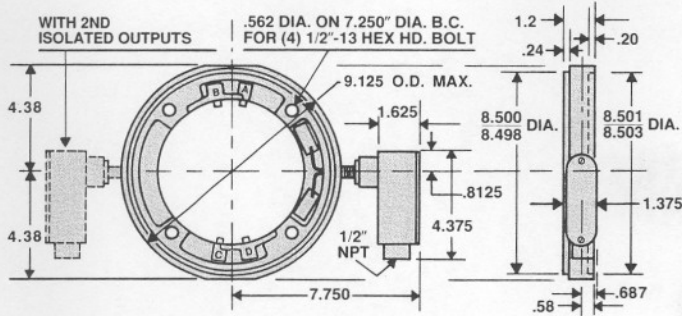


# Rotopulser® Digital Tachs

This product has been discontinued.  
Please contact Dynapar for assistance.  
1-800-873-8731  
www.dynapar.com

## Outline Dimensions

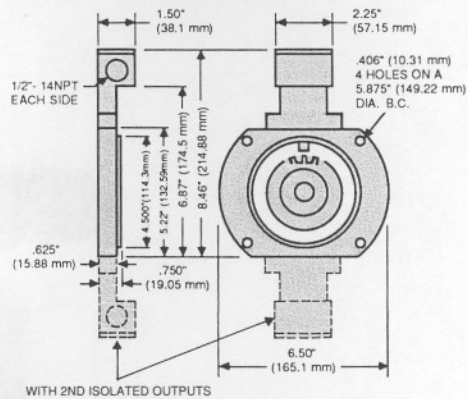
### Series 77 & 97



<b>For Motor Frame Sizes:</b>	182TC, 184TC, 213C, 215C, 254C, 213TC, 215TC, 254UC, 256UC, 254TC, 256TC, 360AT, 400AT, 500AT
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For mounting to any 8-1/2" dia. NEMA C motor or accessory flange.

### Series 76 & 96



<b>For Motor Frame Sizes:</b>	56C, 143TC, 145TC, 182C, 184C
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For mounting to any 4-1/2" dia. NEMA C motor or accessory flange.

## Ordering Information

Rings and gears must be ordered separately. Order rings first, by following the table from left to right. Then refer to the Gear Ordering Table appropriate to the Series 76 & 77 ring selected.

Choose a gear model with the required bore size and PPR by following the table from left to right.

Be sure to select a gear with the same PPR value as the ring. **The shaded model numbers are the most frequently specified.**

### Series 76/77 Unidirectional Tachs

Output Waveform	For Motor Frame Sizes	PPR's	Model No.
<b>Unidirectional</b> A	56C, 143TC, 145TC, 182C, 184C,	60, 120	76-0RT-000
<b>Unidirectional</b> (current sink outputs) A	182C, 184TC, 213C, 215C, 254C, 213TC, 215TC, 254UC, 256UC, 254TC, 256TC, 360, 400, 500	60, 120, 240	77-A0A-0R1C00
w/2nd isolated output A'	56C, 143TC, 145TC, 182C, 184C	60, 120	76-0Z2T-000
<b>Unidirectional</b> with Line Driver A	182TC, 184TC, 213C, 215C, 254C, 213TC, 215TC, 254UC, 256UC, 254TC, 256TC, 360, 400, 500	60, 120, 240	77-A0A-0-D1C-00
w/2nd isolated output A'			77-A0A-0-D5C-00

### Gears for Series 76/96

Description		Model No.	
Typical Motor Frame Sizes:	Bore Size	60 PPR	120 PPR
56C	5/8"	GR-16D207-184	GR-16D207-213
143TC, 145TC, 182C, 184C	7/8"	GR-16D207-185	GR-16D207-214

### Series 96/97 Bidirectional Tachs

Output Waveform	For Motor Frame Sizes	PPR's	Model No.
<b>Bidirectional</b> (current sink outputs) A B	56C, 143TC, 145TC, 182C, 184C	60	96-0BT-000
w/2nd isolated output A' B'			96-0B2T-000
<b>Bidirectional</b> with Line Driver A B	182TC, 184TC, 213C, 215C, 254C, 213TC, 215TC, 254UC, 256UC, 254TC, 256TC, 360, 400, 500	240	97-A0A-0-D6C-00
w/2nd isolated output A' B'			97-A0A-0-D7C-00

### Gears for Series 77/97

Description		Model No.		
Typical Motor Frame Sizes:	Bore Size	Unidirectional Models Only (Reluctance or Zero Speed) 60 PPR	120 PPR	Zero Speed Models Only 240 PPR
182TC, 184TC, 213C, 215C, 254C	1-1/8"	GR-16D207-216	GR-16D207-219	GR-16D207-222
213TC, 215TC, 254UC, 256UC	1-3/8"	GR-16D207-217	GR-16D207-220	GR-16D207-223
254TC, 256TC	1-5/8"	GR-16D207-218	GR-16D207-221	GR-16D207-224
	1-7/8"	GR-16D260-314	GR-16D260-307	GR-16D260-230
	2"	GR-16D260-315	GR-16D260-308	GR-16D260-303
360	2-1/8"	GR-16D260-316	GR-16D260-309	GR-16D260-304
	2-1/4"	GR-16D260-317	GR-16D260-310	GR-16D260-305
400	2-3/8"	GR-16D260-318	GR-16D260-311	GR-16D260-1
	2-1/2"	GR-16D260-319	GR-16D260-312	GR-16D260-236
500	2-7/8"	GR-16D260-320	GR-16D260-313	GR-16D260-306

### Accessory Covers

For closing & protecting rear mounted and/or through-shaft mounted tachs.

