

Series H58



- **Rugged, ultra-reliable design using long-life bearings**
- **Available unbreakable metal code disk**
- **Complete electrical protection and noise immunity tested to EN50082-2**
- **Available with environmental sealing to IP66 / NEMA4**
- **Economical solution for medium resolution applications**
- **Industry-standard size 58 packages**

The Dynapar brand Series H58 is a rugged, reliable and economical encoder for industrial motion applications. Models with resolutions of 1024 or less are equipped with an unbreakable code disk that meets the demands of the most severe shock and vibration generating processes. Long life, heavy-duty bearings keep tough loads from disrupting internal alignment, avoiding failure due to the disk "crashes" so typical in competitive encoders. Protection against installation problems such as wiring errors prevents the encoder from damage, while immunity to electrical noise keeps the encoder signals intact. An IP66 / NEMA 4 sealing option protects against damage from contamination.

Packaged in the European standard 58mm enclosure, the Series H58 offers a variety of mechanical options: servo or face mounting on 42mm or 48mm bolt circles, 6mm or 10mm shafts, and an optional 36mm pilot. Electrical options include: resolutions from 1 to 2540 pulses/revolution; single ended push-pull or differential line driver outputs; and a choice of connector or cable terminations.

The Series H58 utilizes the latest technology optical emitters and sensors, surface mount assembly and precisely fabricated metal components to deliver high reliability and performance in a compact and economical package.

Mechanical / Environmental Features

- Long Life bearings
- Extended temperature range option
- Industry Standard, 58mm Form Factor
- IP66/NEMA4 washdown rating option
- Operation to 10,000 RPM

Electrical Features

- Noise Immune to ESD, RFI and electrical transients
- High current outputs
- Over-Voltage protection
- Reverse Voltage protection
- Output Short-Circuit protection
- 100 kHz frequency response

SPECIFICATIONS

Electrical

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

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 EN50082-2 (Heavy Industrial) for Electro Static Discharge, Radio Frequency Interference, Electrical Fast Transients, Conducted and Magnetic Interference

Mating Connector:

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

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

12 pin, CW (605560-0001)

12 pin, CCW (605560-0002)

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

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

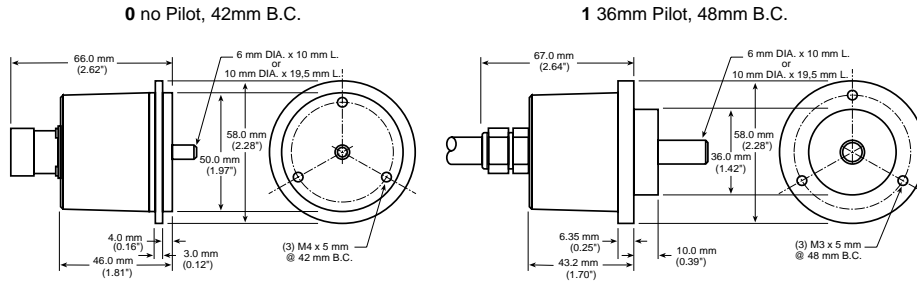
Enclosure Rating: NEMA12/IP54 (dirt tight, splashproof); NEMA4/IP66 (dust proof, washdown) when ordered with shaft seal and either MS connector or watertight cable exit

Electrical Connections

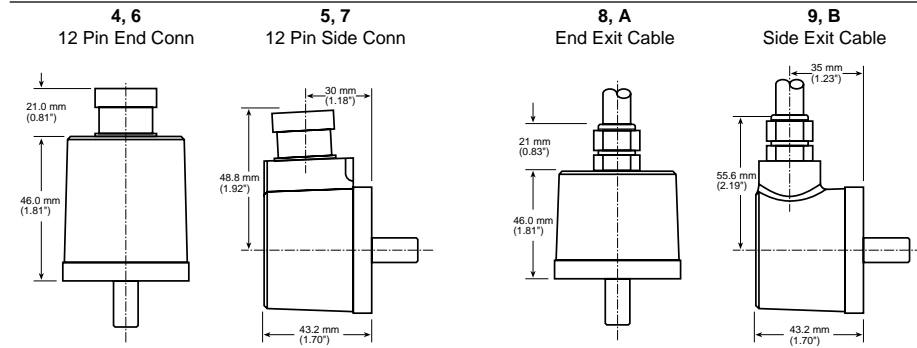
Encoder Function	Cable # 108595-7 Pin (If Used)		Cable # 1400635-10 Pin (If Used)		Cable # 108615-12 Pin CCW (If Used)		Cable # 108616-12 Pin CW (If Used)	
	Pin	Wire Color	Pin	Wire Color	Pin	Wire Color	Pin	Wire Color
Sig. A	A	BRN	A	BRN	5	BRN	3	BRN
Sig. B	B	ORN	B	ORG	8	ORG	4	ORG
Sig. Z	C	YEL	C	YEL	3	YEL	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.

Code 3: Pilot, Face Mounts

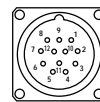
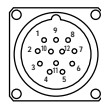


Code 7: Terminations



Code 7: Terminations

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



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"/>
Ordering Information							
H58 Bidirectional with Index (Channels A, B and Z)	Metal Disk 0001 0250 0005 0254 0010 0256 0012 0300 0050 0360 0060 0400 0086 0500 0100 0512 0120 0600 0125 0800 0180 0900 0200 1000 0240 1024 Glass Disk 1200 1968 1250 2000 1270 2048 1500 2400 1600 2500 1800 2540	0 (3) M4 @ 42mm BC, no Pilot 1 (3) M3 @ 48mm BC, 36mm Dia. Pilot	0 6mm Dia. Shaft 1 10mm Dia. Shaft	0 no Shaft Seal 1 Shaft Seal	0 5-26V in, 5-26V Push-Pull out available when Code 7 is 2 through B: 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)	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	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
					A Same as "0" with extend. temp range B Same as "1" with extend. temp range C Same as "2" with extend. temp range	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	