

SERIES H58

Dynapar™ brand

Shafted Encoder

Key Features

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



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental

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:

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

Outputs:

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 EN61326 (Industrial) for Electro Static Discharge, Radio Frequency Interference, Electrical Fast Transients, Conducted and Magnetic Interference

CONNECTIONS

Mating Connector:

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

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

12 pin style M23, CW (605560-0001)

12 pin style M23, CCW (605560-0002)

5 pin, style M12: Cable with connector available

8 pin, style M12: Cable with connector available

MECHANICAL

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

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

ENVIRONMENTAL

Operating Temperature:

Standard: 0 to +70 °C;

Extended: -40 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: to 98% without condensation

Enclosure Rating: NEMA12/IP54 (dirt tight, splashproof); NEMA4/IP66 (dust proof, washdown) when ordered with shaft seal and either MS 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 | 0500 | 0 (3) M4 @ 42mm BC, no Pilot | 0 6mm Dia. Shaft | 0 no Shaft Seal | 0 5-26V in, 5-26V Push-Pull out 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) A Same as "0" with extend. temp range B Same as "1" with extend. temp range C Same as "2" with extend. temp range | 0 7 Pin Conn, End Mount | 0 no Mating Connector |
| | 0005 | 0512 | 1 (3) M3 @ 48mm BC, 36mm Dia. Pilot | 1 10mm Dia. Shaft | 1 Shaft Seal | | 1 7 Pin Conn, Side Mount | 1 7 Pin Mating Connector |
| | 0010 | 0600 | | | | | 2 10 Pin Conn, End Mount | 2 10 Pin Mating Connector |
| | 0012 | 0800 | | | | | 3 10 Pin Conn, Side Mount | 3 12 Pin CCW Mating Connector |
| | 0050 | 0900 | | | | | 4 12 Pin CCW Conn, End Mount | 4 12 Pin CW Mating Connector |
| | 0060 | 1000 | | | | | 5 12 Pin CCW Conn, Side Mount | 4 12 Pin CW Mating Connector |
| | 0086 | 1024 | | | | | 6 12 Pin CW Conn, End Mount | 3 12 Pin CCW Mating Connector |
| | 0100 | 1200 | | | | | 7 12 Pin CW Conn, Side Mount | 4 12 Pin CW Mating Connector |
| | 0120 | 1250 | | | | | C 5 pin M12 Conn, End Mount | 4 12 Pin CW Mating Connector |
| | 0125 | 1270 | | | | | D 5 pin M12 Conn, Side Mount | 4 12 Pin CW Mating Connector |
| 0180 | 1500 | E 8 pin M12 Conn, End Mount | | | | 4 12 Pin CW Mating Connector | | |
| 0200 | 1600 | F 8 pin M12 Conn, Side Mount | 4 12 Pin CW Mating Connector | | | | | |
| 0240 | 1800 | 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 | |
| 0250 | 1968 | | | | | | | |
| 0254 | 2000 | | | | | | | |
| 0256 | 2048 | | | | | | | |
| 0300 | 2400 | | | | | | | |
| 0360 | 2500 | | | | | | | |
| 0400 | 2540 | | | | | | | |

10 foot Cable Assemblies with MS Connector

- 108595-0010** 7 Pin MS, Cable Assy. For Use with Single Ended w/Index Outputs
- 1400635-0010** 10 Pin MS, Cable Assy. For Use with Differential Line Driver with Index Outputs
- 108615-0010** 12 Pin CCW (if used) MS, Cable Assy. For Use with Differential Line Driver with Index Outputs
- 108616-0010** 12 Pin CW (if used) MS, Cable Assy. For Use with Differential Line Driver with Index Outputs

15 foot Cable Assemblies with M12 Connector

- 112859-0015** 5 Pin M12, Cable Assy. For Use with Single Ended Outputs
- 112860-0015** 8 Pin M12, Cable Assy. For Use with Single Ended Outputs
- 112860-0015** 8 Pin M12, Cable Assy. For Use with Differential Line Driver Outputs

SERIES H58



ELECTRICAL CONNECTIONS

7, 10 and 12 Pin 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 same color coding as shown for each output configuration.

