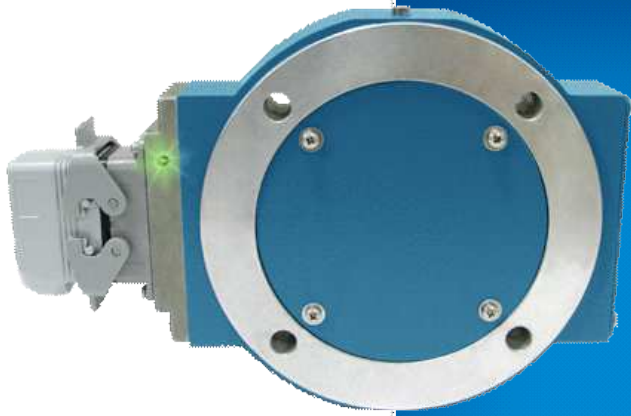


# Avtron AV850 SMARTach II Encoders



## Heavy Mill Duty Magnetic Modular Encoder, 8.5" C-Face Mount

### Ultra-Reliable! AV850

- | Heavy Mill Duty
- | Installation in Minutes!
- | Up to 5000 PPR
- | Removable Sensors
- | Wide-Gap Technology, No Air Gap Adjustment Required
- | Mounts Securely to Motor
- | Outputs Fully Short Circuit Protected
- | Self-Diagnostic LED & Alarm Output
  - | Sealed Electronics
  - | -40°C to +100°C Operation
- | 3 Year No-Hassle Warranty
- | Excellent for Gear Motors and Brake Applications

SMARTach II™ Magnetic, Modular Encoder, 8.5" C-Face Mount

AV850 SMARTach II heavy mill duty modular magnetic encoders fit standard 8.5" FC-Face motors. Other models, from 115mm to 12.5", are available to fit other motor sizes, and hazardous duty models: [XR850](#) are also available.

Quite simply, the AV850 is designed to eliminate encoder failures.

All AV850 electronics are fully encapsulated. There are no moving wearing parts. AV850 sensors locate over 4X farther from the rotor than the competition; no more sensor/rotor grinding!

The AV850's high-power outputs have over 50X more capacity.

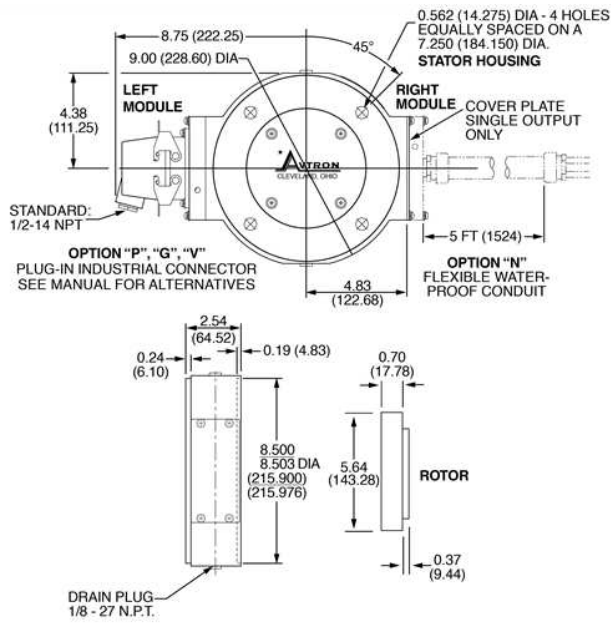
Miswiring an encoder is common— and it shouldn't cost you time or money. The AV850 has full output short circuit and reverse voltage protection, plus surge protection.

AV850 SMARTach II sensors digitally self-tune the outputs to eliminate drive trips caused by poor encoder signals.

AV850 sensors feature unsurpassed diagnostics. If the encoder signal is not ideal, the alarm output and LED inform the machine operator that the encoder should be checked, before a failure occurs! The AV850 even checks the rotor position before you start running!

If you think you need to replace your drives to end your encoder failures, try a better encoder instead. Specify AV850!

# OUTLINE DRAWING



# MORE AV850 ADVANTAGES

- SMARTach II sensors find problems before they cause failure
- Replaces Northstar/LakeShore RIM8500™, NexGen 8500; Avtron M193B, M285; GE AN-DG models
- Resists motor and brake interference noise
- Reverse voltage protection
- Mix and match any PPRs with any rotor
- Permits axial movement up to +/-0.100" [ +/-2.54mm]
- Universal rotor for all GE CD style and many Reliance motors.
- Optional overspeed switch
- Optional shaft grounding

