

# SERIES HDN58

**NorthStar™** brand

## Shaft-Less Encoder

### Key Features

- No Shaft, Bearings, or Seals to Wear Out
- Eliminates Shaft Coupling Issues
- Completely Sealed & Encapsulated Electronics
- Wide Sensing Envelope is Tolerant to Misalignment
- Incremental or Absolute Output



## SPECIFICATIONS

### MECHANICAL

Enclosure Diameter: 58mm

Max. Speed: 3000 RPM

### ELECTRICAL

Input Power: 6vdc min to 30vdc max at 60mA max, not including output loads

Outputs: 7272 Push-Pull : 40mA sink or source

Output Resolution: 8 to 2048 quadrature pulses per revolution (13 bit)

Electrical Protection: Overvoltage, Reverse Voltage, Output Short Circuit Protected

Electrical Connections: 5-pin terminal strip, 5-pin M12, 8-pin M12, cable (see Connections)

LED Indicators: Power and Output Channel

### ENVIRONMENTAL

Operating Temperature: -30 to +80 °C (-22 to 176 °F)

Humidity: 100% relative humidity

Potting Compound: Non-porous, water and chemical resistant, RoHS compliant

Shock & Vibration: Meets MIL-STD-202

Shock: 400G/6ms

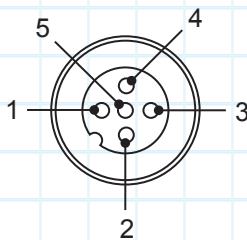
Thermal Shock: -40 to +125 °C one hour dwell

Vibration: 5 to 3000hz, 20g

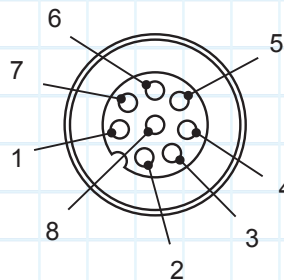
Enclosure Rating: Connector dependent IP65, IP67 or IP68

### CONNECTIONS

| Function       | 5 Pin Terminal Strip | 5 Pin M12 | 5 Conductor Cable | 8 Pin M12 | 8 Conductor Cable |
|----------------|----------------------|-----------|-------------------|-----------|-------------------|
|                | Pin                  | Pin       | Wire Color        | Pin       | Wire Color        |
| +Vdc           | 1                    | 1         | BRN               | 2         | BRN               |
| Common         | 2                    | 3         | BLU               | 7         | BLU               |
| Data A         | 3                    | 4         | BLK               | 1         | WHT               |
| Data B         | 4                    | 2         | WHT               | 4         | GRN               |
| Data Z         | 5                    | 5         | GRY               | 6         | GRY               |
| Data $\bar{A}$ |                      |           |                   | 3         | YLW               |
| Data $\bar{B}$ |                      |           |                   | 5         | RED               |
| Data $\bar{Z}$ |                      |           |                   | 8         | PNK               |



Male 5-Pin M12



Male 8-Pin M12

**Ordering Information**

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

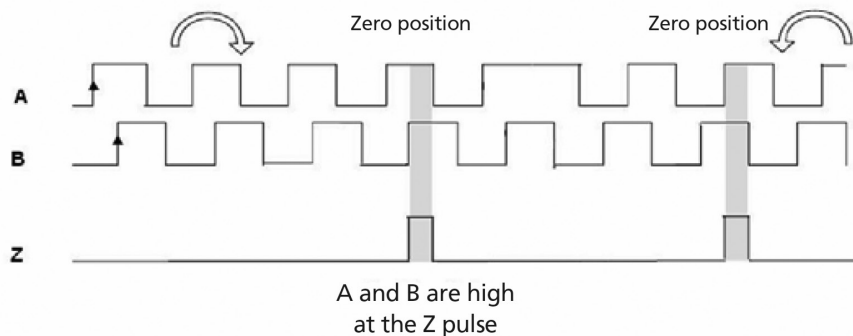
| Code 1: Model | Code 2: PPR                                                                                         | Code 3: Format           | Code 4: Connection       | Code 5: Target Magnet    |
|---------------|-----------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| <b>HDN58</b>  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Ordering Information**

