

SERIES EN44

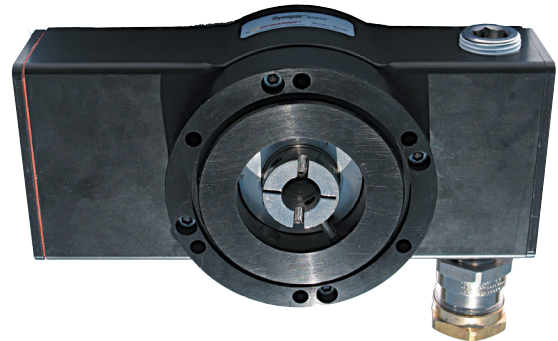
NorthStar™ brand

Zone 1 Hazardous Area Rated Encoder

Key Features

- Triple Certified Encoder for Hazardous Locations
- Hubshaft Design with Isolated Coupling to Compensate for Shaft Endplay
- Encapsulated Electronics with Increased Safety Interface for Zone 1 Use Eliminates Need for I.S. Barrier
- High Current Line Driver for Long Cable Runs
- 50G Shock and 20G Vibration Tolerant

HAZ
Hazardous Duty



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental
Resolution: 1024 and 2048 PPR (pulses/revolution)
Format: Two channel quadrature (AB) with optional Index (Z), and complementary outputs
Index: 180° default gated to B low
Phase Sense: A leads B for CCW shaft rotation viewing the shaft clamp end of the encoder
Quadrature Phasing: 90° ± 30° electrical
Symmetry: 180° ± 30° electrical
Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL

Input Voltage: 7-15VDC, 7-26VDC, 10-30VDC
Input Current: 100mA max., not including output loads
Outputs:

Input/Output Type	Line Driver Type
7-15V/7-15V DC	4428
7-26V/5V DC	4428
10-30V/10-30V DC	2707

Output Current: Refer to Ordering Information Table, Code 4: Output Format

Code 4 Option	Current per Channel (max)
0 or 2	125mA @ 80°C
1 or 3	15mA @ 80°C
4	60mA @ 80°C

Frequency Response: 200 kHz (data and index)
Termination: Terminal block - Ex screwless with spring cage-clamp
Interface: HAWKE type "E" increased safety rated gland for armored and non-armored cables.

HAWKE Part Numbers:

Non-Armored Gland	HAWKE 501/421 A 3/4" NPT S (accepts 8.5 - 13mm cable, OD)
Armored Gland	HAWKE 501/453 UNIV A 3/4" NPT (accepts 12.5 - 20.5mm cable, OD)

MECHANICAL

Mechanical Interface: Electrically isolated stainless steel shaft flex coupling
Mounting: 100mm IEC Flange
Mating Shaft Length: 0.47" to 0.83" (11.9mm to 28.1mm)
Coupling: 16mm, flexible
Shaft Speed: 6000 RPM, max.
Bearings: 6107
Bearing life: 5 x 108 revs at rated shaft Loading, 5 x 1011 revs at 10% of rated shaft loading. (manufacturers' specs)
Housing Material: Aluminum Alloy, Black Anodized and Powder coat
Disc material: Aluminum
Weight: 6 lb. 6 oz, Typical

ENVIRONMENTAL

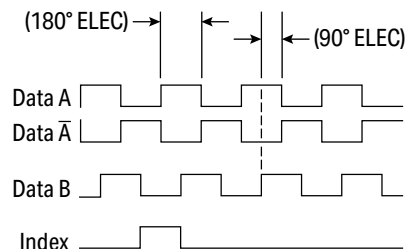
Operating Temperature: Refer to Temperature Range Table (below)
Storage temperature: -50 to 100°C. Armored Gland high-temperature specification limited to +80°C.
Shock: 50G's for 11msec duration
Vibration: 5 to 2000Hz @ 20 G's
Humidity: 100%
Enclosure Rating: IP67

CERTIFICATIONS

IECEX UL 22.0040X
 UL 22 ATEX 2655X
 Ex eb ia mb IIC T4 Gb
 Ex tb IIIC T119°C Db
 Class I, Zone 1, AEx eb ia mb IIC T4 Gb
 Zone 21, AEx tb IIIC T119°C Db

STANDARD DATA AND INDEX

Not all complements shown
 Ā shown for reference



Index Width: 180° Default
 A leads B, CCW (from clamp end)

SERIES EN44

NorthStar™ brand

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: Output Format	Code 5: Termination
EN44	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EN44 Triple Certified ATEX Zone 1 Hollowshaft Encoder	1024 2048	A 16mm	0 Differential AB, 7-15V in, 7-15V out* 1 Differential AB, 7-26V in, 5V out* 2 Differential ABZ, 7-15V in, 7-15V out* 3 Differential ABZ, 7-26V in, 5V out* 4 Differential ABZ, 10-30V in, 10-30V out*	0 No Gland 1 Ex Gland for non-armored cables (8.5 - 13.5mm OD) 2 Ex Gland for armored cables (12.5 - 20.5mm OD)

