

SERIES H58

Dynapar™ brand

Shafted Encoder

Key Features

- Industry Standard 58mm Mounting
- Multiple Connection Options
- Rugged Design with Long-Life Bearings

IND
Industrial Duty



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Optical

Resolution: 1 to 2540 PPR (pulses/revolution)

Accuracy: (Worst case any edge to any other edge) ≤ 1024 PPR (metal disk): ± 7.5 arc-min.
 > 1024 PPR (glass disk): ± 2.5 arc-min.

Format: Two channel quadrature (AB) with optional Index (Z) and complementary outputs

Phase Sense: A leads B for CCW shaft rotation as viewed from the shaft end of the encoder

Quadrature Phasing: $90^\circ \pm 22.5^\circ$ electrical

Symmetry: $180^\circ \pm 18^\circ$ electrical

Index: $180^\circ \pm 18^\circ$ 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:

5 to 26 VDC at 80 mA max., not including output loads

Outputs:

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. (index)
75 kHz min. for extended temperature range

Noise Immunity: Tested to EN61326-1

Electrical Immunity: Reverse polarity and short circuit protected

Termination: MS Connector, M12 Connector, M23 Connector, Cable Exit

Mating Connector:

7 pin, style MS3106A-16S-1S (MCN-N5)

10 pin, style MS3106A-18-1S (MCN-N6)

10 pin, NEMA4 style (MCN-N6N4)

12 pin style M23, CW (MCN-C1)

12 pin style M23, CCW (MCN-C2)

Cable w/ 5 pin M12 Connector (112859-XXXX)

Cable w/ 8 pin M12 Connector (112860-XXXX)

MECHANICAL

Shaft Sizes: 6 mm, 10 mm

Shaft Loading: (at 6 mm from encoder face)

Resolutions ≤ 1024 PPR: 356 N radial, axial

Resolutions > 1024 PPR: 178 N radial, axial

Shaft Speed:

Resolutions ≤ 1024 PPR: 10,000 RPM max.

Resolutions > 1024 PPR: 5,000 RPM max.

Starting Torque: (max at 25 °C)

without shaft seal: 0.007 N-m;

with shaft seal: 0.014 N-m

Moment of Inertia: 21.2 g-cm²

Housing and Cover: Aluminum

Shaft Material: Stainless Steel

Disc Material: Glass

Weight: 283 g. (10 oz.) max.

ENVIRONMENTAL

Operating Temperature:

Standard: 0 to +70 °C;

Extended: 0 to +85 °C

Storage Temperature: -40 to +90 °C

Shock: 50 G's for 11 milliseconds duration

Vibration: 5 to 2000 Hz at 20 G's

Humidity: Up to 98% (non-condensing)

Enclosure Rating: NEMA12/IP54 (dirt tight, splashproof); NEMA4/IP66 (dust proof, wash-down) when ordered with shaft seal and either M12 connector or watertight cable exit

Ordering Information

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

| Code 1: Model | Code 2: PPR | Code 3: Pilot, Face | Code 4: Shaft | Code 5: Shaft Seal | Code 6: Electrical | Code 7: Termination | Code 8: Connector | |
|---|---|--------------------------|--|--------------------------|--------------------------|--|---|--|
| H58 | <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"/> | |
| Ordering Information | | | | | | | | |
| H58 Bidirectional with Index (Channels A, B and Z) | 0001 | 0600 | 0 (3) M4 @ 42mm BC, no Pilot | 0 6mm Dia. Shaft | 0 no Shaft Seal | 0 5-26V in, 5-26V Push-Pull out A Same as "0" with extend. temp range available when Code 7 is 2 thru B, E or F: 1 5-26V in, 5-26V Differential Line Driver out (7272) 2 5-26V in, 5V Differential Line Driver out (7272) 3 5-26V in, 5V Differential Line Driver out (4469) 4 5-15V in, 5-15V Differential Line Driver out (4469) B Same as "1" with extend. temp range C Same as "2" with extend. temp range | 0 7 Pin Conn, End Mount 1 7 Pin Conn, Side Mount 2 10 Pin Conn, End Mount 3 10 Pin Conn, Side Mount 4 12 Pin CCW Conn, End Mount 5 12 Pin CCW Conn, Side Mount 6 12 Pin CW Conn, End Mount 7 12 Pin CW Conn, Side Mount C 5 pin M12 Conn, End Mount D 5 pin M12 Conn, Side Mount E 8 pin M12 Conn, End Mount F 8 pin M12 Conn, Side Mount available when Code 5 is 1: 8 1m Sealed Cbl, End Exit 9 1m Sealed Cbl, Side Exit A 3m Sealed Cbl, End Exit B 3m Sealed Cbl, Side Exit | 0 No Mating Connector 1 7 Pin Mating Connector 2 10 Pin Mating Connector 3 12 Pin CCW Mating Connector 4 12 Pin CW Mating Connector |
| | 0010 | 0800 | | | 1 Shaft Seal | | | |
| | 0012 | 1000 | | 1 10mm Dia. Shaft | | | | |
| | 0050 | 1024 | 1 (3) M3 @ 48mm BC, 36mm Dia. Pilot | | | | | |
| | 0060 | 1200 | | | | | | |
| | 0086 | 1250 | | | | | | |
| | 0100 | 1270 | | | | | | |
| | 0120 | 1500 | | | | | | |
| | 0125 | 1600 | | | | | | |
| | 0200 | 1800 | | | | | | |
| | 0240 | 1968 | | | | | | |
| | 0250 | 2000 | | | | | | |
| 0300 | 2048 | | | | | | | |
| 0360 | 2400 | | | | | | | |
| 0400 | 2500 | | | | | | | |
| 0500 | 2540 | | | | | | | |
| 0512 | | | | | | | | |

