

**HS Amphe-Lite Series**  
**Industrial High Speed Amphe-Lite**



**Commercial D38999 High Speed Diversity**  
**Speeding Industrial Revolution**

## Company Profile

Established in 2007, Amphenol Technology (Zhuhai) Co., Ltd. is a manufacturing facility for Amphenol Industrial Operations, which serves a number of industrial markets, included but not limited to Factory Automation, Transportation, Heavy Equipment, Alternative Energy, Oil & Gas, Server/Data Comm and Power Distribution.

Amphenol Technology (Zhuhai) Co., Ltd. covers an area of 306,449 square feet (28,470m<sup>2</sup>) and is equipped with CNCs, plating, injection molding and assembly workshops. This plant specializes in the design and manufacturing of industrial connectors featuring high power, high density inserts, medium to high voltage electrical properties, and harsh environment applications. Many of the products produced here have been certified by independent standards including UL, IEC/TUV, ATEX, IECEx and MA. The facility is also certified to ISO 9001, ISO 14001 and TS16949.



# Table of Contents



- **Markets and Applications.....P3**
- **Features & Benefits.....P4**
- **Differential Quadrax Contacts.....P5**
- **Quadrax Specifications.....P6**
- **Split Pair Quadrax Contacts .....P7**
- **Insert Arrangement Overview.....P8**
- **Insert Arrangement Layouts.....P9**
- **Ordering Guide and Dimensions.....P10**
- **Amphe-Lite Shell Ordering Guide.....P11**



RMT



Intelligent Equipment



Heavy-duty Off-Road Vehicles



Industrial Datalink

## Datalink Solutions for the Industrial Environment

- MWB-WTB Signal
- High-Speed Ethernet
- Cockpit (Display + Communications)
- Datalink in vibration and harsh environment

## Protocols

- 10/100/1000/10GBASE-T Ethernet
- DVI
- USB 2.0, 3.0
- Serial Rapid IO (up to 3.125Gbps)
- PCI-Express 2.0
- HDMI1.3a

# Features and Benefits



## Description

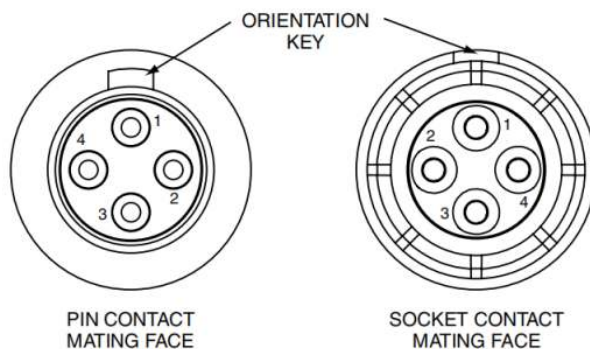
High data transfer rates, low power consumption, excellent EMI compatibility.

## Main Features

- Two 100 Ohm matched impedance differential pairs.
- The outer contact has a rugged wall section for durability.
- Available in size 8 crimp termination or PC tails.
- Requires modification of MIL-DTL-38999 connector to accommodate keyed contacts.

## Size 8 Quadrax Performance

- Bandwidth: Up to 1.25GHz
- Data Rate: Exceeding 2.5Gbps
- Voltage Rating: 500 Vrms max. @sea level
- Dielectric Withstanding Voltage: 1000 VAC rms between all inner contacts @sea level, 500 VAC rms between inner and outer contacts @sea level



## Mechanical

- Durability: Minimum 500 cycles
- Shock: EN2591-402 method A
- Vibration (MIL-DTL-38999) : EN2591-40
- Method A : Sinusoidal
- Method B (figure 3 and table 2, level J) : Random

## Environmental

- Salt Spray: 48 hours minimum
- Temperature Range: -55°C to +125°C

## Material

- Inner Contact: Copper Alloy
- Body: Copper Alloy
- Insulator: Thermoplastic
- Contact Plating: Gold Over Nickel Plated
- Contact Resistance - Signal Contacts (Low Level): Initial 6mΩ, after testing 7,5mΩ
- Consult Amphenol Industrial Operations for resistance changes under current and temperature
- For Signal Integrity, consult Amphenol Industrial Operations



# Split Pair Quadrax Contacts

## Description

For use with CAT 5E or CAT 6A type cable.

