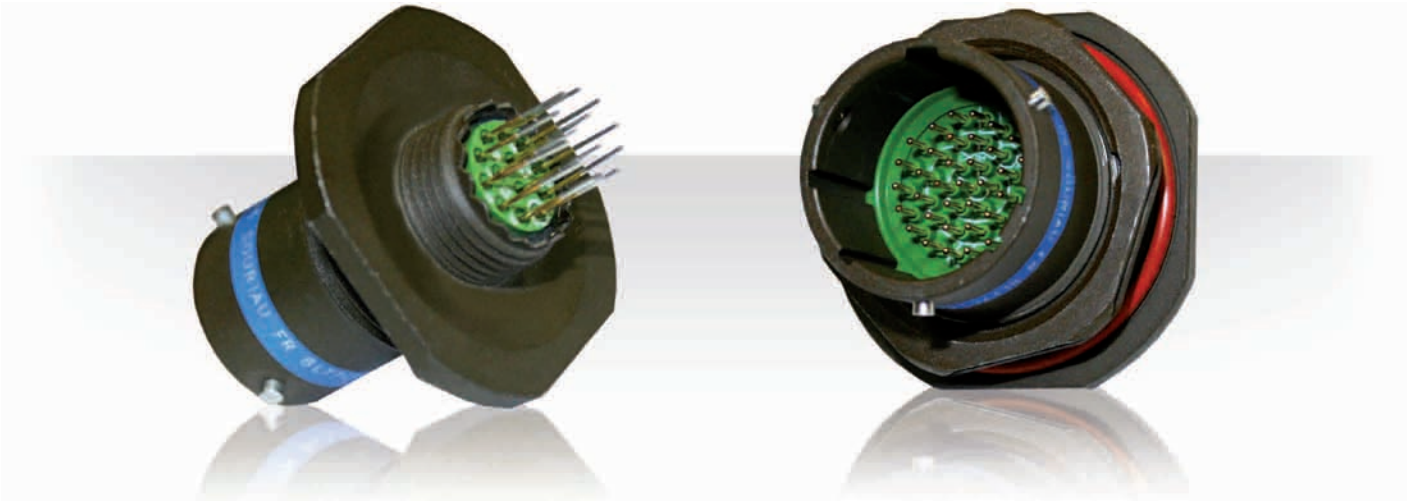
SOURIAU

# 8LT Series

## MIL-DTL-38999 Series I

Esterline
Connection Technologies

# 8LT Series
## MIL-DTL-38999 Series I



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# 8LT Series

8LT Series

# Overview


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# 8LT Series
## MIL-DTL-38999 Series I

## 8LT Series - Presentation

### High contact density connectors with high reliability

**38999 Series I: 8LT Series**

This 8LT product family is qualified in accordance to the MIL-DTL-38999 Series I.

Originally designed to meet the high performance needs of the aerospace industries & military applications, it is also now used in varied applications needing extremely reliable interconnections with high density contact arrangements in a miniature circular shell.

- Weight and Space Saving
- Quick Mating - 3 point bayonet lock system
- Mismating, error proof positioning - keyway polarization (5 positions)
- High choice of Insert arrangements (customization possible, please consult us)
- Range extension available or on demand (Rack Panel, Potted, Hermetics, Low Profile, Filters, etc..), please consult us
- Versatility thanks to our inserts as for the series III (except for 8LT type 2) with full range of crimp contacts interchangeable
- Gold plated crimp or PC tail contacts are rear removable and retained in the insulator by a metal clip.
- RoHS version available (cadmium free)

## 8LT Series - Applications

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# 8LT Series
## MIL-DTL-38999 Series I

### A universal product platform: MIL-DTL-38999

#### 38999 Series II: 8T Series

- Short version of MIL-DTL-38999 Series I
- Low profile = lightweight
- High density MIL-spec circular (1980's)
- Non-scoop proof, bayonet coupling
- Method of mounting: screws or jam nut
- Shell: Aluminum alloy
- Plating: cadmium, nickel, hard anodized
- QPL approved
- Numerous layouts

#### 38999 Series III: 8D Series

- High density MIL-spec circular (1980's)
- Scoop proof, fast screw coupling
- Composite light-weight version available
- QPL approved
- Titanium version, light-weight, mechanical and environnemental performances
- Quadrax and Elio version
- Specific versions (clinch nuts, double flange, high power, hermetic, ...)

### A universal product platform: VG96912 & JN1003

#### 8ST Series

- High density - same layouts as 38999 Series I
- Lightweight version of Series I
- Scoop proof, bayonet coupling
- Method of mounting: screws or jam nut
- Shell: Aluminum alloy
- Plating: olive green cadmium or nickel
- VG 96912 German specification
- JN 1003 Typhoon specification

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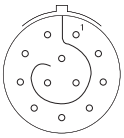
# 8LT Series
## MIL-DTL-38999 Series I

## Contact layouts

### 09

**12** HD

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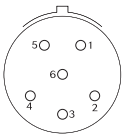
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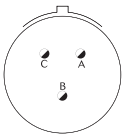
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Service I

- Contact #26 & #22D
- Contact #20
- Contact #16
- Contact #12
- Contact #10
- Contact #8
- Contact #8 Power
- Contact #8 Quadrax
- Contact #4 Power

### 11

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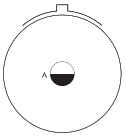
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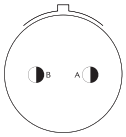
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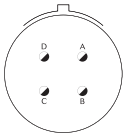
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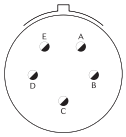
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**22***

4#22D
Service M

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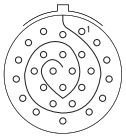
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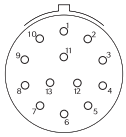
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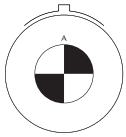
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Service I

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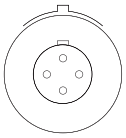
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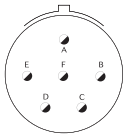
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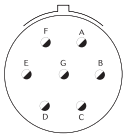
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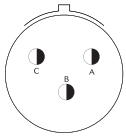
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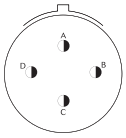
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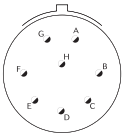
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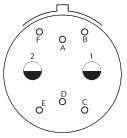
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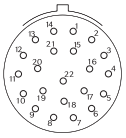
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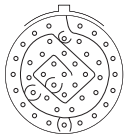
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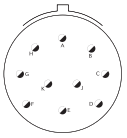
10#20
Service I

Ethernet Quadrax HD High Density layout * Available on specific request. Please consult us.


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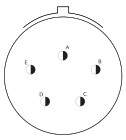
## Contact layouts

### 15

**05**



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Service II

**15**

1#16
14#20
Service I

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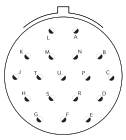

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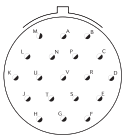

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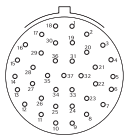

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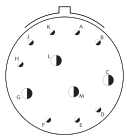

4#16
8#20
Service I

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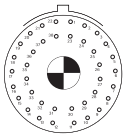

38#22D
1#8 Triax
Service M

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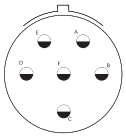

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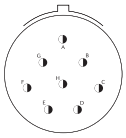

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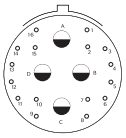

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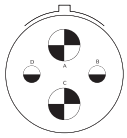

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2#8 Triax
Service M

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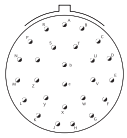

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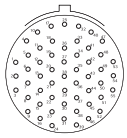

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Service M

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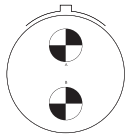

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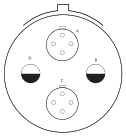

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2#8 Quadrax

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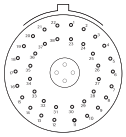

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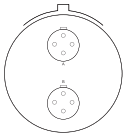

2#8 Quadrax

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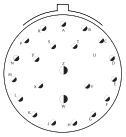

2#16
21#20
Service I

### 19

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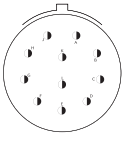

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Service II

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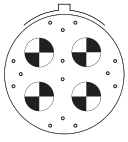

14#22D
4#8 Triax
Service M

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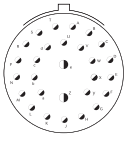

26#20
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Service I

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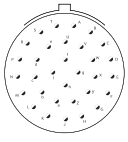

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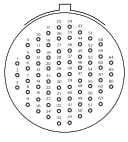
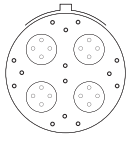


66#22D
Service M

**84**



14#22D
4#8 Quadrax

Ethernet Quadrax  * Available on specific request. Please consult us.

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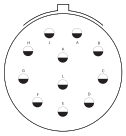
## Contact layouts

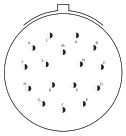
### 21

**11**



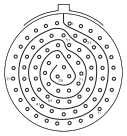
11#12
Service I

**16**



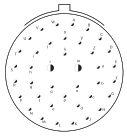
16#16
Service II

**35**



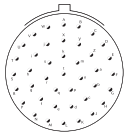
79#22D
Service M

**39**



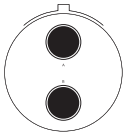
2#16
37#20
Service I

**41**



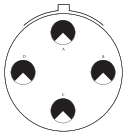
41#20
Service I

**42**



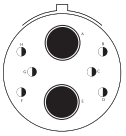
2#4 Power
Service I

**48**



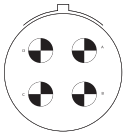
4#8 Power
Service I

**72**



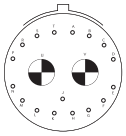
2#4 Power
6#16
Service I

**75**



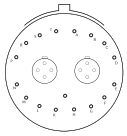
4#8 Triax
Service M

**77**



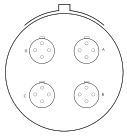
17#22D
2#8 Triax
Service M

**78**



17#22D
2#8 Quadrax

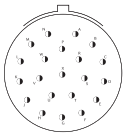
**84**



4#8 Quadrax

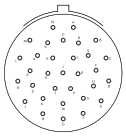
### 23

**21**



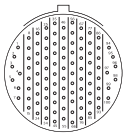
21#16
Service II

**32**



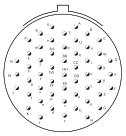
32#20
Service I

**35**



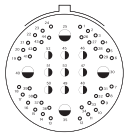
100#22D
Service M

**53**



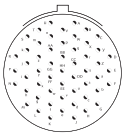
53#20
Service I

**54**



4#12, 9#16
40#22D
Service M

**55**



55#20
Service I

Ethernet Quadrax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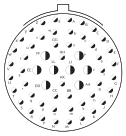
## Contact layouts

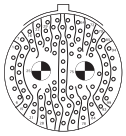
### 25

**04**



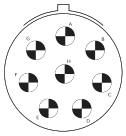
8#16
48#20
Service I

**07**



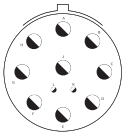
2#8 Triax
97#22D
Service M

**08***



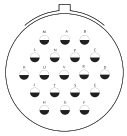
8#8 Triax
Service M

**11***



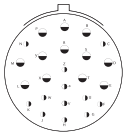
2#20
9#10
Service N

**19**



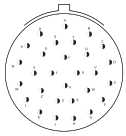
19#12
Service I

**24**



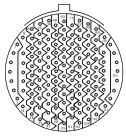
12#16
12#12
Service I

**29**



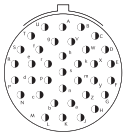
29#16
Service I

**35**



128#22D
Service M

**37**

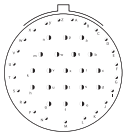


37#16
Service I

**41**

22#22D, 3#20
11#16, 2#12
3#8 Triax
Service M

**43**



23#20
20#16
Service I

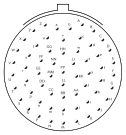
**44**

4#4 Power
4#16
Service I

**46**

40#20, 4#16
2#8 Coax
Service I

**61**

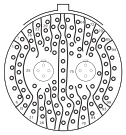


61#20
Service I

**81**

22#22D
3#20, 11#16
2#12
3#8 Quadrax

**82**

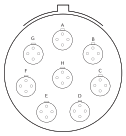


97#22D
2#8 Quadrax

**86**

40#20
4#16
2#8 Quadrax

**88**



8#8 Quadrax

**90**

40#20, 4#16
2#8 Twinax
Service I

Ethernet Quadrax

* Available on specific request. Please consult us.

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## Contact layouts (matrix)

| Shell Size | Layout | Service | 8LT | 8LT2 | MIL-DTL-38999 (QPL) | | HE 308 | | | Nber of Contacts | #26 | #22D | #20 | #16 | #12 | #10 | # 8 | #4 Power |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | MS (1) | MS27505 | Not Rack | | Rack | | | | | | | | | |
| 09 | 09-12 | R | | | | | | | | 12 | 12 | | | | | | | |
| | 09-35 | M | | | **Q** | **Q** | O | X | | 6 | | 6 | | | | | | |
| | 09-98 | I | | | **Q** | | O | X | | 3 | | | 3 | | | | | |
| 11 | 11-01 | II | | | | | | | • | 1 | | | | | 1 | | | |
| | 11-02 | I | | | **Q** | | | | • | 2 | | | | 2 | | | | |
| | 11-04 | I | | | **Q** | | | | • | 4 | | | 4 | | | | | |
| | 11-05 | I | | | **Q** | | | | • | 5 | | | 5 | | | | | |
| | 11-22 | M | | | | | | | | 4 | | 4 | | | | | | |
| | 11-26 | R | | | | | | | | 26 | 26 | | | | | | | |
| | 11-35 | M | | | **Q** | **Q** | O | X | • | 13 | | 13 | | | | | | |
| | 11-80 | I | | | | | | | | 1 | | | | | | | 1 Triax | |
| | 11-81 | - | | | | | | | | 1 | | | | | | | 1 Qdx | |
| | 11-98 | I | | | **Q** | **Q** | O | X | • | 6 | | | 6 | | | | | |
| | 11-99 | I | | | **Q** | | | | • | 7 | | | 7 | | | | | |
| 13 | 13-03 | I | | | | | | | | 3 | | | | 3 | | | | |
| | 13-04 | I | | | **Q** | | O | | • | 4 | | | | 4 | | | | |
| | 13-08 | I | | | **Q** | | | | • | 8 | | | 8 | | | | | |
| | 13-26 | M | | | | | | | | 8 | | 6 | | | 2 | | | |
| | 13-35 | M | | | **Q** | **Q** | O | X | • | 22 | | 22 | | | | | | |
| | 13-43 | R | | | | | | | | 43 | 43 | | | | | | | |
| | 13-98 | I | | | **Q** | **Q** | O | X | • | 10 | | | 10 | | | | | |
| 15 | 15-05 | II | | | **Q** | | O | X | • | 5 | | | | 5 | | | | |
| | 15-15 | I | | | | | | | • | 15 | | | 14 | 1 | | | | |
| | 15-18 | I | | | **Q** | **Q** | O | | • | 18 | | | 18 | | | | | |
| | 15-19 | I | | | **Q** | **Q** | O | X | • | 19 | | | 19 | | | | | |
| | 15-35 | M | | | **Q** | **Q** | O | X | • | 37 | | 37 | | | | | | |
| | 15-97 | I | | | **Q** | **Q** | O | X | • | 12 | | | 8 | 4 | | | | |
| 17 | 17-02 | M | | | | | | | | 39 | | 38 | | | | | 1 Triax | |
| | 17-06 | I | | | **Q** | **Q** | O | | • | 6 | | | 6 | | | | | |
| | 17-08 | II | | | **Q** | | O | X | • | 8 | | | | 8 | | | | |
| | 17-20 | M | | | | | | | | 20 | | 16 | | | 4 | | | |
| | 17-22 | M | | | | | | | | 4 | | | | | 2 | | 2 Triax | |
| | 17-26 | I | | | **Q** | **Q** | O | X | • | 26 | | | 26 | | | | | |
| | 17-35 | M | | | **Q** | **Q** | O | X | • | 55 | | 55 | | | | | | |
| | 17-75 | M | | | | | | | • | 2 | | | | | | | 2 Triax | |
| | 17-80 | - | | | | | | | | 4 | | | | | 2 | | 2 Qdx | |
| | 17-81 | - | | | | | | | | 39 | | 38 | | | | | 1 Qdx | |
| | 17-82 | - | | | | | | | | 2 | | | | | | | 2 Qdx | |
| | 17-99 | I | | | **Q** | **Q** | O | X | • | 23 | | | 21 | 2 | | | | |
| 19 | 19-11 | II | | | **Q** | | O | X | • | 11 | | | | 11 | | | | |
| | 19-18 | M | | | | | | | | 18 | | 14 | | | | | 4 Triax | |
| | 19-28 | I | | | **Q** | | | | • | 28 | | | 26 | 2 | | | | |
| | 19-32 | I | | | **Q** | **Q** | O | X | • | 32 | | | 32 | | | | | |
| | 19-35 | M | | | **Q** | **Q** | O | X | • | 66 | | 66 | | | | | | |
| | 19-84 | - | | | | | | | | 18 | | 14 | | | | | 4 Qdx | |

Souriau's layout

**Q** Qualified layout (QPL) MIL - DTL 38999

(1) Available MS27466 & MS27467 & MS27468 & MS27656

O Layout according to UTE C 93-422 norm

X Qualified Layout HE308 for «Ministère de la Défense» DGA DTAT

• Layout according to C5935X0005 norm

**#8** **Qdx:** Quadrax


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## Contact layouts (matrix)

| Shell Size | Layout | Service | 8LT | 8LT2 | MIL-DTL-38999 (QPL) | | HE 308 | | | Nber of Contacts | #26 | #22D | #20 | #16 | #12 | #10 | # 8 | #4 Power |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | MS (1) | MS27505 | Not Rack | | Rack | | | | | | | | | |
| 21 | 21-11 | I | | | Q | | O | X | • | 11 | | | | | 11 | | | |
| | 21-16 | II | | | Q | Q | O | X | • | 16 | | | | 16 | | | | |
| | 21-35 | M | | | Q | Q | O | X | • | 79 | | 79 | | | | | | |
| | 21-39 | I | | | Q | Q | O | | • | 39 | | | 37 | 2 | | | | |
| | 21-41 | I | | | Q | Q | O | X | • | 41 | | | 41 | | | | | |
| | 21-42 | I | | | | | | | | 2 | | | | | | | | 2 |
| | 21-48 | I | | | | | | | | 4 | | | | | | | 4 Pow | |
| | 21-72 | I | | | | | | | | 8 | | | | 6 | | | | 2 |
| | 21-75 | - | | | Q | | | | • | 4 | | | | | | | 4 Triax | |
| | 21-77 | M | | | | | | | | 19 | | 17 | | | | | 2 Triax | |
| | 21-78 | - | | | | | | | | 19 | | 17 | | | | | 2 Qdx | |
| | 21-84 | - | | | | | | | | 4 | | | | | | | 4 Qdx | |
| 23 | 23-21 | II | | | Q | | O | | • | 21 | | | | 21 | | | | |
| | 23-32 | I | | | Q | Q | | | | 32 | | | 32 | | | | | |
| | 23-35 | M | | | Q | Q | O | X | • | 100 | | 100 | | | | | | |
| | 23-53 | I | | | Q | | O | X | • | 53 | | | 53 | | | | | |
| | 23-54 | M | | | | | | | | 53 | | 40 | | 9 | 4 | | | |
| | 23-55 | I | | | Q | | | | • | 55 | | | 55 | | | | | |
| 25 | 25-04 | I | | | Q | Q | | | | 56 | | | 48 | 8 | | | | |
| | 25-07 | M | | | Q | | | | | 99 | | 97 | | | | | 2 Triax | |
| | 25-08 | - | | | | | | | | 8 | | | | | | | 8 Triax | |
| | 25-11 | N | | | | | | | | 11 | | | 2 | | | 9 | | |
| | 25-19 | I | | | Q | | O | X | | 19 | | | | | 19 | | | |
| | 25-24 | II | | | Q | | | | | 24 | | | | 12 | 12 | | | |
| | 25-29 | I | | | Q | | O | X | | 29 | | | | 29 | | | | |
| | 25-35 | M | | | Q | Q | O | X | | 128 | | 128 | | | | | | |
| | 25-37 | I | | | | | | | | 37 | | | | 37 | | | | |
| | 25-41 | N | | | | | | | | 41 | | 22 | 3 | 11 | 2 | | 3 Triax | |
| | 25-43 | I | | | Q | | | | | 43 | | | 23 | 20 | | | | |
| | 25-44 | I | | | | | | | | 8 | | | | 4 | | | | 4 |
| | 25-46 | I | | | Q | | | | | 46 | | | 40 | 4 | | | 2 Coax | |
| | 25-61 | I | | | Q | | O | X | | 61 | | | 61 | | | | | |
| | 25-81 | N | | | | | | | | 41 | | 22 | 3 | 11 | 2 | | 3 Qdx | |
| | 25-82 | M | | | | | | | | 99 | | 97 | | | | | 2 Qdx | |
| | 25-86 | I | | | | | | | | 46 | | | 40 | 4 | | | 2 Qdx | |
| | 25-88 | - | | | | | | | | 8 | | | | | | | 8 Qdx | |
| | 25-90 | I | | | | | | | | 46 | | | 40 | 4 | | | 2 Triax | |

Souriau's layout

**Q** Qualified layout (QPL) MIL - DTL 38999

(1) Available MS27466 & MS27467 & MS27468 & MS27656

O Layout according to UTE C 93-422 norm

X Qualified Layout HE308 for «Ministère de la Défense» DGA DTAT

• Layout according to C5935X0005 norm

**#8** **Pow:** Power; **Qdx:** Quadrax

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# 8LT Series

8LT Series

# Series


- 8LT Standard Version ..... 16
- Backshells ..... 24
- 8LT Rack & Panel ..... 28
- 8LT Resin Sealed ..... 32

# 8LT Series
## MIL-DTL-38999 Series I

## Description

- High contact density
- Bayonet coupling
- Contact protection : 100% Scoop proof
- Shell size from 9 to 25
- Accessories available (protective caps, backshells, etc… )
- RFI - EMI shielding and shell to shell continuity
- Hermetic
- Alluminium alloy, protection by cadmium, nickel, green zinc cobalt or black zinc nickel plating

## Applications

- Civil and Military Aerospace
- Marine Equipments
- Communications Equipements
- Medical Instrumentation
- Ballistic Missiles & Weapon Systems
- Armored Carriers & Tanks
- Test Equipments

## Technical features

### Mechanical

- Shell: aluminum alloy
- Plating: . black zinc nickel (Z)
  . olive green cadmium (B)
  . nickel (F)
  . green zinc cobalt (ZC)
- Insulator: thermoplastic or metallic version available for specification 284 & 384
- Grommet or seal: liquid silicone rubber or fluorocarbone elastomer for specification 022
- Contact: copper alloy
- Plating contact: gold over nickel
- Endurance:
  500 mating / unmating operations
- Chock: 300 g during 3 ms and as per MIL S 901 grade A
- Vibration: . Sine 10 to 2000 Hz - 30 g
  . Random 100 à 300 Hz - 5 g²/Hz
- Contact retention (min force in N):

| Contacts size | 22 | 20 | 16 | 12 | 8 | 4 |
|---|---|---|---|---|---|---|
| Min force in N | 44 | 67 | 111 | 111 | 111 | 200 |

