TRP TRU-TRACPRO™ - PROGRAMMABLE WHEELED ENCODER

FEATURES

The TRP Tru-TracPro is the programmable upgrade to the TR1 Tru-Trac®. It offers high resolution, user selectable waveforms, and many other features when used with the PR2 Programmer. The identical form factor to the TR1 allows for drop in interchangeability with existing systems.

- All-in-one field programmable encoder, measuring wheel & spring loaded torsion arm
- Resolutions from 1-100,000 CPR[1] - no need to change wheel size
- Customizable waveform output - choose from 40 options
- Teach index location
- Field calibration for better performance and accuracy
- Get up and running quickly with the optional PR2 programmer
- Spring loaded torsion arm makes wheel pressure adjustments easy
- Easily installed in a vertical, horizontal or upside down orientation
- Fast installation for mounting on any surface
- Reduce cost and inventory with a simplified system design - program as needed
- Gear option is available when used with an optional rack

COMMON APPLICATIONS

Web Tension Control, Paper Monitoring, Glue Dispensing, Linear Material Monitoring, Cut-to-Length, Conveyor Systems, Ink Jet Printing, Laser Printing, Labeling, Document Handling

TRP ORDERING GUIDE

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

Model: TRP

Mechanical: U1 – R4

Electrical: 000500 – V1 – A0 – HV – F00

Environmental: T0 – S0 – NC

CYCLES PER REVOLUTION
CPR may be specified from 1 - 100,000[1]

INPUT VOLTAGE
V1 5 to 28 VDC

CONNECTOR TYPE
F00 Cable by feet[6]
M00 Cable by meter[7]
J00 Cable with 5-pin M12 (feet)[6]
K00 Cable with 8-pin M12 (feet)[6]

OPERATING TEMPERATURE
T0 -20° to 85° C (Std)
T6 -40° to 100° C[4]

CERTIFICATION
NC None (Std)
CE CE Marked[8]

PIVOT SHAFT MOUNTING[2]
R4 Right side 1/4-20 thread
L4 Left side 1/4-20 thread
R6 Right side M6 thread
L6 Left side M6 thread

WHEEL TYPE & CIRCUMFERENCE
U1 Urethane 6.0"
U2 Urethane 200 mm
K1 Knurled 6.0"
K2 Knurled 200 mm
A1 Anodized Knurled 6.0"
A2 Anodized Knurled 200 mm
19 No wheel - 1/4" shaft
20 No wheel - 6 mm shaft
D1 40 tooth pinion gear for stainless steel rack
D2 40 tooth pinion gear for flexible rack

WAVEFORMS
Programmable feature
Select the initial index and waveform configuration to be programmed at factory. See options on page 4.

OUTPUT TYPE[9]
HV Line Driver[3]
PP Push-Pull
OC Open Collector
PU Pull-Up Resistor[4]

SEALING
S0 IP50 (Std)
S2 IP65
S3 IP66

NOTES:

1 There are a number of factors to consider when selecting the appropriate resolution for your application. Please see TB-546 for system considerations and recommendations.
2 See mechanical drawing for Right and Left Side definition. Pivot Shaft is reversible in the field.
3 Line Driver output not available with 5-pin M12 connector. Please consult Customer Service.
4 With Input Voltage above 16 VDC, operating temperature is limited to 85° C.
5 For mating connectors, cables, and cordsets, see Accessories at encoder.com. For Connector Pin Configuration Diagrams, see Connector Pin Configuration Diagrams at encoder.com.
6 For cable lengths in feet enter 'F' plus cable length expressed in feet. Example: F06 = 6 feet of cable.
7 For metric cable lengths enter 'M' plus cable length expressed in meters. Example: M06 = 6 meters of cable.
8 Please refer to Technical Bulletin TB-100: When to Choose the CE Mark at encoder.com.
9 Output Type is not programmable

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TRP SPECIFICATIONS

Electrical

Input Voltage	4.75 to 28 VDC max for temperatures up to 85° C 4.75 to 24 VDC for temperatures between 85° C and 100° C
Input Current	100 mA max (65 mA typical) with no output load
Output Format	Incremental Programmable – See Waveform Diagrams on page 4 for options.
Output Types[1]	**Line Driver (HV)** - 20 mA max per channel (Meets RS 422 at 5 VDC supply) **Open Collector (OC)** - 20 mA max per channel **Push-Pull (PP)** - 20 mA max per channel **Pull-Up (PU)** - Open Collector with 2.2K ohm internal resistor, 20 mA max per channel
Index	Once per revolution. See Waveform Diagrams.
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
Electrical Protection	Reverse voltage and output short circuit protected.
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
Quadrature	67.5° electrical or better is typical.
Edge Separation	54° electrical minimum at temperatures > 99° C
Waveform Symmetry	180°(±18°) electrical (single channel encoder)
Encoder Accuracy	Within 0.017° mechanical or 1 arc-minute from true position

