

## Avtron AV56 THIN-LINE III™ Encoders



**Heavy Mill Duty Magnetic Modular Encoder 4.5" C-Face Mount**

### Magnetic Durability in a Compact Encoder

Heavy Mill Duty
Simple, Secure Installation
Wide-Gap Technology: No Sensor Scraping or Adjustment
Up to 50000 PPR
No Couplings or Bearings
Sealed Electronics
Self-Diagnostic LED and Alarm Output
Universal 5-24V Operation
3 Year No-Hassle Warranty
All models are protected against all short circuits and wiring errors

### AV56

AV56 THIN-LINE III™ heavy mill duty modular magnetic encoders fit standard 4.5" C-Face motors such as Marathon Blue and Black Max, as well as Baldor Reliance models. The stainless steel AV56S is designed for washdown and marine duty. Other THIN-LINE III models, ranging from 115mm to 8.5", are available to fit other motor sizes.

THIN-LINE III encoders feature simple installation, durable construction, and clear diagnostics to eliminate encoder-related downtime:

First, the magnetic sensors are fully potted, to withstand dirt and liquids. No glass disks, no optics to clog. There are no moving, wearing parts!

The patented Wide-Gap™ Cam Screw Rotors™ put an end to sensor damage, are simpler to install, and stay securely mounted to the shaft.

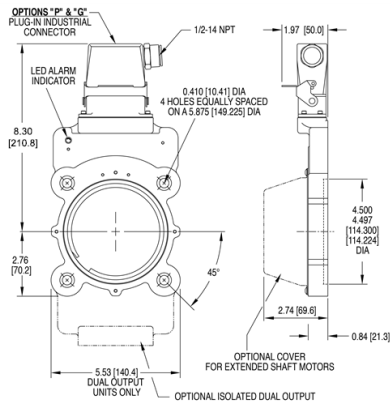
The universal 5-24V design drives longer cables and is protected against wiring errors and surges.

When you power up an AV56, you know you installed it right: the green LED tells you the digital self-tuning has set your AV56 optimally.

If at any time, the AV56 cannot produce ideal signals, the LED changes to red and the remote alarm contact activates. Even wiring errors and short circuits are detected and indicated by changing the LED to orange. However, the encoder keeps working to give you time to schedule service.

With a real-world installation history of over 4,500,000 hour MTBF, AV56 encoders will keep your machine running 24/7/365!

## OUTLINE DRAWING



## MORE AV56 ADVANTAGES

- Replaces Avtron M56, Northstar/Dynapar™ D5, D560, SL56, ST56, Wind56; online cross reference guide available
- Shrugs off dirt, oil, and water contamination
- Highly resistant to electrical and magnetic motor and brake noise
- If damaged, electronics can be replaced without removing rotor
- Patented Cam Screw Rotor™ eliminates rotor slipping
- Built-in motor position guide and diagnostic check
- No air gap adjustment required
- Sealed thru-shaft option
- Fits shafts 0.500" - 3.188" [10 - 85 mm]
- 4,500,000+ hour MTBF design

## MORE AV56 SPECIFICATIONS

Operating Power: Volts: 5 - 24 VDC; Current: 100mA, no load  
 Output Format: A Quad B with Marker (A./A, B./B, Z./Z)  
 Second Isolated Output: Optional  
 Frequency Range: @5V, @1m cable, 250 kHz Max  
 @24V, @300m cable, #8 output, 45 kHz Max  
 Maximum Cable Length: 1000' PPR: 4 - 5000  
 Speed: 5400 RPM Max. std., for higher speeds, consult factory  
 Electronics: Fully Encapsulated, IP67 (see manual for details)  
 Temperature: -40° to 100°C (150°C rotor)  
 Vibration: 18 g's  
 Shock: 1 meter drop test  
 Chemical: Polyurethane enamel paint protects against salt spray, mild acids, and bases.  
 Weight: 2 - 3 lbs [0.9 - 1.36 kg]

All dimensions are in inches [millimeters]; Specifications and features are subject to change without notice.

