



PDF Support

**SOURIAU**

**8D Series**

MIL-DTL-38999 Series III





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and Series.



8D Series

# Overview

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# 8D Series

## MIL-DTL-38999 Series III



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

#### 38999 Series I: 8LT Series



- ▶ High density (#22D) MIL-spec circular (1980's)
- ▶ Scoop proof
- ▶ Coupling system: Bayonet
- ▶ Method of mounting: screws or jam nut
- ▶ Shell: Aluminum alloy
- ▶ Plating: olive green cadmium or nickel
- ▶ QPL approved
- ▶ Numerous layouts

#### 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

### 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

# 8D Series

## MIL-DTL-38999 Series III



### 8D Series - Presentation

#### 38999 Series III: 8D Series

Since the early 80's, Souriau is a major supplier of 38999 Series III, the screw-coupled version of MIL-C-38999. Present on the main international programs, Souriau has developed a range of products that meet the performance required in extreme environments:

- Civil and military aeronautics
- Ground military
- Industrial
- Marine and offshore

**This evolution of MIL-C-38999 allows:**

- A high contact density up to 128 contacts #22D
- A quick screw coupling with self locking mechanism
- High resistance to harsh environments (vibration, 200°C)

**Always at the cutting edge of innovation, Souriau's teams have continuously improved this range of connectors:**

- Composite version in the 90's (Its choice is recommended wherever weight is critical)
- Titanium version for weight saving and very high and mechanical resistance
- Today Souriau remains innovative with cadmium free and RoHS solutions.  
In 2009 Souriau was the first to be QPL qualified for Zinc Nickel plating.

**This product family is in accordance with MIL-DTL-38999 Series III, EN 3645, CECC (standard for bronze shell), ... and also meets many customers' standards (Rolls Royce, ABS, BACC, ...)**



# 8D Series

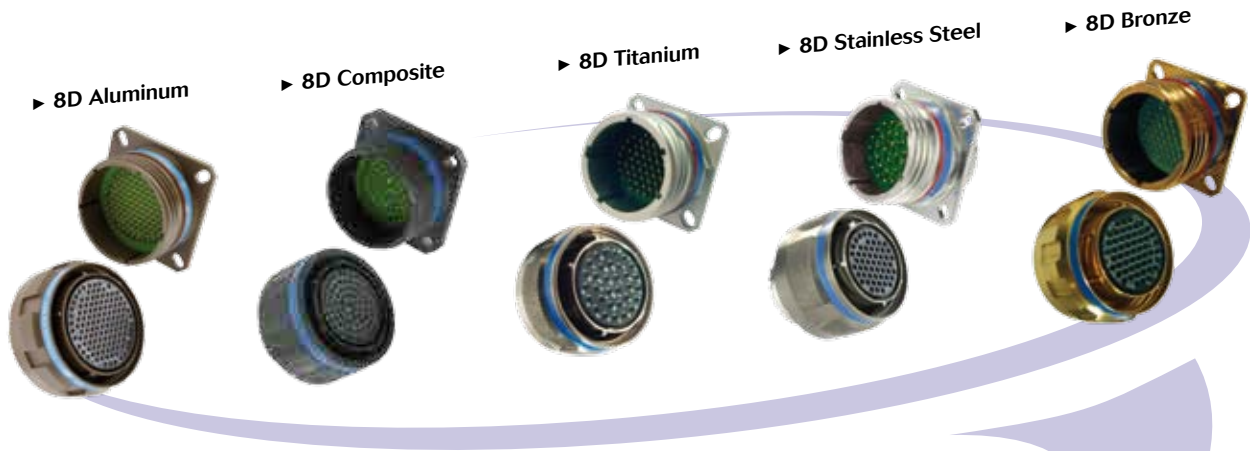
## MIL-DTL-38999 Series III



### 8D Series - Product overview

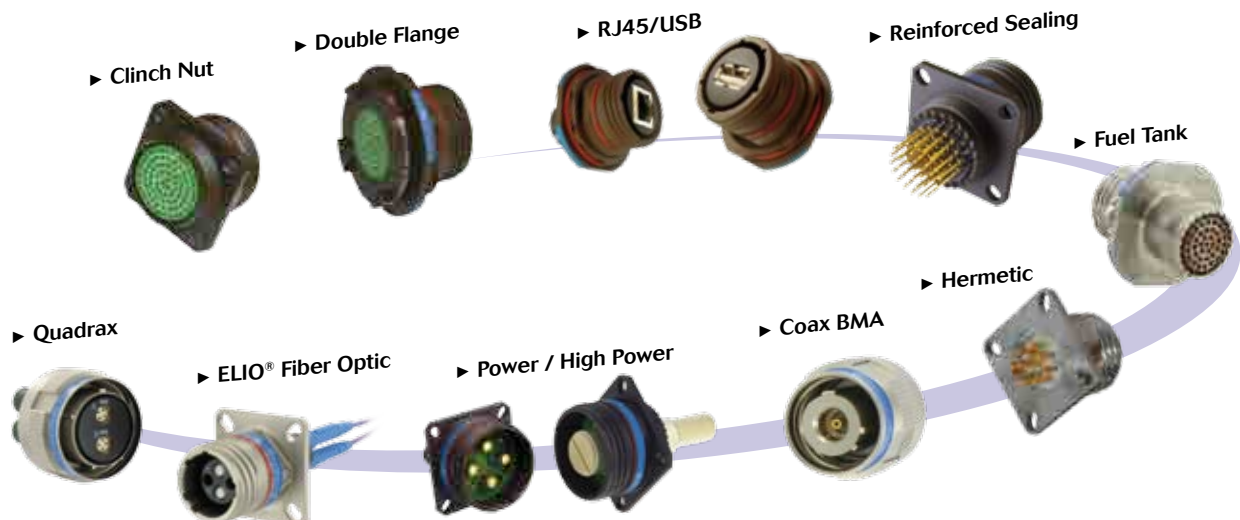
#### Standard Series

- ▶ 5 different materials
- ▶ A full platform that matches any environment
- ▶ Different platings (including RoHS & Cadmium free platings)



#### Derived Series

- ▶ Various possibilities of range extension & shell variant from Standard Series
- ▶ The only limit is your imagination: Consult us !





# 8D Series

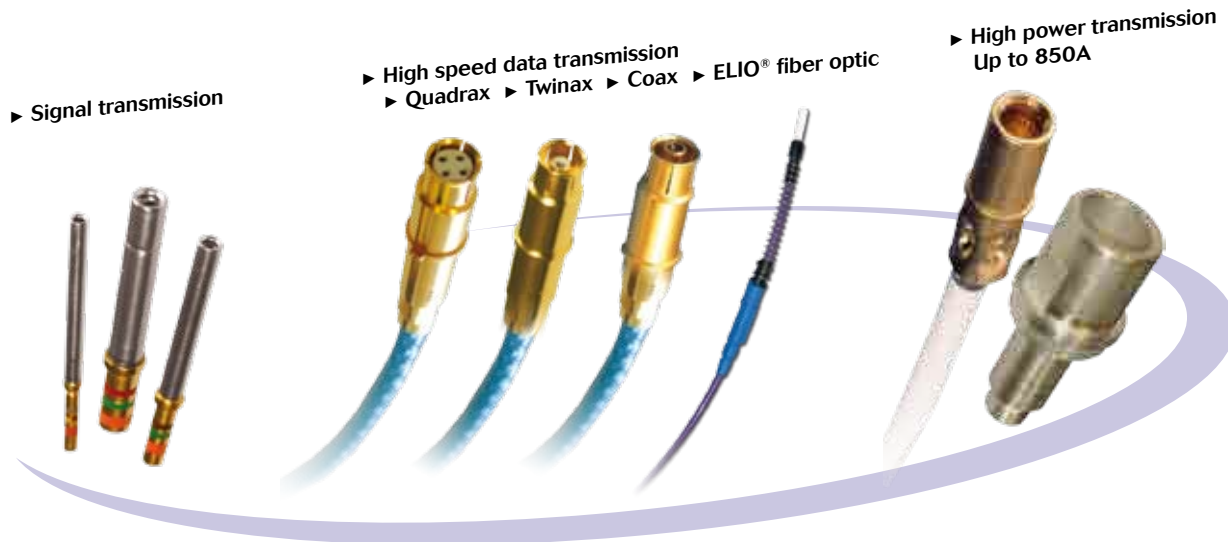
## MIL-DTL-38999 Series III



### 8D Series - A superior concept

#### A full range of contacts

##### ► Multi-contact technology provides versatile connectors



##### ► Various contact styles

- Crimp
- Solder cup
- PC tails
- Wire wrap
- PCB contacts without shoulder

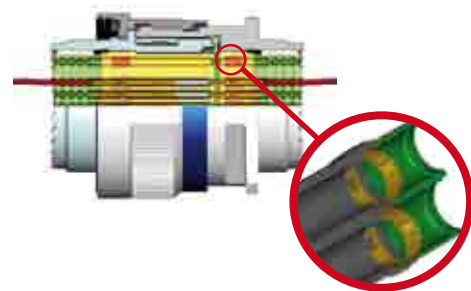
##### ► Common cavity for all #8 contacts

#### Metallic clips

##### ► Unique clip retention technology

##### ► High performance contact retention system:

- Insure high temperature withstanding
- Provides superior strength in vibrations
- Better retention characteristics than plastic clips



#### High performance sealing (IP67)

- Each contact cavity is individually sealed

#### Accessories available

- Protective caps, backshells, tools, ...

# 8D Series

## MIL-DTL-38999 Series III



### A performing MIL standard connector design

#### Scoop proof connector

- ▶ No risk of damaging the contact during the coupling operation

#### Unique self locking mechanism

Patented by Souriau

- ▶ Connector will never unscrew even under high vibration (44g)

#### Visual mating indication

- ▶ Red band visible = not correctly mated



- ▶ Red band hidden = correctly mated



#### Quick screw coupling

- ▶ 1 1/4 turn to mate



#### Fully shielded connector

- ▶ 360° shielding



- ▶ Shell to shell bottoming = perfect shield continuity

# 8D Series

## MIL-DTL-38999 Series III



### Applications

- Civil and Military Aerospace
- Marine and Offshore Equipment
- Defense and Ground Military
- Industrial

### Standards

- MIL-DTL-38999 Series III
- EN3645
- BACC63CT/CU; BACC63DB/DC

### Technical features

#### Mechanical

- **Shell:**  
Aluminum, composite, stainless steel, bronze
- **Shell plating:**
  - . Aluminum shell:
    - Cadmium olive drab (W)
    - Nickel (F)
    - Black zinc nickel (Z)
    - Green zinc cobalt (ZO)
  - . 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)
  - . Bronze shell:
    - Without plating
  - **Insulator:** Thermoplastic
  - **Grommet and interfacial seal:**  
Silicone elastomer
  - **Contacts:** Copper alloy
  - **Contacts plating:** Gold over nickel plated
  - **Endurance:**
    - . 500 mating cycles all materials
    - . 1500 mating cycles with composite connectors with 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 T° cycling
    - . Random:
      - . 50 to 2000 Hz, 2x8 Hrs (1g2/ Hz, 100 - 2000Hz) at T° max.
      - . 25 to 2000 Hz, 2x8 Hrs (5g2/ Hz, 100 - 300Hz) at ambient T°
- Test with accessories in acc with EN2591-D3

### Description

- High contact density layouts available **HD**
- Screw coupling, Shell size from 9 to 25
- Contact protection: 100% Scoop proof
- Protected by cadmium, nickel, green zinc cobalt or black zinc nickel plating
- RFI - EMI shielding and shell to shell continuity
- Accessories available (protective caps, backshells, etc... )
- Hermetic versions
- High power up to 850A
- Optical layouts
- 230V layouts available (ABS22-19, ABS22-20, ABS22-21 & ABS22-22 qualified)

