

SERIES HSD35

NorthStar™ brand

Heavy Duty Optical Encoder

Key Features

- Rugged Design Resists up to 400g Shock
- Stainless Steel Clamp and Hub Shaft for Mill Duty
- Compact Design with Field Serviceable Connector for Solder-Less Connections
- Accommodates Shaft Sizes up to 1.25" (Electrically Isolated up to 1.125")
- Dual Isolated Output Option for Redundancy



PRELIMINARY SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental
Resolution: 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 1024PPR: 180° ±25° electrical; all other resolutions: 180° ±18°
Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL CONNECTIONS

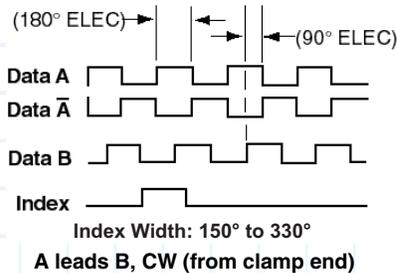
Signal	Connector Pin
Common	1
B	2
A	3
Z *	4
Case (optional)	5
Vcc 5-26 VDC	6
B	7
A	8
Z *	9
No Connection	10

* Index (Z) optional. See Ordering Information

ELECTRICAL

Input Power: 5-26VDC, 5-15VDC. 50 mA max., not including output loads.
Outputs: ET7272, ET7273, 4469
Frequency Response: 125 kHz (data & index)
Termination: 10 Pin EPIC Connector
Mating Connector: 10 pin style HA-10

DATA AND INDEX
 Not all complements shown
 A shown for reference



MECHANICAL

Shaft Material: Stainless Steel
Bore Diameter: 6mm to 28mm, 1.4" to 1.25", electrically isolated
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
Disc material: Plastic or metal (unbreakable)
Weight: 1.76lb (28 Oz) Typical

ENVIRONMENTAL

Standard Operating Temperature: -40 to +85°C (0 to +70°C with 4469 line driver, see "Ordering Information"). At shaft speed above 3000 RPM, derate 10°C per 1000 RPM
Extended Temperature Range: -40 to +100°C (See ordering information)
Storage temperature: -40 to +100°C
Shock: 400g, 6mSec
Vibration: 5 to 3000 Hz, 20g
Humidity: 100%
Enclosure Rating: IP67 (IP64 at shaft speeds above 5000RPM)
Connector Rating: IP65

Replaces the Magcoder HS35M (shown below)



Contact Customer Service for appropriate replacement model. +1.800.873.8731

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"/>		
Ordering Information						
HSD35 Heavy-duty, 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/56C-face cover 5 Same as 3 w/cover 6 Same as 2 w/180C-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, 5-26, 5-26 out (7272) 5 Differential AB only, 5-26 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, 5-26 in, 5V out (7272) 7 Differential ABZ, 5-26 in, 5-26 out (7272) 8 Differential ABZ, 5-26 in, 5V out (4469) 9 Differential ABZ, 5-15 in, 5-15 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" H Same as "0" with Extended temp range J Same as "1" with Extended temp range K Same as "2" with Extended temp range L Same as "4" with Extended temp range M Same as "5" with Extended temp range N Same as "6" with Extended temp range P Same as "7" with Extended temp range Q Same as "D" with Extended temp range R Same as "E" with Extended temp range	Blank None

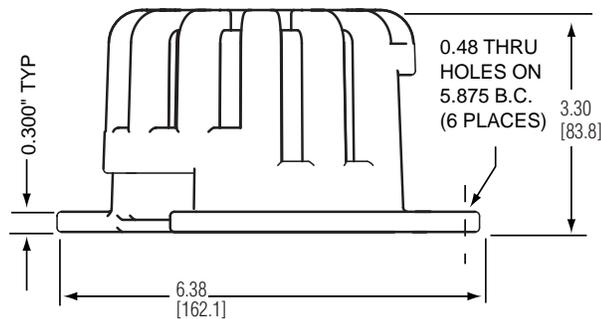
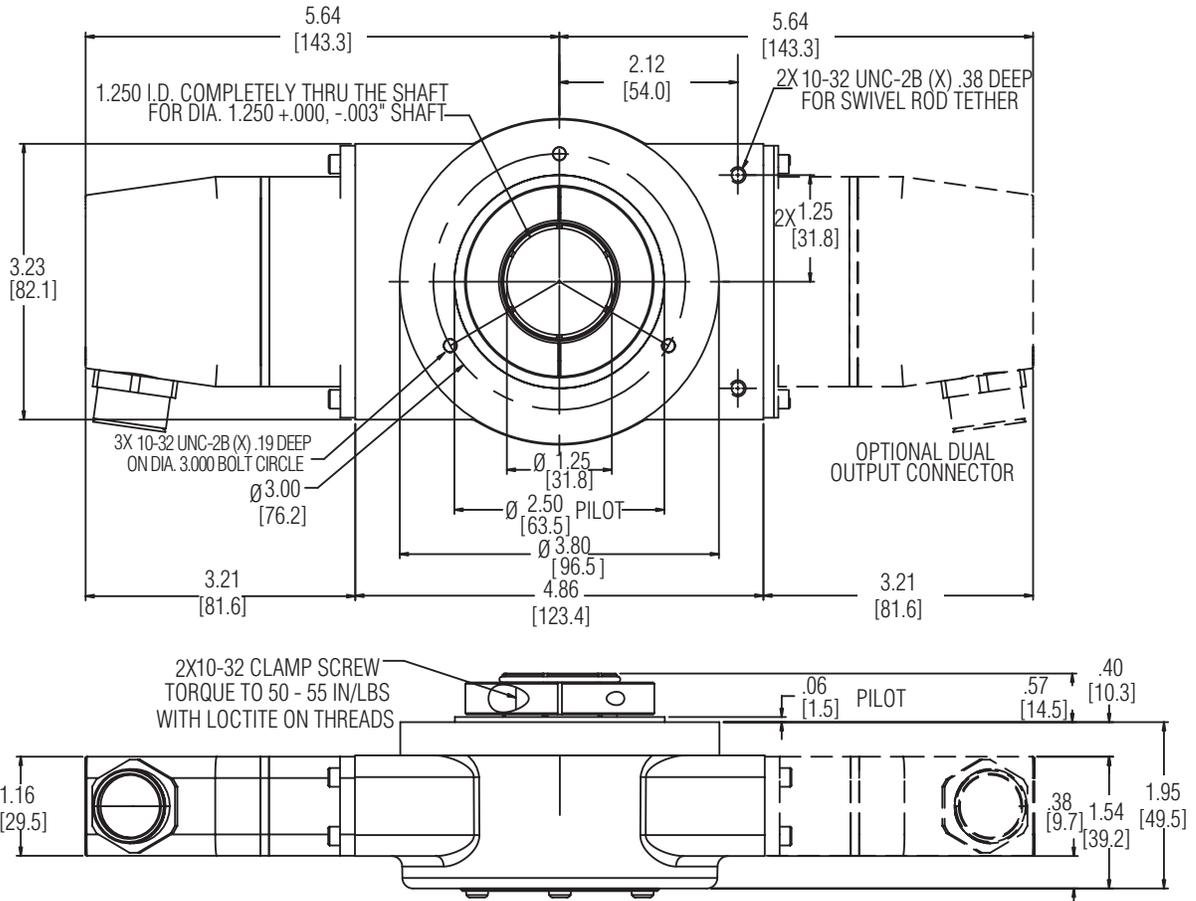
Accessory Kits:

- 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, 56C-face (single or dual output)
- 114928-0001** Cover Kit, 180C-face (single or dual output)
- 114623-0001** Cover Kit, Fan cover (single or dual output)

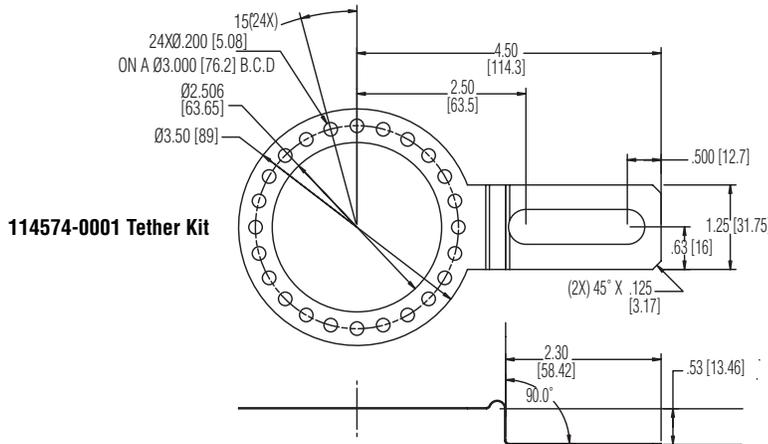
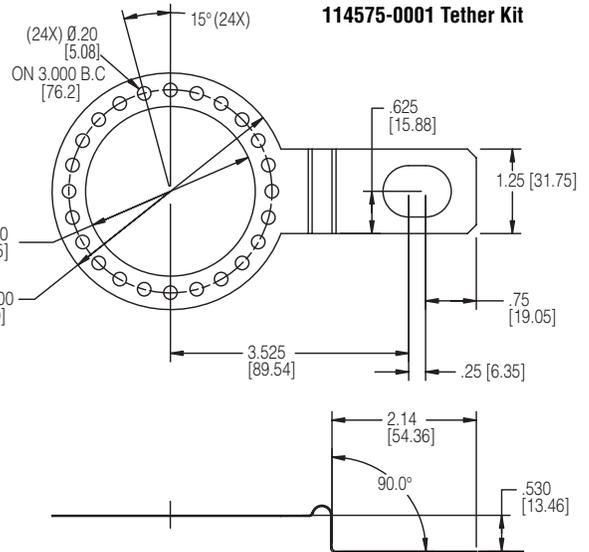
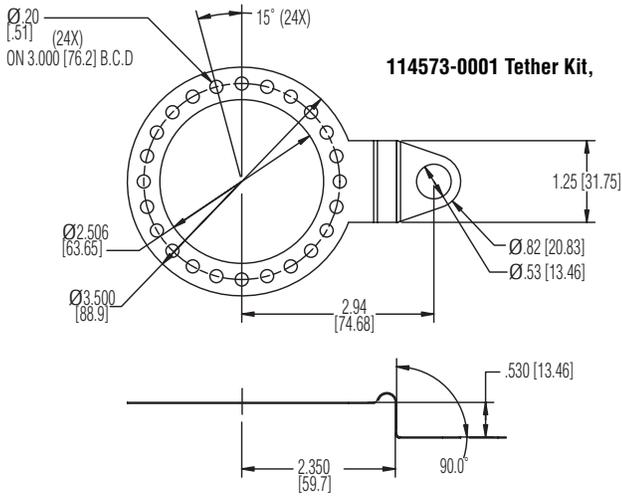
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