### Electrical

- Test voltage (Vrms)

| Service | sea level | at 21000 m |
|---|---|---|
| R | 400 | N/A |
| M | 1 300 | 800 |
| N | 1 000 | 600 |
| I | 1 800 | 1 000 |
| II | 2 300 | 1 000 |

- Insulation resistance:
  ≥ 5 000 MW (at 500 Vcc)
- Contact resistance:

| Contacts size | 26 | 22 | 20 | 16 | 12 | 8 | 4 |
|---|---|---|---|---|---|---|---|
| Resistance mΩ | 16 | 14.6 | 7.3 | 3.8 | 3.5 | 3 | 2 |

- Contact rating:

| Contacts size | 26 | 22 | 20 | 16 | 12 | 8 | 4 |
|---|---|---|---|---|---|---|---|
| Rating (A) | 3 | 5 | 7.5 | 13 | 23 | 45 | 80 |

- Shell continuity: . black zinc nickel: 2.5 mΩ
  . olive green plating: 2.5 mΩ
  . nickel plating: 1 mΩ
  . green zinc cobalt: 2.5 mΩ
- Shielding: 90 db at 100 MHz, 50 db at 10 000 MHz
- Electrical continuity between contact and shell for specification 284 & 384: 10 mΩ max

### Climatic

- Temperature range:
  . black zinc nickel plating (Z)
  - 65°C +175°C
  . olive green cadmium plating (B)
  - 65°C +175°C
  . nickel plating (F)
  - 65°C +200°C
  . green zinc cobalt plating (ZC)
  - 65°C +200°C
- Sealing: mated connectors
  Differential pressure 2 bars:
  leakage ≤ 16 cm³/h
- Salt spray as per:
  . MIL STD 1344 method 1001 :
  - 500 hours (plating B, ZC and Z)
  - 48 hours (plating F)
  . NFC 93422 :
  - 48 hours (plating F)
- Resistance to fluids
  . As per MIL DTL 38999, hydraulic fluids, solvants
  . Specification 022 for fuel immersion (please consult us)


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# Ordering information

| Basic series | 8LT | 0 | - | 13 | B | 35 | P | N | | | L |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Shell type**
- **0:** Square flange receptacle
- **1:** In line receptacle
- **2:** Short square flange receptacle, not accepting backshell
- **3:** Square flange receptacle (rear mounting)
- **5:** Plug with RFI shielding
- **7:** Jam nut receptacle
- **15:** Plug with RFI shielding, not accepting backshell

**Type**
- **-:** Connector with standard crimp contacts
- **L:** Connector with long PC tail (male and female #22D)
- **M:** Connector with medium PC tail (please see page 38)
- **C:** Connector with short spill (male and female #22D, #20, #16, #12, #8 quadrax)
- **T:** Connector with male contact size 20 for wire wrap (2 wraps)
- **W:** Connector with male contact size 22D for wire wrap (3 wraps)
- **S:** Connector with specific PC Tail (male and female #22D only)
- **Q:** Connector with quadrax crimp contacts
- **P:** Connector with solder cup: . Pin: #22D & #16; Socket: #12
  . Socket: #22D & #16; Pin: #12 - Please consult us

**Shell size**
**09; 11; 13; 15; 17; 19; 21; 23; 25**

**Plating**
- **Z:** Black zinc nickel
- **F:** Nickel
- **B:** Olive green cadmium
- **ZC:** Green zinc cobalt

**Contact layout**
See tables pages 8 to 11

**Contact type**
- **P:** Male
- **A:** Connector supplied less pin contact or with specific contacts (Connector marking : A + orientation)
- **S:** Female
- **B:** Connector supplied less socket contact or with specific contacts (Connector marking : B + orientation)

**Orientation** (1)
**N, A, B, C, D** see table page 48

**Specifications**
- **None:** Supplied with contact
- **046:** PC Tail contact with tinned plating
- **251:** Connector provided with power contacts with layout contacts #8
- **022:** Fuel tank Please consult us
- **284:** Quadrax grounded (cts 100Ω) (2)(3)
- **308:** Quadrax not grounded (cts 100Ω) (2)
- **384:** Quadrax grounded (cts 150Ω) (2)(3)
- **408:** Quadrax not grounded (cts 150Ω) (2)

**Special custom**
- **None:** Standard plastic cap
- **M:** Antistatic plastic cap

**L:** For P or S contact type only, connector delivered without contacts, connector marking P or S (without L )

(1) Orientations B & C not developped for shell size number 9.
(2) Type shell 0, 3 and 5 available only.
(3) Excepted mixed layouts with quadrax and signal contacts. Please consult us.

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## MIL-DTL-38999 connector part numbers

| Basic series | MS | 27466 | T | 13 | B | 35 | P | | | L |
|---|---|---|---|---|---|---|---|---|---|---|

**Shell type**
- **27466:** Square flange receptacle (front mounting)
- **27656:** Square flange receptacle (rear mounting)
- **27468:** Jam nut receptacle
- **27467:** Plug with RFI shielding
- **27505:** Square flange receptacle, not accepting backshell

**Class**
- **E:** Without thread for back fitting, not accepting backshell for MS27505 and MS27467 only
- **T:** With thread for backfitting, supplied without backshell (excepted MS27505)

**Shell size**
09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

**Plating**
**Z:** Black zinc nickel **F:** Nickel **B:** Olive green cadmium

**Contact layout**
See tables pages 8 to 11

**Contact type**
**P:** Male **A:** Connector supplied less pin contact or with specific contacts (Connector marking : A + orientation)
**S:** Female **B:** Connector supplied less socket contact or with specific contacts (Connector marking : B + orientation)

**Orientation (1)**
- **None:** Normal (N)
- **A, B, C, D** see table page 48

**Special custom**
- **None:** Standard plastic cap
- **M:** Antistatic plastic cap

**L:** For P or S contact type only, connector delivered without contacts, connector marking P or S (without L )

## HE 308 connector part numbers

| Basic series | HE308 | 00 | T | 13 | 35 | P | N | 7 | M | | L |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Shell type**
- **00:** Square flange receptacle
- **07:** Jam nut receptacle
- **06:** Plug with RFI shielding
- **11 :** Jam nut receptacle with PC Tail contacts

**Class**
- **T:** Sealed

**Shell size**
09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

**Contact layout**
See tables pages 8 to 11

**Contact type**
- **P:** Male
- **S:** Female

**Orientation (1)**
- **N, A, B, C, D** see table page 48

**Plating**
- **6:** Nickel
- **7:** Olive green cadmium

**Contractual spécification**

**Special custom**
- **None:** Standard plastic cap
- **M:** Antistatic plastic cap

**Specification**
- **None:** Connector supplied with contact
- **L:** Connector supplied without contact

(1) Orientations B & C not developped for shell size number 9.


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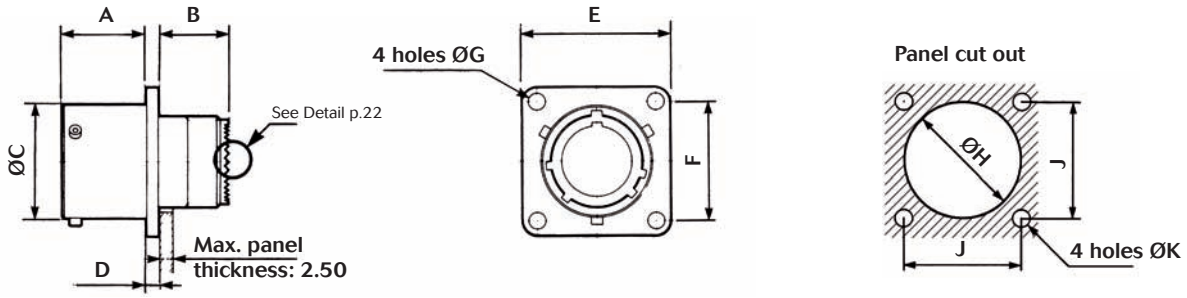
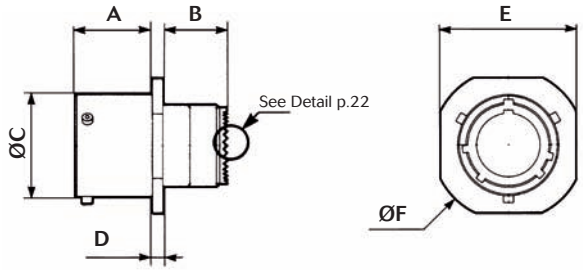
# Dimensions

## Type 0 - Square flange receptacle




| Shell size | A | | B | | ØC | | D | | E | | F | ØG | | ØH Min | J | K ±0.15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | | Min | Max | | | |
| 09 | 15.93 | 16.05 | 13.23 | 13.49 | 14.40 | 14.53 | 2.14 | 2.54 | 23.70 | 24.30 | 18.26 | 3.25 | 3.35 | 15.70 | 18.26 | 3.25 |
| 11 | | | | | 17.65 | 17.78 | | | 26.05 | 26.70 | 20.62 | | | 18.70 | 20.62 | |
| 13 | | | | | 21.40 | 21.59 | | | 28.50 | 29.05 | 23.01 | | | 21.80 | 23.01 | |
| 15 | | | | | 24.65 | 24.77 | | | 30.85 | 31.45 | 24.61 | | | 25.00 | 24.61 | |
| 17 | | | | | 27.82 | 27.94 | | | 33.20 | 33.80 | 26.97 | | | 28.30 | 26.97 | |
| 19 | | | | | 29.24 | 30.66 | | | 36.40 | 37.00 | 29.36 | | | 31.00 | 29.36 | |
| 21 | 15.17 | 15.29 | | | 33.70 | 33.83 | 2.90 | 3.30 | 39.55 | 40.15 | 31.75 | | | 34.20 | 31.75 | |
| 23 | | | | | 36.92 | 37.00 | | | 42.75 | 43.35 | 34.93 | 3.73 | 3.83 | 37.30 | 34.92 | 3.91 |
| 25 | | | | | 40.06 | 40.18 | | | 46.00 | 46.50 | 38.10 | | | 40.50 | 38.10 | |

## Type 1 - Cable connecting receptacle




| Shell size | A | | B | | ØC | | D | | E | | ØF | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 9 | 15.93 | 16.05 | 13.23 | 13.49 | 14.40 | 14.53 | 2.14 | 2.54 | 18.35 | 18.92 | 21.80 | 22.35 |
| 11 | | | | | 17.65 | 17.78 | | | 21.65 | 22.22 | 25.10 | 25.65 |
| 13 | | | | | 21.40 | 21.59 | | | 25.05 | 25.62 | 28.50 | 29.05 |
| 15 | | | | | 24.65 | 24.77 | | | 27.25 | 27.82 | 30.70 | 31.25 |
| 17 | | | | | 27.82 | 27.94 | | | 30.78 | 31.35 | 34.10 | 34.65 |
| 19 | | | | | 29.24 | 30.66 | | | 34.05 | 34.62 | 37.50 | 38.05 |
| 21 | 15.17 | 15.29 | | | 33.70 | 33.83 | 2.90 | 3.30 | 37.45 | 38.02 | 40.90 | 41.45 |
| 23 | | | | | 36.92 | 37.00 | | | 41.45 | 42.02 | 44.90 | 45.45 |
| 25 | | | | | 40.06 | 40.18 | | | 45.93 | 46.50 | 49.40 | 49.95 |

*Note: All dimensions are in millimeters (mm)*

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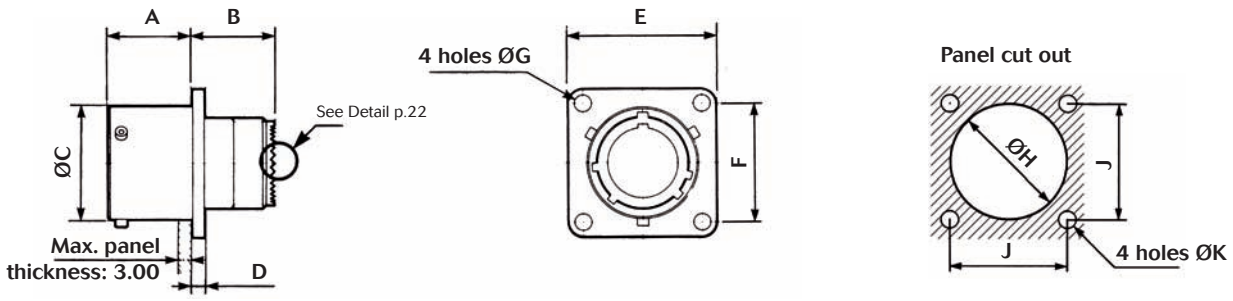
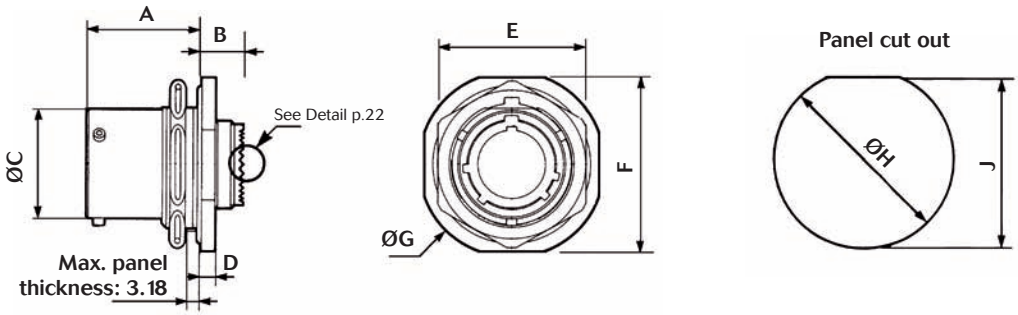
## Type 3 - Square flange receptacle (rear mounting)




| Shell size | A | | B | | ØC | | D | | E | | F | ØG | | ØH Min | J | K ±0.15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | | Min | Max | | | |
| 09 | 20.71 | 20.83 | 10.40 | 11.90 | 14.40 | 14.53 | 2.14 | 2.54 | 23.70 | 24.30 | 18.26 | 3.25 | 3.35 | 16.66 | 18.26 | 3.25 |
| 11 | | | | | 17.65 | 17.78 | | | 26.05 | 26.70 | 20.62 | | | 20.22 | 20.62 | |
| 13 | | | | | 21.40 | 21.59 | | | 28.50 | 29.05 | 23.01 | | | 23.42 | 23.01 | |
| 15 | | | | | 24.65 | 24.77 | | | 30.85 | 31.45 | 24.61 | | | 26.59 | 24.61 | |
| 17 | | | | | 27.82 | 27.94 | | | 33.20 | 33.8 | 26.97 | | | 30.96 | 26.97 | |
| 19 | | | | | 29.24 | 30.66 | | | 36.40 | 37.00 | 29.36 | | | 32.94 | 29.36 | |
| 21 | 19.96 | 20.08 | 11.15 | 12.70 | 33.70 | 33.83 | 2.90 | 3.30 | 39.55 | 40.15 | 31.75 | | | 36.12 | 31.75 | |
| 23 | | | | | 36.92 | 37.00 | | | 42.75 | 43.35 | 34.93 | 3.73 | 3.83 | 39.29 | 34.92 | 3.91 |
| 25 | | | | | 40.06 | 40.18 | | | 46.00 | 46.50 | 38.10 | | | 42.47 | 38.10 | |

## Type 7 - Jam nut receptacle
## Type 11 - HE 308




| Shell size | F | | E | | ØC | | ØG | | A | | B | | D | | ØH | J |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | | |
| 09 | 26.60 | 27.35 | 21.95 | 22.35 | 14.40 | 14.53 | 29.90 | 30.58 | 23.12 | 23.36 | 8.18 | 8.32 | 2.60 | 3.00 | 17.78 | 17.02 |
| 11 | 31.40 | 32.10 | 25.15 | 25.55 | 17.65 | 17.78 | 34.60 | 35.30 | | | | | | | 20.96 | 19.59 |
| 13 | 34.60 | 35.31 | 29.80 | 30.30 | 21.40 | 21.59 | 37.75 | 38.50 | | | | | | | 25.65 | 24.26 |
| 15 | 37.80 | 38.49 | 33.05 | 33.45 | 24.65 | 24.77 | 41.00 | 41.65 | | | | | | | 28.83 | 27.56 |
| 17 | 40.90 | 41.63 | 36.25 | 36.65 | 27.82 | 27.94 | 44.11 | 44.85 | | | | | | | 32.00 | 30.73 |
| 19 | 45.63 | 46.37 | 39.40 | 39.80 | 29.24 | 30.66 | 48.90 | 49.60 | | | | | 3.35 | 3.79 | 35.18 | 33.91 |
| 21 | 48.84 | 49.58 | 42.60 | 43.00 | 33.70 | 33.83 | 52.00 | 52.75 | | | | | | | 38.35 | 37.08 |
| 23 | 52.02 | 52.76 | 45.75 | 46.15 | 36.92 | 37.00 | 55.30 | 55.94 | | | | | | | 41.53 | 40.26 |
| 25 | 55.19 | 55.93 | 50.65 | 50.95 | 40.06 | 40.18 | 58.40 | 59.10 | | | | | | | 44.70 | 43.45 |

*Note: All dimensions are in millimeters (mm)*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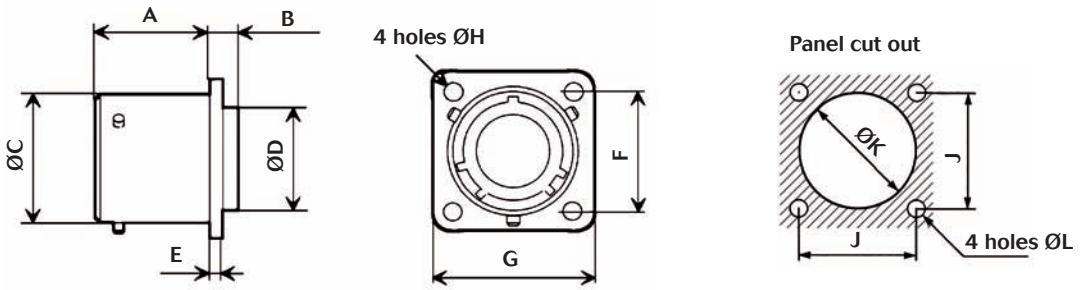
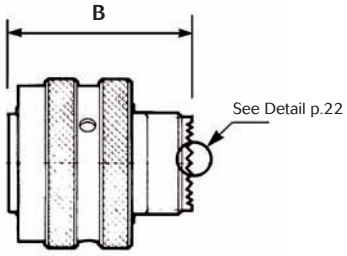
## Type 2 - Short square flange receptacle (not accepting backshell)

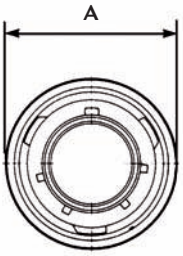



| Shell size | A | | B | | ØC | | ØD | | E | | F | G | | ØH | | J | ØK | ØL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | | Min | Max | Min | Max | | | |
| 09 | 20.71 | 20.83 | 5.40 | 5.55 | 14.40 | 14.53 | 9.85 | 9.95 | 2.14 | 2.54 | 18.26 | 23.70 | 24.30 | 3.25 | 3.35 | 18.26 | 16.66 | 3.25 |
| 11 | | | | | 17.65 | 17.78 | 12.80 | 12.90 | | | 20.62 | 26.05 | 26.70 | | | 20.62 | 20.22 | |
| 13 | | | | | 21.40 | 21.59 | 16.00 | 16.10 | | | 23.01 | 28.50 | 29.05 | | | 23.01 | 23.42 | |
| 15 | | | | | 24.65 | 24.77 | 18.95 | 19.05 | | | 24.61 | 30.85 | 31.45 | | | 24.61 | 26.59 | |
| 17 | | | | | 27.82 | 27.94 | 22.10 | 22.20 | | | 26.97 | 33.20 | 33.80 | | | 26.97 | 30.96 | |
| 19 | | | | | 29.24 | 30.66 | 25.10 | 25.20 | | | 29.36 | 36.40 | 37.00 | | | 29.36 | 32.94 | |
| 21 | 19.96 | 20.08 | 6.15 | 6.35 | 33.70 | 33.83 | 28.25 | 28.35 | 2.90 | 3.30 | 31.75 | 39.55 | 40.15 | | | 31.75 | 36.12 | |
| 23 | | | | | 36.92 | 37.00 | 31.40 | 31.50 | | | 34.93 | 42.75 | 43.35 | 3.73 | 3.83 | 34.92 | 39.29 | 3.91 |
| 25 | | | | | 40.06 | 40.18 | 34.60 | 34.70 | | | 38.10 | 46.00 | 46.50 | | | 38.10 | 42.47 | |

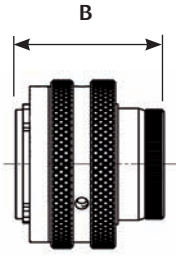
## Type 5 - Plug with RFI shielding
## Type 15 - Plug with RFI shielding (not accepting backshell)




Type 5




Type 5 and 15




Type 15

| Shell size | | 09 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|
| A | Max | 21.80 | 25.00 | 29.30 | 32.50 | 35.70 | 38.50 | 41.70 | 43.85 | 48.00 |
| B | Min | 31.28 | 31.28 | 31.28 | 31.28 | 31.28 | 31.28 | 31.28 | 31.28 | 31.28 |
| | Max | 31.35 | 31.35 | 31.35 | 31.35 | 31.35 | 31.35 | 31.35 | 31.35 | 31.35 |

*Note: All dimensions are in millimeters (mm)*

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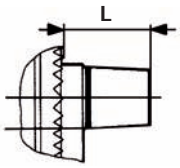
## Detail

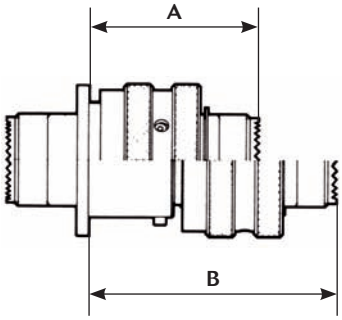



Sealing bushing used for triaxial #8 protude

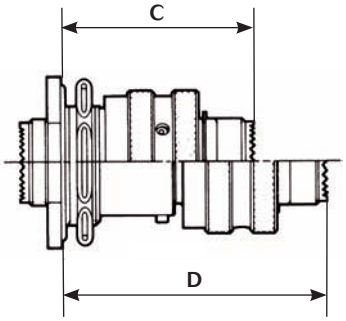
| Shell Type | Type 0 | Type 1 | Type 3 | Type 5 | Type 7 |
|---|---|---|---|---|---|
| L max | 13.39 | 13.58 | 13.58 | 13.54 | 13.58 |

