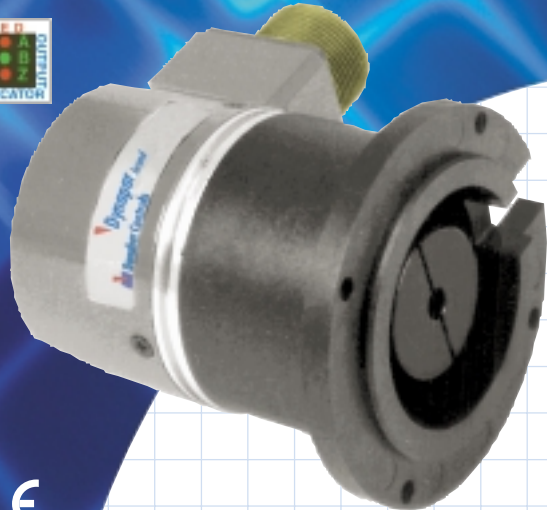


Series HA26



Compumotor Equivalent Model:
For Size 42 Stepper Motor: HA526-1000-CB05

- **Ultra-reliable, heavy duty**
- **Complete electrical protection and noise immunity**
- **Up to 2540 PPR with optional marker**
- **Coupling & flange provide thermal and electrical isolation for the encoder**
- **Field replaceable coupling**

SPECIFICATIONS

Electrical

Code: Incremental
Resolution: 1 to 2540 PPR (pulses/revolution)
Accuracy: (worst case any edge to any other edge) ± 2.5 arc-min.
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: $90^\circ \pm 22.5^\circ$ 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:
 7273 Open Collector: 30 VDC max., 40 mA sink max.
 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)
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

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: 5,000 RPM max.
Starting Torque: (max at 25 °C) 1.0 oz-in;
Moment of Inertia: 4.3×10^{-4} oz-in-sec²

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)

The Series HA26 is designed for rugged industrial applications. The integral shaft coupling and mounting flange allows it to be installed on the end of a motor or shaft assembly without the addition of a bracket or coupling. A high impact fiber reinforced integral housing provides thermal and electrical isolation for the encoder. The coupling includes an insulator at the encoder for isolation of the shaft. Long life bearings keep tough loads from disrupting internal alignment. Protection against installation problems such as wiring errors prevents the encoder from damage, while immunity to electrical noise keeps the encoder signals intact. The Series HA26 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

- Extended temperature range available

Electrical Features

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

Typical Applications

- Servo and stepper motor mounting
- Machine tools
- Position tables
- Robotics

Electrical Connections

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.

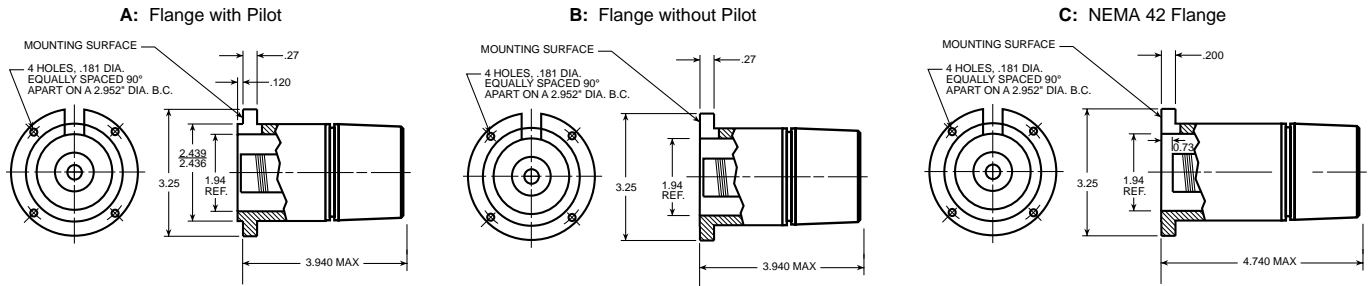
Pin	Function (If Used)	Wire Color Code	Cable* Accessory Color Code
A	Signal A	BRN	RED
B	Signal B	ORN	BLUE
C	Signal Z	YEL	YEL
D	Power Source	RED	WHT
E	No Connection	—	GRN
F	Common	BLK	BLK
G	Case	GRN	SHIELD

