

Series HR26

- Ultra-reliable, heavy duty
- Unbreakable code disk available
- Complete electrical protection and noise immunity
- Up to 1024 PPR with optional marker
- Coupling & flange provide thermal and electrical isolation for the encoder
- Field replaceable coupling



MOTOR MOUNT

APPLICATION/INDUSTRY

The Series HR26 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.

Typical Applications

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

DESCRIPTION

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. An unbreakable code disk meets the demands of the most severe shock and vibration generating processes; and long life bearings that 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. The Series HR26 utilizes the latest technology optical emitters and sensors, surface mount assembly and precisely fabricated metal components to deliver a high reliability and performance in a compact and economical package.

FEATURES AND BENEFITS

Mechanical / Environmental Features

- Unbreakable, code disk and long life 80 lb. bearings
- 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

SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental
Resolution: 1 to 1024 PPR (pulses/revolution)
Accuracy: (worst case any edge to any other edge) ± 7.5 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

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
 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)
 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: 4.3×10^{-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)

ELECTRICAL CONNECTIONS

Series HR26

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.

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

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 4= H to Z

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

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

* Index not provided on all models. See ordering information

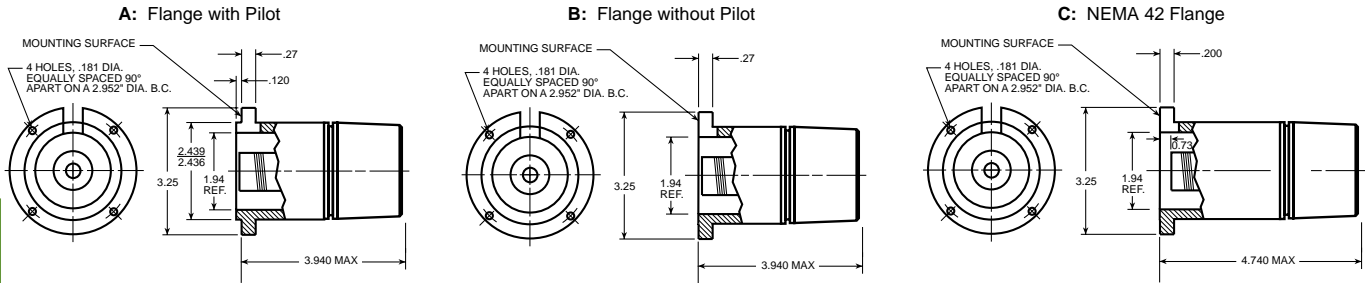
Cable Configuration: PVC jacket, 105 °C rated, overall foil shield; 24 AWG conductors, minimum

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

DIMENSIONS

Series HR26

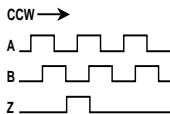
Code 3: Mechanical



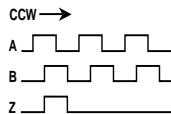
Mating shaft lengths: Typically: 0.5" max. available into the coupling as measured from the A/B mounting surface.
1.3" max. available into the coupling as measured from the C mounting surface.

Code 4: Output

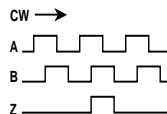
0 - 3: Format A



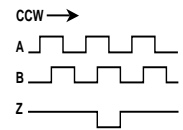
4 - 5: Format B



6 - D: Format C



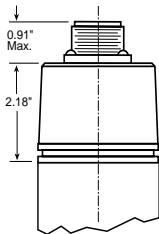
G: Format D



Code 6: Termination

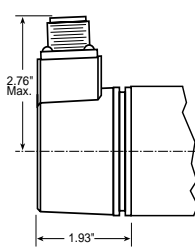
0: End MS Connector

When Code 5 is 0 to 5 or A to G

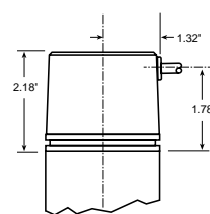


1: Side MS Connector

When Code 5 is 0 to 5 or A to G

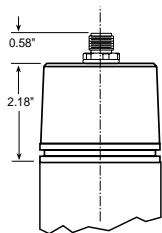


2 - A: Side Cable



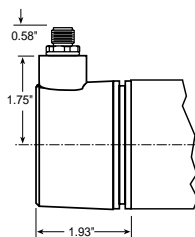
0: End M12 Connector

When Code 5 is H to Z



1: Side M12 Connector

When Code 5 is H to Z



MOTOR MOUNT

ORDERING INFORMATION

Series HR26

Code 1: Model	Code 2: PPR	Code 3: Mechanical	Code 4: Output	Code 5: Electrical	Code 6: Termination	Code 7: Options
HR526	<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						
HR526 Size 25 with Integral Coupling and Flange Adapter	0001 0250 0005 0256 0010 0300 0012 0360 0050 0400 0060 0500 0086 0512 0100 0600 0120 0635 0125 0800 0180 0900 0200 1000 0240 1024	A Flange Adapter with Pilot B Flange Adapter without Pilot C Flange Adapter for NEMA Size 42 Motors	7 Pin Connector or Cable 0 Single Ended, no Index, Format A, Table 2 1 Single Ended, with Index, Format A, Table 2 4 Single Ended, with Index, Format B, Table 2	0 5-26V in; 5-26V Open Collector with 2.2k Ω 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) 5 5-26V in, 5 V Differential Line Driver out (4469) 6 5-15V in, 5-15 V Differential Line Driver out (4469)	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
			10 Pin Connector or Cable 2 Differential, no Index, Format A, Table 1 3 Differential, with Index, Format A, Table 1 5 Differential, with Index, Format B, Table 1 B Differential, with Index Format C, Table 1 D Differential, no Index, Format C, Table 1			
			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			
			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	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		
605512-0020	Flexible Coupling 3/8"; 1/4", 3/8", 1/2"					

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