## Mated connectors dimensions

**Square flange receptacle (type 0) with plug (type 5)**




**Jam nut receptacle (type 7) with plug (type 5)**




| Shell Size | A Max | B Max | C Max | D Max |
|---|---|---|---|---|
| 09 | 33.30 | 47.40 | 40.60 | 54.70 |
| 11 | | | | |
| 13 | | | | |
| 15 | | | | |
| 17 | | | | |
| 19 | | | | |
| 21 | 32.50 | 46.70 | | |
| 23 | | | | |
| 25 | | | | |

*Note: All dimensions are in millimeters (mm)*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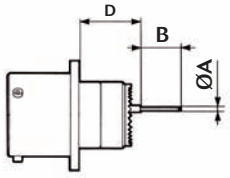
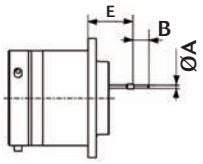
## Receptacle with PC Tail contact

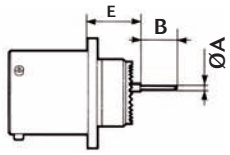
Type 0
Square flange receptacle



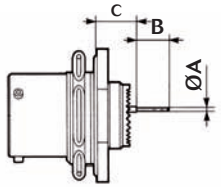

Type 2
Short square flange receptacle




Type 3
Square flange receptacle (rear mounting)




Type 7
Jam nut receptacle

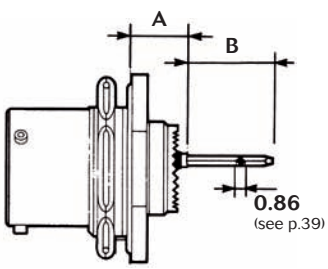



(1) M: Male Contact
F: Female Contact

(2) C: Short PC tail
M: Medium PC tail
L: Long PC tail
S: Specific PC tail

| Shell Size | | | | | 09 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Contact size | Contact type (1) | PC tail contact (2) | | | | | | | | | | |
| ØA | #22D | M & F | C & L | | 0.70 | | | | | | | | |
| | | | S | | 0.50 | | | | | | | | |
| | | M | M | | 0.50 | | | | | | | | |
| | #20 | M & F | C | | 0.70 | | | | | | | | |
| | #16 | M & F | C | | 1.15 | | | | | | | | |
| B | #22D | M & F | C | | $4\,^{0}_{0.20}$ | | | | | | | | |
| | | | S | | $5^{\pm 0.1}$ | | | | | | | | |
| | | | L | | $8.5\,^{0}_{0.20}$ | | | | | | | | |
| | | M | M | | $6^{\pm 0.1}$ | | | | | | | | |
| | #20 | M & F | C | | $5^{\pm 0.1}$ | | | | | | | | |
| | #16 | M & F | C | | $5^{\pm 0.1}$ | | | | | | | | |
| C type 7 | 8LT #22D | M | C & L | Max | 10.06 | | | | | | | | |
| | | | | Min | 9.07 | | | | | | | | |
| | | | M | Max | 10.21 | | | | | | | | |
| | | | | Min | 9.23 | | | | | | | | |
| | | F | C & L | Max | 10.06 | | | | | | | | |
| | | | | Min | 8.74 | | | | | | | | |
| | 8LT7S HE308 #22D | M | S | Max | 10.23 | | | | | | | | |
| | | | | Min | 9.24 | | | | | | | | |
| | | F | S | Max | 10.23 | | | | | | | | |
| | | | | Min | 8.91 | | | | | | | | |
| | 8LT/HE308 #20 & #16 | M & F | C | Max | 10.23 | | | | | | | | |
| | | | | Min | 9.24 | | | | | | | | |
| D type 0 | #22D | M | C & L | Max | 15.08 | | | | | | | | |
| | | | | Min | 13.91 | | | | | | | | |
| | | | M | Max | 15.22 | | | | | | | | |
| | | | | Min | 14.05 | | | | | | | | |
| | | F | C & L | Max | 15.08 | | | | | | | | |
| | | | | Min | 13.58 | | | | | | | | |
| | | M | S | Max | 15.25 | – | | | | | | | 15.25 |
| | | | | Min | 14.08 | – | | | | | | | 14.08 |
| | | F | S | Max | 15.25 | – | | | | | | | 15.25 |
| | | | | Min | 13.75 | – | | | | | | | 13.75 |
| | #20 & #16 | M & F | C | Max | 15.25 | | | | | | | | |
| | | | | Min | 14.08 | | | | | | | | |
| E type 2 type 3 | #22D | M | C & L | Max | 12.47 | | | | | | 13.22 | | |
| | | | | Min | 11.60 | | | | | | 12.35 | | |
| | | F | C & L | Max | 12.47 | | | | | | 13.22 | | |
| | | | | Min | 11.27 | | | | | | 12.02 | | |
| | | M | S | Max | 12.64 | – | | | | 12.64 | 13.39 | | |
| | | | | Min | 11.77 | – | | | | 11.77 | 12.52 | | |
| | | F | S | Max | 12.64 | – | | | | 12.64 | 13.39 | | |
| | | | | Min | 11.44 | – | | | | 11.44 | 12.19 | | |
| | #20 & #16 | M & F | C | Max | 12.64 | | | | | | 13.39 | | |
| | | | | Min | 11.77 | | | | | | 12.52 | | |

## Type 7 receptacle with wire wrap contacts




| Contact size | Contact type | A | B Max |
|---|---|---|---|
| #22D | W (3 wraps) | 9.07 / 10.06 | 16.00 |
| #20 | T (2 wraps) | 9.7 / 10.06 | 12.60 |

*Note: All dimensions are in millimeters (mm)*

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# Aluminum backshells

## Ordering information

| Basic Series | 8T | AB | 05 | A | 16 | W | S | 01 | - |
|---|---|---|---|---|---|---|---|---|---|

**Accessories type**

**Type:**
- **01:** Backnut
- **02:** Cable clamp
- **03:** Shrink boot
- **04:** Crimp ring
- **05:** Band lock
- **06:** Double cone

**Angle:**
- **A:** Straight
- **B:** 90° (Type 02 only)

**Size code:**
**08, 10, 12, 14, 16, 18, 20, 22, 24**

| Size code | 08 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
|---|---|---|---|---|---|---|---|---|---|
| = Shell size 8LT | 09 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |

**Finish:**
- **Z:** Black zinc nickel
- **W:** Olive green cadmium
- **F:** Nickel
- **A:** Black anodized

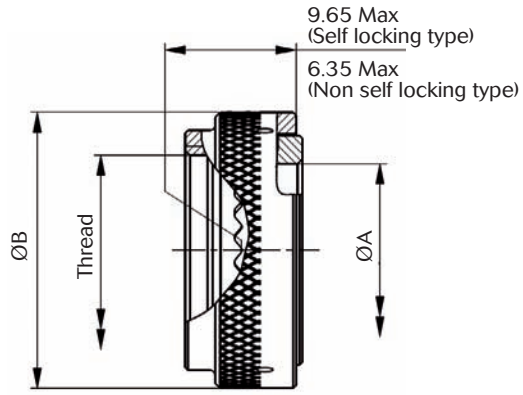
**Self locking option:**
- **None**
- **S:** Self locking (available for Types 01 & 02 - mandatory for Type 05)

**Cable entry (Type 05 only):**
- **01, 02** (02 mandatory for shell size 08 & 10)

**Drain hole option:**
- **None**
- **D:** Drain hole (Type 03 only)

## Dimensions

### Aluminum backshell Type 01 - Backnut




| Shell size | ØA Min | ØB Max |
|---|---|---|
| 09 | 6.7 | 17.9 |
| 11 | 9.95 | 20.9 |
| 13 | 12.85 | 24.3 |
| 15 | 17.0 | 27.9 |
| 17 | 19.25 | 31.3 |
| 19 | 21.7 | 35.3 |
| 21 | 24.7 | 38.1 |
| 23 | 27.8 | 41.5 |
| 25 | 32.0 | 44.5 |

Thread: See page 27 for information.

*Note: All dimensions are in millimeters (mm)*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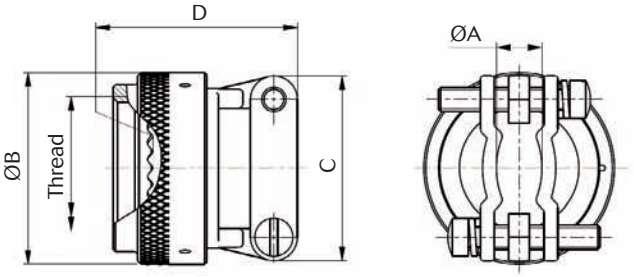
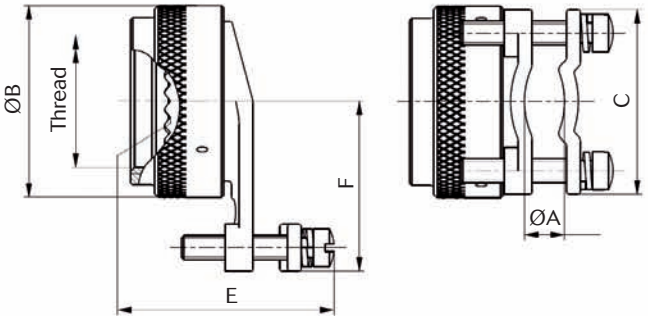
## Aluminum backshell Type 02 - Cable clamp

A Angle - straight



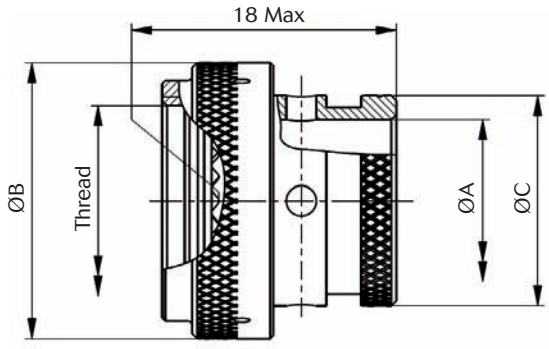

B Angle - 90°




Thread: See page 27 for information.

| Shell size | ØA | | ØB Max | C Max | D Max | E Max | F Max |
|---|---|---|---|---|---|---|---|
| | Min | Max | | | | | |
| 09 | 2.49 | 5.94 | 17.9 | 21.5 | 23.1 | 29.5 | 20 |
| 11 | 3.89 | 5.94 | 20.9 | 21.5 | 23.1 | 29.5 | 21.5 |
| 13 | 4.83 | 8.33 | 24.3 | 24.5 | 25.6 | 31.5 | 23.5 |
| 15 | 6.60 | 11.61 | 27.9 | 27.5 | 26.9 | 35.8 | 25.5 |
| 17 | 7.19 | 15.6 | 31.3 | 31.5 | 29.4 | 40.1 | 27.5 |
| 19 | 8.26 | 16.1 | 35.3 | 35.5 | 35.8 | 40.6 | 30.5 |
| 21 | 8.71 | 17.73 | 38.1 | 37 | 38.3 | 42.7 | 31.5 |
| 23 | 9.68 | 20.9 | 41.5 | 40.5 | 42.1 | 46.2 | 34.5 |
| 25 | 10.62 | 21.67 | 44.5 | 45 | 44.7 | 49 | 36.5 |

## Aluminum backshell Type 03 - Shrink boot




| Shell size | ØA Min | ØB Max | C Max |
|---|---|---|---|
| 09 | 6.7 | 19.0 | 11.3 |
| 11 | 9.95 | 21.5 | 14.9 |
| 13 | 12.85 | 25.3 | 17.8 |
| 15 | 16.05 | 29.1 | 21.27 |
| 17 | 19.2 | 31.7 | 24.3 |
| 19 | 21.5 | 35.5 | 26.4 |
| 21 | 24.7 | 39.3 | 30.8 |
| 23 | 27.8 | 41.8 | 34.1 |
| 25 | 31 | 46.9 | 36.6 |

Thread: See page 27 for information.

*Note: All dimensions are in millimeters (mm)*

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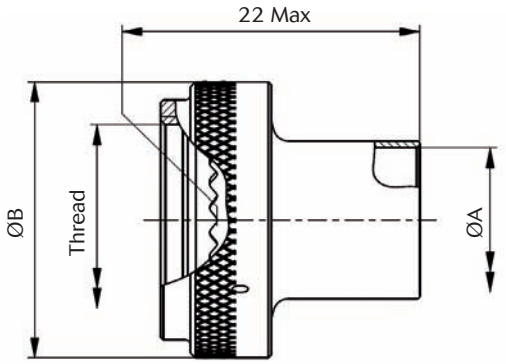
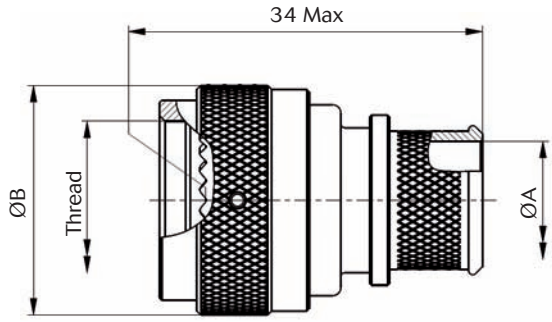
## Aluminum backshell Type 04 - Crimp ring




| Shell size | ØA Min | ØB Max |
|---|---|---|
| 09 | 6 | 17.9 |
| 11 | 8.2 | 20.9 |
| 13 | 10.5 | 24.3 |
| 15 | 13.6 | 27.9 |
| 17 | 16.9 | 31.3 |
| 19 | 20 | 34.3 |
| 21 | 23.2 | 38.1 |
| 23 | 26.1 | 41.5 |
| 25 | 28.1 | 44.4 |

Thread: See page 27 for information.

## Aluminum backshell Type 05 - Band lock

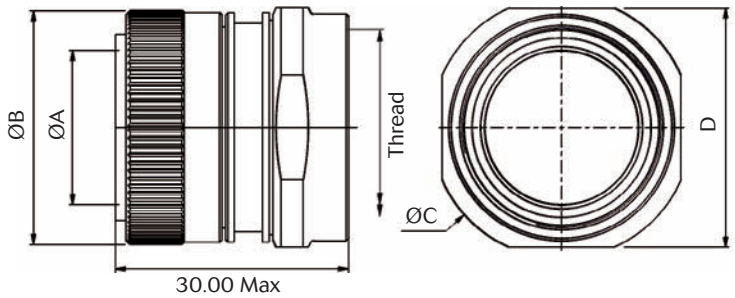



| Shell size | ØA Max - Entry size | | ØB Max |
|---|---|---|---|
| | 01 | 02 | |
| 09 | - | 6.6 | 17.9 |
| 11 | - | 8 | 24.9 |
| 13 | 8 | 11.2 | 29.3 |
| 15 | 11.2 | 14.4 | 32.4 |
| 17 | 12.8 | 16 | 35.6 |
| 19 | 16 | 19.1 | 38.4 |
| 21 | 16 | 20.7 | 41.6 |
| 23 | 17.6 | 23.9 | 44.8 |
| 25 | 19.1 | 25.5 | 47.9 |

Thread: See page 27 for information.

## Aluminum backshell Type 06 - Double cone

**HE 308 standard - Screen termination and heat shrink boot**




| Shell size | ØA$^{\pm 0.07}$ | ØB$^{\pm 0.12}$ | ØC$^{\pm 0.12}$ | D$^{\pm 0.07}$ |
|---|---|---|---|---|
| 09 | 7.1 | 15.55 | 19.35 | 16.7 |
| 11 | 10.25 | 18.45 | 23.35 | 20.7 |
| 13 | 13.05 | 21.85 | 25.35 | 22.7 |
| 15 | 15.25 | 25.05 | 28.35 | 25.7 |
| 17 | 18.45 | 28.05 | 31.35 | 28.7 |
| 19 | 20.65 | 31.05 | 34.35 | 31.7 |
| 21 | 23.85 | 34.45 | 38.35 | 35.7 |
| 23 | 26.95 | 37.45 | 41.35 | 38.7 |
| 25 | 30.15 | 40.75 | 44.35 | 41.7 |

Thread: See page 27 for information.

*Note: All dimensions are in millimeters (mm)*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# 8LT Series
## MIL-DTL-38999 Series I

### Thread information

| Shell size | UNEF Thread |
|---|---|
| 09 | 7/16-28 2B |
| 11 | 9/16-24 2B |
| 13 | 11/16-24 2B |
| 15 | 13/16-20 2B |
| 17 | 15/16-20 2B |
| 19 | 1 1/16 -18 2B |
| 21 | 1 3/16 -18 2B |
| 23 | 1 5/16 -18 2B |
| 25 | 1 7/16 -18 2B |

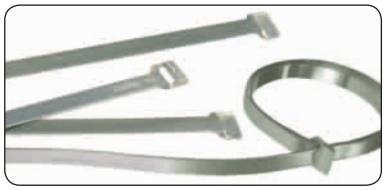
### Recommended installation torque

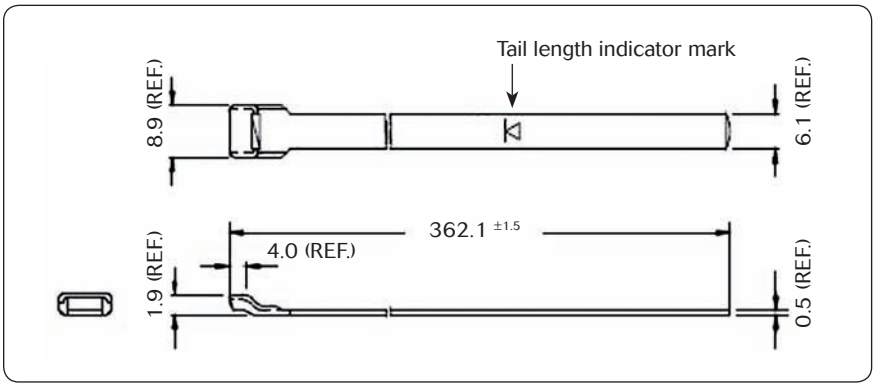
| Shell Size | Installation Torque (Inch-Pounds) |
|---|---|
| 09 | 40 |
| 11 | 40 |
| 13 | 40 |
| 15 | 40 |
| 17 | 40 |
| 19 | 40 |
| 21 | 80 |
| 23 | 80 |
| 25 | 80 |

Note: Torque values are based on 80% of the coupling thread strength specified in SAE-AS85049 standard.

### Band-it

| Designation | Flat stainless steel standard band | Pre-coiled stainless steel standard band | Hand banding tool |
|---|---|---|---|
| Part number | 8599-9344 | 8599-9345 | 8599-9346 |






### MIL specification

For aluminum bachshells MIL specification, please consult us.

*Note: All dimensions are in millimeters (mm)*

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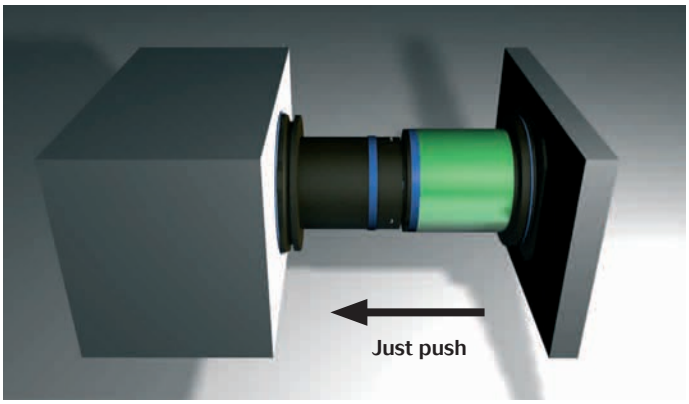
# 8LT Series
## MIL-DTL-38999 Series I

## Rack and Panel

- Signal and Power connector
- Easy and fast connection without any coupling/uncoupling between a float-mounting unit and a fixed unit.
- 100% scoop proof
- Plug misalignment allowed
- Rear accessories available
- 8 shell sizes available: from 11 to 23 with DTAT-C5935-X0005 layout - including power contact cavities
- Sealing as per HE 308
- EMI performances as per DTAT-C5935-X0005

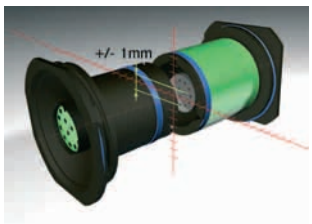
| Shell Size | Mated Force (daN) | Unmatted Force (daN) |
|---|---|---|
| 11 | 20 | 12 |
| 13 | 30 | 13 |
| 15 | 35 | 15 |
| 17 | 50 | 16 |
| 19 | 55 | 18 |
| 21 | 65 | 22 |
| 23 | 80 | 27 |
| 25 | - | - |

## Blind mateable connector

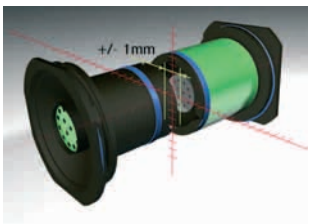


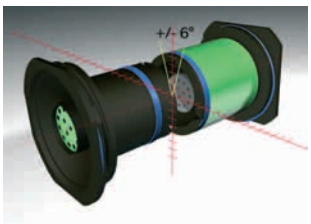

**Just push to connect... and release to disconnect**

## Superior misalignment allowances

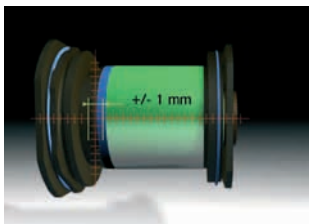



**Axial alignment**




**Angular aligment**




**Longitudinal alignment**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# Rack and Panel - Ordering information

## Souriau Rack and Panel connectors part numbers

| Basic series | 8LT | 27 | - | 15 | B | 35 | P | N | | | L |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Shell type**
**27:** Receptacle for rack, for male contacts, with possibility to mount rear accessory
**23:** Square flange receptacle (consult us)
**26:** Floating plug for rack, for crimp female contacts, with possibility to mount rear accessory

**Type**
**-:** Connector with standard crimp contacts
**Q:** Connector with quadrax crimp contacts
**C:** Connector with short PC tail (male and female #20, #16, #12, #8 quadrax)
**S:** Connector with specific PC tail (male and female #22D only)
**L:** Connector with long PC tail (male and female #22D)

**Shell size:** 11, 13, 15, 17, 19, 21, 23, 25

**Plating**
**Z:** Black zinc nickel **F:** Nickel **B:** Olive green cadmium

**Contact layout:** See tables pages 8 to 11

**Contact type**
**P:** Male **S:** Female

**Orientation: N**

**Specification**
**None:** Supplied with contacts
**251:** Connector provided with power contacts (for layout with cavities #8)
***284:** Quadrax grounded (cts 100Ω)
**308:** Quadrax not grounded (cts 100Ω)
***384:** Quadrax grounded (cts 150Ω)
**408:** Quadrax not grounded (cts 150Ω)

**Special custom**
**None:** Standard plastic cap **M:** Antistatic plastic cap

**L:** Connector supplied without contacts

*Excepted mixted layouts with quadrax and signal contacts. Please consult us.

