

INCREMENTAL ENCODERS

SERIES 60

Dynapar™ brand

Heavy Duty Rotopulser®

Key Features

- Heavy-duty bearings with 1/2" diameter shaft
- Unbreakable disk
- Wide selection of resolutions available up to 2500 PPR
- Servo ring and face mount options

HD
Heavy Duty



SPECIFICATIONS

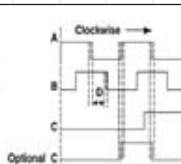
STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Optical
Resolution: 1 to 2500 PPR (pulses/revolution) See ordering information
Format: Two channel quadrature (AB) with optional index
Phase Sense: A leads B for CW rotation of the primary shaft
Minimum Free Path: Between any A and B transition (Distance D) will not be less than 12.5% of one full electrical cycle. This includes effects of jitter, phase and symmetry shifts.

ELECTRICAL

Power Requirements: 5 to 15 VDC max. 115 mA max. plus load requirements
Frequency Response: 50 kHz
Output:
 7272 Push-Pull: 40mA, sink or source
 7272 Differential Line Driver: 40 mA, sink or source
Mating Connector: 10 Pin: Style MS3106A-18-1S, Dynapar Part No. MCN-N6

Note: Signal C (Marker) is low for the first 180° of shaft rotation clockwise (as viewed from shaft end), and is high for the next 180°.



ELECTRICAL CONNECTIONS

Single-Ended Output (6-pin)		
Function (If Used)	MS Pin No.	#14002090010* Cable Accessory Color Code
Signal A	B	RED
Signal B	D	BLUE
Signal C (Marker)	A	GREEN
+V	E	WHITE
Common	C	BLACK
Shield	F	SHIELD

Differential Line Driver (10-pin)		
Function (If Used)	MS Pin No.	#14004190010* Cable Accessory Color Code
Signal A	B	RED
Signal A	G	BLACK
Signal B	D	BLUE
Signal B	H	BLACK
Signal C (Marker)	A	GREEN
Signal C	I	BLACK
+V	E	WHITE
Common	C	BLACK
Shield	F	SHIELD
Not Used	J	

*This is a mating connector/cable assembly described in the Encoder Accessories section of this catalog. Color-coding information is provided here for reference.

MECHANICAL

Shaft Sizes: 1/4", 1/8"
Speed Range: Up to 3600 RPM
Starting Torque: 0.45 oz-in (0.30 oz-in for 1/4 in. dia. shaft)
Running Torque: 0.35 oz-in (0.15 oz-in for 1/4 in. dia. shaft)
Housing & Cover Material: Aluminum
Shaft Material: Stainless Steel
Disc Material: Mylar
Weight: 26 oz.

ENVIRONMENTAL

Operating Temperature: 0-54°C
Humidity: Up to 98% (non-condensing)
Enclosure Rating: NEMA 12 / IP54;

