

HAZARDOUS SERIES HSD35

Hazardous Duty Encoder

Key Features

- UL Certified for Hazardous Applications
- Rugged Design Resists up to 400G Shock and 20G Vibration
- Compact Design with Field Serviceable Connector for Solder-Less Connections
- Dual Isolated Output Option for Redundancy



Class 1, Div 2 Group A, B, C & D
Class 2, Div 2 Group F & G

SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Optical

Resolution: 1 to 5000 PPR (pulses/revolution)
See Ordering Information

Format: Two channel quadrature (AB) with optional Index (Z), and complementary outputs

Phase Sense: A leads B for CW shaft rotation viewing the shaft clamp end of the encoder

Quadrature Phasing:

For resolutions 200 to 300PPR and 1200PPR and above: 90° ±30° electrical; all other resolutions: 90° ±15°

Symmetry:

For resolutions 200-300PPR and above: 180° ±25° electrical; all other resolutions: 180° ±18°

Index: 150° to 330°, A leads B CW (From Clamp End)

Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL

Input Power: 5-26VDC, 5-15VDC. 50 mA max., not including output loads.

Outputs:

7272 Push-Pull: 40mA, sink or source

7272 Differential Line Driver: 40 mA, sink or source

7273 Open Collector: 40mA, sink max

4469 Differential Line Driver: 100mA, sink or source

High Powered Mosfet Line Drivers (10-30VDC)

Frequency Response: 125 kHz (data & index)

Noise Immunity: Tested to EN61326-1

Electrical Immunity: Reverse polarity and short circuit protected

Termination: Pluggable screw terminals, inside terminal box with 1/2" conduit connector

MECHANICAL

Bore Diameter: 6mm to 28mm, 1.4" to 1.25", electrically isolated

Mounting Configuration: Hollow Bore, direct mount over shaft with multiple tether options available

Mating Shaft Length: 1.25", Minimum, 1.60", Recommended

Shaft Speed: 6000 RPM, Maximum (Enclosure Rating is IP64 at speed over 5000 RPM)

Starting Torque: 11.0 in-oz. maximum (at 25°C)

Running Torque: 5.0 in-oz. maximum (at ambient)

Bearings: ABEC 3

Housing and Cover: Hard Anodized and Powder Coated Aluminum

Shaft Material: Stainless Steel

Disc Material: Mylar

Weight: 3.2 lb (51.2 Oz) Typical

ENVIRONMENTAL

Operating Temperature: -40 ° to +85 °C with 7272 Line Driver; -40 ° to +70 °C with 4469 line driver; see "Ordering Information". At shaft speed above 3000 RPM, derate 10 °C per 1000 RPM

Storage Temperature: -40 to +100°C

Shock: 400g, 6mSec

Vibration: 5 to 3000 Hz, 20g

Humidity: Up to 98% (non-condensing)

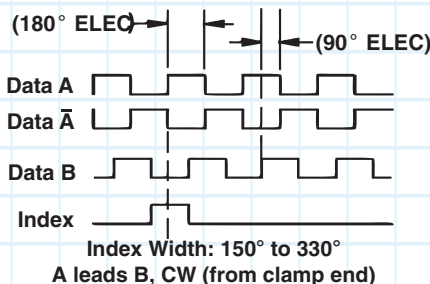
Enclosure Rating: IP67 (IP64 at shaft speeds above 5000RPM)

Hazardous Location Certification:

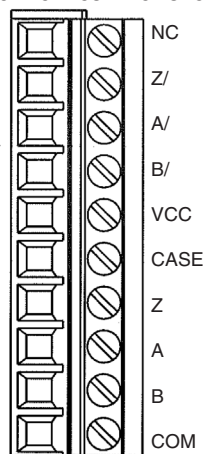
Class I, Division 2, Groups A, B, C & D;
Class II, Division 2, Groups F & G