#### • Contact 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 g	42% lighter
Titanium	33.90 g	
Aluminum	20.35 g	40% lighter
Composite	14.30 g	30% lighter



# 8D Series

## MIL-DTL-38999 Series III

### Electrical

#### • Test voltage rating (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

#### • Contact resistance

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

#### • Insulation resistance:

≥ 5 000 MΩ (under 500 Vdc)

#### • Contact rating:

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

#### • Shell continuity

. Aluminum shell:

Cadmium olive drab (W): 2.5 mΩ

Nickel (F): 1 mΩ

Black zinc nickel (Z): 2.5 mΩ

Green zinc cobalt (ZO): 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:

. Aluminum shell:

F: 65 db at 10 GHz

Z, F & W: 85 db at 1 GHz

Z & W: 50 db at 10 GHz

ZC: Consult us

. Composite shell:

J & M: 85 db at 1 GHz

. Stainless steel shell:

K: 45 db at 10 GHz

S: 65 db at 10 GHz

. Titanium shell:

TT: 45 db at 10 GHz

TF: 65 db at 10 GHz

. Bronze shell:

85 db at 10 GHz

### Climatics

#### • Temperature range:

. Aluminum shell:

W: -65°C +175°C

F: -65°C +200°C

Z: -65°C +200°C

ZC: -65°C +175°C

. Composite shell:

J: -65°C +175°C

M: -65°C +200°C

Without plating (X): -65°C +175°C

. Stainless steel shell:

K: -65°C +200°C

S: -65°C +200°C

. Titanium shell:

TT: -65°C +200°C

TF: -65°C +200°C

. Bronze shell:

Without plating: -65°C +175°C

#### • Sealing:

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

#### • Salt spray:

. Aluminum shell:

W: 500 Hrs

F: 48 Hrs

Z: 500 Hrs

ZC: 250 Hrs

. Composite shell:

J: 2000 Hrs

M: 2000 Hrs

Without plating (X): 2000 Hrs

. Stainless steel shell:

K: 500 Hrs

S: 500 Hrs

. Titanium shell:

TT: 500 Hrs

TF: 48 Hrs

. Bronze shell:

Without plating: 500 Hrs

### Resistance to fluids

#### • According to MIL-DTL-38999 standard

. Gasoline: JP5 (OTAN F44)

. Mineral hydraulic 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 diluted

. De-icing fluid: MIL-A-8243

. Extinguishing fluid: Chlorobrométhane











. Cooling fluid: Coolanol

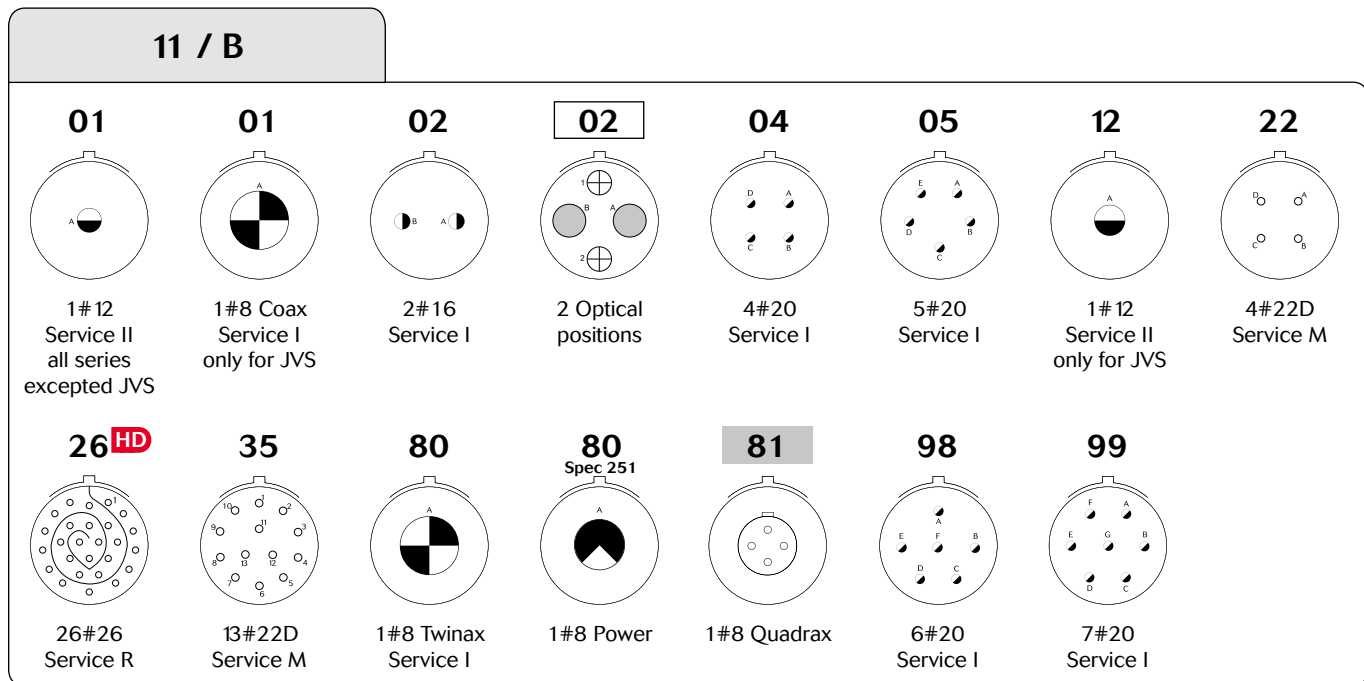
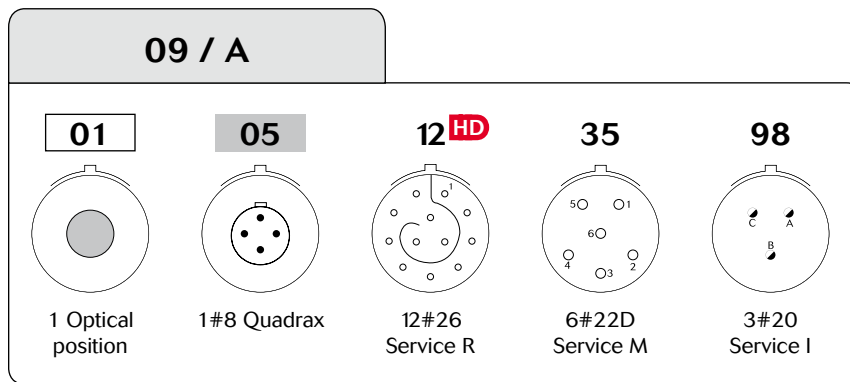
# 8D Series

## MIL-DTL-38999 Series III



### Contact layouts

-  Contact #26 & #22D
-  Contact #8 Twinax or Coax - consult us
-  Contact #20
-  Contact #8 Power
-  Contact #16
-  Contact #8 Quadrax
-  Contact #12
-  Contact ELIO® (fiber optic)
-  Contact #10
-  Contact #4 Power



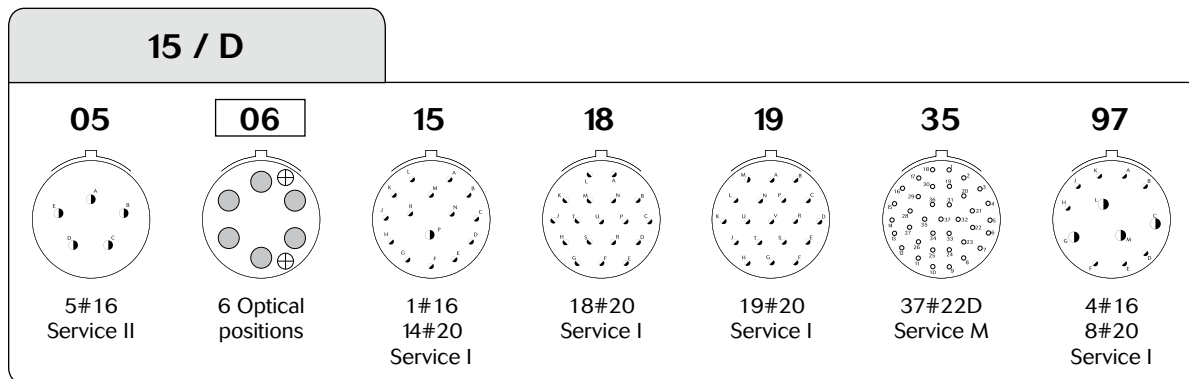
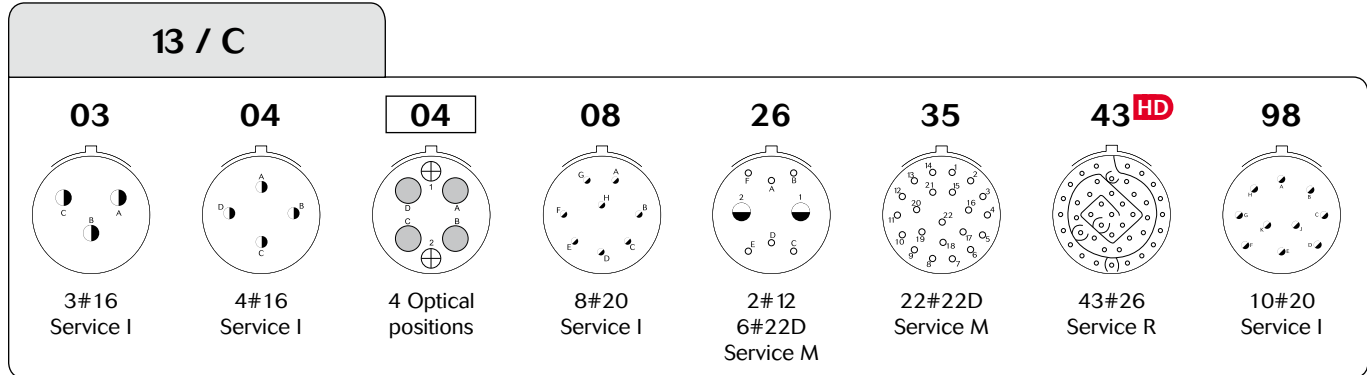
 ELIO® fiber optic  Ethernet Quadrax  High Density layout

# 8D Series

## MIL-DTL-38999 Series III



### Contact layouts



# 8D Series

## MIL-DTL-38999 Series III



### Contact layouts

**17 / E**

<p><b>02</b></p> <p>38#22D 1#8 Twinax Service M</p>	<p><b>02</b> Spec 251</p> <p>38#22D 1#8 Power</p>	<p><b>06</b></p> <p>6#12 Service I</p>	<p><b>08</b></p> <p>8#16 Service II</p>	<p><b>20</b></p> <p>4#12 16#22D Service M</p>	<p><b>22</b></p> <p>2#12 2#8 Twinax Service M</p>	<p><b>22</b> Spec 251</p> <p>2#12 2#8 Power</p>	<p><b>26</b></p> <p>26#20 Service I</p>
<p><b>35</b></p> <p>55#22D Service M</p>	<p><b>75</b></p> <p>2#8 Twinax Service M</p>	<p><b>75</b> Spec 251</p> <p>2#8 Power</p>	<p><b>80</b></p> <p>2#12 2#8 Quadrax</p>	<p><b>81</b></p> <p>38#22D 1#8 Quadrax</p>	<p><b>82</b></p> <p>2#8 Quadrax</p>	<p><b>99</b></p> <p>2#16 21#20 Service I</p>	

**19 / F**

<p><b>08</b></p> <p>8 Optical positions</p>	<p><b>11</b></p> <p>11#16 Service II</p>	<p><b>18</b></p> <p>14#22D 4#8 Twinax Service M</p>	<p><b>18</b> Spec 251</p> <p>14#22D 4#8 Power</p>	<p><b>28</b></p> <p>26#20 2#16 Service I</p>	<p><b>32</b></p> <p>32#20 Service I</p>	<p><b>35</b></p> <p>66#22D Service M</p>	<p><b>84</b></p> <p>14#22D 4#8 Quadrax</p>
<p><b>H1</b></p> <p>1#00 High power</p>							



