

9 Channel – 10GBASE-T Ethernet Switch

Rugged Ethernet 10G Switch with Micro-D and Octonet Connector Interfaces



DESCRIPTION

Amphenol Military High Speed is continually evolving their line of industry-leading, rugged, and high-speed media converters and Ethernet switches. This latest form factor is designed with specific customer applications in mind, utilizing the latest high-speed Octonet copper contacts for Gigabit Ethernet and MIL-DTL-83513 Micro-D connectors.

The following product has proven reliability and performance along with a rugged and versatile design creates a robust network switch, meeting and exceeding the harshest of environments for any application. Dependable internal electronics combined with compliant copper contacts provides any systems with all the benefits that a world-class connector company like Amphenol can provide!

FEATURES

- 9 channels of 1G/10GBASE-T Ethernet using Octonet contacts and a rectangular panel mount connector
- Copper protocols are auto negotiated and compliant to 802.3an
- Compact size and package, total volume = 40 in³
- High-performance thermal surface for efficient thermal management
- Power consumption under 45W at 10GBase-T for 9 channels
- Cold start functionality for low temperature performance (-54°C)
- Interfaces for power, diagnostics, and others.
- Operational temperature of -40°C to +85°C
- Storage temperatures of -62°C to 95°C
- EMI/EMC sealed and compatible.
- 28VDC input voltage (+/- 20%)
- Reduces system complexity.
- Guarantees seamless, mission-critical connections between computer systems and other devices.
- Proven and reliable L2/L3 Marvell ROS embedded Linux software (manuals available upon request)

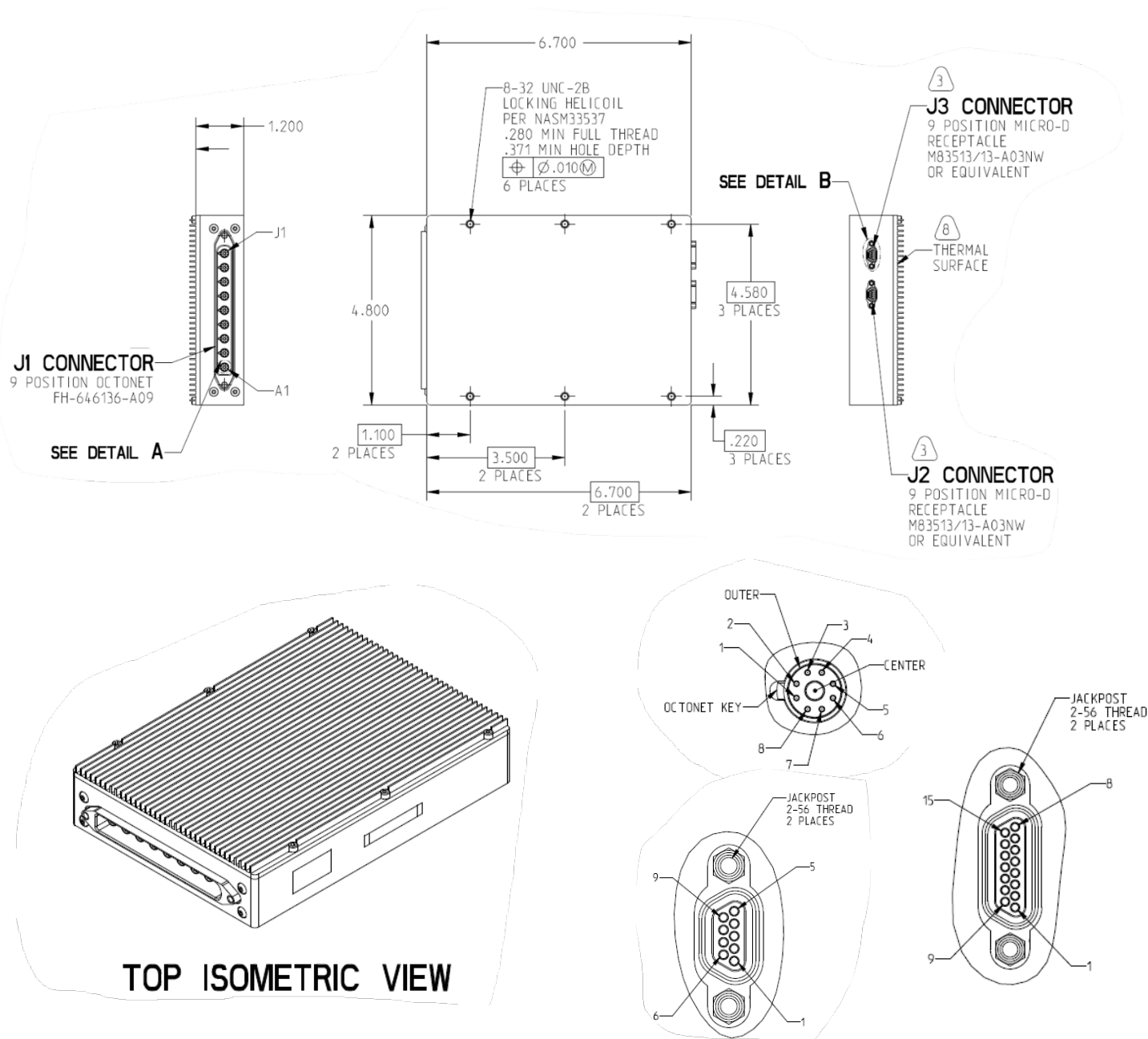


ORDERING INFORMATION

PART NUMBER	DESCRIPTION
CF-02WA00-10X	Ethernet Network Switch with Micro-D and Octonet Connectors

