

# SERIES HS85

**NorthStar™ brand**

## Hollow Shaft Encoder

### Key Features

- Hollowshaft Design Mounts Easily to Large Motor Shafts, up to 4.5" in Diameter
- Magneto-Resistive Technology with Removable On-The-Fly Sensor Modules
- Multiple Bore Sizes Available, Including Tapered Shafts
- Stainless Steel and Ductile Cast Iron Construction



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental  
**Pulses per Revolution:** 60-2048  
**Phasing Sense:** A leads B for Counter-Clockwise rotation (CCW) viewing encoder-mounted end  
**Quadrature Phasing:** 90° ± 22°  
**Symmetry:** 180° ± 54°  
**Index:** 270°, ungated (optional gated to falling B edge)

### ELECTRICAL

**Input Voltage Requirement:** 5-15 or 15-26 Volts DC

#### Current Requirement:

With Electrical Option L: 45mA typical per sensor module plus line driver load  
 With Electrical Option R: 65mA typical per sensor module plus line driver load  
 With Electrical Option 5: 65mA typical per sensor module plus line driver load

#### Output Signals:

With Elec Option L: 5-15 V Line Driver, 150mA  
 With Elec Option R: 15 V Line Driver, 150mA  
 With Elec Option 5: 5V Line Driver, 150mA  
**Electrical Immunity:** 2kV ESD, Reverse Polarity, Short Circuit  
**Connector:** 10 pin industrial duty latching, sealed NEMA 4 & 12, IP65; MS connector or pig-tail

### MECHANICAL

**Mating shaft sizes:** 1-1/8" to 4-1/2", straight or tapered bore  
**Shaft Speed:** 3,600 RPM  
**Mounting Configuration:** Hollow Shaft mount with Anti-Rotation Tether  
**Housing Material:** Cast Iron/Stainless Steel  
**Acceleration Rate:** 3,600 rpm/sec max  
**Allowable Shaft End-Play:** 0.25" (Subject to RPM Limitation)  
**Allowable Shaft Runout:** 0.010" TIR (Subject to RPM Limitation)

### ELECTRICAL CONNECTIONS

Signal	Connector Pin	Pigtail Cable	MS 3102E18-IT#
Common	1	Black	A
B	2	Green	E
A	3	Blue	D
Z *	4	Violet	C
No Connection	5	—	—
Vcc	6	Red	B
B	7	Yellow	H
A	8	Gray	G
Z *	9	Orange	I
Shield	10	Braid	J

\* Index (Z) optional. See Ordering Information

### ENVIRONMENTAL

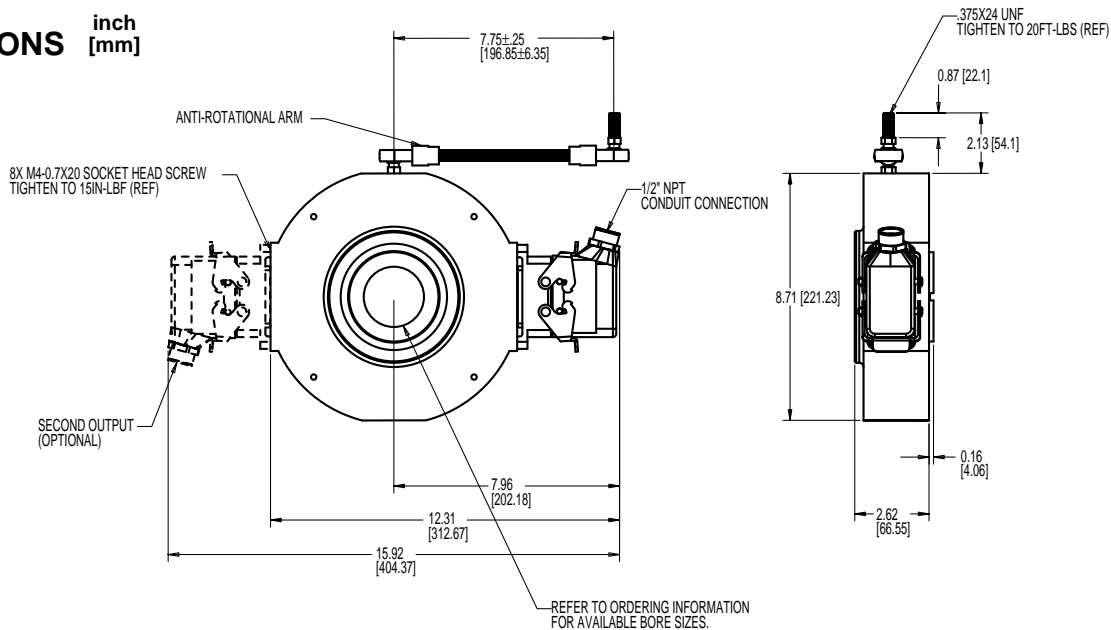
**Operating Temperature Range:** -20°C to +70°C  
**Storage Temperature Range:** -40°C to +120°C  
**Humidity:** to 98% RH (non-condensing)  
**Shock (Sensor Module):** 1 meter drop test, 30 G's Min  
**Vibration:** 18 G's @ 5-2000 Hz spectrum

