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Encoder Instructions

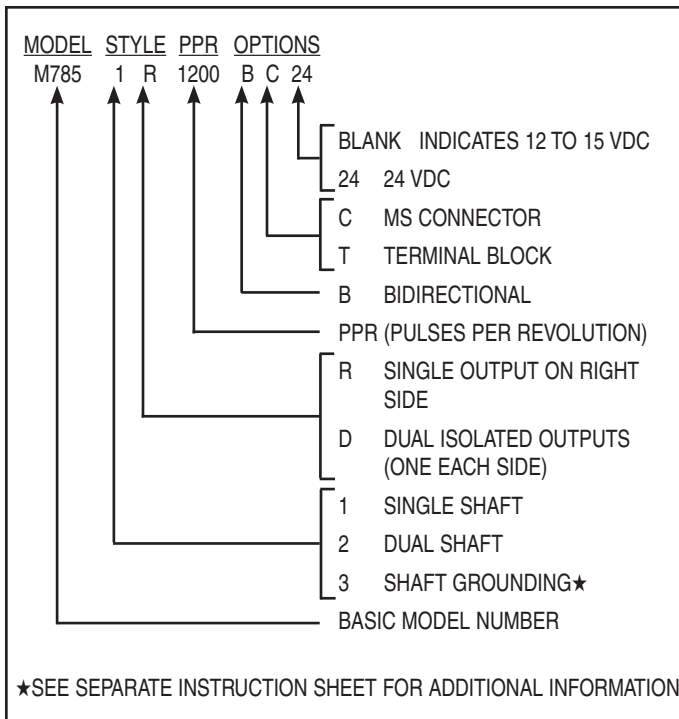
M785
 INACTIVE DESIGN
 Replaced by Model AV485

DESCRIPTION

The Model M785 Pulse Generator is a zero-speed rotary transducer, allowing operation down to zero RPM. The M785 generates a specific number of pulses for each rotation of its shaft. When 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 disc rotating between an infrared source and four photo receptors. A rugged cast aluminum housing, steel shaft, and heavy-duty sealed bearings provide mechanical ruggedness required for industrial applications.

The M785's second output is electrically independent and totally isolated. For many applications, this feature provides a running spare by simply interchanging output connectors.

Various M785 options and how they are indicated in the M785 part number are shown below:



CAUTION

DO NOT open an M785. This will void the warranty.

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

Do not install M785's (or any other rotating equipment) where liquids will be sprayed or hosed onto them. If necessary, provide a shield.

DO NOT connect grounded oscilloscopes or any grounded instrument to M785 output.

DO NOT connect oscilloscope or any instrument common to any pulse generator connection other than common.

INSTALLATION

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

With a direct drive, use a flexible coupling and align the shafts as accurately as possible. The pulse generator 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 or rust if necessary. Consider driving shaft endplay when positioning coupling.

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

SPECIAL APPLICATION NOTES

For bidirectional operation of the 2-phase M785, 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 (anti-drive end on units with single shaft extension).

Interconnection cables specified in the wiring diagrams are based on typical applications. Refer to the 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 gauge, braid or foil with drain wire, 0.05 MF maximum total mutual or direct capacitance, outer sheath insulator, 1,000 ft. max.

M785 SPECIFICATIONS:

	15 V OPERATING VOLTAGE	24 V OPERATING VOLTAGE
OPERATING POWER (EACH PICKUP)	12 TO 15 VDC AT APPROX. 125 mA (NO LOAD)	24 VDC AT APPROX. 125 mA (NO LOAD)
OUTPUT SIGNAL	TWO CHANNELS IN QUADRATURE (2-PHASE BIDIRECTIONAL)	TWO CHANNELS IN QUADRATURE (2-PHASE BIDIRECTIONAL)
PULSES PER REVOLUTION.....	240, 360, 600, 800, 1024, 1200 PPR STANDARD — OTHERS AVAILABLE UPON REQUEST	240, 360, 600, 800, 1024, 1200 PPR STANDARD — OTHERS AVAILABLE UPON REQUEST
WAVE SHAPE	SQUARE WAVE	SQUARE WAVE
VOLTAGE OUTPUT	HIGH: SUPPLY VOLTAGE 1 VOLT (NO LOAD) 120 OHMS PULL-UP LOW: 1.0 VOLT MAX. 50mA SINK	HIGH: SUPPLY VOLTAGE 1 VOLT (NO LOAD) 330 OHMS PULL-UP LOW: 1.0 VOLT MAX. 50mA SINK
FREQUENCY	50KHz MAX.	50KHz MAX.
OUTPUT PROTECTION	SHORT CIRCUIT PROTECTION COMMON	SHORT CIRCUIT PROTECTION COMMON
OPERATING TEMPERATURE	0° TO 160° F AMBIENT	0° TO 160° F AMBIENT
WEIGHT	15 LBS. (STYLE 2D)	15 LBS. (STYLE 2D)
MECHANICAL		
SPEED RANGE	0 TO 3000 RPM	0 TO 3000 RPM
STARTING TORQUE.....	2.2 OZ.-IN. (TYP.)	2.2 OZ.-IN. (TYP.)
SHAFT INERTIA.....	0.1 OZ.-IN.-SEC ²	0.1 OZ.-IN.-SEC ²
ACCELERATION (MAX.).....	5000 RPM/SEC	5000 RPM/SEC
COUPLING RECOMMENDED.....	ZERO BACKLASH, THOMAS MINIATURE FLEXIBLE OR EQUIVALENT. WHERE AXIAL ENDPLAY EXCEEDS +/-0.020 INCH, USE THOMAS CCX OR EQUIVALENT.	ZERO BACKLASH, THOMAS MINIATURE FLEXIBLE OR EQUIVALENT. WHERE AXIAL ENDPLAY EXCEEDS +/-0.020 INCH, USE THOMAS CCX OR EQUIVALENT.

