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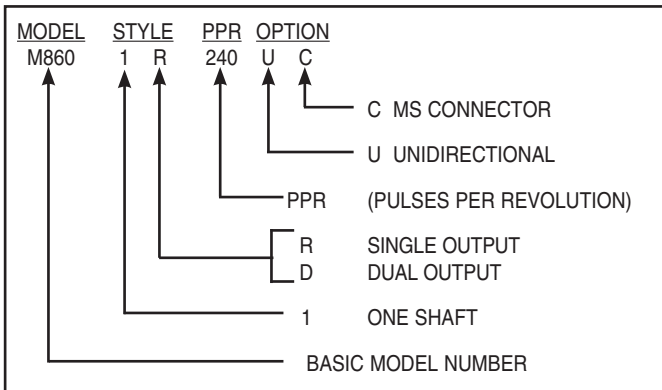
Encoder Instructions

M860
 INACTIVE DESIGN
 Replaced by Model AV56

DESCRIPTION

The Model M860 Pulse Generator is a zero-speed rotary transducer; that is, it can operate effectively down to zero RPM. The M860 is designed to face mount between two drive system elements, typically a motor and DC Tachometer generator having a NEMA C face mounting and dimensions. The M860 generates a specific number of pulses for each rotation of its shaft. When the M860 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 (pickup) to provide long life and high reliability. A rugged cast aluminum housing and self-aligning hardened steel shaft provide the mechanical ruggedness required for industrial applications.

The various M860 options and how they are indicated in the part number are shown below:



REPAIR OR REPLACEMENT

Service or repair of M860 pulse generators requires special test equipment and trained personnel. It is recommended that broken or otherwise inoperative pulse generators be returned to Avtron for repair. Units not under the original equipment warranty will be restored for a nominal charge on a short turn-around basis. It is recommended that units which are badly damaged or become inoperative after years of service be replaced by re-manufactured units (subject to availability) or new units. Re-manufactured units are restored to like-new condition and carry the same one-year warranty as new units, at a lower replacement cost.

INSTALLATION

The hollow shaft of the M860 aligns to and is supported by the shaft and bearing of the mating drive unit. The 3/16" square key and the 3/8-16 x 1" bolts required for mounting are provided. Direct drive of the combination assembly through a flexible drive coupling is required and attachment should follow coupling manufacturer's installation procedure. Prior to coupling and assembly, the misalignment shall not exceed 0.010" T.I.R. The pulse generator shall not be exposed to any axial thrust or to side loads from drives such as belt, chain, and gear.

CAUTION

DO NOT force or drive coupling member onto the M860 shaft, or damage to the bearing or displacement of the shaft and damage to the rotor disc and pickup will result. Provide clearance between the shaft extension of M860 and the coupled driving shaft to allow for thermal expansion and end play.

SPECIAL APPLICATION NOTES

Interconnection cables specified in the wiring diagram 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.

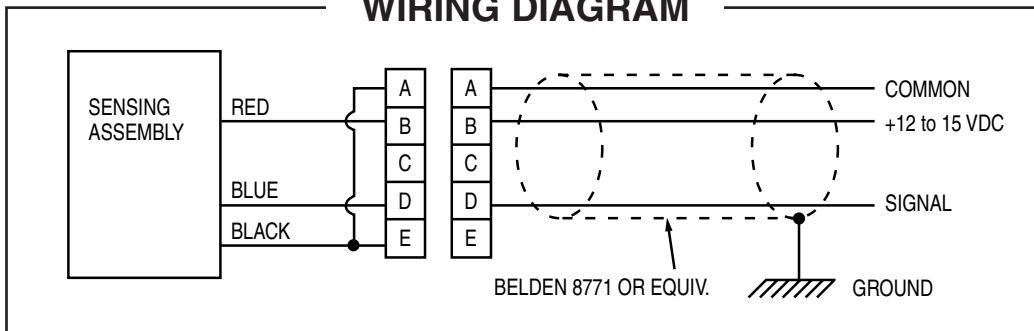
Each pulse generator is shipped with a quantity of grease in the female bore. Do not clean out this grease. It is applied to inhibit the occurrence of fretting corrosion. If the pulse generator is removed for service, an application of lithium base grease containing Molybdenum Disulfide (MoS₂) must be applied before re-installing.

Examples:

MOLY-LITH[®] Manufactured by Pennsylvania Refining Co., Cleveland, Ohio.

MOLYKOTE[®] Manufactured by Dow Corning Corp., Midland, MI.