# AV850 SPECIFICATIONS

**Operating Power (Each Sensor):** 5-24V, 100mA  
**Output Format:** A Quad B with marker (A,A-, B,B-, Z,Z-)  
**Frequency Range:** 0 to 165 KHz  
**Maximum Instantaneous Current Output:** 3000mA\*  
**PPR:** 8 - 5000 **Speed:** 6000 RPM Max\*\*\*  
**Rotor Positioning:** Up to +/-0.100" movement/misalignment  
**Sensor-Rotor Gap:** 0.045", +0.015/-0.040" [1.14mm+0.38/-1.0]  
**Temperature:** -40° to 100°C (rotor -40° to 150°C peak)  
**Electronics:** Fully Encapsulated, IP67\*\*  
**Vibration:** 18 g's **Shock:** 1 meter drop test  
**Weight:** 9lbs. [4kg]; 11lbs. [5kg] dual

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

All dimensions are in inches [millimeters].  
 Specifications and features are subject to change without notice  
 \*Output option 8; see manual for details.  
 \*\*Connector options may reduce IP rating.  
 \*\*\*Max RPM may be limited  
 For PPR > 2500 contact factory

# SELECTION GUIDE

AV850 PART NUMBERS AND AVAILABLE OPTIONS											
Model	Rotor Style	Shaft Size	Inboard & Outboard Cover Plates	Left Module			Right Module			Connector Options	Modifications
				Line Driver	PPR		Line Driver	PPR			
AV850			X- none D- no inboard, domed outboard cover plate B- inboard, thru out-board* F- no inboard, flat outboard N- inboard, flat out-board* T- no inboard, thru out-board*	X- none 6- 5-24V in/out 7272 8- 5-24V in/ 5-15V out, 4125 hi-power 9- 5-24V in, 5V out 7272	X- none F- 60 G- 100 H- 120 A- 128 L- 240 N- 256 P- 300 E- 360 B- 480 Q- 500 R- 512	S- 600 V- 900 J- 960 Y- 1024 Z- 1200 3- 2000 4- 2048 D- 4096 8- 4800 5- 5000 0-special	X- none 6- 5-24V in/out 7272 8- 5-24V in/ 5-15V out, 4125 hi-power 9- 5-24V in, 5V out 7272	X- none F- 60 G- 100 H- 120 A- 128 L- 240 N- 256 P- 300 E- 360 B- 480 Q- 500 R- 512	S- 600 V- 900 J- 960 Y- 1024 Z- 1200 3- 2000 4- 2048 5- 2500 D- 4096 8- 4800 9- 5000 0-special	A- w/out Plug C- with Plug & Flex. Conduit Adapter G- Large, (Northstar™ Pinout) with Plug L- with Right Angle Plug P- Large, with Plug W- Leads Only	000- none 003- Include analog signal converter (K661) 004- Super sensor shielding 704- Large Motor Stator Adapter* & Shielding

+ Large motor stator adapter required if not previously installed. > N/A for End of Shaft rotor styles. \* Rotor Style "T" only.

Rotor Style	Shaft Size									
T- Thru Shaft (Inch)	A- 0.750	E- 1.000	J- 1.625	M- 2.000	Q- 2.250	W- 3.250	2- 2.875	G- 3.750*	6- 4.500*	
C- Thru Shaft, Cam Screw (Inch)	B- 0.625	F- 1.125	K- 1.750	N- 1.750	R- 2.500	Y- 3.375	3- 3.500	4- 3.875*		
	C- 0.875	H- 1.375	L- 1.875	P- 2.375	T- 2.625	Z- 3.421	D- 3.625*	1- 4.000*		
M- Thru Shaft (mm)	F- 30mm	P- 60mm	Z- 80mm (2)	1) For Shaft DIA 80 -0.030/-0.047mm (f6)		2) For Shaft DIA 80 +0/-0.030mm (h7)				
E- End of Shaft	F- 1.125 GE CD180-320			P- 2.375 GE CD400			2- 2.875 GE CD500		9- GE CD6000, 6100, 6200, 6700, 6800, & 6900	
H- End of Shaft for Grounding Kit	N- 2.125 GE CD360			Q- 2.250 GE CD444/505E						
U- Universal with End of Shaft	F- 1.125 GE CD180-320			9- GE CD6000, 6100, 6200, 6700, 6800, & 6900			Y- GE CD4600, 4700, 8500, & 8600*		U- Universal (Includes 1 Rotor and Shaft adapters for all motors except Q, R, Z & 4)	
G- Universal with Grounding Kit	N- 2.125 GE CD360			V- GE CD4300, 4400, 5400, 6400 & 6500*			Z- GE CD680*		Q- GE CD444/505E*	
Q- EDS Adapter for Stacked Encoders	P- 2.375 GE CD400			W- GE CD4500, 7500, 7600*			4- ABB 95mm			
	2- 2.875 GE CD500									
	R- GE CD507, 509									
K- Keyway Thru Shaft, Cam Screw (Inch)	E- 1.000									
X- no rotor	X- no rotor									



Nidec-Avtron Makes the Most Reliable Encoders in the World  
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All dimensions are in inches [millimeters].  
 Specifications and features are subject to change without notice.  
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