## HE 308 Rack and Panel connectors part numbers

| Basic series | HE308 | 26 | T | 23 | 01 | P | N | 7 | M | |
|---|---|---|---|---|---|---|---|---|---|---|

**Shell type**
**26:** Floating plug for rack, for crimp female contacts, with possibility to mount rear accessory
**27:** Receptacle for rack, for male contacts, with possibility to mount rear accessory
**21:** Receptacle for rack with PC Tail contacts

**Class**
**T:** Sealed

**Shell size:** 11, 13, 15, 17, 19, 21, 23

**Contact layout:** See tables pages 8 to 11

**Contact type**
**P:** Male **S:** Female

**Orientation: N**

**Plating**
**7:** Olive green cadmium

**Contractual specifications**
**M:** DAT quality insurance

**Special custom**
**None:** Standard plastic cap **M:** Antistatic plastic cap

**Specifications**
**None:** Connector supplied with contact **L:** Connector supplied without contact

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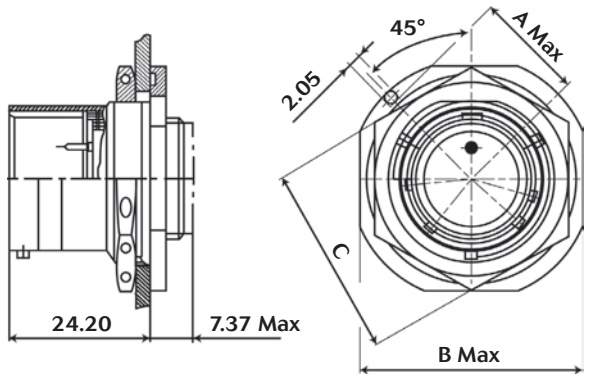
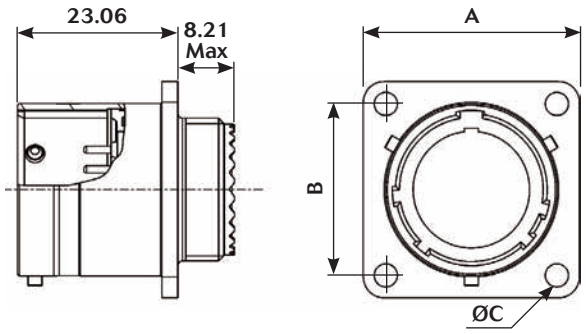
# Rack and Panel - Dimensions

## Equipment receptacle (type 27)



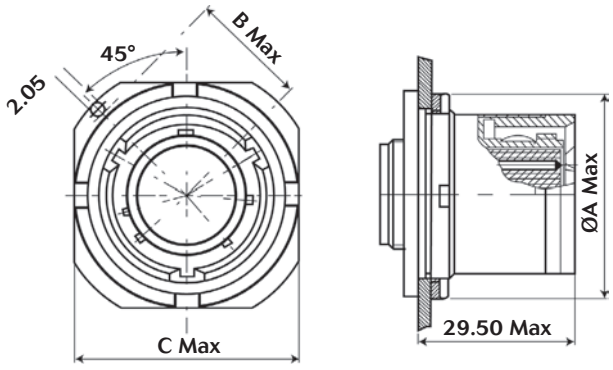

| Shells | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
|---|---|---|---|---|---|---|---|---|
| A Max | 15.33 | 16.92 | 18.51 | 20.1 | 22.67 | 24.26 | 25.84 | 27.43 |
| B Max | 32.16 | 35.34 | 38.51 | 41.69 | 46.43 | 49.64 | 52.78 | 56 |
| C | 25.55 | 30.3 | 33.45 | 36.65 | 39.8 | 43 | 46.15 | 50.95 |

## Square flange receptacle (type 23)




| Shells | 09 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
|---|---|---|---|---|---|---|---|---|---|
| A Min | 23.7 | 26.05 | 28.5 | 30.85 | 33.2 | 36.4 | 39.55 | 42.75 | 46 |
| A Max | 24.3 | 26.7 | 29.05 | 31.45 | 33.8 | 37 | 40.15 | 43.35 | 46.5 |
| B | 18.26 | 20.62 | 23.01 | 24.61 | 26.97 | 29.36 | 31.75 | 34.93 | 38.1 |
| ØC Min | 3.25 | | | | | | | 3.73 | |
| ØC Max | 3.35 | | | | | | | 3.83 | |

## Rack plug (type 26)




| Shells | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
|---|---|---|---|---|---|---|---|---|
| A Max | 32.1 | 35.25 | 38.4 | 41.6 | 46.3 | 49.6 | 52.7 | 55.9 |
| B Max | 16.92 | 18.51 | 20.1 | 22.67 | 24.26 | 25.84 | 27.43 | 29.03 |
| C Max | 32.16 | 35.34 | 38.51 | 41.69 | 46.43 | 49.64 | 52.78 | 55.96 |

*Note: All dimensions are in millimeters (mm)*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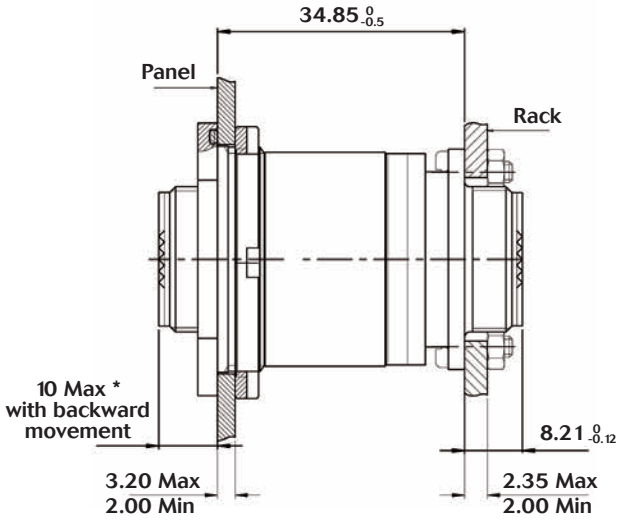
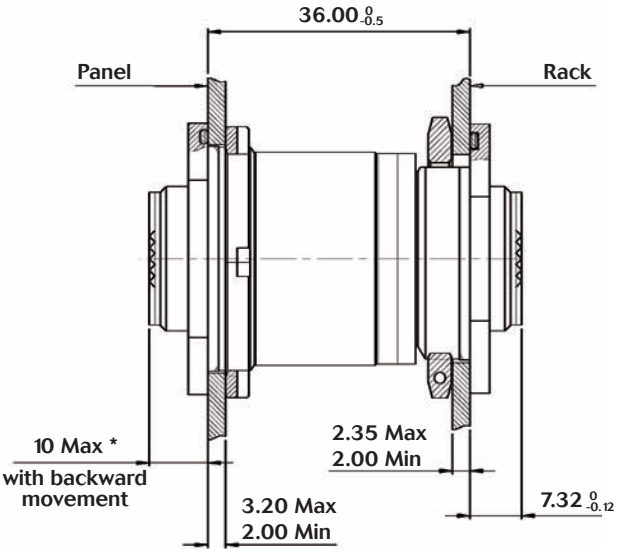
## Mated connectors

Plug type 26 & Receptacle type 23

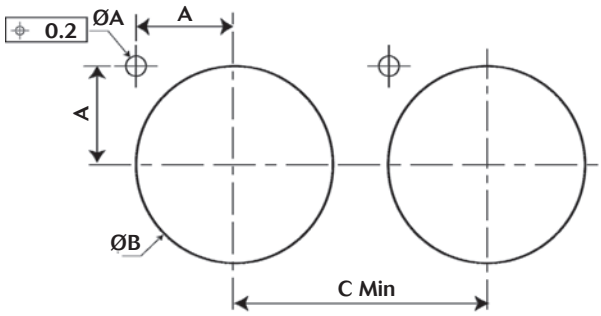


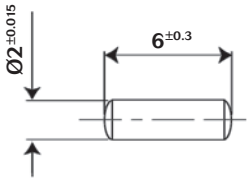

Plug type 26 & Receptacle type 27




*Included longitudinal alignment

## Panel cut out




| Shell size | Plug | | | |
|---|---|---|---|---|
| | A | ØB $^{\pm 0.1}_{0}$ | C Min | ØA |
| 11 | 12.81 | 25.58 | 32.57 | 2 $^{0}_{-0.05}$ |
| 13 | 13.94 | 28.80 | 36 | |
| 15 | 15.06 | 31.98 | 39.60 | |
| 17 | 16.88 | 35.15 | 43.30 | |
| 19 | 18 | 38.28 | 47 | |
| 21 | 19.12 | 41.50 | 50.60 | |
| 23 | 20.24 | 44.68 | 54.20 | |
| 25 | 21.38 | 47.85 | 57.45 | |

| Shell size | Receptacle | | | |
|---|---|---|---|---|
| | A | ØB $^{\pm 0.1}_{0}$ | C Min | ØA |
| 09 | 10 | 17.70 | 27.80 | 2 $^{0}_{-0.05}$ |
| 11 | 11.69 | 20.86 | 32.57 | |
| 13 | 12.81 | 25.58 | 36 | |
| 15 | 13.94 | 28.80 | 39.60 | |
| 17 | 15.06 | 31.98 | 43.30 | |
| 19 | 16.88 | 35.15 | 47 | |
| 21 | 18 | 38.28 | 50.60 | |
| 23 | 19.12 | 41.50 | 54.20 | |
| 25 | 20.24 | 44.68 | 59.70 | |

*Note: All dimensions are in millimeters (mm)*

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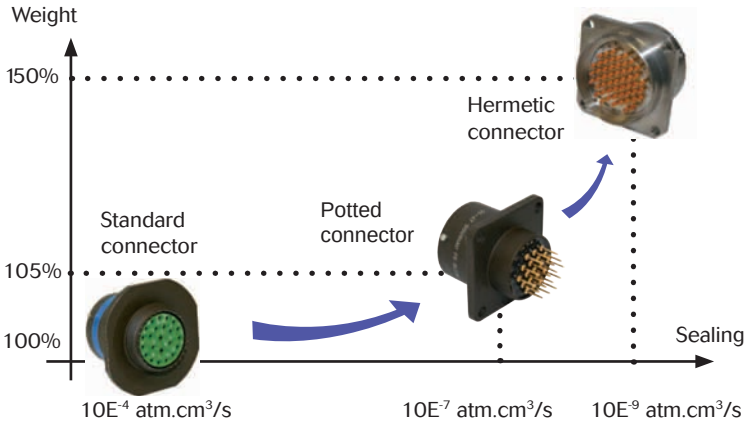
# 8LT Series
## MIL-DTL-38999 Series I

## Cost effective & light hermetics / Resin sealed

- Potted receptacle with male or female straight PC tail contacts
- 100% scoop proof: no interference when mating the connector, contacts never touch each other
- Weight saving compared to hermetic version
- Reinforced sealing for harsh environment ($10E^{-7}$ atm.cm³/s)

### Comparison between standard and hermetic version




- Good shock resistance - better than hermetic glass seal
- Female contacts available for the receptacle

### Contact layout

- PC Tail from #22D to #16
  for all other contacts please consult us.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# Cost effective & light hermetics / Resin sealed

## Souriau Part Numbers

| Basic Series | 8LTR | 0 | C | 09 | B | 35 | P | N |
|---|---|---|---|---|---|---|---|---|

**Shell style**
- **0:** Square flange receptacle
- **1:** In line receptacle
- **2:** Short square flange receptacle not accepting backshell
- **3:** Square flange receptacle (rear mounting)
- **5:** Plug with RFI shielding
- **7:** Jam nut receptacle
- **15 :** Plug with RFI shielding not accepting backshell

**Type**
- **C:** Receptacle with short PC tail (male and female #22D, #20, #16)
- **L:** Connector with long PC tail (male and female #22D)
- **S:** Connector with specific PC Tail (male and female #22D)
- **M:** Connector with medium PC tail (male #22D)
- **P:** Connector with solder cup: . Pin: #22D & #16; Socket: #12
  . Socket: #22D & #16; Pin: #12 - Please consult us

**Shell size:** 09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

**Plating**
- **B:** Olive green cadmium
- **F:** Nickel
- **ZC:** Green zinc cobalt
- **Z:** Black zinc nickel

**Contact layouts:** see tables pages 8 to 11

**Contact type**
- **P:** Male
- **S:** Female

**Orientation** (1)
- **N - A - B - C - D** see table page 48

(1) Orientation B & C not developed for shell size number 9

# 8LT Series

8LT Series

# Contacts & Tooling


Contacts:

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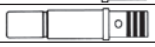
## Crimp contacts

| Contact size | Contact type | Souriau Part number (without color code) | MIL-DTL-38999 contacts | |
|---|---|---|---|---|
| | | | Part number | Profile and color code |
| #26 | Pin | 8599-0297 | - | |
| | Socket | 8599-0298 | - | |
| #22D | Pin | 8599-0702 JJ | M39029/58 360 | Black / Blue / Orange |
| | Socket | 8599-0706 900 | M39029/56 348 | Grey / Yellow / Orange |
| #20 | Pin | 8599-0703 SA | M39029/58 363 | Orange / Blue / Orange |
| | Socket | 8599-0707 900 | M39029/56 351 | Brown / Green / Orange |
| #16 | Pin | 8599-0704 MJ | M39029/58 364 | Yellow / Blue / Orange |
| | Socket | 8599-0708 900 | M39029/56 352 | Red / Green / Orange |
| #16 Coaxial | Pin | - | M39029/76 424 | Yellow / Red / Yellow |
| | Socket | - | M39029/77 428 | Grey / Red / Yellow |
| #12 | Pin | 8599-0705 MJ | M39029/58 365 | Green / Blue / Orange |
| | Socket | 8599-0709 900 | M39029/56 353 |  Orange / Green / Orange |
| #12 Coaxial | Pin | - | M39029/102 558 | |
| | Socket | - | M39029/103 559 | |
| | Pin | - | M39029/28 211 | |
| | Socket | - | M39029/75 416 | |
| #10 Power | Pin | - | M39029/58 528 | |
| | Socket | - | M39029/56 527 | |
| #8 Power | Pin | 8599-7544 * | - | |
| | Socket | 8599-7541 * | - | |
| | Pin | 8599-7580 | - | |
| | Socket | 8599-7581 | - | |
| | Boot | 8599-4542 | - | For wire #8 |
| | | 8599-4547 | - | For wire #10 |
| | Reductor | 8599-7645 | - | |
| #8 Coaxial | Pin | - | M39029/60 367 | |
| | Socket | - | M39029/59 366 | |
| | Boot | 8590-4571 | - | |
| #8 Twinax | Pin | - | M39029/90 529 | |
| | Socket | - | M39029/91 530 | |
| | Boot | 8590-4571 | - | |
| #4 Power | Pin | 8599-7598 900 ** | - | For wire 25 mm² |
| | Socket | 8599-7599 900 ** | - | |
| | Pin | 8599-7534 | - | For wire 21.15 mm² |
| | Socket | 8599-7535 | - | |
| | Boot for cable 16 mm² | 8599-4594 | - | |
| | Boot for cable 10 mm² | 8599-4593 | - | |
| | Reductor cable 10 mm² | 8400-2351A | - | |
| #4 Power with reduced barrel | Pin | 8599-7528 900 | - | Mating part #4 / Barrel #6 |
| | Socket | 8599-7529 900 | - | |
| | Boot | 8599-4593 | - | |

* JVS only. ** Not included in connector Part number. Must be ordered separately.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## Crimp contacts

| Contact size | Contact type | Contact Ø | Conductor section AWG | | Conductor section mm² | | External Ø over insulator | |
|---|---|---|---|---|---|---|---|---|
| | | | Min | Max | Min | Max | Min | Max |
| #26 | Pin | 0.76 | 30 | 24 | 0.055 | 0.215 | 0.60 | 0.83 |
| | Socket | | | | | | | |
| #22D | Pin | 0.76 | 28 | 22 | 0.095 | 0.34 | 0.76 | 1.37 |
| | Socket | | | | | | | |
| #20 | Pin | 1.00 | 24 | 20 | 0.21 | 0.60 | 1.02 | 2.11 |
| | Socket | | | | | | | |
| #16 | Pin | 1.60 | 20 | 16 | 0.60 | 1.34 | 1.65 | 2.77 |
| | Socket | | | | | | | |
| #16 Coaxial | Pin | | RG 174<br>RG 179<br>RG 316 | | | | 1.65 | 2.60 |
| | Socket | | | | | | | |
| #12 | Pin | 2.40 | 14 | 12 | 1.91 | 3.18 | 2.46 | 3.61 |
| | Socket | | | | | | | |
| #12 Coaxial | Pin | | RG 174<br>RG 179<br>RG 316 | | | | 2.40 | 2.60 |
| | Socket | | | | | | | |
| | Pin | | | | | | | |
| | Socket | | | | | | | |
| #10 Power | Pin | 3.20 | Please consult us | | | | - | 2.95 |
| | Socket | | | | | | | |
| #8 Power | Pin | 3.64 | - | 8 | - | 8.98 | - | - |
| | Socket | | | | | | | |
| | Boot | | - | - | - | - | 4.50 | 6.50 |
| | | | - | - | - | - | 2.50 | 4 |
| | Reductor | | - | - | - | - | - | - |
| #8 Coaxial | Pin | | RG 180 A/U | | | | - | 2.80 |
| | Socket | | | | | | | |
| | Boot | | | | | | | |
| #8 Twinax | Pin | 5.50 | 0,76MIL-C 17/176 00002<br>FILECA F.2703/14<br>RAYCHEM CHEMINAX 10612<br>FILOTEX M 17/176 00002 | | | | 3.15 | 3.40 |
| | Socket | | | | | | | |
| | Boot | | | | | | | |
| #4 Power | Pin | 5.74 | - | 3 | - | 25 | - | - |
| | Socket | | | | | | | |
| | Pin | | 5 | 4 | 16 | 21.15 | - | - |
| | Socket | | | | | | | |
| | Boot (Available for 8599-7534 and 7535 contacts) | | - | - | - | - | 6.35 | 7.50 |
| | | | - | - | - | - | 4 | 5.80 |
| | Reductor cable 10 mm² | | - | - | - | - | - | - |
| #4 Power with reduced barrel | Pin | | 6 | | 13.3 | | - | - |
| | Socket | | | | | | | |
| | Boot | | - | - | - | - | 4 | 5.80 |

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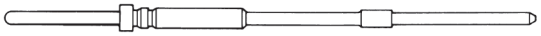
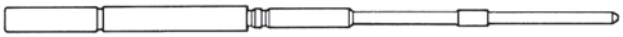
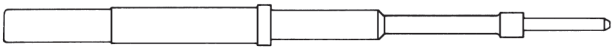
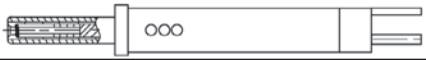
## Straight PC tail contacts

| Contact size | Contact type | PC tail type | Part number | Profile |
|---|---|---|---|---|
| #22D | Pin | L | 8599-0720 900 |  |
| | Pin | M | 8599-8028 900 | - |
| | Pin | C | 8599-0730 900 | |
| | Pin | S | 8599-0796 900 | |
| | Socket | L | 8599-0721 900 |  |
| | Socket | C | 8599-0731 900 | |
| | Socket | S | 8599-0797 900 | |
| #20 | Pin | M | 8599-0658 JJ | - |
| | Socket | M | 8599-0759 900 | - |
| | Pin | C | 8599-0724 900 | |
| | Socket | C | 8599-0725 900 |  |
| | Pin | L | 8599-0771 900 | - |
| | Socket | L | 8599-0772 900 | - |
| #16 | Pin | C | 8599-0726 900 | |
| | Socket | C | 8599-0727 900 | |
| Coaxial #16 | Pin | C | 8599-1000 900 |  |
| #12 | Pin | C | 8599-7929 900 | - |
| | Socket | C | 8599-7932 900 | - |

S: Specific PC tail
L: Long PC tail
M: Medium PC tail
C: Short PC tail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## Coaxial contacts #12

| Designation | Part number |
|---|---|
| Coaxial socket solder #12 | THA1-0151A |
| Coaxial pin solder #12 | THA1-0152A |
| Coaxial pin crimp contact #12 | THA1-0155A |
| Coaxial crimp contact #12 | THA1-0156A |

## Solder cup

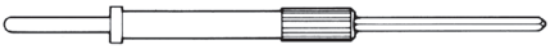
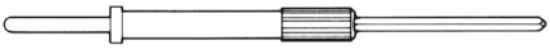
| Contact size | Contact type | Part number |
|---|---|---|
| #22D | Pin | 8599-0750 900 |
| #20 | Pin | 8599-0077A 900 |
| #16 | Pin | 8599-7482A 900 |
| #12 | Socket | 8599-7485A 900 |

For other contacts type please consult us.

## Crimp contacts: 1500 mating

| Contact size | MIL-DTL-38999 contacts | | |
|---|---|---|---|
| | Contact type | Part number | Color code |
| #22D | Pin (H) | M39029/107 620 | Blue / Red / Black |
| | Socket (J) | M39029/106 614 | Blue / Brown / Yellow |
| #20 | Pin (H) | M39029/107 621 | Blue / Red / Brown |
| | Socket (J) | M39029/106 615 | Blue / Brown / Green |
| #16 | Pin (H) | M39029/107 622 | Blue / Red / Red |
| | Socket (J) | M39029/106 616 | Blue / Brown / Blue |
| #12 | Pin (H) | M39029/107 623 | Blue / Red / Orange |
| | Socket (J) | M39029/106 617 | Blue / Brown / Gray |

## Wire wrap contacts

| Contact size | Contact type | Part number | Contact Ø (mm) | Profile | (mm) |
|---|---|---|---|---|---|
| #22D | Pin | 8599-0790 JJ | 0.76 |  | 0.86 |
| #20 | Pin | 8599-0791 900 | 1 |  | 0.86 |

## Quadrax #8 contacts

| Contact type | Version | Souriau Part Number | Cross Norm | T° | Impedance | Sealing | Release |
|---|---|---|---|---|---|---|---|
| Pin | PCB mount | ETH1-1237A | - | 125°C | 100Ω | Sealed | Rear |
| | | ETH1-1501A | - | | 150Ω | | |
| | Crimp | ETH1-1345A | EN3155-074 | 200°C | 100Ω | | |
| | | ETH1-1503A | - | | 150Ω | | |
| Socket | PCB mount | ETH1-1238A | - | 125°C | 100Ω | | |
| | | ETH1-1502A | - | | 150Ω | | |
| | Crimp | ETH1-1346A | EN3155-075 | 200°C | 100Ω | | |
| | | ETH1-1504A | - | | 150Ω | | |

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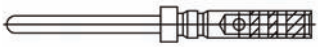
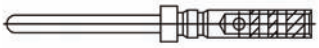
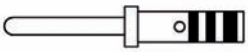
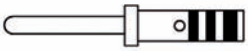
## Thermocouple contacts

| Contact size | Contact type | Souriau part numbers (without color code) | MIL-DTL-38999 contacts | | Ø Contact (mm) | Wire section | | | | Ø Over insulation (mm) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Part numbers | Profile and color code | | Awg | | mm² | | | |
| | | | | | | min | max | min | max | min | max |
| #22D Chromel | Pin | - | M39029/87-472 |  Red / Violet / Yellow | 0.75 | 28 | 22 | 0.095 | 0.34 | 0.76 | 1.37 |
| | Socket | - | M39029/88-484 | Yellow / Grey / Yellow | | | | | | | |
| #22D Alumel | Pin | - | M39029/87-471 |  Brown / Violet / Yellow | | | | | | | |
| | Socket | - | M39029/88-483 | Orange / Grey / Yellow | | | | | | | |
| #20 Chromel | Pin | 8599-0749 900 | 8599-0949 900 |  Blue / Violet / Yellow | 1 | 24 | 20 | 0.21 | 0.6 | 1.02 | 2.11 |
| | Socket | 8599-0753 900 | 8599-0953 900 | Grey / Grey / Yellow | | | | | | | |
| #20 Alumel | Pin | 8599-0761 900 | 8599-0961 900 |  Green / Violet / Yellow | | | | | | | |
| | Socket | 8599-0765 900 | 8599-0965 900 | Violet / Grey / Yellow | | | | | | | |

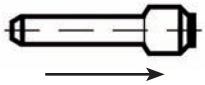
## Dummy contacts

| Size | Part number |
|---|---|
| #16 | 8599-6A016001A |
| #8 | 8599-0308 |
| #4 | 8599-0310 |

8599-0308

## Filler plugs

| Contact size | Filler plugs | | |
|---|---|---|---|
| | MS Part number (Rev. N) | Souriau Part number | Color |
| #22D | MS27488-22-2 | 8660-212 | Black |
| #20 | MS27488-20-2 | 8522-389A | Red |
| #16 | MS27488-16-2 | 8522-390A | Blue |
| #12 | MS27488-12-2 | 8522-391A | Yellow |



Direction of introduction in grommet

These filler plugs are installed at the rear of unwired contact to maintain connector sealing.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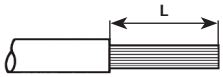
# Wiring instruction

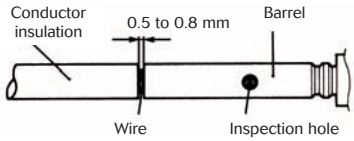
## Cable preparation and wire stripping

| Contact size | #26 | #22D | #20 | #16 | #12 | #8 | #4 |
|---|---|---|---|---|---|---|---|
| L | 4 | | 6 | | | 12 | |



L = length of wire stripping

## Insertion of wire in contact barrel

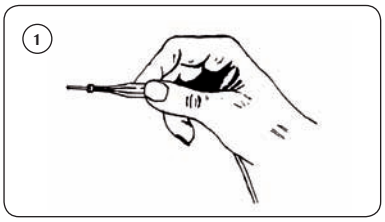



When inserting the stripped wire into the contact barrel check that no strands are left outside and that the wire is visible through the wire inspection hole in the barrel.

