

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	0 7 Pin Conn, End Mount
	0010	0800			1 Shaft Seal	A Same as "0" with extend. temp range	1 7 Pin Conn, Side Mount
	0012	1000		1 10mm Dia. Shaft			2 10 Pin Conn, End Mount
	0050	1024	1 (3) M3 @ 48mm BC, 36mm Dia. Pilot			available when Code 7 is 2 thru B, E or F:	3 10 Pin Conn, Side Mount
	0060	1200				1 5-26V in, 5-26V Differential Line Driver out (7272)	4 12 Pin CCW Conn, End Mount
	0086	1250				2 5-26V in, 5V Differential Line Driver out (7272)	5 12 Pin CCW Conn, Side Mount
	0100	1270				3 5-26V in, 5V Differential Line Driver out (4469)	6 12 Pin CW Conn, End Mount
	0120	1500				4 5-15V in, 5-15V Differential Line Driver out (4469)	7 12 Pin CW Conn, Side Mount
	0125	1600				B Same as "1" with extend. temp range	C 5 pin M12 Conn, End Mount
	0200	1800				C Same as "2" with extend. temp range	D 5 pin M12 Conn, Side Mount
	0240	1968					E 8 pin M12 Conn, End Mount
	0250	2000					F 8 pin M12 Conn, Side Mount
0300	2048					available when Code 5 is 1:	
0360	2400					8 1m Sealed Cbl, End Exit	
0400	2500					9 1m Sealed Cbl, Side Exit	
0500	2540					A 3m Sealed Cbl, End Exit	
0512						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	

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

SERIES H58



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.

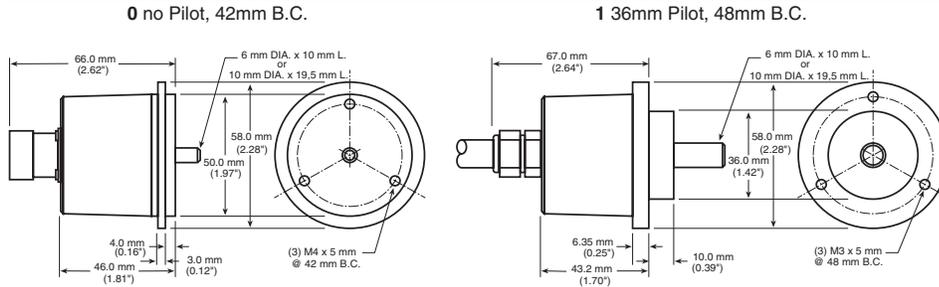
Table 2						
Encoder Function	Cable # 112859-XXXX 5 Pin Single Ended		Cable # 112860-XXXX 8 Pin Single Ended		Cable # 112860-XXXX 8 Pin Differential	
	Pin	Wire Color Code	Pin	Wire Color Code	Pin	Wire Color Code
Signal A	4	BLK	1	BRN	1	BRN
Signal B	2	WHT	4	ORG	4	ORG
Signal Z	5	GRY	6	YEL	6	YEL
Power +V	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:

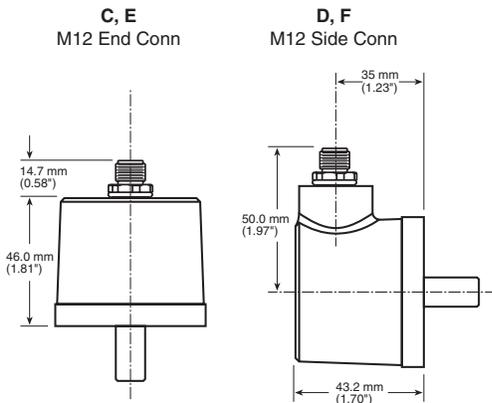
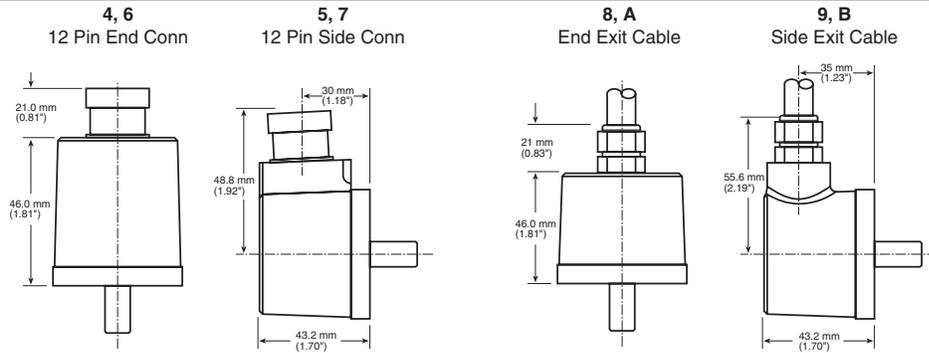
- 1) Cable Configuration (Table 1): PVC jacket, 105 °C rated, overall foil shield; 3 twisted pairs 26 AWG (output signals), plus 2 twisted pairs 24 AWG (input power)
- 2) Cable Configuration (Table 2): PVC jacket, 105 °C rated, overall foil shield; 24 AWG conductors, minimum
- 3) Standard cable length 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)

