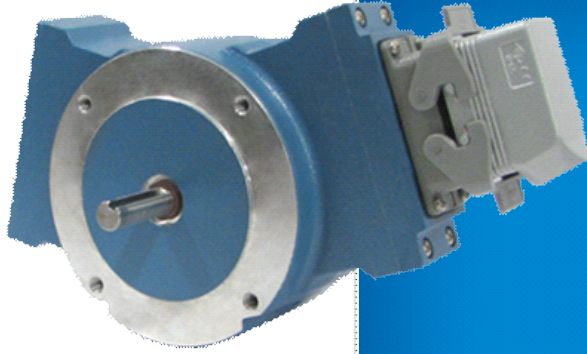


# Avtron AV485 SMARTach™ III Encoders



**Severe Mill Duty Magnetic Encoder; Foot or NEMA 56C Face Mount, 5/8" Solid Shaft**

## The Most Rugged Solid Shaft Encoder Available!

- ┆ Severe Mill Duty
- ┆ Up to 5000 PPR
- ┆ Replaces Competitive Models Without Rewiring
- ┆ Self-Diagnostic LED & Alarm Output
  - ┆ Foot or NEMA 56C Face Mount
  - ┆ Removable Sensors
  - ┆ IP66 Enclosure
  - ┆ High-Power Output Standard
- ┆ Outputs Fully Short Circuit Protected
  - ┆ Optional Dual Isolated Outputs

## AV485

AV485 SMARTach™ III severe duty magnetic encoders can be foot or NEMA 56C face/flange mounted. They feature our largest bearings on an ultra-wide stance for pulley and other rough applications. Also available: [AV685](#) for hollow shaft mounting, and [AV850](#) encoders for complete flowerpot/flange/coupling elimination.

The AV485 is designed to withstand the worst environments: buried in slag, coated in pulp, sprayed with salt water or cutting coolants, it keeps working. The modular, gull-winged design makes it easy to install and service; the base can be bolted in place without removing the encoder, and the AV5 wide-gap removable sensors require no adjustment or shimming.

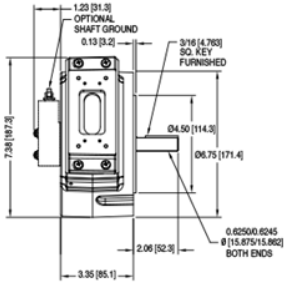
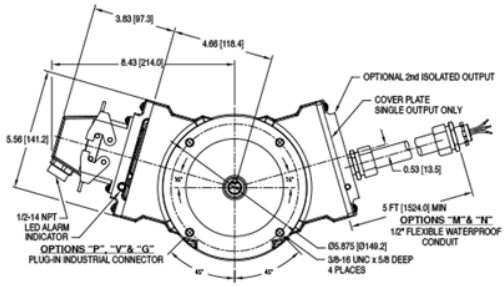
The sensors are fully potted to protect against liquids, and are interchangeable between AV850, AV485, and AV685 encoders. The universal 5-24V design drives longer cables and is protected against wiring errors and surges. A second backup output is available with the same or different PPR, and offers completely separate electronics for maximum uptime.

**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.

For easy upgrades, the AV485 matches the bolt pattern and shaft location of older analog and digital models.

Keep your mill running today, and for years to come: install AV485!

## OUTLINE DRAWING



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

## MORE AV485 ADVANTAGES

- | Foot mount bolt pattern matches older analog models exactly
- | Optional K661 signal converter for direct replacement of analog tachs (BC42, 46, etc.)
- | Replaces Dynapar H56, Northstar RIM6200, NexGen 6200; Avtron M485, M727, M737; GE 5BC42/46
- | SMARTach II sensors find problems before they cause failures
- | Protected against: power-to-phase, short circuits, and reverse voltage wiring problems
- | Mix and match any PPR's
- | Optional extended temperature ranges: -40°C to +80°C, -20°C to + 120°C\*
- | Shaft grounding & overspeed switch optional
- | 1 Year No-Hassle Warranty

## AV485 SPECIFICATIONS

**Operating Power:** Volts: 5 - 24 VDC\*

**Current:** 100mA nom, 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 - 50000\*\*\***

**Speed: 5000 RPM Max\*\*\*\***

**Electronics:** Fully Encapsulated, IP67\*\*

**Temperature:** -40° to 120°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:** 14 lbs. [6.4 kg] / 16 lb [7.3 kg] dual output

\* 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.

<sup>^</sup> -20°C to 80°C Standard, requires high-temperature model and instrument air feed for 120°C rating

All dimensions are in inches [millimeters].

Specifications and features are subject to change without notice.

## SELECTION GUIDE

AV485 PART NUMBERS AND AVAILABLE OPTIONS INCLUDING AV5 SENSORS											
											
Model	Temp Rating	Foot Bracket	Style	Left Module			Right Module			Connector Options	Modifications
				Line Driver	PPR		Line Driver	PPR			
AV485	N- -20°C to 80°C C- -40°C to 80°C H- -20°C to 120°C*	X- none 1- A36261 STD 2- BC42/46 style (A25448)	S- single shaft D- dual shaft G- grounding	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- 360 B- 480 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 5- 2500 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- 360 B- 480 Q- 500 R- 512 S- 600 U- 720	J- 960 W- 1000 Y- 1024 Z- 1200 2- 1500 6- 1800 3- 2000 4- 2048 5- 2500 D- 4096 8- 4800 9- 5000 0-special	000- none 003- Include analog signal converter (K061) 004- Super magnetic shielding	
+ Contact Factory											

Connector Options							
Mounted on Encoder Body				3' Cable			5' Flexible Conduit
Industrial Connector	5 pin MS	10 pin MS	Other	Industrial Connector	Twist Lock	Other	
G- (Northstar <sup>SM</sup> Pinout) with Plug P- with Plug V- with Plug, w/insulated adapter 1- Mini-Epic with Plug	E- (M737 Pinout) without Plug F- "E" with Plug H- (M727 Pinout) without Plug J- "H" with Plug	A- without Plug B- with Plug & clamp C- with Plug & Flex. Adapter L- with Right Angle Plug	K- Condulet R- Twist Lock Mini MS with Plug 3- 6 Pin MS connector with plug (M940)	Z- with Plug Q- 18" Flex Cable on Remote	S- Mini MS with Plug	W- Leads only	D- 10 pin MS, w/ins. adapter M- w/ins. adapter N- In Flexlight T- Terminal box Y- Terminal box w/ins. adapter

**SPECIAL PPR OPTION CODES**  
For full list download manual



Nidec-Avtron Makes the Most Reliable Encoders in the World

8901 E. PLEASANT VALLEY ROAD • INDEPENDENCE, OHIO 44131-5508

TELEPHONE: (1) 216-642-1290 • FAX: (1) 216-642-6037

E-MAIL: [tachs@nidec-avtron.com](mailto:tachs@nidec-avtron.com) • WEB: [www.avtronencoders.com](http://www.avtronencoders.com)



All dimensions are in inches [millimeters].  
Specifications and features are subject to change without notice.  
EU-SMART™, SMARTSafe™, SMARTach II™, THIN-LINE™,  
THIN-LINE II™, WIDE-GAP™, and BULLSEYE32™ are trademarks  
of Nidec Avtron Automation. All other trademarks and registered  
trademarks are the property of their respective owners.