Cable Assemblies with MS Connector*

- 108595-XXXX** 7 Pin MS, Cable Assy. For Use with Single Ended w/Index Outputs
- 1400635XXXX** 10 Pin MS, Cable Assy. For Use with Differential Line Driver with Index Outputs
- 109209-XXXX** NEMA4 10 pin MS, Cable Assy. For Use with Differential Line Driver with Index Outputs
- 108615-XXXX** 12 Pin CCW (if used) MS, Cable Assy. For Use with Differential Line Driver with Index Outputs
- 108616-XXXX** 12 Pin CW (if used) MS, Cable Assy. For Use with Differential Line Driver with Index Outputs

Cable Assemblies with M12 Connector*

- 112859-XXXX** 5 Pin M12, Cable Assy. For Use with Single Ended Outputs
- 112860-XXXX** 8 Pin M12, Cable Assy. For Use with Single Ended Outputs
- 112860-XXXX** 8 Pin M12, Cable Assy. For Use with Differential Line Driver Outputs

*Note: 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.

Mating Connectors (no cable)

- MCN-N5** 7 pin, style MS3106A-16S-1S
- MCN-N6** 10 pin, style MS3106A-18-1S
- MCN-N6N4** 10 pin, NEMA4 style
- MCN-C1** 12 pin style M23, CW
- MCN-C2** 12 pin style M23, CCW

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ELECTRICAL CONNECTIONS

7, 10 & 12 Pin M23 Connectors and Cables - Code 7 =0 to 7

Connector & mate/accessory cable assembly pin numbers and wire color information is provided here for reference. Models with direct cable exit carry the color coding as shown in the right hand column.

| Table 1 | | | | | | | | |
|------------------|---|-----------------|--|-----------------|-----------------------------------|-----------------|----------------------------------|-----------------|
| Encoder Function | Cable # 108595-XXXX 7 Pin Single Ended | | **Cable # 109209-XXXX or 1400635XXXX 10 Pin Differential Line Driver w/ Index | | Cable # 108615-XXXX 12 Pin CCW | | Cable # 108616-XXXX 12 Pin CW | |
| | Pin | Wire Color Code | Pin | Wire Color Code | Pin | Wire Color Code | Pin | Wire Color Code |
| Signal A | A | BRN | A | BRN | 5 | BRN | 3 | BRN |
| Signal B | B | ORG | B | ORG | 8 | ORG | 4 | ORG |
| Signal Z | C | YEL | C | YEL | 3 | YEL | 7 | YEL |
| Power +V | D | RED | D | RED | 12 | RED | 2 | RED |
| N/C | E | — | E | — | 7 | — | — | — |
| Com | F | BLK | F | BLK | 10 | BLK | 1 | BLK |
| Case | G | GRN | G | GRN | 9 | — | — | — |
| Signal \bar{A} | — | — | H | BRN/WHT | 6 | BRN/WHT | 5 | BRN/WHT |
| Signal \bar{B} | — | — | I | ORG/WHT | 1 | ORG/WHT | 6 | ORG/WHT |
| Signal \bar{Z} | — | — | J | YEL/WHT | 4 | YEL/WHT | 8 | YEL/WHT |
| 5V Sense | — | — | — | — | 2 | GRN | — | — |
| 0V Sense | — | — | — | — | 11 | BLK/WHT | — | — |

5 & 8 Pin M12 Accessory Cables when Code 7 = C to F

Connector pin numbers and cable assembly wire color information is provided here for reference.

