

# Model TR1 - Tru-Trac

## Encoder and Spring Loaded Measuring Wheel



# Principle Engineering



### Features

- Encoder And Measuring Wheel Solution Integrated Into One Compact Unit
- Spring Loaded Torsion Arm Makes Wheel Pressure Adjustments So Easy
- 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

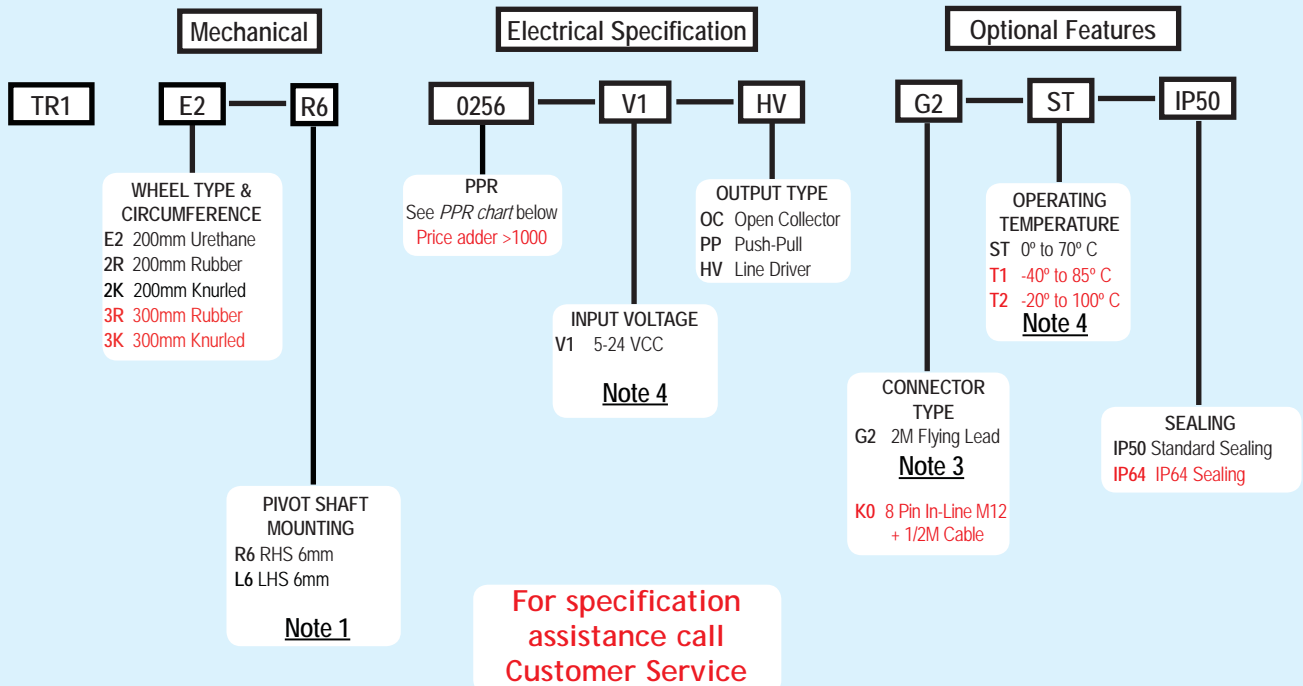
FINALLY! An integrated encoder and spring loaded measuring wheel assembly available in one, easy-to-use, compact unit. The NEW Tru-Trac is a versatile solution for tracking velocity, position, or distance over a wide variety of surfaces in almost any application. Its spring-loaded torsion arm provides a simple-to-adjust torsion load, allowing the Tru-Trac to be mounted in almost any orientation, even upside-down. The threaded shaft on the pivot axis is field reversible providing mounting access from either side. The Tru-Trac housing is a durable, conductive composite material that will eliminate static build up. With operating speeds up to 3000 feet per minute and a wide variety of configuration options, it's easy to see the Tru-Trac is the ideal solution for countless applications.

### Common Applications

Web Tension Control, Paper Monitoring, Glue Dispensing, Linear Material Monitoring, Conveyor Systems, Printing, Labelling, Document Handling

## Model TR1 Tru-Trac Ordering Guide

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



### Model TR1 TRU-TRAC PPR Options

0200	0250	0254	0256	0300	0360	0400
0500	0512	0600	0720	0800	0840	1000
1024	1200	1220	1250	1270	1500	1800
2000	2048	2500	2540	3000	4096	6000
8192	10000					

### Note 2

\*Contact Customer service for High Temp option

Contact Customer Service for other disc resolutions; not all disc resolutions available with every commutation option.

### NOTES:

- 1 Contact Customer Service for additional options not shown.
- 2 Contact Customer Service for non-standard index gating.
- 3 For non-standard cable lengths - Contact Customer Service for availability and cost.
- 4 With input voltage higher than 16 VCC, The operating temperature is limited to 85°C.

