

The EX11 Series was developed to provide a high precision, low cost enclosed shaft encoder for light duty applications. The EX11 offers benefits of the Opto-ASIC design with 1024 line counts in a 1.1 inch diameter size.

Packaged in a glass filled polycarbonate housing with a 1/8" stainless steel shaft and precision bearings, the EX11 provides superior performance at a lower cost.

The EX11 Series is capable of operating over a temperature range of -10°C to +70°C without degradation of signals.

Proven design and Duncan Electronics' experience makes the EX11 perfectly suited for high volume OEM applications, including: robotics, process control and instrumentation.

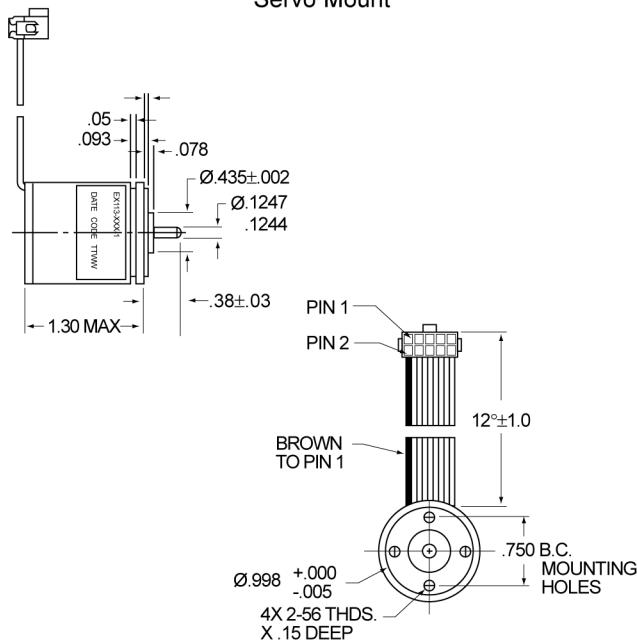
Standard Features

- Line counts up to 1024 PPR
- RS422 compatible 26LS31 line driver
- 1.1 inch diameter package in servo or flange mount configurations
- 2-year warranty



Figure 1

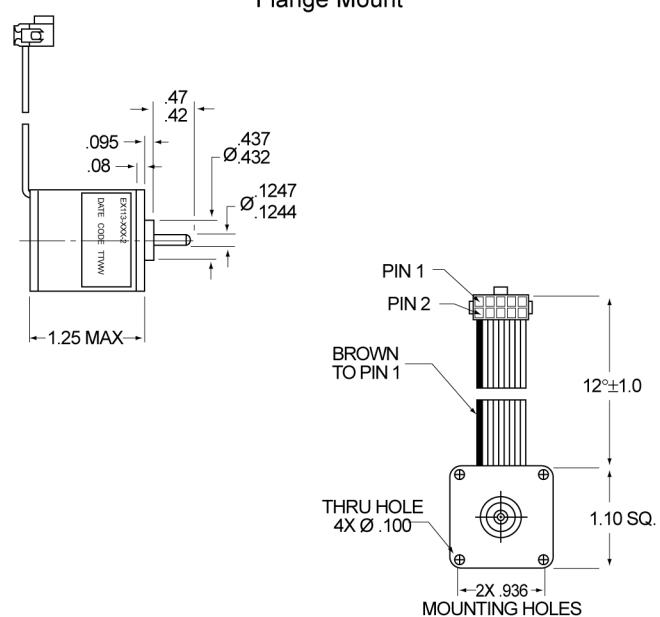
Servo Mount



All dimensions in inches

Figure 2

Flange Mount



.xx = ±.02
.xxx = ±.005



DUNCAN ELECTRONICS
170 Technology Drive
Irvine, CA 92618-2401
(949) 341-9500 Fax: (949) 453-2700
email: sales@beiduncan.com

ISO9001 Certified/QS9000 Compliant

EX11 Series

Miniature Incremental Rotary Optical Encoder

Performance Specifications

Mechanical

| | |
|-----------------------------|--|
| Dimensions | see Figure 1 |
| Weight | 2.0 oz. (Approx.) |
| Shaft Diameter | 0.1247 + .0000/- .0003 |
| Shaft Load | axial 2 lbs., Radial 1 lb. |
| Torque, starting running | less than 0.4 oz. in. less than 0.2 oz. in. |
| Inertia | 3.0×10^{-5} oz. in./sec. |

