



# EMWS

## Encoder with Measuring Wheel Solution

Designed for light to medium duty sensing applications, the Model EMWS encoder with measuring wheel is compact in size and easy-to-use. It features a built-in, spring-loaded torsion arm that provides a simple-to adjust torsion load, allowing the unit to be mounted in almost any orientation, including upside down. Using one of two 6" measuring wheels, the EMWS can be used on almost any surface, while operating at speeds up to 3000 feet per minute. The housing is a durable, conductive composite material that will eliminate static build up. Whether you need to measure speed, position, or distances, the Model EMWS is the ideal solution. For other pulse rates and/or wiring configurations, contact the factory for further details.



- COMPACT SIZE
- QUADRATURE OUTPUT
- BUILT-IN SPRING TENSIONING  
VERTICAL, HORIZONTAL, OR  
UPSIDE-DOWN MOUNTING
- REDUCES INSTALLATION TIME

# Cut To Length!



The KEPMINI (MRT) controller and EMWS encoder are the perfect combination for Cut-To-Length applications. The MRT is easily programmed from the front keypad making setpoint entry a snap.

**Controller**  
**MINI (MRTA3)**  
 Pulse Input  
 DC Output  
 Input Scaling  
 Relay Outputs

**Encoder**  
**EMWS- x**  
 Pulse Output  
 DC Input

# Position Monitor!



If you're looking for a quick and simple position monitoring system... Look no further! The 520 display along with the EMWS with quadrature output provide a simple solution. The compact size of both units make for easy mounting and setup!

**Display**  
**K520**  
 Quad. Pulse Input  
 DC Input

**Encoder**  
**EMWS- x**  
 Quad. Pulse Output  
 DC Input

# Speed Monitor!

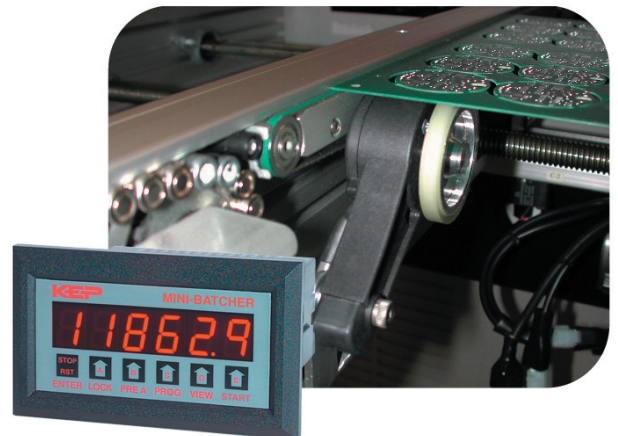


The KEPTR-545 and EMWS encoder are a great match for speed monitoring applications. The large LED display makes the speed easy to read from a distance. The EMWS is easy to mount in almost any position.

**Display**  
**TR-545**  
 Pulse Input  
 DC Output  
 Input Scaling

**Encoder**  
**EMWS- x**  
 Pulse Output  
 DC Input

# Batch Control!



Batch counting and control has never been easier now that the MINIBATCHER (MB2) can be paired with the EMWS encoder. Simply key in the batch amount, Press "start" and the batch process is up and running!

**Controller**  
**MB2A3**  
 Pulse Input  
 DC Output  
 Input Scaling  
 Relay Outputs

**Encoder**  
**EMWS- x**  
 Pulse Output  
 DC Input

## ELECTRICAL SPECIFICATIONS

### INPUT VOLTAGE:

4.75 to 28 VDC max for temperatures up to 85° C; 4.75 to 24 VDC 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.

