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Encoder Instructions

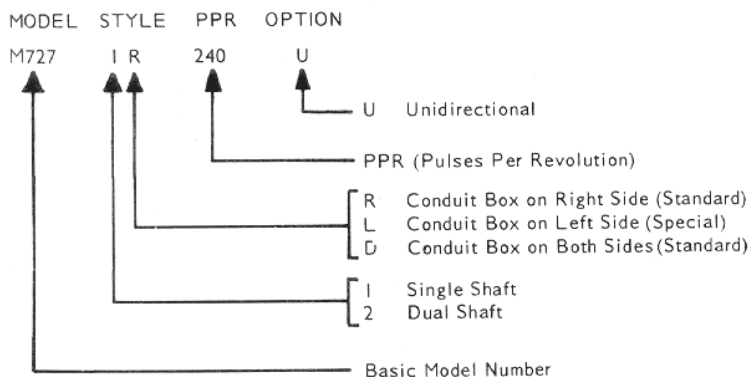
M727

INACTIVE DESIGN
 Replaced by Model AV485

Description

The Model M727 Pulse Generator is a zero-speed rotary transducer; that is, it can operate effectively down to zero RPM. The M727 generates a specific number of pulses for each rotation of its shaft. When the M727 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 large, non-breakable optical disc, rotating between an LED source and photo detector in an epoxy encapsulated sensing assembly to provide long life and high reliability. A rugged cast aluminum housing, hardened steel shaft, heavy-duty sealed bearings and slinger disc on shaft extension provide mechanical ruggedness required for industrial applications.

Various M727 options and how they are shown in the M727 part number are shown below:



CAUTION

The M727 is often used for speed feedback in drive systems, where any failure can cause a machine shutdown. While the M727 is designed for continuous mill operation, it is extra important to follow proper procedures with this unit.

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

DO NOT open a M727, or remove the sensor. This will void the warranty, as it can break a seal or cause the pickup to be misaligned.

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

DO NOT remove the connector from an unused output on a dual output M727. Otherwise, when it comes time to use the second output, the pins may be corroded.

DO NOT install M727 s (or any other rotating equipment) where liquids drip onto them. If necessary, provide a cover.

DO NOT connect grounded oscilloscopes, K761, or any grounded instrument to M727 output.

DO NOT connect oscilloscope or any instrument "common" to any pulse generator connection other than "common" (Pin A).

Specifications

Operating Power (each pickup).. 12 to 15 VDC at approx. 50 ma.

Output Signal (std. connection) Single channel (Single-Phase)

Pulses per revolution..... 30, 60, 120, 240 ppr.

Wave Shape..... Square Wave

Voltage Swing (No load)..... 0 to operating voltage (12-15 VDC)

Frequency..... 0 to 12 kHz max. at 3000 rpm (240 ppr)

0 to 10 kHz max. at 5000 rpm (120 ppr)

Output Signal (opt. connection)..Not Applicable

Output Impedance..... 1000 Ohms pull up, 10 ma. sink

Load Impedance.....M727 output is short circuit protected to common

Weight..... 15 lbs. (Style 2D)

Speed Range..... 0 to 3000 rpm (240 ppr unit)
 0 to 5000 rpm (120 ppr or less)

Mechanical

Starting Torque.....2.2 oz. - in. (typ.)

Shaft Inertia.....0.373 oz. - in. - sec²

Acceleration (max.)..... 5000 rpm/sec.

Operating Temperature.....32° to 140° F ambient

Installation

For best accuracy, the pulse generator must be driven by a positive drive rather than a friction drive. The following means of coupling are acceptable when properly installed: Direct Coupling, Timing Belt Pulleys, Chain Sprockets.

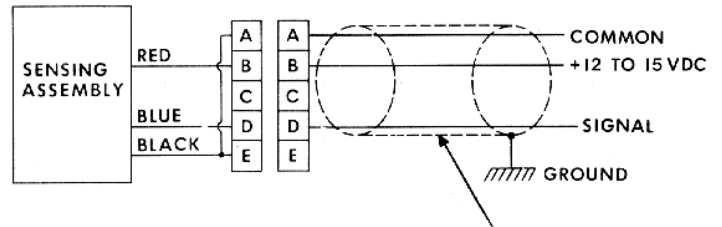
If a direct drive is used, use a flexible coupling and align the shafts as accurately as possible. (Misalignment should not exceed .010 inches). The pulse generator should not be subjected to any axial thrust. Overhanging loads should also be minimized. Installations using timing belts pulleys should have just enough belt tension to eliminate belt sag. Excessive tension will shorten belt and bearing service life.

CAUTION

Do not force or drive coupling member onto the output shaft, or damage to the bearings, pickup, or the rotor disc will result. Provide clearance between shaft end of M727 and the coupled driving shaft to allow for thermal expansion and end play.

For more details and special considerations in specifying and installing drive components, refer to separate Installation Instructions, Avtron Rotary Pulse Generators.

Wiring Diagram (Unidirectional Unit)



Reference system drawing for specific cable requirements where applicable. Physical properties of cable such as abrasion, temperature, tensile strength, solvents, etc. are dictated by the specific application. General electrical requirements are: stranded copper, 22 thru 16 gage, braid or foil with drain wire, 0.05 MF maximum total mutual or direct capacitance, outer sheath insulator, 1000 ft. max.

Outline Drawing

