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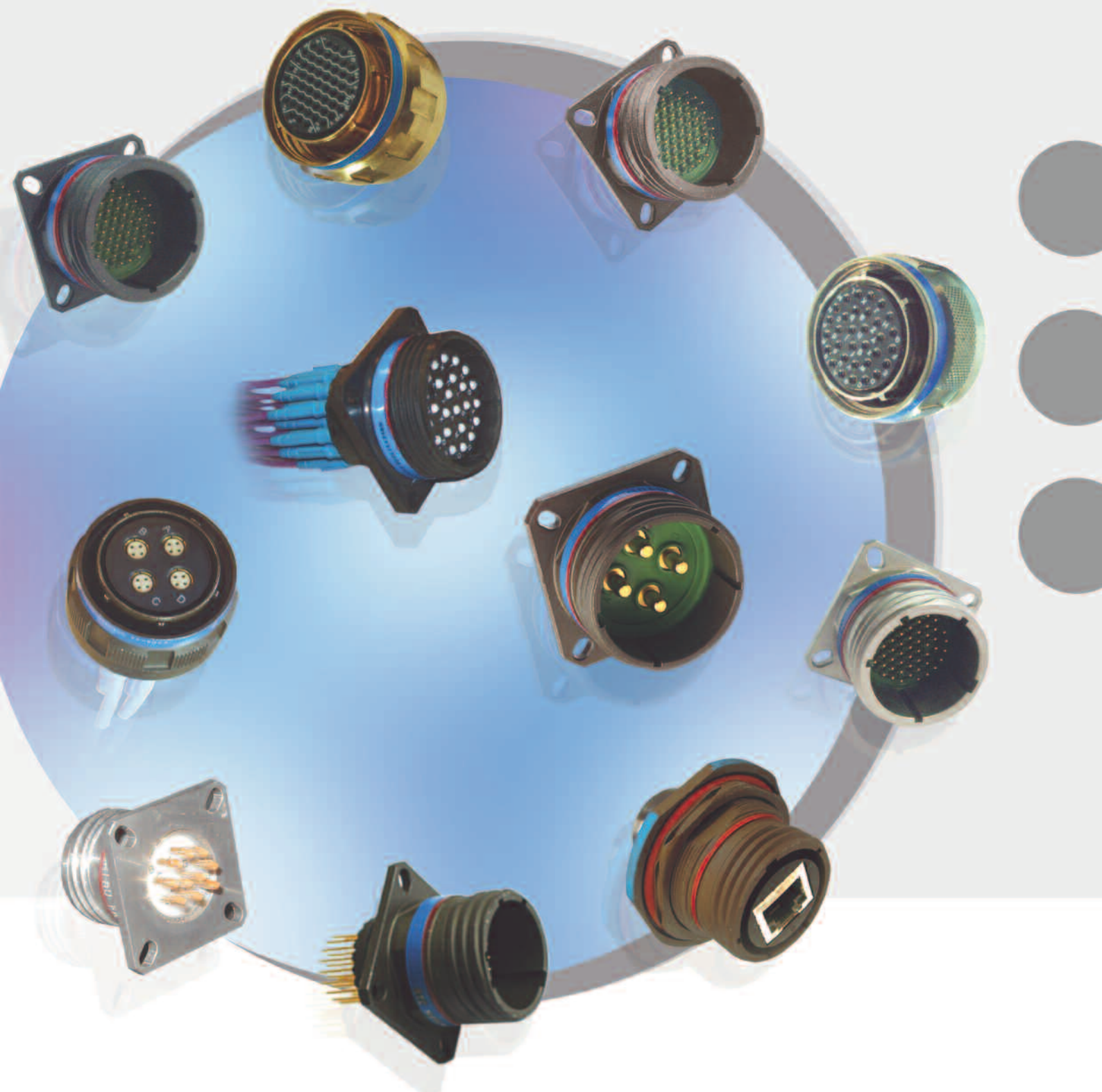
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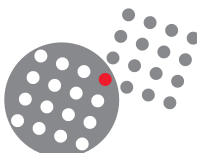
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# MIL-DTL-38999 series III and range extension



**SOURIAU**  
Connection Technology

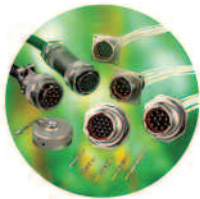


## SOURIAU

### Connectors and interconnect systems for harsh environments

The company designs, manufactures and markets high performance interconnect solutions for severe environments from industrial broadline and universal ranges to complex system with integrated functions:

filtering, high speed data transmission, hermetic seal, separation mechanism, remote handling, underwater mating, ...



Industrial



Aeronautical



Equipment & system

The dedicated end markets for SOURIAU's products are aeronautical, defense-space and industrial.



Railway  
Geophysics  
Manufacturing environment  
Instrumentation  
Automation & process



Civil & military aircraft  
Helicopter  
Weapon delivery system  
Avionics



Military marine  
Communications  
Satellites  
Launcher & missile

SOURIAU was established in 1917 and has been created by successive acquisitions of the industrial, aeronautical, defense and space activities of SOURIAU, JUPITER and BURNDY.

The Group's products are engineered and manufactured in the USA and Dominican Republic, Europe and Morocco, Japan and India, and sold by a worldwide sales and marketing organization, and in addition to SOURIAU's offices, a large network of licensed distributors and agents.

SOURIAU complies with most of national and international Quality Assurance Standards, production unit with ISO 14001.

**Quality Certificate  
Management System**

**ISO 9001**

**Environment Certificate  
Management System**

**ISO 14001**

**Quality Certificate  
Management System**

**Aeronautic Industry : EN 9100**

# MIL-DTL 38999 Series III



## Introduction

This product family is in accordance with MIL-DTL-38999 K Serie III , EN 3645 and CECC standard for bronze shell

Proposed in aluminium, composite, stainless steel, titanium and bronze versions.

This family gives :

- A high contact density up to 128 contacts #22D.
- A quick screw coupling with self locking mechanism.
- 100% scoop proof offering polarising options by angular positioning of keys.
- EMI enhanced protection by shielding ring and shell to shell bottoming.

Moreover, composite connectors reach high performance in terms of:

- Resistance to salt spray (> 2000 hours)
- Endurance : (> 1500 mating / Unmating operations with specific contacts)

Its choice is recommended wherever weight is critical (typically –30% versus aluminium version) or particularly in harsh climatic and mechanical environments.

8D Titanium version is characterized by a very high and mechanical resistance:

- Weight saving as compared to stainless steel
- Unplated and nickel plated version available

8D / D38999 family has applications in:

- Aeronautics and military
- Marine and offshore
- Industrial.

