

Avtron AV125 SMARTach™ III Encoders



Heavy Mill Duty Magnetic Modular Encoder, 12.5" C-Face Mount

Time isn't Money. UPTIME is Money!

- ┆ Heavy Mill Duty
- ┆ Up to 7.88" [200mm] Shafts
- ┆ Up to 8192 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 Brake Applications

AV125

AV125 SMARTach™ III heavy mill duty modular magnetic encoders fit 12.5" motor and NEMA brake flanges. Other models, from 115mm to 8.5", are available to fit other motor sizes.

AV125 is ideal for large motor and brake applications where a large diameter through-shaft is needed. It permits shafts up to 7 7/8" [200mm] to pass through the encoder, facilitating motor-encoder-brake sandwich construction, as well as hollow shafts for water or air cooling systems to pass through the encoder. Because AV125 is super-reliable and features removable sensors, you can install it in hard-to-access configurations and locations without risk of downtime.

Quite simply, the AV125 is designed to eliminate encoder failures: All AV125 electronics are fully encapsulated. There are no moving wearing parts. AV125 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 AV125 has full output short circuit and reverse voltage protection, plus surge protection.

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

Adaptive Electronics: At power-up you know you installed it right! The green LED tells you your AV12 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.

Why risk tiny fragile optical encoders perched precariously behind your large motor or brake. Specify a heavy duty AV125 encoder!

OUTLINE DRAWING

MORE AV125 ADVANTAGES

- SMARTach II sensors find problems before they cause failure
- Replaces Northstar/LakeShore RIM1250™, NexGen 1250, SL1250™; Avtron M1250 models
- Resists motor and brake interference noise
- Reverse voltage protection
- Mix and match any PPR with any rotor
- Permits axial movement up to +/-0.100" [+/-2.54mm]

AV125 SPECIFICATIONS

Operating Power: (Each Sensor): 5-24V*

Current: 100mA nom, no load

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: 5000 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: 15-17 lb. [6.8-8 kg]

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

* 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

Northstar/LakeShore RIM1250™ and SL1250™ are trademarks of Dynapar.

Spare sensors, rotors, through-shaft cover plates, and shaft grounding kits can be ordered separately.

SELECTION GUIDE

AV125 PART NUMBERS AND AVAILABLE OPTIONS

Model	Thru Shaft Rotor Bore, US Sizes	Inboard & Outboard Cover Plates	Left Module			Right Module			Connector Options	Modifications
			Line Driver	PPR		Line Driver	PPR			
AV125	XX- no rotor CE- 4.890" CH- 1.375" CA- 4.875" CJ- 1.825" CG- 5.000" CL- 1.875" CK- 5.250" CM- 2.000" C7- 5.375" CN- 2.125" C3- 6.000" CQ- 2.250" CF- 6.250" CP- 2.375" TU- 6.375" CR- 2.500" C8- 6.750" CT- 2.825" T8- 7.875" C2- 2.875" DG-25mm CV- 3.125" DY-85mm CW- 3.250" D4-90mm CY- 3.375" M1-100mm G4- 3.875" DC-110mm G1- 4.000" DE-120mm** CB- 4.125" DF-180mm C6- 4.250" M8-170mm** CC- 4.375" DE-120mm** C8- 4.500" DF-180mm CD- 4.825" M8-170mm**	X- none F- no 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 F- 60 C- 64 G- 100 H- 120 A- 128 L- 240 N- 256 P- 300 E- 380 Q- 500 R- 512 S- 600 U- 720	V- 900 J- 960 W- 1000 Y- 1024 Z- 1200 2- 1500 6- 1800 3- 2000 4- 2048 D- 4096 8- 4800 9- 5000 0- special	X- none 6- 5-24V in/out (7272) 8- 5-24V in/out (HX) 9- 5-24V in, 5V out (7272)	X- none F- 60 C- 64 G- 100 H- 120 A- 128 L- 240 N- 256 P- 300 E- 380 Q- 500 R- 512 S- 600 U- 720	V- 900 J- 960 W- 1000 Y- 1024 Z- 1200 2- 1500 6- 1800 3- 2000 4- 2048 D- 4096 8- 4800 9- 5000 0- special		000- none 003- include analog signal converter (K881) 004- Super magnetic shielding 006- 8000 RPM top speed 008- Super magnetic shielding w/sealed/marine housing 4xx-Special PPR (see table)

Connector Options					
Mounted on Encoder Body			3' Cable		5' Flexible Conduit
Industrial Connector	10 pin MS (LARGE ENCODER PINOUT)	Other	Industrial Connector	Mini MS	
P- with Plug G- (Northstar™ Pinout) with Plug	A- without Plug B- with Plug C- with Plug & Flex. Conduit Adapter L- with Right Angle Plug	K- Condulet with Leads R- Mini MS/ Twist Lock with Plug	Z- with Plug	S- Beldor Twist Lock with Plug	W- Leads only N- Leads only T- Terminal box

Table 1

* To specify this PPR, also specify modification code 4xx.

SPECIAL PPR OPTION CODES
For full list download manual

Spare sensors, rotors, through-shaft cover plates, and shaft grounding kits can be ordered separately. (See Tables 2 and 3)

Cam screw rotors patented.

* rotors above 6.75" bore are set screw, all others cam screw style

** m8 tolerance, all other metric rotors are h7



Nidec-Avtron Makes the Most Reliable Encoders in the World

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