AVTRON™ ENCODERS
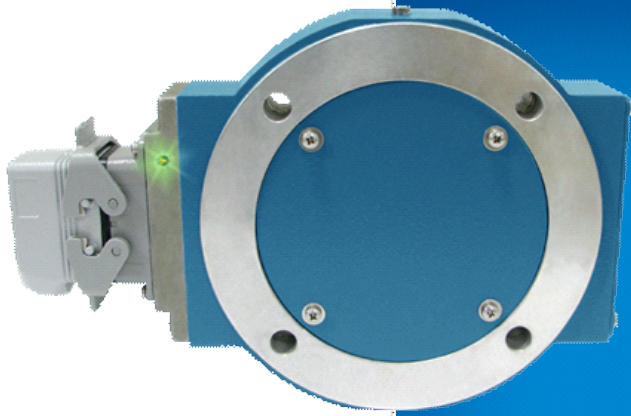
Avtron AV850 SMARTach™ III Encoders

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

Time isn't Money. UPTIME is Money!

- 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

AV850

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

AV850 SMARTach III 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 and XPH8 intrinsically safe and SV850 functional safety encoders are also available.

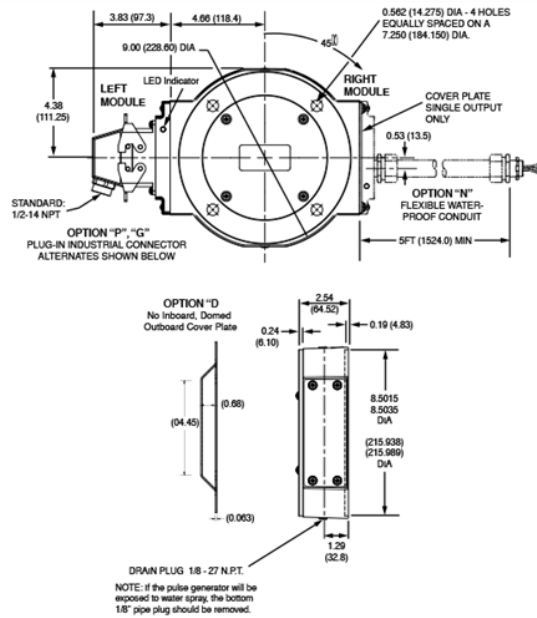Quite simply, the AV850 is designed to eliminate encoder failures.

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!

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 III sensors digitally self-tune the outputs to eliminate drive trips caused by poor encoder signals. The universal 5-24V design drives longer cables and is protected against wiring errors.

Adaptive Electronics: At power-up you know you installed it right! The green LED tells you your AV5 Sensor is aligned with the rotor and reading signal. If at any time, the AV5 cannot produce consistent signals, the LED changes to red and the optional remote alarm contact activates. However, the encoder keeps working to give you time to schedule service. Even wiring errors and short circuits that cause an over-temp situation will be detected and indicated by changing the LED to orange.

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

OUTLINE DRAWING

3.83 (97.3)   4.66 (118.4)

9.00 (228.60) DIA

0.562 (14.275) DIA - 4 HOLES EQUALLY SPACED ON A 7.250 (184.150) DIA.

45°

LED Indicator

LEFT MODULE

RIGHT MODULE

4.38 (111.25)

COVER PLATE SINGLE OUTPUT ONLY

0.53 (13.5)

STANDARD: 1/2-14 NPT

OPTION "P", "G" PLUG-IN INDUSTRIAL CONNECTOR ALTERNATES SHOWN BELOW

OPTION "N" FLEXIBLE WATER-PROOF CONDUIT

5FT (1524.0) MIN

OPTION "D" No Inboard, Domed Outboard Cover Plate

2.54 (64.52)

0.24 (6.10)

0.19 (4.83)

(0.68)

(04.45)

8.5015 8.5035 DIA

(215.938) (215.989) DIA

(0.063)

1.29 (32.8)

DRAIN PLUG 1/8 - 27 N.P.T.

NOTE: If the pulse generator will be exposed to water spray, the bottom 1/8" pipe plug should be removed.