# 8D Series

## MIL-DTL-38999 Series III



### Contact layouts

**21 / G**

<b>11</b>  11#12 Service I	<b>12</b>  12 Optical positions	<b>16</b>  16#16 Service II	<b>20</b>  18#20 2#8 Twinax Service M	<b>20</b> Spec 251  18#20 2#8 Power	<b>35</b>  79#22D Service M	<b>39</b>  2#16 37#20 Service I	<b>41</b>  41#20 Service I		
<b>42</b>  2#4 Power Service I	<b>48</b>  4#8 Power Service I	<b>59</b>  55#22D 4#12 Service M	<b>72</b>  6#16 2#4 Power Service I	<b>75</b>  4#8 Twinax Service M	<b>75</b> Spec 251  4#8 Power	<b>77</b>  17#22D 2#8 Twinax Service M	<b>77</b> Spec 251  17#22D 2#8 Power		
<b>78</b>  17#22D 2#8 Quadrax	<b>80</b>  18#20 2#8 Quadrax	<b>84</b>  4#8 Quadrax							

**23 / H**

<b>06</b>  6#8 Twinax	<b>06</b> Spec 251  6#8 Power	<b>21</b>  21#16 Service II	<b>32</b>  32#20 Service I	<b>35</b>  100#22D Service M	<b>53</b>  53#20 Service I	<b>54</b>  4#12, 9#16 40#22D Service M	<b>55</b>  55#20 Service I
<b>86</b>  6#8 Quadrax	<b>H1</b>  1#000 High power						

ELIO® fiber optic
  Ethernet Quadrax

# 8D Series

## MIL-DTL-38999 Series III



### Contact layouts

25 / J							
<p><b>04</b></p> <p>48#20 8#16 Service I</p>	<p><b>07</b></p> <p>97#22D 2#8 Twinax Service M</p>	<p><b>07</b> Spec 251</p> <p>97#22D 2#8 Power</p>	<p><b>08</b></p> <p>8#8 Twinax Service M</p>	<p><b>08</b> Spec 251</p> <p>8#8 Power</p>	<p><b>11</b></p> <p>2#20 9#10 Service N</p>	<p><b>17</b></p> <p>36#22D 6#8 Twinax</p>	<p><b>17</b> Spec 251</p> <p>36#22D 6#8 Power</p>
<p><b>19</b></p> <p>19#12 Service I</p>	<p><b>20*</b></p> <p>10#20, 13#16 4#12 Coax 3#8 Twinax Service N</p>	<p><b>20*</b> Spec 251</p> <p>10#20 13#16, 4#12 3#8 Power</p>	<p><b>24</b></p> <p>12#16 12#12 Service I</p>	<p><b>24</b></p> <p>24 Optical positions</p>	<p><b>29</b></p> <p>29#16 Service I</p>	<p><b>35</b></p> <p>128#22D Service M</p>	<p><b>37</b></p> <p>37#16 Service I</p>
<p><b>41</b></p> <p>22#22D, 3#20 11#16, 2#12 3#8 Twinax Service M</p>	<p><b>41</b> Spec 251</p> <p>22#22D, 3#20 11#16, 2#12 3#8 Power</p>	<p><b>43</b></p> <p>23#20 20#16 Service I</p>	<p><b>44</b></p> <p>4#16 4#4 Power Service I</p>	<p><b>46</b></p> <p>40#20, 4#16 2#8 Coax Service I</p>	<p><b>46</b> Spec 251</p> <p>40#20, 4#16 2#8 Power Service I</p>	<p><b>61</b></p> <p>61#20 Service I</p>	<p><b>80</b></p> <p>10#20 13#16 4#12 Coax 3#8 Quadrax</p>
<p><b>81</b></p> <p>22#22D 3#20, 11#16 2#12 3#8 Quadrax</p>	<p><b>82</b></p> <p>97#22D 2#8 Quadrax</p>	<p><b>86</b></p> <p>40#20 4#16 2#8 Quadrax</p>	<p><b>87</b></p> <p>36#22D 6#8 Quadrax</p>	<p><b>88</b></p> <p>8#8 Quadrax</p>	<p><b>90</b></p> <p>40#20, 4#16 2#8 Twinax Service I</p>	<p><b>H1</b></p> <p>1#0000 High power</p>	

# 8D Series

## MIL-DTL-38999 Series III



### Contact layouts (matrix)

Shell size	Layout	MIL-DTL-38999 (QPL) Aluminum, Stainless steel & Composite	8D Titanium	JVS-CECC Bronze connector	Hermetics	EN3645	BACC63 CT/CU DB/DC	Number of contacts	#26	#22D	#20	#16	#12	#10	#8	#4	Fiber optic or High power
09 / A	09-01							1									1 Optic.
	09-05 <sup>(1)</sup>							1							1 Qdx		
	09-12							12	12								
	09-35	Q		Q		Q	Q	6		6							
	09-98	Q		Q		Q	Q	3			3						
11 / B	11-01							1					1				
	11-01							1							1 Coax		
	11-02	Q		Q		Q	Q	2				2					
	11-02							2									2 Optic.
	11-04	Q					Q	4			4						
	11-05	Q		Q		Q	Q	5			5						
	11-12							1					1				
	11-22							4		4							
	11-26							26	26								
	11-35	Q		Q		Q	Q	13		13							
	11-80							1								1 Twx	
	11-80 <sup>sp 251</sup>							1								1 Pow	
	11-81							1								1 Qdx	
11-98	Q		Q		Q	Q	6			6							
11-99	Q		Q		Q	Q	7			7							
13 / C	13-03							3									
	13-04	Q		Q		Q	Q	4				4					
	13-04							4									4 Optic.
	13-08	Q		Q		Q	Q	8			8						
	13-26			Q		Q		8		6			2				
	13-35	Q		Q		Q	Q	22		22							
	13-43							43	43								
13-98	Q		Q		Q	Q	10			10							
15 / D	15-05	Q		Q		Q	Q	5				5					
	15-06							6									6 Optic
	15-15	Q		Q		Q	Q	15			14	1					
	15-18	Q		Q		Q	Q	18			18						
	15-19	Q		Q		Q	Q	19			19						
	15-35	Q		Q		Q	Q	37		37							
	15-97	Q		Q		Q	Q	12			8	4					
17 / E	17-02					Q	Q	39		38						1 Twx	
	17-02 <sup>sp 251</sup>							39		38						1 Pow	
	17-06	Q		Q		Q	Q	6					6				
	17-08	Q		Q		Q	Q	8				8					
	17-20							20		16			4				
	17-22							4					2			2 Twx	
	17-22 <sup>sp 251</sup>							4					2			2 Pow	
	17-26	Q		Q		Q	Q	26			26						
	17-35	Q		Q		Q	Q	55		55							
	17-75							2								2 Twx	
	17-75 <sup>sp 251</sup>							2								2 Pow	
	17-80							4						2		2 Qdx	
	17-81							39		38						1 Qdx	
17-82							2								2 Qdx		
17-99	Q		Q		Q	Q	23			21	2						
19 / F	19-08							8									8 Optic.
	19-11	Q		Q		Q	Q	11				11					
	19-18	Q						18		14						4 Twx	
	19-18 <sup>sp 251</sup>																
	19-28	Q		Q			Q	28			26	2					
	19-32	Q		Q		Q	Q	32			32						
	19-35	Q		Q		Q	Q	66		66							
	19-84							18		14						4 Qdx	
19-H1							1									1 #00	

Souriau's layout

Q Souriau's layout & Layout according to corresponding norm

(1) Grounded insert only - Please consult us

#8 Pow: Power; Qdx: Quadrax; Twx: Twinax

# 8D Series

## MIL-DTL-38999 Series III



### Contact layouts (matrix)

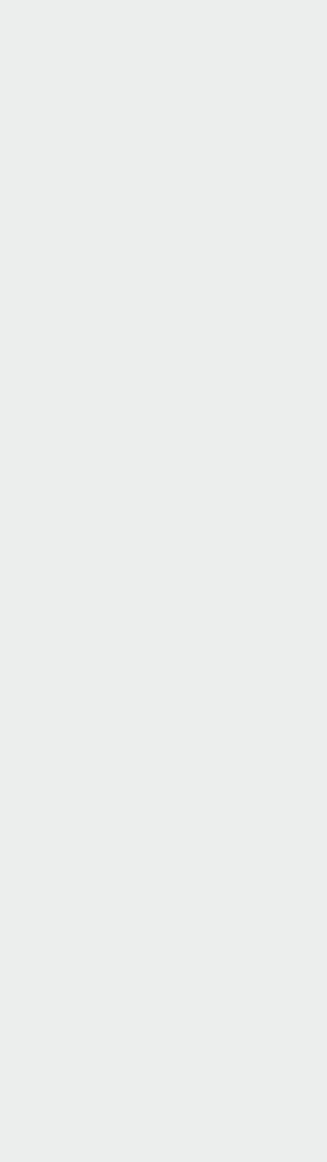
Shell size	Layout	MIL-DTL-38999 (QPL) Aluminum, Stainless steel & Composite	8D Titanium	JVS-CECC Bronze connector	Hermetics	EN3645	BACC63 CT/CU DB/DC	Number of contacts	#26	#22D	#20	#16	#12	#10	#8	#4	Fiber optic or High power	
21 / G	21-11	Q		Q		Q	Q	11					11					
	21-12							12									12 Optic	
	21-16	Q		Q		Q	Q	16				16						
	21-20					Q		20			18					2 Twx		
	21-20 sp 251							20			18					2 Pow		
	21-35	Q		Q		Q	Q	79	79									
	21-39	Q		Q		Q	Q	39			37	2						
	21-41	Q		Q		Q	Q	41			41							
	21-42								2									2 Pow
	21-48				Q				4							4 Pow		
	21-59								59	55				4				
	21-72								8				6					2 Pow
	21-75	Q					Q	Q	4							4 Twx		
	21-75 sp 251								4							4 Pow		
	21-77								19		17					2 Twx		
21-77 sp 251								19		17					2 Pow			
21-78							Q	19		17					2 Qdx			
21-80								20			18				2 Qdx			
21-84							Q	4							4 Qdx			
23 / H	23-06							6							6 Twx			
	23-06 sp 251							6							6 Pow			
	23-21	Q		Q		Q	Q	21				21						
	23-32	Q						32			32							
	23-35	Q		Q		Q	Q	100	100									
	23-53	Q		Q		Q	Q	53			53							
	23-54					Q		53	40		9	4						
	23-55	Q		Q		Q	Q	55			55							
	23-86							6								6 Qdx		
23-H1								1									1 #000	
25 / J	25-04	Q				Q	Q	56			48	8						
	25-07	Q				Q	Q	99	97						2 Twx			
	25-07 sp 251							99	97						2 Pow			
	25-08	Q		Q <sup>(2)</sup>		Q	Q	8							8 Twx			
	25-08 sp 251							8							8 Pow			
	25-11	Q				Q	Q	11			2			9				
	25-17							42	36						6 Twx			
	25-17 sp 251							42	36						6 Pow			
	25-19	Q		Q <sup>(4)</sup>		Q	Q	19					19					
	25-20	Q <sup>(3)</sup>				Q <sup>(5)</sup>	Q <sup>(6)</sup>	30			10	13	4 <sup>(7)</sup>		3 Twx			
	25-20 sp 251							30			10	3	4		3 Pow			
	25-24	Q		Q		Q	Q	24				12	12					
	25-24							24										24 Optic.
	25-29	Q		Q		Q	Q	29				29						
	25-35	Q		Q		Q	Q	128		128								
	25-37	Q					Q	Q	37				37					
	25-41								41		22	3	11	2		3 Twx		
	25-41 sp 251								41		22	3	11	2		3 Pow		
	25-43	Q		Q		Q	Q	43				23	20					
	25-44							8					4			4 Pow		
	25-46	Q					Q	Q	46			40	4			2 Coax		
	25-46 sp 251								46			40	4			2 Pow		
	25-61	Q		Q		Q	Q	61				61						
25-80								30			10	13	4		3 Qdx			
25-81								41		22	3	11	2		3 Qdx			
25-82								99		97					2 Qdx			
25-86								46			40	4			2 Qdx			
25-87								42		36					6 Qdx			
25-88								8							8 Qdx			
25-90								46			40	4			2 Twx			
25-H1								1									1 #0000	

Souriau's layout  
**Q** Souriau's layout & Layout according to corresponding norm  
**(2)** For CECC, layout 25-08 only delivered without contact

**(3)** For Aluminum & Stainless steel only  
**(4)** For classes F, W, S, K only  
**(5)** For classes F, W, K only

**(6)** Qualified BACC63DB/DC only  
**(7)** 4 #12 coax (2+2)  
**#8** Pow: Power; Qdx: Quadrax; Twx: Twinax

and Series.



