Nidec-Avtron Makes the Most Reliable Encoders in the World

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Encoder Instructions

AV20

SOLID SHAFT 1/4" - 10mm

DESCRIPTION

The Avtron Model AV20 Encoder is a light mill duty speed and position transducer (also known as tachometer or rotary pulse generator). When coupled to a motor or machine, its output is directly proportional to shaft position (pulse count) or speed (pulse rate).

Mechanically the AV20 mounts using industry standard 2" square or round flanges. The AV20 can also be mounted using an optional industry standard face mount bolt pattern.

The AV20 encoder offers 2Ø outputs (A,B) 90° apart for direction sensing. Optional complements ($\bar{A}$,$\bar{B}$) and marker pulse and complement (Z,$\bar{Z}$) are available; see channel options.

DRIVE INSTALLATION INSTRUCTIONS

The AV20 may be driven via a contact/friction wheel provided the axial spring force is modest, less than 25% of the 100 lb maximum radial load, or (preferably) the AV20 can be coupled to the load. The following means of coupling are acceptable when properly installed: Direct Coupling, Timing Belt/Pulleys.

With a direct drive, use a flexible, insulated disc coupling and align the shafts as accurately as possible. The encoder should not be subjected to any axial thrust. Overhung loads should also be minimized. Installations using timing belts/pulleys should have just enough belt tension to eliminate belt sag. Excessive tension will shorten belt and bearing service life. If a rubber slinger disc is used, position it on the shaft so it will rotate freely.

CAUTION
Do not force or drive the coupling onto the shaft or damage to the bearings may result. The coupling should slide easily on the shaft. Remove nicks and burrs if necessary. Consider driving shaft endplay when positioning coupling.

Equipment Needed for Installation		
Provided	**Optional**	**Not Provided**
AV20 Encoder	Mating MS Cable Connector	AV20 Face Mounting Screws (see table below and drawing on last page for sizes) Thread Locker (Loctite 242 recommended) Anti-Seize Adapter Flange Shaft Coupling (Insulated style recommended) Dial Indicator Gauge

For more details on alignment specifications, measurement techniques, and special considerations in specifying and installing drive components, refer to separate installation instructions in the Avtron ENCODER HANDBOOK.

FACE and FLANGE MOUNTING INSTRUCTIONS

1) Disconnect power from equipment and encoder cable.
2) Use dial indicator guage to verify the motor/load total indicated shaft runout <0.002" [0.05mm].
3) Apply anti-seize compound to inner circumference of coupling (both motor and encoder side).
4) Loosen set screws in coupling and apply thread locker to set screws.
5) Place coupling on motor/load shaft, inserting to depth per manufacturer's instructions.
6) Attach coupling to motor/load shaft using set screws per manufacturer's instructions.

AV20 PART NUMBERS AND AVAILABLE OPTIONS

Mount	PPR*	Line Driver	Shaft Size	Connector Options	Wiring	Mounting Style	Face/Bolt Pattern	Seals	Channels	Special Features
AV20	**A-** 1 **C-** 25 **F-** 60 **G-** 100 **H-** 120 **K-** 200 **L-** 240 **M-** 250 **N-** 256 **P-** 300 **E-** 360 **Q-** 500 **R-** 512 **S-** 600 **T-** 625 **U-** 720 **W-**1000 **Y-** 1024 **Z-** 1200 **1-** 1250 **2-** 1440 **3-** 2000 **4-** 2048 **5-** 2500 **6-** 2540 **7-** 3600 **0-** Special	**1-** 5-28V (7272) **2-** 5-28V, open collector (7273) **4-** 5-28V in, 5V out (7272)	**0**-Non-std. With Flat **A-** 0.25" **B-** 0.375" **C-** 10mm Without Flat **N-** 0.25" **P-** 0.375" **R-** 10mm	**W-** 18" cable (pigtail)	**A-** Side	**1-** Sq. Flange 2.06" w/ 1.25" male pilot **2-** Rnd. Flange 2.0" w/ 1.25" male pilot **3-** Sq. Flange 2.06" w/ 1.181" female pilot **4-** Rnd. Flange 2.0"	**X-** None **5-** 4x 6-32 @ 2" **6-** 4x 10-32 @ 1.625" **7-** 3x 4-40 @ 1.5"	**A-** Shaft Sealed** **B-** Bearing Sealed **X-** None^^	With Comp. **A-** A,$\bar{A}$,B,$\bar{B}$ Z,$\bar{Z}$ *** **B-** A,$\bar{A}$,B,$\bar{B}$ **D-** A,$\bar{A}$ Without Comp. **E-** A, B, Z **F-** A, B	**000-** None **00W-** Connector on 18" cable: Use w/ Option "T"-"U" **9xx-** Specify cable length xx=feet (use w/ Option "W")

Connector Options

Mounted on Encoder			Mounted on 18" cable (00W)
10 Pin MS	**6 Pin MS**	**7 Pin MS**	**8 Pin M12**
A- w/o plug (std. phasing) **B-** w/o plug (reverse phasing) **C-** w/ plug (std. phasing) **D-** w/ plug (reverse phasing)	**E-** w/o plug (std. phasing) **F-** w/o plug (reverse phasing) **G-** w/ plug (std. phasing) **H-** w/ plug (reverse phasing)	**J-** w/o plug (std. phasing) **K-** w/o plug (reverse phasing) **M-** w/ plug (std. phasing) **N-** w/ plug (reverse phasing)	**T-** w/o plug (Turck Pinout) **U-** w/o plug (US Pinout)

* up to 16,384 PPR available
** recommended, N/A with Mounting Styles "3" & "4".
*** N/A with MS 6 or 7 Pin Connector.
^^ not recommended for industrial applications

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