**For more informations or questions, please contact us to:**

**Contactmilaero@souriau.com**

# MIL-DTL 38999 Series III



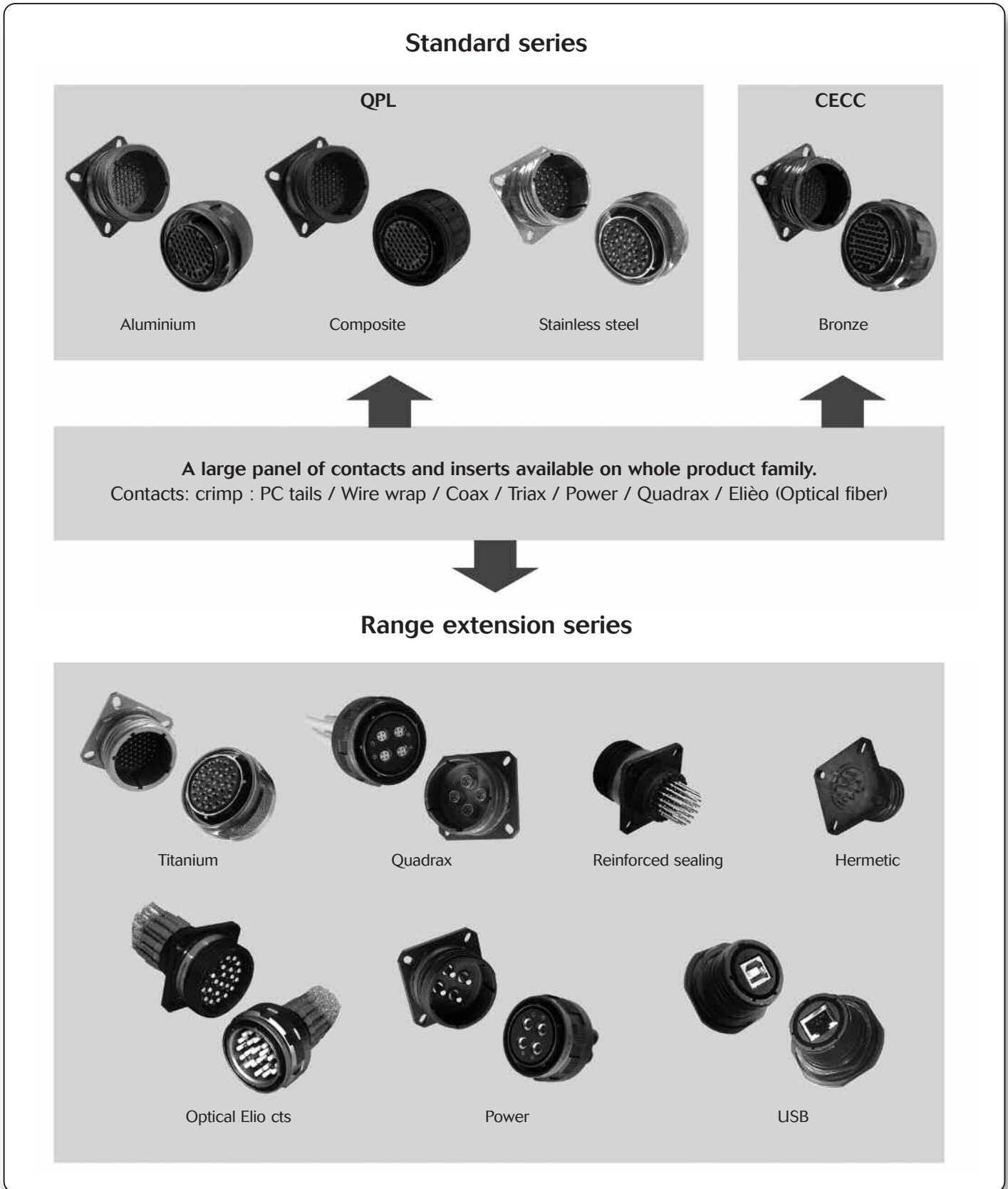
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# MIL-DTL 38999 Series III



## Overview



# MIL-DTL 38999 Series III



## Technical characteristics

### Characteristics

• **Shell:**  
Aluminium, composite, stainless steel, bronze

• **Shells plating:**

**Aluminium shell:**

- Cadmium olive drab (W)
- Nickel (F)
- Black zinc nickel (Z)
- Green zinc cobalt (ZC)

**Composite shell:**

- Cadmium olive drab (J)
- Nickel (M)
- Without plating (X)

**Stainless steel shell:**

- Passivated (K)
- Nickel (S)

**Titanium shell:**

- Without plating (TT)
- Nickel (TF)

**Boîtier bronze:**

- Without plating

• **Insulator:** Thermoplastic or thermoset.

• **Grommet and interfacial seal:**

- Silicone elastomer

• **Contacts:** Copper alloy

• **Contacts plating:** Gold over nickel plated

• **Endurance:**

- 500 mating / unmating operations whatever the material used
- 1500 mating / unmating operations with composite connectors + specifics contacts

• **Shock:**

300g, 3 ms according EN 2591-D2 method A

• **Vibration:**

**Sinus:**

- 10 à 2000 Hz, 3x12 hrs (60g, 140 – 2000 Hz) with temperature cycling

**Random:**

- 50 to 2000 Hz, 2x8 Hrs (1g<sup>2</sup>/ Hz, 100 – 2000Hz) at T° max.
- 25 to 2000 Hz, 2x8 Hrs (5g<sup>2</sup>/ Hz, 100 – 300Hz) (at ambient T°)

Test with accessories in acc with EN 2591-D3

• **Contacts retention:**

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

### Weight comparison

Example for a plug shell size 15

Materials	Weight
Stainless steel	58.80 grs
Titanium	33.90 grs
Aluminium	20.35 grs
Composite	14.30 grs

40% lighter (Aluminium vs Stainless steel)  
42% lighter (Composite vs Stainless steel)  
30% lighter (Composite vs Titanium)

### Electrical

• **Test voltage rating (Vrms):**

Service	At sea level	At 21000 m
M	1 300	800
N	1 000	600
I	1 800	1 000
II	2 300	1 000

For Quadrax see page 70

• **Contact resistance:**

Contacts size	22	20	16	12	8	4
Cts resistance (mΩ)	14.6	7.3	3.8	3.5	3	2

• **Insulation resistance:**

≥ 5 000 MΩ (under 500 Vdc).

• **Contact rating:**

Contacts size	22	20	16	12	8	4
Contact rating (A)	5	7,5	13	23	45	80

• **Shell continuity**

**Aluminium shell:**

- Cadmium olive drab (W): 2.5 mΩ
- Nickel (F): 1 mΩ
- Black zinc nickel (Z): 2.5 mΩ
- Green zinc nickel (ZC): 2.5 mΩ

**Composite shell:**

- Cadmium olive drab (J): 3 mΩ
- Nickel (M): 3 mΩ

**Stainless steel shell:**

- Passivated (K) : 10 mΩ
- Nickel (S) : 1 mΩ

**Titanium shell:**

- Without plating (TT) : 10 mΩ
- Nickel (TF): 1 mΩ

**Bronze shell:**

Without plating: 5 mΩ

• **Shielding:**

**Aluminium shell:**

- 65 db at 10 GHz (F) – 50 db at 10 GHz (W)
- 85 db at 1 GHz (F)
- (Z & ZC): Consult us

**Composite shell:**

- 90 db at 10 GHz
- 85 db at 1 GHz

**Stainless steel shell:**

- 45 db at 10 GHz (K)
- 65 db at 10 GHz (S)

**Titanium shell:**

- 45 db at 10 GHz (TT)
- 65 db at 10 GHz (TF)

**Bronze shell:** 85 db at 10 GHz



# MIL-DTL 38999 Series III



## Technical characteristics

### Climatics

- **Temperature range:**

- **Aluminium shell:**

- Cadmium olive drab (W): -65°C +175°C
    - Nickel (F): -65°C +200°C
    - Black zinc nickel (Z): -65°C +200°C
    - Green zinc nickel (ZC): -65°C +200°C

- **Composite shell:**

- Cadmium olive drab plating (J): -65°C +175°C
    - Nickel (M): -65°C +200°C
    - Without plating (X): -65°C +175°C

- **Stainless steel shell:**

- Passivated (K): -65°C +200°C
    - Nickel (S): -65°C +200°C

- **Titanium shell:**

- Without plating (TT): -65°C +200°C
    - Nickel (TF): -65°C +200°C

- **Bronze shell:**

- No plating: -65°C +175°C

- **Sealing:**

- Mated connectors meet altitude immersion requirements of MIL-DTL-38999.