INCREMENTAL ENCODERS



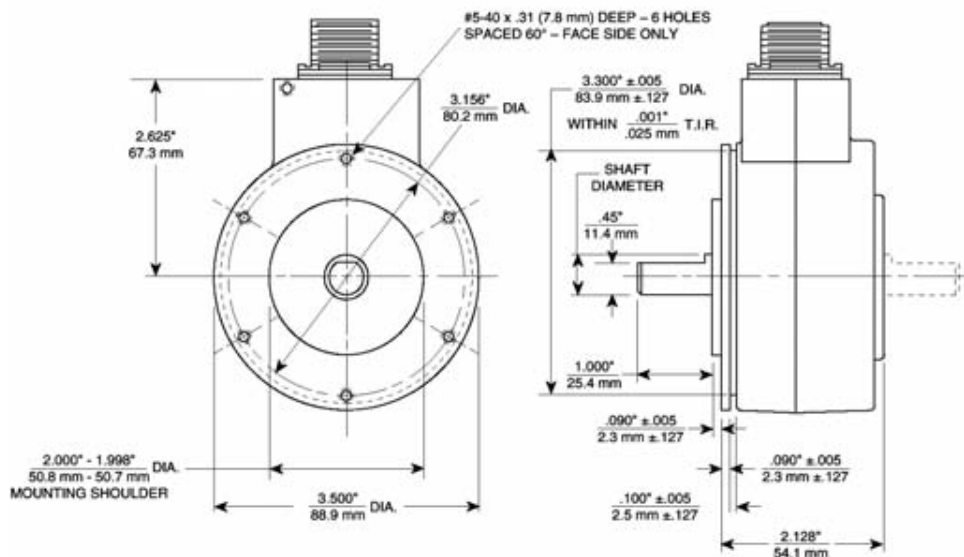
SERIES 60

Ordering Information

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

Code 1: Model	Code 2: Housing	Code 3: Shaft	Code 4: Output	Code 5: Voltage	Code 6: Pulses/Rev	Code 7: Wiring	Code 8: Misc
6 □	□	□	□	F	□ □ □ □	A	□
2 Bidirectional, Heavy Duty 3 Bidirectional with Marker, Heavy Duty	A Standard Housing for Single Shaft C Standard Housing for Double Shaft	A 1/2" Dia, 1.0" Len with Flat B 1/2" Dia, 1.0" Len without Flat C 1/2" Dia, 1.5" Len with Flat D 1/2" Dia, 1.5" Len without Flat Available when Code 2 = A or C: G 1/4" Dia, 1.0" Len without Flat H 1/4" Dia, 1.0" Len with Flat	E Single Ended Available when Code 2 = A or C: D Differential	F 5 to 15 VDC	0001 0150 0530 0002 0180 0550 0004 0192 0600 0005 0200 0625 0006 0203 0720 0010 0240 0750 0012 0250 0800 0015 0256 0805 0018 0300 0833 0020 0306 0900 0025 0315 1000 0040 0360 1024 0045 0375 1200 0050 0382 1270 0060 0384 1500 0064 0390 1800 0090 0400 2000 0096 0402 2160 0100 0430 2250 0120 0450 2400 0125 0500 2500 0127 0508 0128 0512	A MS Connector	0 No Shaft Seals Available when Code 3 = A, B, C, or D: B Shaft Seals

DIMENSIONS inches [mm]



INCREMENTAL ENCODERS

SERIES 60P

Dynapar™ brand

Heavy Duty Rotopulser[©]

HD
Heavy Duty

Key Features

- Classic Mill-Duty Foot or Face Mount Design
- MS Connector or 1/2" Conduit Entry
- Unbreakable Code Disc
- NEMA 56 C-Face Housing with Feet
- Available with or without Purse Plugs



SPECIFICATIONS

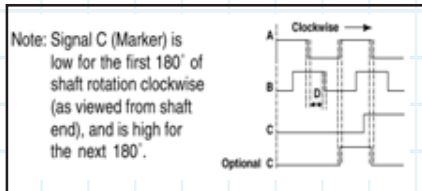
STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Optical
Resolution: 1 to 2500 PPR (pulses/revolution) See ordering information
Format: Two channel quadrature (AB) with optional index
Phase Sense: A leads B for CW rotation of the primary shaft
Minimum Free Path: Between any A and B transition (Distance D) will not be less than 12.5% of one full electrical cycle. This includes effects of jitter, phase and symmetry shifts.

ELECTRICAL

Power Requirements: 5 to 15 VDC max. 115 mA max. plus load requirements
Output: TC1428 Differential Line Driver, 40 mA Sink/ Source
Frequency Response: 50 kHz
Mating Connector: 10- pin: style MS3106A- 18- 1S, Dynapar Part No. MCN- N6

ELECTRICAL OUTPUT



ELECTRICAL CONNECTIONS

Single-Ended Output

Function (If Used)	Cable #14002090010* 6 PIN Single-Ended		Twisted Pairs Cable #14004190010* 10 PIN Differential		Terminal Strip Connector No.
	Pin	Color	Pin	Color	
Signal A	B	RED	B	RED	1
Signal \bar{A}	-	-	G	BLK	12
Signal B	D	BLU	D	BLU	3
Signal \bar{B}	-	-	H	BLK	11
Signal C (Marker)	A	GRN	A	GRN	4
Signal \bar{C}	-	-	I	BLK	10
+V	E	WHT	E	WHT	5
Common	C	BLK	C	BLK	2
Shield	F	SHIELD	F	SHIELD	6
Not Used	-	-	J	-	7, 8, 9

*This is a mating connector/cable assembly described in the Encoder Accessories section of this catalog. Color-coding information is provided here for reference.

Dual Isolated Output

Function (If Used)	Code 4 is K or L			Code 4 is M*	
	6 PIN Primary	10 PIN Primary	7 PIN Secondary	10 PIN Primary	10 PIN Secondary
Signal A	B	B	A	B	B
Signal \bar{A}	-	G	C	G	G
Signal B	D	D	B	D	D
Signal \bar{B}	-	H	E	H	H
Signal C	A	A	(No Marker)	-	(No Marker)
Signal \bar{C}	-	I	(No Marker)	-	(No Marker)
Primary Power	E	E	D	E	E
Primary Common	C	C	F	C	C
Secondary Power	-	-	-	-	J
Secondary Common	-	-	-	-	I
Shield	F	F	G	F	F
Not Used	-	J	-	A, I, J	A

*To provide quick backup, jumper cable assembly pins E & J and C & I; then, if the primary output fails, move the connection from the primary to secondary connector.

