

Lineshaft Pacer Encoders

The ability to interface a position encoder to a ServoWire Drive can provide vital position information to the motion control system.

This approach is simple, yet effective, because information for the “encoder axis” is available to be used in the same way that information is used from any “servo axis”.

Uses of Remote Encoders

- 1) **Pacer Encoders** measure real-time shaft position data of a machine axis to be sent to other servo axes in the system when **electronic gearing** and/or **cam profiling** are used in an application.
- 2) **Programmable limit switches** on each ServoWire drive can be configured to turn on or off based on pacer encoder position.
- 3) **Position and velocity information** is accessible from the application program for every encoder used with an SMLC system.
- 4) **Remote Feedback Encoders** can be used to provide position feedback directly from the load under control, usually used in conjunction with velocity feedback from the servomotor shaft to provide an additional level of precision for the control system.

ServoWire Drive Interface

The encoder interface is a partial servo axis interface, consisting only of differentially received quadrature A and B channels and a reference Z-channel. Selecting the “encoder input” axis control mode disables servodrive alarm detection but still provides open wire detection to insure encoder position information integrity.

Optical Position Encoders

ORMEC’s Model EDR-25 optical, incremental position encoders are ideal for a wide variety of rugged industrial applications where reliability is a prime concern.

LED light sources rated for 100K hours MTBF, 40 pound axial/40 pound

radial shaft loading capability, 200 KHz frequency response allow these encoders to be effective in harsh, industrial applications.

The EDR-25 provides a 1/4 cycle wide gated zero reference output. Models with cycle interpolation have maximum resolutions up to 200,000 counts per shaft revolution.

Electrical Specifications

Excitation voltages: 5 VDC @ 100 mA maximum.

Output format: Two outputs (A and B) in phase quadrature with a zero reference (Z) output

Output Specifications: Output stage is an MC3487 (or performance equivalent) differential line driver with 20 ma sink and -20 ma source current.

Mechanical Specifications

Maximum Shaft loading: 80 lb. max, 40 lb. rated, axially and radially

Shaft radial runout: 0.001" T.I.R.

Maximum Starting torque at 25C: 3.0 oz-in typical

Shaft angular acceleration: 10⁵ radians/sec² (maximum)

Moment of inertia: 5.2 x 10⁻⁴ oz-in-sec²

Bearing type: Precision ABEC ball bearing

Minimum Bearing Life: 1.5 x 10⁹ revolutions at rated shaft loading.

Shaft: 303 stainless steel

Maximum shaft speed: 8000 RPM or 200 KHz count channel output frequency, whichever occurs first (before cycle interpolation).

Weight: 11 oz. typical (25S)
14 oz. typical (25C)

Environmental Specifications

Operating temperature range: 0 to +70C

Storage temperature range: -25 to +85C

Maximum Shock: 75G’s for 11 milliseconds duration

Vibration: 58 Hz to 500 Hz at 20G’s

Maximum Humidity: 98% R.H. (non-condensing)

ORDERING GUIDE

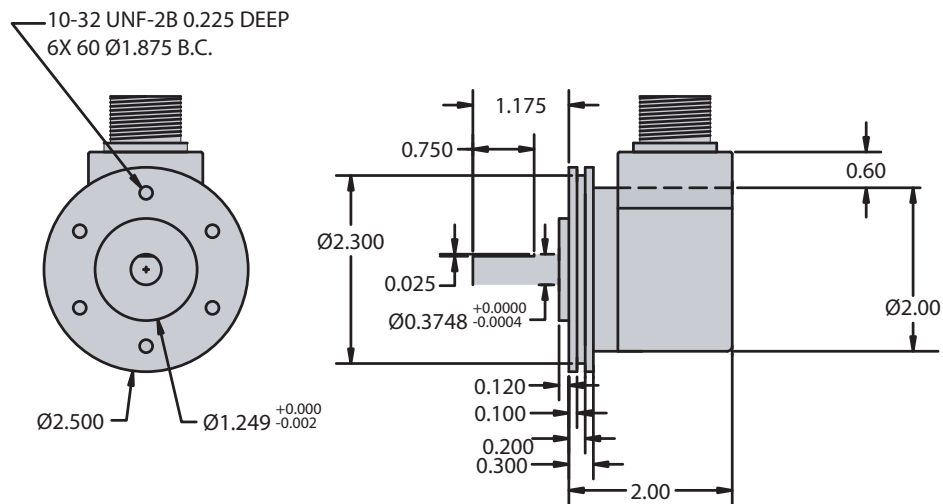
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EDR-25S/A1000	Position Encoder: 1000 linecount, servo mount provides 4,000 counts per rev
EDR-25S/A1250	Position Encoder: 1250 linecount, servo mount provides 5,000 counts per rev
EDR-25S/A2500	Position Encoder: 2500 linecount, servo mount provides 10,000 counts per rev
EDR-25S/A5000	Position Encoder: 5000 linecount, servo mount provides 20,000 counts per rev
EDR-25S/B5000	Position Encoder: 10,000 linecount, servo mount provides 40,000 counts per rev
EDR-25S/E2500	Position Encoder: 12,500 linecount, servo mount provides 50,000 counts per rev
EDR-25S/D5000	Position Encoder: 20,000 linecount, servo mount provides 80,000 counts per rev
EDR-25S/E5000	Position Encoder: 25,000 linecount, servo mount provides 100,000 counts per rev
EDR-25S/F5000	Position Encoder: 25,000 linecount, servo mount provides 100,000 counts per rev, high freq.
EDR-25S/G5000	Position Encoder: 50,000 linecount, servo mount provides 200,000 counts per rev, high freq.

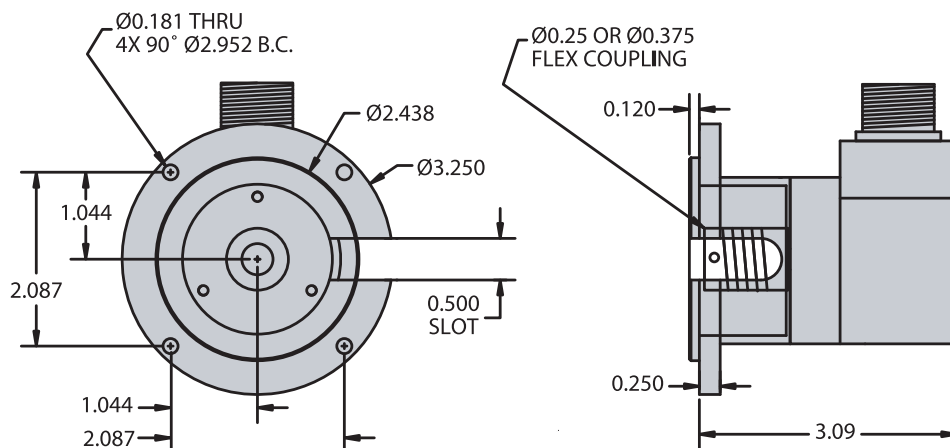
Note: To specify encoder with flange mount and integral coupling, replace “25S” in model numbers above with “25C”.

CBL-QE25SW/X	Encoder Cable, EDR-25 to ServoWire Drive, 5-150 ft
CBL-QE25SWV/X	Encoder Cable, EDR-25 to ServoWire Drive, IP-67, water-resistant, 5-150 ft
CON-E25	Encoder Connector, for EDR-25 Encoders

EDR-25S Outline Drawing



EDR-25C Outline Drawing



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