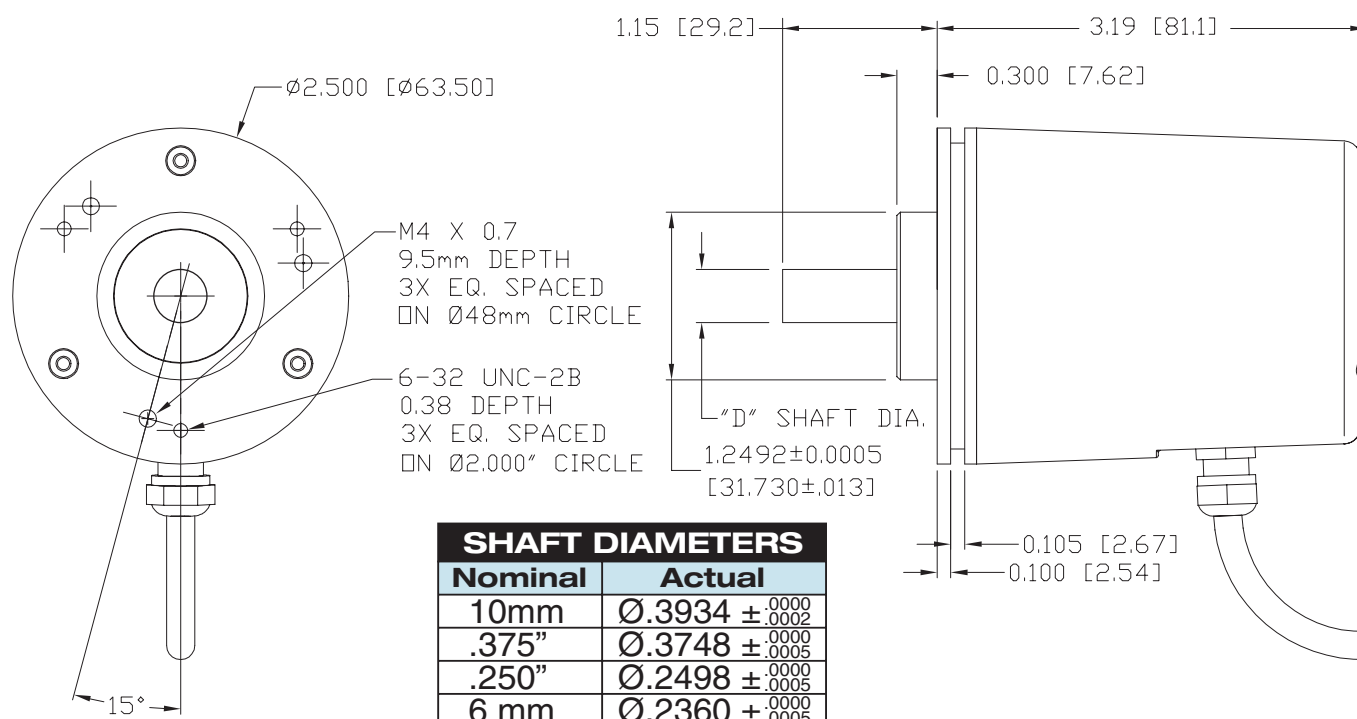
| 0 ROTATIONAL RANGE |          |
|--------------------|----------|
| Designator         | Rotation |
| 45D                | 45°      |
| 90D                | 90°      |
| 180D               | 180°     |
| 1                  | 1 Rev.   |
| 2                  | 2 Rev.   |
| 3                  | 3 Rev.   |
| 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 <b>No</b> Mating Connector-- <i>Electrical cable with mating connector may be ordered separately as item number 10248-xM where 'x' is the required length in meters.</i> |
| 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                                                                                                                                           |

### 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**



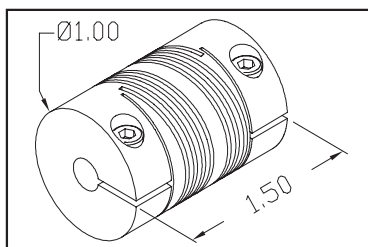
#### 10350 – SERVO CLEAT KIT (Metric)

**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.