

# SERIES HC26

**Dynapar™ brand**

## Integral Coupling Encoder

### Key Features

- High 5000PPR Resolution Available
- Integral Coupling and Flange Provide Thermal and Electrical Isolation
- Field Replaceable Coupling



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental

**Resolution:** 3000 to 5000 PPR (pulses/revolution)

**Accuracy:** (worst case any edge to any other edge)  $\pm 10.8^\circ$ /PPR

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

**Phase Sense:** A leads B for CW or CCW shaft rotation as viewed from the shaft end of the encoder; see Ordering Information

**Quadrature Phasing:**  $90^\circ \pm 25^\circ$  electrical

**Symmetry:**  $180^\circ \pm 25^\circ$  electrical

**Index:**  $90^\circ \pm 25^\circ$  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:**

7273 Open Collector: 30 VDC max., 40 mA sink max.

7272 Push-Pull and Differential Line Driver: 40 mA sink or source

**Frequency Response:** 250 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

**Mating Connector:**

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

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

5 pin, style M12: Cable with connector available

8 pin, style M12: Cable with connector available

### MECHANICAL

**Shafts coupling:** accepts 1/4", 3/8" and 1/2" motor or machinery shafts

**Shafts alignment:** 0.002" max. TIR runout; 0.005" max. radial offset; 3° max. angular

**Shaft Speed:** 10,000 RPM max.

**Starting Torque:** (max at 25 °C) 1.0 oz-in

**Moment of Inertia:**  $4.3 \times 10^{-4}$  oz-in-sec<sup>2</sup>

### 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)

## Ordering Information

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

Code 1: Model	Code 2: PPR	Code 3: Mechanical	Code 4: Output	Code 5: Electrical	Code 6: Termination	Code 7: Options
HC526						
Ordering Information						
HC526 Size 25 Enclosed with Integral Coupling and Flange Adapter	3000 3,000 3600 3,600 4096 4,096 5000 5,000	A Flange Adapter with Pilot B Flange Adapter without Pilot C Flange Adapter for NEMA Size 42 Motors	7 Pin Connector or Cable	0 5-26V in; 5-26V Open Collector with 2.2kΩ Pullup out 1 5-26V in; 5-26V Open Collector out 2 5-26V in; 5V Totem Pole out 3 5-26V in; 5V Differential Line Driver out (7272) 4 5-26V in; 5-26V Differential Line Driver out (7272)	0 End Mount Connector 1 Side Mount Connector 2 18" Cable, Side 3 3' Cable, Side 4 6' Cable, Side 5 10' Cable, Side 6 15' Cable, Side	available when Code 4 is 0 thru G, and Code 6 is 0 or 1:  PS LED Output Indicator
			0 Single Ended, no Index, Format A, Table 1 1 Single Ended, with Index, Format A, Table 1 4 Single Ended, with Index, Format B, Table 1 A Single Ended, with Index, Format C, Table 1 C Single Ended, no Index, Format C, Table 1 G Single Ended, with Index, Format D, Table 1			
			10 Pin Connector or Cable			
			2 Differential, no Index, Format A, Table 2 3 Differential, with Index, Format A, Table 2 5 Differential, with Index, Format B, Table 2 B Differential, with Index Format C, Table 2 D Differential, no Index, Format C, Table 2			
			5 Pin M12 Connector			
H Single ended, no index, Format A, Table 4 J Single ended, with index, Format A, Table 4 K Single ended, with index, Format B, Table 4 L Single ended, with index, Format C, Table 4 M Single ended, no index, Format C, Table 4 N Single ended, with index, Format D, Table 4	A Same as "0" with extend. temp range B Same as "1" with extend. temp range C Same as "2" with extend. temp range D Same as "3" with extend. temp range E Same as "4" with extend. temp range					
8 Pin M12 Connector						
P Single ended, no index, Format A, Table 5 Q Single ended, with index, Format A, Table 5 R Single ended, with index, Format B, Table 5 S Single ended, with index, Format C, Table 5 T Single ended, no index, Format C, Table 5 U Single ended, with index, Format D, Table 5 V Differential, no index, Format A, Table 6 W Differential, with index, Format A, Table 6 X Differential, with index, Format B, Table 6 Y Differential, with index, Format C, Table 6 Z Differential, no index, Format C, Table 6						
CPLX1250375 Flexible Coupling 3/8" to 1/4", 3/8" or 1/2"						

### 10 foot Cable Assemblies with MS Connector

**1400431-0010** 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

### 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

### Mating Connectors (no cable)

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

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

# SERIES HC26



## ELECTRICAL CONNECTIONS

### Prewired Cable or Accessory Cables with 7 or 10 Pin MS Connector - when Code 4= 0 to 5, or A, B, C, D or G

Note: Wire color codes are referenced here for models that are specified with pre-wired cable. Connector/cables are described in the Encoder Accessories section of this catalog and color-coding information is provided here for reference.