Mechanical

Max Shaft Speed	6000 RPM. Higher speeds may be achievable - contact Customer Service.
Shaft Material	Stainless Steel
Radial Shaft Load	5 lb max. Rated load of 2 to 3 lb for bearing life of 1.2 x 10^{10} revolutions
Axial Shaft Load	5 lb max. Rated load of 2 to 3 lb for bearing life of 1.2 x 10^{10} revolutions
Starting Torque	IP50 0.05 oz-in IP65 0.4 oz-in IP66 0.8 oz-in
Housing	Static dissipative nylon composite
Weight	5 oz typical

Environmental

Storage Temp	-25° C to 85° C
Operating Temp	-20° C to 85° C -40° C to 100° C optional
Humidity	98% RH non-condensing
Vibration	10 g @ 58 to 500 Hz
Shock	80 g @ 11 ms duration
Sealing	IP50 standard; IP65 or IP66 available

[1] Output type is not programmable and must be selected at time of order.

WIRING TABLE

For EPC-supplied mating cables, refer to wiring table provided with cable.

Trim back all unused wires.

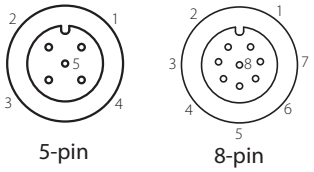
Function	Gland Cable* Wire Color	5-pin M12**	8-pin M12**
Com	Black	3	7
+VDC	White	1	2
A	Brown	4	1
A'	Yellow	--	3
B	Red	2	4
B'	Green	--	5
Z	Orange	5	6
Z'	Blue	--	8
Shield	Bare***	--	--

*Standard cable is 24 AWG conductors with foil and braid shield.

**CE Option: Cable shield (bare wire) is connected to internal case.

***CE Option: Use cable cordset with shield connected to M12 connector coupling nut.

M12 PINOUT DRAWINGS



5-pin 8-pin

PR2 PROGRAMMER*

PR2 Order Guide

Part **#	Encoder Connector
PR2-001-J	5-pin M12
PR2-001-K	8-pin M12
PR2-001-T	Flying Lead

*Sold separately

**Includes PR2 Programmer and 2 meter USB Type-A to USB Type-C cable. Free software download from EPC website.

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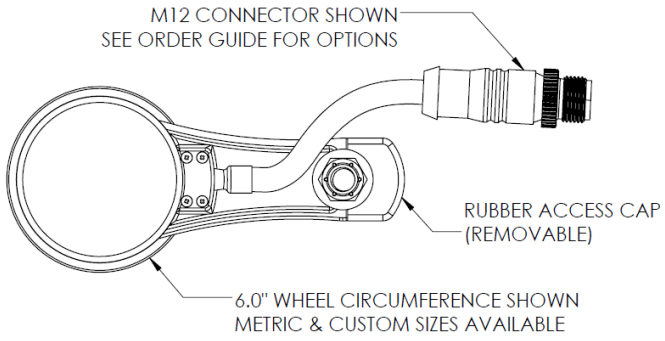
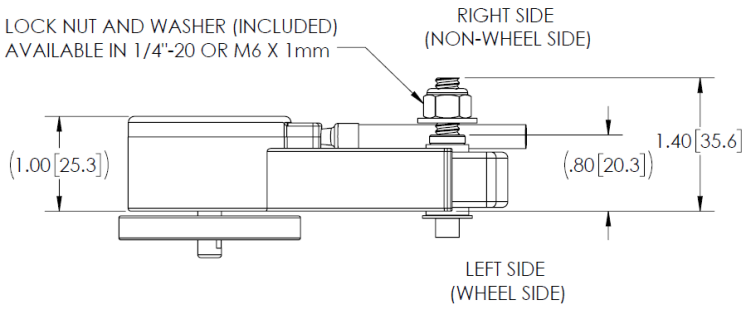
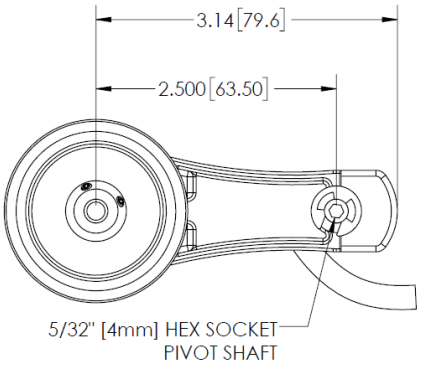
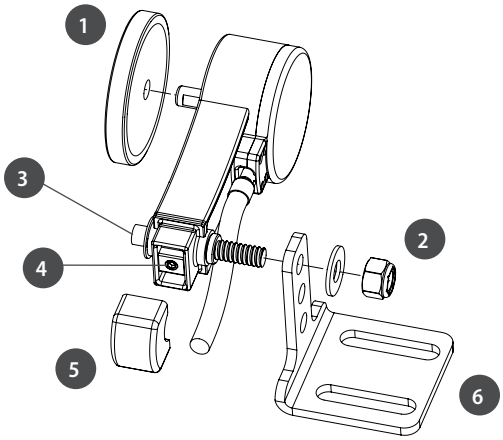
TRP TRU-TRACPRO™ DRAWINGS