- **Salt spray:**

- **Aluminium shell:**

- Cadmium olive drab (W): 500 Hrs
    - Nickel (F): 48 Hrs
    - Black Zinc nickel (Z): 500 Hrs
    - Green Zinc cobalt (ZC): 250 Hrs

- **Composite shell:**

- Cadmium olive drab (J) : 2000 Hrs
    - Nickel (M): 2000 Hrs
    - Without plating (X): 2000 Hrs

- **Stainless steel shell:**

- Passivated (K): 500 Hrs
    - Nickel (S): 48 Hrs

- **Titanium shell:**

- Without plating (TT): 500 Hrs
    - Nickel (TF): 48 Hrs

- **Bronze shell:**

- No plating: 500 Hrs

### Resistance to fluids

- **According to MIL-DTL-38999 standard.**

- Gasoline: JP5 (OTAN F44)
  - Mineral hydrolic fluid: MIL-H-5606 (OTAN H515)
  - Synthetic hydraulic fluid: Skydrol 500 B4

- **LD4 (SAE AS 1241).**

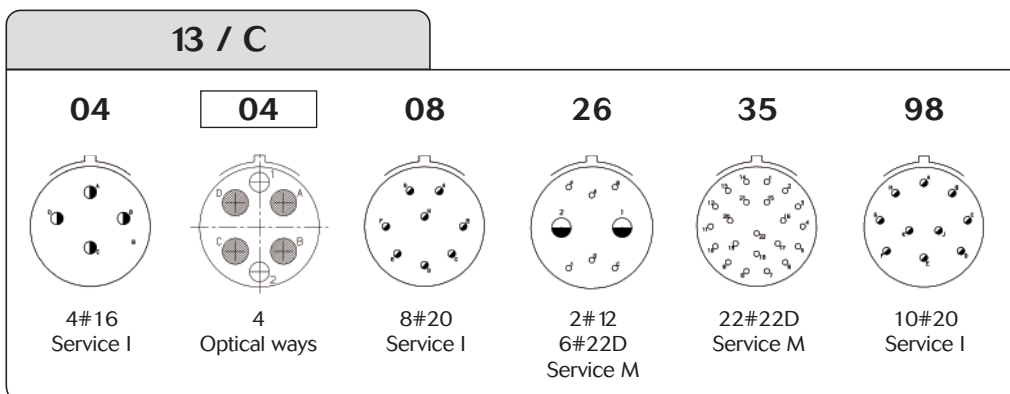
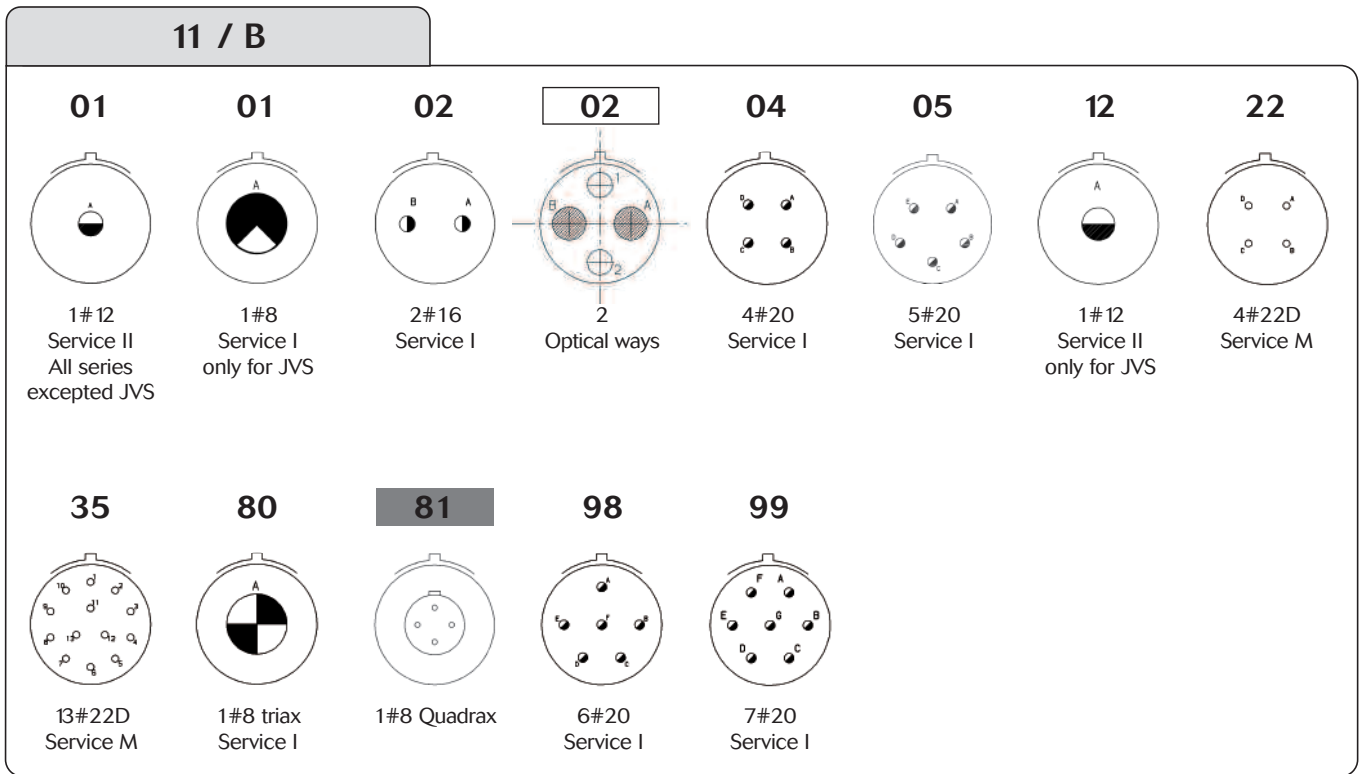
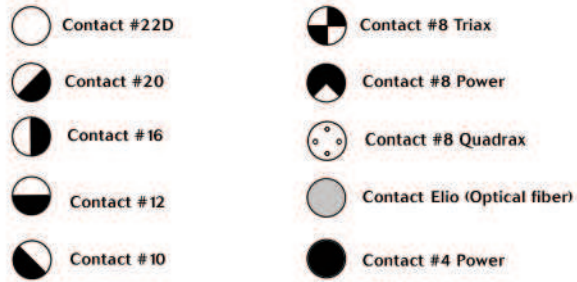
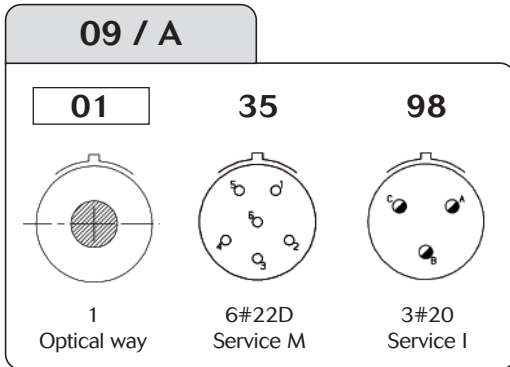
- Mineral lubricating: MIL-L-7870A (OTAN 0142)
  - Synthetic lubricating: MIL-L-23699 (OTAN 0156), MIL-L-7808.
  - Cleaning fluid: MIL-DTL-25769 dilué/diluted
  - De-icing fluid: MIL-A-8243.
  - Extinguishing fluid: Chlorobrométhane
  - Cooling fluid: Coolanol