8D Series

# Standard Series

■ Aluminum Series .....	22
■ Composite Series .....	36
■ Stainless Steel Series .....	42
■ Titanium Series .....	48
■ Bronze Series .....	54





# 8D Series

## D38999 Aluminum Series

### Connector part numbers

<b>Basic Series</b>	<b>8D</b>	<b>0</b>	<b>-</b>	<b>11</b>	<b>W</b>	<b>35</b>	<b>P</b>	<b>N</b>			<b>L</b>
<b>Shell style:</b>											
<ul style="list-style-type: none"> <li><b>0:</b> Square flange receptacle</li> <li><b>1:</b> In line receptacle</li> <li><b>7:</b> Jam nut receptacle</li> <li><b>5:</b> Plug with RFI shielding</li> </ul>											
<i>Also available:</i>											
<ul style="list-style-type: none"> <li>. Square flange receptacle with clinch nuts (see page 95)</li> <li>. Jam nut receptacle with double flange (see page 98)</li> </ul>											
<b>Type:</b>											
<ul style="list-style-type: none"> <li>-: Connectors with standard crimp contacts.</li> <li><b>L:</b> Receptacle with long PC tail (male and female size #22D, #20).</li> <li><b>C:</b> Receptacle with short PC tail (male and female #22D, #20, #16).</li> <li><b>S:</b> Receptacle with specific PC tail (male et female #22D)</li> <li><b>W:</b> Receptacle with male contacts #22D for wire wrap (3 wraps)</li> <li><b>T:</b> Receptacle with male contacts #20 for wire wrap (2 wraps)</li> <li><b>P:</b> Receptacle with solder cup contacts - please consult us               <ul style="list-style-type: none"> <li>. see page 86 for Reinforced sealing Series with solder cup contacts</li> <li>. see page 69 for solder cup contacts information</li> </ul> </li> </ul>											
<b>Shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25</b>											
<b>Plating:</b>											
<ul style="list-style-type: none"> <li><b>W:</b> Olive drab cadmium</li> <li><b>F:</b> Nickel</li> <li><b>ZC:</b> Green zinc cobalt</li> <li><b>Z:</b> Black zinc nickel</li> </ul>											
<b>Contact layout:</b> See pages 13 to 19											
<b>Contact type:</b>											
<ul style="list-style-type: none"> <li><b>P:</b> Pin</li> <li><b>A:</b> Connector supplied less pin contact or with specific contacts (connector marking: A + orientation)</li> <li><b>S:</b> Socket</li> <li><b>B:</b> Connector supplied less socket contact or with specific contacts (connector marking: B + orientation)</li> </ul>											
<b>Orientation: N, A, B, C, D, E</b> (see page 75)											
<b>Specification:</b>											
<ul style="list-style-type: none"> <li><b>046:</b> Tinned straight PC tail</li> <li><b>251:</b> Connector provided with power contacts (layouts with contact #8)</li> <li><b>022:</b> Fuel tank</li> </ul>											
<b>Special custom:</b>											
<ul style="list-style-type: none"> <li><b>None:</b> Standard plastic cap</li> <li><b>M:</b> Antistatic plastic cap</li> <li><b>L:</b> For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation</li> </ul>											

Note: PC tail contacts without shoulder also available. Please see page 102.



# 8D Series

## D38999 Aluminum Series



### MIL-DTL-38999 part numbers\*

<b>Basic Series</b>	<b>D38999/</b>	<b>20</b>	<b>W</b>	<b>B</b>	<b>35</b>	<b>P</b>	<b>N</b>	<b>L</b>
<b>Shell style:</b>								
20: Square flange receptacle								
24: Jam nut receptacle								
26: Plug with RFI shielding.								
<b>Plating:</b>								
Z: Black zinc nickel								
W: Olive drab cadmium								
F: Nickel								
<b>Shell size: A, B, C, D, E, F, G, H, J</b>								
<b>Contact layout:</b> See page 18 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: N, A, B, C, D, E</b> (see page 75)								
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).

### EN3645 part numbers

<b>Basic Series</b>	<b>EN3645</b>	<b>W</b>	<b>6</b>	<b>G</b>	<b>N</b>	<b>35</b>	<b>B</b>	<b>N</b>
<b>Plating:</b>								
W: Olive drab cadmium								
F: Nickel								
<b>Shell style:</b>								
0: Square flange receptacle								
6: Plug								
7: Jam nut receptacle								
<b>Shell size:</b>								
09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J								
<b>Grounding:</b>								
N: Standard insert not grounded								
<b>Contact layout:</b>								
See page 18 for layout according to EN3645								
<b>Contact type:</b>								
A: Connector supplied less pin contact								
B: Connector supplied less socket contact								
F: Socket								
M: Pin								
<b>Orientation:</b>								
N, A, B, C, D, E (see page 75)								

# 8D Series

## D38999 Aluminum Series



### Dimensions

Receptacle type 0										
	Shell size	A Max	B Max	C Max	D Thread	E $\pm 0.3$	F	G	H $\pm 0.2$	J $\pm 0.2$
	09 (A)	20.9	10.72	2.5	M12 x 1-6g	23.8	18.26	15.09	3.25	5.49
11 (B)	M15 x 1-6g				26.2	20.62	18.26	4.93		
13 (C)	M18 x 1-6g				28.6	23.01	20.62	4.4		
15 (D)	M22 x 1-6g				31	24.61	23.01			
17 (E)	M25 x 1-6g				33.3	26.97	24.61			
19 (F)	M28 x 1-6g				36.5	29.36	26.97	4.93		
21 (G)	M31 x 1-6g	39.7	31.75	29.36						
23 (H)	M34 x 1-6g	42.9	34.93	31.75	3.91	6.15				
25 (J)	M37 x 1-6g	46	38.1	34.93						

Receptacle type 7								
	Shell size	A $\pm 0.15$	B Max	C Max	D Thread	E Max	F $\pm 0.4$	ØG Max
	09 (A)	16.53	9.9	3.2	M12 x 1-6g	23	27	30.5
11 (B)	19.07	M15 x 1-6g			26	31.8	35.2	
13 (C)	23.82	M18 x 1-6g			31	34.9	38.4	
15 (D)	26.97	M22 x 1-6g			34	38.1	41.6	
17 (E)	30.15	M25 x 1-6g			37	41.3	44.8	
19 (F)	33.32	M28 x 1-6g			41	46	49.5	
21 (G)	36.50	M31 x 1-6g			46	49.2	52.7	
23 (H)	39.67	55.9			47	52.4	55.9	
25 (J)	42.85	59			51.23	55.6	59	

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

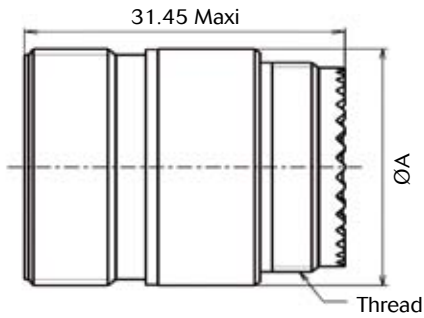
Shell	09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
Coupling torque ( $\pm 0.5$ N.m)	4	5	7	8	9	10	12	13	14

# 8D Series

## D38999 Aluminum Series

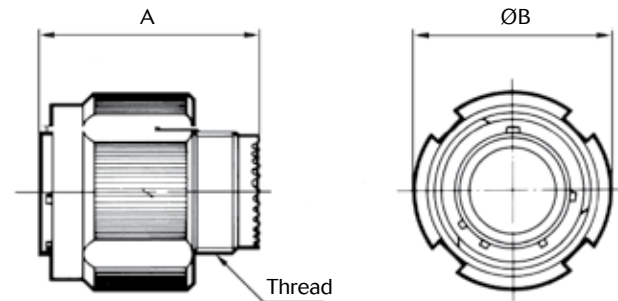


### In line receptacle type 1



Shell size	Thread	ØA
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

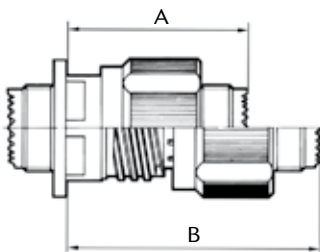
### Plug type 5



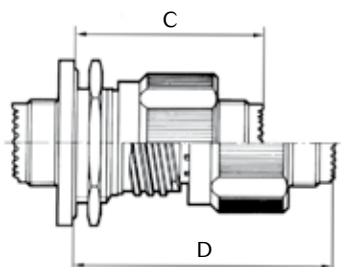
Shell size	A Max	Thread	ØB Max
09 (A)	31.00	M12 x 1-6g	21.80
11 (B)		M15 x 1-6g	25.00
13 (C)		M18 x 1-6g	29.40
15 (D)		M22 x 1-6g	32.50
17 (E)		M25 x 1-6g	35.70
19 (F)		M28 x 1-6g	38.50
21 (G)		M31 x 1-6g	41.70
23 (H)		M34 x 1-6g	44.90
25 (J)		M37 x 1-6g	48.00

### Mated connectors dimensions

Type 0 with plug



Type 7 with plug



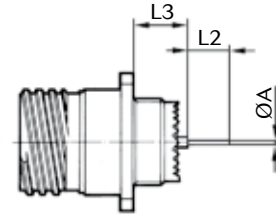
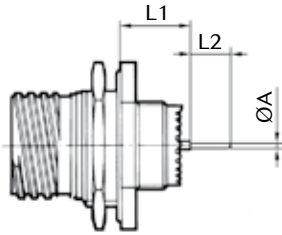
Shell size	A Max	B Max	C Max	D Max
09 (A)	37.00	52.30	38.30	53.60
11 (B)				
13 (C)				
15 (D)				
17 (E)				
19 (F)	36.00	51.30	38.50	53.80
21 (G)				
23 (H)				
25 (J)				

# 8D Series

## D38999 Aluminum Series



### Receptacle with straight PC tail contacts



		Shell size			09 (A)	11 (B)	13 (C)	15 (C)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
		Contact size	Contact type	PC tail type									
A		#22D	M & F	L & C	0.70								
		#22D	M & F	S	0.50								
		#20	M & F	C	0.70								
		#16	M & F	C	1.12 <sup>±0.03</sup>								
L1	Min	#22D	M	L & C	10.52								10.34
	Max	#22D	M	L & C	11.46								11.28
	Min	#22D	F	L & C	10.19								10.01
	Max	#22D	F	L & C	11.46								11.28
	Min	#22D	M	S	10.19								10.01
	Max	#22D	M	S	11.46								11.28
	Min	#22D	F	S	10.69								10.51
	Max	#22D	F	S	11.63								11.45
	Min	#20	M	C	10.36								10.18
	Max	#20	M	C	11.63								11.45
	Min	#20	F	C	10.69								10.51
	Max	#20	F	C	11.63								11.45
	Min	#16	M	C	10.69								10.51
	Max	#16	M	C	11.63								11.45
	Min	#16	F	C	10.69								10.51
	Max	#16	F	C	11.63								11.45
L2		#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 <sup>±0.1</sup>								
L3	Min	#22D	M	L & C	9.48							9.59	
	Max	#22D	M	L & C	10.58							10.69	
	Min	#22D	F	L & C	9.15							9.26	
	Max	#22D	F	L & C	10.58							10.69	
	Min	#22D	M	S	9.65							9.76	
	Max	#22D	M	S	10.75							10.86	
	Min	#22D	F	S	9.15							9.26	
	Max	#22D	F	S	10.75							10.86	
	Min	#20	M	C	9.65							9.76	
	Max	#20	M	C	10.75							10.86	
	Min	#20	F	C	9.65							9.76	
	Max	#20	F	C	10.75							10.86	
	Min	#16	M	C	9.64							9.75	
	Max	#16	M	C	10.75							10.86	
	Min	#16	F	C	9.64							9.75	
	Max	#16	F	C	10.75							10.86	