### OUTPUT TYPE:

Open Collector; 20 mA max per channel

### FREQUENCY RESPONSE:

200 KHz standard

### NOISE IMMUNITY:

Tested to BS EN61000-6-2; BS EN50081-2; BSEN61000-4-2; BS EN61000-4-3; BS EN61000-4-6, BS EN500811

### SYMMETRY:

180° (±18°) electrical

### QUADRATURE:

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)

## ENVIRONMENTAL SPECIFICATIONS

### OPERATING TEMPERATURE:

-20° to +85° C for standard models; -40° to +85° C for low temperature option; -20° to +100° C for high temperature option

### STORAGE TEMPERATURE:

-25° to +85° C

### HUMIDITY:

98% RH non-condensing

### VIBRATION:

10 g @ 58 to 500 Hz

### SHOCK:

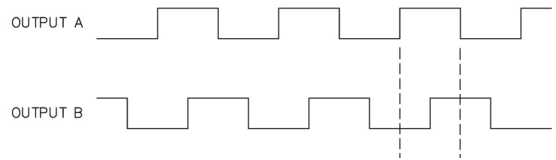
80 g @ 11 msec duration

### SEALING:

IP50 standard; IP65 available

## WAVEFORM DIAGRAM

### INCREMENTAL SIGNALS



## MECHANICAL SPECIFICATIONS

### MAXIMUM MECHANICAL SPEED:

6000 RPM. Higher speeds may be achievable, contact the factory.

### SHAFT MATERIAL:

Stainless Steel

### SHAFT TOLERANCE:

+0.0000/-0.0004" (+0.000/-0.010 mm)

**RADIAL SHAFT LOAD:** 5 lb. max. Rated load of 2 to 3 lb for bearing life of 1.2 x 10<sup>10</sup> revolutions

### AXIAL SHAFT LOAD:

5 lb. max. Rated load of 2 to 3 lb for bearing life of 1.2 x 10<sup>10</sup> revolutions

### STARTING TORQUE:

IP50 0.05 oz-in; IP65 0.4 oz-in

### ELECTRICAL CONNECTION:

2 meter Cable, (foil and braid shield, 24 AWG conductors). Drain wire internally connected.

### MOUNTING:

Pivot Shaft can be mounted from either side of the housing and is field reversible

### HOUSING:

Stainless steel fibers in a high temperature nylon composite

### OPERATING TEMPERATURE:

-20° to +85° C



### WEIGHT:

5 oz typical

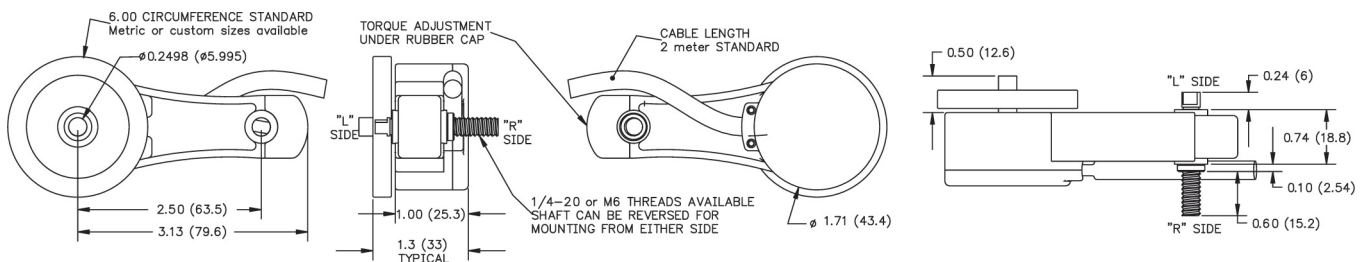
## WIRE DESIGNATION

CABLE WIRE COLOR	FUNCTION
Black	Com
Red	+VDC
White	A
Green	B
Bare	Shield

## ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PPR	PART NUMBER
EMWS	Miniature Encoder with Measuring Wheel and Quadrature Output	250	EMWS-250
		500	EMWS-500
		1000	EMWS-1000
	Urethane (6" Circumference) Wheel	-	161360
	Knurled (6" Circumference) Wheel	-	161401
	EMWS Mounting Bracket allows for a variety of mounting positions and makes installation even easier.	-	140104

## DIMENSIONS



**Note:** All dimensions are in inches (mm) with a tolerance of +0.005" or +0.01" unless otherwise specified.