

HD - Incremental Encoders



- Unbreakable Code Disc up to 5000PPR
- Rugged Design Withstands up to 400g Shock
- Rugged Design with Wide-Spaced Oversized Bearings
- Improved Seal Design for Increased Moisture Resistance
- EURO flange, 11 mm shaft diameter
- Phased Array Sensor for Reliable Signal Output

HEAVY DUTY

NorthStar™ CE RoHS

NUMBER OF PULSES

0001 / 0003 / 0010 / 0012 / 0015 / 0032 / 0050 / 0060 / 0100 / 0120 / 0200 / 0240 / 0250 / 0300 / 0360 / 0500 / 0512 / 0600 / 0900 / 1000 / 1024 / 1200 / 1500 / 2000 / 2048 / 2400 / 2500 / 3072 / 4000 / 4096 / 5000

GENERAL INFORMATION

EXTREME HEAVY DUTY SHAFT ENCODER

NorthStar's HD35R Extreme Duty Shaft Encoder has a 100 mm IEC flange with an 11 mm shaft containing a 4mm key for standard motor mounting. The HD35R's features are two, large-gauge, over-sized bearings that can handle excessive shaft loading of up to 440 N axial and 220 N radial. Wide temperature spec of -40°C to 100°C for higher temperature applications. This encoder is IP67 rated for application versatility in harsh duty environments and with PPR range through 5000. The connection has a sealed junction box for field wiring and water ingress protection.

The phased array, wide-gap encoder engine, combined with a unbreakable code disk, to deliver superior shock (400g) and vibration (20g) resistance.

APPLICATIONS

The encoder type HD35R is designed for harsh duty environment applications.

Typical application fields are:

- Steel Mills
- Paper Mills
- Offshore Applications
- Enamelling production line
- Chemical Industry
- Heavy Rail
- Wind power plant

**TECHNICAL DATA
mechanical**

Housing diameter	141,80 mm
Shaft diameter	11mm (Solid shaft) with 4mm key
Flange (Mounting of housing)	EURO flange
Protection class	IP67
Starting torque	0,56 Ncm
Disc material	Mylar (unbreakable)
Max. speed	Max. 6000min ⁻¹
Vibration resistance	20g (5 to 3000 Hz)
Shock resistance	400g (6 msec)
Standard Operating Temperature	-40 ... +85°C At shaft speed above 3000min ⁻¹ , derate 10°C per 1000min ⁻¹

Technical Data Sheet

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**TECHNICAL DATA
mechanical (continued)**

Extended Operating Temperature	-40 ...+ 100°C (See Ordering information)
Storage temperature	-40 ...+ 100°C
Material shaft	Stainless Steel
Material housing	Hard Anodized Aluminium
Weight	approx. 1,8 kg
Connection	Pluggable screw terminals inside terminal box with M20 cable gland exit

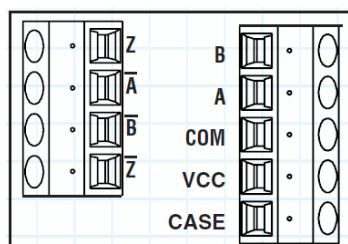
**TECHNICAL DATA
electrical**

Supply voltage	DC 5-26 VDC, DC 5-15 VDC
Max. current w/o load	50 mA
Code	Incremental, optical
Max. pulse frequency	125 kHz
Phasing	Incremental signals (A leads B): A leads B by 90° for cw shaft rotation viewing the shaft end of the encoder
Pulse shape	Square wave

