# Quadrax Contact

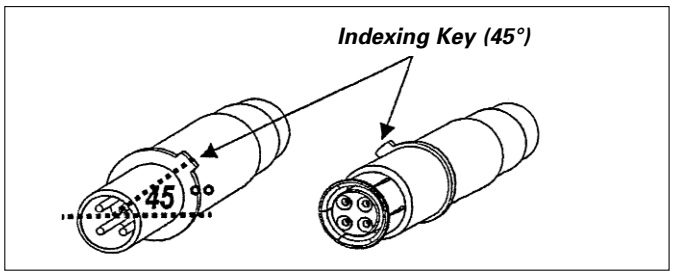


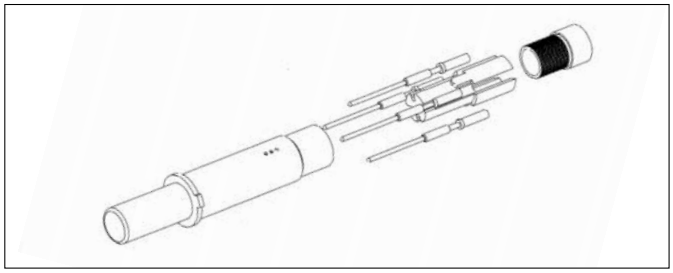
## 1 - DESCRIPTION

- Four # 24 pin contacts with 360° shielding
- Compact design allows mounting into # 8 cavity dimensions
- Replaces the use of 2 twinax contacts with 30% shorter cabling time and better performance
- Front and rear removable versions available
- Crimp and PC tail versions available

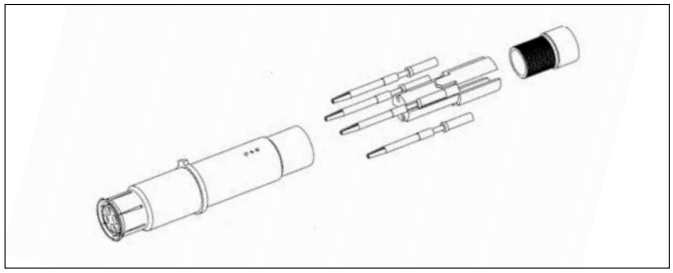
### Key features

- Crimped signal contacts, crimped # 8 body
- Standard # 8 cavity insertion and removal tools
- Ground connection of the cable braid to the shell possible through the external shell of the # 8 contacts
- Compatible with star quad cable and twinax cable
- Characteristic impedance of 100 Ω or 150 Ω
- Operating temperature: - 65°C/+200°C.

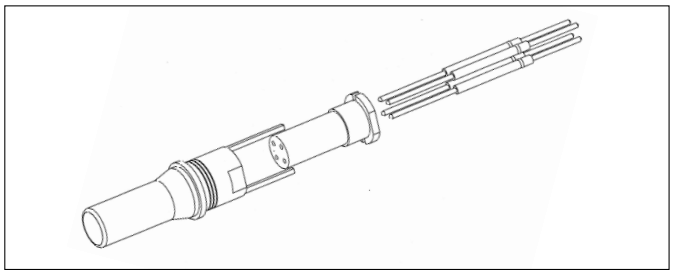


*Pin to crimp*



*Socket to crimp*



*PC Tail Pin*

# Quadrax Contact

## 2 - TECHNICAL CHARACTERISTICS

### Mechanical

- Endurance: minimum 500 mating / unmating operations in any connector
- Shocks: 300 g, 3 ms as per EN-2591-6404 method A and MIL-STD 1344 in 38999 connector
- Vibrations:
  - Random 100 to 1000 Hz, 3 x 8 hours 0.2 $g^2$/Hz, as per MIL-STD 1344 A, Method 2005.1, level E, test V, in ARINC 600 connector
  - Random, 3 x hours – 0.2 $g^2$/Hz, as per EN-2591-6403 Method B, level J in 38999 connector
- Contact retention: minimum 155 N
- Contact insertion force: maximum 11 N

### Environmental

- Salt spray: 48 hours minimum, as per MIL-STD 1344 A, method 1003
- Temperature range: -65° C, +200° C
- Sealing in connector insert (for sealed Quadrax version):
  - Altitude immersion 2 kPa in accordance with EN 2591-6303 table 7 and MIL-STD 1344
  - IP 68

