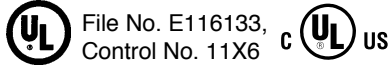


Series X25

- Heavy duty industrial enclosure with 1/2" diameter conduit entry
- Up to 5000 PPR with optional marker
- Approved for National Electrical Code (NEC) Class 1 & 2, Divisions 1 & 2, Groups C,D,E,F,G



APPLICATION/INDUSTRY

These rugged, high-performance, incremental optical encoders are suitable for hazardous locations feature environmentally sealed, cast aluminum housings with 4-inch square flange mounting, and 1/2" conduit entry. A stainless steel shaft and a clear anodized housing provide corrosion resistance.

DESCRIPTION

Electrical outputs are electronically compatible with almost all drives and PLC's. Differential line driver outputs are available for long cable runs (hundreds of feet) and higher noise immunity.

Series X25 encoders are designed for use in environments stated in: UL Class I, Group C: atmospheres such as ethyl ether and ethylene; UL Class I Group D: atmospheres such as acetone, ammonia, benzene, butane, cyclopropane, ethanol, gasoline, hexane, methanol, methane, natural gas, naphtha, and propane; Class II, Groups E, F & G: combustible metal dusts, including aluminum, magnesium, and their commercial alloys, and atmospheres containing combustible carbonaceous dusts, including carbon black, charcoal, coal, or coke dusts, and combustible dusts including flour, grain, wood, plastic, and chemicals.

Classifications of hazardous locations are subject to the approval of the authority having jurisdiction. Refer to Article 500 of the National Electrical Code (NEC).

FEATURES AND BENEFITS

Mechanical & Environmental Features

- Large stainless steel shaft (1/4" or 3/8") and shaft seal
- Heavy-duty cast aluminum housing, and an O-ring seal
- Heavy-duty ABEC precision bearings standard
- Up to 5000 RPM slew speed

Electrical Features

- Noise immune to ESD, RFI and electrical transients
- High current outputs
- Over-Voltage protection
- Reverse Voltage protection
- Output Short-Circuit Protection

SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental
 Resolution: 1 to 5000 PPR (pulses/revolution)
 Accuracy: (Worst case any edge to any other edge) ≤ 1024 PPR (metal disk): ± 7.5 arc-min.
 > 1024 PPR (glass disk): ± 2.5 arc-min.
 Format: Two channel quadrature (AB) with optional Index (Z) and complementary outputs
 Phase Sense: A leads B for CCW shaft rotation as viewed from the shaft end of the encoder
 Quadrature Phasing: $90^\circ \pm 25^\circ$ electrical
 Symmetry: $90^\circ \pm 25^\circ$ electrical
 Index: 2540 PPR and below: $180^\circ \pm 25^\circ$ electrical; Greater than 2540 PPR: $90^\circ \pm 25^\circ$ electrical
 Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL

Input Power:
 4.5 min. to 26 VDC max. at 80 mA max., not including output loads
 Outputs:
 7273 Open Collector: 30 VDC max., 40 mA sink max.
 7272 Push-Pull and Differential Line Driver: 40 mA sink or source
 Frequency Response: 100 kHz min.
 Electrical Protection: Overvoltage, reverse voltage and output short circuit protected
 Noise Immunity: Tested to EN50082-2 (Heavy Industrial) for Electro Static Discharge, Radio Frequency Interference, Electrical Fast Transients, Conducted and Magnetic Interference

MECHANICAL

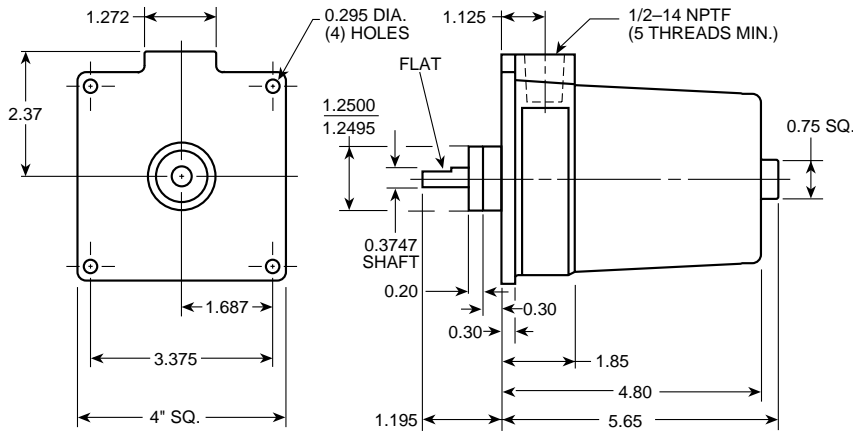
Shaft Loading: 40 lbs. radial, 40 lbs. axial
 Shaft Speed: 5,000 RPM max.
 Shaft Runout: 0.001" max. TIR
 Starting Torque: (max at 25 °C) 2.0 oz.-in
 Moment of Inertia: 9.0×10^{-4} oz-in-sec²

ENVIRONMENTAL

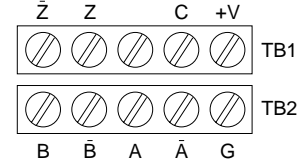
Operating Temperature: 0 to +70 °C;
 Storage Temperature: -40 to +90 °C
 Shock: 50 G's for 11 milliseconds duration
 Vibration: 5 to 2000 Hz at 2 G's
 Humidity: to 98% without condensation
 Weight: 4.5 lbs. (2.0 kg)
 Enclosure Rating: NEMA4X/IP56 (dust proof, washdown)

Series X25

Approximate Dimensions (in inches)

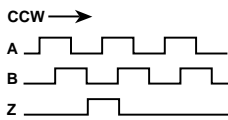


Terminal Board Connections

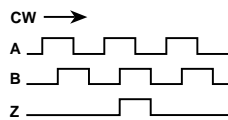


Screw terminals with pressure plates that accept #14 AWG to #22 AWG.

Format A

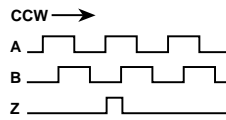


Format C

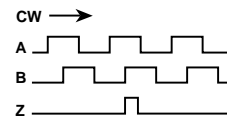


If Code 2 PPR > 2540

Format A



Format C



Ordering Information

To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: Pulses/Rev			Code 3: Mechanical	Code 4: Output	Code 5: Electrical
X25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X25 Explosion Proof, Shielded Bearings with Shaft Seal	0001 0005 0010 0012 0025 0050 0060 0086 0100 0120 0180 0200 0240 0250 0254 0256 0300 0360 0400 0500 0512	0600 0635 0720 0768 0800 0900 1000 1024 1200 1250 1270 1500 1600 1800 1968	2000 2048 2400 2500 2540 3000 3400 3600 3750 4000 4096 4800 5000	0 3/8" Shaft 1 1/4" Shaft	0 Single Ended, no index, Format C 1 Single Ended, with index, Format C 2 Differential, no Index, Format C 3 Differential, with index, Format C 4 Single Ended, with index, Format A 5 Differential, with index, Format A	0 5-26V in; 5-26V Open Collector with 2.2kΩ Pullup out 1 5-26V in; 5-26V Open Collector out 2 5-26V in; 5V Totem Pole out 3 5-26V in; 5V Line Driver out 4 5-26V in; 5-26V Line Driver out