Amphenol
MILITARY HIGH SPEED

SINGLE-CHANNEL 1000BASE-T TO SGMII ETHERNET CONVERTER

PDS-367

DESCRIPTION

Amphenol's 1000BASE-T to SGMII Ethernet Converter uses SerDes technology and protocol conversion with a new level of ruggedization. Utilizing Amphenol's 38999 connectors with a quadraxial cable, It has one port of Gigabit Ethernet and is compliant with IEEE 802.3ab Ethernet Standards and Specifications. A Hermetic option is also available with a helium leak rate of 10-4 cc/sec. This product line is rugged, flexible, affordable, and can be used in harsh environment avionics, ground systems, or naval application.

FEATURES

- Single Channel - 1G Base-T to SGMII Ethernet
- Quadraxial Cable
- 5V power connection
- Low power consumption - Less than 1 watt
- 2 ports of Gigabit Ethernet
- Conversion of 1000BASE-T to SGMII
- EMI/EMC compatible
- Compliant with IEEE 802.3ab Ethernet Standards
- Hermetic option available with a helium leak rate of 10-4 cc/sec
- Operational temperature -40°C to +85°C
- Storage temperature -50°C to +125°C

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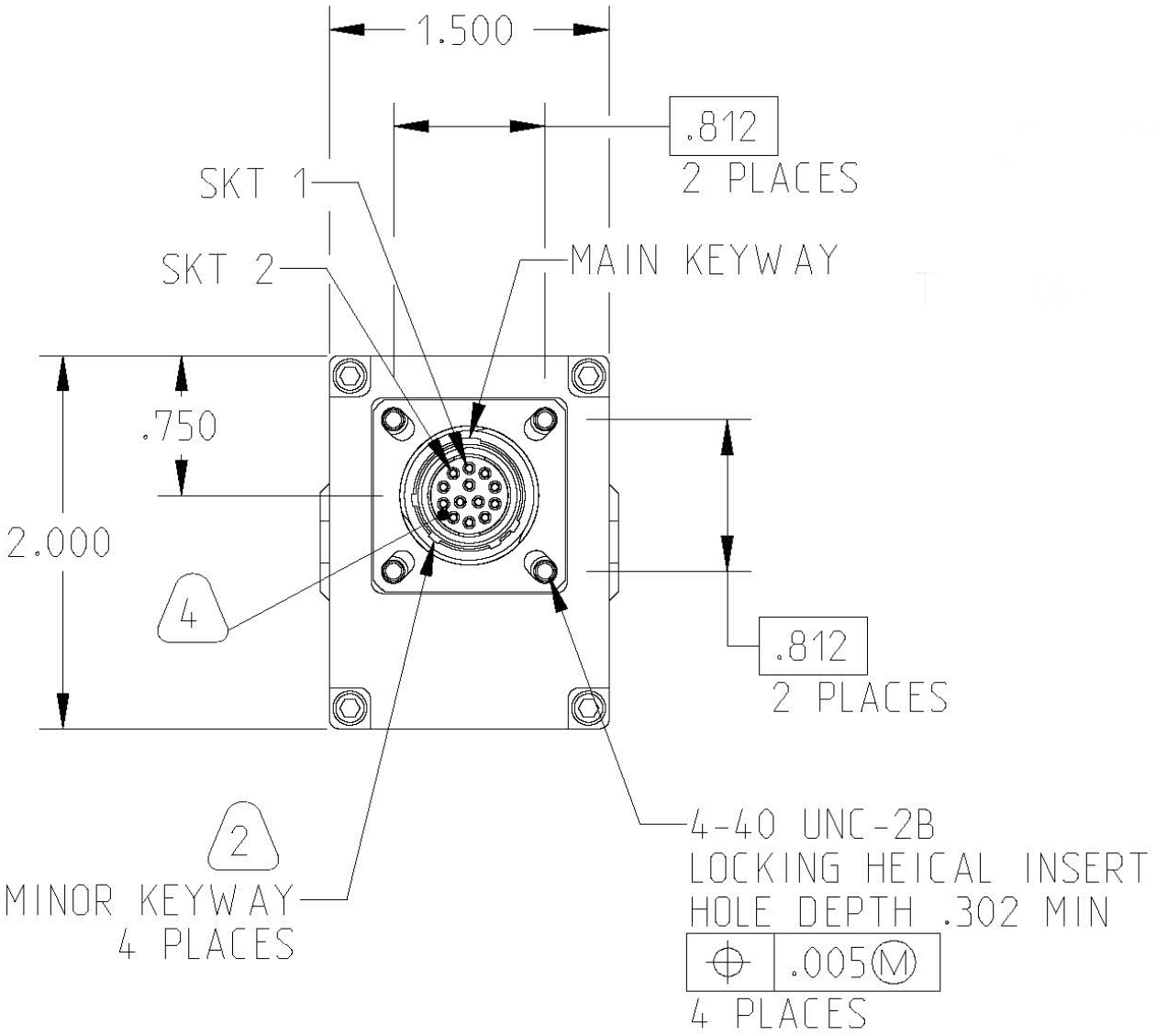
DIMENSIONAL INFORMATION



