

Инкрементальный энкодер для опасных зон HD20

Технические характеристики

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HAZARDOUS SERIES HD20

NorthStar™ brand

Hazardous Duty Encoder

Key Features

- Size 20 Encoder with Single or Dual Isolated Outputs
- ATEX, UL and IECEx Certified for Hazardous Duty Applications
- Unbreakable Code Disc up to 9,000 PPR
- Special Housing and Seals for IP67 Rating
- Anodized Aluminum, Stainless Steel, or Nickel Plated Housing

HAZ
Hazardous Duty

SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Optical**Resolution:** 1 to 9,000 PPR (pulses/revolution)**Format:** Two channel quadrature (AB) with optional Index (Z), and complementary outputs**Phase Sense:** A leads B for CCW shaft rotation viewing the shaft end of the encoder**Quadrature Phasing:** $90^\circ \pm 30^\circ$ electrical**Symmetry:** $180^\circ \pm 25^\circ$ electrical**Index:** 180° default gated to B low**Waveforms:** Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL

Input Power: 5VDC, 7-26VDC**Outputs:**

2N2222 Open Collector: 250mA, sink max

7272 Push-Pull: 40mA, sink or source

7272 Differential Line Driver: 40 mA, sink or source

7273 Open Collector: 40mA, sink max

Frequency Response: 200 kHz (data and index)**Noise Immunity:** Tested to EN61326-1**Electrical Immunity:** Reverse polarity and short circuit protected on all models and short circuit protected on 7272 and 7273 line drivers only**Termination:** 6, 7, or 10 pin MS Connector; Cable exit with seal**Mating Connector:**

6 pin, style MS3106A-14S-6S (MCN-N4);

7 pin, style MS3106A-16S-1S (MCN-N5);

10 pin, style MS3106A-18-1S (MCN-N6)

10 pin, NEMA4 style (MCN-N6N4)

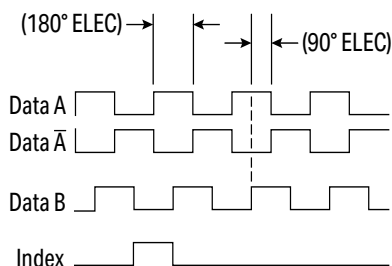
MECHANICAL

Shaft Size: 10mm, 3/8"**Shaft Speed:** 6000 RPM, maximum**Shaft Loading:** Up to 100 lbs axial and radial**Starting Torque:** 2.5 in-oz. maximum (at 25°C)**Bearings:** 5200 ZZ double row**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. Also available in Electroless Nickel finish and Stainless Steel.**Shaft Material:** 303 stainless steel (passivated)**Disc Material:** Aluminum**Weight:** 14 ounces, typical

ENVIRONMENTAL

Operating Temperature: -40 to 80°C **Storage Temperature:** -40 to 100°C **Shock:** 50G's for 11msec duration**Vibration:** 5 to 2000Hz @ 20 G's**Humidity:** Up to 98% (non-condensing)**Enclosure Rating:** IP67

STANDARD DATA AND INDEX

Not all complements shown
A shown for referenceIndex Width: 180° Default
A leads B, CCW (from shaft end)

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ORDERING INFORMATION

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

Code 1: Model	Code 2: PPR	Code 3: Shaft	Code 4: Electrical	Code 5: Termination	Code 6: Options
HD20 ☐	☐ ☐ ☐ ☐	☐	☐	☐	☐
HD20 Hazardous Duty Encoder 1 Unidirectional (A Channel) 2 Bidirectional (A and B Channels) 3 Bidirectional with Index (A, B, Z Channels) Note: See code 4 column for addition of differential complementary channels	Enter Custom PPR from 0001 to 9000 Examples: 0001 = 1 PPR 0256 = 256 PPR 1024 = 1024 PPR 8192 = 8192 PPR 9000 = 9000 PPR	0 3/8" Dia. Shaft with flat 4 10mm Dia. Shaft, no flat	0 Open Collector out (7273) 2 Push-Pull out (7272) F Open Collector out (2222) G Open Collector out with 2.2 kΩ Pullups (2222) Available when: Code 1 is 1, 2 and Code 5 is 3 through H, or Code 1 is 3 and Code 5 is 5 through H: 3 Differential Line Driver out (7272) Available ATEX Certified Options ATEX Type 1: ATEX Certified; 5V in, 5V out only ATEX Type 2: ATEX Certified; 7-26V in, 7-26V out ATEX Type 3: ATEX Certified; 7-26V in, 5V out	1 6 Pin Connector 3 7 Pin Connector 5 10 Pin Connector D 18" Sealed Cable E 3' Sealed Cable F 6' Sealed Cable G 10' Sealed Cable H 15' Sealed Cable	Available when Code 4 is 0, 2, F, G, 3 A Standard Housing with ATEX Type 1 B Nickel Finish Housing with ATEX Type 1 C Stainless Steel Housing with ATEX Type 1 G Same as "A" with ATEX Type 2 H Same as "B" with ATEX Type 2 I Same as "C" with ATEX Type 2 Available when Code 4 is 0, 2 D Redundant Outputs (Dual Connector Housing) with ATEX Type 1† E Nickel Finish Housing, Redundant Outputs with ATEX Type 1† F Stainless Steel Housing, Redundant Outputs with ATEX Type 1† J Same as "D" with ATEX Type 2† K Same as "E" with ATEX Type 2† L Same as "F" with ATEX Type 2† Available when Code 4 is 2 or 3 M Same as "A" with ATEX Type 3 N Same as "B" with ATEX Type 3 O Same as "C" with ATEX Type 3 P Same as "D" with ATEX Type 3† Q Same as "E" with ATEX Type 3† R Same as "F" with ATEX Type 3† † Simultaneous use of redundant outputs will void ATEX certification and is not allowed. Consult factory for details.