* See Electrical Specifications for Details

TEMPERATURE RANGE

Code 4 Option	Output Current	Group II Ambient Temperature Range	Group III Ambient Temperature Range
0 or 2	125mA max per channel	Ta = -50°C to +80°C	Ta = -25°C to +80°C
1 or 3	10mA max per channel	Ta = -50°C to +80°C	Ta = -25°C to +80°C
1 or 3	15mA max per channel	Ta = -50°C to +80°C	Ta = -25°C to +80°C
4	90mA max per channel	Ta = -50°C to +60°C	Ta = -25°C to +60°C
4	60mA max per channel	Ta = -50°C to +80°C	Ta = -25°C to +80°C

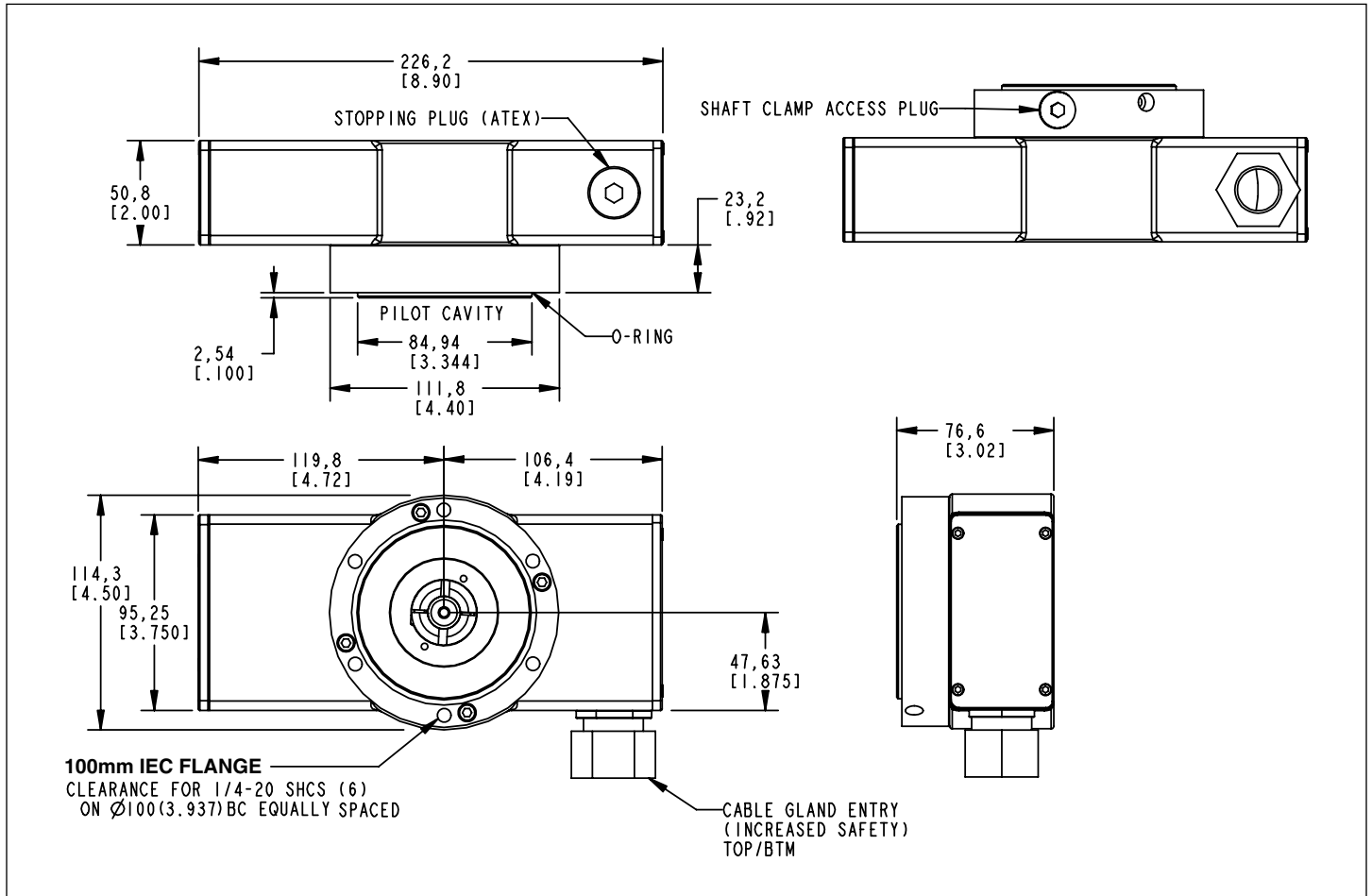
ELECTRICAL CONNECTIONS

Encoder Function	Terminal Box Connection
Signal A	1
Signal \bar{A}	2
Signal B	3
Signal \bar{B}	4
Signal Z	5
Signal \bar{Z}	6
Power +V	7
Common	8

SERIES EN44

NorthStar™ brand

Dimensions: inch [mm]



Worldwide Brands: NorthStar™ • Dynapar™ • Hengstler™ • Harowe™

WWW.DYNAPAR.COM



Headquarters
2100 West Broad St.
Elizabethtown, NC 28337
USA

Customer Service:
Tel: +1.800.234.8731
custserv@dynapar.com

Technical Support
Tel.: +1.800.234.8731
support@dynapar.com

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