

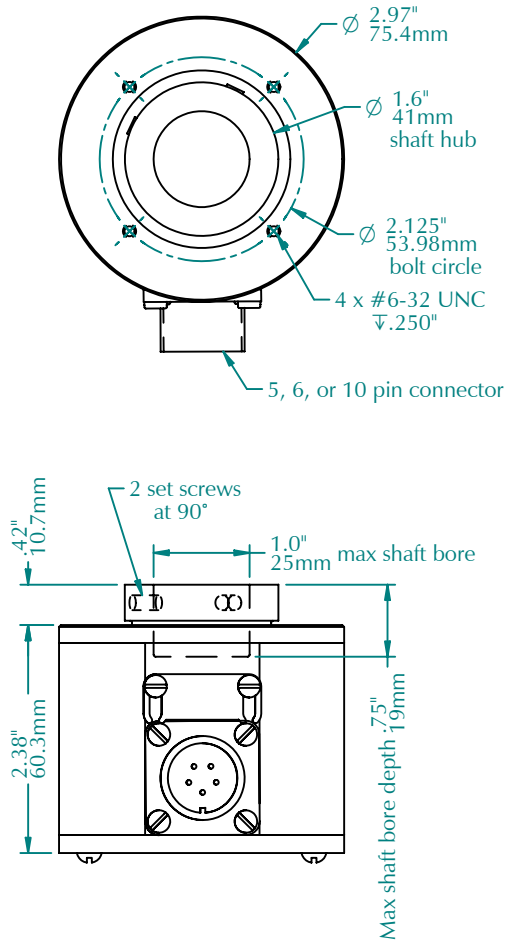
## FEATURES



- 3/8" to 1", or 9mm to 25mm Shaft Bore
- 3/4" or 19mm blind bore depth (not through bore)
- Shaft Version Available - see Model RL
- Programmable Model Available - see Model HRL-P
- Exclusive "Anti-Jitter" Circuit for Conveyor Applications
- Single (A), Quadrature (A, B), and Index (Z) Outputs
- Dual or Triple output Models with different pulses per revolution on each output
- Short Circuit / ESD Protection on Most Models
- Custom Models Available

## DIMENSIONS

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



## SPECIFICATIONS

### Mechanical

**Maximum speed:** 6,000 rpm  
**Shaft Loading:** Radial: 25 lb. (11.3 kg) max.  
 Axial: 15 lb. (6.8 kg) max.  
**Bearing Life:** 36 x 1,000,000/rpm = hours  
**Materials:**  
 — Case: 1/4" Aluminum, anodized  
 — Shaft: Aluminum

### Electrical Connections

#### Push/Pull Outputs:

5-Pin Connector	Function	Wire Color
A	+vdc	Red
B	Common	Black
C	Output A	White
D	Output B	Green
E	Output Z	Brown*

\* Output Z is green if Output B is not used.

#### Line Driver Outputs:

Connector	6-pin	10-pin <sup>3</sup>	Function	Wire Color
A	F	Common	Common	Black
B	D	+vdc	+vdc	Red
C	A	Output A	Output A	White
D	H	Output $\bar{A}$	Output $\bar{A}$	Blue <sup>1</sup>
E	B	Output B <sup>2</sup>	Output B <sup>2</sup>	Green
F	I	Output $\bar{B}$ <sup>2</sup>	Output $\bar{B}$ <sup>2</sup>	Brown
-	C	Output Z	Output Z	Yellow
-	J	Output $\bar{Z}$	Output $\bar{Z}$	Orange

- <sup>1</sup> Output  $\bar{A}$  is green if Output B is not used.
- <sup>2</sup> These are Outputs Z /  $\bar{Z}$  if B /  $\bar{B}$  are not used.
- <sup>3</sup> 10-pin only applies when all outputs (A /  $\bar{A}$ , B /  $\bar{B}$ , Z /  $\bar{Z}$ ) are required.

Standard cable length is 10 ft / 3 meters.  
 Other lengths are available.

### Electrical

**Supply Voltages:** (specify when ordering)  
 5 VDC or 8-30 VDC  
**Current:** 50 mA max (no load)  
 100 mA max (line driver)  
**Pulse Rate:** 0 - 30 kHz  
**Pulses per Revolution:** (specify when ordering)  
 1 to 1200  
**Operating Temperature:** 0° to 70° C  
**Output Circuit:** (specify when ordering)  
Single Ended:  
 — 7273 open collector (30 VDC max, 50 mA max)  
 — 7272 Push-Pull (50 mA max source or sink)  
Differential Line Driver:  
 — 7272 differential line driver (output level same as supply voltage)  
 — RS422 differential line driver (with regulated 5vdc output level)

**Output Format:** Two channel quadrature square waves (A,B) with optional index (Z).  
 Optional complimentary outputs (-A,-B,-Z).  
 Output A leads B by 90° for clockwise rotation when viewed from shaft end.

**Symmetry:** 180° ± 30%  
**Pulse interval jitter:** 30% max  
**Quadrature:** 90° ± 30% max  
**Phase jitter:** 30% max

**Anti-jitter:** (single output models only)  
 Increases the pulse hysteresis to 1/2 of a pulse width, eliminating the effects of mechanical vibration and possible false output pulses. For example a 10 pulse per revolution output has 18° hysteresis (i.e. 360° ÷ 10 × 1/2).

**Enhanced Anti-jitter:** see our website or contact us for more information.

### Accessories

See our website or contact us for more information about cables, flexible couplings, and measuring wheels.

## MODEL NUMBER

<b>HRL</b>									
<b>Model Type</b>									
<b>Shaft Bore:</b> 1 = 1", .75 = 3/4", .875 = 7/8", M25 = 2.5mm, others are available									
<b>Output Type:</b> leave blank for single output on A, Q = quadrature outputs on A and B									
<b>Index Output:</b> leave blank for no index, Z = index output									
<b>Pulses Per Revolution:</b> a number from 1 to 1200, enter dual and triple output values separated by "/"									
<b>Anti-jitter option:</b> leave blank for no anti-jitter, AJ = anti-jitter option (single output models only)									
<b>Supply Voltage:</b> 5 or 8-30									
<b>Output Circuit:</b> leave blank for 7272 Push/Pull, C = 7273 open collector, DH = 7272 line driver, DL = RS422 line driver with 5vdc output level									
<b>Modification Number:</b> optional modification or special feature ID. Call or see our website.									
<b>Accessories:</b> leave blank for no accessories. Call or see our website for more information.									

Example: HRL1QZ-1024/8-30DL - 1" shaft bore, quadrature and index outputs, 1024 ppr, 8-30 vdc, RS422 differential line driver, 10-pin connector



PO Box 25135 Tampa FL 33622-5135, USA  
 813-886-4000 800-237-0946  
 tco.com • photocraftencoders.com