TRP TRU-TRACPRO™ EXPLODED VIEW



1 - MEASURING WHEEL
SEE ORDER GUIDE FOR OPTIONS

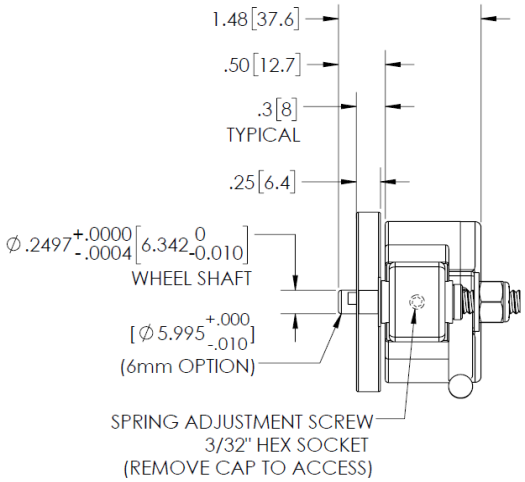
2 - LOCK NUT & WASHER (INCLUDED)
AVAILABLE IN 1/4"-20 & M6 X 1mm

3 - REMOVABLE & REVERSIBLE PIVOT SHAFT
AVAILABLE IN 1/4"-20 & M6 X 1mm
REPLACEMENT KITS AVAILABLE

4 - TORSION SPRING ADJUST
3/32" HEX SOCKET

5 - REMOVABLE RUBBER
ACCESS CAP (INCLUDED)

6 - MOUNTING BRACKET (OPTIONAL)
ORDER SEPARATELY



Note:
All dimensions are in inches with a tolerance of +0.005" or +0.01" unless otherwise specified.
Metric dimensions are given in brackets [mm].

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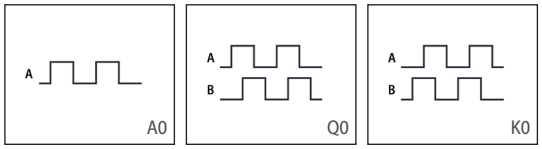
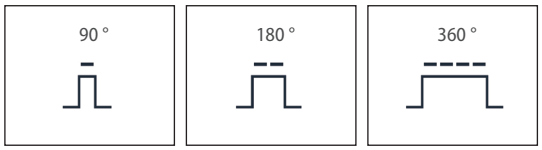
WAVEFORM OPTIONS

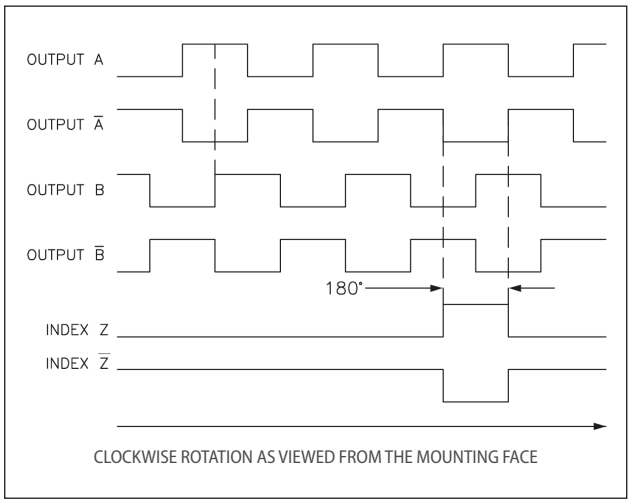


Programmability Note:

- If A0 option selected only CPR is programmable
- If Q0 or K0 option selected only CPR and quadrature direction are programmable
- If A1 thru Y4 option is selected CPR and any waveform is programmable



STANDARD EPC WAVEFORM (B5)

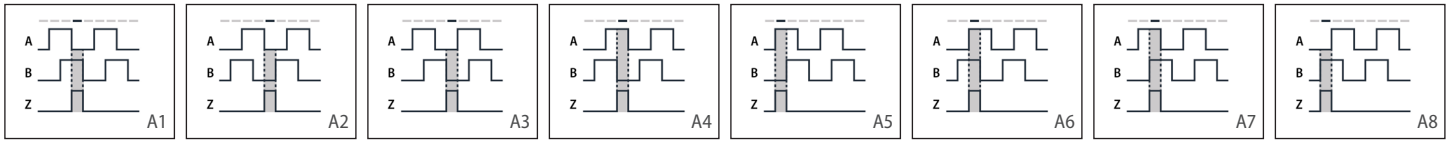


NOTE:

ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES.

Waveform shown with optional complementary signals Ā, B̄, Z̄ for HV output only.

A



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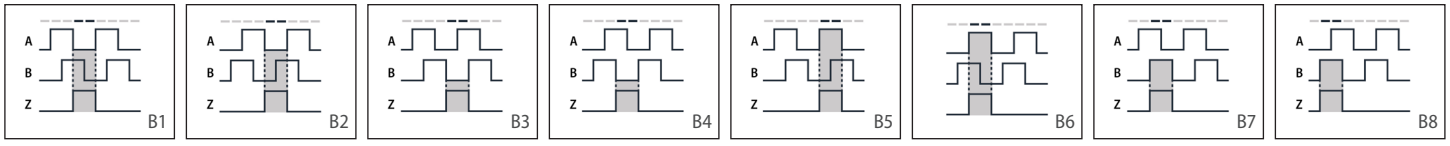

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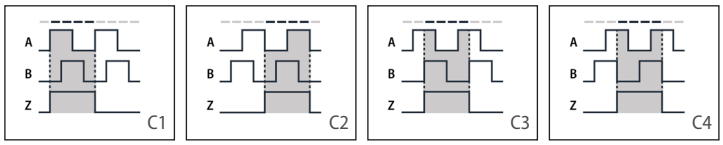

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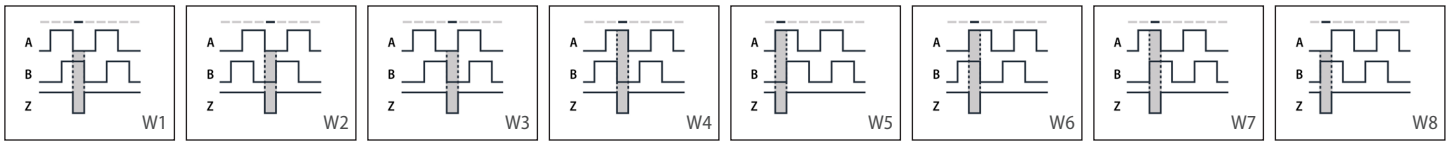
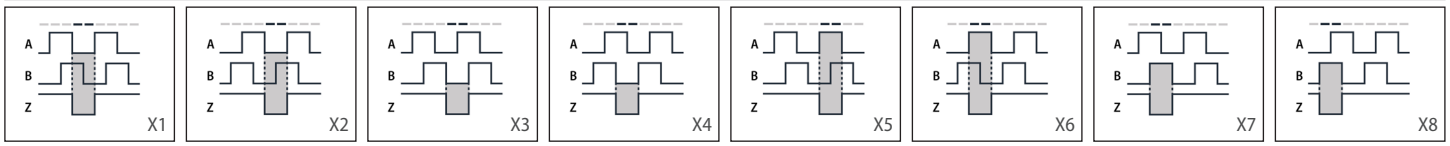


X



Y