M: Male contact

F: Female contact

L: Long PC tail

C: Short PC tail

S: Specific PC tail

Dimensions in millimeters



# 8D Series

## D38999 Aluminum Series

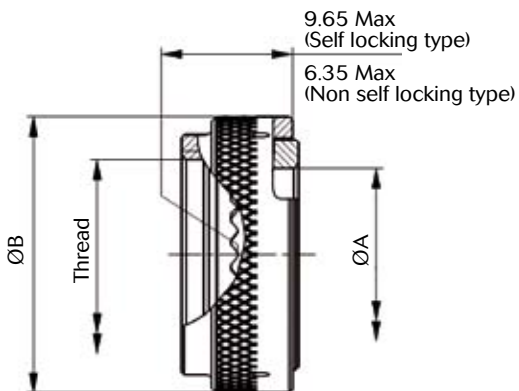
### Souriau aluminum backshells

#### Ordering information

Basic Series	8D	AB	05	A	17	W	S	02	-
Accessories type									
Type:									
01: Backnut	04: Crimp ring								
02: Cable clamp	05: Band lock								
03: Shrink boot									
Angle:									
A: Straight									
B: 90° (Type 02 only)									
Shell size:									
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):									
02, 03 (03 mandatory for shell size 09 & 11)									
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 29 for information.

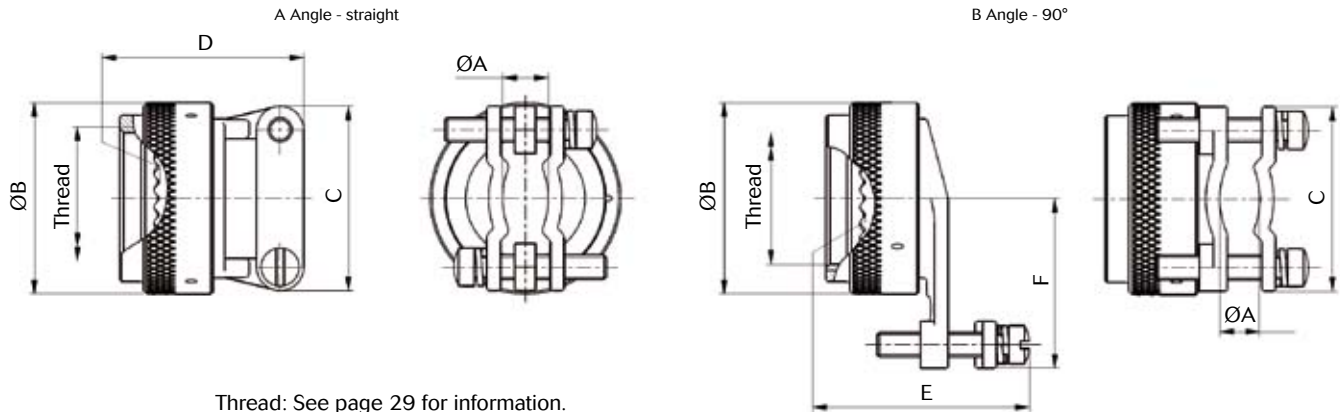
Note: All dimensions are in millimeters (mm)

# 8D Series

## D38999 Aluminum Series



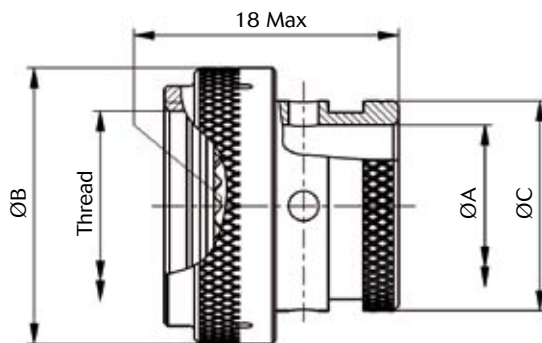
### Aluminum backshell Type 02 - Cable clamp



Thread: See page 29 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

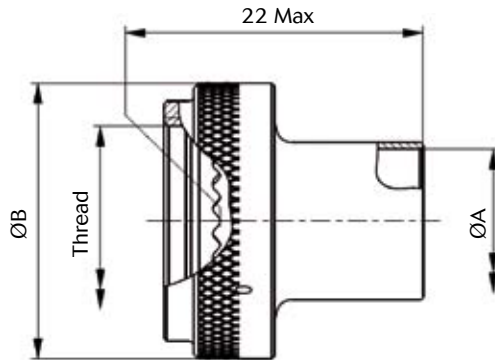
Thread: See page 29 for information.

# 8D Series

## D38999 Aluminum Series



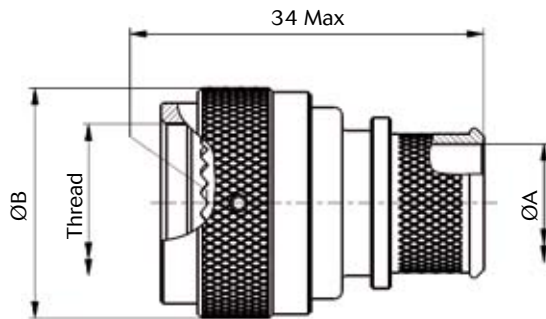
### Aluminum backshell Type 04 - Crimp ring



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 below for information.

### Aluminum backshell Type 05 - Band lock



Shell size	ØA Max - Entry size		ØB Max
	02	03	
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 below for information.

### Recommended installation torque

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

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

### Thread information

Shell size	UNEF Thread
09	M12x1.0-6H-0.10R
11	M15x1.0-6H-0.10R
13	M18x1.0-6H-0.10R
15	M22x1.0-6H-0.10R
17	M25x1.0-6H-0.10R
19	M28x1.0-6H-0.10R
21	M31x1.0-6H-0.10R
23	M34x1.0-6H-0.10R
25	M37x1.0-6H-0.10R

Note: All dimensions are in millimeters (mm)



# 8D Series

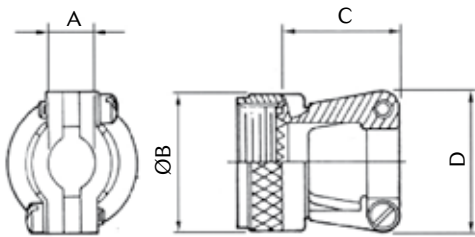
## D38999 Aluminum Series



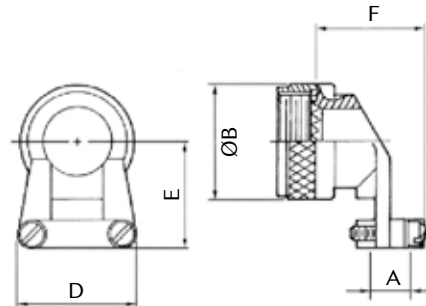
### M85049 aluminum backshells

#### Backshells - Cable clamp

Straight cable clamp (Type 38)



90° cable clamp (Type 39)



Shell size	A		ØB Max	C Max	D Max	E	F
	Min	Max					
09	2.50	5.90	21.80	23.10	21.60	25.40	25.70
11	3.90	5.90	25.00	23.10	22.90	27.90	25.70
13	4.80	8.30	29.40	25.70	27.90	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

Basic Series M85049 38 - 11 W

**Backshell type:**

- 38: Straight cable clamp
- 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:**

**Type 38 & 39:**

- A: Black anodized (500 hours salt spray)
- W: Olive drab cadmium over nickel (500 hours salt spray)

**Type 38S & 39S:**

- W: Olive drab cadmium over nickel (500 hours salt spray)
- N: Nickel (48 hours salt spray)

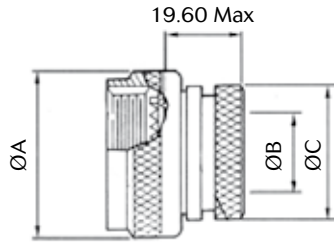
# 8D Series

## D38999 Aluminum Series



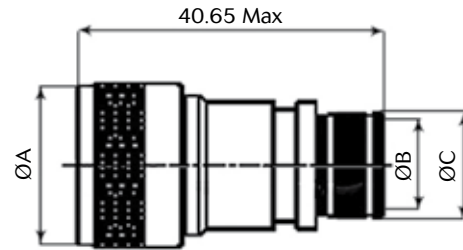
### Backshells for heat shrink boots

#### Backshell for heat shrink boots (Type 69)



Shell size	ØA Max	ØB 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

#### Straight backshell for EMI/RFI heat shrink boots (Type 88)



Shell size	ØA Max	ØB <sup>+0.10</sup> Entry size		ØC	
		02	03	02	03
09	21.79	-	6.35	-	10.03
11	24.99	-	7.92	-	11.61
13	29.39	7.92	11.13	11.61	14.81
15	32.49	11.13	14.27	14.81	17.96
17	35.71	12.70	15.88	16.38	19.56
19	38.51	15.88	19.05	19.56	22.73
21	41.71	15.88	20.62	19.56	24.30
23	44.91	17.47	23.83	21.06	27.51
25	47.98	19.05	25.40	22.73	29.08

Basic Series M85049    69    11    A    D

**Backshell type:**  
**69:** Backshell for heat shrink boots  
**88:** Straight backshell for EMI/RFI heat shrink boots

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

**Plating:**  
**Type 69:**  
**A:** Black anodised (500 hours salt spray)  
**Type 88:**  
**W:** Olive drab cadmium  
**N:** Nickel

**Option (Type 69 only):**  
**Empty:** Without drain hole  
**D:** With drain hole  
**Entry size (Type 88 only):**  
**02:** See table above  
**03:** See table above

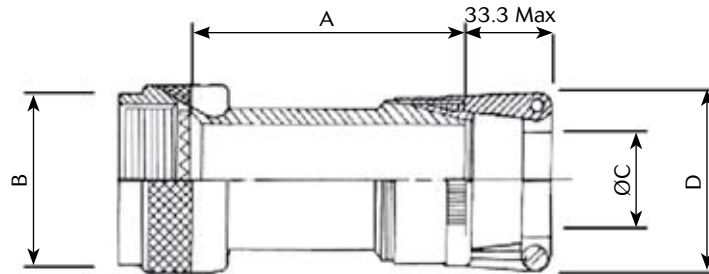
# 8D Series

## D38999 Aluminum Series



### Backshell for screen termination and cable clamp

#### Backshell for screen termination and cable clamp (Type 19)



Shell size	A Max	B Max	Clamp indicator base on shell size
09	38.10	19.10	01 - 02
11		21.60	01 - 02 - 03
13		25.40	02 - 03 - 04
15		27.90	02 - 03 - 04 - 05
17		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 - 08
25		44.50	04 - 05 - 06 - 07 - 08 - 10