# MIL-DTL 38999 Series III



## Contact layouts



# MIL-DTL 38999 Series III



## Contact layouts

**15 / D**

<b>05</b>  5#16 Service II	<b>15</b>  1#16 14#20 Service I	<b>18</b>  18#20 Service I	<b>19</b>  19#20 Service I	<b>35</b>  37#22D Service M	<b>97</b>  4#16 8#20 Service I
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**17 / E**

<b>02</b>  38#22D 1#8 triax Service M	<b>06</b>  6#12 Service I	<b>08</b>  8#16 Service II	<b>20</b>  4#12 16#22D Service M	<b>26</b>  26#20 Service I	<b>35</b>  55#22D Service M	<b>75</b>  2#8 triax Service M	<b>81</b>  38#22D 1#8 Quadrax
<b>82</b>  2 Quadrax	<b>99</b>  2#16 21#20 Service I						

**19 / F**

<b>08</b>  8 Optical ways	<b>11</b>  11#16 Service II	<b>28</b>  26#20 2#16 Service I	<b>32</b>  32#20 Service I	<b>35</b>  66#22D Service M
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 Elio fiber optics  Ethernet Quadrax

# MIL-DTL 38999 Series III



## Contact layouts

21 / G				23 / H		
<b>11</b>  11#12 Service I	<b>16</b>  16#16 Service II	<b>35</b>  79#22D Service M	<b>39</b>  2#16 37#20 Service I	<b>21</b>  21#16 Service II	<b>35</b>  100#22D Service M	<b>53</b>  53#20 Service I
<b>41</b>  41#20 Service I	<b>48</b>  4#8 power Service I	<b>75</b>  4#8 triax Service M	<b>84</b>  4 Quadrax	<b>54</b>  4#12 9#16 40#22D Service M	<b>55</b>  55#20 Service I	

25 / J								
<b>04</b>  8#16 48#20 Service I	<b>07</b>  2#8 triax 97#22D Service M	<b>08</b>  8#8 triax Service M	<b>11</b>  2#20 9#10 Service N	<b>19</b>  19#12 Service I	<b>20<sup>(1)</sup></b>  10#20 4#12 coax 13#16 3#8 triax Service N	<b>24</b>  12#16 12#12 Service II	<b>24</b>  24 Optical Ways	<b>29</b>  29#16 Service I
<b>35</b>  128#22D Service M	<b>37</b>  37#16 Service I	<b>41</b>  22#22D 3#20 11#16 2#12 3#8 triax Service M	<b>43</b>  23#20 20#16 Service I	<b>44</b>  4#4 power 4#16 Service I	<b>46</b>  40#20 4#16 2#8 coax Service I	<b>61</b>  61#20 Service I	<b>82</b>  97#22D 2#8 Quadrax	<b>80</b>  10#20 - 4#12 13#16 3#8 Quadrax
<b>81</b>  22#22D - 3#20 11#16 - 2#12 3#8 Quadrax	<b>86</b>  40#20 4#16 2#8 Quadrax	<b>88</b>  8 Quadrax						

(1) For classes F, W, K, S only.

Elio fiber optics
  Ethernet Quadrax

# MIL-DTL 38999 Series III



## Contact layouts

Shell Size	Layout	Service	MIL - DTL - 38999 (QPL)			8D Titanium	JVS (CECC) Bronze	Hermetics	Number of contacts	#22D	#20	#16	#12	#10	#8	#4 Power	Optical Way
			Alu	Stainless steel	Composite												
09 / A	09 - 01	-						1								1	
	09 - 35	M					x	6	6								
	09 - 98	I					x	3		3							
11 / B	11 - 01	II						1				1					
	11 - 01	II					x	1						1 Coax			
	11 - 02	I					x	2			2						
	11 - 02	-						2								2	
	11 - 04	I						4		4							
	11 - 05	I					x	5		5							
	11 - 12	I					x	1				1					
	11 - 22	M						4	4								
	11 - 35	M					x	13	13								
	11 - 80	I						1							1 Triax		
	11 - 81	-						1							1 Quadrax		
	11 - 98	I					x	6		6							
11 - 99	I					x	7		7								
13 / C	13 - 04	I					x	4			4						
	13 - 04	-						4								4	
	13 - 08	I					x	8		8							
	13 - 26	M					x	8	6			2					
	13 - 35	M					x	22	22								
	13 - 98	I					x	10		10							
15 / D	15 - 05	II					x	5			5						
	15 - 15	I					x	15		14	1						
	15 - 18	I					x	18		18							
	15 - 19	I					x	19		19							
	15 - 35	M					x	37	37								
	15 - 97	I					x	12		8	4						
17 / E	17 - 02	M						39	38						1 Triax		
	17 - 06	I					x	6		6							
	17 - 08	II					x	8		8							
	17 - 20	M						20	16			4					
	17 - 26	I					x	26		26							
	17 - 35	M					x	55	55								
	17 - 75	M					x	2							2 Triax		
	17 - 81	-						39	38						1 Quadrax		
	17 - 82	-						2							2 Quadrax		
17 - 99	I					x	23		21	2							
19 / F	19 - 08	-						8								8	
	19 - 11	II					x	11			11						
	19 - 28	I					x	28		26	2						
	19 - 32	I					x	32		32							
	19 - 35	M					x	66	66								
21 / G	21 - 11	I					x	11				11					
	21 - 16	II					x	16			16						
	21 - 35	M					x	79	79								
	21 - 39	I					x	39		37	2						
	21 - 41	I					x	41		41							
	21 - 48	I					x	4							4 Power		
	21 - 59	M					x	59	55			4			4 Triax		
	21 - 75	-					x	4							4 Quadrax		
21 - 84	-						4							4 Quadrax			
23 / H	23 - 21	II					x	21			21						
	23 - 35	M					x	100	100								
	23 - 53	I					x	53		53							
	23 - 54	M					x	53	40		9	4					
	23 - 55	I					x	55		55							
25 / J	25 - 04	I						56		48	8						
	25 - 07	M						99	97						2 Triax		
	25 - 08	-					x <sup>(2)</sup>	8							8 Triax		
	25 - 11	N						11		2			9				
	25 - 19	I					x	19				19					
	25 - 20(1)	N					x	30		10	13	4			3 Triax		
	25 - 24	II					x	24			12	12					
	25 - 24	-						24								24	
	25 - 29	I					x	29			29						
	25 - 35	M					x	128	128								
	25 - 37	I						37			37						
	25 - 41	N						41	22	3	11	2			3 Triax		
	25 - 43	I					x	43		23	20						
	25 - 44	I						8			4					4	
	25 - 46	I					x	46		40	4				2 Coax		
	25 - 61	I					x	61		61							
	25 - 80	N						30		10	13	4			3 Quadrax		
	25 - 81	N						41	22	3	11	2			3 Quadrax		
25 - 82	M						99	97						2 Quadrax			
25 - 86	I						46		40	4				2 Quadrax			
25 - 88	-						8							8 Quadrax			

(1) For classes F, W, S, K only

(2) For CECC, Layout 25 - 08 only delivery without contact







# MIL-DTL 38999 Serie III Aluminium Series

# 8D - D38999 Aluminum Serie



## Connector part numbers

Basic Series	8D	0	-	11	W	35	P	N	**
<b>Shell style:</b> 0: Square flange receptacle 1: In line receptacle 7: Jam nut receptacle 5: Plug with RFI shielding.									
<b>Type:</b> -: Connectors with standard crimp contacts. L: Receptacle with long spill (male and female size #22D, #20). C: Receptacle with short spill (male and female #22D, #20, #16). S: Receptacle with specific spill (male et female #22D) W: Receptacle with male contacts #22D for wire wrap (3 wraps) T: Receptacle with male contacts #20 for wire wrap (2 wraps)									
<b>Shell size:</b> 09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25									
<b>Plating:</b> W: Olive drab cadmium F: Nickel ZC: Green zinc cobalt Z: Black zinc nickel									
<b>Contact layout:</b> See page 8 to 11									
<b>Contact type:</b> P: Pin.           A: Connector supplied less pin contact or with specific contacts (connector marking: A + orientation). S: Socket.       B: Connector supplied less socket contact or with specific contacts (connector marking: B + orientation).									
<b>Orientation:</b> N, A, B, C, D & E (see page 58)									
<b>Specification:</b> 046: Tinned straight spills 251: Connector provided with power contacts (layouts with contact #8) 022: Fuel tank L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation.									