| Encoder Function | Cable # 108595-7 Pin (If Used) | | Cable # 1400635-10 Pin (If Used) | | Cable # 108615-12 Pin CCW (If Used) | | Cable # 108616-12 Pin CW (If Used) | |
|------------------|--------------------------------|------------|----------------------------------|------------|-------------------------------------|------------|------------------------------------|------------|
| | Pin | Wire Color | Pin | Wire Color | Pin | Wire Color | Pin | Wire Color |
| Sig. A | A | BRN | A | BRN | 5 | BRN | 3 | BRN |
| Sig. B | B | ORN | B | ORG | 8 | ORG | 4 | ORG |
| Sig. 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 | — | — | — |
| Sig. \bar{A} | — | — | H | BRN/WHT | 6 | BRN/WHT | 5 | BRN/WHT |
| Sig. \bar{B} | — | — | I | ORG/WHT | 1 | ORG/WHT | 6 | ORG/WHT |
| Sig. \bar{Z} | — | — | J | YEL/WHT | 4 | YEL/WHT | 8 | YEL/WHT |
| 5V Sense | — | — | — | — | 2 | GRN | — | — |
| 0V Sense | — | — | — | — | 11 | BLK/WHT | — | — |

Mating connector/cable assembly wire color information is provided here for reference. H58 models with direct cable exit carry the same color coding as shown for each output configuration.

Cable Configuration: PVC jacket, 105 °C rated, overall foil shield; 3 twisted pairs 26 AWG (output signals), plus 2 twisted pairs 24 AWG (input power)

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.

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

Cable Configuration: PVC jacket, 105 °C rated, overall foil shield; 24 AWG conductors, minimum

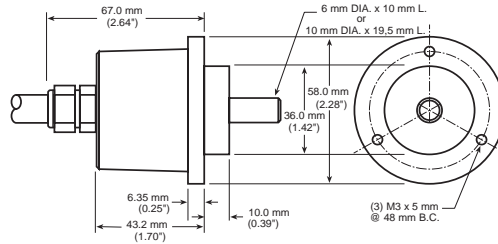
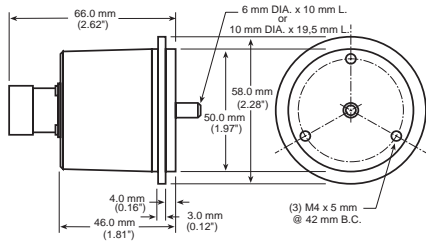
See "Accessories" Section for Connectors and Cable Assemblies Ordering Information

DIMENSIONS

Code 3: Pilot, Face Mounts

0 no Pilot, 42mm B.C.

1 36mm Pilot, 48mm B.C.



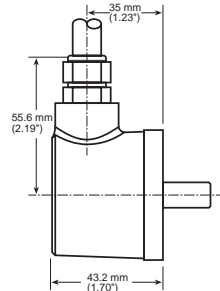
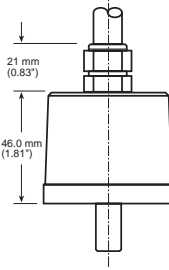
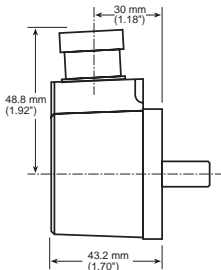
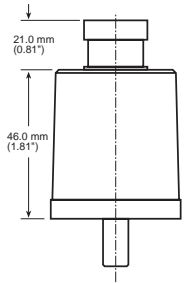
Code 7: Terminations

4, 6
12 Pin End Conn

5, 7
12 Pin Side Conn

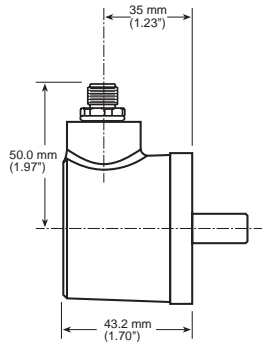
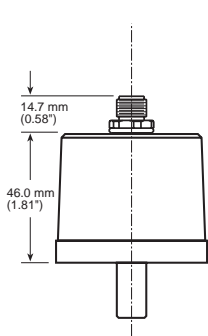
8, A
End Exit Cable

9, B
Side Exit Cable



C, E
M12 End Conn

D, F
M12 Side Conn

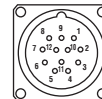
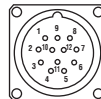


Code 7: Terminations

4, 5 CCW

6, 7 CW

(when looking at encoder)



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