ACCESSORIES

Cable Assemblies with MS Connector				Mating Connectors (no cable)		
Sku	Pins		Use with...	Sku	Pins	Style
108594-XXXX	6 Pin MS	Connector, Cable Assembly	single ended outputs	MCN-N4	6 pin	MS3106A-14S-6S
108595-XXXX	7 Pin MS		single ended outputs	MCN-N5	7 pin	MS3106A-16S-1S
108596-XXXX	7 Pin MS		differential line driver without index outputs	MCN-N6	10 pin	MS3106A-18-1S
1400635XXX	10 Pin MS		differential line driver with index outputs	MCN-N6N4	10 pin	NEMA4
109209-XXXX	NEMA4 10 pin MS		differential line driver with Index outputs			

Note: Standard cable length is 10 feet but may be ordered in any length in 5 foot increments. For example, for a 20 foot cable, replace XXXX with -0020.

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ELECTRICAL CONNECTIONS

6, 7 AND 10 PIN MS CONNECTORS AND CABLES—WHEN CODE 5 = 1, 3, 5, OR D-P

Connector and mate/accessory cable assembly pin numbers and wire color information is provided here for reference.

Models with direct cable exit carry the color coding as shown in the right hand column.

Table 1

Encoder Function	Cable # 108594-XXXX 6 Pin Single Ended		Cable # 108595-XXXX 7 Pin Single Ended		Cable # 108596-XXXX 7 Pin Diff Line Driver without Index		Cable # 109209-XXXX* or 1400635XXXX 10 Pin Diff Line Driver with Index		Cable Exit with Seal
	Pin	Wire Color	Pin	Wire Color	Pin	Wire Color	Pin	Wire Color	Wire Color
Signal A	E	BRN	A	BRN	A	BRN	A	BRN	GRN
Signal B	D	ORG	B	ORG	B	ORG	B	ORG	BLU
Signal Z [†]	C	YEL	C	YEL	—	—	C	YEL	ORG
Power +V	B	RED	D	RED	D	RED	D	RED	RED
Common	A	BLK	F	BLK	F	BLK	F	BLK	BLK
Case	—	—	—	—	—	—	—	—	—
N/C	F	—	E	—	—	E	E	—	—
Signal $\bar{A}$	—	—	—	—	C	BRN/WHT	H	BRN/WHT	VIO
Signal $\bar{B}$	—	—	—	—	E	ORG/WHT	I	ORG/WHT	BRN
Signal $\bar{Z}$ [†]	—	—	—	—	—	—	J	YEL/WHT	YEL

Notes:

Cable Configuration (Table 1): PVC jacket, 105°C rated, overall foil shield; 3 twisted pairs 24 AWG (output signals), plus 2 twisted pairs 22 AWG (input power)

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MS" Type mating connectors and pre-build cables are rated NEMA 12

