

# SERIES H56

**Dynapar™ brand**

## Heavy Duty Encoder

### Key Features

- Encoder-Within-Encoder Design
- Large Outer Bearings Isolate Shaft Loads
- Foot Mount or 56C Mace Mount Easily Replaces BC42 and 46 Tachs



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental  
**Resolution:** 1 to 2500 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° ± 18° electrical  
**Index:** 180° ± 18° 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) 4.5 min. to 26 VDC max. at 100 mA max., not including output loads  
**Outputs:**  
 7273 Open Collector: 30 VDC max., 40 mA sink max.  
 7272 Push-Pull and Differential Line Driver: 40 mA sink or source  
 4469 Differential Line Driver: 100 mA, sink or source  
**Frequency Response:** 100 kHz min.  
**Electrical Protection:** Overvoltage, reverse voltage and output short circuit protected  
**Noise Immunity:** Tested to EN50082-2 (Heavy Industrial) for Electro Static Discharge, Radio Frequency Interference, Electrical Fast Transients, Conducted and Magnetic Interference

### Mating Connector:

6 pin, style MS3106A-14S-6S (MCN-N4);  
 10 pin, style MS3106A-18-1S (MCN-N6)  
 Pluggable Screw-Terminal (110532-0001)

### 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.

| Function (If) | Cable #14002090010*<br>6 Pin Single Ended |            | Twisted Pairs Cable #14004190010*<br>10 Pin Differential |            | Pluggable Screw Terminal Pin Number |
|---------------|---|------------|--|------------|-------------------------------------|
|               | Pin                                       | Wire Color | Pin  | Wire Color |                                     |
| Sig. A        | B   | RED        | B  | RED        | 3                                   |
| Sig. Ā       | —   | —          | G  | BLK        | 8                                   |
| Sig. B        | D   | BLU        | D  | BLU        | 7                                   |
| Sig. B̄       | —   | —          | H  | BLK        | 2                                   |
| Sig. Z        | A   | GRN        | A  | GRN        | 4                                   |
| Sig. Z̄       | —   | —          | I  | BLK        | 9                                   |
| +V            | E   | WHT        | E  | WHT        | 6                                   |
| Common        | C   | BLK        | C  | BLK        | 1                                   |
| Shield        | F   | SHIELD     | F  | SHIELD     | 10                                  |

### MECHANICAL

**Bearing Life:** see table, below  
**Shaft Loading:** 100 lbs. radial, 50 lbs. axial  
**Shaft Speed:** 3600 RPM max.  
**Starting Torque:** 15 oz-in max.;  
**Moment of Inertia:** 7.9 x 10<sup>-4</sup> oz-in-sec<sup>2</sup>  
**Weight:** 144 oz. (9 lbs.)

### 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:** to 98% without condensation  
**Enclosure Rating:** NEMA4/IP66 (dust proof, washdown)

### Bearing Life versus Load

| Radial | Axial | Revolutions            |
|--------|-------|------------------------|
| 75     | 15    | 1.3 x 10 <sup>10</sup> |
| 75     | 25    | 6.4 x 10 <sup>9</sup>  |
| 100    | 25    | 4.1 x 10 <sup>9</sup>  |
| 100    | 50    | 1.3 x 10 <sup>9</sup>  |



### 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

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

### 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

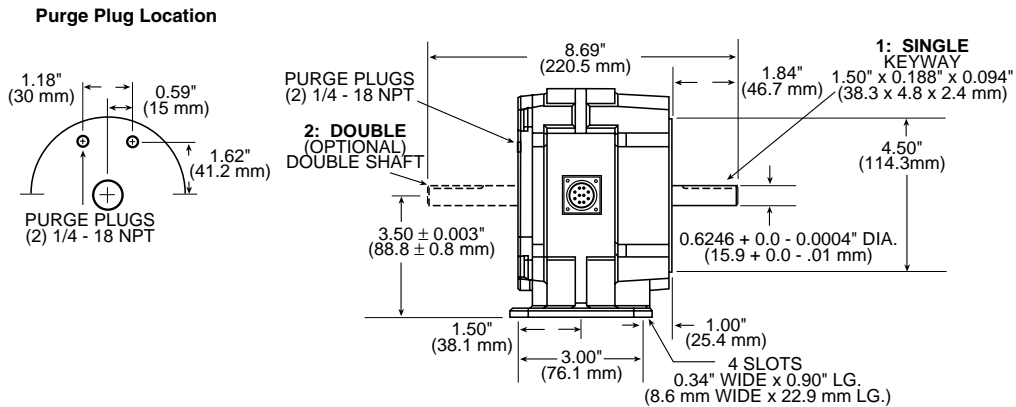
## Ordering Information

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  |
|--|---|------------------------------------|---|--|--|--|
| <b>H56</b>   | □□□□  | □                                  | □   | □  | □  | □□   |
| Ordering Information                                     |   |                                    |   |  |  |  |
| <b>H56</b> Mill Duty, 56C-Face or Foot Mount Rotopulser® | <b>0001</b> <b>0300</b><br><b>0002</b> <b>0360</b><br><b>0003</b> <b>0400</b><br><b>0005</b> <b>0500</b><br><b>0006</b> <b>0512</b><br><b>0010</b> <b>0600</b><br><b>0012</b> <b>0625</b><br><b>0025</b> <b>0720</b><br><b>0050</b> <b>0900</b><br><b>0060</b> <b>1000</b><br><b>0064</b> <b>1024</b><br><b>0100</b> <b>1200</b><br><b>0120</b> <b>1270</b><br><b>0128</b> <b>1500</b><br><b>0180</b> <b>1800</b><br><b>0200</b> <b>2000</b><br><b>0240</b> <b>2048</b><br><b>0250</b> <b>2400</b><br><b>2500</b> | <b>1</b> Single<br><b>2</b> Double | Compliments available when Code 5 is 3 or 4<br><b>2</b> Single, bidirectional quadrature (AB)<br><b>3</b> Single, bidirectional quadrature with index (ABZ)<br><b>4</b> Dual, isolated bidirectional quadrature (dual AB)<br><b>6</b> Dual, isolated bidirectional quadrature with index (dual ABZ) | <b>0</b> 5-26V in, 5-26V open collector out<br><b>1</b> 5-26V in, 5-26V open collector out w/ 2.2kΩ pullups<br><b>2</b> 5-26V in, 5-26V single ended push-pull out<br><b>3</b> 5-26V in, 5V differential line driver out (7272)<br><b>4</b> 5-26V in, 5-26V differential line driver out (7272)<br><b>5</b> 5-26V in, 5V Differential Line Driver out (4469)<br><b>6</b> 5-15V in, 5-15V Differential Line Driver out (4469) | <b>0</b> MS Connector(s)<br><b>1</b> MS Connector(s), plus mating connector(s)<br><b>2</b> Pluggable screw terminal connector(s)<br><b>3</b> Pluggable screw terminal(s), plus mating connector(s) | available when Code 6 is 0 or 1:<br><b>PS</b> 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