WIRING DIAGRAM



M860 SPECIFICATIONS

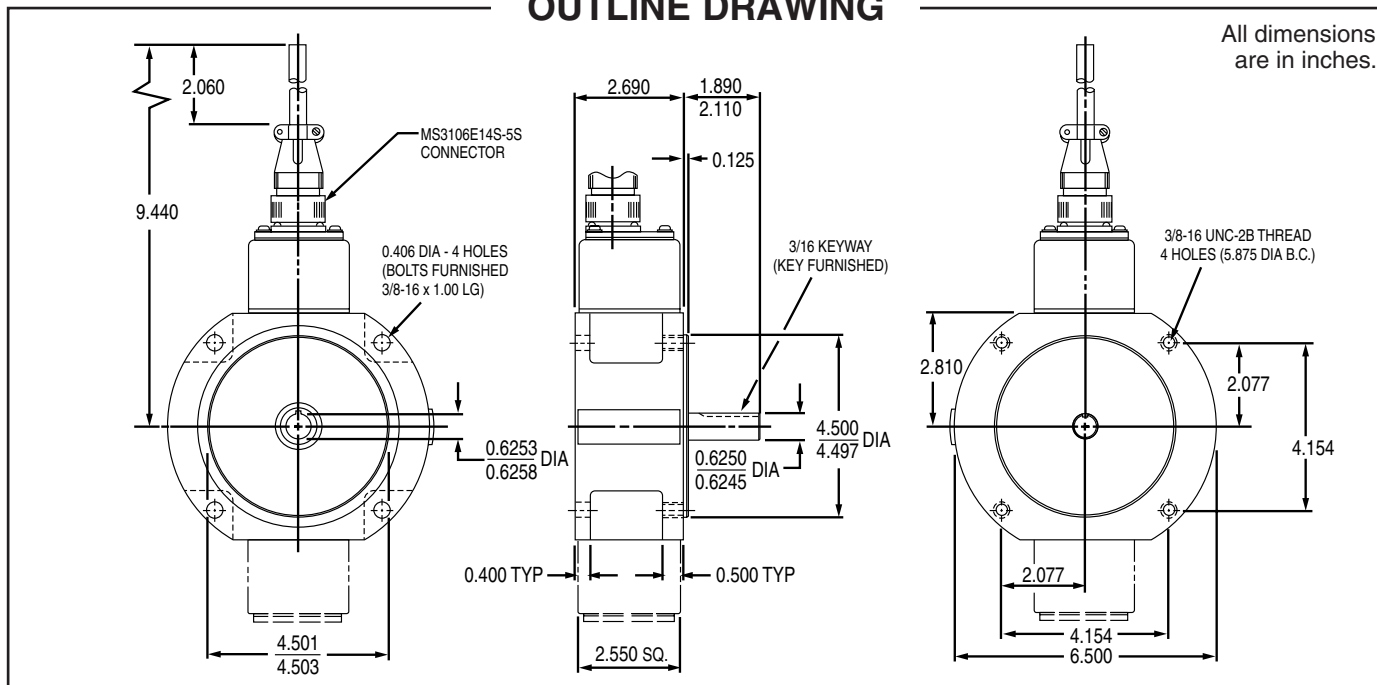
INPUTS

MECHANICAL.....	Shaft rotation directly proportional to process variable monitored.
OPERATING POWER (EACH PICKUP).....	12 to 15 VDC at approx. 50 mA
OUTPUT SIGNAL.....	Single channel (single phase)
WAVE SHAPE.....	Square wave
VOLTAGE SWING (NO LOAD).....	LOW = 0 to +1.5 volts HIGH = Supply voltage minus 1.5 volts
FREQUENCY RANGE.....	0 to 12 KHz max. at 3000 RPM
OUTPUT IMPEDANCE.....	1000 Ohms Pull-up, 10 mA sink
OUTPUT PROTECTION.....	Short circuit protected to common
SPEED RANGE.....	0 to 3000 RPM
OPERATING TEMPERATURE.....	32° to 140° F ambient
WEIGHT.....	13 lbs.

MECHANICAL

STARTING TORQUE.....	4 oz. -in. (TYP)
SHAFT INERTIA.....	0.084 oz. -in. -sec ²
ACCELERATION (MAX.).....	10,000 RPM/SEC
COUPLING RECOMMENDED.....	Zero backlash type Thomas DBZ or equal (where axial end play exceeds ± .020", use Thomas CCX or equal).

OUTLINE DRAWING



Features subject to change without notice. Avtron standard warranty applies. Copies available upon request.



REV. 7-05-01