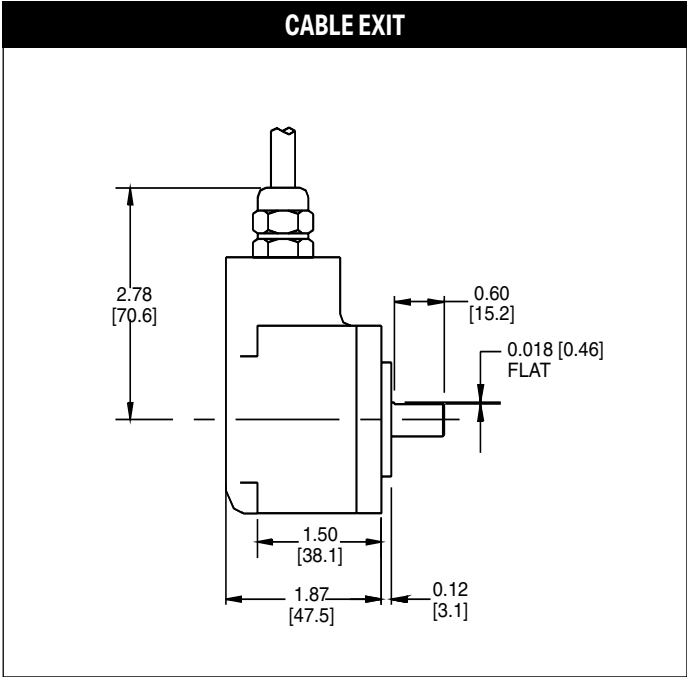
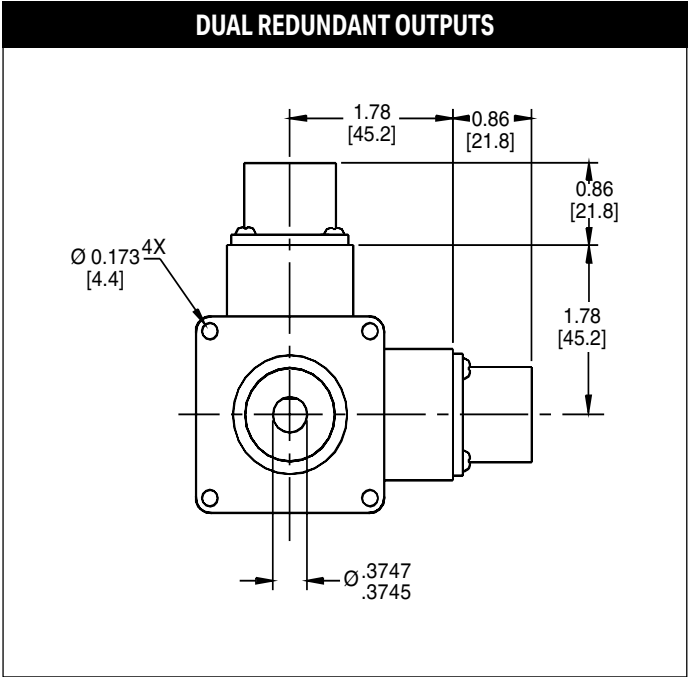
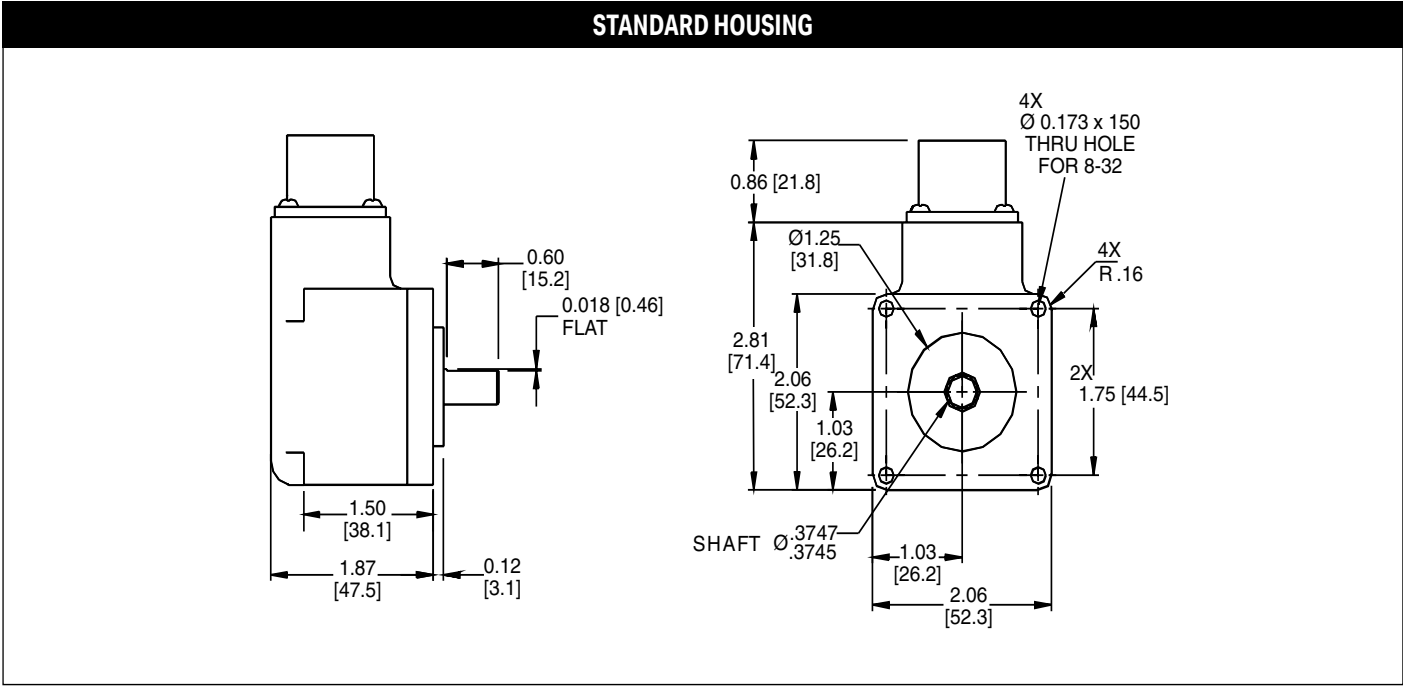
*For watertight applications, use NEMA4 10 pin cable and connector 109209-XXXX

[†] Index not provided on all models. See ordering information

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Dimensions: inch [mm]



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