### Material

- Inner contact: copper alloy
- Body: copper alloy
- Insulator: thermoplastic
- Contact plating: gold over nickel plated

### Electrical performances

- Contact resistance (low level): initial 15 mΩ, after tests 30 mΩ
- Contact resistance at rated current:

| | | Max contact resistance (mΩ) | | |
|---|---|---|---|---|
| | | 23° C | | 200° C |
| **Contact** | **Rated current (A)** | **Initial** | **After tests** | **After tests** |
| Signal contacts | 1 | 15 | 30 | 45 |
| Outer body | 12 | 3 | 4 | 6 |

- Dielectric withstanding voltage:
  Sea level = 500 Vrms between signal contacts and signal contact/body
  21000 m = 125 Vrms between signal contacts and signal contact/body
- Insulation resistance: at ambient temperature > 5000 MΩ, at high temperature > 1000 MΩ
- Characteristic impedance: 100 Ω @ 100 MHz
- Attenuation ≤ 0.3 dB @ 100 MHz typical per contact pair (cat 5E requirement = 0.3 dB @ 100 MHz)
- Crosstalk ≥ 40 dB @ 100 MHz typical (cat 5E requirement = 40 dB)

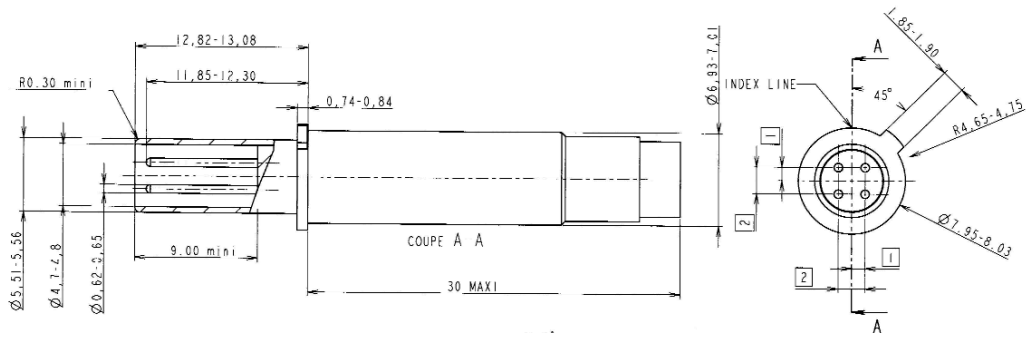
# Quadrax Contact

## 3 - DIMENSIONS AND PART NUMBERS

### A/ For Arinc 600 Connectors

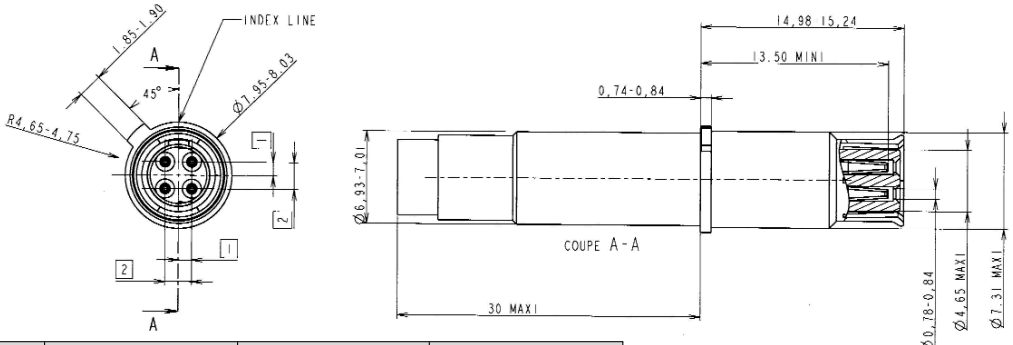


**QUADRAX # 8 - PIN FOR ARINC 600 CONNECTOR**



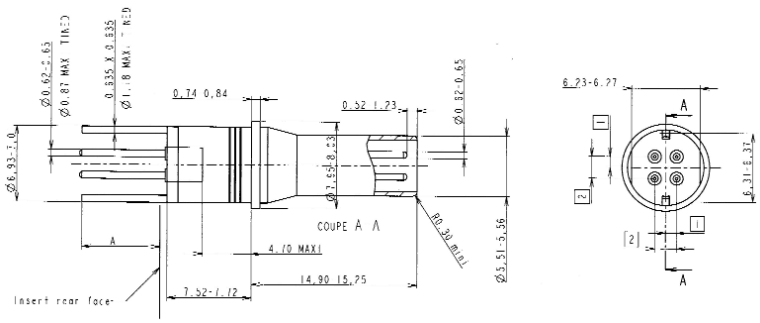

| Male Contact | Rear release | To crimp | P/N: ETH1-1100A |
|---|---|---|---|

**QUADRAX # 8 – SOCKET FOR ARINC 600 CONNECTOR**




| Female Contact | Rear release | To crimp | P/N: ETH1-1101A |
|---|---|---|---|

**QUADRAX # 8 – PIN FOR ARINC 600 CONNECTOR PCB MOUNT**



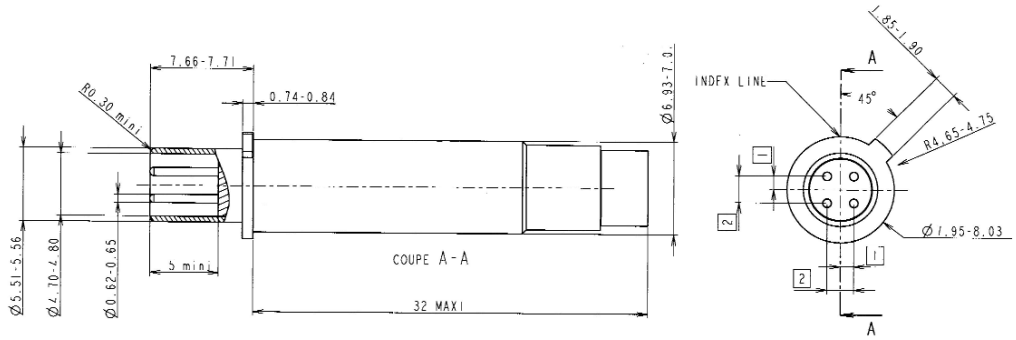

| Male Contact | Front release | PC Tail contact L = 6.35 mm | P/N: ETH1-1110A |
|---|---|---|---|

