AVTRON™ ENCODERS

Avtron AV5 SMARTach™ III Sensor Module for AV485/AV685/AV850

Severe Duty Magnetoresistive Sensor for AV485, AV685 & AV850 Encoders, Rotor Fits Shafts 5/8"-4 1/2" [16mm-115mm]

Avtron AV5 SMARTach™ III

ı Wide-Gap Technology Eliminates Gapping and Shimming

ı Mount in AV485, AV685, and AV850 Encoders

ı Direct Machine-Mount Option

ı Permits Up to 4.5" [115mm] Through-Shaft

ı Fully Potted Electronics

ı -40°C to +100°C Standard; +120°C Option Requires Encoder Cooling

ı 3 Year No-Hassle Warranty

AV5

Avtron AV5 SMARTach III™ sensors are magnetoresistive, severe duty incremental quadrature sensors for the AV485, AV685, or AV850 rotary encoders. The AV5 is also usable in applications where an encoder housing is not needed – simply mount the AV5 with your bracket, and use an AV850 or other rotor. Also available: XR5 and XR12 sensors for hazardous duty applications or XP5 for applications where explosion proof is a requirement.
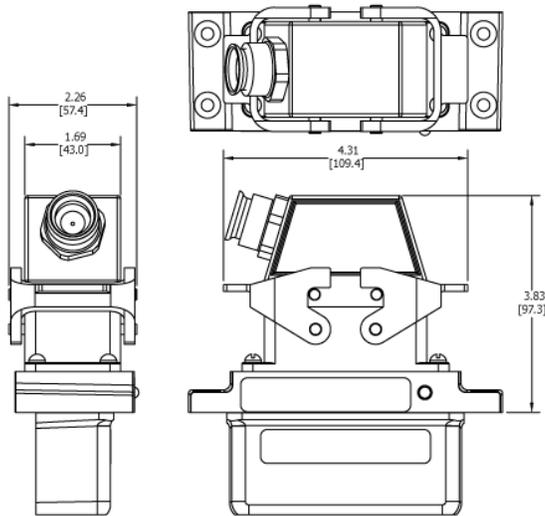
The AV5 is ideal for applications where mounting on a large diameter through-shaft is needed, including large hollow shafts for cooling water or air. The AV5 sensor + AV850 rotor combination permits through-shafts up to 4.5" [115mm].

The AV5 offers a full range of electrical connector options, including IP67 cable, IP66 MS connectors, and IP65 Industrial with built-in terminal strips. The AV5 sensor is fully protected against all types of wiring errors, including short circuits, reverse voltage, and phase-to-phase shorts. It is one tough sensor! For larger bore applications, use AV12 sensors with the AV125 encoder (or as stand-alone).

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 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.

OUTLINE DRAWING

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

MORE AV5 ADVANTAGES

- High resolution up to 5000 PPR
- Sensor PPR can be factory reprogrammed
- Full protection against short circuits, reverse voltage, phase-to-phase shorts
- High-power outputs for long cable runs
- Optional 24V in, 5V out option for low-voltage, long-cable applications
- Diagnostic LED and alarm output contact indicates proper operation

AV5 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: 5400 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: 2 - 3 lbs [0.9 - 1.36 kg] (will vary by connector options)

* 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.
^ Requires air cooling system option in AV485 & AV685 to reach +120°C rating

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

SELECTION GUIDE

AV5 Sensor				
Model	**Line Driver**	**PPR**	**Connector Options**	**Modifications**
AV5	6- 5-24V in/out 7272 8- 5-24V in/out (HX) 9- 5-24V in, 5V out 7272	X- none S- 600 F- 60 V- 900 G- 100 J- 960 H- 120 Y- 1024 A- 128 Z- 1200 L- 240 3- 2000 N- 256 4- 2048 P- 300 5- 2500 E- 360 D- 4096 B- 480 8- 4800 Q- 500 9- 5000 R- 512 0- Special	See Table Below	000- none 004- Super Magnetic Shielding 018- Includes isolator 4xx- Special PPR (see table) 9xx- Special Cable Length (xx=ff/0.3m)

SPECIAL PPR OPTION CODE		
OPTION CODE	LEFT PPR	RIGHT PPR
401	1270	NONE
402	150	NONE
403	50	NONE
404	512	16
405	16	NONE
406	6000	NONE

Connector Options						
Mounted on Encoder Body			3' Cable			5' Flexible Conduit
Industrial Connector	10 pin MS	Other	Industrial Connector	Mini MS	Other	
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- Baldor Twist Lock with Plug	W- Leads only	N- Leads only T- Terminal box

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