Motor Interface

| | |
|-----------------------|--|
| Servo Mounting Holes | 4 places #2-56 @ 90° on 0.75" B.C. |
| Servo Mount | designed to accommodate motor mount cleat "PIC type" L2-2 |
| Flange Mounting Holes | 4 places .100 dia. thru holes |
| Shaft Coupling | must be flexible (do not hard mount) |

Electrical

| | |
|-----------------------|---|
| Code | incremental |
| Pulses per Revolution | see "Ordering Information" |
| Supply Voltage | +5 volts ±5% @ 80mA max. |
| Output Format | dual channel quadrature and index with complements (no index on EX112) |
| Output Type | TTL differential line driver (26LS31 or equiv.) should be terminated into a line receiver (26LS32, or equivalent circuit) |
| Rise Time | 1.0μsec. max. |
| Frequency Response | see graph: Fig. 3 |

Environmental

| | |
|-------------|---|
| Temperature | operating: -10°C to +70°C storage: -40°C to +125°C |
|-------------|---|

Termination

| | |
|------|--|
| Type | 28 AWG flat ribbon cable with 10 position connector Berg P/N 65863-165 or equiv. Mates with Berg P/N65863-165 or equiv. (mating connector not provided) |
|------|--|

Ordering Information

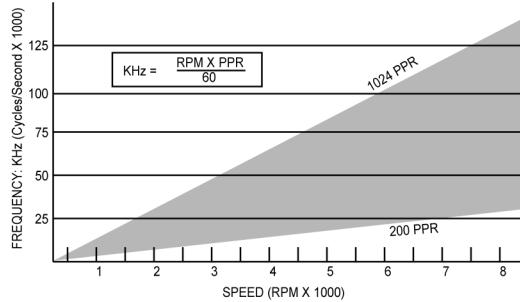
EX11 X - XXXX - X

| | |
|---|----------------------|
| Basic Model No. | <input type="text"/> |
| Output Format | <input type="text"/> |
| 2 = Quadrature | |
| 3 = Quadrature w/index | |
| 6 = Quadrature w/index & complements | |
| Pulses Per Revolution (PPR) | <input type="text"/> |
| -200, -256, -500, -512, -1000, -1024 | |
| Mounting | <input type="text"/> |
| 1 = Servo mount | |
| 2 = Flange Mount | |

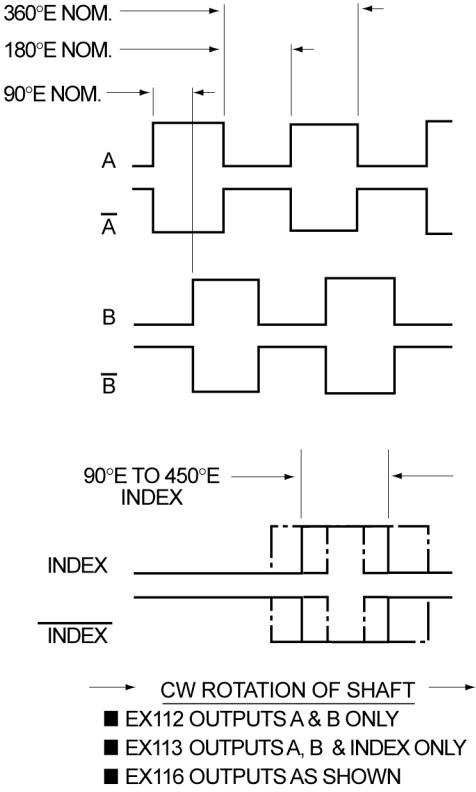
EXAMPLE: EX113-500-2

| Pin No. | Color | Signal |
|---------|--------|-----------|
| 1 | Brown | N/C |
| 2 | Red | +5V |
| 3 | Orange | \bar{B} |
| 4 | Yellow | B |
| 5 | Green | index |
| 6 | Blue | index |
| 7 | Violet | \bar{A} |
| 8 | Gray | A |
| 9 | White | N/C |
| 10 | Black | Ground |

Figure 3



Output Wave Form



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170 Technology Drive
Irvine, CA 92618-2401
(949) 341-9500 Fax: (949) 453-2700
email: sales@beiduncan.com

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