Check out our website for more detailed specifications, drawings, and installation instructions. [www.avtronencoders.com](http://www.avtronencoders.com)



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# SELECTION GUIDE

MODEL	HOUSING TYPE	ROTOR BORE SIZE	COVER STYLE	LINE DRIVER	LEFT OUTPUT PPR	RIGHT OUTPUT PPR	CONNECTOR OPTIONS	MODIFICATIONS
AV56A	1 - Single Output 2 - Dual, Isolated Outputs	XX - No Rotor CA - 1/2" Thru-Shaft Cam Screw Rotor CB - 5/8" Thru-Shaft Cam Screw Rotor CC - 7/8" Thru-Shaft Cam Screw Rotor CD - 15/16" Thru-Shaft Cam Screw Rotor CE - 1" Thru-Shaft Cam Screw Rotor CF - 1 1/8" Thru-Shaft Cam Screw Rotor CG - 1 1/4" Thru-Shaft Cam Screw Rotor CH - 1 3/8" Thru-Shaft Cam Screw Rotor CI - 1 1/2" Thru-Shaft Cam Screw Rotor CJ - 1 5/8" Thru-Shaft Cam Screw Rotor CK - 1 3/4" Thru-Shaft Cam Screw Rotor CL - 1 7/8" Thru-Shaft Cam Screw Rotor CM - 2" Thru-Shaft Cam Screw Rotor CN - 2 1/8" Thru-Shaft Cam Screw Rotor CQ - 2 1/4" Thru-Shaft Cam Screw Rotor CP - 2 3/8" Thru-Shaft Cam Screw Rotor CR - 2 1/2" Thru-Shaft Cam Screw Rotor CS - 2 5/8" Thru-Shaft Set Screw Rotor	E - Extended (Pie-Pan Style) Cover G - Extended (Pie-Pan Style) Cover with Gasket for High-Dust Environments T - Thru-Shaft Outboard Seal Plate with V-Ring Seal F - Flat Outboard Cover, Low-Profile X - No Cover Plate D - 1/4 inch Domed cover for rear motor/brake sealing	6 - 5-24v in, 5-24v out (7Z72) recommended for single-ended wiring (A,B,Z, no A/B/Z) 8 - 5-24V In/Out (HX) Hi-Power Line Driver, Fully Protected Outputs 1 - 5-24V In/Out For Special Option Code 007 & 015 Only, No Diagnostics 9 - 7-24V In, 5v fixed outputs (7Z72) T - 5-24V In, 5-15V Out	F - 60 PPR G - 100 PPR H - 120 PPR A - 128 PPR L - 240 PPR N - 256 PPR P - 300 PPR E - 360 PPR B - 480 PPR Q - 500 PPR R - 512 PPR S - 600 PPR V - 900 PPR J - 960 PPR W - 1000 PPR Y - 1024 PPR Z - 1200 PPR 3 - 2000 PPR 4 - 2048 PPR 5 - 2500 PPR	X - No Right Output, Single Output Only F - 60 PPR G - 100 PPR H - 120 PPR A - 128 PPR L - 240 PPR N - 256 PPR P - 300 PPR E - 360 PPR B - 480 PPR Q - 500 PPR R - 512 PPR S - 600 PPR V - 900 PPR J - 960 PPR W - 1000 PPR Y - 1024 PPR Z - 2000 PPR 3 - 2000 PPR Z - 1200 PPR 4 - 2048 PPR	A - 10 Pin MS Style w/o Plug Avtron BEI HS35 Pin out B - 10 pin MS style w/o Plug, Danaher HS35 Pin out C - 10 pin MS style w/ Plug, Avtron/BEI HS35 Pin out D - 10 pin MS style w/ Plug, Danaher HS35 Pin out J - 7 pin MS style w/o Plug, A, /A, B, /B, No Marker Pulse P - Industrial (EPIC Style) w/mating plug & remote alarm contact G - Ind'l w/Northstar Pinout (EPIC Style connector), w/mating plug, LED diagnostics Q - EPIC connector w/Remote Base Mount for Baldor TEFC/BC Motors 18"Cable w/LED Diagnostics + alarm output Z - Ind'l on 36 inch Cable (side entry) (EPIC Style) w/LED diagnostics + alarm output W - 36 inch Cable w/LED diagnostics + alarm output contact R - 10 pin Mini-MS style (Bayonet) w/LED diagnostics S - 10 pin Mini-MS style (Bayonet) on 12" cable w/LED diagnostics Y - 10 pin MS style connector on 12 in. cable w/LED diagnostics T - M12 8 Pin Euro Connector on Sealed Cable, (Turck pinout) U - M12 8 Pin Euro Connector on Sealed Cable, (USA Pin out)	000 - None 00W - Connector Mounted to the End of an 18" Sealed Cable 003 - Add 85mm Flange Adapter (B34407) & Flat Cover (B34407) & Flat Cover 004 - Add Drain hole (Single Output Only) 005 - Super Magnetic Shielding Added 006 - Right Angle Cable Exit (for cable W or remote bases Q, Z) 014 - Add 85mm Flange Adapter (B34407) & Thru Shaft Cover 016 - Modification to a 6" cable to remote "Q" connector base 017 - Add counterbored mounting holes to the housing 038 - Special Flange adapter and Shaft Grounding Kit 050 - Primed Model Only for GE Motor, upgraded model including diagnostic LED & cam screw rotor and super magnetic shielding P50 - Special options for GE Motor, upgraded model including diagnostic LED & cam screw rotor and super magnetic shielding 051 - Primed Model Only Special options for ADC Motor, upgraded model including diagnostic LED & cam screw rotor and super magnetic shielding P51 - Special options for ADC Motor, upgraded model including blue paint, diagnostic LED & cam screw rotor and super magnetic shielding 053 - Custom Split Housing for easier field replacement on crowded installations 058 - Primed Model Only for GE Motor, upgraded model including diagnostic LED & cam screw rotor and super magnetic shielding P59 - Special options for Next ERA Energy on GE Motor, upgraded model including diagnostic LED & cam screw rotor and super magnetic shielding P60 - Special options for Next ERA Energy on ADC Motor, upgraded model including paint, diagnostic LED & cam screw rotor and super magnetic shielding 073 - M12-8pin on 18" cable to remote connector base P79 - Special options for ADC Motor, upgraded model including black paint, diagnostic LED & cam screw rotor and super magnetic shielding



