

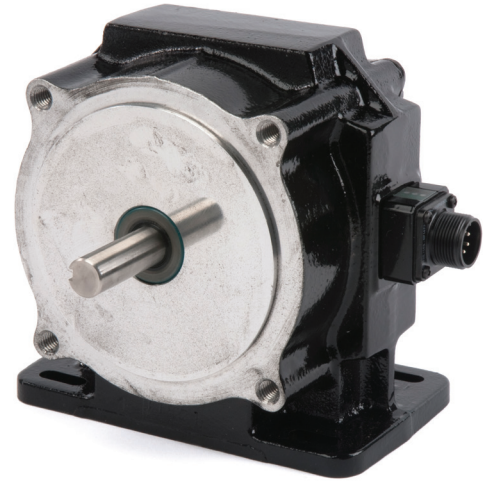
SERIES H56

NorthStar™ brand

Heavy Duty Encoder

Key Features

- **Encoder-Within-Encoder Design with Phased Array Sensor for Reliable Signal Output**
- **Large Outer Bearings Isolate Shaft Loads**
- **Foot Mount or 56 C-Face Mount Easily Replaces BC42 and 46 Tachs**
- **Rugged Enclosure Rating: IP66**



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Optical
Resolution: 1 to 5000 PPR (pulses/revolution)
Accuracy: (Worst case any edge to any other edge) ±7.5 arc-min.
Format: Two channel quadrature (AB) with optional Index (Z) and complementary outputs
Phase Sense: A leads B for CW shaft rotation as viewed from the C-face of the encoder
Quadrature Phasing: 90° ± 22.5° electrical
Symmetry: 180° ± 25° electrical
Index: 180° ± 25° electrical (gated with B low)
Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL

Input Power: (each output)
 5-26 VDC at 100 mA max., not including output loads
Outputs:
 7273 Open Collector: 40mA, sink max
 7272 Push-Pull: 40mA, sink or source
 7272 Differential Line Driver: 40 mA, sink or source
 4469 Differential Line Driver: 100mA, sink or source
Frequency Response: 100 kHz min.
Noise Immunity: Tested to EN61326-1
Electrical Immunity: Reverse polarity and short circuit protected
Mating Connector:
 6 pin, style MS3106A-14S-6S (MCN-N4);
 10 pin, style MS3106A-18-1S (MCN-N6)
 Pluggable Screw-Terminal (110532-0001)

MECHANICAL

Shaft Size: 5/8" nominal
Shaft Loading: 100 lbs. radial, 50 lbs. axial
Shaft Speed: 3600 RPM max.
Starting Torque: 16 oz-in max.;
Moment of Inertia: 7.9 x 10⁻⁴ oz-in-sec²
Bearing Life: See table, below
Housing Material: Aluminum
Shaft Material: Stainless Steel
Disc Material: Mylar (unbreakable)
Weight: 144 oz. (9 lbs.)

ELECTRICAL CONNECTIONS

* This is a mating connector/cable assembly described in the Encoder Accessories section of this catalog. Color-coding information is provided here for reference.

Encoder Function	Cable # 1400209XXXX 6 Pin Single Ended		Cable #1400419XXXX 10 Pin Differential Twisted Pairs		Pluggable Screw Terminal Pin Number
	Pin	Wire Color	Pin	Wire Color	
Sig. A	B	RED	B	RED	3
Sig. A̅	—	—	G	BLK	8
Sig. B	D	BLU	D	BLU	7
Sig. B̅	—	—	H	BLK	2
Sig. Z*	A	GRN	A	GRN	4
Sig. Z̅*	—	—	I	BLK	9
+V	E	WHT	E	WHT	6
Common	C	BLK	C	BLK	1
Shield	F	SHIELD	F	SHIELD	10

NOTES:

- 1) Cable Configuration: PVC jacket, 80°C rated, spiral wrapped copper shield; 22 AWG conductors
- 2) 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
- 3) *Index not provided on all models. See ordering information.
- 4) "MS" Type mating connectors and pre-build cables are rated NEMA 12

ENVIRONMENTAL

Operating Temperature: -40 to +80 °C
Storage Temperature: -40 to +80 °C
Shock: 50 G's for 11 milliseconds duration
Vibration: 5 to 2000 Hz at 2.5 G's
Humidity: Up to 98% (non-condensing)
Enclosure Rating: NEMA4/IP66 (dust proof, washdown)