DATA AND INDEX

Not all complements shown
A shown for reference



ELECTRICAL CONNECTIONS



* Index (Z) optional. See Ordering Information

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Ordering Information

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

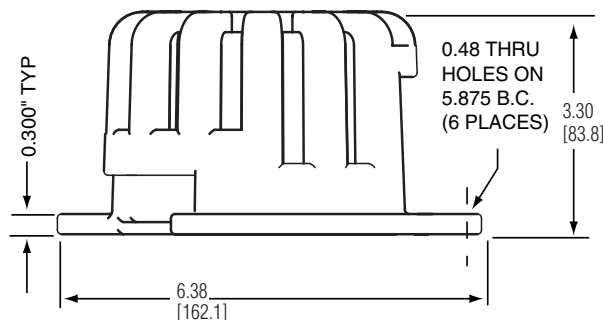
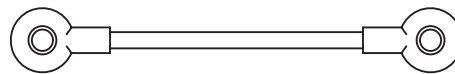
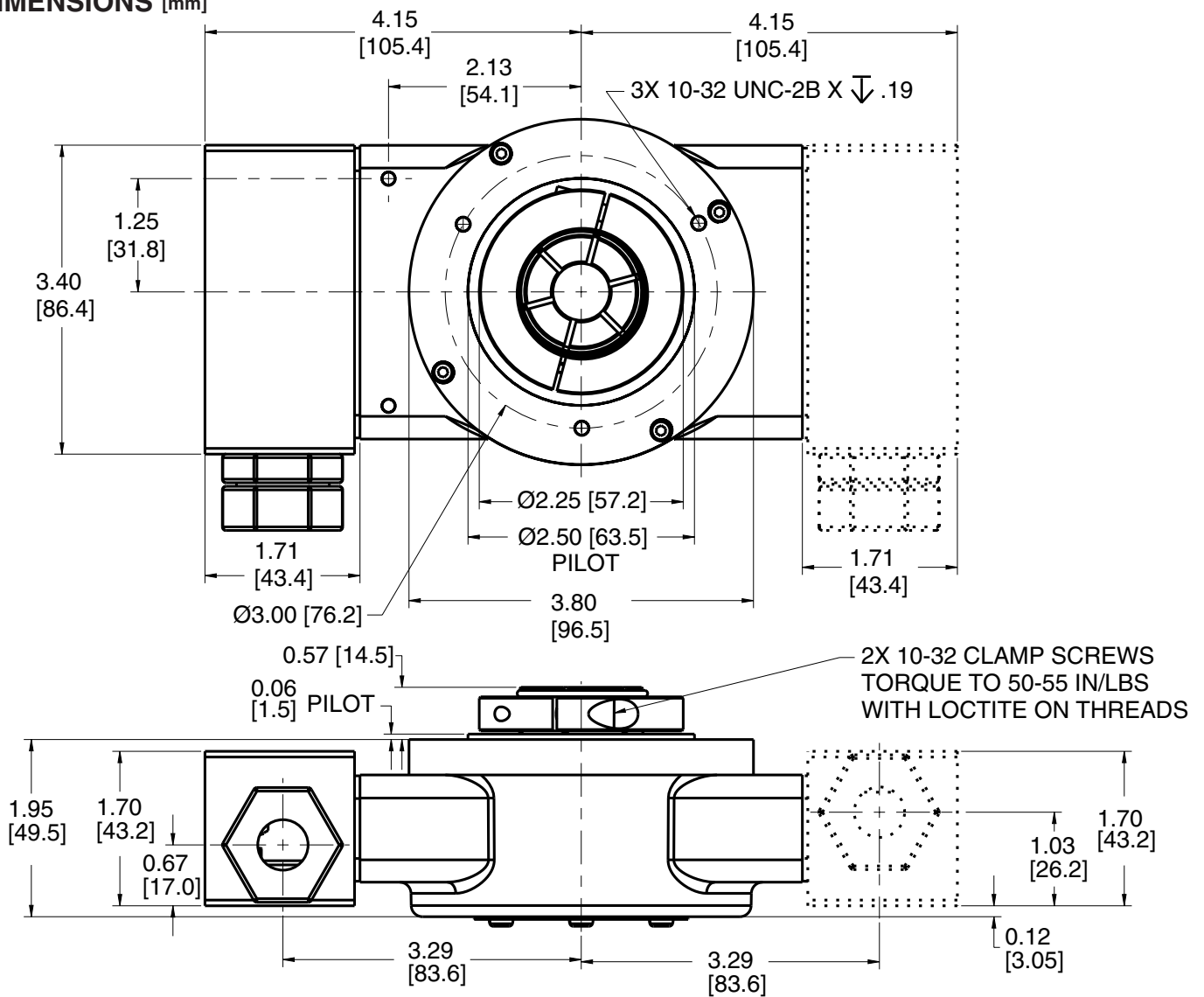
Code 1: Model	Code 2: PPR	Code 3: Bore Size	Code 4: Fixing	Code 5: Output Format	Code 6: Options	
HSD35	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D2	
Ordering Information						
HSD35 Hazardous Series, Hollowshaft Encoder	0001 0512 0003 0600 0010 0900 0012 1000 0015 1024 0032 1200 0050 1500 0060 2000 0100 2048 0120 2400 0200 2500 0240 3072 0250 4000 0300 4096 0360 5000 0500	0 6mm 1 1/4" 2 5/16" 3 8mm 4 3/8" 5 10mm 6 12mm 7 1/2" 8 5/8" 9 15mm A 16mm C 19mm D 3/4" E 20mm F 7/8" G 24mm H 1" J 1-1/8" K 1-1/4" M 14mm N 18mm P 25mm R 28mm	Stamped Metal 0 None 1 4.5" C-Face Tether 2 8.5" C-Face Tether 3 Slotted Tether 4 Same as 1 w/56 C-Face Cover 5 Same as 3 w/Cover 6 Same as 2 w/180 C-Face Cover	Swivel Rod A AC Motor Fan Cover Tether with T-Bolt B 4.5" C-Face Tether with 3/8" Bolt C 8.5" C-Face Tether with 1/2" Bolt D Same as "A" w/ Cover Kit E Same as "B" w/ Cover Kit	0 Single Ended ABZ, 5-26VDC push-pull 1 Single Ended ABZ, 5-26VDC O/C 2 Single Ended ABZ, 5-26VDC O/C w2.2kOhm 4 Differential AB only, 5-26V, 5-26V out (7272) 5 Differential AB only, 5-26V in, 5V out (7272) A Differential AB, 5-26V in, 5V out (4469) C Differential AB, 5-15V in, 5-15V out (4469) 6 Differential ABZ, 5-26V in, 5V out (7272) 7 Differential ABZ, 5-26V in, 5-26V out (7272) 8 Differential ABZ, 5-26V in, 5V out (4469) 9 Differential ABZ, 5-15V in, 5-15V out (4469) D Dual Isolated Outputs, same as "6" E Dual Isolated Outputs, same as "7" F Dual Isolated Outputs, same as "8" G Dual Isolated Outputs, same as "9" W Differential ABZ, 10-24V in, 10-24V out (MOSFET)	D2

