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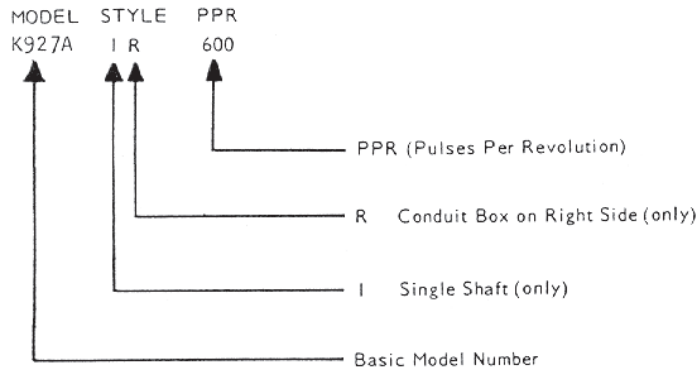
# Encoder Instructions

**K927A**  
 INACTIVE DESIGN  
 Replaced by Model AV485

## Description

The Model K927A Pulse Generator is a zero-speed rotary transducer; that is, it can operate effectively down to zero RPM. The K927A generates a specific number of pulses for each rotation of its shaft. When the K927A is coupled to a machine, its output is directly proportional to process travel (pulse count) or speed (pulse rate). The output signal is generated by a nonbreakable disc rotating between an infrared source and four photo receptors. A rugged cast aluminum housing, hardened steel shaft, heavy-duty sealed bearings provide mechanical ruggedness required for industrial applications.

Various K927A options and how they are shown in the K927A part number are shown below;



## WARNING

The K927A is often used for speed feedback in drive systems, where any failure can cause a machine shutdown. While the K927A is designed for continuous mill operation, it is important to follow proper procedures with this unit.

DO NOT force or drive a coupling onto the shaft. This can damage bearings, so that a failure will happen at a later time.

REPAIR of defective units requires returning the unit to the factory, where there is special test equipment. Turn-around time is minimal, and charges are nominal for out-of-warranty units.

DO NOT install K927As (or any other rotating equipment) where liquids will be sprayed or hosed onto them. If necessary, provide a shield.

DO NOT connect grounded oscilloscopes, K761, or any grounded instrument to K927A output.

DO NOT connect oscilloscope or any instrument common to any pulse generator connection other than common (Blk wire or pin A.)

## Specifications

Operating Power.....	18-24 VDC @ 120 ma (TYP) 24-30 VDC @ 120 ma (TYP)
Output Signal	Four channels in quadrature (two-phase, bidirectional, $\overline{0A}$ , $\overline{0B}$ )
Pulses per revolution.....	600/1200/1800 Standard. Others available upon request.
Wave Shape.....	Square Wave
Voltage Swing (No load).....	1.5 to 15 VDC
Connection.....	MS3106E16S-1S PLUG
Frequency.....	0 to 18 kHz max.
Output Impedance.....	1500 Ohms pull up, 12 ma. sink, HTL 680 LINE DRIVER
Output Protection.....	M927 output is short circuit protected to common
Speed Range.....	0 to 1800 rpm for 600 PPR 0 to 900 rpm for 1200 PPR 0 to 600 rpm for 1800 PPR
Operating Temperature.....	32° to 140° F ambient
Weight.....	15 lbs.
Mechanical	
Starting Torque.....	2.2 oz. - in. (typ.)
Shaft Inertia.....	0.1 oz.- in. - sec <sup>2</sup>
Acceleration (max.).....	5,000 rpm/sec.
Coupling Recommended.....	Zero Backlocks, Thomas DBZ or equivalent

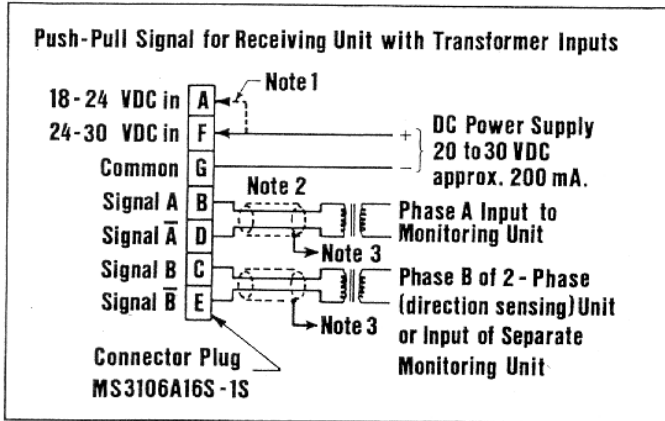
# INSTALLATION

The pulse generator should be driven by a positive drive rather than a friction or Vee-belt drive. The following means of driving the pulse generator may be used when installed in accordance with the coupling manufacturer's recommendations: Direct Coupling, Timing Belt and Pulleys, Chain and Sprockets, Gears. If a direct drive is used, use a flexible coupling and align the shafts as accurately as possible. (Misalignment should not exceed 0.010 T.I.R.). The pulse generator should not be subjected to any axial thrust. Overhung loads should also be minimized. Installations using timing belts and pulleys should have just enough belt tension to insure proper engagement of teeth. Excessive tension will shorten belt and bearing life.

# CAUTION

Do not drive or force coupling or pulley onto the shaft of the unit, otherwise damage to the bearing will result. Refer to coupling manufacturer's instructions for proper installation procedure. Allow clearance between the shaft ends or the hubs of the flexible couplings, as specified by the coupling manufacturer, to permit thermal expansion of the shaft in operation.

## WIRING DIAGRAM

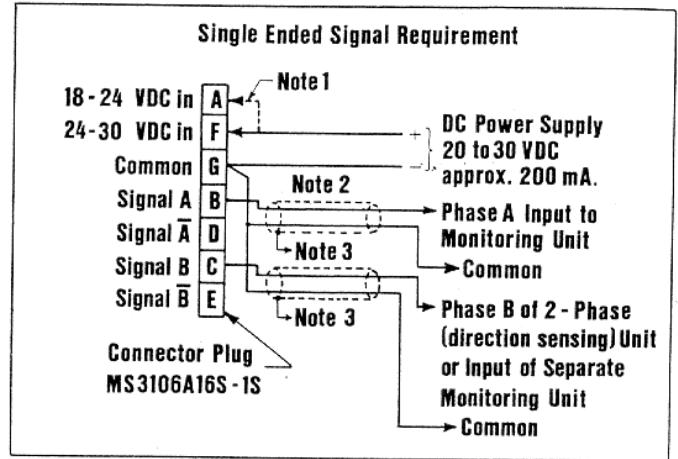


Note 1. Connect to terminal with voltage range closest to actual voltage of DC Power Supply.

Note 2. As shown above, each phase output must be individually shielded; however the DC Power input may be run inside the shield with either signal if this simplifies interconnection wiring, e.g. one Belden #8424 cable (or equiv.) for DC Power plus Signal A, and one Belden #8412 (or equiv.) cable for Signal B.

Note 3. Cable shields should be connected to the "common" of the receiving unit and/or to its earth ground connection as most suitable for the specific application.

Note 4. Interconnection cables specified in the wiring diagrams below are based on typical applications with cable lengths limited



to about 500 feet. Cable length, operating frequency, and receiving equipment affect choice of cable. Consult factory for recommendations for other conditions.

For bidirectional operation of the two-phase K927A, proper phasing of the two output channels is important. Phase A channel leads phase B for clockwise rotation of the shaft as viewed from the end of the housing with the end plate

## OUTLINE DRAWING