*Dimensions in millimeters*

# Quadrax Contact

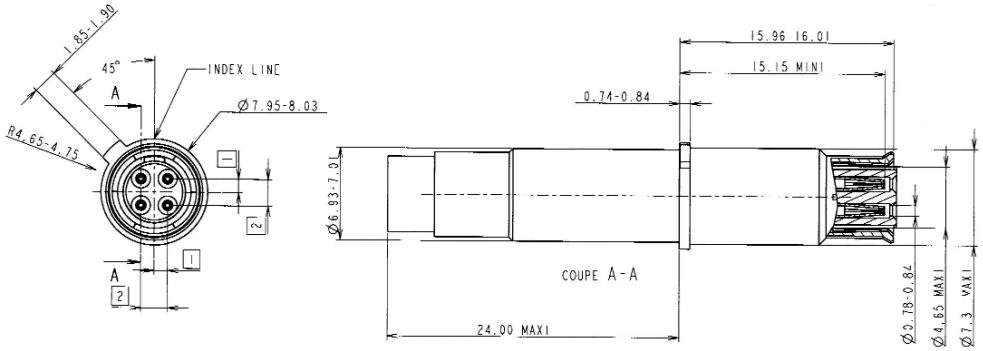
## B/ For MIL-DTL-38999 Connectors

### QUADRAX # 8 – PIN FOR 38999 CONNECTOR



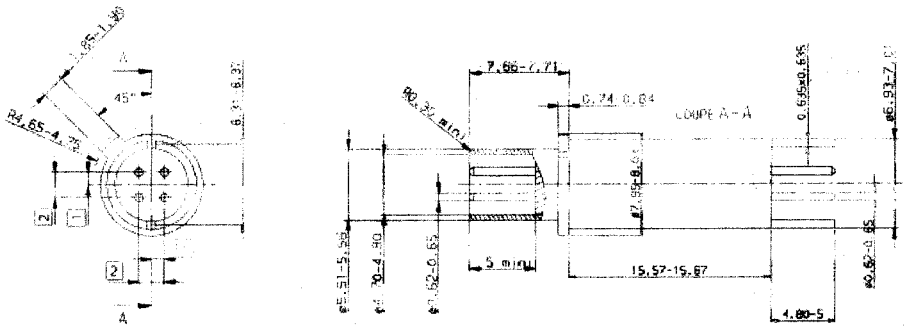

| Male Contact | Rear release | To crimp | P/N: ETH1-1115A |
|---|---|---|---|

### QUADRAX # 8 – SOCKET FOR 38999 CONNECTOR




| Female Contact | Rear release | To crimp | P/N: ETH1-1116A |
|---|---|---|---|

### QUADRAX # 8 – PIN FOR 38999 CONNECTOR FOR PCB MOUNT



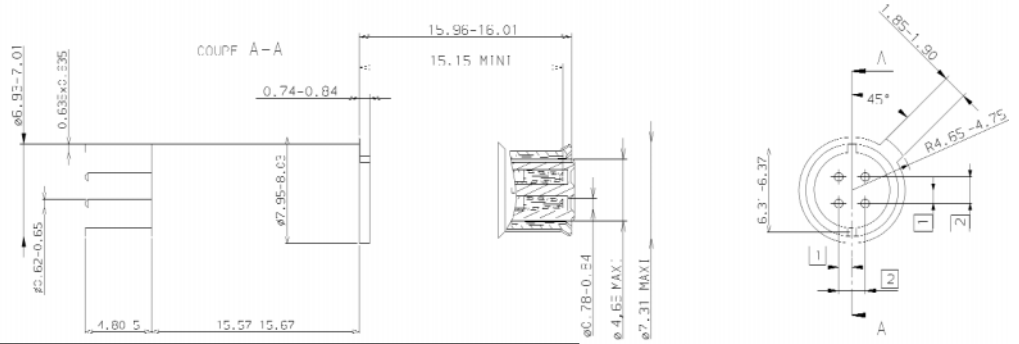

| Male Contact | Rear release | PC Tail contact | P/N: ETH1-1117A |
|---|---|---|---|

*Dimensions in millimeters*

# Quadrax Contact



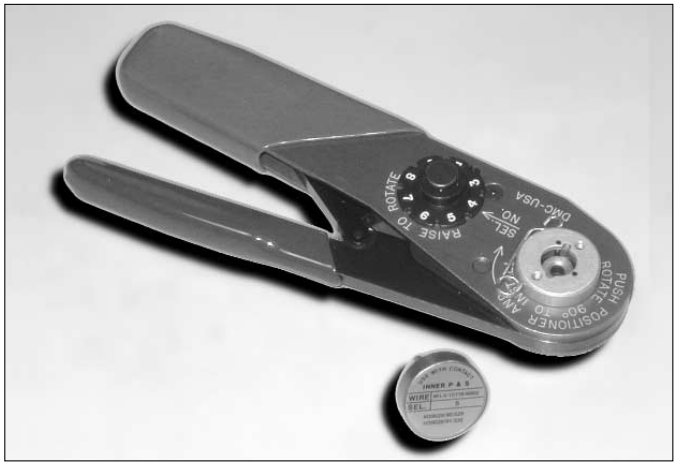
**QUADRAX # 8 - SOCKET FOR 38999 CONNECTOR FOR PCB MOUNT**




| Female Contact | Rear release | PC Tail Contact | P/N: ETH1-1114A |
|---|---|---|---|