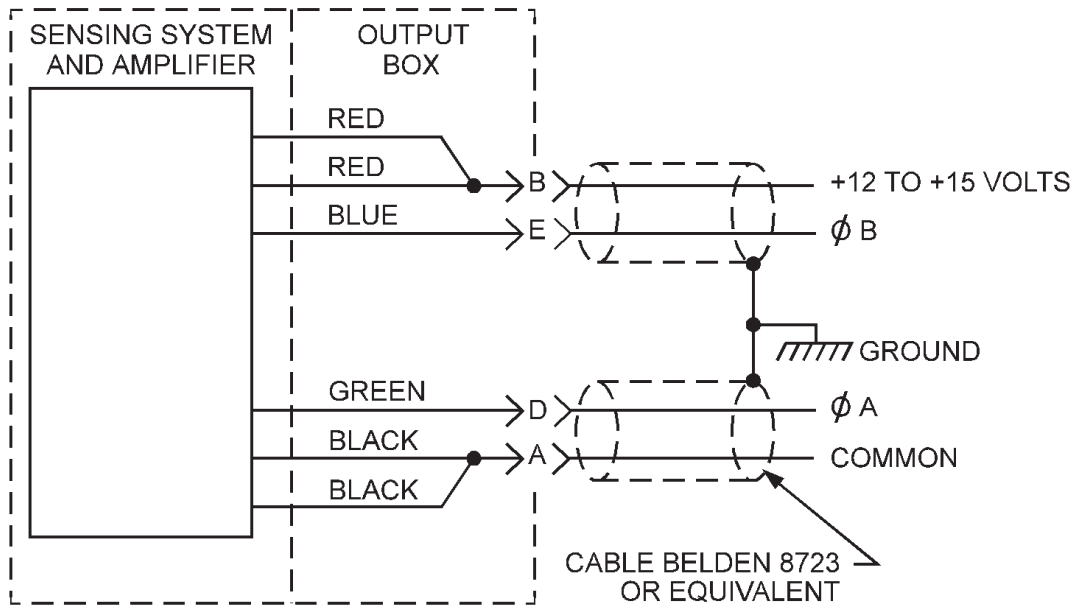
NOTE: AVTRON STANDARD WARRANTY APPLIES.
COPIES AVAILABLE UPON REQUEST.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