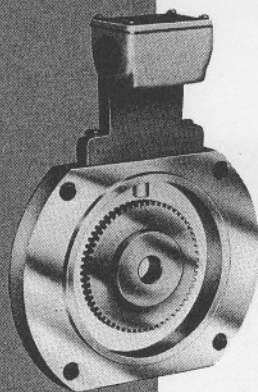
Series 76/96	16D231-28
Series 77/97	16D231-29



# Motor-Mount, Ring-Kit, Magnetic Incremental

**SERIES 76/77**  
**Unidirectional**

**SERIES 96/97**  
**Bidirectional**

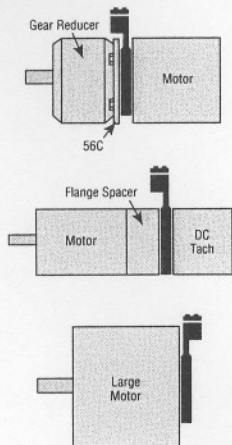


- 60, 120, & 240 PPR tach signals
- Designed for NEMA 56C through 500 AC or DC motor frames
- Rugged magnetic pickup with separately mounted gears
- No bearings to fail; no flex couplings required

Motor-Mount Ring Kit Rotopulsers® provide precise digital speed feedback for NEMA 56C through 500 frame AC and DC motors. These rings are mounted to the motors and utilize rugged magnetic pickups with separately mounted gears. The ring and gear are designed and machined to function properly without further adjustments when mounted to NEMA C face (4-1/2" dia. or 8-1/2" dia.) motor frames and accessory mounts. There are no flexible couplings required or bearings to fail.

Series 76/77 and 96/97 units are designed to provide precise, reliable speed signals for many monitoring and control applications, and are the standard feedback accessory for many suppliers of AC and DC variable speed drives.

Dynapar ring kits are among the thinnest packages available, providing easier installation and retrofit of constant speed systems. The larger 8-1/2" dia. Series 77 and 97 units accommodate both stub and through shaft mountings for motor frames from 180 through 500.



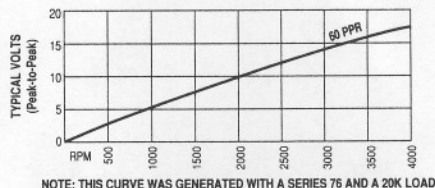
When a bidirectional unit is teamed with a Dynapar FV2 Frequency-to-Voltage Converter, the Series 76/77 and 96/97 rings provide lower cost replacement for a precision brushless DC tach generator.

Series 76/77 units are available with your choice of variable reluctance sensors with self-powered sinewave output or magneto-resistive sensors with squarewave output. Bidirectional Series 96/97 are available with magneto resistive sensors with squarewave outputs.

Reliable operation in wet, dirty, high temperature industrial environments has made the Series 76/77 and 96/97 a popular feedback package.

## SPECIFICATIONS (Variable Reluctance Models)

- PPR:** 60, 120  
**Speed Range:** 200 to 4000 RPM max.  
**Operating Temperature:** 0 to 170°F  
**Housing:** Cast aluminum  
**Gear Inertia:** 2000 gm cm<sup>2</sup> (Series 76)  
**Pickup Gap:** .008"  
**Cable Length:** Maximum recommended cable length is 100 feet, but can be extended to 300 feet at speeds above 1000 RPM.  
**Termination:** Conduit box  
**Recommended Cable:** Belden 8737 or equivalent; 2-conductor twisted pair with shield  
**Output:** Sinewave greater than .5 volt peak (2k ohm load) above 200 RPM; greater if gap is reduced to .002" during installation.



NOTE: THIS CURVE WAS GENERATED WITH A SERIES 76 AND A 20K LOAD

## SPECIFICATIONS (Magneto-Resistive Models)

- PPR:** Series 76 & 96: 60, 120; Series 77: 60, 120, 240; Series 97: 240  
**Speed Range:** 0 to 4000 RPM max.  
**Input Power:** 4.5 to 15 VDC  
**Current:** Open Collector Model: 15 mA per channel plus load  
 Line Driver Model: 35 mA per channel plus load  
**Housing:** Cast aluminum  
**Gear Inertia:** 2000 gm cm<sup>2</sup> (Series 76)  
**Output Type:** Logic level, squarewave  
**TIR:** Series 77/97: .020" max. (±.010")  
**Output Frequency:** Series 76 & 96: 10 kHz max.; Series 77 & 97: 20 kHz max.  
**Quadrature Phasing:** Series 96 & 97: 90° ± 36° at 10 kHz

**Recommended Cables:** 1) Belden 9770 or equivalent; 3-conductor cable for each squarewave output. 2) Alpha 2254; 6-conductor cable or equivalent for bidirectional 76 or 77 units with or without line drivers

## Electrical Output Ratings (Magneto-Resistive Models Only)

Model	Outputs	Voltage Range	Sink (mA)	Source (mA)
Series 76, 77 & 96	Current Sink (Open collector w/2.0 kΩ pull-ups)	4.5 to 15 VDC	25	0.8 @ 3.5 volt output
Series 77, 97	Differential Line Driver	5 VDC to 15-VDC max.	8 22	22 40

## Electrical Connections

Function (If Used)	Wire Color Codes	
	Series 76	Series 76/96
Power	—	RED
Signal A	WHT	YEL
Common	BLK	BLK
Signal B	—	BRN

Function (If Used)	Sinewave Output	Wire Color Codes	
		Series 77	Series 77/97
Power	—	RED	RED
Signal A	WHT	YEL	WHT
Common	BLK	BLK	BLK
Signal A̅	—	—	GRN
Signal B	—	—	BRN
Signal B̅	—	—	BLUE
Shield	—	—	Shield

Note: For tachs with 2nd isolated outputs: the second set of isolated outputs are identically color-coded and labeled (as listed above) in the optional unilet conduit box.