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## Model TR1 - Tru-Trac™ Specifications

### Electrical

- Input Voltage ..... 4.75 to 28 VCC max for temperatures up to 85° C  
4.75 to 24 VCC for temperatures between 85° C to 100° 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  
Line Driver- 20 mA max per channel (Meets RS 422 at 5 VDC supply)
- Index ..... Once per revolution.  
0190 to 2540 PPR: Gated to output A  
0001 to 0189 PPR: Ungated  
See *Waveform Diagrams* below.
- Freq. Response ..... 200 kHz standard (up to 1MHz)
- Noise Immunity ..... Tested to BS EN61000-6-2; BS EN50081-2;  
BS EN61000-4-2; BS EN61000-4-3;  
BS EN61000-4-6, BS EN500811
- Symmetry ..... 180° (±18°) electrical
- Quad. Phasing ..... 90° (±22.5°) electrical
- Min. Edge Sep ..... 67.5° electrical
- Accuracy ..... Within 0.017° mechanical or 1 arc-minute from true position. (for CPR>189)

### Mechanical

- Max Shaft Speed ..... 6000 RPM. Higher speeds may be achievable, contact Customer Service.
- Shaft Material ..... Stainless Steel
- Shaft Tolerance ..... g6
- Radial Shaft Load ..... 2.5kg max. Rated load of 1.25kg to 1.75kg for bearing life of  $1.2 \times 10^{10}$  revolutions
- Axial Shaft Load ..... 2.5kg max. Rated load of 1.25kg to 1.75kg for bearing life of  $1.2 \times 10^{10}$  revolutions
- Starting Torque ..... IP50  $3.531 \times 10^{-4}$  Nm  
IP64  $2.825 \times 10^{-3}$  Nm
- Electrical Conn ..... 2M cable (foil and braid shield, 24 AWG conductors), 8-pin M12 (12 mm) in-line connector with 0.5M cable (braid shield)
- Mounting ..... Pivot shaft can be mounted from either side of the Tru-Trac™ housing, and is reversible in the field. Specify 1/4-20 or M6 threads
- Housing ..... Stainless steel fibers in a high temperature nylon composite
- Wheel Width ..... 0.25"
- Weight ..... 150 gms typical

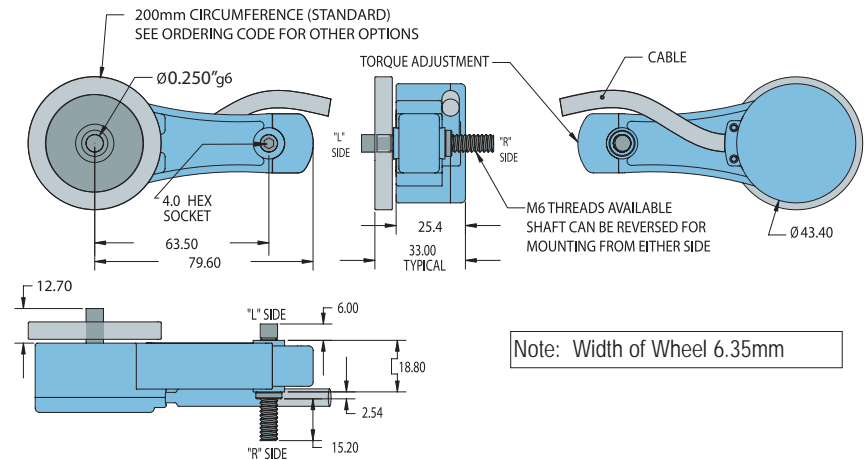
### Environmental

- Operating Temp ..... -0° to +70° C for standard models  
-40° to +85° C for low temperature option  
-20° to +100° C for high temperature option
- Storage Temp ..... -25° to +85° C
- Humidity ..... 98% RH non-condensing
- Vibration ..... 10 g @ 58 to 500 Hz
- Shock ..... 80 g @ 11 ms duration
- Sealing ..... IP50 standard; IP64 available

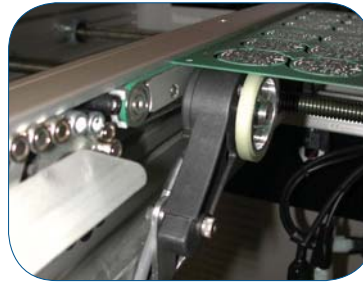


Angle Mounting Bracket for TR1 Tru-Trac can be ordered separately as part No: 140104 Dimensional drawing shown on accessory Data-sheet

## Model TR1 - Tru-Trac™



## Model TR1 - Tru-Trac™ Applications



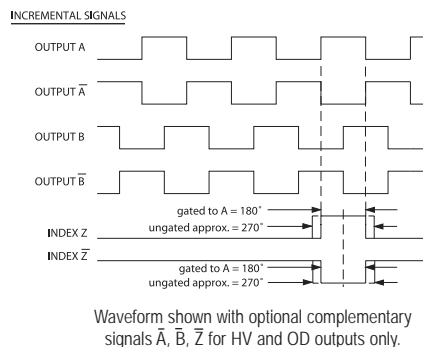
For **Linear Applications** the Tru-Trac™ can be mounted above or below the moving object, and the tension on the wheel adjusted for a wide range of applications such as packaging, conveyors, mail sorting, cut to length, labelling, gantries etc.



For **Rotational Applications** the Tru-Trac™ can be mounted in any orientation to monitor the position or velocity of many types of rotating equipment such as web tension control drums, rotary tables, printing, spooling, etc.



### Waveform Diagrams



### Wiring Table

Function	Cable Wire Color	8-pin M12**
Com	Black	7
+VDC	White	2
A	Brown	1
A'	Yellow	3
B	Red	4
B'	Green	5
Z	Orange	6
Z'	Blue	8
Shield	Bare *	--