WIRING DIAGRAM

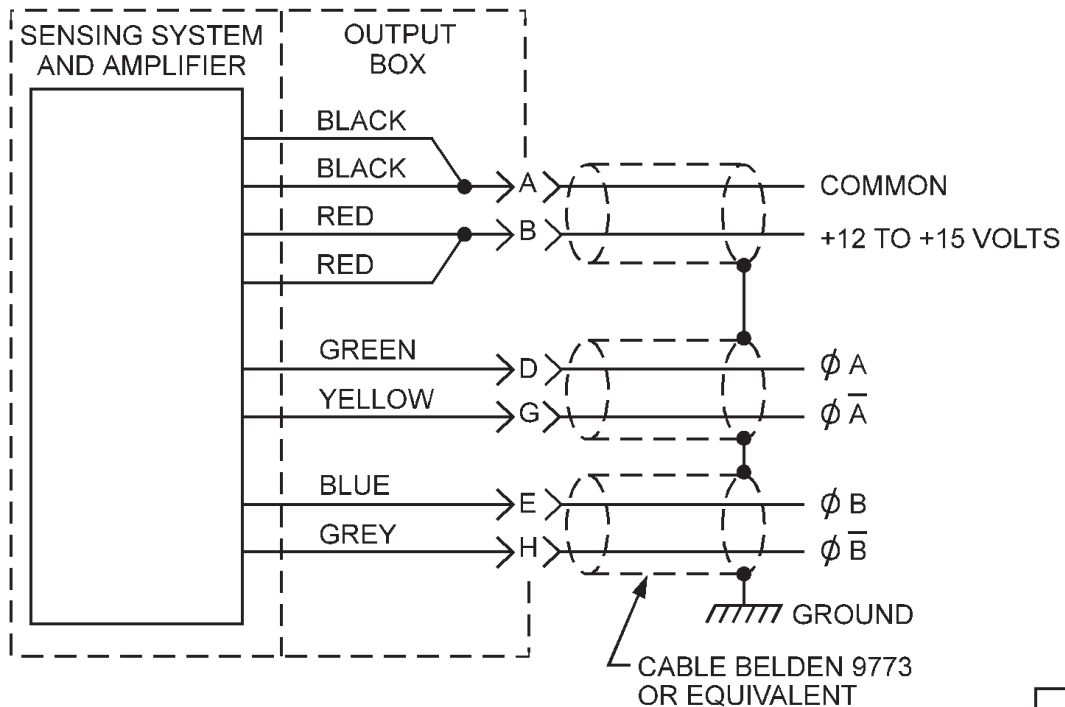
FOR SINGLE ENDED APPLICATIONS

M785 PULSE GENERATOR



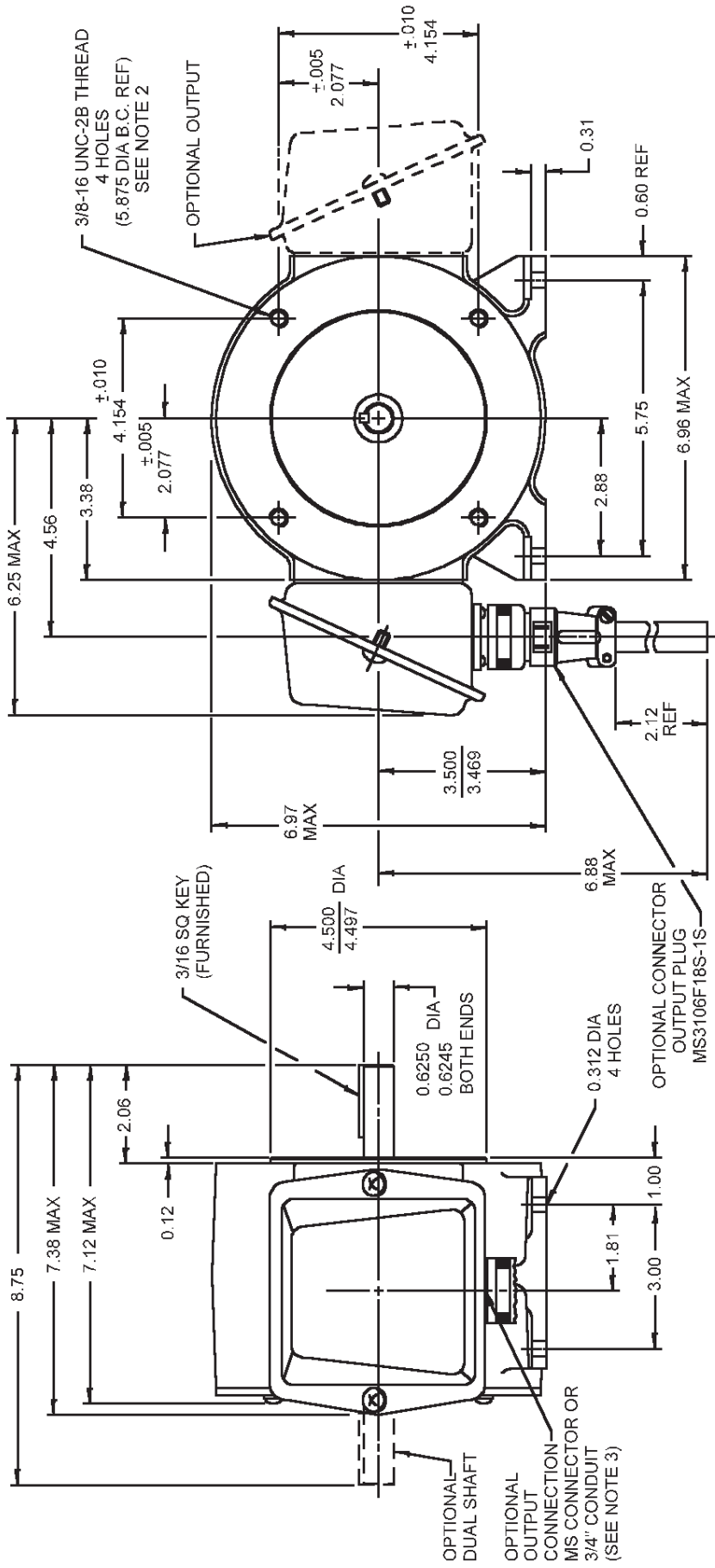
FOR DIFFERENTIAL APPLICATIONS

M785 PULSE GENERATOR



WDM785D119A

NOTE: OPTIONAL OUTPUT CONNECTORS ARE SHOWN FACING DOWN FOR CLARITY. CONNECTORS WILL BE POSITIONED TOWARDS "C" FACE FOR SHIPMENT FROM FACTORY.



3- OUTPUT BOX MAY BE ROTATED 90° IN ANY ONE OF 4 POSITIONS.
 2- PILOT MOUNTING CONFORMS TO A NEMA 56C FACE.

1 - ALL DIMENSIONS ARE IN INCHES



INDUSTRIAL AUTOMATION, INC.

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