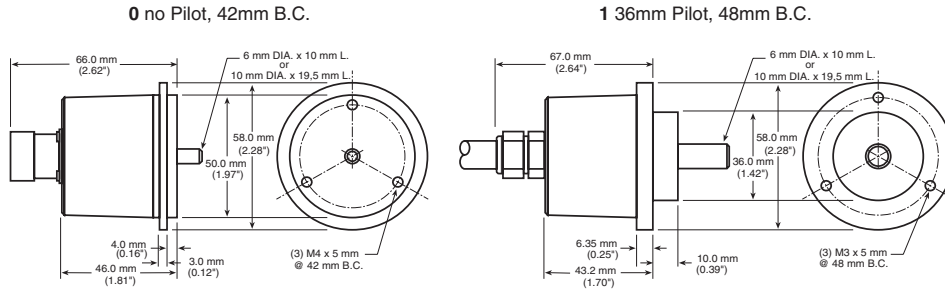
| Table 2 | | | | | | |
|------------------|---|-----------------|---|-----------------|---|-----------------|
| Encoder Function | Cable # 112859-XXXX 5 Pin Single Ended | | Cable # 112860-XXXX 8 Pin Single Ended | | Cable # 112860-XXXX 8 Pin Differential | |
| | Pin | Wire Color Code | Pin | Wire Color Code | Pin | Wire Color Code |
| Signal A | 4 | BLK | 1 | BRN | 1 | BRN |
| Signal B | 2 | WHT | 4 | ORG | 4 | ORG |
| Signal Z | 5 | GRY | 6 | YEL | 6 | YEL |
| Power +V | 1 | BRN | 2 | RED | 2 | RED |
| Com | 3 | BLU | 7 | BLK | 7 | BLK |
| Signal \bar{A} | — | — | — | — | 3 | BRN/WHT |
| Signal \bar{B} | — | — | — | — | 5 | ORG/WHT |
| Signal \bar{Z} | — | — | — | — | 8 | YEL/WHT |

NOTES:

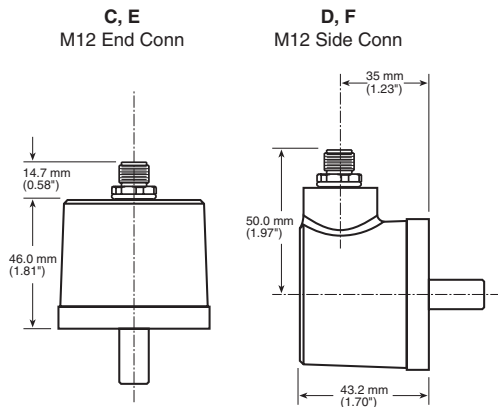
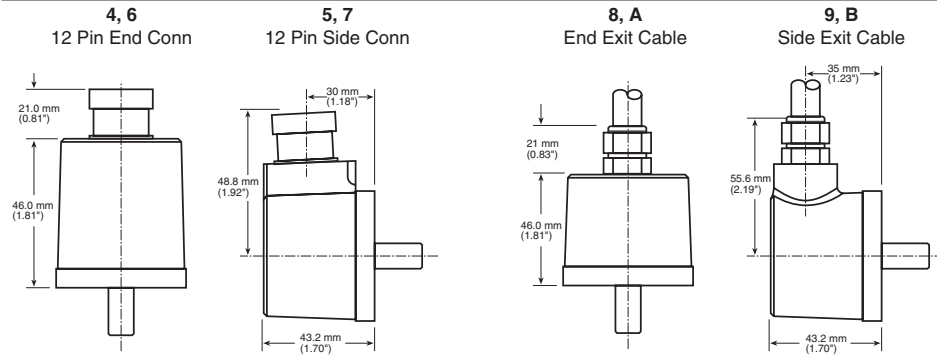
- 1) Cable Configuration (Table 1): PVC jacket, 105 °C rated, overall foil shield; 3 twisted pairs 26 AWG (output signals), plus 2 twisted pairs 24 AWG (input power)
- 2) Cable Configuration (Table 2): PVC jacket, 105 °C rated, overall foil shield; 24 AWG conductors, minimum
- 3) Standard cable length 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
- 4) **For watertight applications, use NEMA4 10 pin cable & connector 109209-XXXX.
- 5) "MS" Type mating connectors and pre-build cables are rated NEMA 12
- 6) "M12" Cable assemblies are rated IP67

DIMENSIONS

Code 3: Pilot, Face Mounts



Code 7: Terminations



Code 7: Terminations

4, 5 CCW **6, 7 CW**
 (when looking at encoder)