MECHANICAL SPECIFICATIONS

CF-02WA00-10X



PINOUT

I/O CHART		
CONNECTOR DESCRIPTION	PIN NO.	SIGNAL
J1 9 POSITION OCTONET FH-646136-A09	A1-1	1G/10GBASE-T_CH1-DA+
	A1-2	1G/10GBASE-T_CH1-DA-
	A1-3	1G/10GBASE-T_CH1-DB+
	A1-4	1G/10GBASE-T_CH1-DB-
	A1-5	1G/10GBASE-T_CH1-DC+
	A1-6	1G/10GBASE-T_CH1-DC-
	A1-7	1G/10GBASE-T_CH1-DD+
	A1-8	1G/10GBASE-T_CH1-DD-
	A1-CENTER	GND
	A1-OUTER	
	B1-1	1G/10GBASE-T_CH2-DA+
	B1-2	1G/10GBASE-T_CH2-DA-
	B1-3	1G/10GBASE-T_CH2-DB+
	B1-4	1G/10GBASE-T_CH2-DB-
	B1-5	1G/10GBASE-T_CH2-DC+
	B1-6	1G/10GBASE-T_CH2-DC-
	B1-7	1G/10GBASE-T_CH2-DD+
	B1-8	1G/10GBASE-T_CH2-DD-
	B1-CENTER	GND
	B1-OUTER	
	C1-1	1G/10GBASE-T_CH3-DA+
	C1-2	1G/10GBASE-T_CH3-DA-
	C1-3	1G/10GBASE-T_CH3-DB+
	C1-4	1G/10GBASE-T_CH3-DB-
	C1-5	1G/10GBASE-T_CH3-DC+
	C1-6	1G/10GBASE-T_CH3-DC-
	C1-7	1G/10GBASE-T_CH3-DD+
	C1-8	1G/10GBASE-T_CH3-DD-
	C1-CENTER	GND
	C1-OUTER	
	D1-1	1G/10GBASE-T_CH4-DA+
	D1-2	1G/10GBASE-T_CH4-DA-
	D1-3	1G/10GBASE-T_CH4-DB+
	D1-4	1G/10GBASE-T_CH4-DB-
	D1-5	1G/10GBASE-T_CH4-DC+
	D1-6	1G/10GBASE-T_CH4-DC-
	D1-7	1G/10GBASE-T_CH4-DD+
	D1-8	1G/10GBASE-T_CH4-DD-
	D1-CENTER	GND
	D1-OUTER	
	E1-1	1G/10GBASE-T_CH5-DA+
	E1-2	1G/10GBASE-T_CH5-DA-
	E1-3	1G/10GBASE-T_CH5-DB+
	E1-4	1G/10GBASE-T_CH5-DB-
	E1-5	1G/10GBASE-T_CH5-DC+
	E1-6	1G/10GBASE-T_CH5-DC-
	E1-7	1G/10GBASE-T_CH5-DD+
	E1-8	1G/10GBASE-T_CH5-DD-
	E1-CENTER	GND
	E1-OUTER	

I/O CHART		
CONNECTOR DESCRIPTION	PIN NO.	SIGNAL
J1 9 POSITION OCTONET FH-646136-A09	G1-1	1G/10GBASE-T_CH1-DA+
	G1-2	1G/10GBASE-T_CH1-DA-
	G1-3	1G/10GBASE-T_CH1-DB+
	G1-4	1G/10GBASE-T_CH1-DB-
	G1-5	1G/10GBASE-T_CH1-DC+
	G1-6	1G/10GBASE-T_CH1-DC-
	G1-7	1G/10GBASE-T_CH1-DD+
	G1-8	1G/10GBASE-T_CH1-DD-
	G1-CENTER	GND
	G1-OUTER	
	H1-1	1G/10GBASE-T_CH2-DA+
	H1-2	1G/10GBASE-T_CH2-DA-
	H1-3	1G/10GBASE-T_CH2-DB+
	H1-4	1G/10GBASE-T_CH2-DB-
	H1-5	1G/10GBASE-T_CH2-DC+
	H1-6	1G/10GBASE-T_CH2-DC-
	H1-7	1G/10GBASE-T_CH2-DD+
	H1-8	1G/10GBASE-T_CH2-DD-
	H1-CENTER	GND
	H1-OUTER	
	J1-1	1G/10GBASE-T_CH3-DA+
	J1-2	1G/10GBASE-T_CH3-DA-
	J1-3	1G/10GBASE-T_CH3-DB+
	J1-4	1G/10GBASE-T_CH3-DB-
	J1-5	1G/10GBASE-T_CH3-DC+
	J1-6	1G/10GBASE-T_CH3-DC-
	J1-7	1G/10GBASE-T_CH3-DD+
	J1-8	1G/10GBASE-T_CH3-DD-
	J1-CENTER	GND
	J1-OUTER	
J2 POWER M83513/13-A03NW	1	PWR_IN 28V
	2	PWR_IN 28V
	3	N/C
	4	PWR_RTN
	5	PWR_RTN
	6	PWR_IN 28V
	7	PWR_IN 28V
	8	PWR_RTN
	9	PWR_RTN
J3 DEBUG M83513/13-A03NW	1	RS-232 TX
	2	RS-232 RX
	3	RS-232 Ground
	4	NC
	5	Debug CPU DA+
	6	Debug CPU DA-
	7	Debug CPU DB+
	8	Debug CPU DB-
	9	Reset
	10	Reset Ground
	11	NC
	12	Debug CPU DC+
	13	Debug CPU DC-
	14	Debug CPU DD+
	15	Debug CPU DD-

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 - 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 interface

ALTITUDE:

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

ELECTROMAGNETIC 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.

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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