Model TR3 - Heavy Duty Tru-Trac™

### Features
- Heavy Duty Encoder And Measuring Wheel Solution Integrated Into One Industrial Strength Unit
- Spring Loaded Torsion Arm Makes Wheel Pressure Adjustments A Snap
- Easily Installed In A Vertical, Horizontal, or Upside-Down Orientation
- Operates Over A Variety Of Surfaces At Speeds Up To 3000 Feet Per Minute
- Integrated Module Simplifies Your System Design, Reducing Cost

EPC does it again! The NEW TR3 Heavy Duty Tru-Trac™ by Encoder Products Company is an integrated heavy duty encoder and spring loaded measuring wheel assembly all in one, easy-to-use, compact unit. Available in a single, or optional dual-wheel format, the TR3 Heavy Duty Tru-Trac™ is a versatile solution for tracking velocity, position or distance over a wide variety of surfaces in almost any industrial application. Its spring loaded torsion arm provides a simple-to-adjust torsion load, allowing the TR3 Heavy Duty Tru-Trac™ to be mounted in any orientation, even upside-down. The TR3 Heavy Duty Tru-Trac™ housing is an all metal work horse, specifically designed to take on your toughest application environments at operating speeds up to 3000 feet per minute. Just one look and it's easy to see the TR3 Heavy Duty Tru-Trac™ is the ideal solution for countless applications.

### Common Applications
- Lumber, Corrugated, Converting, Metal Roll Forming, Paper Monitoring, Glue Dispensing, Linear Material Monitoring, Conveyor Systems, Printing, Labeling, Mining, Construction

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### Model TR3 - Tru-Trac™ Ordering Guide

**Blue type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details.**

#### Mechanical

<table>
<thead>
<tr>
<th>MODEL TR3</th>
<th>U3</th>
<th>A</th>
<th>0500</th>
<th>N</th>
<th>V1</th>
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**WHEEL TYPE & CIRCUMFERENCE**
- U3 Urethane 12" cir
- U5 Urethane 300 mm cir
- K3 Knurled 12" cir
- K5 Knurled 300 mm cir
- 25 No Wheel 3/8" (0.375") Shaft
- A3 Hard Anodized Knurled 12" cir
- A5 Hard Anodized Knurled 1/3 M cir

**INPUT VOLTAGE**
- V1 5 to 28 VDC

**NUMBER OF CHANNELS**
- A Channel A
- Q Quadrature A & B
- R Quadrature A & B with Index
- Channel A Leads B
- Channel B Leads A

**OUTPUT TYPE**
- OC Open Collector
- PP Push-Pull
- HV Line Driver
- PU Pull-Up Resistor
- OD Open Collector with Differential Outputs

**CONNECTOR TYPE**
- F00 18" Cable (Std)
- F01 12" Cable
- F02 24" Cable
- F03 36" Cable
- M00 2M Cable
- SMW 6-pin MS
- SMY 7-pin MS
- SMX 10-pin MS
- SMJ 5-pin MS12
- SMK 6-pin MS12

**CONNECTOR ORIENTATION**
- Standard Rear Exit
- L1 60° From Standard
- L2 120° From Standard
- L3 180° From Standard
- L4 240° From Standard
- L5 300° From Standard

**MAXIMUM FREQUENCY**
- Standard
- F3 Extended

**OPERATING TEMPERATURE**
- -20° to +85° C (Std)
- T1 -40° to +85° C
- T2 -20° to +100° C

**TEMPERATURE**
- Standard
- IP50 (Std)

**SEALING**
- S3

**OPTIONAL FEATRES**
- -260° to +65°C Std
- IP65 Std

**CERTIFICATION**
- CE Marked

**NOTES:**
1. Contact Customer Service For non-standard index gating or phase relationship options.
2. For non-standard English cable lengths enter ‘F’ plus cable length expressed in feet. Example: F06 = 6 feet of cable. Frequency above 300 KHz standard cable lengths only.
3. For non-standard metric cable lengths enter ‘M’ plus cable length expressed in meters. Example: M06 = 6 meters of cable.
5. With input Voltage above 16 VDC, operating temperature is limited to 85° C.
7. Body Mount connector options only available with connector orientation L1 thru L5.
8. Reverse Quadrature not available with PU output type.

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For specification assistance call Customer Service at 1-800-366-5412

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Model TR3 - Heavy Duty Tru-Trac™ Specifications

Electrical
- Input Voltage: 4.75 to 28 VDC max for temperatures up to 85° C
- Input Current: 100 mA max (65 mA typical) with no output load
- Output Format: Incremental - Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the wheel side. See Waveform Diagrams below.
- Output Types:
  - Open Collector- 20 mA max per channel
  - Push-Pull- 20 mA max per channel
  - Pull-Up- Open collector with 2.2k ohm Pull-Up conductors)
- Quad. Phasing: 90° (±22.5°) electrical
- Mounting: 5/8" diameter thru hole with clamp
- Max. Frequency: Standard Frequency Response is 200 kHz for CPR 1 to 2540
  - 500 kHz for CPR 2541 to 5000
  - 1 MHz for CPR 5001 to 10,000
  - Extended Frequency Response (optional) is 300 kHz for CPR 2000, 2048, 2500, and 2540
- Noise Immunity:
- Symmetry: ±180° (±18°) electrical
- Min. Edge Sep.: 6.7° electrical
- Accuracy: Within 0.017° mechanical or 1 arc-minute from true position. (for CPR>189)
- Index: Once per revolution.
- Input Voltage: 4.75 to 28 VDC max for temperatures up to 85° C
- Input Current: 100 mA max (65 mA typical) with no output load
- Output Format: Incremental - Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the wheel side. See Waveform Diagrams below.
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- Accuracy: Within 0.017° mechanical or 1 arc-minute from true position. (for CPR>189)
- Index: Once per revolution.

Mechanical
- Max Linear Speed: 3000 FPM not to exceed a maximum shaft speed of 6000 RPM.
- Shaft Material: Stainless Steel
- Shaft Size: ø0.625 +0.000
- Radial Shaft Load: Up to 10 lb max. Controlled by spring torsion feature
- Starting Torque: 1.0 oz-in typical with IP50 seal and single wheel
  - 2.5 oz-in typical with IP66 seal and dual wheel
  - 4.0 oz-in typical with IP66 seal and dual wheel
- Electrical Conn: 18" cable (foil and braid shield, 24 AWG conductors)
- Mounting: 5/8" diameter thru hole with clamp
- Housing: Powder coated aluminum
- Wheel Width: 3/4" standard
- Weight: 2.5 lb typical with single wheel
  - 3.0 lb typical with dual wheel

Environmental
- Operating Temp: -20° to +85° C for standard models
  - -41° to +85° C for low temperature option
  - -20° to +100° C for high temperature option
- Storage Temp: -25° to +85° C
- Humidity: 99% RH non-condensing
- Vibration: 10 g @ 55 to 500 Hz
- Shock: 80 g @ 11 ms duration
- Sealing: IP50 standard; IP66 available
Model TR3 Connector Options

Wiring Table

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<th>Gland Cable Wire Color</th>
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Waveform Diagram

Clockwise rotation as viewed from the single wheel side.

Note: All degree references are electrical degrees.

Waveform shown with optional complementary signals A, B, Z for HV and OD outputs only.