Model TR1 - Tru-Trac
Encoder and Spring Loaded Measuring Wheel

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.

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<td>TR1</td>
<td>E2</td>
<td>G2</td>
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<tr>
<td></td>
<td>R6</td>
<td>ST</td>
</tr>
<tr>
<td>WHEEL TYPE &amp; CIRCUMFERENCE E2 200mm Urethane 2R 200mm Rubber 2K 200mm Knurled 3R 300mm Rubber 3K 300mm Knurled</td>
<td>PPR OUTPUT TYPE OC Open Collector PP Push-Pull HV Line Driver</td>
<td>IP50</td>
</tr>
<tr>
<td>PIVOT SHAFT MOUNTING R6 RHS 6mm L6 LHS 8mm</td>
<td>V1 INPUT VOLTAGE V1 5-24 VCC</td>
<td>OPERATING TEMPERATURE T0º to 70º C T1 -40º to 85º C T2 -20º to 100º C</td>
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<td>Note 1</td>
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For specification assistance call Customer Service at +44 (0)1978 262100

Electrical Specification

<table>
<thead>
<tr>
<th>Model TR1 TRU-TRAC PPR Options</th>
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<tbody>
<tr>
<td>0200 0250 0254 0256 0300 0350 0400</td>
</tr>
<tr>
<td>0500 0512 0600 0720 0800 0840 1000</td>
</tr>
<tr>
<td>1024 1200 1220 1250 1270 1500 1800</td>
</tr>
<tr>
<td>2000 2048 2500 2540 3000 4096 6000</td>
</tr>
</tbody>
</table>

Note 1 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.
Model TR1 - Tru-Trac
Encoder and Spring Loaded Measuring Wheel

Model TR1 - Tru-Trac™
Specifications

Electrical
Input Voltage........... 4.75 to 28 VCC max for temperatures up to 85º C
4.75 to 24 VCC for temperatures between 85º C to 100º 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 EN50081-1
Symmetry.................. 180º (±18º) electrical
Quad. Phasing............. 90º (±22.5º) electrical
Min. Edge Sep............. 67.5º electrical
Accuracy.................. Within 0.017º 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 x 10^10 revolutions
Axial Shaft Load......... 2.5kg max. Rated load of 1.25kg to 1.75kg for bearing life of 1.2 x 10^10 revolutions
Starting Torque.......... IP50: 3.531 x 10^-4 Nm
IP64: 2.825 x 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........... -4° to +70° C for standard models
-60° 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

Model TR1 - Tru-Trac™ Applications

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.

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, labeling, ganntries etc.

Waveform Diagrams

Wiring Table

<table>
<thead>
<tr>
<th>Function</th>
<th>Cable Wire Color</th>
<th>B-pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com</td>
<td>Black</td>
<td>7</td>
</tr>
<tr>
<td>+VDC</td>
<td>White</td>
<td>2</td>
</tr>
<tr>
<td>A</td>
<td>Brown</td>
<td>1</td>
</tr>
<tr>
<td>A'</td>
<td>Yellow</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>Red</td>
<td>4</td>
</tr>
<tr>
<td>B'</td>
<td>Green</td>
<td>5</td>
</tr>
<tr>
<td>Z</td>
<td>Orange</td>
<td>6</td>
</tr>
<tr>
<td>Z'</td>
<td>Blue</td>
<td>8</td>
</tr>
<tr>
<td>Shield</td>
<td>Bare</td>
<td>—</td>
</tr>
</tbody>
</table>

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