

SERIES HD35R

NorthStar™ brand

Heavy Duty Encoder

Key Features

- **Phased Array Sensor for Reliable Signal Output**
- **Rugged Design with Wide-Spaced Oversized Bearings**
- **Unbreakable Code Disc up to 5000 PPR**
- **Improved Seal Design for Increased Moisture Resistance**
- **400G Shock and 20G Vibration Independently Validated**



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 end of the encoder
Quadrature Phasing: For resolutions to 1200 PPR: 90° ± 15° electrical; For resolutions over 1250 PPR: 90° ± 30° electrical
Symmetry:
 For resolutions to 1024 PPR: 180° ± 18° electrical
 For resolutions over 1024 PPR: 180° ± 25° electrical
Index: 150° to 300°, A leads B CW (from shaft 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: 40 mA sink max
 4469 differential line driver: 100 mA sink or source
Frequency Response: 125 kHz (data & index)
Noise Immunity: Tested to EN613261
Electrical Immunity: Reverse polarity and short circuit protected
Termination: Pluggable screw terminals inside terminal box with M20 cable gland exit

MECHANICAL

Shaft Diameter: 11mm with 4mm key
Mounting Configuration: 100mm IEC “Euro” Flange with 6 Hole Face
Shaft Speed: 6000 RPM, Maximum
Starting Torque: 12.0 in-oz. maximum (at 25°C)
Running Torque: 5.0 in-oz. maximum (at ambient)
Bearings: Deep groove, Dual arrangement
Housing and Cover: Hard Anodized Aluminum
Shaft Material: Stainless Steel
Disc Material: Mylar (unbreakable)
Weight: 4lb

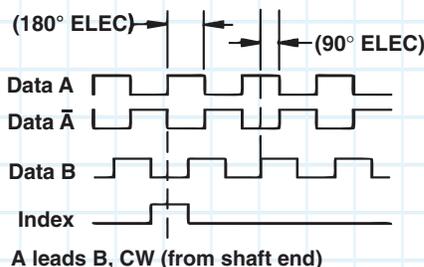
ENVIRONMENTAL

Standard Operating Temperature: -40 to +85°C. 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: Up to 98% (non-condensing)
Enclosure Rating: IP67; Custom Seal Option available for environments with pressurized carbon dust

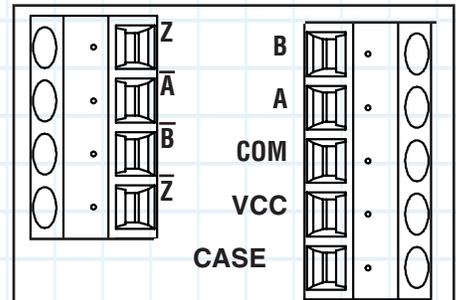
WIRE COLORS

WIRE	PRIMARY FUNCTION	ALTERNATE FUNCTION
Black paired w/ Green	VCC	+UB
Green paired w/ Black	COM	COM
Black paired w/ Blue	A	K1
Blue paired w/ Black	\bar{A}	$\bar{K}1$
Black paired w/ Red	B	K2
Red paired w/ Black	\bar{B}	$\bar{K}2$
Black paired w/ White	Z	K0
White paired w/ Black	\bar{Z}	$\bar{K}0$