Clamp size indicator	C		D
	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

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

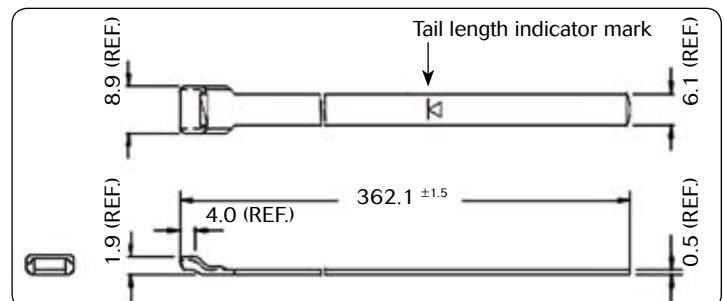
N: Nickel

Clamp size indicator:

See tables above

## 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



Note: All dimensions are in millimeters (mm)

# 8D Series

## D38999 Aluminum Series



### Dummy receptacle

Dimensions									
	<b>Shell size</b>	<b>Souriau Part number *</b>	<b>A Max</b>	<b>B Max</b>	<b>C<sup>+0.30</sup></b>	<b>D</b>	<b>E</b>	<b>F<sup>±0.20</sup></b>	<b>G<sup>±0.20</sup></b>
	<b>09</b>	8D0-09GUR 8D0-09FUR	20.90	2.50	23.80	18.26	15.09	4.49	3.25
	<b>11</b>	8D0-11GUR 8D0-11FUR	20.90	2.50	26.20	20.62	18.26	4.93	3.25
	<b>13</b>	8D0-13GUR 8D0-13FUR	20.90	2.50	28.60	23.01	20.62	4.93	3.25
	<b>15</b>	8D0-15GUR 8D0-15FUR	20.90	2.50	31.00	24.61	23.01	4.93	3.25
	<b>17</b>	8D0-17GUR 8D0-17FUR	20.90	2.50	33.30	26.97	24.61	4.93	3.25
	<b>19</b>	8D0-19GUR 8D0-19FUR	20.90	2.50	36.50	26.97	24.61	4.93	3.25
	<b>21</b>	8D0-21GUR 8D0-21FUR	20.10	3.20	39.70	31.75	29.36	4.93	3.25
	<b>23</b>	8D0-23GUR 8D0-23FUR	20.10	3.20	42.90	34.93	31.75	6.15	3.91
	<b>25</b>	8D0-25GUR 8D0-25FUR	20.10	3.20	46.00	38.10	34.93	6.15	3.91

\* G: Olive green cadmium  
F: Nickel

### Caps

#### Souriau part number

<b>Basic Series</b>	<b>8D</b>	<b>AC</b>	<b>5</b>	<b>R</b>	<b>09</b>	<b>W</b>
<b>Accessories style:</b> AC: Aluminum caps						
<b>Caps style:</b> 5: Plug caps 0: Receptacle caps						
<b>Accessories:</b> N: With stainless steel rope and ring R: With stainless steel rope and eyelet						
<b>Shell size:</b> 09, 11, 13, 15, 17, 19, 21, 23, 25						
<b>Finish:</b> W: Olive drab cadmium F: Nickel Z: Black zinc nickel A: Black anodized						

Note: All dimensions are in millimeters (mm)



# 8D Series

## D38999 Aluminum Series

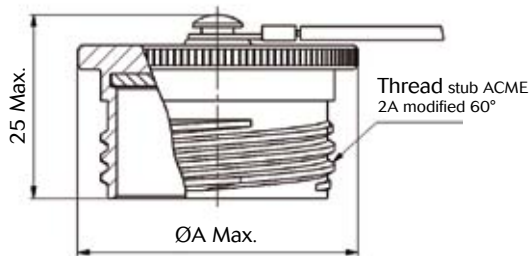
### MIL-DTL-38999 part number

Basic Series	D38999/	32	W	09	R
Caps style:					
32: Plug caps					
33: Receptacle caps					
Finish:					
W: Olive drab cadmium					
F: Nickel					
Z: Black zinc nickel					
Shell size:					
09, 11, 13, 15, 17, 19, 21, 23, 25					
Accessories:					
N: With stainless steel rope and ring					
R: With stainless steel rope and eyelet					

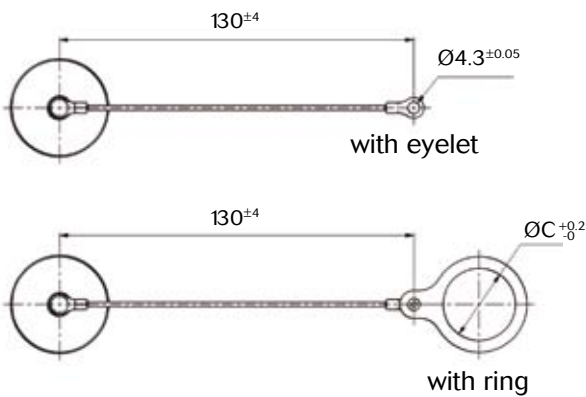
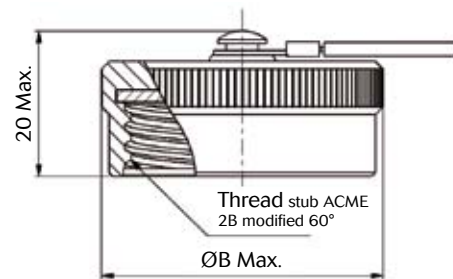
### Dimensions

#### Aluminum caps with stainless steel rope

##### For plug



##### For receptacle



Size	ØA	ØB	ØC for plug	ØC for receptacle	Thread
09	22.6	22.8	15	18.4	0.6250-0.1P-0.3L-TS
11	25.8	26.5	18.4	23.2	0.7500-0.1P-0.3L-TS
13	30	30	23.2	26.5	0.8750-0.1P-0.3L-TS
15	33	31.8	23.2	30.3	1.0000-0.1P-0.3L-TS
17	36.5	36.8	26.5	32.6	1.1875-0.1P-0.3L-TS
19	39.2	38.8	30.3	36.5	1.2500-0.1P-0.3L-TS
21	42.5	41.8	32.6	39.3	1.3750-0.1P-0.3L-TS
23	45.8	44.8	36.5	42.9	1.5000-0.1P-0.3L-TS
25	48.9	48.8	39.3	45	1.6250-0.1P-0.3L-TS

Note: All dimensions are in millimeters (mm)

# 8D Series

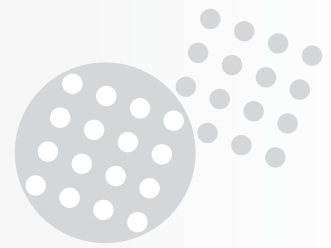
## D38999 Aluminum Series



### 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 (+/- 15%)



# 8D Series

## D38999 Composite Series

### Connector part numbers

<b>Basic Series</b>	<b>8D</b>	<b>0</b>	<b>-</b>	<b>11</b>	<b>J</b>	<b>35</b>	<b>P</b>	<b>N</b>		<b>L</b>
<b>Shell style:</b>										
0: Square flange receptacle										
5: Plug with RFI shielding										
<b>Type:</b>										
-: Connectors with standard crimp contacts.										
L: Receptacle with long PC tail (male and female size #22D, #20).										
C: Receptacle with short PC tail (male and female #22D, #20, #16).										
S: Receptacle with specific PC tail (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)										
P: Receptacle with solder cup contacts - see page 69, please consult us										
<b>Shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25</b>										
<b>Plating:</b>										
J: Olive drab cadmium										
M: Nickel										
X: Without plating										
<b>Contact layout:</b> See pages 13 to 19										
<b>Contact type:</b>										
P: Pin (500 mating/unmating)										
H: Pin (1500 mating/unmating)										
A: Connector supplied less pin contact or with specific contacts (connector marking: A + orientation)										
S: Socket (500 mating/unmating)										
J: Socket (1500 mating/unmating)										
B: Connector supplied less socket contact or with specific contacts (connector marking: B + orientation)										
<b>Orientation: N, A, B, C, D, E, T, V</b> (see page 75)										
<b>Specification:</b>										
046: Tinned straight PC tail										
251: Connector provided with power contacts (layouts with contact #8)										
022: Fuel tank										
600: 230V qualified connector (T or V orientation mandatory - Consult us for available layouts)										
<b>Special custom:</b>										
None: Standard plastic cap										
M: Antistatic plastic cap										
L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation.										

Note: PC tail contacts without shoulder also available. Please see page 102.

### MIL-DTL-38999 part numbers\*

<b>Basic Series</b>	<b>D38999/</b>	<b>20</b>	<b>M</b>	<b>B</b>	<b>35</b>	<b>P</b>	<b>N</b>	<b>L</b>
<b>Shell style:</b>								
20: Square flange receptacle								
26: Plug with RFI shielding.								
<b>Plating:</b>								
J: Olive drab cadmium								
M: Nickel								
<b>Shell size: 09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J</b>								
<b>Contact layout:</b> See page 18 for layout according to MIL-DTL-38999								
<b>Contact type:</b>								
P: Pin (500 mating/unmating)								
H: Pin (1500 mating/unmating)								
A: Connector supplied less pin contact or with specific contacts (connector marking: A + orientation)								
S: Socket (500 mating/unmating)								
J: Socket (1500 mating/unmating)								
B: Connector supplied less socket contact or with specific contacts (connector marking: B + orientation)								
<b>Orientation: N, A, B, C, D, E</b> (see page 75)								
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 Series

## D38999 Composite Series

### BACC part numbers

<b>Basic Series:</b> BACC63CT: 8D5*M (composite plug) BACC63CU: 8D0*M (composite square flange receptacle)	BACC63CT	13	-	98	P	N	H
<b>Shell size:</b> 09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J							
<b>Plating &amp; grounding:</b> -: Nickel plated, ungrounded G: Nickel plated, grounded D: Cadmium plated, ungrounded C: Cadmium plated, grounded							
<b>Contact layout:</b> See page 18 for layout according to BACC							
<b>Contact type:</b> P: Pin S: Socket							
<b>Orientation:</b> N, A, B, C, D, E (see page 75)							
<b>Specification:</b> None: With contacts H: Without contact & without filler plug							

### EN3645 part numbers

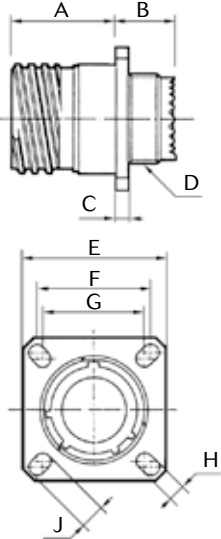
<b>Basic Series</b>	EN3645	J	6	G	N	35	B	N
<b>Plating:</b> J: Olive drab cadmium M: Nickel								
<b>Shell style:</b> 0: Square flange receptacle 6: Plug								
<b>Shell size:</b> 09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J								
<b>Grounding:</b> N: Standard insert not grounded								
<b>Contact layout:</b> See page 18 for layout according to EN3645								
<b>Contact type:</b> A: Connector supplied less pin contact B: Connector supplied less socket contact F: Socket M: Pin								
<b>Orientation:</b> N, A, B, C, D, E (see page 75)								