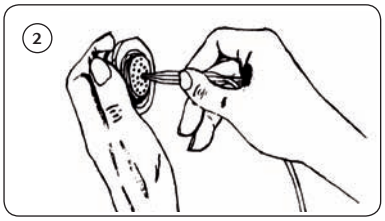
*Important:*
*- Slide any accessories over wire strands before carrying out the following operations.*
*- Contacts are inserted and extracted from the rear of the connector.*

## Insertion of the contacts

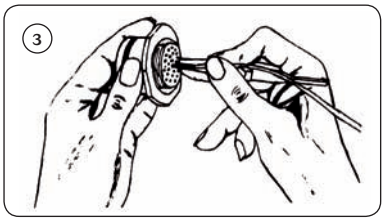
1 - Engage the crimp cable / contact asembly into the longitudinal slot of the plastic tool (coloured tip).
Slide the tool down the cable until the tip of the tool abuts the contact retention shoulder.




2 - Introduce the contact into the required contact cavity in the insulator, pushing tool axialy, until the contact snaps into position in clip.

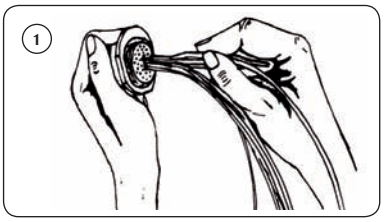



3 - Withdraw the tool (from rear). Check that contact is firmly locked by pulling wire gently.
When connector is fully loaded, check the position of contact tips. They should all be in the same plane.
Nota: For larger sizes of cable which are stiff enough manual insertion without tool is preferable.

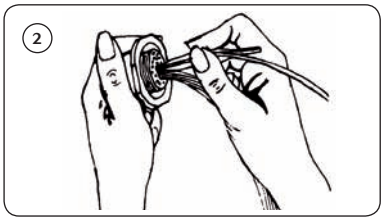



## Extraction of the contacts

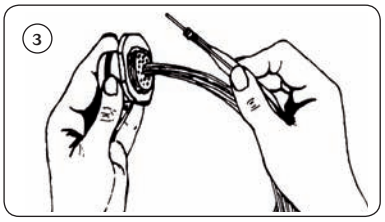
1 - Engage the appropriate cable into the longitudinal slot of the tool with the white tip towards connector.




2 - Slide the tool down towards the contact. Insert the tool in the insulator until it abuts the contact shoulder.




3 - Holding the tool-contact and cable assembly together, remove them simultaneously.

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# Tooling

## Crimping tools

| Contact size | Contact type | Plier M22520/1-01 | | Plier M22520/2-01 (Souriau 8476-01) | | Plier M300BT | Plier * M22520/23-01 | |
|---|---|---|---|---|---|---|---|---|
| | | Turret Part number | | Locator Part number | | Locator Part number | Turret Part number | Locator Part number |
| | | Norm | Souriau | Norm | Souriau | | | |
| #22D | Pin | - | - | M22520/2-09 | 8476-09 | - | - | - |
| | Socket | - | - | M22520/2-07 | 8476-07 | - | - | - |
| #20 | Pin | M22520/1-04 | 8365-04 | M22520/2-10 | 8476-10 | - | - | - |
| | Socket | | | | | - | - | - |
| #16 | Pin | M22520/1-04 | 8365-04 | - | - | - | - | - |
| | Socket | | | - | - | - | - | - |
| #12 | Pin | M22520/1-04 | 8365-04 | - | - | - | - | - |
| | Socket | | | - | - | - | - | - |
| #8 Power | Pin | - | - | - | - | SP 593 | M22520/23-02 | 8599-9601 |
| | Socket | - | - | - | - | | | |
| #4 Power | pin | - | - | - | - | - | M22520/23-04 | M22520/23-11 |
| | Socket | - | - | - | - | - | | |

| Contact size | Contact type | Plier M22520/2-01 (Souriau 8476-01) | Plier M22520/31-01 | Plier M22520/4-01 | Plier M22520/5-01 |
|---|---|---|---|---|---|
| | | Locator Part Number | Locator Part number | Locator Part Number | Die set Part Number |
| #12 Coaxial M39029/102-558 M39029/103-559 | Inner | - | - | - | M22520/5-03 |
| | Outer | - | - | - | |
| #12 Coaxial M39029/28-211 M39029/75-416 | Inner | M22520/2-34 | - | | |
| | Outer | - | M22520/31-02 | - | - |
| #16 Coaxial | Inner | M22520/2-35 | - | - | - |
| | Outer | - | - | M22520/4-02 | - |
| #8 Coaxial | Inner | M22520/2-31 | - | - | - |
| | Outer | - | - | - | M22520/5-05 closure B |
| #8 Triaxial | Inner | K709 | - | - | - |
| | Middle | - | - | - | y631 closure B |
| | Ferrule | - | - | - | y631 closure A |

* Pneumatic plier
Note: for the #10 contact's plier and locator, please consult us.


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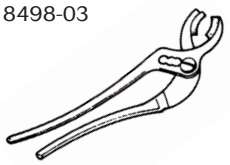
## Insertion & extraction tools

| Contact size | Material | Part number | | Color | |
|---|---|---|---|---|---|
| | | MIL standard | Souriau | Insertion | Extraction |
| #26 | Plastic | - | 8599-0399 900 | Black | White |
| #22D | Plastic | M81969/14-01 | - | Green | White |
| #20 | Plastic | M81969/14-10 | - | Red | Orange |
| #16 | Plastic | M81969/14-03 | - | Blue | White |
| #12 | Plastic | M81969/14-04 | - | Yellow | White |
| #10 | Plastic | M81969/14-05 | - | Grey | - |
| #8 | Plastic | M81969/14-12 | - | - | Green |
| | Metalic | - | 8660-197 | - | - |
| #4 | Plastic | M81969/14-07 | - | - | Blue |
| | Metalic | - | 8533-8175 | - | - |

## Backshell tightening tools

8498-03



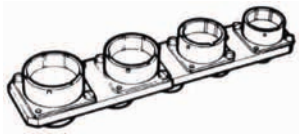
Backshell tightening pliers,
part number: **8498-03**
Square jaws (order 2 jaws),
part number: **8500-1015**

**Tightening of rear accessories:**

| Shell size | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
|---|---|---|---|---|---|---|---|---|---|
| Max torque in m/daN | 0.62 | | | | | | 1.24 | | |

## Tightening support

8599-0801



Part number: **8599-0801**
This tool is made up of dummy receptacles housings of all 9 sizes for all key polarisation, and secures free connectors during wiring and fitting of rear accessories.

## Slackening tools

8498-04

Strap clamp,
part number: **8498-04**
Spare strap,
part number: **8498-103**

## Tightening of fixing nuts, receptacle type 7

| Shell size | 09 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
|---|---|---|---|---|---|---|---|---|---|
| Nut dimension across flats | 22.35 | 25.55 | 30.30 | 33.45 | 36.65 | 39.80 | 43.00 | 46.10 | 50.95 |
| Max tightening torque on nut (mN) | 6 | 8 | 10 | 13 | 20 | 23 | 25 | 26 | 28 |

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# 8LT Series

8LT Series

# Common Section


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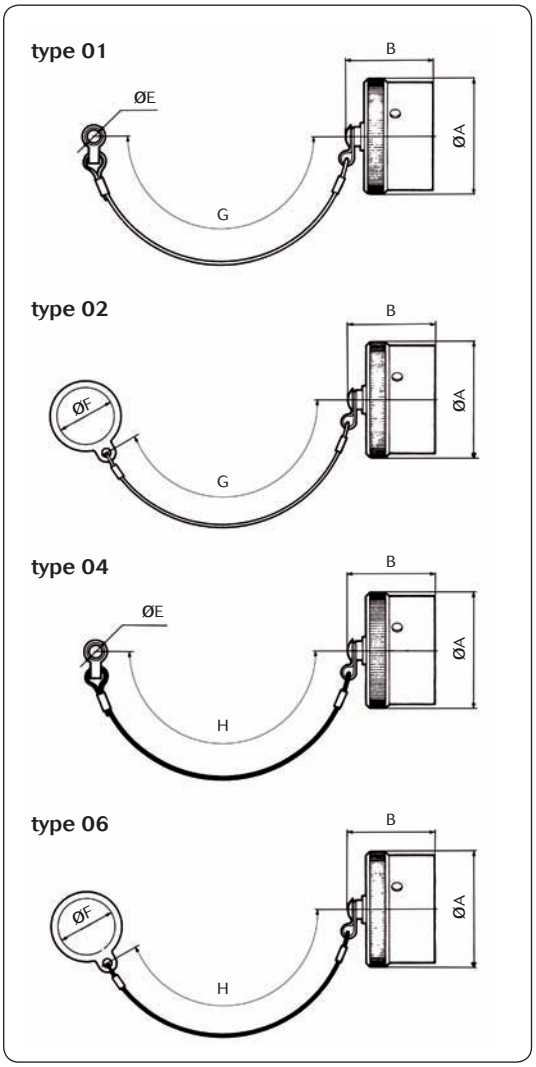
- Orientations ..... 48
- Panel gasket ..... 49
- Dummy receptacles ..... 49
- Cross reference list ..... 50
- Coordinates information ..... 52

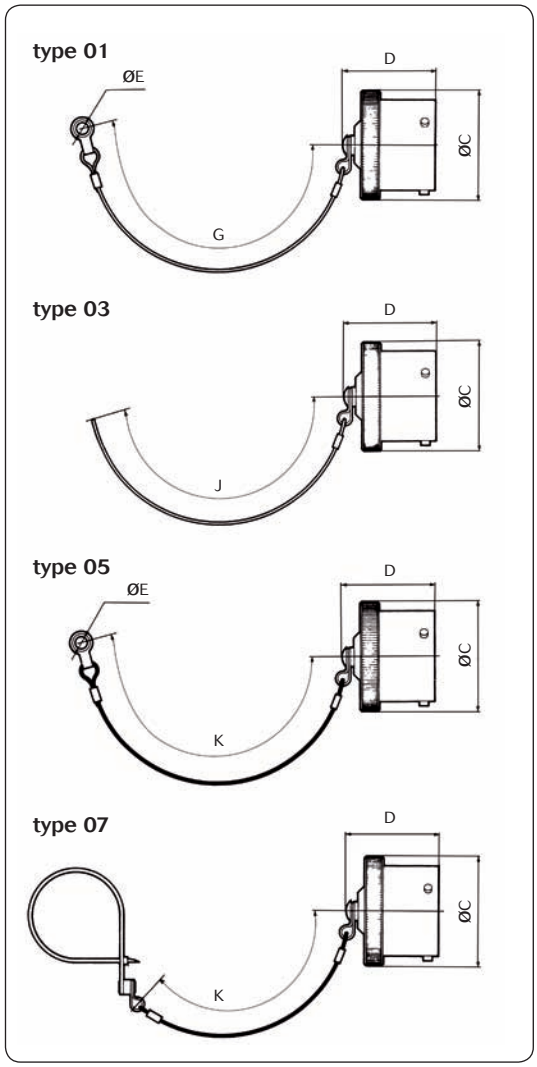
## Protective caps

### Metalic protective caps - Dimensions

Metalic protective cap for receptacles




Metalic protective cap for plugs




| Shell size | ØA Max | B Max | ØC Max | D Max | ØE Min | ØF Min | G | H±5 | J±5 | K±5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 09 | 21.80 | 28.00 | 20.80 | 29.50 | 3.20 | 17.80 | 76 | 105 | 200 | 160 |
| 11 | 24.90 | | 23.80 | | | 21.30 | | | | |
| 13 | 29.40 | | 27.70 | | | 25.70 | 89 | | | |
| 15 | 32.50 | | 30.20 | | | 29.00 | | | | |
| 17 | 35.80 | | 33.50 | | | 32.00 | | | | |
| 19 | 38.60 | | 36.50 | | | 35.30 | | | | |
| 21 | 41.90 | | 39.80 | | | 38.40 | 102 | | | |
| 23 | 44.90 | | 42.90 | | | 41.70 | | | | |
| 25 | 48.00 | | 46.20 | | | 44.70 | | | | |

*Note: All dimensions are in millimeters (mm)*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# Protective caps

## Metalic protective caps - Ordering

| Basic series | 8LT | E | 01 | B | 13 |
|---|---|---|---|---|---|

**Cap type**
- **E:** Cap for receptacle
- **F:** Cap for plug

**Fixing type**

| Cap for receptacle | Cap for plug |
|---|---|
| **01:** Plastic sleeved metal cord with eyelet | **01:** Plastic sleeved metal cord with eyelet |
| **02:** Plastic sleeved metal cord with ring | **03:** Nylon cord without fastener |
| **04:** Nylon cord with eyelet | **05:** Nylon cord with eyelet |
| **06:** Nylon cord with ring | **07:** Nylon cord with strap |
| **10:** Black nylon cord with eyelet | |

**Plating**
- **B:** Olive green cadmium
- **F:** Nickel

**Shell size:**
**09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25**

## Plastic protective caps

| Shell size | Part numbers for standard cap | | Part numbers for antistatic cap | |
|---|---|---|---|---|
| | Caps for receptacle | Caps for plug | Caps for receptacle | Caps for plug |
| 09 | 8500-5594 | 70609 | MS90376-10RF | MS90376-14RF |
| 11 | MS90376-12R | MS90376-16Y | MS90376-12RF | MS90376-16RF |
| 13 | 8500-5588A | 8500-5600 | 8500-5588N | 8500-5600N |
| 15 | 8500-5589A | 8500-5601 | MS90376-18YF | 8500-5601N |
| 17 | MS90376-20YF | 8500-5602 | MS90376-20YF | 8500-5602N |
| 19 | 8500-5601 | 8500-5592A | 8500-5601N | 8500-5592N |
| 21 | 8500-5602 | 8500-5593A | 8500-5602N | 8500-5593N |
| 23 | MS90376-24R | MS90376-24R | MS90376-24RF | - |
| 25 | 8500-5593A | J599ABC6009A00 | 8500-5593N | - |

# Reductors

| Reductor Size | Part number | For cable | For pin contacts | For socket contacts |
|---|---|---|---|---|
| #8 Power | 8599-7645 | #10 | 8599-7580 | 8599-7581 |
| #4 Power | 8400-2352A | 10 mm² | 8599-7534A | 8599-7535A |

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## Boots

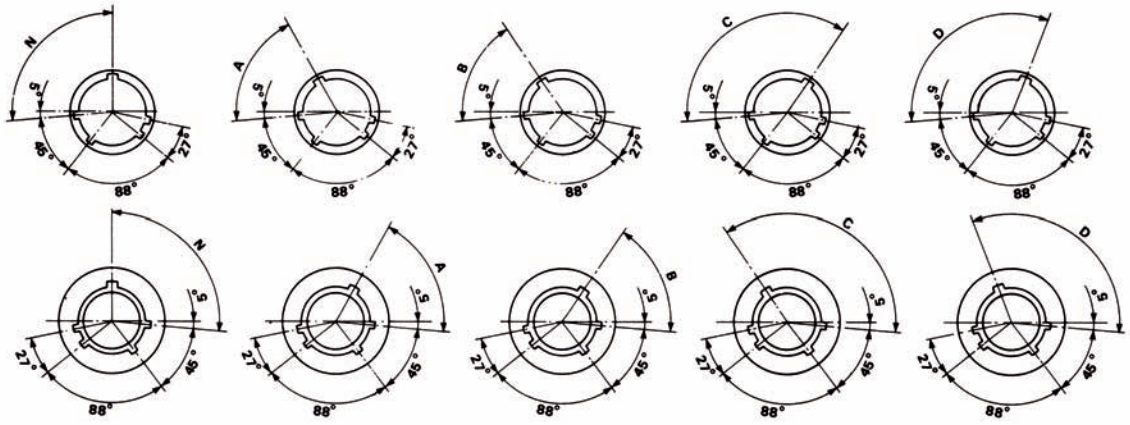
| Boot Size | Part number | Admissible wire section mm² | | For cable |
|---|---|---|---|---|
| #8 Power | 8599-4542 | 5 | 6.5 | 8.48 à 10 mm² |
| | 8599-4547 | 2.5 | 4 | #10 |
| #4 Power | 8599-4594 | 6.35 | 7.5 | #4 - #5 |
| | 8599-4593 | 4 | 5.8 | #6 - #8 |

## Orientations

Polarization is determined by the master keyway position.
The secondary keyway positions remain fixed.

View from front face of receptacle

View from front face of plug




| Shell size | Angles (degrees) | | | | |
|---|---|---|---|---|---|
| | N | A | B | C | D |
| 09 | 95 | 77 | - | - | 113 |
| 11 | 95 | 81 | 67 | 123 | 109 |
| 13 | 95 | 75 | 63 | 127 | 115 |
| 15 | 95 | 74 | 61 | 129 | 116 |
| 17 | 95 | 77 | 65 | 125 | 113 |
| 19 | 95 | 77 | 65 | 125 | 113 |
| 21 | 95 | 77 | 65 | 125 | 113 |
| 23 | 95 | 80 | 69 | 121 | 110 |
| 25 | 95 | 80 | 69 | 121 | 110 |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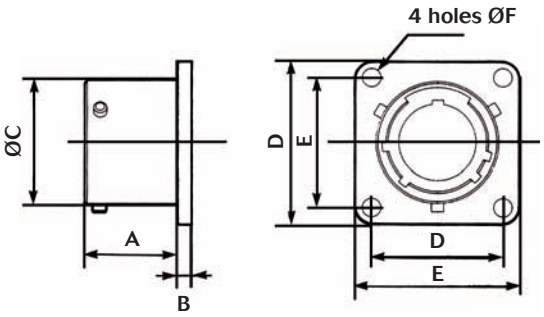
## Panel gasket

| Shell size | Part numbers | |
|---|---|---|
| | Gasket for receptacle type 0, 2, 3 (to be ordered separately) | O ring for receptacle type 7 (shipped with connector) |
| 09 | 8599-5541 | AS3582-019 |
| 11 | 8599-5542 | AS3582-022 |
| 13 | 8599-5543 | AS3582-024 |
| 15 | 8599-5544 | AS3582-026 |
| 17 | 8599-5545 | AS3582-028 |
| 19 | 8599-5546 | AS3582-128 |
| 21 | 8599-5547 | AS3582-130 |
| 23 | 8599-5548 | AS3582-132 |
| 25 | 8599-5549 | AS3582-134 |

## Dummy receptacles




| Shell size | Part numbers | A Max | B Max | ØC Max | D Max | E | ØF |
|---|---|---|---|---|---|---|---|
| 09 | 8LT0-09GUR | 16.05 | 2.54 | 14.53 | 24.25 | 18.26 | 3.25 |
| | 8LT0-09FUR | | | | | | |
| 11 | 8LT0-11GUR | 16.05 | 2.54 | 17.78 | 26.60 | 20.62 | 3.25 |
| | 8LT0-11FUR | | | | | | |
| 13 | 8LT0-13GUR | 16.05 | 2.54 | 21.59 | 29.00 | 23.01 | 3.25 |
| | 8LT0-13FUR | | | | | | |
| 15 | 8LT0615GUR | 16.05 | 2.54 | 24.77 | 31.35 | 24.61 | 3.25 |
| | 8LT0615FUR | | | | | | |
| 17 | 8LT0-17GUR | 16.05 | 2.54 | 27.94 | 33.75 | 26.97 | 3.25 |
| | 8LT0-17FUR | | | | | | |
| 19 | 8LT0-19GUR | 16.05 | 2.54 | 30.66 | 36.90 | 29.36 | 3.25 |
| | 8LT0-19FUR | | | | | | |
| 21 | 8LT0-21GUR | 15.29 | 3.30 | 33.83 | 40.10 | 31.75 | 3.25 |
| | 8LT0-21FUR | | | | | | |
| 23 | 8LT0-23GUR | 15.29 | 3.30 | 37.00 | 43.25 | 34.93 | 3.73 |
| | 8LT0-23FUR | | | | | | |
| 25 | 8LT0-25GUR | 15.29 | 3.30 | 40.18 | 46.50 | 38.10 | 3.73 |
| | 8LT0-25FUR | | | | | | |

*Note: All dimensions are in millimeters (mm)*

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# Cross reference list :
## Part Numbers Souriau and Specifications : NFC 93422 / MIL DTL 38999

