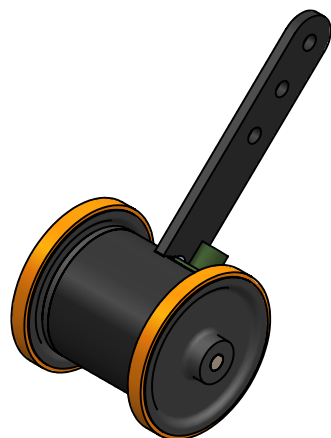




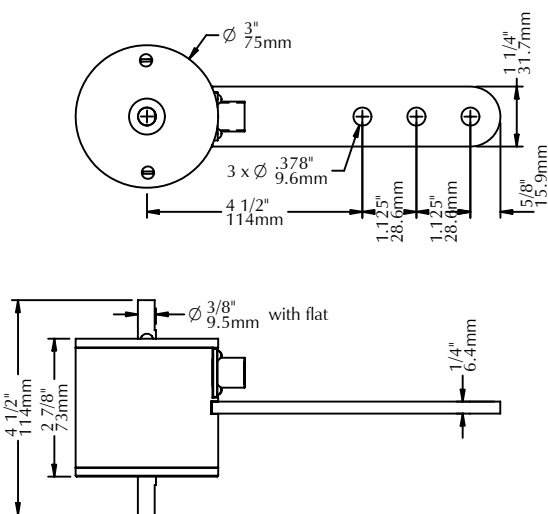
Shown with  
optional MW-1  
measuring wheels

\* CE requires Photocraft cable, and enhanced surge protection option if cable exceeds 100' (30m) or leaves the building.

## FEATURES

- Generates pulses for accurate linear measurement
- Tracks conveyor movement independent of conveyor roller diameters
- Heavy duty construction
- Precision 12" or 30cm circumference measuring wheels
- Programmable model available - see Model RH-P
- Exclusive "Anti-jitter" circuit for conveyor applications
- Single (A), quadrature (A, B), and index (Z) outputs
- Short circuit, ESD, reverse voltage protection
- Various mounting hardware kits are available
- See the model R22 for a smaller wheeled encoder

## DIMENSIONS



**MATERIAL HANDLING AND  
INDUSTRIAL EXPERIENCE  
SINCE 1974**

**HOTOCRAFT INC**

602 E. North Street **630-365-7148**  
Elburn, IL 60119, USA Fax: 630-365-7149  
[www.photocraftencoders.com](http://www.photocraftencoders.com)

## SPECIFICATIONS

### Mechanical

**Maximum speed:** 6,000 rpm

**Shaft Loading:**

- Radial: 25 lbs. / 11.3 kg
- Axial: 10 lbs. / 4.5 kg

**Bearing Life:** 70 x 1,000,000/rpm = hours

**Materials:**

- Case: 1/4" Aluminum, anodized
- Shaft: 303 Stainless steel

**Weight:** 1.34 lbs. / .6 kg

### Electrical Connections

**Single Ended Outputs:**

--- Connectors ---

| 3-pin | 6-pin | 4-pin | Function      | Wire Color     |
|-------|-------|-------|---------------|----------------|
| C     | A/1   | 3     | Common        | Black          |
| A     | B/2   | 1     | +vdc          | Red            |
| --    | C/3   | --    | Output Z      | Brown or Green |
| B     | D/4   | 4     | Output A      | White          |
| --    | E/5   | 2     | Output B      | Green          |
| --    | F/6   | --    | no connection |                |

3-pin is C-5015 style 97-3102A-10SL-3P or equivalent

6-pin is C-5015 style 97-3102A-14S-6P or equivalent; or

16mm Amphenol T3402000 or equivalent

4-pin is 12mm Turck FS4.4/14.5 or equivalent

**Differential Line Driver Outputs:**

--- Connectors ---

| 6-pin | 8-pin | 10-pin | Function  | Wire Color      |
|-------|-------|--------|-----------|-----------------|
| A     | 5     | F      | Common    | Black           |
| B     | 4     | D      | +vdc      | Red             |
| C     | 1     | A      | Output +A | White           |
| D     | 6     | H      | Output -A | Blue or Green   |
| E     | 2     | B      | Output +B | Green           |
| F     | 7     | I      | Output -B | Brown           |
| --    | 3     | C      | Output +Z | Yellow or Green |
| --    | 8     | J      | Output -Z | Orange or Brown |
| --    | --    | G      | Case Gnd  | Purple          |

6-pin is C-5015 style 97-3102A-14S-6P or equivalent

8-pin is 16mm Amphenol T3506000 or equivalent

10-pin is C-5015 style 97-3102E-18-1P or equivalent  
see M226 modification drawing for additional details.