ELECTRICAL CONNECTIONS

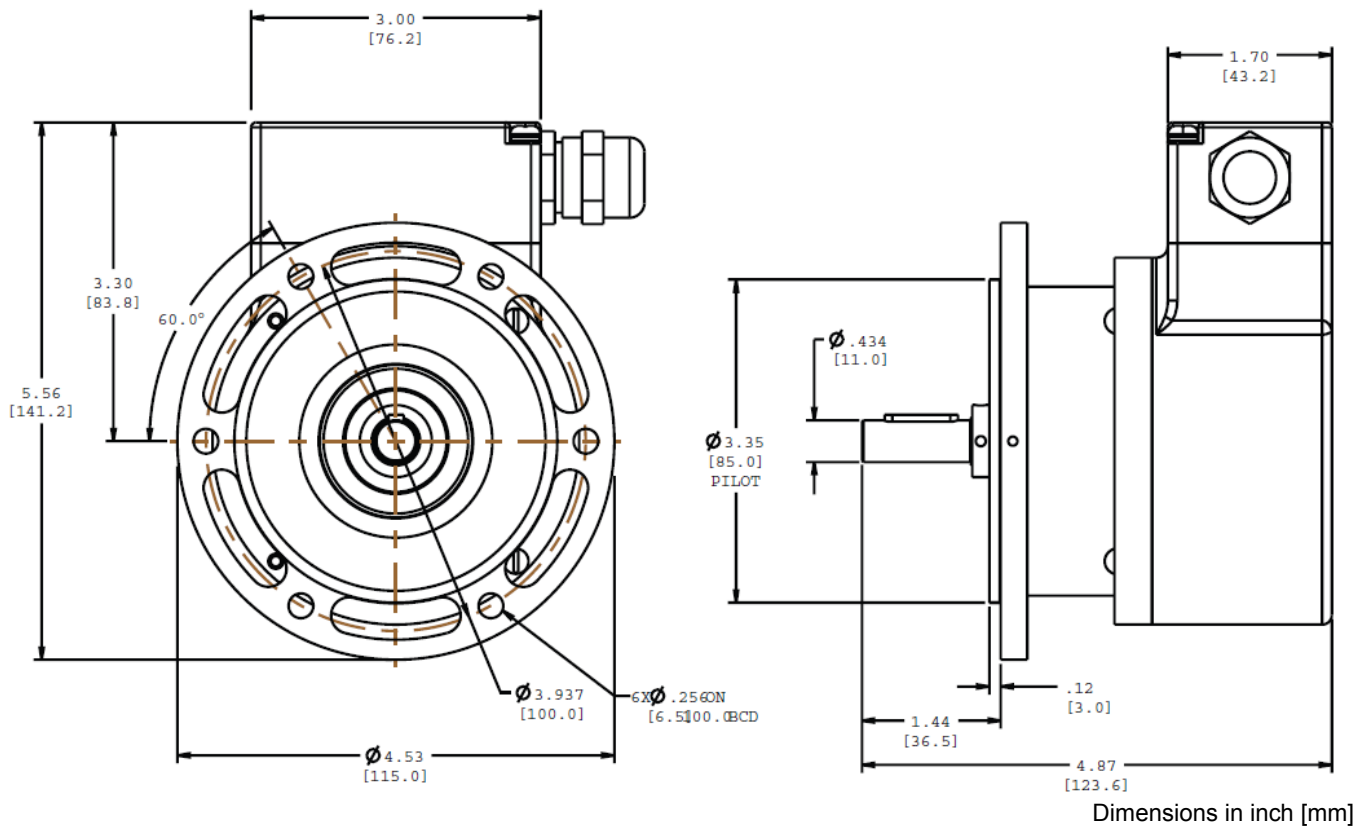
Wire Color	Funktion
Black paired with Green	VCC
Green paired w/ Black	COM
Black paired w/ Blue	A
Blue paired w/ Black	A\
Black paired w/ Red	B
Red paired w/ Black	B\
Black paired w/ White	Z
White paired w/ Black	Z\

TERMINAL CONNECTIONS



Technical Data Sheet
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DIMENSIONED DRAWINGS



ORDERING INFORMATION

Type	Number of Pulses	Mounting	Output Format	Termination	Housing	Options
HD35R	1 ... 5000	0 100mm IEC "Euro" flange, 11 mm shaft with 4mm key	0 Single Ended ABZ, 5-26VDC push-pull H Same as "0" 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, 5-26VDC 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 over 80 meter cable runs	0 Terminal Box, M20 gland	0 Anodized Aluminum	Blank None

ACCESSORIES

Isolated coupling, 11mm

114917-001