**Ordering Information**

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

Code 1: Model	Code 2: PPR	Code 3: Index	Code 4: Wheel Bore	Code 5: Output	Code 6: Electrical	Code 7: Termination	
<b>H8</b>	□□□□	□	□□□	□	□	□	
Ordering Information							
<b>H8</b> Hollow Shaft	<b>0060</b>	<b>0300</b>	L No Index Available when Code 2 is 0480, 0512, 0600, 0960, 1024, 1200 or 2048	<b>Thru-bores</b> <b>T01</b> 1-1/8" bore <b>T02</b> 1-3/8" bore <b>T03</b> 1-5/8" bore <b>T04</b> 1-7/8" bore <b>T05</b> 2.00" bore <b>T06</b> 2-1/8" bore <b>T07</b> 2-1/4" bore <b>T08</b> 2-3/8" bore <b>T09</b> 2-1/2" bore <b>T10</b> 2-7/8" bore	<b>1</b> Single <b>2</b> Dual (Isolated)  Differential, bidirectional signals (A, $\bar{A}$ , B, $\bar{B}$ )	<b>L</b> 5-15V in, 5-15V Line Driver (4428) out  <b>R</b> 15-26V in, 15V Line Driver (4428) out  <b>5</b> 5-15V in, 5V Line Driver (4428) out	<b>C</b> Latching Industrial Connector with 1/2" NPT  <b>M</b> 10 pin MS Connector  <b>P</b> 18" Pigtail
	<b>0064</b>	<b>0480</b>					
<b>Note:</b> See ACCESSORIES Section For Connectors, Spare Parts and Pulse Wheels							

**DIMENSIONS** inch [mm]



**Worldwide Brands:** NorthStar™ • Acuro™ • Dynapar™ • Hengstler™ • Harowe™  
Headquarters: 1675 Delany Road • Gurnee, IL 60031-1282 • USA • Phone: 1.847.662.2666 • Fax: 1.847.662.6633

**Satellite Locations:**

- **North America:** North Carolina, South Carolina, Connecticut, Massachusetts, New York, Canada, British Virgin Islands
- **West Indies:** St. Kitts • **Europe:** United Kingdom, Italy, France, Germany, Spain, Slovakia
- **South America:** Brazil • **Asia:** China, Japan, Korea, Singapore

**Customer Service:**  
Tel.: +1.800.873.8731  
Fax: +1.847.662.4150  
custserv@dynapar.com

**Technical Support**  
Tel.: +1.800.234.8731  
Fax: +1.847.782.5277  
northstar.techsupport@dynapar.com

**European Sales Representative**  
Hengstler GmbH  
Uhlandstrasse 49, 78554 Aldingen  
Germany  
www.hengstler.de