

## HTT-400N-180E Specification Sheet

SHEET # 940-2T890

### DESCRIPTION

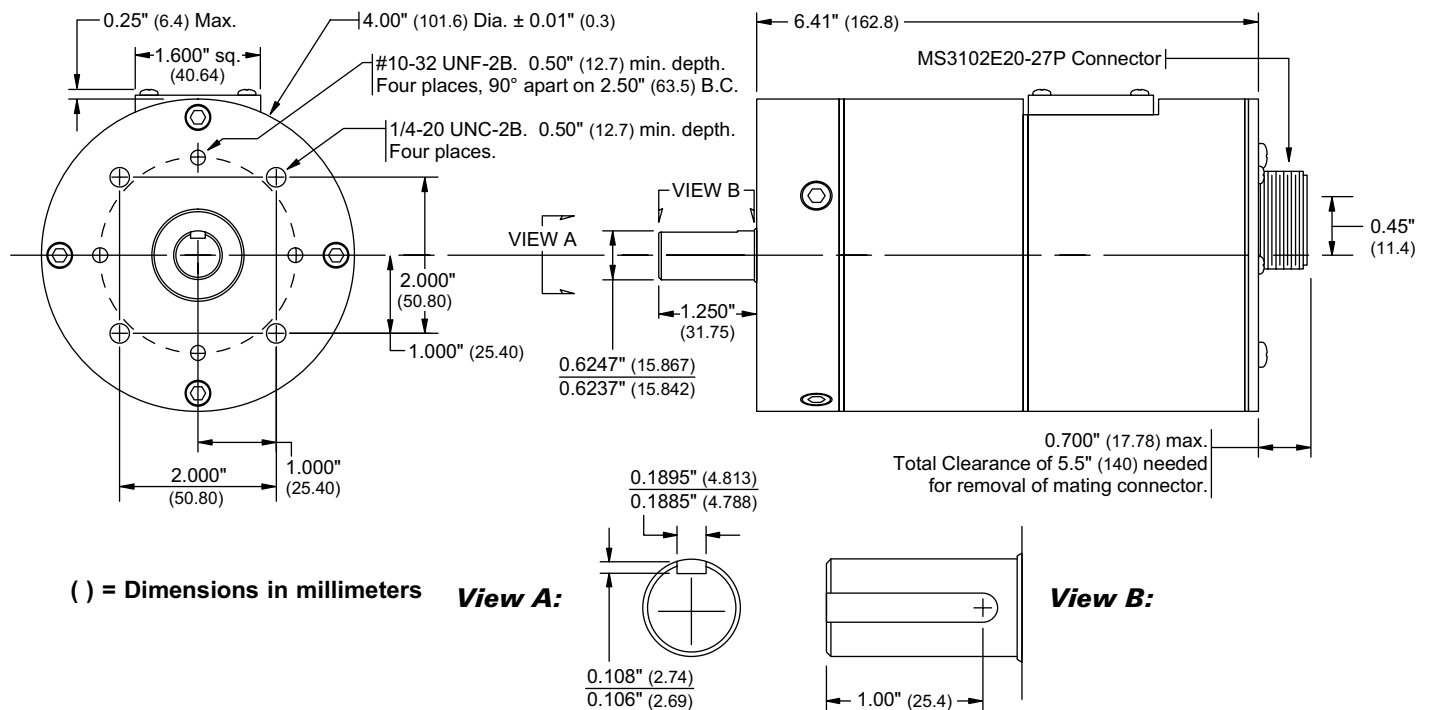
The HTT-400N-180E is an absolute multi-turn transducer that incorporates nuclear hardened resolvers in an industry standard four inch diameter package. The transducer has a short term tolerance of  $1 \times 10^4$  rads and a 40 year exposure limit of  $2.2 \times 10^8$  rads. The transducer can encode up to 180 turns of travel. The position resolution within a turn is dictated by the electronics that decode the position value. AMCI electronics offer either 10 bit resolution for 1,024 counts/turn (184,320 counts/180 turns) or 12 bit resolution for 4,096 counts/turn (737,280 counts/180 turns).

The 5/8" shaft and oversized sealed bearings allow you to directly mount gears or pulleys on the shaft. However, use a flexible coupler when attaching the transducer to a machine shaft. Even a small misalignment or movement in the machine shaft can cause very large radial and axial loads on the transducer bearings if the two shafts are directly coupled.

Two bolt patterns are available on the face of the transducer. The 1/4"-20 is AMCI's standard bolt pattern for our HT-20 line of transducers. The #10-32 pattern is used by AVG/Autotech. Having both patterns allows you to easily mount this transducer to many existing mounting plates.

Because the HTT-400N-1E is an absolute sensor, it cannot "lose counts" as an incremental transducer can. If the HTT-400N-1E appears to be losing counts when operating, the usual cause is a shaft slipping in a loose coupler. Check all mechanical couplings and use shaft keys wherever possible.

### DIMENSIONAL DRAWING



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## SPECIFICATIONS

### Mechanical

Shaft Loading: Radial: 100 lbs. max.  
 Axial: 50 lbs. max.  
*Bearing life rated at  $2 \times 10^9$  revolutions  
 minimum at specified shaft load.*  
 Starting Torque: 8 oz.in. @ 25°C  
 Moment of Inertia:  $8.75 \times 10^{-4}$  oz-in-sec<sup>2</sup> max.  
 Weight: 5.25 lbs

### Radiation Exposure Limits

Short Term Tolerance:  $1 \times 10^4$  rads  
 40 Year Exposure Limit:  $2.2 \times 10^8$  rads

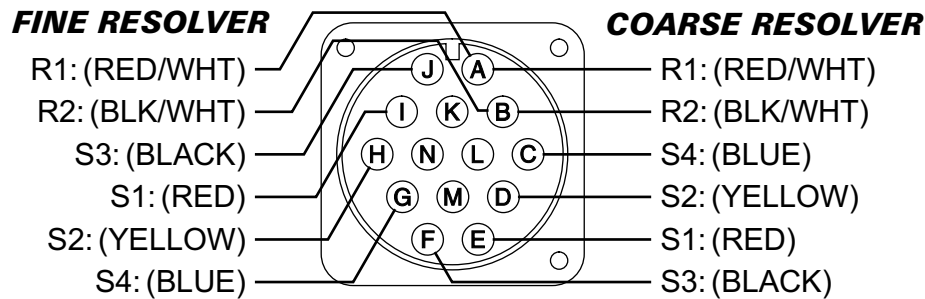
### Environmental

Shock: 50 g's for 11 mSec  
 Vibration: 15 g's to 2000 Hz  
 Operating Temp: -40 to 125°C (-40 to 257°F)  
 Enclosure: Anodized Aluminum Body  
 1070 Carbon Steel Shaft  
 Tefzil insulation on resolver  
 wires.  
 IP64 when conduit properly  
 sealed.

## CONNECTOR PINOUT

The figure below shows the connector pinout to industry standard designations and wire colors. The Fine and Coarse resolvers are linked with a vernier gear arrangement with the Fine resolver encoding the single turn position. Note that the wire colors given on the left are industry standard colors, not the actual colors of the Tefzil insulation used on the nuclear hardened resolvers. These colors are given in the table on the right.

Military Equivalent: MS3102E20-27P



Tefzil Resolver Wire Colors

- R1: Red
- R2: Black
- S1: Orange or White
- S2: Yellow
- S3: Green
- S4: Brown or Blue