## MIL-DTL-38999 part numbers\*

Basic Series	D38999	20	W	B	35	P	N	L
<b>Shell style:</b> 20: Square flange receptacle 24: Jam nut receptacle 26: Plug with RFI shielding.								
<b>Plating:</b> W: Olive drab cadmium F: Nickel								
<b>Shell size:</b> A - B - C - D - E - F - G - H - J								
<b>Contact layout:</b> See page 11 for layout according to MIL-DTL-38999								
<b>Contact type:</b> P: Pin.           A: Connector supplied less pin contact or with specific contacts (connector marking: A + orientation). S: Socket.       B: Connector supplied less socket contact or with specific contacts (connector marking: B + orientation).								
<b>Orientation:</b> N, A, B, C, D & E (see page 58)								
L: For P or S contact type only, connector delivered without contacts, connector marking P or S (without L)								

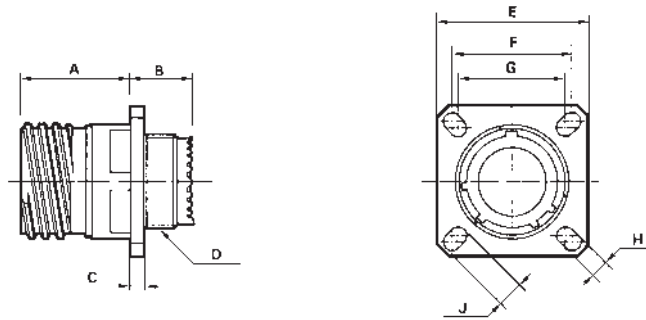
\* Note: To place an order of MIL connectors delivered without MIL removable crimp contacts and keep P or S plus orientation marking, it must be specify clearly on the order (by adding a suffix L at the end of the P/N or specified in comment).

# 8D - D38999 Aluminium Series



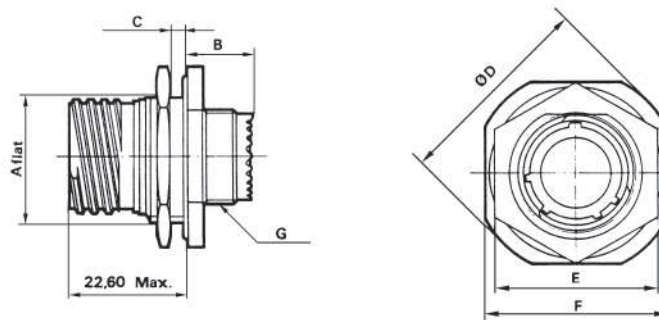
## Dimensions

### Receptacle type 0



Shell size	A Max.	B Max.	C Max.	D thread	E ± 0,30	F	G	H ± 0,20	J ± 0,20
09 (A)	20.90	10.60	2.50	M12 x 1-6g	23.80	18.26	15.09	3.25	5.49
11 (B)	20.90	10.60	2.50	M15 x 1-6g	26.20	20.62	18.26	3.25	4.93
13 (C)	20.90	10.60	2.50	M18 x 1-6g	28.60	23.01	20.62	3.25	4.93
15 (D)	20.90	10.60	2.50	M22 x 1-6g	31.00	24.61	23.01	3.25	4.93
17 (E)	20.90	10.60	2.50	M25 x 1-6g	33.30	26.97	24.61	3.25	4.93
19 (F)	20.90	10.60	2.50	M28 x 1-6g	36.50	29.36	26.97	3.25	4.93
21 (G)	20.10	11.40	3.20	M31 x 1-6g	39.70	31.75	29.36	3.25	4.93
23 (H)	20.10	11.40	3.20	M34 x 1-6g	42.90	34.93	31.75	3.91	6.15
25 (J)	20.10	11.40	3.20	M37 x 1-6g	46.00	38.10	34.93	3.91	6.15

### Receptacle type 7



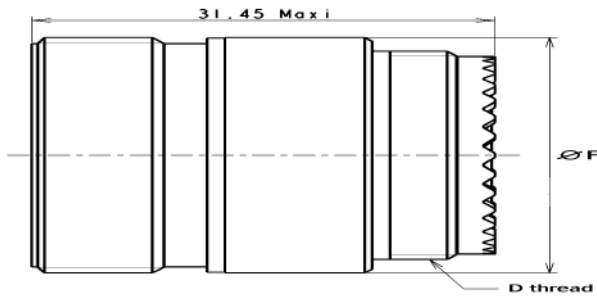
Shell size	A + 0,10 - 0,15	B Max.	C Max.	D Max.	E Max.	F ± 0,40	G thread
09 (A)	16.53	9.90	3.20	30.50	23.00	27.00	M12 x 1-6g
11 (B)	19.07	9.90	3.20	35.20	26.00	31.80	M15 x 1-6g
13 (C)	23.82	9.90	3.20	38.40	31.00	34.90	M18 x 1-6g
15 (D)	26.97	9.90	3.20	41.60	34.00	38.10	M22 x 1-6g
17 (E)	30.15	9.90	3.20	44.80	37.00	41.30	M25 x 1-6g
19 (F)	33.32	9.90	3.50	49.50	41.00	46.00	M28 x 1-6g
21 (G)	36.50	9.90	3.50	52.70	46.00	49.20	M31 x 1-6g
23 (H)	39.67	9.90	3.50	55.90	47.00	52.40	M34 x 1-6g
25 (J)	42.85	9.90	3.50	59.00	52.00	55.60	M37 x 1-6g



# 8D - D38999 Aluminium Series

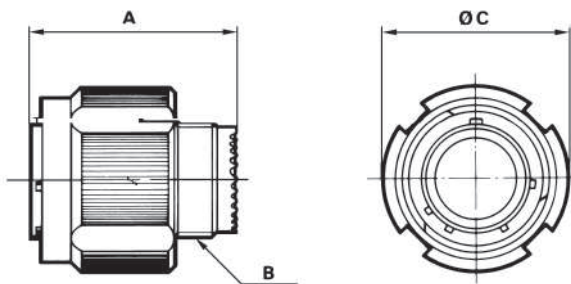


## In line receptacle type 1



Shell size	D thread	Ø F
09 (A)	M12 x 1-6g	15.90
11 (B)	M15 x 1-6g	19.05
13 (C)	M18 x 1-6g	22.25
15 (D)	M22 x 1-6g	25.40
17 (E)	M25 x 1-6g	30.15
19 (F)	M28 x 1-6g	31.75
21 (G)	M31 x 1-6g	34.75
23 (H)	M34 x 1-6g	37.10
25 (J)	M37 x 1-6g	41.30