### Connectors

| SOURIAU | NFC 93422<br>HE 308 | MIL DTL 38999<br>Serie I | Designation |
|---|---|---|---|
| 8LT0●●B●●P/SN<br>8LT0●●F●●P/SN | HE30800T●●●●P/SN7 M<br>HE30800T●●●●P/SN6 M | MS27466T●●B●●P/S●*<br>MS27466T●●F●●P/S●* | Square flange receptacle |
| 8LT1●●B●●P/SN<br>8LT1●●F●●P/SN | -<br>- | -<br>- | Cable connecting receptacle |
| 8LT2●●B●●P/SN<br>8LT2●●F●●P/SN | -<br>- | MS27505E●●B●●P/S●*<br>MS27505E●●F●●P/S●* | Square flange receptacle<br>not accepting backshell |
| 8LT3●●B●●P/SN<br>8LT3●●F●●P/SN | -<br>- | MS27656T●●B●●P/S●*<br>MS27656T●●F●●P/S●* | Square flange receptacle<br>(rear mounting) |
| 8LT5●●B●●P/SN<br>8LT5●●F●●P/SN | HE30806T●●●●P/SN7 M<br>HE30806T●●●●P/SN6 M | MS27467T●●B●●P/S●*<br>MS27467T●●F●●P/S●* | Plug with RFI shielding |
| 8LT15●●B●●P/SN<br>8LT15●●F●●P/SN | -<br>- | MS27467E●●B●●P/S●*<br>MS27467E●●F●●P/S●* | Plug with RFI shielding<br>not accepting backshell |
| 8LT7●●B●●P/SN<br>8LT7●●F●●P/SN | HE30807T●●●●P/SN7 M<br>HE30807T●●●●P/SN6 M | MS27468T●●B●●P/S●*<br>MS27468T●●F●●P/S●* | Jam nut receptacle |
| 8LT7S●●B●●P/SN (#22D)<br>8LT7S●●F●●P/SN (#22D) | HE30811T●●●●P/SN7 M<br>HE30811T●●●●P/SN6 M | -<br>- | Jam nut receptacle with PC Tail<br>contacts |
| 8LT7C●●B●●P/SN (#20, #16, #12)<br>8LT7C●●F●●P/SN (#20, #16, #12) | HE30811T●●●●P/SN7 M<br>HE30811T●●●●P/SN6 M | -<br>- | Jam nut receptacle with PC Tail<br>contacts |
| 8LT26●●B●●P/SN<br>8LT26●●F●●P/SN | HE30826T●●●●P/SN7 M<br>- | -<br>- | Floating plug for rack HE308 |
| 8LT27●●B●●P/SN<br>8LT27●●F●●P/SN | HE30827T●●●●P/SN7 M<br>- | -<br>- | Receptacle for rack HE308 with<br>possibility to mount rear accessories |
| 8LT27S●●B●●P/SN (#22D)<br>8LT27C●●B●●P/SN (#20, #16, #12) | HE30821T●●●●P/SN7 M<br>HE30821T●●●●P/SN7 M | -<br>- | Receptacle for rack HE308 with<br>PC Tail contacts |
| 8LT23●●B●●P/SN | - | - | Square flange receptacle |

* Standard P/S : . None = N position,
. Use A,B,C,D for other orientations

### Backshells

| SOURIAU | NFC 93422<br>HE 308 | MIL DTL 38999<br>Serie I | Designation |
|---|---|---|---|
| 8LST●●●B01<br>8LST●●●F01 | -<br>- | M8504927●●W<br>M8504927●●N | Backnut |
| 8LST●●●B02<br>8LST●●●F02<br>8LST●●●G02 | -<br>HE308-11●●26<br>HE308-11●●27 | -<br>-<br>- | Straight cable clamp |
| 8LST●●●B03<br>8LST●●●F03<br>8LST●●●G03 | -<br>HE308-12●●26<br>HE308-12●●27 | -<br>-<br>- | Elbow cable clamp |
| 8LST●●●B071<br>8LST●●●F071 | HE308-13●●17<br>HE308-13●●16 | -<br>- | Backshell for screen termination<br>and heatshrink sleeving |


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## Caps

| SOURIAU | NFC 93422 / HE 308 | MIL-DTL-38999 Series I | Designation |
|---|---|---|---|
| 8LTE04B●●<br>8LTE04F●● | HE308-B00●●7<br>HE308-B00●●6 | -<br>- | Cap for square flange receptacle |
| 8LTE06B●●<br>8LTE06F●● | HE308-B07●●7<br>HE308-B07●●6 | -<br>- | Cap for jam nut receptacle |
| 8LTF05B●●<br>8LTF05F●● | HE308-B16●●7<br>HE308-B16●●6 | -<br>- | Cap for plug |
| 8LTF07B●●<br>8LTF07F●● | HE308-B06●●7<br>HE308-B06●●6 | -<br>- | Cap for plug |
| 8LTE01B●●<br>8LTE01F●● | -<br>- | MS27502B●●C<br>MS27502F●●C | Cap for receptacle |
| 8LTE02B●●<br>8LTE02F●● | -<br>- | MS27502B●●N<br>MS27502F●●N | Cap for receptacle |
| 8LTF01B●●<br>8LTF01F●● | -<br>- | MS27501B●●C<br>MS27501F●●C | Cap for plug |

## Contacts

See page 35

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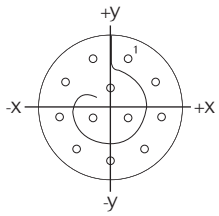
# Coordinates for straight PC tail terminations

## Viewed from front face of male insulator

Hole sizes: 1mm min. (#22 and #20 contacts) and 1.3mm min. (#16 contact) coordinates in mm.

## 09 / A

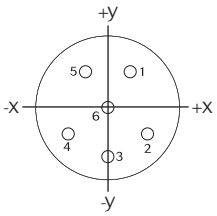
### 12




| Ctc | x | y |
|---|---|---|
| 1 | +0.92 | +2.54 |
| 2 | +2.34 | +1.35 |
| 3 | +2.66 | -0.47 |
| 4 | +1.74 | -2.07 |
| 5 | 0.00 | -2.70 |
| 6 | -1.74 | -2.07 |

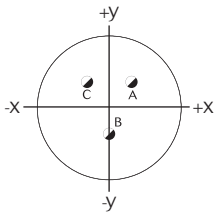
| Ctc | x | y |
|---|---|---|
| 7 | -2.66 | -0.47 |
| 8 | -2.34 | +1.35 |
| 9 | -0.92 | +2.54 |
| 10 | 0.00 | +1.03 |
| 11 | +0.89 | -0.51 |
| 12 | -0.89 | -0.51 |

### 35




| Ctc | x | y |
|---|---|---|
| 1 | +1.14 | +1.98 |
| 2 | +1.98 | -1.14 |
| 3 | 0.00 | -2.29 |
| 4 | +1.98 | -1.14 |
| 5 | +1.14 | +1.98 |
| 6 | 0.00 | 0.00 |

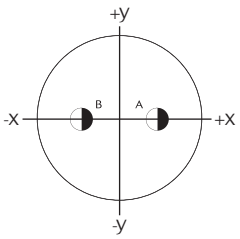
### 98




| Ctc | x | y |
|---|---|---|
| A | +1.65 | +0.97 |
| B | 0.00 | -1.90 |
| C | -1.65 | +0.97 |

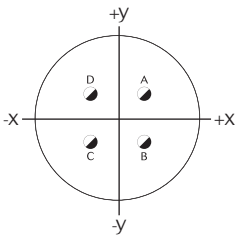
## 11 / B

### 02



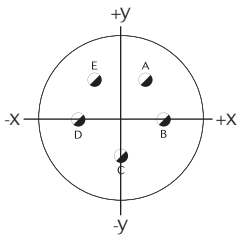

| Ctc | x | y |
|---|---|---|
| A | 0.00 | +2.41 |
| B | 0.00 | -2.41 |

### 04



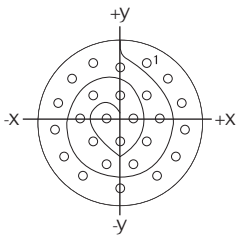

| Ctc | x | y |
|---|---|---|
| A | +1.65 | +1.65 |
| B | +1.65 | -1.65 |
| C | -1.65 | -1.65 |
| D | -1.65 | +1.65 |

### 05




| Ctc | x | y |
|---|---|---|
| A | +1.65 | +1.42 |
| B | +2.86 | -1.65 |
| C | 0.00 | -3.30 |
| D | -2.86 | -1.65 |
| E | -1.65 | +1.42 |

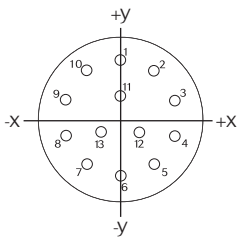
### 26




| Ctc | x | y |
|---|---|---|
| 1 | +1.69 | +3.79 |
| 2 | +3.09 | +2.77 |
| 3 | +3.95 | +1.28 |
| 4 | +4.13 | -0.44 |
| 5 | +3.58 | -2.10 |
| 6 | +2.40 | -3.37 |
| 7 | 0.00 | -4.13 |
| 8 | -2.40 | -3.37 |
| 9 | -3.58 | -2.10 |
| 10 | -4.13 | -0.44 |
| 11 | -3.95 | +1.28 |
| 12 | -3.09 | +2.77 |
| 13 | -1.69 | +3.79 |

| Ctc | x | y |
|---|---|---|
| 14 | 0.00 | +3.50 |
| 15 | +1.70 | +1.76 |
| 16 | +2.55 | +0.29 |
| 17 | +1.70 | -1.18 |
| 18 | +0.85 | -2.65 |
| 19 | -0.85 | -2.65 |
| 20 | -1.70 | -1.18 |
| 21 | -2.55 | +0.29 |
| 22 | -1.70 | +1.76 |
| 23 | 0.00 | +1.76 |
| 24 | +0.85 | +0.29 |
| 25 | 0.00 | -1.18 |
| 26 | -0.85 | +0.29 |

### 35




| Ctc | x | y |
|---|---|---|
| 1 | 0.00 | +3.71 |
| 2 | +2.16 | +3.00 |
| 3 | +3.51 | +1.14 |
| 4 | +3.51 | -1.14 |
| 5 | +2.16 | -3.00 |

| Ctc | x | y |
|---|---|---|
| 6 | 0.00 | -3.71 |
| 7 | -2.16 | -3.00 |
| 8 | -3.51 | -1.14 |
| 9 | -3.51 | +1.14 |

| Ctc | x | y |
|---|---|---|
| 10 | -2.16 | +3.00 |
| 11 | 0 | +1.42 |
| 12 | +1.24 | -0.89 |
| 13 | -1.24 | -0.89 |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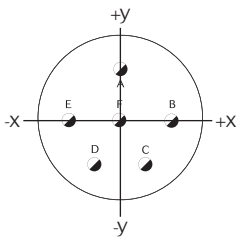
# 8LT Series
## MIL-DTL-38999 Series I

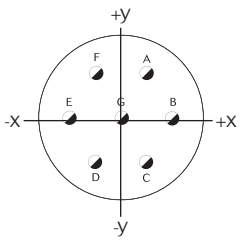
## 11 / B

### 98




| Ctc | x | y |
|---|---|---|
| A | 0.00 | +3.30 |
| B | +3.30 | 0.00 |
| C | +1.65 | -2.87 |
| D | -1.65 | -2.87 |
| E | -3.30 | 0.00 |
| F | 0.00 | 0.00 |

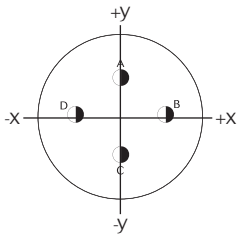
### 99




| Ctc | x | y |
|---|---|---|
| A | +1.65 | +2.85 |
| B | +3.30 | 0.00 |
| C | +1.65 | -2.87 |
| D | -1.65 | -2.87 |
| E | -3.30 | 0.00 |
| F | -1.65 | +2.87 |
| G | 0.00 | 0.00 |

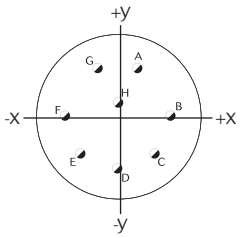
## 13 / C

### 04



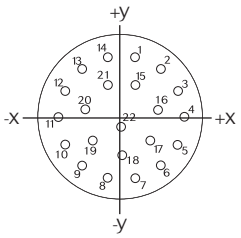

| Ctc | x | y |
|---|---|---|
| A | 0.00 | +3.81 |
| B | +3.71 | +0.89 |
| C | 0.00 | -2.11 |
| D | -3.71 | +0.89 |

### 08




| Ctc | x | y |
|---|---|---|
| A | +1.65 | +3.99 |
| B | +4.32 | 0.00 |
| C | +3.05 | -3.05 |
| D | 0.00 | -4.32 |
| E | -3.05 | -3.05 |
| F | -4.32 | 0.00 |
| G | -1.65 | +3.99 |
| H | 0.00 | +1.12 |

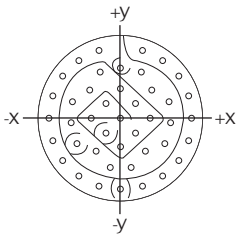
### 35




| Ctc | x | y |
|---|---|---|
| 1 | +1.14 | +5.00 |
| 2 | +3.20 | +4.01 |
| 3 | +4.62 | +2.24 |
| 4 | +5.16 | 0.00 |
| 5 | +4.62 | -2.24 |
| 6 | +3.20 | -4.01 |
| 7 | +1.14 | -5.00 |
| 8 | -1.14 | -5.00 |
| 9 | -3.20 | -4.01 |
| 10 | -4.62 | -2.24 |
| 11 | -5.16 | 0.00 |

| Ctc | x | y |
|---|---|---|
| 12 | -4.62 | +2.24 |
| 13 | -3.20 | +4.01 |
| 14 | -1.14 | +5.00 |
| 15 | +1.14 | +2.72 |
| 16 | +2.97 | +0.66 |
| 17 | +2.36 | -1.91 |
| 18 | 0.00 | -3.05 |
| 19 | -2.36 | -1.91 |
| 20 | -2.97 | +0.66 |
| 21 | -1.14 | +2.72 |
| 22 | 0.00 | -0.76 |

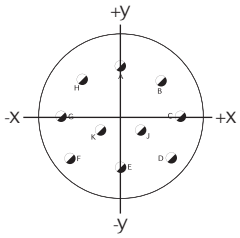
### 43




| Ctc | x | y |
|---|---|---|
| 1 | +1.80 | +5.54 |
| 2 | -1.80 | +5.54 |
| 3 | +3.42 | +4.71 |
| 4 | +4.71 | +3.42 |
| 5 | +5.54 | +1.80 |
| 6 | +5.82 | 0.00 |
| 7 | +5.54 | -1.80 |
| 8 | +4.71 | -3.42 |
| 9 | +3.42 | -4.71 |
| 10 | +1.80 | -5.54 |
| 11 | 0.00 | -5.82 |
| 12 | -1.80 | -5.54 |
| 13 | -3.42 | -4.71 |
| 14 | -4.71 | -3.42 |
| 15 | -5.54 | -1.80 |
| 16 | -5.82 | 0.00 |
| 17 | -5.54 | +1.80 |
| 18 | -4.71 | +3.42 |
| 19 | -3.42 | +4.71 |
| 20 | 0.00 | +4.12 |
| 21 | +1.68 | +3.76 |
| 22 | +2.54 | +2.28 |

| Ctc | x | y |
|---|---|---|
| 23 | +3.92 | +1.27 |
| 24 | +4.10 | -0.43 |
| 25 | +3.57 | -2.06 |
| 26 | +1.99 | -2.74 |
| 27 | +0.86 | -4.03 |
| 28 | -0.86 | -4.03 |
| 29 | -1.99 | -2.74 |
| 30 | -3.57 | -2.06 |
| 31 | -4.10 | -0.43 |
| 32 | -3.92 | +1.27 |
| 33 | -2.54 | +2.28 |
| 34 | -1.68 | +3.76 |
| 35 | 0.00 | +2.42 |
| 36 | +1.21 | +1.21 |
| 37 | +2.42 | 0.00 |
| 38 | +1.21 | -1.21 |
| 39 | 0.00 | -2.42 |
| 40 | -1.21 | -1.21 |
| 41 | -2.42 | 0.00 |
| 42 | -1.21 | +1.21 |
| 43 | 0.00 | 0.00 |

### 98




| Ctc | x | y |
|---|---|---|
| A | 0.00 | +4.95 |
| B | +3.18 | +3.81 |
| C | +4.90 | +0.76 |
| D | +4.17 | -2.67 |
| E | 0.00 | -3.43 |

| Ctc | x | y |
|---|---|---|
| F | -4.17 | -2.67 |
| G | -4.90 | +0.76 |
| H | -3.18 | +3.81 |
| J | +1.65 | -0.38 |
| K | -1.65 | -0.38 |

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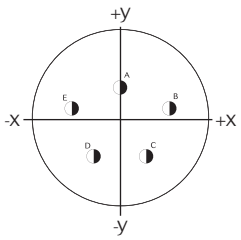
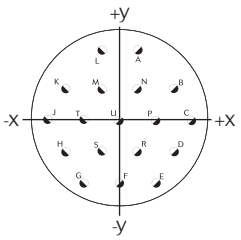
## 15 / D

### 05




| Ctc | X | y |
|---|---|---|
| A | 0 | +2.54 |
| B | +4.42 | +0.61 |
| C | +2.39 | +3.76 |
| D | -2.39 | -3.76 |
| E | -4.42 | +0.61 |

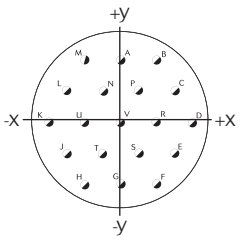
### 18




| Ctc | X | y |
|---|---|---|
| A | +1.65 | +6.40 |
| B | +4.95 | +2.87 |
| C | +6.60 | 0.00 |
| D | +4.95 | -2.87 |
| E | +3.30 | -5.72 |
| F | 0.00 | -5.72 |
| G | -3.30 | -5.72 |
| H | -4.95 | -2.87 |
| J | -6.60 | 0.00 |

| Ctc | X | y |
|---|---|---|
| K | -4.95 | +2.87 |
| L | -1.65 | +6.40 |
| M | -1.65 | +2.87 |
| N | +1.65 | +2.87 |
| P | +3.30 | 0.00 |
| R | +1.65 | -2.87 |
| S | -1.65 | -2.87 |
| T | -3.30 | 0.00 |
| U | 0.00 | 0.00 |

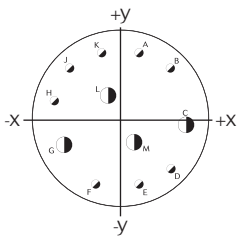
### 19




| Ctc | X | y |
|---|---|---|
| A | 0.00 | +5.72 |
| B | +3.30 | +5.72 |
| C | +4.95 | +2.87 |
| D | +6.60 | 0.00 |
| E | +4.95 | -2.87 |
| F | +3.30 | -5.72 |
| G | 0.00 | -5.72 |
| H | -3.30 | -5.72 |
| J | -4.95 | -2.87 |
| K | -6.60 | 0.00 |

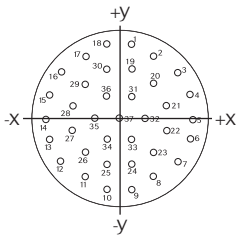
| Ctc | X | y |
|---|---|---|
| L | -4.95 | +2.87 |
| M | -3.30 | +5.72 |
| N | -1.65 | +2.87 |
| P | +1.65 | +2.87 |
| R | +3.30 | 0.00 |
| S | +1.65 | -2.87 |
| T | -1.65 | -2.87 |
| U | -3.30 | 0.00 |
| V | 0.00 | 0.00 |

### 97




| Ctc | X | y |
|---|---|---|
| A | +1.65 | +5.94 |
| B | +4.52 | +4.52 |
| C | +5.84 | -0.58 |
| D | +4.52 | -4.52 |
| E | +1.65 | -5.94 |
| F | -2.26 | -5.97 |
| G | -5.26 | -2.41 |
| H | -5.94 | +1.65 |
| J | -4.52 | +4.52 |
| K | -1.65 | +5.94 |
| L | -1.19 | +2.06 |
| M | +1.19 | -2.06 |

### 35




| Ctc | X | y |
|---|---|---|
| 1 | +1.14 | +6.65 |
| 2 | +3.12 | +5.51 |
| 3 | +5.36 | +4.06 |
| 4 | +6.45 | +2.03 |
| 5 | +6.75 | -0.25 |
| 6 | +6.27 | -2.49 |
| 7 | +5.08 | -4.45 |
| 8 | +3.30 | -5.89 |
| 9 | +1.14 | -6.65 |
| 10 | -1.14 | -6.65 |
| 11 | -3.30 | -5.89 |
| 12 | -5.08 | -4.45 |
| 13 | -6.27 | -2.49 |
| 14 | -6.76 | -0.25 |
| 15 | -6.45 | +2.03 |
| 16 | -5.36 | +4.06 |
| 17 | -3.12 | +5.51 |
| 18 | -1.14 | +6.65 |
| 19 | +1.14 | +4.37 |

| Ctc | X | y |
|---|---|---|
| 20 | +3.12 | +3.02 |
| 21 | +4.32 | +1.02 |
| 22 | +4.32 | -1.27 |
| 23 | +3.12 | -3.23 |
| 24 | +1.14 | -4.37 |
| 25 | -1.14 | -4.37 |
| 26 | -3.12 | -3.23 |
| 27 | -4.32 | -1.27 |
| 28 | -4.32 | +1.02 |
| 29 | -3.12 | +3.02 |
| 30 | -1.14 | +4.37 |
| 31 | +1.14 | +1.88 |
| 32 | +2.29 | -0.10 |
| 33 | +1.14 | -2.08 |
| 34 | -1.14 | -2.08 |
| 35 | -2.29 | -0.10 |
| 36 | -1.14 | +1.88 |
| 37 | 0.00 | -0.10 |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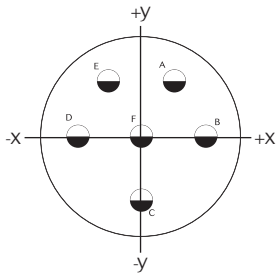
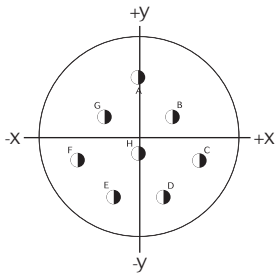
## 17 / E

### 06



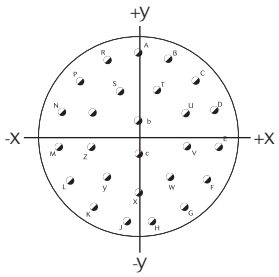

| Ctc | x | y |
|---|---|---|
| A | +3.07 | +5.31 |
| B | +6.12 | 0.00 |
| C | 0.00 | -6.12 |
| D | -6.12 | 0.00 |
| E | -3.07 | +5.31 |
| F | 0.00 | 0.00 |

### 08




| Ctc | x | y |
|---|---|---|
| A | 0.00 | +5.99 |
| B | +3.25 | +2.18 |
| C | +5.84 | -1.98 |
| D | +2.39 | -5.49 |
| E | -2.39 | -5.49 |
| F | -5.84 | -1.98 |
| G | -3.25 | +2.18 |
| H | 0.00 | -1.32 |