MECHANICAL

Shaft Size: 5/8" nominal
Slew Speed: 3600 RPM
Shaft Diameter: 5/ 8"
Shaft Loading: Radial: 45 lbs. overhung; Axial: 15 lbs.
Inertia: 285 gm- cm² max.
Typical Starting Torque: 15 oz- in
Bearings: Motor Duty Bearings
Housing and Cover: Aluminum
Shaft Material: Stainless Steel
Disc Material: Mylar
Weight: 10 lbs.

ENVIRONMENTAL

Operating Temperature: 0 to 54 °C
Humidity: Up to 98% (non-condensing)
Enclosure Rating: NEMA 12 / IP54; NEMA 4 / IP66 with optional shaft seals

INCREMENTAL ENCODERS



SERIES 60P

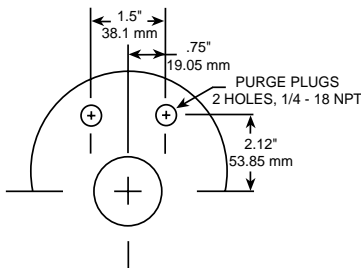
Ordering Information

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

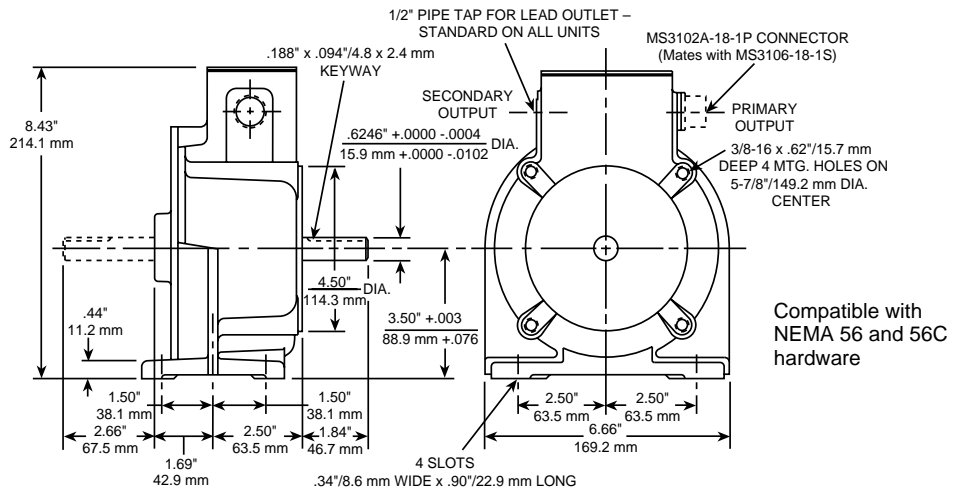
Code 1: Model	Code 2: Housing	Code 3: Shaft	Code 4: Output	Code 5: Voltage	Code 6: Pulses/Rev	Code 7: Wiring	Code 8: Misc
6	P			F			
2 Bidirectional, Heavy Duty	P Mill Duty	M 5/8" Dia, Single Shaft with Keyway	D Differential	F 5 to 15 VDC	0001 0096 0360 0750	A MS Connector	O No Purge Plugs, No Shaft Seals
3 Bidirectional with Marker, Heavy Duty		N 5/8" Dia, Double Shaft with Keyway	E Single Ended		0002 0100 0375 0800		
			K Single Ended, Dual Isolated, 6 and 7 pin connectors		0004 0120 0382 0805	Available when Code 4 is D or E:	A Purge Plugs, No Shaft Seals
			L Differential, Dual Isolated, 10 and 7 Pin Connectors		0005 0125 0384 0833		T Terminal Strip
			Available when Code 1 is 62:		0006 0127 0390 0900		
			M Differential, Dual Isolated, 10 and 10 Pin Connectors		0010 0128 0400 1000		
					0012 0150 0402 1024		
					0015 0180 0430 1200		
					0018 0192 0450 1250		
					0020 0200 0500 1270		
					0025 0203 0508 1500		
					0040 0240 0512 1800		
					0045 0250 0530 2000		
					0050 0256 0550 2160		
					0060 0300 0600 2250		
					0064 0306 0625 2400		
					0090 0315 0720 2500		

DIMENSIONS inches [mm]

Purge Plug Location



Approximate Dimensions



Compatible with NEMA 56 and 56C hardware