Zone 1 Hazardous Area Rated Encoder

Key Features

- Triple Certified Encoder for Hazardous Locations
- Encapsulated Electronics with Increased Safety Interface for Zone 1 Use Eliminates Need for I.S. Barrier
- Industry Leading -50 to +100°C Temperature Range
- High Current Line Driver for Long Cable Runs
- 50g Shock and 20G Vibration Tolerant
- 2 Year Warranty

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 ±25 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° ± 15° electrical; For resolutions over 1250 PPR: 90° ± 30° electrical

**Symmetry:** 180° ± 18° 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 (see ordering information)

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

**Outputs:** 4428 (7-15VDC), 7272 (7-26VDC) and High Powered Mosfet Line Drivers (10-30VDC)

**Output Current:** (Refer to Ordering Information Table, Code 4: 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
- Code 4, Option 4: 90mA max per channel @ 60°C
- 60mA max per channel at 95°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.

**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:** 5 x 10^6 revs at rated shaft Loading, 5 x 10^5 revs at 10% of rated shaft loading. (manufacturers’ specs)

**Bearings:** 61806-ZZ

**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:** 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 SIR 15.0051X
Sira 09ATEX5172X
Ex ia mb eb IIC T4 Gb
Ex tb IIIC T119°C Db
CSA 2676947
Ex eb ia mb IIC T4 Gb
Ex tb IIIC T119°C Db IP64
Ex mb IIC T4 Gb and Class III, Div 1; Class II, Div 1, Groups E, F and G
Class I, Zone 1, AEx eb ia mb IIC T4 Gb
Zone 21, AEx tb IIIC T119°C Db IP64
**Ordering Information**

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

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**EN42**
- Triple Certified
- ATEX Zone 1
- Hollowshaft Encoder

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**TEMPERATURE RANGE**

<table>
<thead>
<tr>
<th>Code 4 Option</th>
<th>Output Current</th>
<th>Group II Ambient Temperature Range</th>
<th>Group III Ambient Temperature Range</th>
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<tbody>
<tr>
<td>0 or 2</td>
<td>125mA max per channel</td>
<td>Ta = -50°C to +100°C</td>
<td>Ta = -25°C to +100°C</td>
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<tr>
<td>1 or 3</td>
<td>10mA max per channel</td>
<td>Ta = -50°C to +100°C</td>
<td>Ta = -25°C to +100°C</td>
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<tr>
<td>1 or 3</td>
<td>15mA max per channel</td>
<td>Ta = -50°C to +90°C</td>
<td>Ta = -25°C to +90°C</td>
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<td>4</td>
<td>90mA max per channel</td>
<td>Ta = -50°C to +60°C</td>
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<td>4</td>
<td>60mA max per channel</td>
<td>Ta = -50°C to +95°C</td>
<td>Ta = -25°C to +95°C</td>
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**ELECTRICAL CONNECTIONS**

<table>
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<tr>
<th>Encoder Function</th>
<th>Terminal Box Connection</th>
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<td>Sig. A</td>
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**DATA AND INDEX**

Not all complements shown

A shown for reference

(180° ELEC)  (90° ELEC)

Data A
Data A
Data B
Index

A leads B, CCW (From Clamp End)
HAZARDOUS DUTY

DIMENSIONS (Inch [metric])

2.00 [50.8]
EXTENDED REAR COVER

3/4" NPT STOPPING PLUG
10 MM HEX KEY

5/16-24 X .70" MOUNTING STUD / JAM NUT

5/16-24 JAM NUT AND WASHER

12 ± .5
[305 ± 13]

TETHER MOUNTING BRACKET
MAY ALSO BE ATTACHED
180° FROM THIS POSITION

TERMINAL COVER SCREWS
4 X #6-32 X 3/8"L SHCS
7/64" HEX KEY

SHAFT COLLAR CLAMP SCREW
2X 1/4-20 X 3/4"L
3/16" HEX KEY

CABLE GLAND ENTRY FOR
ARMORED OR NON-ARMORED
CABLE (MAY BE MOUNTED
ON TOP OR BOTTOM)

TETHER MOUNTING BRACKET SCREWS
3X #10-32 X 3/8"L SHCS
5/32" HEX KEY

SHOWED WITH HEAVY DUTY SWIVEL ROD TETHER ATTACHED

REAR COVER SCREWS
#6-32 X 3/8"L SHCS
7/64" HEX KEY

FLAT REAR COVER INCLUDED
(MAY BE REMOVED FOR
EXTENDED SHAFT LENGTHS)

EXTENDED REAR COVER

SLOTTED TETHER
SUPPLIED WITH ADAPTOR
BUSHINGS FROM 0.25 TO 0.375

Specifications subject to change without notice.

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