DATA AND INDEX
 Not all complements shown
 A shown for reference



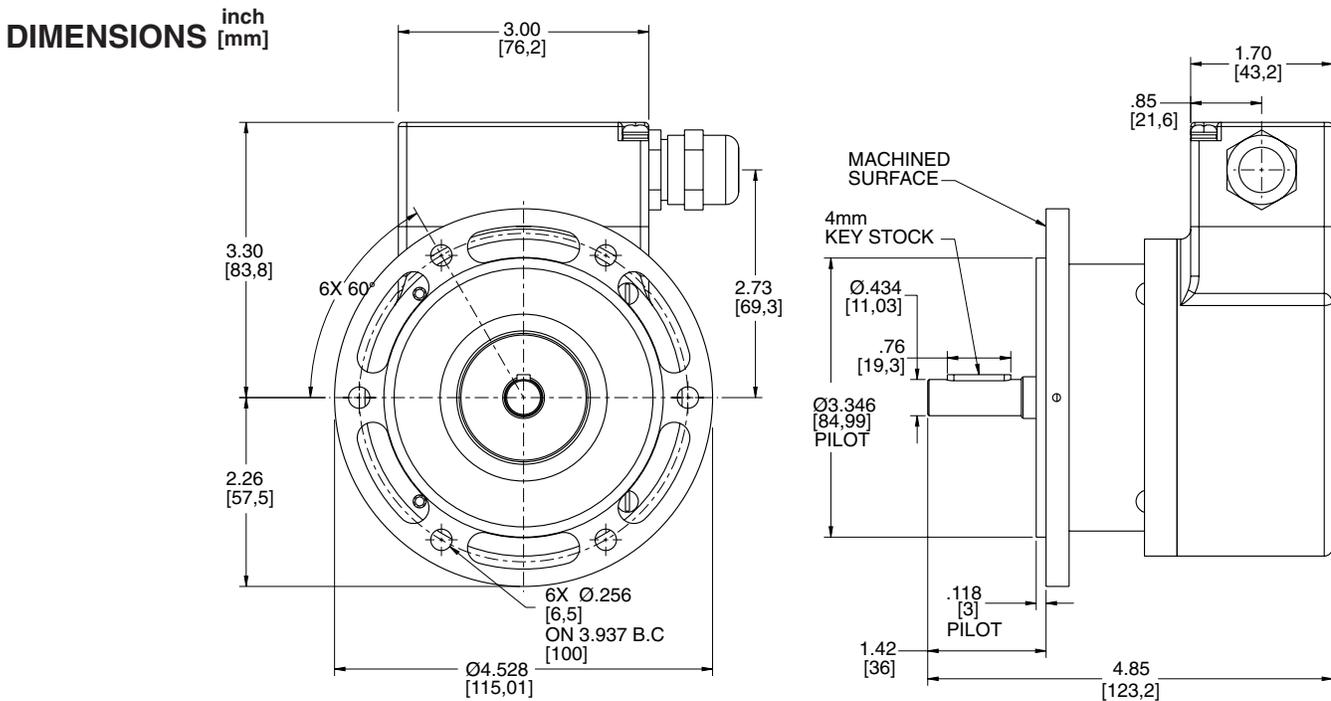
TERMINAL CONNECTIONS



Ordering Information

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

Code 1: Model	Code 2: PPR	Code 3: Mounting	Code 4: Output Format	Code 5: Termination	Code 6: Housing	Code 7: Options
HD35R	□□□□	□	□	□	□	□□
Ordering Information						
HD35R Heavy Duty IEC Flange Encoder	0001 0500 0003 0512 0010 0600 0012 0900 0015 1000 0032 1024 0050 1200 0060 1500 0100 2000 0120 2048 0200 2400 0240 2500 0250 3072 0300 4000 0360 4096 5000	0 100mm IEC "Euro" flange, 11mm shaft w/ 4mm key	0 Single Ended ABZ, 5-26VDC push-pull (7272) 1 Single Ended ABZ, 5-26VDC O/C (7273) 2 Single Ended ABZ, 5-26VDC O/C w2.2kOhm (7273) H Same as "0" with Extended temp range J Same as "1" with Extended temp range K Same as "2" with Extended temp range 4 Differential AB only, 5-26VDC, 5-26VDC out *(7272) 5 Differential AB only, 5-26VDC in, 5VDC out *(7272) A Differential AB only, 5-15VDC in, 5VDC out *(4469) C Differential AB only, 5-15VDC in, 5-15VDC out *(4469) L Same as "4" with Extended temp range M Same as "5" with Extended temp range 6 Differential ABZ, 5-26VDC in, 5VDC out *(7272) 7 Differential ABZ, 5-26VDC in, 5-26VDC out *(7272) 8 Differential ABZ, 5-15VDC in, 5VDC out *(4469) 9 Differential ABZ, 5-15VDC in, 5-15VDC out *(4469) N Same as "6" with Extended temp range P Same as "7" with Extended temp range W ABZ, 10-24VDC Line Driver for cable runs up to 500ft/120m * Note: Line Driver Type, High Powered Mosfet	0 Terminal Box, M20 gland	0 Anodized Aluminum	Blank None 01 Wind Generator Application with Custom Sealing
Accessories: 114917-0001 Isolated Coupling, 11 mm Bore, 50 mm Length 114917-0002 Isolated Coupling, 11 mm Bore, 68 mm Length						



Headquarters: 1675 Delany Road • Gurnee, IL 60031-1282 • USA

Customer Service:
Tel.: +1.800.873.8731
Fax: +1.847.662.4150
custserv@dynapar.com

Technical Support
Tel.: +1.800.234.8731
Fax: +1.847.662.4150
northstar.techsupport@dynapar.com

European Sales Representative
Hengstler GmbH
Uhlandstrasse 49, 78554 Aldingen
Germany
www.hengstler.com