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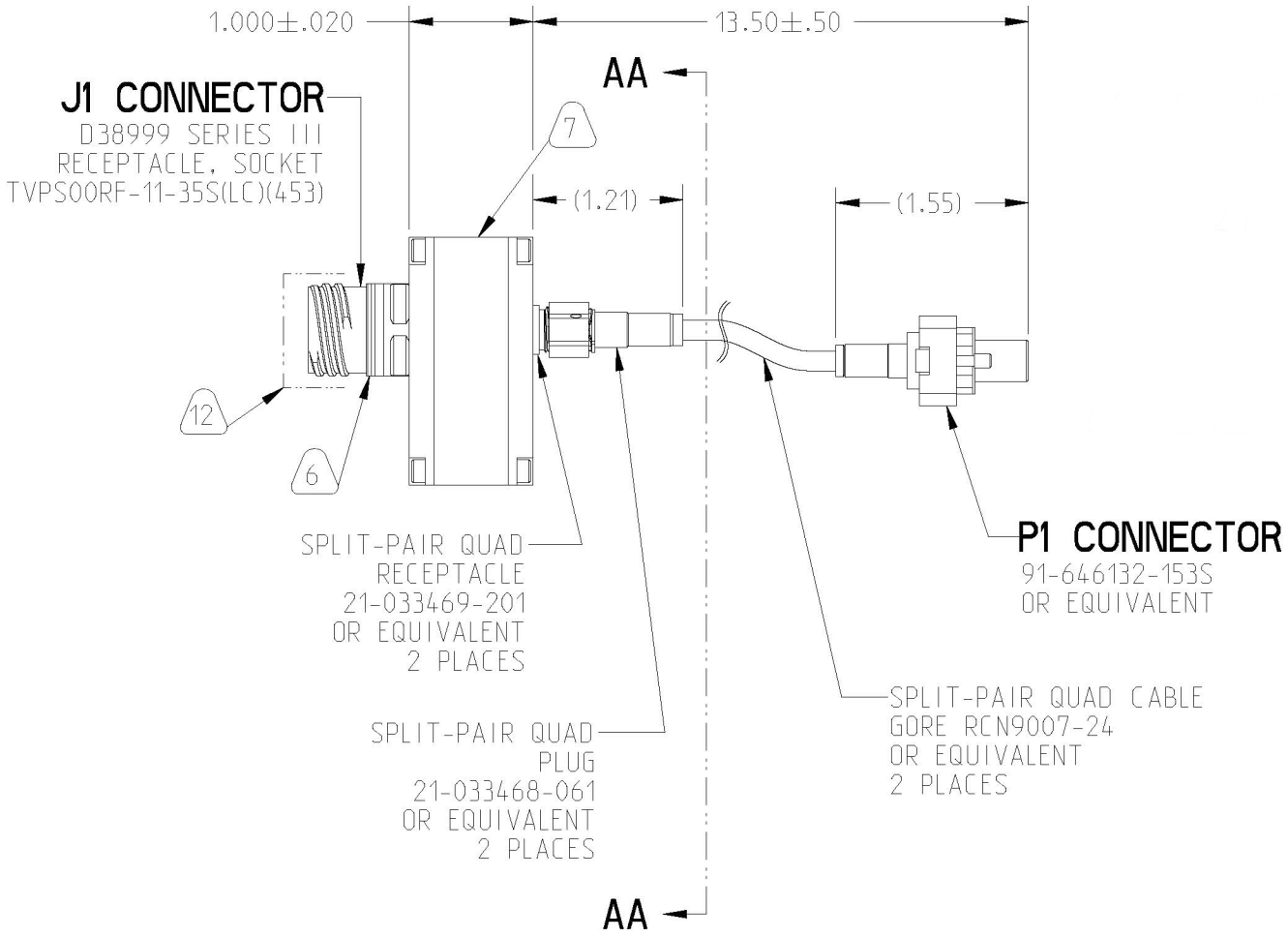

