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
- 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

SPECSIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental
Resolution: to 2048 PPR (pulses/revolution) See Ordering Information
Format: Two channel quadrature (AB) with optional Index (Z, ungated), and complementary outputs
Index: 180 degrees ±18 degrees (electrical), ungated
Phase Sense: A leads B for CCW shaft rotation viewing the shaft clamp end of the encoder
Quadrature Phasing: 1200 PPR: 90° ± 15° electrical; 2048 PPR: 90° ± 30° electrical
Symmetry: 180° ± 25° 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

MECHANICAL

Housing Material: Aluminum Alloy, Black Anodized
Disc material: Mylar®
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 SIR 15.0051X
Sira 09ATEX5172X
Ex ia mb IIC T4 Gb
Ex tb IIC 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 e ia mb IIC T4 Gb
Zone 21, AEx tb IIIC T119°C Db IP64
SERIES EN44

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

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>EN44</td>
<td></td>
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</tbody>
</table>

EN44
Triple Certified
ATEX Zone 1
Hollowshaft Encoder

<table>
<thead>
<tr>
<th>Code 2</th>
<th>Code 3</th>
<th>Code 4</th>
<th>Code 5</th>
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</thead>
<tbody>
<tr>
<td>1 024</td>
<td>A 16mm</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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*

* See Electrical Specifications for Details

† Note: Armored Gland high-temperature specification limited to +80°C.

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>
</tr>
</thead>
<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>
</tr>
<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>
</tr>
<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>
</tr>
<tr>
<td>4</td>
<td>90mA max per channel</td>
<td>Ta = -50°C to +60°C</td>
<td>Ta = -25°C to +60°C</td>
</tr>
<tr>
<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>
</tr>
</tbody>
</table>

ELECTRICAL CONNECTIONS

<table>
<thead>
<tr>
<th>Encoder Function</th>
<th>Terminal Box Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. A</td>
<td>1</td>
</tr>
<tr>
<td>Sig. Ā</td>
<td>2</td>
</tr>
<tr>
<td>Sig. B</td>
<td>3</td>
</tr>
<tr>
<td>Sig. Ā</td>
<td>4</td>
</tr>
<tr>
<td>Sig. Z</td>
<td>5</td>
</tr>
<tr>
<td>Sig. Ā</td>
<td>6</td>
</tr>
<tr>
<td>Power +V</td>
<td>7</td>
</tr>
<tr>
<td>Com</td>
<td>8</td>
</tr>
</tbody>
</table>

DATA AND INDEX
Not all complements shown
Å shown for reference

(180° ELEC) (90° ELEC)

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

NorthStar™ brand

SERIES EN44

DIMENSIONS [mm] [inch]

226.2 [8.90]
50.8 [2.00]
23.2 [.92]
84.94 [3.344]
111.8 [4.40]
2.54 [.100]
119.8 [4.72]
106.4 [4.19]
114.3 [4.50]
95.25 [3.750]
47.63 [1.875]
76.6 [3.02]

100mm IEC FLANGE
CLEARANCE FOR 1/4-20 SHCS (6)
ON Ø[100(3.937)] BC EQUALLY SPACED

CABLE GLAND ENTRY
(INCREASED SAFETY)
TOP/BTM

STOPPING PLUG (ATEX)
SHAFT CLAMP ACCESS PLUG
PILOT CAVITY
O-RING

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