*Cable Accessory: P/N 14004310010

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

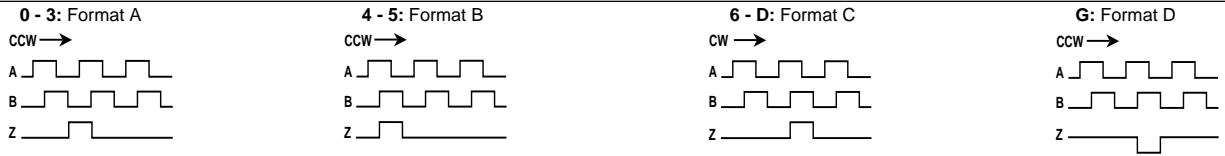
*Cable Accessory: P/N 14006350010

Code 3: Mechanical

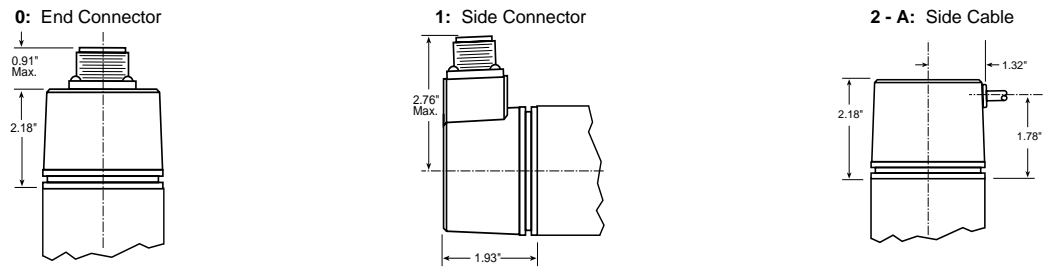


Mating shaft lengths: Typically: 0.5" max. available into the coupling as measured from the A/B mounting surface.
1.3" max. available into the coupling as measured from the C mounting surface.

Code 4: Output



Code 6: Termination



Code 1: Model	Code 2: Pulses/Rev	Code 3: Mechanical	Code 4: Output	Code 5: Electrical	Code 6: Termination	Code 7: Options
HA526	<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

Code 1: Model	Code 2: Pulses/Rev	Code 3: Mechanical	Code 4: Output	Code 5: Electrical	Code 6: Termination	Code 7: Options	
HA526 Size 25 with Integral Coupling and Flange Adapter, Glass Code Disk	0001	0600	A Flange Adapter with Pilot	0 Single Ended, no Index, Format A, Table 1	0 5-26V in; 5-26V Open Collector with 2.2kΩ Pullup out	0 End Mount Connector	available when Code 6 is 0 or 1: PS LED Output Indicator Note: LED Output Option adds 0.54" to connector length
	0005	0625	B Flange Adapter without Pilot	1 Single Ended, with Index, Format A, Table 1	1 5-26V in; 5-26V Open Collector out	1 18" Cable, Side Connector	
	0010	0635	C Flange Adapter for NEMA Size 42 Motors	2 Differential, no Index, Format A, Table 2	2 5-26V in; 5V Totem Pole out	2 3' Cable, Side	
	0012	0720		3 Differential, with Index, Format A, Table 2	3 5-26V in; 5V Differential Line Driver out (7272)	3 6' Cable, Side	
	0050	0800		4 Single Ended, with Index, Format B, Table 1	4 5-26V in; 5-26V Differential Line Driver out (7272)	4 10' Cable, Side	
	0060	0900		5 Differential, with Index, Format B, Table 2	5 5-26V in, 5 V Differential Line Driver out (4469)	5 15' Cable, Side	
	0100	1000		A Single Ended, with Index, Format C, Table 1	6 5-15V in, 5-15 V Differential Line Driver out (4469)		
	0120	1024		B Differential, with Index Format C, Table 2	A Same as "0" with extend. temp range		
	0150	1200		C Single Ended, no Index, Format C, Table 1	B Same as "1" with extend. temp range		
	0180	1250		D Differential, no Index, Format C, Table 2	C Same as "2" with extend. temp range		
	0200	1270		G Single Ended, with Index, Format D, Table 1	D Same as "3" with extend. temp range		
	0240	1500			E Same as "4" with extend. temp range		
	0250	1600					
	0256	1800					
	0300	1968					
	0360	2000					
	0400	2048					
	0500	2400					
	0512	2500					
		2540					
	For Resolutions above 2540, see Series HC526						