

SERIES EN42

NorthStar™ brand

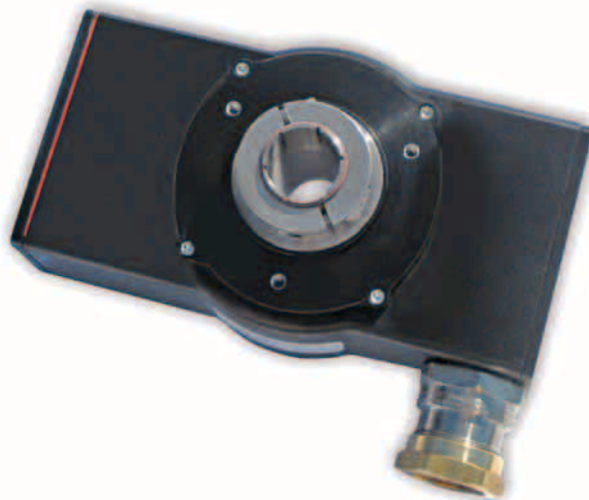
Zone 1 "Hazardous Area" Rated Encoder

Key Features

- Encapsulated Electronics and Increased Safety Interface for use in Zone 1 and Zone 2 Environments, Apparatus Groups IIA, IIB & IIC, and with Temperature Classes T1, T2, T3 & T4
- Design Eliminates Need for I.S. Barriers
- Industry Leading -50 to +100°C Temperature Range
- High current line driver for long cable runs
- Designed for use in Oilfield Drilling Motor Applications



Ex ia mb e IIC T4 Gb
Certification No.
Sira 09ATEX5172X



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental

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

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

Index: 180 degrees \pm 18 degrees (electrical), ungated

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

Quadrature Phasing: For resolutions to 1200 PPR: 90° \pm 15° electrical; For resolutions over 1250 PPR: 90° \pm 30° electrical

Symmetry: 180° \pm 18° electrical

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

ELECTRICAL

Input Voltage: 5-15VDC, 5-26VDC (see ordering information)

Input Current: 65mA max., not including output loads

Outputs: TC4428 Line Driver

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

Code 4 Option 0 or 2: 125mA max. per channel

Code 4 Option 1 or 3: 10mA max. per channel @ 100°C;

15mA max. per channel @ 90°C

Frequency Response: 125 kHz (data & index)

Termination: Terminal block - Ex screwless w/spring cage-clamp

Interface: HAWKE type "E" increased safety rated gland for armored and non-armored cables.

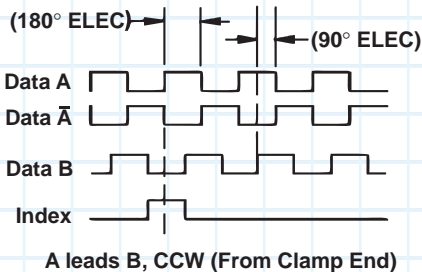
HAWKE Part Numbers:

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)

DATA AND INDEX

Not all complements shown
A shown for reference



ELECTRICAL CONNECTIONS

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

† Note: Armored Gland high-temperature specification limited to +80°C. Certification at +100°C pending for Feb 2011

MECHANICAL

Shaft Material: Stainless steel or anodized aluminum (See ordering information)

Bore Diameter: 1.00", 0.875", 0.750", 0.625", 16mm, 15mm. Insulated inserts provided for bores under 1 inch

Mating Shaft length: 2.00", Minimum; 2.50", Recommended

Shaft Speed: 3600RPM Maximum continuous; 6000RPM Peak

Starting torque: 8.0 in-oz. maximum (at 25°C)
Running Torque: 5.0 in-oz. maximum (at ambient)

Bearings: 61806-ZZ

Bearing Life: 5 x 10⁸ revs at rated shaft Loading, 5 x 10¹¹ revs at 10% of rated shaft loading. (manufacturers' specs)

Housing and Cover: Hard Anodized Aluminum.

Disc Material: Metal or Plastic

Accessory Fastners, Provided With:

Tether Bracket: (3) #10-32 x 3/8" SHCS Socket Head Cap Screws

Threaded Rod: (2) 5/16-24 x .70" Mounting Bolts

Rear Cover: (4) #6-32 x 3/8" SHCS Socket Head Cap Screws

Terminal box: (4) #6-32 x 3/8" SHCS Socket Head Cap Screws

Weight: 6.5 lb, typical

ENVIRONMENTAL

Operating Temperature: -50 to 100°C. See †Note

Storage temperature: -50 to 100°C. See †Note

Shock: 50G's for 11msec duration

Vibration: 5 to 2000Hz @ 20 G's

Humidity: 100%

Enclosure Rating: IP67

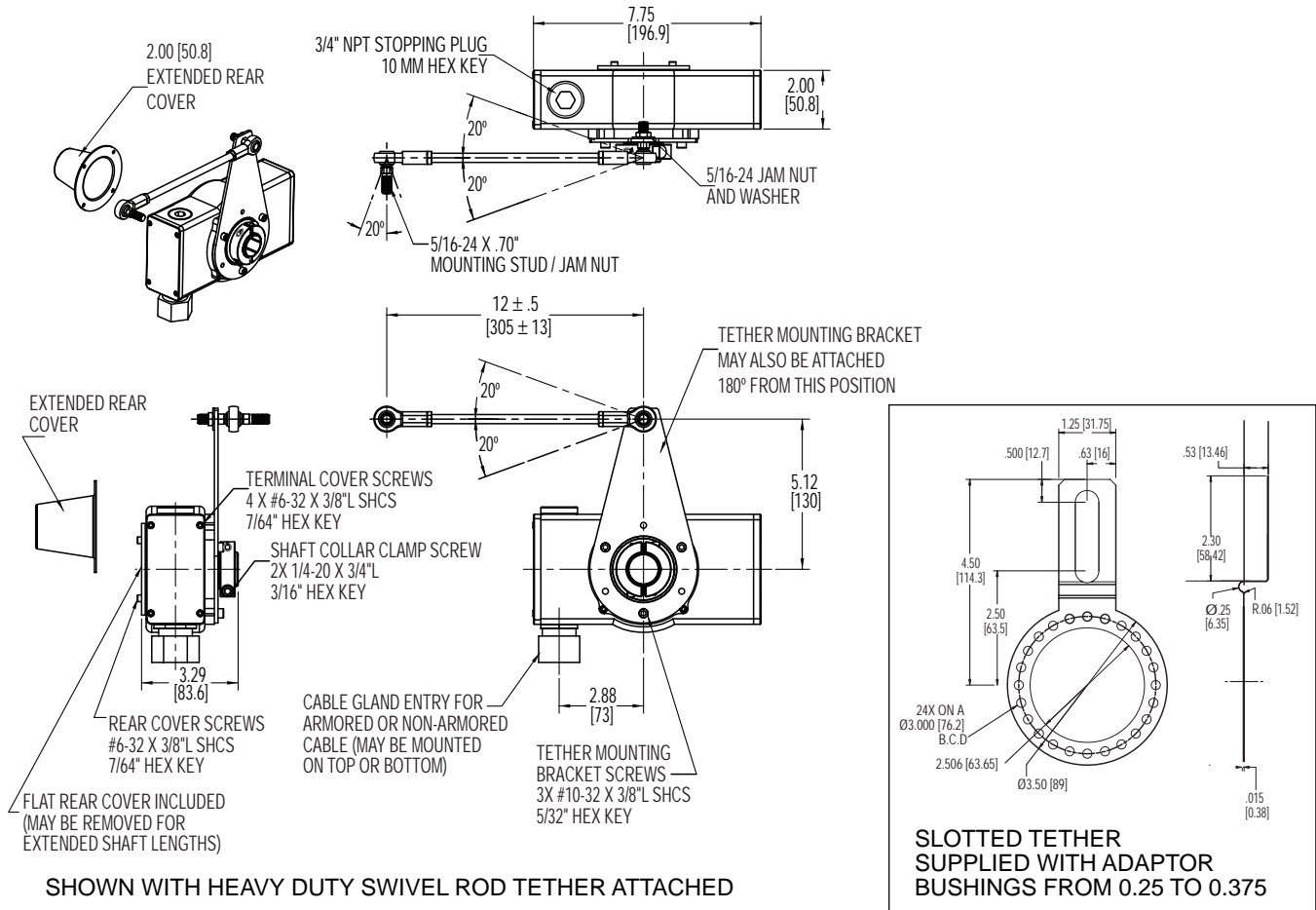
Ordering Information

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: ATEX Output Format	Code 5: Termination	Code 6: Tether	Code 7: Cover
EN42	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ordering Information						
EN42 ATEX Zone 1 Hollowshaft Encoder	0015	1000	Stainless Steel Hub	0 Differential AB, 5-15V in, 5-15V out*	0 No Gland	0 Covers, Standard Flat and Extended
	0032	1024	8 5/8"	1 Differential AB, 5-26V in, 5V out*	1 Ex Gland for non-armored cables (8.5 - 13.5mm OD)	1 Heavy Duty Swivel Rod Tether
	0100	1200	9 15 mm	2 Differential ABZ, 5-15V in, 5-15V out*	2 Ex Gland for armored cables (12.5 - 20.5mm OD)	
	0200	2000	A 16mm	3 Differential ABZ, 5-26V in, 5V out*	See †Note	
	0240	2048	D 3/4"			
	0250	2500	F 7/8"			
	0500	4000	H 1" Non-Isolated			
	0512	5000	Anodized Aluminum Hub	* See Electrical Specifications for Details		
	0600		R 1" Isolated			

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DIMENSIONS (Inch [metric])



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