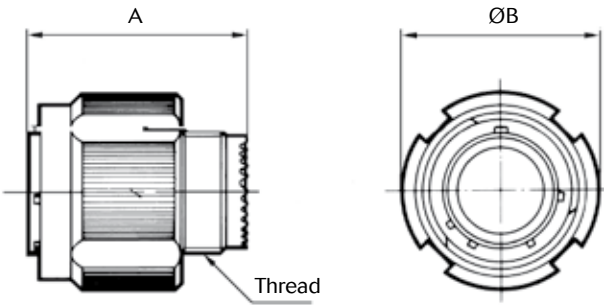
# 8D Series

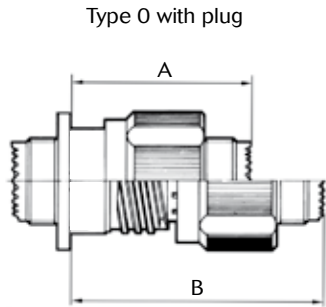
## D38999 Composite Series



### Dimensions

Receptacle type 0										
	Shell size	A Max	B Max	C Max	D Thread	E <sup>±0.3</sup>	F	G	H <sup>±0.2</sup>	J <sup>±0.2</sup>
	09 (A)	19.65	11.96	3.65	M12 x 1-6g	23.8	18.26	15.09	3.25	5.49
	11 (B)				M15 x 1-6g	26.2	20.62	18.26		4.93
	13 (C)				M18 x 1-6g	28.6	23.01	20.62		4.39
	15 (D)				M22 x 1-6g	31	24.61	23.01		4.39
	17 (E)				M25 x 1-6g	33.3	26.97	24.61		4.39
	19 (F)			3.7	M28 x 1-6g	36.5	29.36	26.97		4.93
	21 (G)	18.85	12.76	4.35	M31 x 1-6g	39.7	31.75	29.36	3.91	6.15
	23 (H)			M34 x 1-6g	42.9	34.93	31.75			
	25 (J)			M37 x 1-6g	46	38.1	34.93			

Plug type 5			
			
Shell size	A Max	Thread	ØB Max
09 (A)	31.00	M12 x 1-6g	21.80
11 (B)		M15 x 1-6g	25.00
13 (C)		M18 x 1-6g	29.40
15 (D)		M22 x 1-6g	32.50
17 (E)		M25 x 1-6g	35.70
19 (F)		M28 x 1-6g	38.50
21 (G)		M31 x 1-6g	41.70
23 (H)		M34 x 1-6g	44.90
25 (J)		M37 x 1-6g	48.00

Mated connectors		
		
Shell size	A Max	B Max
09 (A)	37.00	52.30
11 (B)		
13 (C)		
15 (D)		
17 (E)		
19 (F)	36.00	51.30
21 (G)		
23 (H)		
25 (J)		

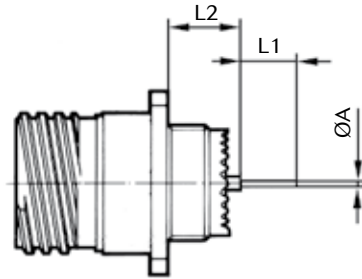
Note: All dimensions are in millimeters (mm)

# 8D Series

## D38999 Composite Series



### Receptacle with straight PC tail contacts



	Shell size			09 (A)	11 (B)	13 (C)	15 (C)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
	Contact size	Contact type	PC tail type									
A	#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				
L1	#22D	M & F	L					8.50				
	#22D	M & F	C					4.00				
	#22D	M & F	S					5.00				
	#20	M & F	C					5.00				
	#16	M & F	C					5.00				
L2	Min	#22D	M	L & C			9.48				9.59	
	Max	#22D	M	L & C			10.38				10.48	
	Min	#22D	F	L & C			9.15				9.26	
	Max	#22D	F	L & C			10.38				10.48	
	Min	#22D	M	S			9.65				9.76	
	Max	#22D	M	S			10.55				10.65	
	Min	#22D	F	S			9.32				9.42	
	Max	#22D	F	S			10.55				10.65	
	Min	#20	M	C			9.65				9.76	
	Max	#20	M	C			10.55				10.65	
	Min	#20	F	C			9.65				9.76	
	Max	#20	F	C			10.55				10.65	
	Min	#16	M	C			9.65				9.76	
	Max	#16	M	C			10.55				10.65	
	Min	#16	F	C			9.65				9.76	
	Max	#16	F	C			10.55				10.65	

M: Male contact    F: Female contact    L: Long PC tail    C: Short PC tail    S: Specific PC tail

Note: All dimensions are in millimeters (mm)

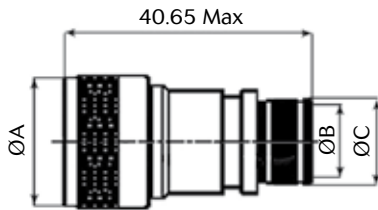
# 8D Series

## D38999 Composite Series

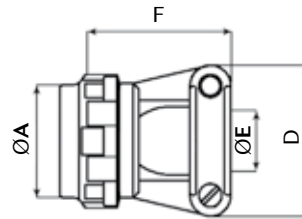


### Backshells

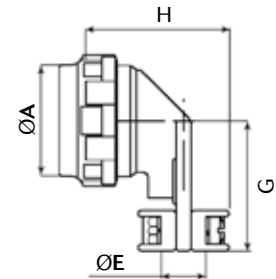
**Straight backshell for EMI/RFI heat shrink boots (Type 88)**



**Straight cable clamp (Type 91)**



**90° cable clamp (Type 92)**



Shell size	ØA Max	ØB <sup>±0.10</sup> Entry size		ØC Entry size		D Max	E Max	F Max	G	H
		02	03	02	03					
09	21.80	N/A	6.35	N/A	10.03	24.90	5.55	21.25	22.20	26.95
11	25.00	N/A	7.92	N/A	11.61	26.00	6.70	24.30	23.80	27.95
13	29.40	7.92	11.13	11.61	14.81	30.50	8.75	27.95	26.20	30.00
15	32.50	11.13	14.27	14.81	17.96	33.00	11.70	27.95	28.60	33.00
17	35.70	12.70	15.88	16.38	19.56	36.10	13.85	31.25	33.30	35.05
19	38.50	15.88	19.05	19.56	22.73	38.60	15.60	35.80	34.95	36.85
21	41.70	15.88	20.62	19.56	24.30	41.65	17.75	38.35	38.10	39.15
23	44.90	17.47	23.83	21.06	27.51	45.00	19.80	42.15	41.30	41.15
25	48.00	19.05	25.40	22.73	29.08	48.00	21.60	44.70	44.45	42.95

Basic Series

M85049

91

11

M

Backshell type:

91: Straight cable clamp

92: 90° cable clamp

Shell size:

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

Plating:

J: Olive drab cadmium over electroless nickel

M: Electroless nickel

T: Without plating (Type 91 & 92 only)

Entry size (Type 88 only):

02: See table above

03: See table above

# 8D Series

## D38999 Composite Series



### Connectors weight

	With contacts				Without contact			
	Plug (type 5)		Receptacle (type 0)		Plug (type 5)		Receptacle (type 0)	
	Male	Female	Male	Female	Male	Female	Male	Female
09 35	8.5	10.1	7.8	9.4	8.1	8.6	7.4	7.9
09 98	8.5	9.8	7.8	9.1	8.1	8.6	7.4	7.9
11 01	12.8	15.7	10.4	13.3	12.1	14.1	9.7	11.7
11 02	11.5	14.1	09.3	11.8	10.9	12.5	08.7	10.3
11 04	12.6	15.7	10.2	13.3	12.0	14.1	9.7	11.7
11 05	12.6	15.8	10.2	13.4	11.9	13.8	9.5	11.5
11 22	11.4	13.8	09.1	11.6	11.1	12.8	08.8	10.6
11 35	12.5	16.0	10.1	13.6	11.6	12.8	9.2	10.4
11 80	15.25	18.6	13.40	10.4	10.75	11.63	08.90	09.4
11 98	12.5	15.3	10.1	12.9	11.7	12.8	9.3	10.5
11 99	11.8	15.0	09.6	12.8	10.8	12.2	08.6	10.0
13 04	17.2	20.9	13.7	17.5	15.6	17.9	12.4	14.3
13 08	17.6	22.8	14.1	19.2	16.5	19.6	12.9	16.1
13 26	17.9	23.6	14.4	20.1	16.2	18.9	12.7	15.4
13 35	17.4	23.1	13.8	19.6	15.8	17.6	12.3	14.1
13 98	17.2	21.8	13.7	18.3	15.8	17.9	12.3	14.3
15 05	21.4	26.7	16.6	21.9	19.8	22.8	15.0	18.0
15 15	22.2	29.3	17.4	24.5	19.9	23.0	15.1	18.1
15 18	22.4	31.3	17.6	26.5	19.9	24.0	15.0	19.2
15 19	22.0	29.6	17.1	24.8	19.2	22.0	14.5	17.2
15 35	22.0	31.3	17.2	26.5	19.4	22.0	14.6	17.2
15 97	21.8	28.9	17.1	24.1	19.4	22.6	14.7	17.8
17 02	26.51	38.85	25.23	37.57	19.35	22.35	18.07	21.07
17 06	25.9	35.5	23.2	32.8	21.9	25.9	19.2	23.2
17 08	24.9	33.6	22.2	30.1	22.4	27.4	19.7	24.7
17 26	25.5	36.3	22.8	33.6	21.8	25.9	19.2	23.1
17 35	25.7	39.3	23.0	36.6	21.9	25.5	19.2	22.8
17 75	31.3	42.6	28.6	39.9	22.3	28.6	19.6	25.9
17 99	25.5	36.1	22.8	33.4	22.0	26.1	19.3	23.4
19 11	32.1	45.7	26.1	39.7	28.7	37.1	22.7	31.1
19 32	31.3	44.7	25.3	38.7	26.8	31.9	20.8	25.9
19 35	31.6	48.1	25.6	42.0	27.1	31.6	21.0	25.6
21 11	38.0	57.9	32.8	52.6	30.8	40.3	25.5	35.1
21 16	35.1	50.4	29.9	45.2	30.2	37.9	24.9	32.7
21 35	35.4	56.1	30.1	50.8	29.9	36.3	24.6	31.1
21 39	36.8	57.1	31.5	51.9	31.0	40.8	25.7	35.5
21 41	35.3	52.7	30.1	47.5	29.6	36.3	24.3	31.0
21 48	42.41	62.40	37.71	57.70	29.3	36.2	24.6	31.5
21 75	47.3	64.2	42.6	59.50	29.3	36.2	24.6	31.5
23 21	43.1	66.3	38.0	61.2	36.5	49.9	31.5	44.8
23 35	41.4	67.5	36.3	62.5	34.4	42.5	29.3	37.5
23 53	41.5	63.6	36.4	58.6	34.1	42.4	29.0	37.4
23 55	42.2	65.3	42.2	60.2	34.5	43.3	29.4	38.2
25 07	53.6	90.05	49.0	84.85	37.8	51.8	33.2	46.6
25 11	59.08	81.60	54.48	77.00	40.8	53.8	36.2	49.2
25 19	51.7	83.7	46.6	78.6	39.2	53.3	34.0	48.2
25 24	51.2	82.5	46.1	77.4	39.6	54.0	34.4	48.9
25 29	49.5	78.5	44.4	73.4	40.5	55.9	35.4	50.7
25 35	47.3	80.1	42.2	75.0	38.4	48.1	33.2	43.0
25 37	49.27	80.36	45.47	76.16	37.8	51.50	34.0	47.30
25 44	69.64	93.70	65.04	94.65	36.1	45.80	31.5	46.75
25 43	49.6	80.2	44.4	75.1	40.1	55.4	35.0	50.3
25 46	51.9	75.7	46.7	70.1	37.2	47.4	32.1	42.2
25 61	46.6	73.4	41.5	68.2	38.1	48.9	32.9	43.8
25 08	72.9	104.8	67.8	99.6	36.9	48.8	31.8	43.6
25 20	57.9	88.2	52.8	83.0	36.4	46.6	31.3	41.5
25 04	50.4	80.2	45.3	75.0	41.2	54.8	36.1	49.6

Weight in gram (+/- 15%)



# 8D Series

## D38999 Stainless Steel Series

### Connector part numbers

<b>Basic Series</b>	<b>8D</b>	<b>0</b>	<b>-</b>	<b>11</b>	<b>K</b>	<b>35</b>	<b>P</b>	<b>N</b>		<b>L</b>
<b>Shell style:</b>										
0: Square flange receptacle										
7: Jam nut receptacle										
5: Plug with RFI shielding										
<b>Type:</b>										
-: Connectors with standard crimp contacts.										
L: Receptacle with long PC tail (male and female size #22D, #20).										
C: Receptacle with short PC tail (male and female #22D, #20, #16).										
S: Receptacle with specific PC tail (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)										
P: Receptacle with solder cup contacts - see page 69, please consult us										
<b>Shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25</b>										
<b>Plating:</b>										
K: Passivated										
S: Nickel										
<b>Contact layout:</b> See pages 13 to 19										
<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: N, A, B, C, D, E, T, V</b> (see page 75)										
<b>Specification:</b>										
046: Tinned straight PC tail										
251: Connector provided with power contacts (layouts with contact #8)										
022: Fuel tank										
600: 230V qualified connector (T or V orientation mandatory - Consult us for available layouts)										
<b>Special custom</b>										
None: Standard plastic cap										
M: Antistatic plastic cap										
L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation.										