Table 1 – Single Ended			
Pin	Function (If Used)	Wire Color Code	Cable* Accessory Color Code
A	Signal A	BRN	RED
B	Signal B	ORN	BLUE
C	Signal Z	YEL	YEL
D	Power Source	RED	WHT
E	No Connection	—	GRN
F	Common	BLK	BLK
G	Case	GRN	SHIELD
*Cable Accessory: P/N 14004310010			

Table 2 – Differential			
Pin	Function (If Used)	Wire Color Code	Cable* Accessory Color Code
A	Signal A	BRN	BRN
B	Signal B	ORN	ORN
C	Signal Z	YEL	YEL
D	Power Source	RED	RED
E	No Connection	—	—
F	Common	BLK	BLK
G	Case	GRN	GRN
H	Signal $\bar{A}$	BRN/WH	BRN/WH
I	Signal $\bar{B}$	ORN/WH	ORN/WH
J	Signal $\bar{Z}$	YEL/WH	YEL/WH
*Cable Accessory: P/N 14006350010			

**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)

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

	Table 4 5 Pin Single Ended		Table 5 8 Pin Single Ended		Table 6 8 Pin Differential	
Encoder Function	Cable # 112859-*		Cable # 112860-*		Cable # 112860-*	
	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

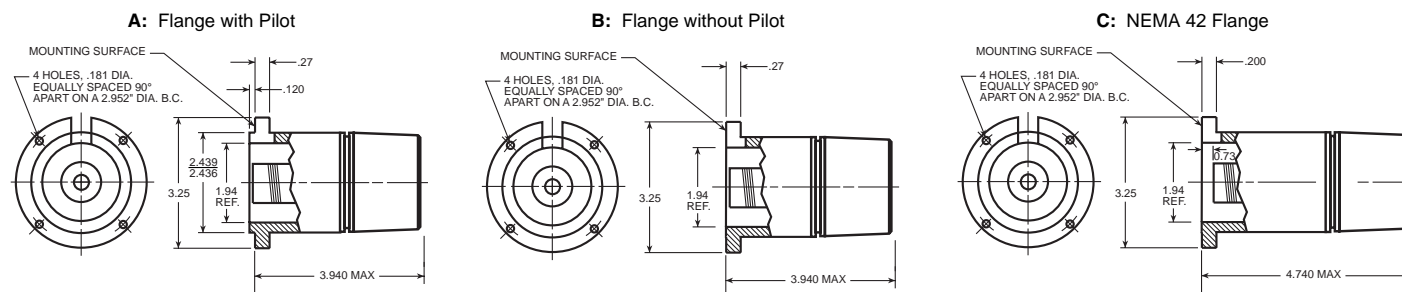
\*Note: Standard cable length is 10 feet but may be ordered in any length in 5 foot increment. For example, -0020 is a 20 foot cable.

†Note: Index not provided on all models. See ordering information

See “Accessories” Section for Connectors and Cable Assemblies Ordering Information

## DIMENSIONS

### Code 3: Mechanical

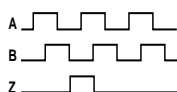


**Mating shaft lengths:** Typically: 0.5" max. available into the coupling as measured from the A/B mounting surface.  
1.3" max. available into the coupling as measured from the C mounting surface.

### Code 4: Output

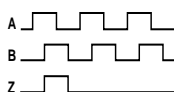
#### 0 - 3: Format A

CCW →



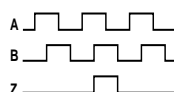
#### 4 - 5: Format B

CCW →



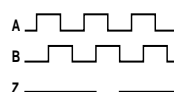
#### 6 - D: Format C

CW →



#### G: Format D

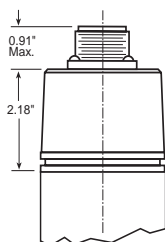
CCW →



### Code 6: Termination

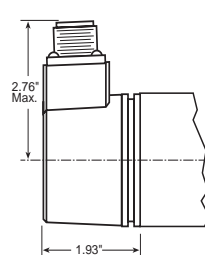
#### 0: End MS Connector

When Code 5 is 0 to 5 or A to G

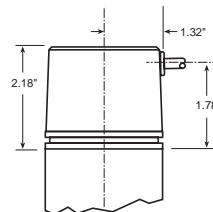


#### 1: Side MS Connector

When Code 5 is 0 to 5 or A to G

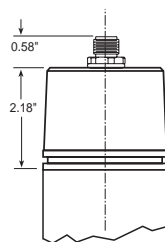


#### 2 - A: Side Cable



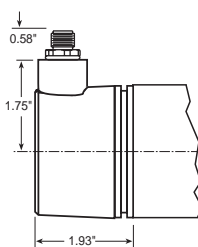
#### 0: End M12 Connector

When Code 5 is H to Z



#### 1: Side M12 Connector

When Code 5 is H to Z



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