## Plug type 5

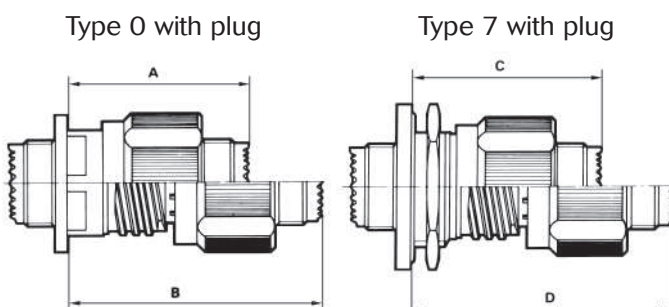


Shell size	A Max.	B thread	C Max.
09 (A)	31.00	M12 x 1-6g	21.80
11 (B)	31.00	M15 x 1-6g	25.00
13 (C)	31.00	M18 x 1-6g	29.40
15 (D)	31.00	M22 x 1-6g	32.50
17 (E)	31.00	M25 x 1-6g	35.70
19 (F)	31.00	M28 x 1-6g	38.50
21 (G)	31.00	M31 x 1-6g	41.70
23 (H)	31.00	M34 x 1-6g	44.90
25 (J)	31.00	M37 x 1-6g	48.00

## Maximum coupling torque on panel for jam nut receptacle (type 7)

Shell	09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
Coupling torque (N.m)	6	8	10	13	20	23	25	26	28

## Mated connectors dimensions



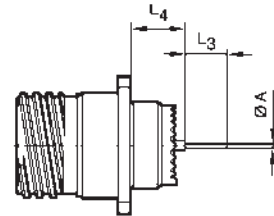
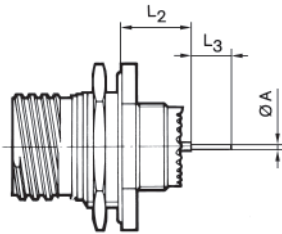
Shell size	A Max.	B Max.	C Max.	D Max.
09 (A)	37.00	52.30	38.30	53.60
11 (B)	37.00	52.30	38.30	53.60
13 (C)	37.00	52.30	38.50	53.80
15 (D)	37.00	52.30	38.50	53.80
17 (E)	37.00	52.30	38.50	53.80
19 (F)	37.00	52.30	38.50	53.80
21 (G)	36.00	51.30	38.50	53.80
23 (H)	36.00	51.30	38.50	53.80
25 (J)	36.00	51.30	38.50	53.80

Dimensions in millimeters

# 8D - D38999 Aluminium Series



## Receptacle with straight spill contacts



		Shell size			09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
		Contact size	Contact type	Spill type									
<b>A</b>		# 22D	M & F	L & C					0.70				
		# 22D	M & F	S					0.50				
		# 20	M & F	C					0.70				
		# 16	M & F	C					1.15				
<b>L2</b>	<b>Min.</b>	# 22D	M	L & C	10.52					10.34			
	<b>Max.</b>	# 22D	M	L & C	11.46					11.28			
	<b>Min.</b>	# 22D	F	L & C	10.19					10.01			
	<b>Max.</b>	# 22D	F	L & C	11.46					11.28			
	<b>Min.</b>	# 22D	M	S	10.19					10.01			
	<b>Max.</b>	# 22D	M	S	11.46					11.28			
	<b>Min.</b>	# 22D	F	S	10.69					10.51			
	<b>Max.</b>	# 22D	F	S	11.63					11.45			
	<b>Min.</b>	# 20	M	C	10.36					10.18			
	<b>Max.</b>	# 20	M	C	11.63					11.45			
	<b>Min.</b>	# 20	F	C	10.69					10.51			
	<b>Max.</b>	# 20	F	C	11.63					11.45			
	<b>Min.</b>	# 16	M	C	10.69					10.51			
	<b>Max.</b>	# 16	M	C	11.63					11.45			
<b>L3</b>		# 22D	M & F	L					8.50				
		# 22D	M & F	C					4.00				
		# 22D	M & F	S					5.10				
		# 20	M & F	C					5.10				
		# 16	M & F	C					5.10				
<b>L4</b>	<b>Min.</b>	# 22D	M	L & C					9.48				
	<b>Max.</b>	# 22D	M	L & C			10.58					10.69	
	<b>Min.</b>	# 22D	F	L & C			9.15					9.26	
	<b>Max.</b>	# 22D	F	L & C			10.58					10.69	
	<b>Min.</b>	# 22D	M	S			9.65					9.76	
	<b>Max.</b>	# 22D	M	S			10.75					10.86	
	<b>Min.</b>	# 22D	F	S			9.15					9.26	
	<b>Max.</b>	# 22D	F	S			10.75					10.86	
	<b>Min.</b>	# 20	M	C			9.65					9.76	
	<b>Max.</b>	# 20	M	C			10.75					10.86	
	<b>Min.</b>	# 20	F	C			9.65					9.76	
	<b>Max.</b>	# 20	F	C			10.75					10.86	
	<b>Min.</b>	# 16	M	C			9.65					9.76	
	<b>Max.</b>	# 16	M	C			10.75					10.86	
<b>Min.</b>	# 16	F	C			9.65					9.76		
<b>Max.</b>	# 16	F	C			10.75					10.86		

M : Male contact      F : Female contact      L : Long spill      C : Short spill      S : Specific spill      Dimensions in millimeters

# 8D - D38999 Aluminium Series



## Souriau backshells part numbers

Basic series									8D	102	B	02
<b>Shell style:</b>												
09	11	13	15	17	19	21	23	25				
101	102	103	104	105	106	107	108	109				
<b>Plating:</b>												
B: Olive drab cadmium												
F: Nickel												
<b>Backshell type:</b>												
02: Straight cable clamp												
03: 90° cable clamp												
13: Backshell for heat shrink boots												

## Cross reference table

Backshell type	AS85049 Standard	SOURIAU part numbers
Straight cable clamp	M85049/38-**-x	8D101x02
90° cable clamp	M85049/39-**-x	8D101x03
Backshell for heat shrink boots	M85049/69-**-x	8D101x13
Backshell for screen termination and cable clamp	M85049/19**x**	N/A

x: Plating    \*\*: Shell size (See page 19 to 21)

# 8D - D38999 Aluminium Series



## Standard backshells part numbers

### Straight cable clamp (M85049/38)

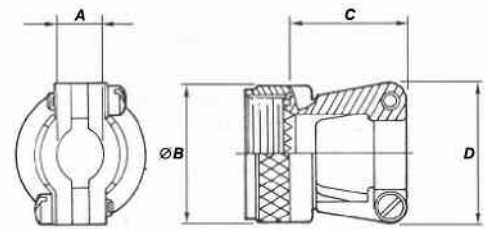
**Basic series**      **M85049**   **38**   -   **11**   **W**

**Backshell type:**  
38: Straight cable clamp

**Nut type:**  
-: Without self-locking  
S: With self-locking

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

**Plating (See table 3):**  
A and W for 38 type  
W and N for 38S type



See table 1 for dimensions

### 90° cable clamp (M85049/39)

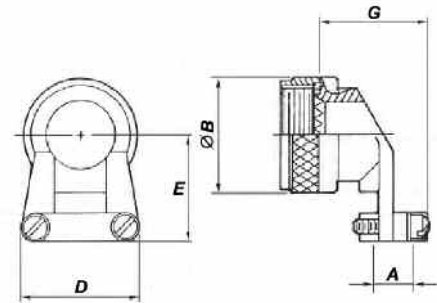
**Basic series**      **M85049**   **39**   -   **11**   **W**