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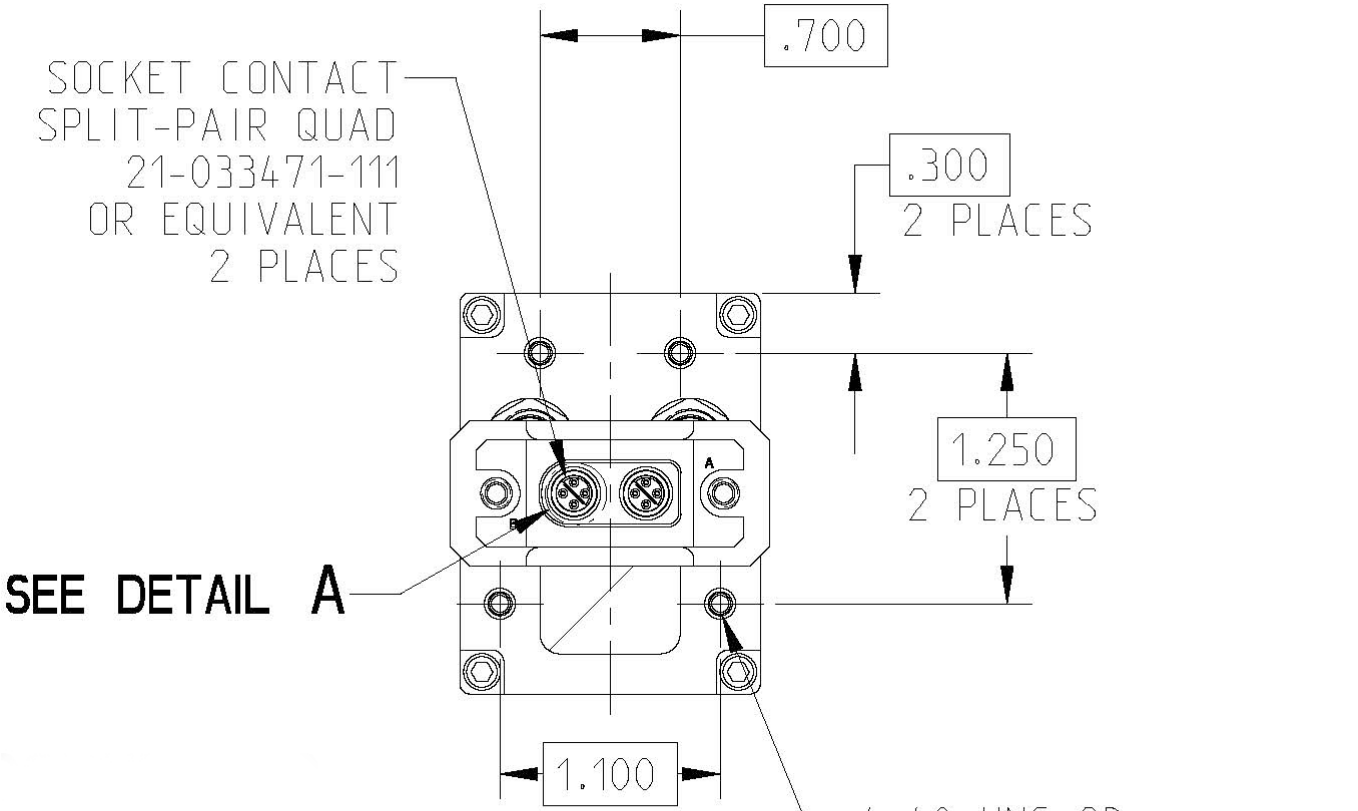