## Main Features

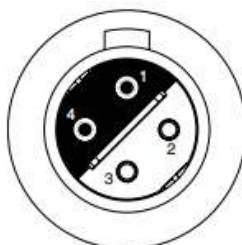
- Two 100 Ohm matched impedance differential pairs.
- The outer contact has a rugged wall section for durability.
- Available in size 8 crimp termination or PC tails.
- Requires modification of MIL-DTL-38999 connector to accommodate keyed contacts.

## Size 8 Split Pair Quadrax Performance

- Supports up to 6.5 Gbps per pair
- Enhanced crosstalk performance (compared to standard quadrax)
- Can be used for a variety of high speed applications beyond current quadrax design

## Applications

- 10/100/1000/10GBASE-T Ethernet
- DVI
- USB 2.0, 3.0
- HDMI 1.3a
- Serial Rapid IO (up to 3.125 Gbps)
- PCI-Express 2.0
- SATA 2.0 (up to 3 GHz)



PIN CONTACT  
MATING FACE



SOCKET CONTACT  
MATING FACE

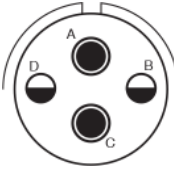
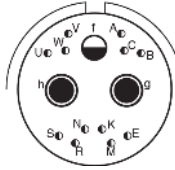
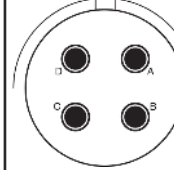
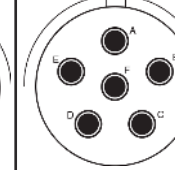
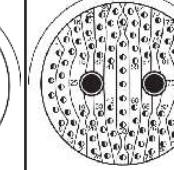




## Insert Arrangement Overview

Insert Pattern	Service Rating	Total						

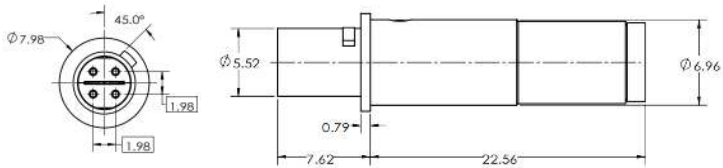
# Insert Arrangement Layouts

<b>Notice:</b> 1. Any size 8 can be replaced by Twinax or Quadrax.						
	Insert Arrangement	17-2	17-22	19-31	21-75	23-6
Service Rating	M	Coax				

## Quadrax Contacts Ordering Guide

Impedance (Ohms)	Inner Conductor (AWG)	Electrical Protocol†† Cable	PN	Pin or Socket	Cable OD	Termination Instruction Sheet
100Ω	24	1000 Base-T Gigabit Ethernet	ALQC-AA8-PB	Pin	.170~.206 inch	L-2119-D
			ALQC-AA8-SB	Socket	.170~.206 inch	
			ALQC-AA8-PA	Pin	.124~.165 inch	
			ALQC-AA8-SA	Socket	.124~.165 inch	

## Quadrax Contacts Dimensions



Quadrax Socket

Quadrax Pin

Split Pair Quadrax Socket

Split Pair Quadrax Pin



**Shell Style**  
00, 06, 07

**Service Classes**  
"F" - Plated, oil resistant  
"U" - Unplated, oil resistant

**Contact Style**  
"Q" - Quadrax  
"T" - Twinax  
"F" - Fiber

**Shell Size**  
17,19, 21, 23, 25

**Shell Plating**  
"Omit" - Nickel  
"072" - Gray ZnNi (for metal shell)  
"946" - Black Zinc Nickel (for metal shell)

**Insert Rotation - N (Omit)**  
A B C D E

**Contacts Type**  
"P" - Pin  
"S" - Socket  
"C" - Pin PC tail  
"D" - Socket PC tail

**Insert Arrangement**  
See page 9

# Amphenol



**Amphenol Industrial Operations**  
Phone: 888-364-9011  
20 Valley Street  
Endwell, NY 13760-3600  
[www.amphenol-industrial.com](http://www.amphenol-industrial.com)

**Amphenol Technology (Zhuhai) Co., Ltd.**  
No.63, Xinghan Road, Sanzao Town,  
Jinwan, Zhuhai, 519040  
China  
[www.amphenol-industrial.com](http://www.amphenol-industrial.com)

Notice: Specifications are subject to change without notice. Contact your nearest Amphenol Corporation Sales Office for the latest specifications. All statements, information and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty, or responsibility of any kind expressed or implied. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that all safety measures are indicated or that other measures may not be required. Specifications are typical and may not apply to all connectors.