**Backshell type:**  
39: 90° cable clamp

**Nut type:**  
-: Without self-locking  
S: With self-locking

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

**Plating (See table 3):**  
A and W for 39 type  
W and N for 39S type



See table 1 for dimensions

**Table 1**

Shell size	A		ØB Max.	C Max.	D Max.	E	G
	Min	Max.					
09	2.50	5.90	21.80	23.10	21.60	25.40	25.70
11	3.90		25.00		22.90		
13	4.80	8.30	29.40	25.70	27.90	30.70	
15	6.60	11.60	32.50	26.90	29.20	31.80	32.00
17	7.20	15.60	35.70	29.50	33.00	33.00	35.80
19	8.30	16.10	38.50	35.80	38.10	34.30	38.40
21	8.70	17.70	41.70	38.40	40.60	40.60	42.20
23	9.70	20.90	44.90	42.20	43.20	44.50	44.70
25	10.60	21.70	48.00	44.70	45.70	47.00	48.50

Dimensions in millimeters



# 8D - D38999 Aluminium Series



## Backshell for heat shrink boots (M85049/69)

**Basic series**      **M85049**    **69**    **11**    **A**    **D**

**Backshell type:**

**69:** Straight backshell for heat shrink boot

**Shell size:**

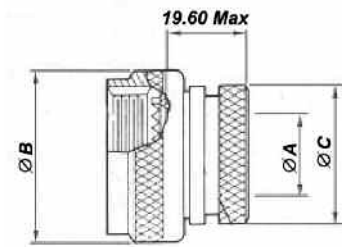
09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

**Plating:**

**A:** see table 3

**Option:**

**Nothing:** Without drain hole  
**D:** With drain hole



See table 2 for dimensions

**Table 2**

Shell size	ØB Max.	ØA Max.	ØC Max.
09	19.10	6.35	13.55
11	21.60	9.50	15.40
13	25.40	12.70	19.70
15	29.20	15.90	21.30
17	31.80	19.00	24.50
19	35.60	20.60	26.50
21	39.40	23.80	30.90
23	41.90	27.00	34.40
25	47.00	30.20	36.65

Dimensions in millimeters

**Table 3**

Plating	Description	Salt spray
<b>A</b>	Black anodise	500 Hrs
<b>N, F</b>	Nickel	48 Hrs
<b>W, B</b>	Olive drab cadmium over nickel	500 Hrs

# 8D - D38999 Aluminium Series



## Backshell for screen termination and cable clamp (M85049/19)

### Basic Series

M85049/ 19 11 W 03

#### Shell style:

19: Backshell for screen termination and cable clamp

#### Shell size:

09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

#### Plating:

W: Olive drab cadmium

N: Nickel

#### Clamp size indicator:

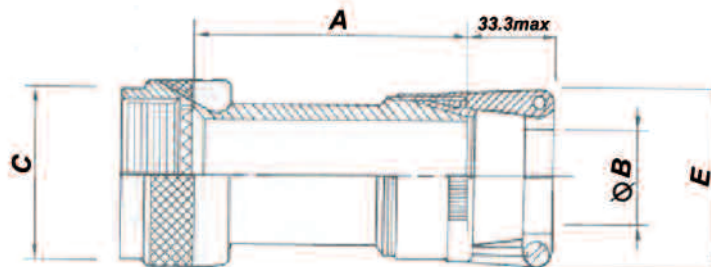
See table 4 and 5

### Table 4

Shell size	A Max.	C Max.	Clamp indicator base on shell size
09		19.10	01 - 02
11		21.60	01 - 02 - 03
13		25.40	02 - 03 - 04
15		27.90	02 - 03 - 04 - 05
17	38.10	31.80	02 - 03 - 04 - 05 - 06
19		35.60	03 - 04 - 05 - 06 - 07
21		38.10	03 - 04 - 05 - 06 - 07 - 08
23		41.90	03 - 04 - 05 - 06 - 07 - 09
25		44.50	04 - 05 - 06 - 07 - 08 - 10

### Table 5

Clamp size indicator	B		E
	Min.	Max.	
01	1.60	3.20	20.30
02	3.20	6.35	25.40
03	6.35	9.50	27.90
04	7.90	12.70	30.50
05	11.10	15.90	31.80
06	14.30	19.00	35.60
07	17.45	22.20	38.10
08	20.60	24.40	41.90
09	23.80	28.60	44.50
10	27.00	31.75	48.30



See table 4 & 5 for dimensions

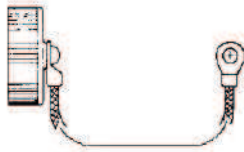
# 8D - D38999 Aluminium Series



## Caps

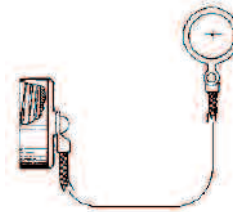
### Caps for receptacle (D38999/33 - S2453)

With stainless steel rope and eyelet



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2453-09W-**-**	D38999/33 W 09 R
11	S2453-11W-**-**	D38999/33 W 11 R
13	S2453-13W-**-**	D38999/33 W 13 R
15	S2453-15W-**-**	D38999/33 W 15 R
17	S2453-17W-**-**	D38999/33 W 17 R
19	S2453-19W-**-**	D38999/33 W 19 R
21	S2453-21W-**-**	D38999/33 W 21 R
23	S2453-23W-**-**	D38999/33 W 23 R
25	S2453-25W-**-**	D38999/33 W 25 R

With stainless steel rope and ring



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2453-09W-**-1	D38999/33 W 09 N
11	S2453-11W-**-1	D38999/33 W 11 N
13	S2453-13W-**-1	D38999/33 W 13 N
15	S2453-15W-**-1	D38999/33 W 15 N
17	S2453-17W-**-1	D38999/33 W 17 N
19	S2453-19W-**-1	D38999/33 W 19 N
21	S2453-21W-**-1	D38999/33 W 21 N
23	S2453-23W-**-1	D38999/33 W 23 N
25	S2453-25W-**-1	D38999/33 W 25 N

### Caps for plug (D38999/32 - S2454)

With stainless steel rope and eyelet



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2454-09F-**-S	D38999/32 W 09 R
11	S2454-11F-**-S	D38999/32 W 11 R
13	S2454-13F-**-S	D38999/32 W 13 R
15	S2454-15F-**-S	D38999/32 W 15 R
17	S2454-17F-**-S	D38999/32 W 17 R
19	S2454-19F-**-S	D38999/32 W 19 R
21	S2454-21F-**-S	D38999/32 W 21 R
23	S2454-23F-**-S	D38999/32 W 23 R
25	S2454-25F-**-S	D38999/32 W 25 R

With stainless steel rope and ring



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2454-09W-**-S	D38999/32 W 09 N
11	S2454-11W-**-S	D38999/32 W 11 N
13	S2454-13W-**-S	D38999/32 W 13 N
15	S2454-15W-**-S	D38999/32 W 15 N
17	S2454-17W-**-S	D38999/32 W 17 N
19	S2454-19W-**-S	D38999/32 W 19 N
21	S2454-21W-**-S	D38999/32 W 21 N
23	S2454-23W-**-S	D38999/32 W 23 N
25	S2454-25W-**-S	D38999/32 W 25 N

Plating - 34: Olive green cadmium - Plating - 12: Nickel. Note: caps available with nylon ropes. Consult us.