Check out our website for more detailed specifications, drawings, and installation instructions. www.avtronencoders.com

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*
Current: 100mA
Output Format: A Quad B with marker (A,/A, B,/B, Z,/Z)
Frequency Range:
   @5V, @1m cable, 250 kHz Max
   @24V, @300m cable, #8 output, 45 kHz Max
Maximum Cable Length: 1000'
PPR: 4 - 50000***
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: 18G
Shock: 1 meter drop test
Weight: 9lbs. [4kg]; 11lbs. [5kg] dual

* Electrical specifications for SMARTach III model (serial #30,000 or higher), consult Nidec Industrial Solutions for earlier model specifications.
** Certain connector options may reduce IP rating.
***(PPR) Standard maximum PPR is 5000. Consult Factory with your application for PPRs up to 50,000.
**** (Speed) Maximum RPM may be limited for PPR > 2,500. Consult Factory with your application.

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

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 outboard* F- no inboard, flat outboard N- inboard, flat outboard* T- no inboard, thru outboard*	X- none 6- 5-24V in/out (7272) 8- 5-24V in/out (HX) 9- 5-24V in, 5V out (7272)	X- none B- 480 2- 1500 F- 60 Q- 500 6- 1800 C- 64 R- 512 3- 2000 G- 100 S- 600 4- 2048 H- 120 U- 720 5- 2500 A- 128 V- 900 D- 4096 L- 240 J- 960 8- 4800 N- 256 W- 1000 9- 5000 P- 300 Y- 1024 O- special E- 360 Z- 1200	X- none 6- 5-24V in/out (7272) 8- 5-24V in/out (HX) 9- 5-24V in, 5V out (7272)	X- none B- 480 2- 1500 F- 60 Q- 500 6- 1800 C- 64 R- 512 3- 2000 G- 100 S- 600 4- 2048 H- 120 U- 720 5- 2500 A- 128 V- 900 D- 4096 L- 240 J- 960 8- 4800 N- 256 W- 1000 9- 5000 P- 300 Y- 1024 O- special E- 360 Z- 1200		000- none 003- Include analog signal converter (K661) 004- Super sensor shielding 4xx- Special PPR (see chart) 700- Large Motor Stator Adapter*

+ 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) C- Thru Shaft, Cam Screw (Inch)	B- 0.625 A- 0.750 C- 0.875 E- 1.000	F- 1.125 H- 1.375 8- 1.500 J- 1.625	K- 1.750 L- 1.875 M- 2.000 N- 2.125	Q- 2.250 P- 2.375 R- 2.500 T- 2.625	S- 2.771 2- 2.875 U- 3.000 W- 3.250	Y- 3.375 G- 3.750 6- 4.500 Z- 3.421 4- 3.875 V- 3.4375 1- 4.000 3- 3.500 7- 4.250
B- Thru Shaft (Inch)	C- 1.250	A- 1.9375	B- 3.1250			
M- Thru Shaft (mm)	E- 19mm F- 30mm	J- 42mm P- 60mm	T- 70mm Z- 19mm	4- 95mm S- 100mm	8- 110mm	
D- Thru Shaft (mm)	C- 17mm E- 19mm	F- 30mm J- 42mm	K- 45mm P- 60mm	Q- 65mm S- 70mm	Y- 180mm 2- 90mm	D- 93mm
E- End of Shaft H- End of Shaft for Grounding Kit	F- 1.125 GE CD180-320 N- 2.125 GE CD360		P- 2.375 GE CD400 Q- 2.250 GE CD444/505E		2- 2.875 GE CD500	9- GE CD6000, 6100, 6200, 6700, 6800, & 6900
U- Universal with End of Shaft G- Universal with Grounding Kit Q- EOS Adapter for Stacked Encoders	F- 1.125 GE CD180-320 N- 2.125 GE CD360 P- 2.375 GE CD400 2- 2.875 GE CD500 R- GE CD507, 509	9- GE CD6000, 6100, 6200, 6700, 6800, & 6900 V- GE CD4300, 4400, 5400,6400 & 6500* W- GE CD4500, 7500, 7600*	Y- GE CD4600, 4700, 8500, & 8600* Z- GE CD680• 4- ABB 95mm		U- Universal (Includes 1 Rotor and Shaft adapters for all motors except Q, R, Z & 4) Q- GE CD444/505E*	
K- Keyway Thru Shaft, Cam Screw (Inch)	E- 1.000					
X- no rotor	X- no rotor					

Avtron™ ENCODERS

$\mathsf{C}\,\mathsf{E}$