Инкрементальный энкодер F18
Технические характеристики

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эл.почта: drx@nt-rt.ru || сайт: https://dynapar.nt-rt.ru/

SERVO DUTY

SERIES F18

Dynapar™ brand

For Stepper & Small Servo Motors

Key Features

- **Under 2.0” Diameter Package with High 4,096 PPR Capability**
- **Easy to Install Hollowshaft and Spring Tether Design**
- **Up to 120°C Temperature Range Doesn’t Limit Motor Performance**

Product shown with optional spring tether

RoHS

SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental with commutation option, Optical
Resolution: 500 - 4096 PPR incremental with 4, 6, 8 or 12 pole commutation channels.
Accuracy: Incremental: ±2.5 arc-mins. max.
edge to any edge; Commutation: ±6 arc-mins. max.
Phasing for CCW rotation of motor shaft (viewing encoder cover): A leads B by 90° and U leads V leads W by 120 °.
Minimum edge separation A to B is 45°.
Index to U channel: +/- 1 °mech. index pulse center to U channel edge.
Index Pulse Width: 90° gated A and B high; (180° gated B high gating options available - consult factory)

ELECTRICAL

Input Power Requirements: 5±10% VDC at 150 mA max (incremental only); 175 mA max. (incremental and commutation), excluding output load
Output Signals:
Incremental: 26LC31 Differential Line Driver, sink / source 40 mA max.
Commutation: Open Collector Commutation 30 mA sink max. (2.0 kΩ pull-ups in encoder)
Frequency Response:
PPR ≤ 2048: 250 kHz; PPR > 2048: 500 kHz
Termination: 16 pin, fully shielded, 2mm pitch, double row header. Accessory mating cable assembly available: 26 AWG twisted pair, jacketed and shielded with copper drain wire

MECHANICAL

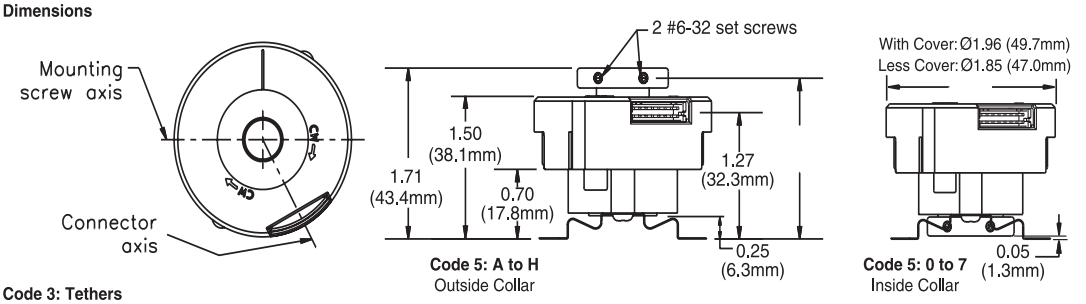
Bore Diameters: 1/4”, 3/8”, 7/16”, 1/2”, 6mm, 8mm,10mm ,12mm standard
Bore Dia. Tolerance: +0.001”/-0.000” (+0.025 mm/-0.000 mm)
Dimensions: Outside Diameter with cover: 1.96” (49.8mm), without cover 1.85” (47.0mm); Outside collar height 1.71” (43.4mm), inside collar height 1.50” (38.1mm)
Mating Shaft Length: 1.62” (41 mm) minimum for outside shaft collar. 0.50 inch minimum for inside shaft collar
Mating Shaft Runout: 0.002” (0.05 mm) max. (Includes shaft perpendicularity to mounting surface)
Mating Shaft Axial movement: ±0.060” (±1.52 mm)
Mounting Configuration: Four standard configurations are available for tethers. A choice of U.S. and Metric screws are included. Mounting holes should be 0.01” (0.254 mm) true position to shaft for best encoder operation.
Shaft clamp: 2 #6-32 set screws in collar around hub shaft (will not mar shaft)
Electrical/Mechanical Alignment Range:
±15° mechanical typical (see tether options)
Acceleration: 100,000 rad/sec.^{2} max.
Max. Velocity: RPM= (Frequency / PPR)x 60; or 12,000 RPM, whichever is less
Moment of Inertia: 5.3X10^{-4} in-oz sec.^{2} (37.3 gm-cm^2)
Housing & Cover Material: Bearing housing: aluminum; Cover: high temperature, glass filled polymer;
Hub: Brass; Disk: 0.030” thick glass; Cover Finish: RAL 7010 (dark grey)
Weight: 4 oz. (110 gm) typ.

ENVIRONMENTAL

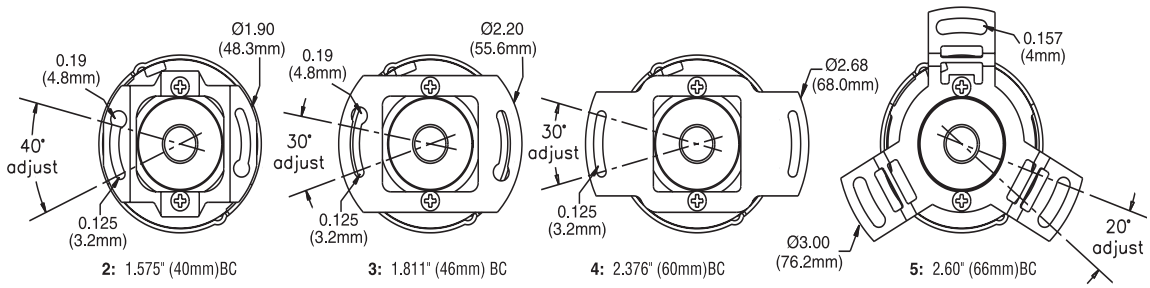
Operating Temperature: 0° to +120°C
Storage Temperature: -40° to +120°C
Shock: 100 Gs for 6 msec duration
Vibration: 2.5 Gs at 5 to 2000 Hz
Humidity: 90% (non-condensing)
Enclosure Rating: NEMA 1 / IP40 (for models with cover)