Accessory Kits:

- 114573-0001** Tether Kit, 4.5" C-Face Single Point with 3/8" Bolt
- 114574-0001** Tether Kit for Standard AC Motor Fan Covers with T-Bolt
- 114575-0001** Tether Kit, 8.5" C-Face Single Point with 1/2" Bolt
- 756-042-01** Rod Tether, AC Motor Fan Cover with T-Bolts
- 756-043-01** Rod Tether Kit, 4.5" C-Face with 3/8" Bolt
- 756-044-01** Rod Tether Kit, 8.5" C-Face with 1/2" Bolt
- 114622-0001** Cover Kit, 56 C-Face (Single or Dual Output)
- 114928-0001** Cover Kit, 180 C-Face (Single or Dual Output)
- 114623-0001** Cover Kit, Fan Cover (Single or Dual Output)

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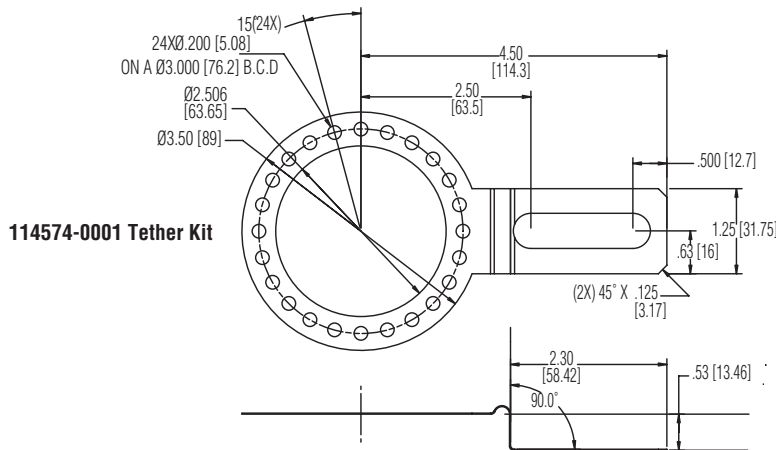
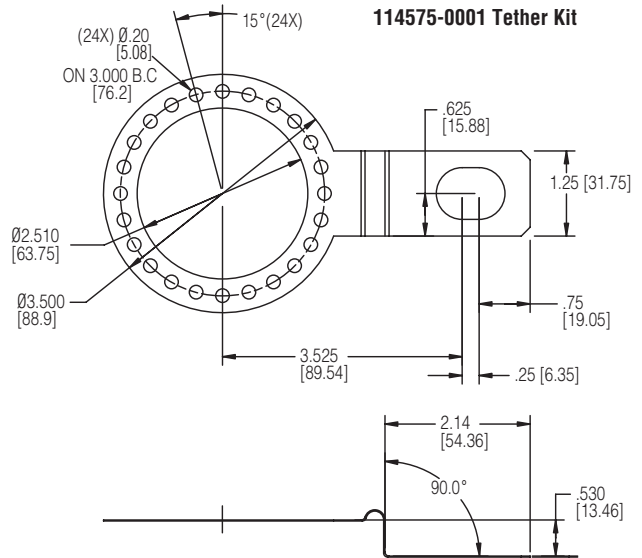
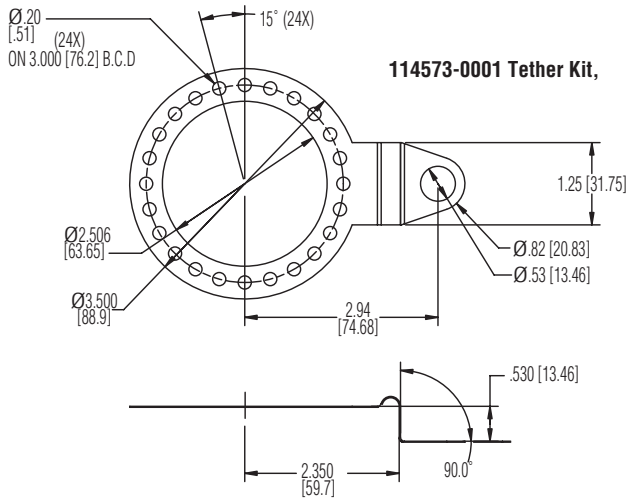
DIMENSIONS inch [mm]



OPTIONAL SAFETY COVER(S)

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DIMENSIONS inch
[mm]



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