Bearing Life versus Load

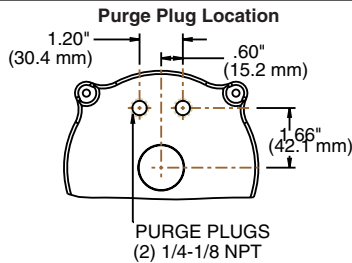
Radial	Axial	Revolutions
75	15	1.3 x 10 ¹⁰
75	25	6.4 x 10 ⁹
100	25	4.1 x 10 ⁹
100	50	1.3 x 10 ⁹

Ordering Information

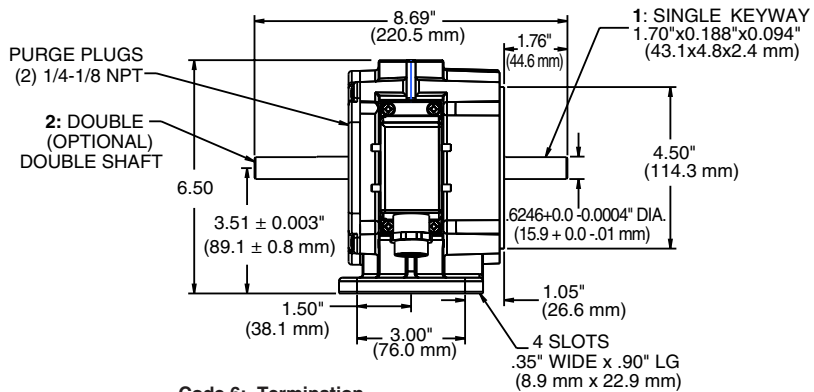
To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: PPR	Code 3: Shaft	Code 4: Format	Code 5: Electrical	Code 6: Termination	Code 7: Options
H56	□□□□	□	□	□	□	□□
Ordering Information						
H56 Mill Duty, 56C-Face or Foot Mount Rotopulser®	0001 0500 0003 0512 0010 0600 0012 0900 0015 1000 0032 1024 0050 1200 0060 1500 0100 2000 0120 2048 0200 2400 0240 2500 0250 3072 0300 4000 0360 4096 5000	1 Single, 5/8" 2 Double, 5/8"	Compliments available when Code 5 is 3 or 4 2 Single, bidirectional quadrature (AB) 3 Single, bidirectional quadrature with index (ABZ) 4 Dual, isolated bidirectional quadrature (dual AB) 6 Dual, isolated bidirectional quadrature with index (dual ABZ)	0 5-26V in, 5-26V Open Collector Out 1 5-26V in, 5-26V Open Collector Out w/ 2.2kΩ Pullups 2 5-26V in, 5-26V Single Ended Push-Pull Out 3 5-26V in, 5V Differential Line Driver Out (7272) 4 5-26V in, 5-26V Differential Line Driver Out (7272) 5 5-26V in, 5V Differential Line Driver Out (4469) 6 5-15V in, 5-15V Differential Line Driver Out (4469)	0 MS Connector(s) 1 MS Connector(s), plus mating connector(s) 2 Pluggable Screw Terminal Connector(s) 3 Pluggable Screw Terminal(s), plus Mating Connector(s)	Available when Code 6 is 0 or 1: PS LED Output Indicator

DIMENSIONS inches [mm]



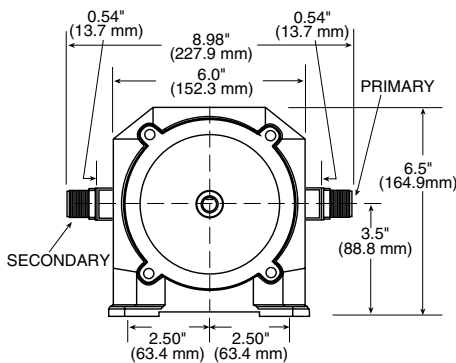
Code 3: Shaft



Code 6: Termination

0,1: MS Connectors

Shown with LED Output Indicator Option
Code 9: PS



2,3: Pluggable Screw Terminals

Code 4: Format