Dynapar™ brand SERIES F18

Dimensions



Code 3: Tethers



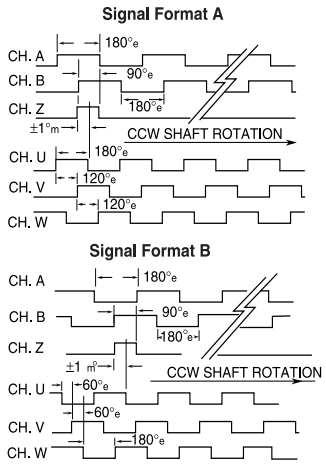
Electrical Connections

Pin	Function*	Cable Wire Color
1	VCC	RED
2	U	Brown
3	GND	BLACK
4	V	GRAY
5	A	BLUE
6	W	WHITE
7	$\bar{A}$	BLUE/BLACK
8	NONE	NONE
9	B	GREEN
10	$\bar{U}$	BROWN/BLACK
11	$\bar{B}$	GREEN/BLACK
12	$\bar{V}$	GRAY/BLACK
13	Z	VIOLET
14	$\bar{W}$	WHITE/BLACK
15	$\bar{Z}$	VIOLET/BLACK
16	NONE	NONE

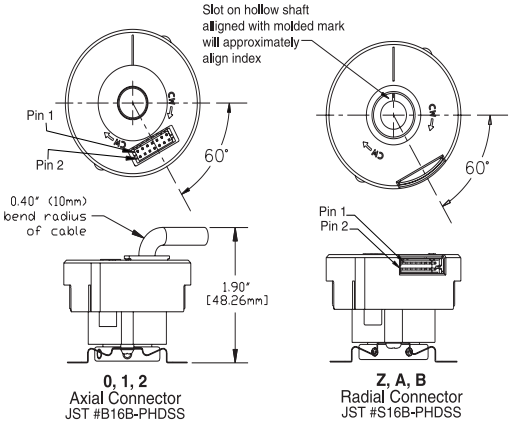
* Function availability dependant on Model

Mating Cable Assembly:
Incremental only, 111752-000x
Incremental + Comm., 111753-000x
x= length in feet

Output Waveforms



Code 6: Termination



Ordering Information

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

Code 1: Model	Code 2: PPR, Poles	Code 3: Tether	Code 4: Electrical	Code 5: Bore	Code 6: Termination
F18	□□□□/□	□	□	□	□

Ordering Information

F18 Size 18 Commutating Encoder

Incremental channels only

0500/0	**2048/0**
1000/0	**2500/0**
1024/0	**4096/0**
2000/0	

Incremental plus Commutation channels

0500/†	**2048/†**
1000/†	**2500/†**
1024/†	**4096/†**
2000/†	

† Available with 4, 6, 8 or 12 pole. *(12 pole is designated by character "C")*

Examples: 1024/8 is 1024PPR, 8 pole; 2000/C is 2000PPR, 12 pole

Code 3: Tether

- **0** No Tether
- **2** 2 #2 on 1.575" Diameter
- **3** 2 #4 on 1.811" Diameter
- **4** 2 #4 on 2.376" Diameter
- **5** 3 #4 on 2.60" Diameter
- **7** 2 M2.5 on 40 mm Diameter
- **8** 2 M3 on 46 mm Diameter
- **9** 2 M3 on 60 mm Diameter
- **A** 3 M3 on 66 mm Diameter

Code 4: Electrical

Available when Code 2 is ≤ 2048/0
- **0** 5V in, open collector out incremental only
- **C** 5V in, open collector out incremental only - reverse phase

Available when Code 2 is XXXX/0
- **3** 5V in, line driver out incremental only
- **D** 5V in, line driver out incremental only - reverse phase

Available when Code 2 is XXXX/4, XXXX/6, XXXX/8 or XXXX/C
- **6** 5V in, line driver out for incremental; 5V in, open collector out for commutation
- **E** 5V in, line driver out for incremental; 5V in, open collector out for commutation - reverse phase
- **9** 5V in, line driver out for incremental; 5V in, line driver out for commutation
- **F** 5V in, line driver out for incremental; 5V in, line driver out for commutation - reverse phase

Code 5: Bore

Inside Collar:
- **0** 1/4 in.
- **1** 3/8 in.
- **2** 7/16 in.
- **3** 1/2 in.
- **4** 6 mm
- **5** 8 mm
- **6** 10 mm
- **7** 12 mm

Outside Collar:
- **A** 1/4 in.
- **B** 3/8 in.
- **C** 7/16 in.
- **D** 1/2 in.
- **E** 6 mm
- **F** 8 mm
- **G** 10 mm
- **H** 12 mm

Code 6: Termination

Code: Connector/Cable Axial	Code: Connector/Cable Radial	Code: Wire Pigtail	Length
0	Z	*N/A*	None
1	A	J	1 Ft.
2	B	K	2 Ft.
3	C	L	3 Ft.
4	D	M	4 Ft.
5	E	N	5 Ft.
6	F	P	6 Ft.
7	G	Q	7 Ft.
8	H	R	8 Ft.

CONNECTION OPTIONS

You may choose an integral connector mounted in axial or radial position. Available with or without mating connector/cable.

Alternativly, a direct-solder pigtail cable is offered.

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