|              |                                                           |                                                                                        |                               |                                                     |
|--------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------|
| <b>HDN58</b> | <b>0008 0100</b>                                          | <b>0</b> Single Ended A,B,Z Push-pull (7272)<br>(Code 4 must = 0,1,2 or 3)             | <b>0</b> 5 pin M12            | <b>0</b> No Magnet, Customer Supplied               |
|              | <b>0010 0125</b>                                          | <b>1</b> Differential line Driver A,B,Z (7272)<br>(Code 4 must = 4, 5, or 6)           | <b>1</b> 5 pin M12 on Pigtail | <b>3</b> Dual Magnet Nylon Collar, 1/2" Bore        |
|              | <b>0016 0128</b>                                          | <b>2</b> 13 bit-Absolute 0-5VDC (code 2 must = ABSO and Code 4 must = 3)               | <b>2</b> 5 Conductor Cable    | <b>4</b> Dual Magnet Nylon Collar, 3/4" Bore        |
|              | <b>0020 0200</b>                                          | <b>3</b> 13 bit-SSI 0-8192 Line Driver (Code 2 must = ABSO and code 4 must = 4,5 or 6) | <b>3</b> 5 pin Terminal Strip | <b>5</b> Dual Magnet Nylon Collar, 1" Bore          |
|              | <b>0025 0250</b>                                          |                                                                                        | <b>4</b> 8 pin M12            | <b>6</b> Dual Magnet Nylon Collar, 1-1/2" Bore      |
|              | <b>0032 0256</b>                                          |                                                                                        | <b>5</b> 8 pin M12 on Pigtail | <b>R</b> Ring Magnet w/Knurled Alumnum Bolt, 1/4-20 |
|              | <b>0040 0400</b>                                          |                                                                                        | <b>6</b> 8 Conductor Cable    |                                                     |
|              | <b>0050 0500</b>                                          |                                                                                        |                               |                                                     |
|              | <b>0064 0512</b>                                          |                                                                                        |                               |                                                     |
|              | <b>0080</b>                                               |                                                                                        |                               |                                                     |
|              | Code 3 Must be J<br><b>ABSO</b>                           |                                                                                        |                               |                                                     |
|              | Other resolutions available. Contact factory for details. |                                                                                        |                               |                                                     |
|              |                                                           | <b>V1</b> 5VDC Input Voltage, .5 - 4.5 Output 0-360 CW, Standard Output Voltage        |                               |                                                     |
|              |                                                           | <b>V2</b> 6-24 VDC Input Voltage, .5 to 4.5 Output 0-360 CW, Standard Output Voltage   |                               |                                                     |
|              |                                                           | <b>I1</b> 12-24VDC Input 4-20mA 0-360 CW, Standard Output                              |                               |                                                     |
|              |                                                           | <b>J</b> CANbus J1939 Protocol (code 2 must = ABSO and code 4 must = 0)                |                               |                                                     |
|              |                                                           | <b>Note:</b> For V1, V2 and I1 Consult Factory for Special Sealing                     |                               |                                                     |

**HDN58 OUTPUT FORMAT**

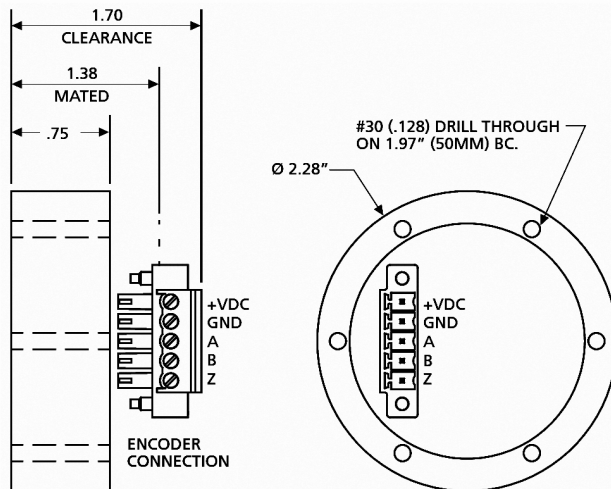
58/MM: QUADRATURE INCREMENTAL OUTPUT



# SERIES HDN58



## HDN58 DIMENSIONS



## HDN58 TARGET MAGNETS

- Neodymium
- Distance from user magnet to face of encoder: 0.01 to 0.5 inches
- Center alignment: 0 to 0.10 inches
- Planar tilt: 30 degrees

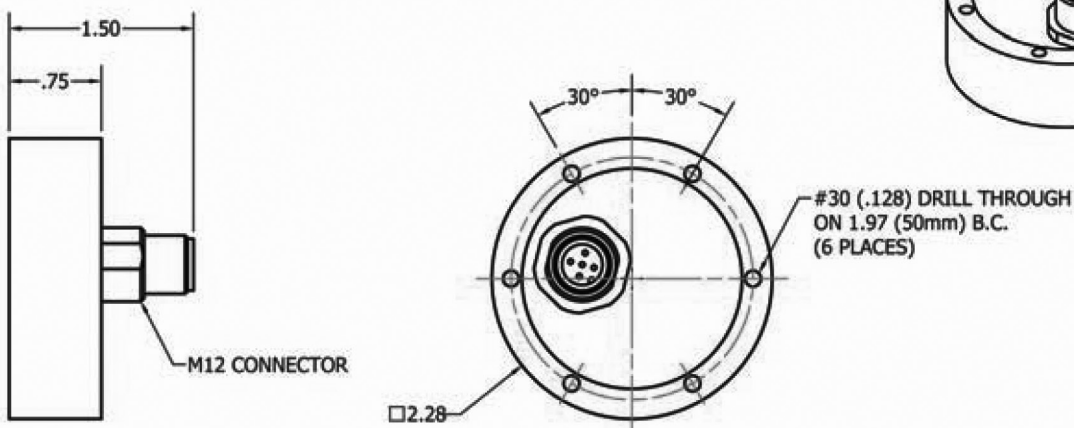


Dual magnet, Nylon collar



1/4 Bolt Magnet with Knurl

## M12 CONNECTIONS



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