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MODEL	HOUSING TYPE	ROTOR BORE SIZE	COVER STYLE	LINE DRIVER	LEFT OUTPUT PPR	RIGHT OUTPUT PPR	CONNECTOR OPTIONS	MODIFICATIONS
		TW - 2 3/4" Thru-Shaft Set Screw Rotor TU - 2 7/8" Thru-Shaft Set Screw Rotor TV - 3" Thru-Shaft Set Screw Rotor T4 - 3 1/8" Thru-Shaft Set Screw Rotor TZ - 3 1/4" Thru-Shaft Set Screw Rotor T7 - 3 3/16" Thru-Shaft Set Screw Rotor D2 - 10mm Thru-Shaft Cam Screw Rotor DA - 11mm Thru-Shaft Cam Screw Rotor D3 - 12mm Thru-Shaft Cam Screw Rotor DB - 14mm Thru-Shaft Cam Screw Rotor DC - 15mm Thru-Shaft Cam Screw Rotor DD - 16mm Thru-Shaft Cam Screw Rotor D4 - 16mm Thru-Shaft Cam Screw Rotor DE - 19mm Thru-Shaft Cam Screw Rotor D7 - 20mm Thru-Shaft Cam Screw Rotor DF - 24mm Thru-Shaft Cam Screw Rotor D5 - 25mm Thru-Shaft Cam Screw Rotor J8 - 26mm Thru-Shaft Cam Screw Rotor with 6x7mm Keyway DG - 28mm Thru-Shaft Cam Screw Rotor DH - 30mm Thru-Shaft Cam Screw Rotor			D - 4096 PPR 8 - 4800 PPR 9 - 5000 PPR 0 - Special PPR	5 - 2500 PPR D - 4096 PPR 8 - 4800 PPR 9 - 5000 PPR 0 - Special PPR		089 - Magnetic shielding and Special Black Painted Housing Combination 401 - 1270 (Special) Left Output PPR, No Right Output (Set PPR Codes = 0) 402 - 150 (Special) Left Output PPR, No Right Output (Set PPR Codes = 0) 403 - 50 (Special) Left Output PPR, No Right Output (Set PPR Codes = 0) 404 - No Left Output, 16 (Special) Right Output (Set PPR Codes = 0) 405 - 16 (Special) Left PPR, No Right Output (Set PPR Codes = 0) 406 - 6000 (Special) Left PPR, No Right Output (Set PPR Codes = 0) 407 - 2800 (Special) Left PPR, No Right Output (Set PPR Codes = 0) 408 - 1400 (Special) Left PPR, No Right Output (Set PPR Codes = 0) 409 - 30 (Special) Left PPR, No Right Output (Set PPR Codes = 0) 410 - No Left Output, 6000 (Special) right PPR 411 - 12000 (Special) Left Output PPR, No Right Output 412 - 200 (Special) Left Output PPR, No Right Output 413 - 30 (Special) PPR 414 - 1500 (Special) Left Output PPR, No Right Output 415 - 3000 (Special) Left Output PPR, No Right Output 416 - 3600 (Special) Left Output PPR, No Right Output 417 - 1250 (Special) Left Output PPR, No Right Output 418 - 2400 (Special) Left Output PPR, 2400(Special) Right Output PPR 419 - 160 (Special) Left Output PPR, 160(Special) Right Output PPR



