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 1X10^6 rads and a 40 year exposure limit of 2.2X10^8 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 resoulution 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

( ) = Dimensions in millimeters

View A:

View B:
**SPECIFICATIONS**

**Mechanical**
- Shaft Loading: Radial: 100 lbs. max.
- Axial: 50 lbs. max.
- Bearing life rated at $2 \times 10^6$ revolutions
- Minimum at specified shaft load.
- Starting Torque: 8 oz.in. @ 25°C
- Moment of Inertia: 8.75X10^-4 oz-in-sec² max.
- Weight: 5.25 lbs

**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
- Tefzel insulation on resolver wires.
- IP64 when conduit properly sealed.

**Radiation Exposure Limits**
- Short Term Tolerance: 1X10⁴ rads
- 40 Year Exposure Limit: 2.2X10⁸ rads

**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 Tefzel insulation used on the nuclear hardened resolvers. These colors are given in the table on the right.

Military Equivalent: MS3102E20-27P

<table>
<thead>
<tr>
<th>FINE RESOLVER</th>
<th>COARSE RESOLVER</th>
<th>Tefzel Resolver Wire Colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1: (RED/WHT)</td>
<td>R1: (RED/WHT)</td>
<td>R1: Red</td>
</tr>
<tr>
<td>R2: (BLK/WHT)</td>
<td>R2: (BLK/WHT)</td>
<td>R2: Black</td>
</tr>
<tr>
<td>S3: (BLACK)</td>
<td>S4: (BLUE)</td>
<td>S1: Orange or White</td>
</tr>
<tr>
<td>S1: (RED)</td>
<td>S2: (YELLOW)</td>
<td>S2: Yellow</td>
</tr>
<tr>
<td>S2: (YELLOW)</td>
<td>S1: (RED)</td>
<td>S3: Green</td>
</tr>
<tr>
<td>S4: (BLUE)</td>
<td>S3: (BLACK)</td>
<td>S4: Brown or Blue</td>
</tr>
</tbody>
</table>

www.amci.com