# 8D - D38999 Aluminium Series



## Connectors weight

	With contacts						Without contact					
	Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)		Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
09 – 35	11.47	13.05	9.15	10.73	13.91	15.49	11.05	11.55	8.73	9.23	13.49	13.99
09 – 98	11.47	12.77	9.15	10.45	13.91	15.21	11.05	11.57	8.73	9.25	13.49	14.01
11 – 01	14.98	17.92	12.01	14.95	18.17	21.11	14.32	16.32	11.35	13.35	17.51	19.51
11 – 02	14.61	17.15	11.64	14.18	17.80	20.34	13.99	15.59	11.02	12.62	17.18	18.78
11 – 04	14.80	17.86	11.83	14.89	17.99	21.05	14.24	16.26	11.27	13.29	17.43	19.45
11 – 05	14.83	18.04	11.86	15.07	19.48	21.23	14.13	16.04	11.16	13.07	17.32	19.23
11 – 22	14.47	16.89	11.50	13.92	17.66	20.08	14.19	15.89	11.22	12.92	17.38	19.08
11 – 35	14.73	18.20	11.76	15.23	17.68	21.39	13.82	14.95	10.85	11.98	17.01	18.14
11 – 80	18.30	21.90	15.30	18.90	21.50	28.39	13.80	14.90	10.80	11.90	17.00	18.10
11 – 98	14.70	17.46	11.73	14.49	17.89	20.65	13.86	15.06	10.89	12.09	17.05	18.25
11 – 99	14.87	18.09	11.90	15.12	18.06	21.28	13.89	15.29	10.92	12.32	17.08	18.48
13 – 04	21.04	24.82	15.71	19.49	24.14	27.92	19.80	21.70	14.47	16.37	22.90	24.80
13 – 08	21.42	26.60	16.09	21.27	24.52	29.70	20.30	23.40	14.97	18.07	23.40	26.50
13 – 26	21.79	27.44	16.46	22.11	24.89	30.54	20.05	22.74	14.72	17.41	23.15	25.84
13 – 35	21.22	26.99	15.89	21.66	24.32	30.09	19.68	21.49	14.35	16.16	22.78	24.59
13 – 98	21.08	25.70	15.75	20.37	24.18	28.80	19.68	21.70	14.35	16.37	22.78	24.80
15 – 05	26.04	31.38	19.54	24.88	29.62	34.96	24.49	27.48	17.99	20.98	28.07	31.06
15 – 15	26.84	34.00	20.34	27.50	30.42	37.58	24.57	27.62	18.07	21.12	28.15	31.20
15 – 18	27.05	35.93	20.55	29.43	30.63	39.51	24.53	28.73	18.03	22.23	28.11	32.31
15 – 19	26.58	34.31	20.08	27.81	30.16	37.89	23.92	26.71	17.42	20.21	27.50	30.29
15 – 35	26.68	35.92	20.18	29.42	30.26	39.50	24.09	26.67	17.59	20.17	27.67	30.25
15 – 97	26.51	33.56	20.01	27.06	30.09	37.14	24.15	27.24	17.65	20.74	27.73	30.82
17 – 02	32.96	46.30	31.26	44.60	42.06	55.40	25.80	29.80	24.10	28.10	34.90	38.90
17 – 06	29.90	39.50	28.21	37.81	39.00	48.60	25.94	29.90	24.25	28.21	35.04	39.00
17 – 08	28.89	37.62	27.20	35.93	37.99	46.72	26.41	31.38	24.72	29.69	35.51	40.48
17 – 26	29.47	40.26	27.78	38.57	38.57	49.36	25.83	29.86	24.14	28.17	34.93	38.96
17 – 35	29.71	43.26	28.02	41.57	38.81	52.36	25.86	29.51	24.17	27.82	34.96	38.61
17 – 75	35.31	46.60	33.62	44.91	44.41	55.70	26.31	32.60	24.62	30.91	35.41	41.70
17 – 99	29.52	40.08	27.83	38.39	38.62	49.18	25.96	30.12	24.27	28.43	35.06	39.22
19 – 11	37.77	51.36	31.07	44.66	44.62	58.21	34.36	42.78	27.66	46.43	30.86	49.63
19 – 32	36.98	50.38	30.28	43.68	43.83	57.23	32.50	37.58	25.80	41.23	29.00	44.43
19 – 35	37.29	53.74	30.59	47.04	44.14	44.09	32.67	37.24	25.97	40.89	29.17	44.09
21 – 11	45.51	65.35	39.31	59.15	53.19	73.03	38.25	47.75	32.05	51.93	35.55	55.43
21 – 16	42.61	57.89	36.41	51.69	50.29	65.57	37.65	45.41	31.45	49.59	34.95	53.09
21 – 35	42.89	63.55	36.69	57.35	50.57	71.23	37.36	43.80	31.16	47.98	34.66	51.48
21 – 39	44.27	64.60	38.07	58.40	51.95	72.28	38.47	48.24	32.27	52.42	35.77	55.92
21 – 41	42.81	60.18	36.61	64.36	50.49	67.86	37.07	43.78	30.87	47.96	34.37	51.46
21 – 48	49.59	49.93	43.39	43.73	55.27	57.61	36.48	43.38	30.28	37.18	44.16	51.06
21 – 75	54.48	71.38	48.28	65.18	62.16	79.06	36.48	43.38	30.28	37.18	44.16	51.06
23 – 21	50.49	73.74	44.19	67.44	59.23	82.48	43.98	57.36	37.68	62.20	41.58	66.10
23 – 35	48.85	75.00	42.55	68.70	57.59	83.74	41.85	50.00	35.55	54.84	39.45	58.74
23 – 53	48.91	71.10	42.61	64.80	57.65	79.84	41.49	49.90	35.19	54.74	39.09	58.64
23 – 55	49.66	72.73	43.36	66.43	58.40	81.47	41.96	50.73	35.66	55.57	39.56	59.47
25 – 07	61.89	90.70	55.73	85.10	71.15	99.10	46.41	56.20	40.25	61.26	44.45	65.46
25 – 11	54.48	71.38	48.28	65.18	62.16	79.06	36.48	43.38	42.94	55.94	58.36	71.36
25 – 19	59.76	91.77	53.60	85.61	69.02	101.03	47.22	61.37	41.06	66.43	45.26	70.63
25 – 24	59.26	90.62	53.10	84.46	68.52	99.88	47.62	62.06	41.46	67.12	45.66	71.32
25 – 29	57.58	86.55	51.42	80.39	66.84	95.81	48.59	63.93	42.43	68.99	46.63	73.19
25 – 35	55.37	88.20	49.21	82.04	64.63	97.46	46.41	56.20	40.25	61.26	44.45	65.46
25 – 37	57.57	89.86	51.41	59.36	66.83	90.06	46.10	61.00	39.94	60.50	55.36	61.20
25 – 44	52.80	67.61	46.53	65.39	62.05	83.39	44.40	59.22	38.14	57.00	53.66	75.00
25 – 43	57.62	88.30	51.46	82.14	66.88	97.56	48.20	63.50	42.04	68.56	46.24	72.76
25 – 46	59.92	83.76	53.76	77.60	69.18	93.02	45.28	55.44	39.12	60.50	43.32	64.70
25 – 61	54.67	81.42	48.51	75.26	63.93	90.68	46.13	57.02	39.97	62.08	44.17	66.28
25 – 08	81.00	112.83	74.84	106.67	90.26	122.09	45.00	56.83	38.84	61.69	43.04	66.09
25 – 20	66.02	96.24	59.86	90.08	75.28	105.50	44.45	54.70	38.29	59.76	42.49	63.96
25 – 04	58.42	88.27	52.26	82.11	67.68	97.53	49.22	62.83	43.06	67.89	47.26	72.09

Weight in gram





# 8D - D38999 Composite Series



## MIL-DTL-38999 Serie III Composite Series