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MODEL	HOUSING TYPE	ROTOR BORE SIZE	COVER STYLE	LINE DRIVER	LEFT OUTPUT PPR	RIGHT OUTPUT PPR	CONNECTOR OPTIONS	MODIFICATIONS
		DT - 32mm Thru-Shaft Cam Screw Rotor DJ - 38mm Thru-Shaft Cam Screw Rotor DK - 38mm Thru-Shaft Cam Screw Rotor DL - 42mm Thru-Shaft Cam Screw Rotor DM - 45mm Thru-Shaft Cam Screw Rotor DN - 48mm Thru-Shaft Cam Screw Rotor DP - 52mm Thru-Shaft Cam Screw Rotor DR - 55mm Thru-Shaft Cam Screw Rotor DS - 60mm Thru-Shaft Cam Screw Rotor MS - Obsolete, use DS for 60mm Thru-Shaft Cam Screw Rotor KD - 15/16" Thru-Shaft Cam Screw Rotor for ADC Pitch Motor KF - 1 1/8" Thru-Shaft Cam Screw Rotor for Wolong/GE Pitch Motor KH - 1.375" Thru-Shaft Cam Screw Rotor for Wolong Pitch Motor MU - 65mm Thru-Shaft Set Screw Rotor MV - 70mm Thru-Shaft Set Screw Rotor MW - 75mm Thru-Shaft Set Screw Rotor MY - 80mm Thru-Shaft Set Screw Rotor MZ - 85mm Thru-Shaft Set Screw Rotor						420 - 450 (Special) Left Output PPR, No Right Output 421 - No Left Output, 30 (Special) Right Output PPR 422 - 96 (Special) Left Output PPR, No Right Output 423 - 10,000 (Special) Left Output PPR, No Right Output 701 - 4.5" Flange Adapter for Nord Gearmotor SK100LA/4 with Fan Removed. For use with C3 rotor code only. 901 - 0.3m 1ft Special Cable Length 902 - 0.6m/2' Special Cable Length 903 - 0.9m/3' Special Cable Length 905 - 1.5m/5' Special Cable Length 910 - 3m/10' Special Cable Length 915 - 4.5m/15' Special Cable Length 920 - 6m/20' Special Cable Length 930 - 9m/30' Special Cable Length 933 - 10m/33' Special Cable Length 950 - 15m/50' Special Cable Length



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