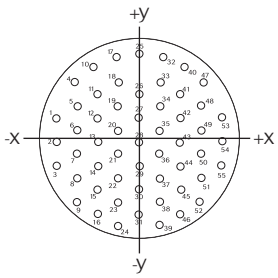
### 26




| Ctc | x | y |
|---|---|---|
| A | 0.00 | +8.15 |
| B | +3.33 | +7.44 |
| C | +6.07 | +5.44 |
| D | +7.75 | +2.51 |
| E | +8.10 | -0.86 |
| F | +7.06 | -4.09 |
| G | +4.80 | -6.60 |
| H | +1.70 | -7.98 |

| Ctc | x | y |
|---|---|---|
| J | -1.70 | -7.98 |
| K | -4.80 | -6.60 |
| L | -7.06 | -4.09 |
| M | -8.10 | -0.86 |
| N | -7.75 | +2.51 |
| P | -6.07 | +5.44 |
| R | -3.33 | +7.44 |
| S | -1.78 | +4.50 |
| T | +1.78 | +4.50 |
| U | +4.45 | +2.39 |
| V | +4.53 | -0.91 |
| W | +3.02 | -3.84 |
| X | 0.00 | -5.16 |
| y | -3.02 | -3.84 |
| Z | -4.53 | -0.91 |
| a | -4.45 | +2.39 |
| b | 0.00 | +1.65 |
| c | 0.00 | -1.65 |

### 35



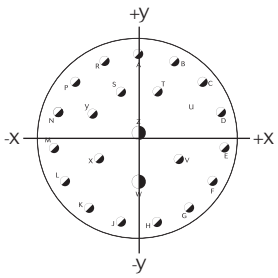

| Ctc | x | y |
|---|---|---|
| 1 | -7.92 | +2.18 |
| 2 | -7.92 | -0.10 |
| 3 | -7.92 | -2.39 |
| 4 | -6.15 | +5.61 |
| 5 | -5.94 | +3.33 |
| 6 | -5.94 | +1.04 |
| 7 | -5.94 | -1.24 |
| 8 | -5.94 | -3.53 |
| 9 | -5.94 | -5.82 |
| 10 | -4.37 | +7.09 |
| 11 | -3.96 | +4.47 |
| 12 | -3.96 | +2.18 |

| Ctc | x | y |
|---|---|---|
| 13 | -3.96 | -0.10 |
| 14 | -3.96 | -2.39 |
| 15 | -3.96 | -4.67 |
| 16 | -3.96 | -6.96 |
| 17 | -2.26 | +8.03 |
| 18 | -1.98 | +5.61 |
| 19 | -1.98 | +3.33 |
| 20 | -1.98 | +1.04 |
| 21 | -1.98 | -1.24 |
| 22 | -1.98 | -3.53 |
| 23 | -1.98 | -5.82 |
| 24 | -1.98 | -8.10 |

| Ctc | x | y |
|---|---|---|
| 25 | 0.00 | +8.36 |
| 26 | 0.00 | +4.47 |
| 27 | 0.00 | +2.18 |
| 28 | 0.00 | -0.10 |
| 29 | 0.00 | -2.39 |
| 30 | 0.00 | +4.67 |
| 31 | 0.00 | -6.96 |
| 32 | +2.26 | +8.03 |
| 33 | +1.98 | +5.61 |
| 34 | +1.98 | +3.33 |
| 35 | +1.98 | +1.04 |
| 36 | +1.98 | -1.24 |
| 37 | +1.98 | -3.53 |
| 38 | +1.98 | -5.82 |
| 39 | +1.98 | -8.10 |
| 40 | +4.37 | +7.09 |

| Ctc | x | y |
|---|---|---|
| 41 | +3.96 | +4.47 |
| 42 | +3.96 | +2.18 |
| 43 | +3.96 | -0.10 |
| 44 | +3.96 | -2.39 |
| 45 | +3.96 | -4.67 |
| 46 | +3.96 | -6.96 |
| 47 | +6.15 | +5.61 |
| 48 | +5.94 | +3.33 |
| 49 | +5.94 | +1.04 |
| 50 | +5.94 | -1.24 |
| 51 | +5.94 | -3.53 |
| 52 | +5.94 | -5.82 |
| 53 | +7.92 | +2.18 |
| 54 | +7.92 | -0.10 |
| 55 | +7.92 | 2-.39 |

### 99




| Ctc | x | y |
|---|---|---|
| A | 0.00 | +8.15 |
| B | +3.33 | +7.44 |
| C | +6.07 | +5.44 |
| D | +7.75 | +2.51 |
| E | +8.10 | -0.86 |
| F | +7.06 | -4.09 |
| G | +4.80 | -6.60 |
| H | +1.70 | -7.98 |
| J | -1.70 | -7.98 |
| K | -4.80 | -6.60 |
| L | -7.06 | -4.09 |
| M | -8.10 | -0.86 |

| Ctc | x | y |
|---|---|---|
| N | -7.75 | +2.51 |
| P | -6.07 | +5.44 |
| R | -3.33 | +7.44 |
| S | -1.78 | +4.50 |
| T | +1.78 | +4.50 |
| U | +4.45 | +2.39 |
| V | +3.81 | -1.91 |
| W | 0.00 | -4.09 |
| X | -3.81 | -1.91 |
| y | -4.45 | +2.39 |
| Z | 0.00 | +0.64 |

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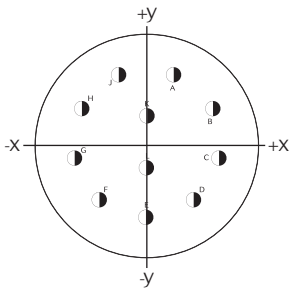
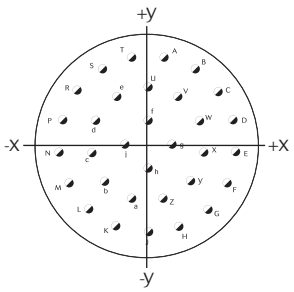
## 19 / F

### 11




| Ctc | x | y |
|---|---|---|
| A | +2.67 | +6.60 |
| B | +6.35 | +3.35 |
| C | +6.99 | -1.35 |
| D | +4.55 | -5.46 |
| E | 0.00 | -7.14 |
| F | -4.55 | -5.46 |
| G | -6.99 | -1.35 |
| H | -6.35 | +3.35 |
| J | -2.67 | +6.60 |
| K | 0.00 | +2.67 |
| L | 0.00 | -2.34 |

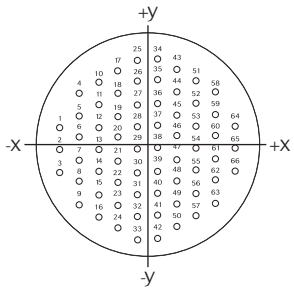
### 32




| Ctc | x | y |
|---|---|---|
| A | +1.68 | +8.97 |
| B | +4.80 | +7.75 |
| C | +7.26 | +5.51 |
| D | +8.76 | +2.49 |
| E | +9.07 | -0.84 |
| F | +8.15 | -4.06 |
| G | +6.15 | -6.73 |
| H | +3.30 | -8.51 |
| J | 0.00 | -9.12 |
| K | -3.30 | -8.51 |
| L | -6.15 | -6.73 |
| M | -8.15 | -4.06 |
| N | -9.07 | -0.84 |
| P | -8.76 | +2.49 |
| R | -7.26 | +5.51 |
| S | -4.80 | +7.75 |

| Ctc | x | y |
|---|---|---|
| T | -1.68 | +8.97 |
| U | 0.00 | +5.84 |
| V | +3.15 | +4.90 |
| W | +5.31 | +2.41 |
| X | +5.79 | -0.84 |
| y | +4.42 | -3.84 |
| Z | +1.65 | -5.61 |
| a | -1.65 | -5.61 |
| b | -4.42 | -3.84 |
| c | -5.79 | -0.84 |
| d | -5.31 | +2.41 |
| e | -3.15 | +4.90 |
| f | 0.00 | +2.44 |
| g | +2.44 | 0.00 |
| h | 0.00 | -2.44 |
| j | -2.44 | 0.00 |

### 35




| Ctc | x | y |
|---|---|---|
| 1 | -9.07 | +2.29 |
| 2 | -9.07 | +0.08 |
| 3 | -9.07 | -2.29 |
| 4 | -7.09 | +5.72 |
| 5 | -7.09 | +3.43 |
| 6 | -7.09 | +1.14 |
| 7 | -7.09 | -1.14 |
| 8 | -7.09 | -3.43 |
| 9 | -7.09 | -5.72 |
| 10 | -5.11 | +6.86 |
| 11 | -5.11 | +4.57 |
| 12 | -5.11 | +2.29 |
| 13 | -5.11 | 0.00 |
| 14 | -5.11 | -2.29 |

| Ctc | x | y |
|---|---|---|
| 15 | -5.11 | -4.57 |
| 16 | -5.11 | -6.86 |
| 17 | -3.12 | +8.00 |
| 18 | +3.12 | +5.72 |
| 19 | -3.12 | +3.43 |
| 20 | -3.12 | +1.14 |
| 21 | -3.12 | -1.14 |
| 22 | -3.12 | -3.43 |
| 23 | -3.12 | -5.72 |
| 24 | -3.12 | -8.00 |
| 25 | -1.14 | +9.14 |
| 26 | -1.14 | +6.86 |
| 27 | -1.14 | +4.57 |

| Ctc | x | y |
|---|---|---|
| 28 | -1.14 | +2.29 |
| 29 | -1.14 | 0.00 |
| 30 | -1.14 | -2.29 |
| 31 | -1.14 | -4.57 |
| 32 | -1.14 | -6.86 |
| 33 | -1.14 | -9.14 |
| 34 | +1.14 | +9.14 |
| 35 | +1.14 | +6.86 |
| 36 | +1.14 | +4.57 |
| 37 | +1.14 | +2.29 |
| 38 | +1.14 | 0.00 |
| 39 | +1.14 | -2.29 |
| 40 | +1.14 | -4.57 |

| Ctc | x | y |
|---|---|---|
| 41 | +1.14 | -6.86 |
| 42 | +1.14 | -9.14 |
| 43 | +3.12 | +8.00 |
| 44 | +3.12 | +5.72 |
| 45 | +3.12 | +3.43 |
| 46 | +3.12 | +1.14 |
| 47 | +3.12 | -1.14 |
| 48 | +3.12 | -3.43 |
| 49 | +3.12 | -5.72 |
| 50 | +3.12 | -8.00 |
| 51 | +5.11 | +6.86 |
| 52 | +5.11 | +4.57 |
| 53 | +5.11 | +2.29 |

| Ctc | x | y |
|---|---|---|
| 54 | +5.11 | 0.00 |
| 55 | +5.11 | -2.29 |
| 56 | +5.11 | -4.57 |
| 57 | +5.11 | -6.86 |
| 58 | +7.09 | +5.72 |
| 59 | +7.09 | +3.43 |
| 60 | +7.09 | +1.14 |
| 61 | +7.09 | -1.14 |
| 62 | +7.09 | -3.43 |
| 63 | +7.09 | -5.72 |
| 64 | +9.07 | +2.29 |
| 65 | +9.07 | 0.00 |
| 66 | +9.07 | -2.29 |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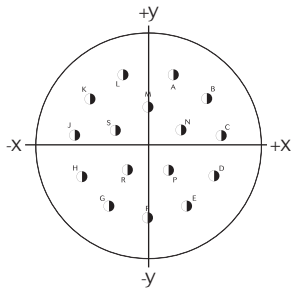
## 21 / G

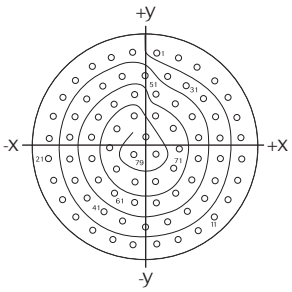
### 16




| Ctc | x | y |
|---|---|---|
| A | +3.00 | +8.18 |
| B | +6.88 | +5.36 |
| C | +8.66 | +0.91 |
| D | +7.82 | -3.81 |
| E | +4.62 | -7.37 |
| F | 0.00 | -8.71 |
| G | -4.62 | -7.37 |
| H | -7.82 | -3.81 |

| Ctc | x | y |
|---|---|---|
| J | -8.66 | +0.91 |
| K | -6.88 | +5.36 |
| L | -3.00 | +8.18 |
| M | 0.00 | +4.45 |
| N | +3.91 | +1.57 |
| P | +2.39 | -3.10 |
| R | -2.39 | -3.10 |
| S | -3.91 | +1.57 |

### 35



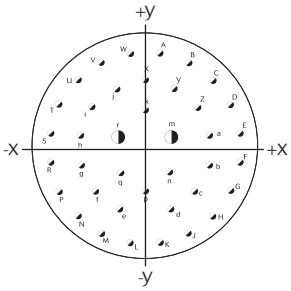

| Ctc | x | y |
|---|---|---|
| 1 | +1.35 | +10.82 |
| 2 | +3.71 | +10.26 |
| 3 | +5.89 | +9.19 |
| 4 | +7.77 | +7.67 |
| 5 | +9.27 | +5.77 |
| 6 | +10.31 | +3.58 |
| 7 | +10.85 | +1.22 |
| 8 | +10.85 | -1.22 |
| 9 | +10.31 | -3.58 |
| 10 | +9.27 | -5.77 |
| 11 | +7.77 | -7.67 |
| 12 | +5.89 | -9.19 |
| 13 | +3.71 | -10.26 |

| Ctc | x | y |
|---|---|---|
| 14 | +1.35 | -10.82 |
| 15 | -1.35 | -10.82 |
| 16 | -3.71 | -10.26 |
| 17 | -5.89 | -9.19 |
| 18 | -7.77 | -7.67 |
| 19 | -9.27 | -5.77 |
| 20 | -10.31 | -3.58 |
| 21 | -10.85 | -1.22 |
| 22 | -10.85 | +1.22 |
| 23 | -10.31 | +3.58 |
| 24 | -9.27 | +5.77 |
| 25 | -7.77 | +7.67 |
| 26 | -5.89 | +9.19 |
| 27 | -3.71 | +10.26 |
| 28 | -1.35 | +10.82 |
| 29 | 0.00 | +8.20 |
| 30 | +2.49 | +8.18 |
| 31 | +4.67 | +7.11 |
| 32 | +6.55 | +5.59 |
| 33 | +7.90 | +3.58 |
| 34 | +8.43 | +1.22 |
| 35 | +8.43 | -1.22 |

| Ctc | x | y |
|---|---|---|
| 36 | +7.90 | -3.58 |
| 37 | +6.55 | -5.59 |
| 38 | +4.67 | -7.11 |
| 39 | +2.49 | -8.18 |
| 40 | 0.00 | -8.81 |
| 41 | -2.49 | -8.18 |
| 42 | -4.67 | -7.11 |
| 43 | -6.55 | -5.59 |
| 44 | -7.90 | -3.58 |
| 45 | -8.43 | -1.22 |
| 46 | -8.43 | +1.22 |
| 47 | -7.90 | +3.58 |
| 48 | -6.55 | +5.59 |
| 49 | -4.67 | +7.11 |
| 50 | -2.49 | +8.18 |
| 51 | -1.22 | +6.12 |
| 52 | +1.22 | +6.12 |
| 53 | +3.40 | +5.05 |
| 54 | +5.28 | +3.53 |
| 55 | +6.02 | +1.22 |
| 56 | +6.02 | -1.22 |
| 57 | +5.28 | -3.53 |

| Ctc | x | y |
|---|---|---|
| 58 | +3.40 | -5.05 |
| 59 | +1.22 | -6.12 |
| 60 | -1.22 | -6.12 |
| 61 | -3.40 | -5.05 |
| 62 | -5.28 | -3.53 |
| 63 | -6.02 | -1.22 |
| 64 | -6.02 | +1.22 |
| 65 | -5.28 | +3.53 |
| 66 | -3.40 | +5.05 |
| 67 | -1.22 | +3.71 |
| 68 | +1.22 | +3.71 |
| 69 | +3.18 | +2.29 |
| 70 | +3.94 | 0.00 |
| 71 | +3.18 | -2.29 |
| 72 | +1.22 | -3.71 |
| 73 | -1.22 | -3.71 |
| 74 | -3.18 | -2.29 |
| 75 | -3.94 | 0.00 |
| 76 | -3.18 | +2.29 |
| 77 | 0.00 | +1.35 |
| 78 | +1.22 | -0.74 |
| 79 | -1.22 | -0.74 |

### 39

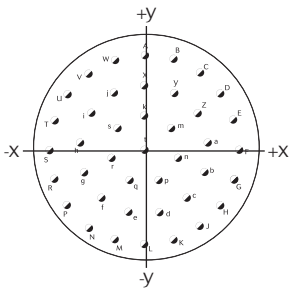



| Ctc | x | y |
|---|---|---|
| A | +1.65 | +10.44 |
| B | +4.80 | +9.42 |
| C | +7.47 | +7.47 |
| D | +9.42 | +4.80 |
| E | +10.44 | +1.65 |
| F | +10.44 | -1.65 |
| G | +9.42 | -4.80 |
| H | +7.47 | -7.47 |
| J | +4.80 | -9.42 |
| K | +1.65 | -10.44 |
| L | -1.65 | -10.44 |
| M | -4.80 | -9.42 |
| N | -7.47 | -7.47 |

| Ctc | x | y |
|---|---|---|
| P | -9.42 | -4.80 |
| R | -10.44 | -1.65 |
| S | -10.44 | +1.65 |
| T | -9.42 | +4.80 |
| U | -7.47 | +7.47 |
| V | -4.80 | +9.42 |
| W | -1.65 | +10.44 |
| X | 0.00 | +7.49 |
| y | +3.20 | +6.50 |
| Z | +5.89 | +4.55 |
| a | +7.11 | +1.45 |
| b | +7.11 | -1.88 |
| c | +5.51 | -4.80 |

| Ctc | x | y |
|---|---|---|
| d | +2.84 | -6.73 |
| e | -2.84 | -6.73 |
| f | -5.51 | -4.80 |
| g | -7.11 | -1.88 |
| h | -7.11 | +1.45 |
| i | -5.89 | +4.55 |
| j | -3.20 | +6.50 |
| k | 0.00 | +4.17 |
| m | +2.90 | +1.22 |
| n | +2.69 | -2.72 |
| p | 0.00 | -4.80 |
| q | -2.69 | -2.72 |
| r | -2.90 | +1.22 |

### 41




| Ctc | x | y |
|---|---|---|
| A | 0.00 | +10.60 |
| B | +3.28 | +10.09 |
| C | +6.23 | +8.58 |
| D | +8.58 | +6.23 |
| E | +10.09 | +3.28 |
| F | +10.60 | 0.00 |
| G | +10.09 | -3.28 |
| H | +8.58 | -6.23 |
| J | +6.23 | -8.58 |
| K | +3.28 | -10.09 |
| L | 0.00 | -10.60 |

| Ctc | x | y |
|---|---|---|
| M | -3.26 | -10.09 |
| N | -6.23 | -8.58 |
| P | -8.58 | -6.23 |
| R | -10.09 | -3.28 |
| S | -10.60 | 0.00 |
| T | -10.09 | +3.28 |
| U | -8.58 | +6.23 |
| V | -6.23 | +8.58 |
| W | -3.28 | +10.09 |
| X | 0.00 | +7.20 |
| y | +3.35 | +6.38 |

| Ctc | x | y |
|---|---|---|
| Z | +5.92 | +4.09 |
| a | +7.15 | +0.87 |
| b | +6.73 | -2.55 |
| c | +4.78 | -5.39 |
| d | +1.73 | -6.99 |
| e | -1.73 | -6.99 |
| f | -4.78 | -5.39 |
| g | -6.73 | -2.55 |
| h | -7.15 | +0.87 |
| i | -5.92 | +4.09 |
| j | -3.35 | +6.38 |
| k | 0.00 | +3.81 |
| m | +2.98 | +2.38 |
| n | +3.71 | -0.85 |
| p | -1.66 | -3.43 |
| q | +1.66 | -3.43 |
| r | -3.71 | -0.85 |
| s | -2.98 | +2.38 |
| t | 0.00 | 0.00 |

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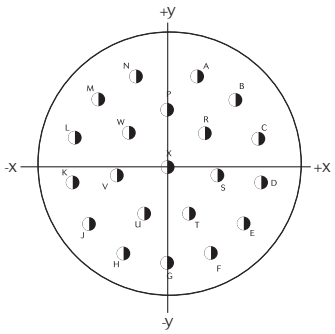
# 8LT Series
## MIL-DTL-38999 Series I

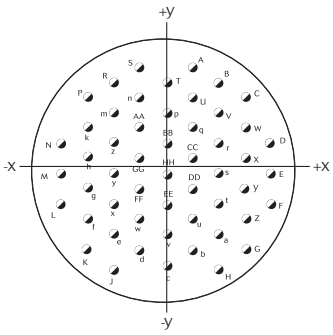
## 23 / H

### 21




| Ctc | x | y |
|---|---|---|
| A | +3.25 | +9.78 |
| B | +7.34 | +7.24 |
| C | +9.80 | +3.12 |
| D | +10.16 | -1.65 |
| E | +8.33 | -6.07 |
| F | +4.65 | -9.19 |
| G | 0.00 | -10.31 |
| H | -4.65 | -9.19 |
| J | -8.33 | -6.07 |
| K | -10.16 | -1.65 |
| L | -9.80 | +3.12 |
| M | -7.34 | +7.24 |
| N | -3.25 | +9.78 |
| P | 0.00 | +6.22 |
| R | +4.06 | +3.71 |
| S | +5.44 | -0.89 |
| T | +2.39 | -4.93 |
| U | -2.39 | -4.93 |
| V | -5.44 | -0.89 |
| W | -4.06 | +3.71 |
| X | 0.00 | 0.00 |

### 53




| Ctc | x | y |
|---|---|---|
| A | +2.84 | +11.56 |
| B | +5.72 | +9.91 |
| C | +8.53 | +8.26 |
| D | +11.43 | +3.30 |
| E | +11.43 | 0.00 |
| F | +11.43 | -3.30 |

