

# RH-P1500AJB

# Bidirectional Programmable PPI

## DESCRIPTION

The RH-P encoder, also known as a Pulse Position Indicator (PPI), converts shaft rotation into square wave output pulses and is ideally suited for linear measuring applications when used with measuring wheels. The number of counts per revolution of the shaft is determined by setting configuration switches. A direction output indicates the shaft rotation direction, clockwise (CW) or counter-clockwise (CCW), as viewed from the shaft end farthest from the connector. For conveyor applications, accessories are available for mounting either above or below the conveyor belt or roller.

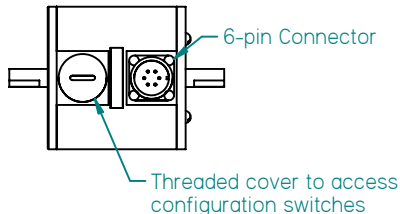
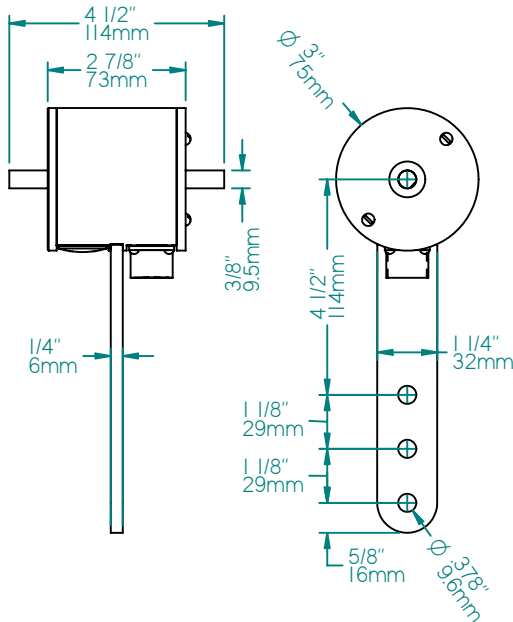
## FEATURES

- Programmable Pulses/Revolution and Direction Output
- ESD / Short Circuit / Reverse Voltage Protected
- Exclusive "Anti-jitter" Circuit for Conveyor Applications

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



## DIMENSIONS



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## SPECIFICATIONS

### Outputs

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

Output A is fixed at 30, 240, 300, 360, 400, 480, 600, or 1500; or Selectable by setting configuration switches 1 to 3.

Output is "low" when initially powered.

**Anti-jitter:** Increases the pulse hysteresis to 1/2 of a pulse width, eliminating the effects of mechanical vibration and the possible dither that results in false output pulses.

For example a 30 pulse per revolution output would have 6° hysteresis ( $360^\circ \div 30 \times \frac{1}{2}$ ).

**Direction output:** Output B indicates the direction of rotation by setting configuration switch 4, and is updated at each 1/1500th of a revolution. This output is "low" when power is initially applied. Non-programmable models are "low" for CW and "high" for CCW.

### Electrical Connections

#### Single Ended Outputs:

| MS 6-pin | 4-pin M12 | Function | Wire Color |
|----------|-----------|----------|------------|
| Pin No.  | Pin No.   |          |            |
| A        | 3         | Common   | Black      |
| B        | 1         | +vdc     | Red        |
| D        | 4         | Output A | White      |
| E        | 2         | Output B | Green      |
| C, F     | -         | not used | -          |

#### Differential Line Driver Outputs:

| MS 6-pin | Function  | Wire Color |
|----------|-----------|------------|
| Pin No.  |           |            |
| A        | Common    | Black      |
| B        | +vdc      | Red        |
| C        | Output +A | White      |
| D        | Output -A | Blue       |
| E        | Output +B | Green      |
| F        | Output -B | Brown      |

### Mechanical

**Weight:** 1.4 lbs (650 gm)

**Shaft Loading:** Radial: 25 lb. (11.3 kg.) max  
Axial: 10 lbs. (6.8 kg.) max

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

**Materials:** — Case: Aluminum, anodized

— Shaft: 303 Stainless steel

— Switch cover: Plastic

### Electrical

**Supply Voltages (+vdc):** (specify when ordering)

5 ± 5% vdc or 8 to 30 vdc

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

100 ma max (line driver)

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

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

Output voltage level is approximately the same as the input voltage level.

#### Single Ended:

— NPN open collector (30vdc/50mA max)

— Push/Pull (50mA max source/sink)

#### Differential Line Driver:

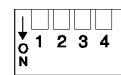
— 7272 line driver (output same as input volts)

— RS422 line driver (regulated 5vdc output)

**Protection:** Short Circuit; ESD 8KV/25KV air

**Maximum Operating Speed:** 1800 rpm

### Configuration Switches



#### Direction Output Selection

- 4 ☐ Output is "low" for CW rotation  
"high" for CCW rotation  
☒ Output is "high" for CW rotation  
"low" for CCW rotation

#### Pulses per Revolution Selection

| 1   | 2                                   | 3                        | 1    | 2                        | 3                        |
|-----|-------------------------------------|--------------------------|------|--------------------------|--------------------------|
| 30  | <input type="checkbox"/>            | <input type="checkbox"/> | 400  | <input type="checkbox"/> | <input type="checkbox"/> |
| 240 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 480  | <input type="checkbox"/> | <input type="checkbox"/> |
| 300 | <input type="checkbox"/>            | <input type="checkbox"/> | 600  | <input type="checkbox"/> | <input type="checkbox"/> |
| 360 | <input type="checkbox"/>            | <input type="checkbox"/> | 1500 | <input type="checkbox"/> | <input type="checkbox"/> |

Switch definitions: ☐ Up (off), ☒ Down (on).

## MODEL NUMBER

| RH    |  | AJB   |   |   |   |
|-------|--|---|---|---|---|
| Model |  |   |   |   |   |
|       | <b>Counts per Revolution</b><br>P1500 = programmable (see configuration switches)<br>or<br>30, 240, 360, 400, 480, 600, 1500 | <b>Features:</b> Anti-jitter and Direction Output | <b>Supply Voltage:</b> 5 = 5vdc, 8-30 = 8-30vdc | <b>Output Circuit:</b> leave blank for push/pull,<br>C = NPN open collector, DL = RS422 line driver,<br>DH = 7272 line driver | <b>Modification Number:</b><br>6 pin MS style connector is standard.<br>M131 = 4-pin 12mm connector<br>Call or see our website for other modifications. |
|       |  |   |   |   | <b>Accessories:</b> leave blank for no accessories.<br>Call or see our website for more information.  |

Example: RH-P1500AJB/8-30 - Model RH encoder with programmable pulses, AJ and Direction features, 8-30vdc, push/pull output, 6-pin MS connector