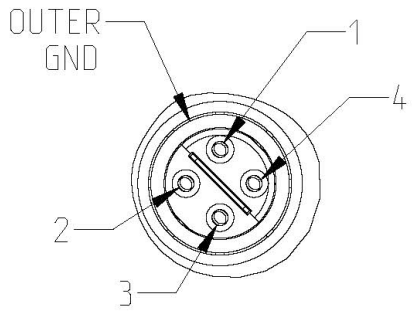

DETAIL A
SPLIT-PAIR QUAD
SCALE 4.000

PART NUMBER

PART NUMBER	J1 CONNECTOR KEYWAY ROTATION
CF-02CA00-02N	N (NORMAL)
CF-02CA00-02A	A
CF-02CA00-02B	B
CF-02CA00-02C	C
CF-02CA00-02D	D
CF-02CA00-02E	E

I/O CHART

P1 I/O CHART	
PIN	DESCRIPTION
A-1	SGMII_TX+
A-4	SGMII_TX-
A-2	SGMII_RX-
A-3	SGMII_RX+
A-OUTER	GND
B-1	5V3_PWR
B-4	5V3_PWR
B-2	PWR_RTN
B-3	PWR_RTN
B-OUTER	GND

J1 I/O CHART	
SKT	DESCRIPTION
1	SPARE
2	1GBase-T_DA+
3	1GBase-T_DA-
4	SPARE
5	1GBase-T_DB-
6	SPARE
7	1GBase-T_DC+
8	SPARE
9	1GBase-T_DD+
10	1GBase-T_DD-
11	SPARE
12	1GBase-T_DB+
13	1GBase-T_DC-

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Amphenol Ruggedization Design

OVERVIEW:

Amphenol integrated electronic products are designed and manufactured to our Ruggedization guidelines listed below. These guidelines ensure years of reliable operation in harsh environment applications where extreme operating temperatures, shock, vibration, and corrosive atmospheres are regularly experienced. Unless otherwise noted, the parts conform to the below specifications

TEMPERATURE:

- Operating Temperature
  - Thermal Cycles between -40°C and 85°C while device is operating
- Temperature is measured at chassis housing or card edge
  - Storage Temperature- Thermal Cycles between -55°C and 125°C

HUMIDITY:

- Operating Humidity
  - Humidity cycle between 0-100% non-condensing humidity while device operating
- Storage Humidity
  - Humidity cycle between 0-100% condensing humidity

SEALING:

- Sealing can be optionally provided at the MIL-DTL-38999 interface with up to 10^{-5} cc/sec performance

SHOCK AND VIBRATION:

- Sine Vibration
  - PORT1_10G Peak, 5-2,000Hz
  - Based on a sine sweep duration of 10 minutes per axis in each of three mutually perpendicular axes. May be displacement limited from 5 to 44 Hz, depending on specific test.
- Random Vibration
  - 0.0005 @ 5Hz, 0.1 @ 15 Hz, 0.1 @ 2,000 Hz
  - 60 minutes per axis, in each of three mutually perpendicular axes.
- 40 G Peak Shock Cycle
  - Three hits in each axis, both directions, ½ sine and terminal-peak saw tooth, Total 36 hits.

FLUIDS SUSEPTABILITY:

- MIL-DTL-38999 receptacle interface per EIA-364-10E

ALTITUDE:

- -1,500 to 60,000 ft Altitude Testing w/ Rapid Depressurization

ELECTRONMAGNETIC COMPATIBILITY:

- Designed to comply with MIL-STD-461E

PRINTED CIRCUIT BOARD ASSEMBLIES:

- Conformal Coat
  - Amphenol performs Conformal Coating to both sides of printed circuit board assemblies using HUSMISEAL IB31 in accordance with IPC-610, Class 3.
- Printed Circuit Board Rigidity
  - Amphenol printed circuit boards are fabricated in accordance with IPC-6012, Class 3.
- Printed Circuit Board Fabrication
  - Amphenol printed circuit boards acceptance criteria is in accordance with IPC-610, Class 3.

OTHER:

- Designed for MIL-STD-704F Power
- Salt/Fog/Dust
- Fluids and Rain
- Explosive atmosphere

RELIABILITY PREDICTIONS (MTBF):

Amphenol can perform Mean Time Between Failure (MTBF) reliability analysis in full compliance with MIL-HDBK-217F-1 Parts Count Prediction and MIL- HDBK-217F-1 Parts Stress Analysis Prediction. We can also perform reliability analyses in full compliance of ANSI/VITA 51.1 if it is required or preferred over the later method.

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