

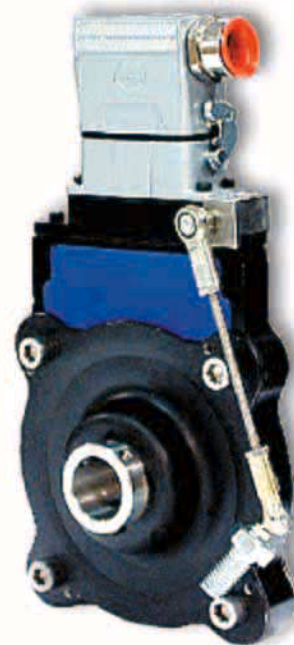
# SERIES HS56

**NorthStar™ brand**

## Hollow Shaft Encoder

### Key Features

- Hollowshaft Design with Heavy-Duty Bearings Ideal for TEFC AC Motor Mounting
- Magneto-Resistive Technology
- Accommodates Shaft Sizes from 5/8" to 1-1/8"
- Stainless Steel and Anodized Aluminum Construction
- Dual Isolated Outputs Available for Redundancy



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental  
**Pulses per Revolution:** 64-2048  
**Phasing Sense:** A leads B for Counter-Clockwise rotation (CCW) viewing encoder-mounted end  
**Quadrature Phasing:**  $90^\circ \pm 22^\circ$   
**Symmetry:**  $180^\circ \pm 54^\circ$   
**Index:**  $270^\circ$ , ungated (optional gated to falling B edge)

### ELECTRICAL

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

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

With Electrical Option V or 5: 65 mA typical per sensor module plus line driver load

### Output Signals:

With Elec Option L: 5-15 V Line Driver, 150mA

With Elec Option V: 5-26 V Line Driver, 100mA

With Elec Option 5: 5V Line Driver, 150mA

**Frequency Response:** 0 - 120kHz Data & Index

**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:** 5/8" to 1-1/8"

**Shaft Speed:** 3,600 RPM

**Mounting Configuration:** Hollow Shaft mount with Anti-Rotation Tether

**Housing Material:** Hard Anodized Aluminum W/Stainless Steel Hub

**Starting Torque:** 7 in-oz

**Acceleration Rate:** 3,600 rpm/sec max

**Shaft Length Required:** 2.0" min

**Allowable Shaft End-Play:**  $\pm 0.150"$  (tether limit)

**Allowable Shaft Runout:** 0.015" TIR typical (rpm

dependent)

### ENVIRONMENTAL

**Operating Temperature Range:**  $-20^\circ\text{C}$  to  $+80^\circ\text{C}$

**Storage Temperature Range:**  $-40^\circ\text{C}$  to  $+120^\circ\text{C}$

**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

### ELECTRICAL CONNECTIONS

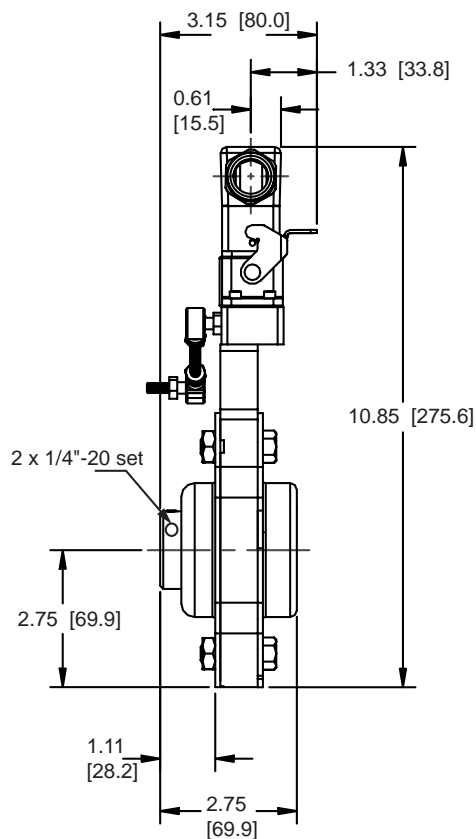
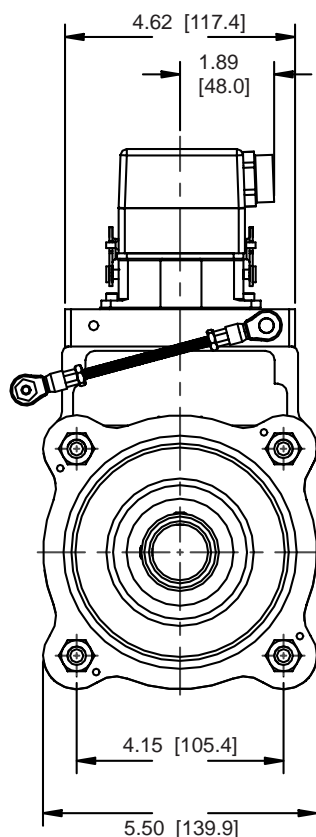
Signal	Connector Pin	Pigtail Cable	MS 3102E18-IT#
Common	1	Black	F
B	2	Green	B
A	3	Blue	A
Z *	4	Violet	C
No Connection	5	—	E
Vcc +	6	Red	D
B	7	Yellow	I
A	8	Gray	H
Z *	9	Orange	J
Shield	10	Braid	G

\* Index (Z) optional. See Ordering Information

**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: Termination	Code 6: Electrical
<b>H</b> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Ordering Information</b>					
<b>H5</b> Hollow Shaft Mount	<b>0064</b> <b>0128</b> <b>0256</b> <b>0512</b>	<b>L</b> No Index  Available when Code 2 is 0512, 1024 or 2048	<b>J04</b> 5/8" bore <b>J05</b> 7/8" bore <b>J06</b> 1.00" bore <b>J07</b> 1-1/8" bore	<b>C</b> Latching Industrial Connector with 1/2" NPT  <b>M</b> 10 pin MS Connector  <b>P</b> 18" pigtail cable  <b>Q</b> Latching Industrial Connector on 18" pigtail cable	<b>L</b> 5-15V in, 5-15V Line Driver (4428) out <b>V</b> 5-26V in, 5-26V Line Driver (IC-WE) out <b>5</b> 5-15V in, 5V Line Driver (4428) out  Differential, bidirectional signals (A, A, B, B)
<b>HD</b> Hollow Shaft Mount Dual Output	<b>1024</b> <b>2048</b>	<b>G</b> Gated Index (Z, Z̄) <b>Z</b> Differential Index (Z, Z̄)			

**Note:** See ACCESSORIES Section For Connectors, Spare Parts and Pulse Wheels**DIMENSIONS** inch  
[mm]

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