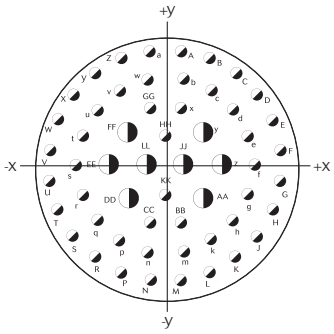
| Ctc | x | y |
|---|---|---|
| G | +8.53 | -8.26 |
| H | +5.72 | -10.41 |
| J | -5.72 | -10.41 |
| K | -8.53 | -8.26 |
| L | -11.43 | -3.30 |
| M | -11.43 | 0.00 |

| Ctc | x | y |
|---|---|---|
| N | -11.43 | +3.30 |
| P | -8.53 | +8.26 |
| R | -5.72 | +9.91 |
| S | -2.84 | +11.56 |
| T | 0.00 | +9.91 |
| U | +2.84 | +8.26 |
| V | +5.72 | +6.60 |
| W | +8.53 | +4.95 |
| X | +8.53 | +1.65 |
| y | +8.53 | -1.65 |
| Z | +8.53 | -4.95 |
| a | +5.72 | -6.60 |
| b | +2.84 | -8.26 |
| c | 0.00 | -9.91 |
| d | -2.84 | -8.26 |
| e | -5.72 | -6.60 |
| f | -8.53 | -4.95 |
| g | -8.53 | -1.65 |
| h | -8.53 | +1.65 |
| k | -8.53 | +4.95 |

| Ctc | x | y |
|---|---|---|
| m | -5.72 | +6.60 |
| n | -2.84 | +8.26 |
| p | 0.00 | +6.60 |
| q | +2.84 | +4.95 |
| r | +5.72 | +3.30 |
| s | +5.72 | 0.00 |
| t | +5.72 | -3.30 |
| u | +2.84 | -4.95 |
| v | 0.00 | -6.60 |
| w | -2.84 | -4.95 |
| x | -5.72 | -3.30 |
| y | -5.72 | 0.00 |
| z | -5.72 | +3.30 |
| AA | -2.84 | +4.95 |
| BB | 0.00 | +3.30 |
| CC | +2.84 | +1.65 |
| DD | +2.84 | -1.65 |
| EE | 0.00 | -3.30 |
| FF | -2.84 | -1.65 |
| GG | -2.84 | +1.65 |
| HH | 0.00 | 0.00 |

## 25 / J

### 04



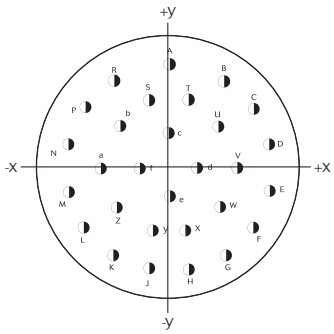

| Ctc | x | y |
|---|---|---|
| A | +1.75 | +13.49 |
| B | +5.16 | +12.57 |
| C | +8.23 | +10.80 |
| D | +10.77 | +8.28 |
| E | +12.52 | +5.21 |
| F | +13.49 | +1.75 |
| G | +13.49 | -1.75 |

| Ctc | x | y |
|---|---|---|
| H | +12.52 | -5.21 |
| J | +10.77 | -8.28 |
| K | +8.23 | -10.80 |
| L | +5.16 | -12.57 |
| M | +1.75 | -13.49 |
| N | -1.75 | -13.49 |
| P | -5.16 | -12.57 |

| Ctc | x | y |
|---|---|---|
| R | -8.23 | -10.80 |
| S | -10.77 | -8.28 |
| T | -12.52 | -5.21 |
| U | -13.49 | -1.75 |
| V | -13.49 | +1.75 |
| W | -12.52 | +5.21 |
| X | -10.77 | +8.28 |
| y | -8.23 | +10.80 |
| Z | -5.16 | +12.57 |
| a | -1.75 | +13.49 |
| b | +2.18 | +10.08 |
| c | +5.38 | +8.78 |
| d | +7.90 | +6.38 |
| e | +9.58 | +3.35 |
| f | +10.46 | 0.00 |
| g | +9.58 | -3.35 |
| h | +7.90 | -6.38 |
| k | +5.38 | -8.78 |
| m | +2.18 | -10.08 |
| n | -2.18 | -10.08 |
| p | -5.38 | -8.78 |

| Ctc | x | y |
|---|---|---|
| q | -7.90 | -6.38 |
| r | -9.58 | -3.35 |
| s | -10.46 | 0.00 |
| t | -9.58 | +3.35 |
| u | -7.90 | +6.38 |
| v | -5.38 | +8.78 |
| w | -2.18 | +10.08 |
| x | +1.75 | +6.66 |
| y | +4.37 | +3.78 |
| z | +6.55 | 0.00 |
| AA | +4.37 | -3.78 |
| BB | +1.75 | -6.66 |
| CC | -1.75 | -6.66 |
| DD | -4.37 | -3.78 |
| EE | -6.55 | 0.00 |
| FF | -4.37 | +3.78 |
| GG | -1.75 | +6.66 |
| HH | 0.00 | +3.35 |
| JJ | +2.18 | 0.00 |
| KK | 0.00 | -3.35 |
| LL | +2.18 | 0.00 |

### 29




| Ctc | x | y |
|---|---|---|
| A | 0.00 | +12.22 |
| B | +6.55 | +10.31 |
| C | +10.03 | +7.04 |
| D | +11.91 | +2.77 |
| E | +11.91 | -2.77 |
| F | +10.03 | -7.04 |
| G | +6.68 | -10.31 |
| H | +2.31 | -11.99 |

| Ctc | x | y |
|---|---|---|
| J | -2.31 | -11.99 |
| K | -6.68 | -10.31 |
| L | -10.03 | -7.04 |
| M | -11.91 | -2.77 |
| N | -11.91 | +2.77 |
| P | -10.03 | +7.04 |
| R | -6.55 | +10.31 |
| S | -2.31 | +8.15 |
| T | +2.31 | +8.15 |
| U | +5.79 | +4.93 |
| V | +8.10 | 0.00 |
| W | +6.10 | -4.60 |
| X | +2.31 | -7.37 |
| y | -2.31 | -7.37 |
| Z | -6.10 | -4.60 |
| a | -8.10 | 0.00 |
| b | -5.79 | +4.93 |
| c | 0.00 | +4.09 |
| d | +3.40 | 0.00 |
| e | 0.00 | -3.30 |
| f | -3.40 | 0.00 |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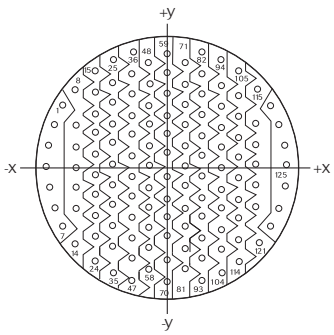
# 8LT Series
## MIL-DTL-38999 Series I

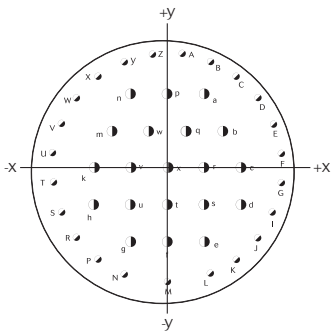
### 25 / J

#### 35



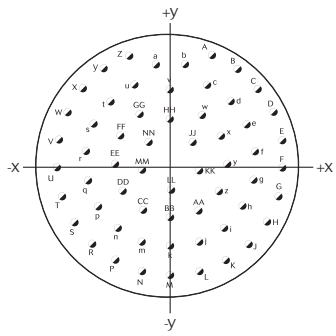

| Ctc | x | y |
|---|---|---|
| 1 | -12.17 | +7.09 |
| 2 | -13.21 | +4.83 |
| 3 | -13.87 | +2.41 |
| 4 | -14.10 | 0.00 |
| 5 | -13.87 | -2.41 |
| 6 | -13.21 | -4.83 |
| 7 | -12.17 | -7.09 |
| 8 | -10.77 | +9.07 |
| 9 | -10.54 | +4.83 |
| 10 | -10.54 | +2.41 |
| 11 | -10.54 | 0.00 |
| 12 | -10.54 | -2.41 |
| 13 | -10.54 | -4.83 |
| 14 | -10.77 | -9.07 |
| 15 | -8.43 | +11.28 |
| 16 | -8.43 | +8.43 |
| 17 | -8.43 | +6.02 |
| 18 | -8.43 | +3.61 |
| 19 | -8.43 | +1.19 |
| 20 | -8.43 | -1.19 |
| 21 | -8.43 | -3.61 |
| 22 | -8.43 | -6.02 |
| 23 | -8.43 | -8.43 |
| 24 | -8.43 | -10.85 |
| 25 | -6.32 | +12.60 |
| 26 | -6.32 | +9.65 |
| 27 | -6.32 | +7.24 |
| 28 | -6.32 | +4.83 |
| 29 | -6.32 | +2.41 |
| 30 | -6.32 | 0.00 |
| 31 | -6.32 | -2.41 |
| 32 | -6.32 | -4.83 |
| 33 | -6.32 | -7.24 |
| 34 | -6.32 | -9.65 |
| 35 | -6.32 | -12.07 |
| 36 | -4.06 | +13.49 |
| 37 | -4.22 | +10.85 |
| 38 | -4.22 | +8.43 |
| 39 | -4.22 | +6.02 |
| 40 | -4.22 | +3.61 |
| 41 | -4.22 | +1.19 |
| 42 | -4.22 | -1.19 |
| 43 | -4.22 | -3.61 |
| 44 | -4.22 | -6.02 |
| 45 | -4.22 | -8.43 |
| 46 | -4.22 | -10.85 |
| 47 | -4.22 | -13.26 |
| 48 | -2.11 | +12.07 |
| 49 | -2.11 | +9.65 |
| 50 | -2.11 | +7.24 |
| 51 | -2.11 | +4.83 |
| 52 | -2.11 | +2.41 |
| 53 | -2.11 | 0.00 |
| 54 | -2.11 | -2.41 |
| 55 | -2.11 | -4.83 |
| 56 | -2.11 | -7.24 |
| 57 | -2.11 | -9.65 |
| 58 | -2.11 | -12.07 |
| 59 | 0.00 | +13.26 |
| 60 | 0.00 | +10.85 |
| 61 | 0.00 | +8.43 |
| 62 | 0.00 | +6.02 |
| 63 | 0.00 | +3.61 |
| 64 | 0.00 | +1.19 |
| 65 | 0.00 | -1.19 |
| 66 | 0.00 | -3.61 |
| 67 | 0.00 | -6.02 |
| 68 | 0.00 | -8.43 |
| 69 | 0.00 | -10.85 |
| 70 | 0.00 | -14.10 |
| 71 | +2.11 | +12.07 |
| 72 | +2.11 | +9.65 |
| 73 | +2.11 | +7.34 |
| 74 | +2.11 | +4.83 |
| 75 | +2.11 | +2.41 |
| 76 | +2.11 | 0.00 |
| 77 | +2.11 | -2.41 |
| 78 | +2.11 | -4.83 |
| 79 | +2.11 | -7.24 |
| 80 | +2.11 | -9.65 |
| 81 | +2.11 | -12.07 |
| 82 | +4.06 | +13.49 |
| 83 | +4.22 | +10.85 |
| 84 | +4.22 | +8.43 |
| 85 | +4.22 | +6.02 |
| 86 | +4.22 | +3.61 |
| 87 | +4.22 | +1.19 |
| 88 | +4.22 | -1.19 |
| 89 | +4.22 | -3.61 |
| 90 | +4.22 | -6.02 |
| 91 | +4.22 | -8.43 |
| 92 | +4.22 | -10.85 |
| 93 | +4.22 | -13.26 |
| 94 | +6.32 | +12.60 |
| 95 | +6.32 | +9.65 |
| 96 | +6.32 | +7.24 |
| 97 | +6.32 | +4.83 |
| 98 | +6.32 | +2.41 |
| 99 | +6.32 | 0.00 |
| 100 | +6.32 | -2.41 |
| 101 | +6.32 | -4.83 |
| 102 | +6.32 | -7.24 |
| 103 | +6.32 | -9.65 |
| 104 | +6.32 | -12.07 |
| 105 | +8.43 | +11.28 |
| 106 | +8.43 | +8.43 |
| 107 | +8.43 | +6.02 |
| 108 | +8.43 | +3.61 |
| 109 | +8.43 | +1.19 |
| 110 | +8.43 | -1.19 |
| 111 | +8.43 | -3.61 |
| 112 | +8.43 | -6.02 |
| 113 | +8.43 | -8.43 |
| 114 | +8.43 | -10.85 |
| 115 | +10.77 | +9.07 |
| 116 | +10.54 | +4.83 |
| 117 | +10.54 | +2.41 |
| 118 | +10.54 | 0.00 |
| 119 | +10.54 | -2.41 |
| 120 | +10.54 | -4.83 |
| 121 | +10.77 | -9.07 |
| 122 | +12.17 | +7.09 |
| 123 | +13.21 | +4.83 |
| 124 | +13.87 | +2.41 |
| 125 | +14.10 | 0.00 |
| 126 | +13.87 | -2.41 |
| 127 | +13.21 | -4.83 |
| 128 | +12.17 | -7.09 |

#### 43




| Ctc | x | y |
|---|---|---|
| A | +1.75 | +13.49 |
| B | +5.16 | +12.57 |
| C | +8.23 | +10.80 |
| D | +10.77 | +8.28 |
| E | +12.52 | +5.21 |
| F | +13.49 | +1.75 |
| G | +13.49 | -1.75 |
| H | +12.52 | -5.21 |
| J | +10.77 | -8.28 |
| K | +8.23 | -10.80 |
| L | +5.16 | -12.57 |
| M | 0.00 | -13.49 |
| N | -5.16 | -12.57 |
| P | -8.23 | -10.80 |
| R | -10.77 | -8.28 |
| S | -12.52 | -5.21 |
| T | -13.49 | -1.75 |
| U | -13.49 | +1.75 |
| V | -12.52 | +5.21 |
| W | -10.77 | +8.28 |
| X | -8.23 | +10.80 |
| y | -5.16 | +12.57 |
| Z | -1.75 | +13.4 |
| a | +4.37 | +8.74 |
| b | +6.55 | +4.37 |
| c | +8.74 | 0.00 |
| d | +8.74 | -4.37 |
| e | +4.37 | -8.74 |
| f | 0.00 | -8.74 |
| g | -4.37 | -8.74 |
| h | -8.74 | -4.37 |
| k | -8.74 | 0.00 |
| m | -6.55 | +4.37 |
| n | -4.37 | +8.74 |
| p | 0.00 | +8.74 |
| q | +2.18 | +4.37 |
| r | +4.37 | 0.00 |
| s | +4.37 | -4.37 |
| t | 0.00 | -4.37 |
| u | -4.37 | -4.37 |
| v | -4.37 | 0.00 |
| w | -2.18 | +4.37 |
| x | 0.00 | 0.00 |

#### 61




| Ctc | x | y |
|---|---|---|
| A | +4.98 | +12.70 |
| B | +7.98 | +11.05 |
| C | +10.49 | +8.71 |
| D | +12.32 | +5.84 |
| E | +13.39 | +2.57 |
| F | +13.61 | -0.76 |
| G | +12.98 | -4.17 |
| H | +11.53 | -7.29 |
| J | +9.35 | -9.93 |
| K | +6.58 | -11.94 |
| L | +3.40 | -13.18 |
| M | 0.00 | -13.64 |
| N | -3.40 | -13.18 |
| P | -6.58 | -11.94 |
| R | -9.35 | -9.93 |
| S | -11.53 | -7.29 |
| T | -12.98 | -4.17 |
| U | -13.61 | -0.76 |
| V | -13.39 | +2.57 |
| W | -12.32 | +5.84 |
| X | -10.49 | +8.71 |
| y | -7.98 | -11.05 |
| Z | -4.98 | +12.10 |
| a | -1.73 | +11.53 |
| b | +1.73 | +11.53 |
| c | +4.39 | +9.22 |
| d | +7.24 | +7.19 |
| e | +9.19 | +4.45 |
| f | +10.13 | +1.17 |
| g | +9.96 | -2.24 |
| h | +8.66 | -5.41 |
| i | +6.38 | -7.98 |
| j | +3.38 | -9.63 |
| k | 0.00 | -10.21 |
| m | -3.38 | -9.63 |
| n | -6.38 | -7.98 |
| p | -8.66 | -5.41 |
| q | -9.96 | -2.24 |
| r | -10.13 | +1.17 |
| s | -9.19 | +4.45 |
| t | -7.24 | +7.19 |
| u | -4.39 | +9.22 |
| v | 0.00 | +8.59 |
| w | +3.73 | +5.66 |
| x | +6.02 | +3.10 |
| y | +6.78 | -0.25 |
| z | +5.79 | -3.53 |
| AA | +3.33 | -5.92 |
| BB | 0.00 | -6.78 |
| CC | -3.33 | -5.92 |
| DD | -5.79 | -3.53 |
| EE | -6.78 | -0.25 |
| FF | -6.02 | +3.10 |
| GG | -3.73 | +5.66 |
| HH | 0.00 | +5.08 |
| JJ | +2.67 | +2.39 |
| KK | +3.43 | -1.04 |
| LL | 0.00 | -3.35 |
| MM | -3.43 | -1.04 |
| NN | -2.67 | +2.39 |
| PP | 0.00 | 0.00 |

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# 8LT Series

8LT Series

# Range Extension


- micro38999 ..... 62
- RoHS solution ..... 62
- High density ..... 63
- PCB contact without shoulder ..... 63

# Product range extension

## micro38999

**A complete miniature range: threaded (8DA), break away (8BA) & bayonet (8LTA). Space saving with scoop proof connector for harsh applications.**

**A compact solution:**
. Diameter up to 45% smaller than size 9 (D38999).
. Up to 50% shorter.
. Integrated backshell: Cost and space saving.

**A high density solution:**
. With #26 contacts (according to 39029).
. 5 layouts (size 3, 5 and 7 with #22 & #26).

**Excellent features:**
. Designed for D38999 requirements.
. IP67 sealing when mated.
. Stainless steel shell (1500 matings) & aluminum shell (500 matings).

**RoHS and Cadmium free:**
. Available in zinc nickel (RoHS) plating, as well as nickel and olive drab cadmium.

See «micro38999, A Complete Miniature Range» catalog on www.souriau.com

## RoHS Solution

**The RoHS alternative to cadmium !
SOURIAU Zinc Nickel: the best in terms of price and performance for aerospace & defense equipment.**

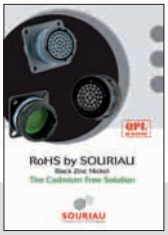
**SOURIAU Black Zinc Nickel:**
. A unique alternative plating process to cadmium.

**RoHS compliant:**
. A unique SOURIAU plating process compliant with RoHS regulations for cadmium and Cr6+.

**The first QPL qualified:**
. SOURIAU Zn Ni is the first product which has been qualified by US Defense standards organization (DLA Land and Maritime).

**High corrosion resistance:**
. 500 hours salt spray.

**Available in mass production:**
. Available for 38999 Series I, II and III aluminum range.




See «RoHS by SOURIAU, The Cadmium Free Solution» catalog on www.souriau.com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# Product range extension

## High Density

**SOURIAU offers a robust & reliable High Density solution derived from 38999 Series I, Series III & VG96912.**

**3 shell sizes available:**
. Provides flexibility according to your application.

**A reliable & robust solution:**
. Same well proven design as standard 38999 & VG96912.

**Significant space saving:**
. Twice the number of contacts compared to size 13-35 with 22 contacts.
. Two shell sizes smaller than a partially populated size 17-35 with 55 cavities.

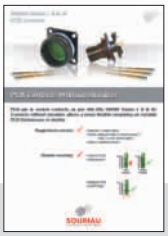
See «High Density Connectors» product news on www.souriau.com

## PCB Contact without Shoulder

**Pin & socket PCB contacts without shoulder #22D & #20 as per MIL-DTL-38999 Series I, II & III. Contacts without shoulder allows a more flexible mounting on variable PCB thicknesses or depths.**

**Ruggedized contacts:**
. Material: copper alloy
. Finish: gold per MIL-G-45204 type I class 1 over nickel plate
. Sleeve: stainless steel

**Flexible mounting:**
. Various PCB thicknesses.
. Multiple PCB positioning.



See «PCB contacts without shoulder» product news on www.souriau.com

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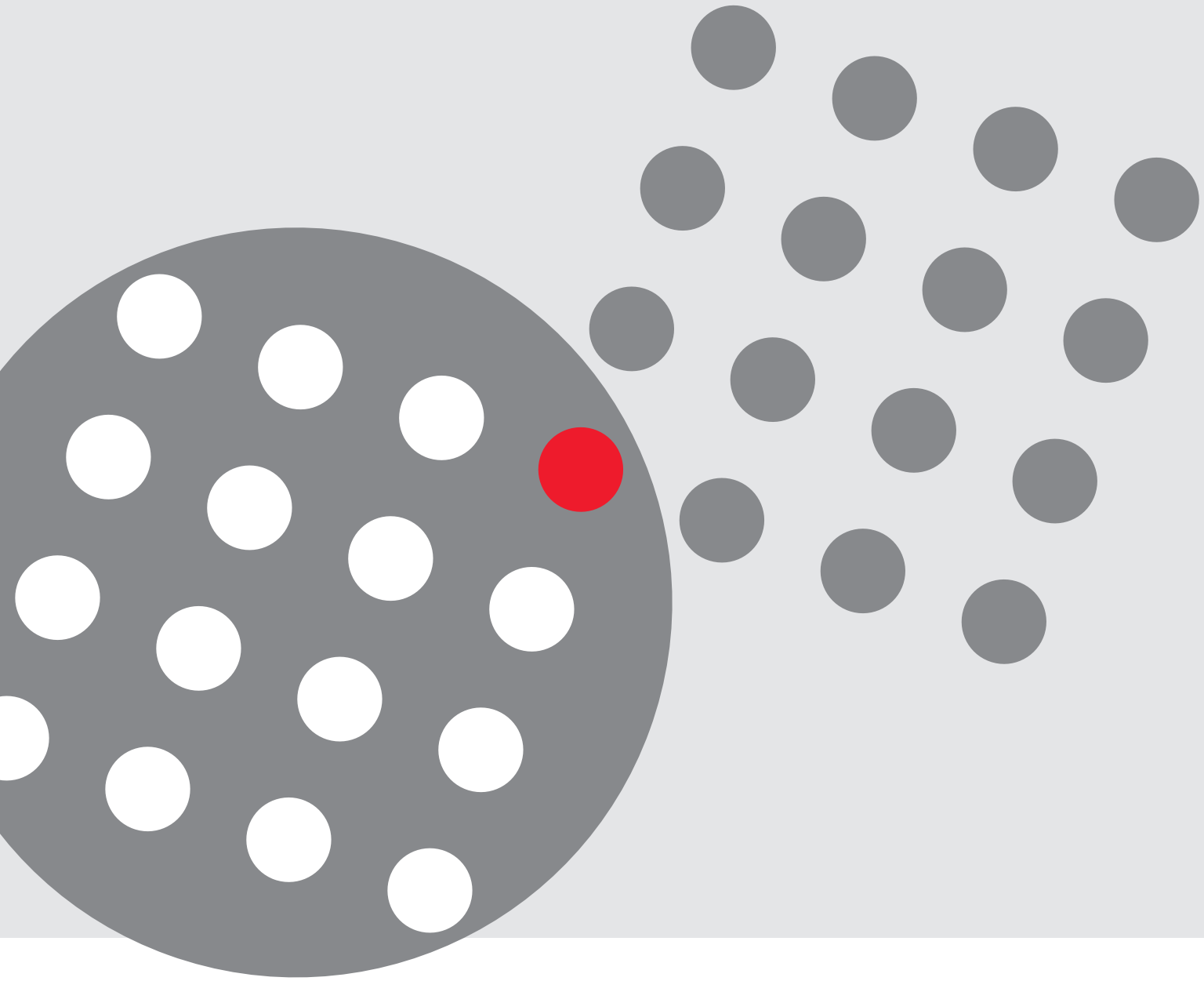

# SOURIAU

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Esterline
Connection Technologies

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