

Энкодер со встроенной связью НА26

Технические характеристики

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SERIES HA26

Dynapar™ brand

Integral Coupling Encoder

Key Features

- Industry Standard 2.5" Rugged Encoder Size
- Integral Coupling and Flange Provide Thermal and Electrical Isolation
- Field Replaceable Coupling

IND
Industrial Duty



CE
EN 61326-1



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Optical

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

ELECTRICAL

Input Power:

5 to 26 VDC at 120 mA max., not including output loads

Outputs:

7273 Open Collector: 40mA, sink max

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, 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)

Cable w/ 5 pin M12 Connector (112859-xxxx)

Cable w/ 8 pin M12 Connector (112860-xxxx)

MECHANICAL

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

Shaft Speed: 5,000 RPM max.

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

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.

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

Moment of Inertia: 4.3×10^{-4} oz-in-sec²

Housing and Cover: Aluminum

Shaft Material: Stainless Steel

Disc Material: Glass

Weight: 1.5 lbs

ENVIRONMENTAL

Operating Temperature:

Standard: 0 to +70 °C;

Extended: 0 to +85 °C (consult factory for low temperature operation to -40 °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)

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	
HA526							
Ordering Information							
HA526 Size 25 with Integral Coupling and Flange Adapter, Glass Code Disk	0001 0600	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) 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
	0005 0625		0 Single Ended, no Index, Format A, Table 1				
	0010 0635		1 Single Ended, with Index, Format A, Table 1				
	0012 0720		4 Single Ended, with Index, Format B, Table 1				
	0050 0800		A Single Ended, with Index, Format C, Table 1				
	0060 0900		C Single Ended, no Index, Format C, Table 1				
	0100 1000		G Single Ended, with Index, Format D, Table 1				
	0120 1024		10 Pin Connector or Cable				
	0150 1200		2 Differential, no Index, Format A, Table 2				
	0180 1250		3 Differential, with Index, Format A, Table 2				
	0200 1270		5 Differential, with Index, Format B, Table 2				
	0240 1500		B Differential, with Index Format C, Table 2				
	0250 1600		D Differential, no Index, Format C, Table 2				
	0256 1800		5 Pin M12 Connector				
	0300 1968		H Single ended, no index, Format A, Table 4				
	0360 2000		J Single ended, with index, Format A, Table 4				
	0400 2048		K Single ended, with index, Format B, Table 4				
	0500 2400		L Single ended, with index, Format C, Table 4				
	0512 2500		M Single ended, no index, Format C, Table 4				
	2540		N Single ended, with index, Format D, Table 4				
	For Resolutions above 2540, see Series HC526		8 Pin M12 Connector		A Same as "0" with extend. temp range		
			P Single ended, no index, Format A, Table 5		B Same as "1" with extend. temp range		
			Q Single ended, with index, Format A, Table 5		C Same as "2" with extend. temp range		
			R Single ended, with index, Format B, Table 5		D Same as "3" with extend. temp range		
			S Single ended, with index, Format C, Table 5		E Same as "4" with extend. temp range		
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							
See page 3 for electrical tables and page 4 for formats.							

Cable Assemblies with MS Connector

1400431XXXX 7 Pin MS, Cable Assy. For Use with Single Ended w/Index Outputs
108596-XXXX 7 Pin MS, Cable Assy. For Use with Differential Line Driver w/o 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

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, NEMA 4 style

Flexible Couplings

CPLX1250375 Flexible Coupling 3/8"; 1/4", 3/8", 1/2"

SERIES HA26



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			
Encoder Function	Cable # 1400431XXXX 7 Pin Single Ended w/ Index Outputs		
	Pin	Wire Color Code	Cable Accessory Color Code
Signal A	A	BRN	RED
Signal B	B	ORN	BLUE
Signal Z*	C	YEL	YEL
Power Source	D	RED	WHT
No Connection	E	—	GRN
Common	F	BLK	BLK
Case	G	GRN	SHIELD

Table 2 – Differential			
Encoder Function	**Cable # 109209-XXXX or 1400635XXXX 10 Pin Differential Line Driver w/ Index		
	Pin	Wire Color Code	Cable Accessory Color Code
Signal A	A	BRN	BRN
Signal B	B	ORN	ORG
Signal Z*	C	YEL	YEL
Power Source	D	RED	RED
No Connection	E	—	—
Common	F	BLK	BLK
Case	G	GRN	GRN
Signal $\bar{A}$	H	BRN/WHT	BRN/WHT
Signal $\bar{B}$	I	ORN/WHT	ORN/WHT
Signal $\bar{Z}$	J	YEL/WHT	YEL/WHT

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.