Standard cable length is 10 ft / 3 meters.

Other lengths are available.

### Electrical

**DC Supply Voltages:** (specify when ordering)

— 5 ± 5%, 5-26 vdc, or 8-30 vdc

Other supported voltages:

— 12, 15, or 24 ± 10% vdc

— 5R to indicate 7 to 12 vdc

— 12R to indicate 12 to 27 vdc

**Current:** 50 ma max (no load)

100 ma max (differential line driver)

**Pulse Rate:** 0 - 30 kHz

**Pulses per Revolution:** (specify when ordering)

— 1 to 1200

— 1 to 2400 (single output only)

**Operating Temperature:** 0° to 70° C

**Output Circuit:** (specify when ordering)

Output voltage level is approximately the

same as the input voltage (unless specified)

**Single Ended:** 50ma max current

— Current sinking NPN with pull-up

— NPN open collector (30 vdc max)

— Current sourcing PNP with pull-down

— Push/pull

**Differential Line Driver:**

— 7272 line driver

— RS422 - 5vdc output voltage level

(requires 5 or 8-30 supply voltage)

**Output WaveShape:** Square wave; outputs A

and B are 50/50 duty cycle nominal;

output Z (index output) is approximately

the width of one cycle on output A or B.

Output A leads B by 90° for clockwise

rotation viewed from shaft end farthest

from the connector.

— Pulse symmetry: 180° ± 30%

— Pulse interval jitter: 30% max

— Quadrature: 90° ± 30% max

— Phase jitter: 30% max

**Anti-jitter:** Increases pulse hysteresis to 1/2 of a pulse width, eliminating the dither caused by excess mechanical vibration and the resulting false output pulses. Call for details.

## MODEL NUMBER

| RH | Model Number                                                                                                   | Supply Voltage: 5, 5-26, or 8-30<br>also available: 12, 15, 24, 5R, 12R | Output Circuit: leave blank for NPN, P = PNP,<br>NP = Push/Pull, C = NPN open collector,<br>DL = RS422 line driver, DH = 7272 line driver | Surge Protection: leave blank for standard<br>protection, G = enhanced protection* | Modification Number: 3 or 6 pin C-5015 style<br>connector is standard (3-pin for A-only output).<br>M131 = 4-pin 12mm connector<br>M198 = 6 or 8 pin 16mm connector<br>M226 = 10-pin C-5015 connector<br>Call or see our website for other modifications. | Accessories: leave blank for no accessories.<br>Call or see our website for more information. |
|----|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|    | <b>Output Type:</b> leave blank for single output on A,<br>Q = quadrature outputs on A and B                   |                                                                         |                                                                                                                                           |                                                                                    |                                                                                                                                                                                                                                                           |                                                                                               |
|    | <b>Index Output:</b> leave blank for no index,<br>Z = index output                                             |                                                                         |                                                                                                                                           |                                                                                    |                                                                                                                                                                                                                                                           |                                                                                               |
|    | <b>Pulses Per Revolution:</b> a number from 1 to 2400,<br>enter dual and triple output values separated by "m" |                                                                         |                                                                                                                                           |                                                                                    |                                                                                                                                                                                                                                                           |                                                                                               |
|    | <b>Anti-jitter option:</b> leave blank for no anti-jitter,<br>AJ = anti-jitter option (A-only output models)   |                                                                         |                                                                                                                                           |                                                                                    |                                                                                                                                                                                                                                                           |                                                                                               |

Example: RHQ-300/8-30 M198 - quadrature outputs (A and B), 300 ppr, 8-30vdc,  
NPN output, 6-pin 16mm connector