## 4 - TOOLING DATA

### A/ Crimping tools




*Ref: M22520/2-01 and K709*

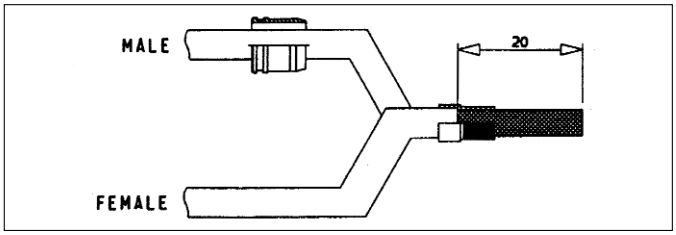
*Ref: M22520/5-01 and M22520/5-45*

### B/ Insertion and extraction tool

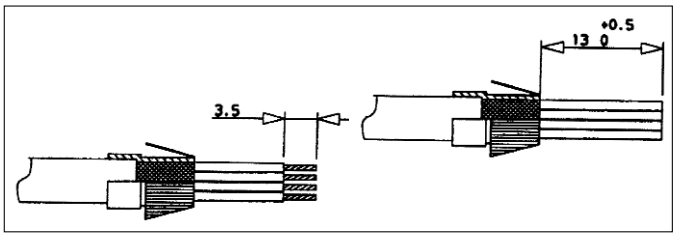
*Ref: 8660-19/7*

# Quadrax Contact

## 5 - WIRING INSTRUCTION

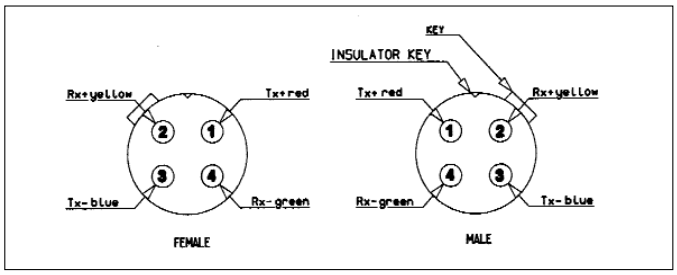


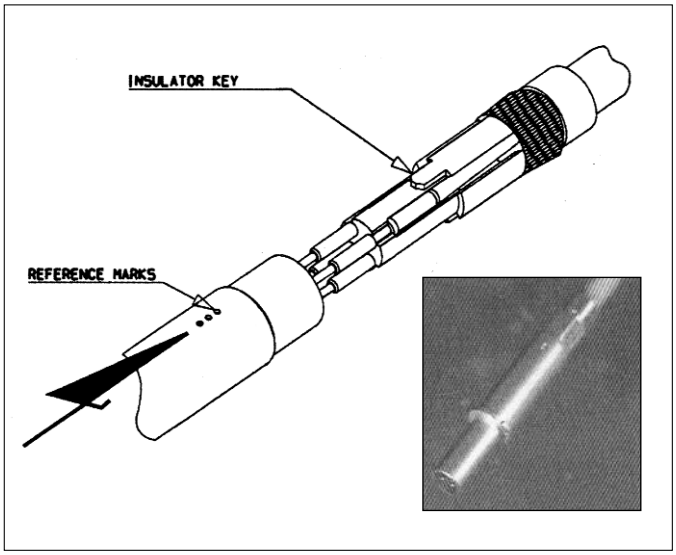

- Fit the supply guide on the cable for the male contact.
- Strip braid back 20 mm.
- Install the ferrule




- Twist braid around the ferrule
  Trim the wires back 13 mm 0/+0,5
  TAKE CARE TO HAVE THE SAME LENGTH FOR THE 4 WIRES
  Cut the braid, leaving the rear part of the ferrule exposed
- Strip the wires back 3,5 mm
  Crimp the contacts using M22520/2-01 tool and K709 positioner, setting number 5

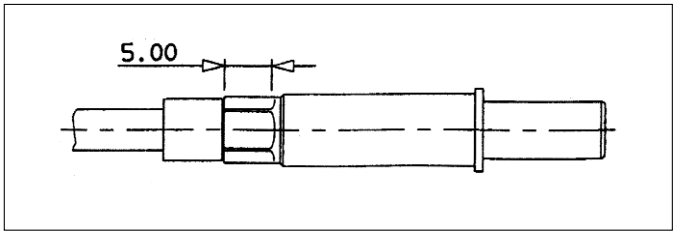
- Put the wired contacts in the insulator
  (see the front face view for positioning)




- Align the insulator key with the reference marks.
  Insert until the knurled part of the ferrule is inside the body

- Insure that all the pieces are held in place before and during crimping. Crimp braid and outer jacket using M22520/5-01 tool and M22520/5-45 die set rep B. Crimp length: 5 mm




## 6 - RECOMMENDED CABLES

| Supplier | Characteristic impedance | P/N | Cable type | Number of pairs |
|---|---|---|---|---|
| Draka | 100 Ω | F4703-38 | Star quad | 2 |
| Nexans | 100 Ω | ET2PC236 | Star quad | 2 |

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