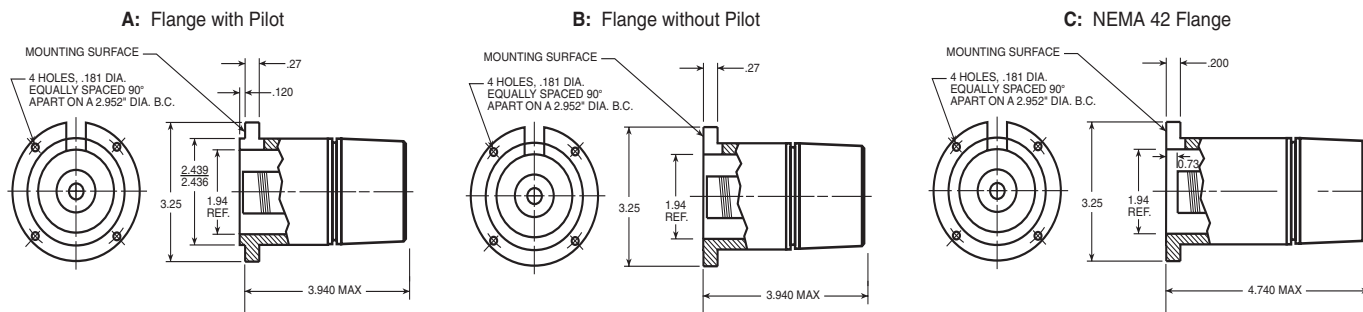
Encoder Function	Table 4		Table 5		Table 6	
	Cable # 112859-XXXX 5 Pin Single Ended		Cable # 112860-XXXX 8 Pin Single Ended		Cable # 112860-XXXX 8 Pin Differential	
	Pin	Wire Color Code	Pin	Wire Color Code	Pin	Wire Color Code
Signal A	4	BLK	1	BRN	1	BRN
Signal B	2	WHT	4	ORG	4	ORG
Signal Z*	5	GRY	6	YEL	6	YEL
Power +V	1	BRN BLU	2	RED	2	RED
Com	3	—	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**): Cable Configuration: PVC jacket, 105°C rated, overall foil shield; 22 AWG conductors, minimum
- 2) Cable Configuration (**Table 2**): PVC jacket, 105 °C rated, overall foil shield; 3 twisted pairs 26 AWG (output signals), plus 2 twisted pairs 24 AWG (input power)
- 3) Cable Configuration (**Tables 4, 5 and 6**): PVC jacket, 105 °C rated, overall foil shield; 24 AWG conductors, minimum
- 4) 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
- 5) * Index not provided on all models. See ordering information.
- 6) **For watertight applications, use NEMA4 10 pin cable & connector 109209-XXXX.
- 7) "MS" Type mating connectors and pre-build cables are rated NEMA 12
- 8) "M12" Cable assemblies are rated IP67

DIMENSIONS

Code 3: Mechanical

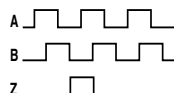


Mating shaft lengths: Typically: 0.5" max. available into the coupling as measured from the A/B mounting surface.
1.3" max. available into the coupling as measured from the C mounting surface.

Code 4: Output

0 - 3: Format A

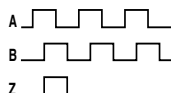
CCW →



A Leads B CCW
Index Width (180°) Gated to $\bar{B}$

4 - 5: Format B

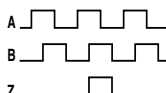
CCW →



A Leads B CCW
Index Width (180°) Gated to B

6 - D: Format C

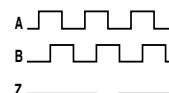
CW →



A Leads B CW
Index Width (180°) Gated to B

G: Format D

CCW →

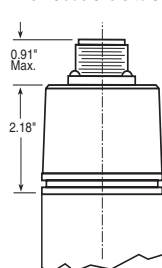


A Leads B CCW
Inverted Index (180°) Gated to B

Code 6: Termination

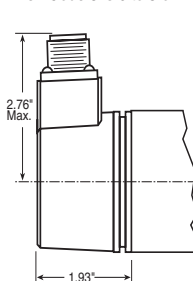
0: End MS Connector

When Code 5 is 0 to 5 or A to G

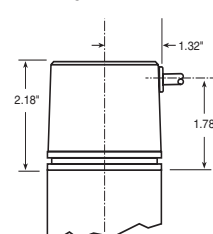


1: Side MS Connector

When Code 5 is 0 to 5 or A to G

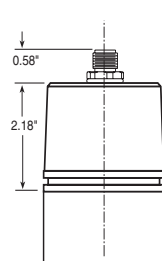


2 - 6: Side Cable



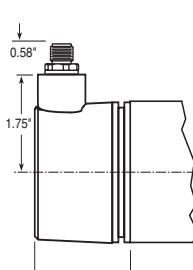
0: End M12 Connector

When Code 5 is H to Z



1: Side M12 Connector

When Code 5 is H to Z



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