Note: PC tail contacts without shoulder also available. Please see page 102.

### MIL-DTL-38999 part numbers\*

<b>Basic Series</b>	<b>D38999/</b>	<b>20</b>	<b>K</b>	<b>B</b>	<b>35</b>	<b>P</b>	<b>N</b>	<b>L</b>
<b>Shell style:</b>								
20: Square flange receptacle								
24: Jam nut receptacle								
26: Plug with RFI shielding.								
<b>Plating:</b>								
K: Passivated								
S: Nickel								
<b>Shell size: 09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J</b>								
<b>Contact layout:</b> See page 18 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: N, A, B, C, D, E</b> (see page 75)								
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 Series

## D38999 Stainless Steel Series

### BACC part numbers

<b>Basic Series:</b> BACC63DB: 8D5*K (stainless steel plug) BACC63DC: 8D0*K (stainless steel square flange receptacle)	<b>BACC63DB</b>	<b>13</b>	<b>-</b>	<b>98</b>	<b>P</b>	<b>N</b>	<b>H</b>
<b>Shell size:</b> 09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J							
<b>Plating &amp; grounding:</b> -: Nickel plated, ungrounded G: Nickel plated, grounded D: Cadmium plated, ungrounded C: Cadmium plated, grounded							
<b>Contact layout:</b> See page 18 for layout according to BACC							
<b>Contact type:</b> P: Pin S: Socket							
<b>Orientation:</b> N, A, B, C, D, E (see page 75)							
<b>Specification:</b> None: With contacts H: Without contact & without filler plug							

### EN3645 part numbers

<b>Basic Series</b>	<b>EN3645</b>	<b>K</b>	<b>6</b>	<b>G</b>	<b>N</b>	<b>35</b>	<b>B</b>	<b>N</b>
<b>Plating:</b> K: Stainless steel passivated								
<b>Shell style:</b> 0: Square flange receptacle 6: Plug 7: Jam nut receptacle								
<b>Shell size:</b> 09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J								
<b>Grounding:</b> N: Standard insert not grounded								
<b>Contact layout:</b> See page 18 for layout according to EN3645								
<b>Contact type:</b> A: Connector supplied less pin contact B: Connector supplied less socket contact F: Socket M: Pin								
<b>Orientation:</b> N, A, B, C, D, E (see page 75)								

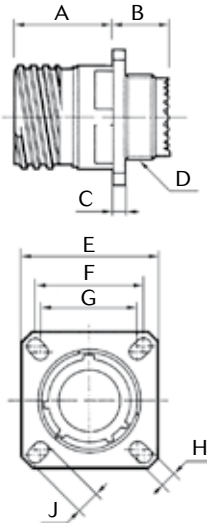
# 8D Series

## D38999 Stainless Steel Series



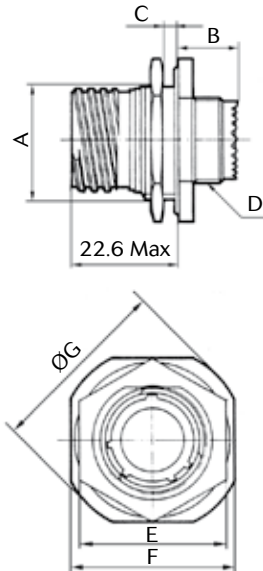
### Dimensions

#### Receptacle type 0 (8D) or type 20 (D38999)



Shell size	A Max	B Max	C Max	D Thread	E $\pm 0.3$	F	G	H $\pm 0.2$	J $\pm 0.2$
09 (A)	20.2	11.4	2.5	M12 x 1-6g	23.8	18.26	15.09	3.25	5.49
11 (B)				M15 x 1-6g	26.2	20.62	18.26		4.93
13 (C)				M18 x 1-6g	28.6	23.01	20.62		4.93
15 (D)				M22 x 1-6g	31	24.61	23.01		
17 (E)				M25 x 1-6g	33.3	26.97	24.61		
19 (F)				M28 x 1-6g	36.5	29.36	26.97		3.91
21 (G)	M31 x 1-6g	39.7	31.75	29.36					
23 (H)	M34 x 1-6g	42.9	34.93	31.75					
25 (J)	M37 x 1-6g	46	38.1	34.93					

#### Receptacle type 7 (8D) or type 24 (D38999)



Shell size	A $\pm 0.15$	B Max	C Max	D Thread	E Max	F $\pm 0.4$	ØG Max
09 (A)	16.53	9.9	3.2	M12 x 1-6g	23	27	30.5
11 (B)	19.07			M15 x 1-6g	26	31.8	35.2
13 (C)	23.82			M18 x 1-6g	31	34.9	38.4
15 (D)	26.97			M22 x 1-6g	34	38.1	41.6
17 (E)	30.15			M25 x 1-6g	37	41.3	44.8
19 (F)	33.32			M28 x 1-6g	41	46	49.5
21 (G)	36.50			M31 x 1-6g	46	49.2	52.7
23 (H)	39.67			55.9	47	52.4	55.9
25 (J)	42.85			59	51.23	55.6	59

#### Recommended 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 ( $\pm 0.5$ N.m)	4	5	7	8	9	10	12	13	14

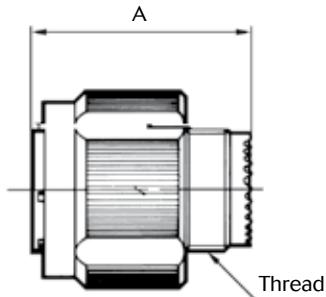




# 8D Series

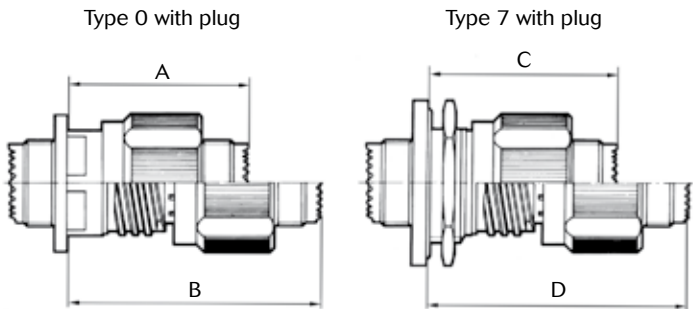
## D38999 Stainless Steel Series

### Plug type 5 (8D) or type 26 (D38999)



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

### 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)			38.50	53.80
13 (C)				
15 (D)				
17 (E)				
19 (F)				
21 (G)	36.00	51.30		
23 (H)				
25 (J)				

Note: All dimensions are in millimeters (mm)

# 8D Series

## D38999 Stainless Steel Series



### Receptacle with straight PC tail contacts



		Shell size			09 (A)	11 (B)	13 (C)	15 (C)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
		Contact size	Contact type	PC tail type									
A		#22D	M & F	L & C	0.70								
		#22D	M & F	S	0.50								
		#20	M & F	C	0.70								
		#16	M & F	C	1.12 <sup>±0.03</sup>								
L1	Min	#22D	M	L & C	10.52					10.34			
	Max	#22D	M	L & C	11.46					11.28			
	Min	#22D	F	L & C	10.19					10.01			
	Max	#22D	F	L & C	11.46					11.28			
	Min	#22D	M	S	10.19					10.01			
	Max	#22D	M	S	11.46					11.28			
	Min	#22D	F	S	10.69					10.51			
	Max	#22D	F	S	11.63					11.45			
	Min	#20	M	C	10.36					10.18			
	Max	#20	M	C	11.63					11.45			
	Min	#20	F	C	10.69					10.51			
	Max	#20	F	C	11.63					11.45			
	Min	#16	M	C	10.69					10.51			
	Max	#16	M	C	11.63					11.45			
	Min	#16	F	C	10.69					10.51			
	Max	#16	F	C	11.63					11.45			
L2		#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 <sup>±0.1</sup>								
L3	Min	#22D	M	L & C			9.48					9.59	
	Max	#22D	M	L & C			10.58					10.69	
	Min	#22D	F	L & C			9.15					9.26	
	Max	#22D	F	L & C			10.58					10.69	
	Min	#22D	M	S			9.65					9.76	
	Max	#22D	M	S			10.75					10.86	
	Min	#22D	F	S			9.15					9.26	
	Max	#22D	F	S			10.75					10.86	
	Min	#20	M	C			9.65					9.76	
	Max	#20	M	C			10.75					10.86	
	Min	#20	F	C			9.65					9.76	
	Max	#20	F	C			10.75					10.86	
	Min	#16	M	C			9.64					9.75	
	Max	#16	M	C			10.75					10.86	
	Min	#16	F	C			9.64					9.75	
	Max	#16	F	C			10.75					10.86	

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

# 8D Series

## D38999 Stainless Steel 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	30.63	32.21	23.93	25.51	33.93	35.51	30.21	30.71	23.51	24.01	33.51	34.01
09-98	30.63	31.93	23.93	25.23	33.93	35.23	30.21	30.73	23.51	24.03	33.51	34.03
11-01	38.13	41.07	29.53	32.47	42.43	45.37	37.47	39.47	28.87	30.87	41.77	43.77
11-02	37.76	40.30	39.36	30.12	46.98	49.52	37.14	38.74	28.56	30.16	46.36	47.96
11-04	37.95	41.01	29.35	32.41	42.25	45.31	37.39	39.41	28.79	30.81	41.69	43.71
11-05	37.98	41.19	29.38	32.59	42.04	45.49	37.28	39.19	28.68	30.59	41.58	43.49
11-22	37.48	39.54	28.90	130.86	46.70	48.76	37.34	39.04	28.76	30.36	46.56	48.26
11-35	37.88	41.35	29.28	32.75	41.94	45.65	36.97	38.10	28.37	29.50	41.27	42.40
11-80	38.12	44.84	29.73	36.26	47.78	54.06	34.86	37.84	26.45	29.26	44.51	47.06
11-98	37.85	40.61	29.25	32.01	42.15	44.91	37.01	38.21	28.41	29.61	41.31	42.51
11-99	38.02	41.24	29.44	32.66	47.24	50.46	37.04	38.44	28.46	29.86	46.26	47.66
13-04	53.34	57.12	37.94	41.72	56.24	60.02	52.10	54.00	36.70	38.60	55.00	56.90
13-08	53.72	58.90	38.32	43.50	56.62	61.80	52.60	55.70	37.20	40.30	55.50	58.60
13-26	54.09	59.74	38.69	44.34	56.99	62.64	52.35	55.04	36.95	39.64	55.25	57.94
13-35	53.52	59.29	38.12	43.89	56.42	62.19	51.98	53.79	36.58	38.39	54.88	56.69
13-98	53.38	58.00	37.98	42.60	56.28	60.90	51.98	54.00	36.58	38.60	54.88	56.90
15-05	64.49	69.83	45.69	51.03	67.59	72.93	62.94	65.93	44.14	47.13	66.04	69.03
15-15	65.29	72.45	46.49	53.65	68.39	75.55	63.02	66.07	44.22	47.27	66.12	69.17
15-18	65.50	74.38	46.70	55.58	68.60	77.48	62.98	67.18	44.18	48.38	66.08	70.28
15-19	65.03	72.76	46.23	53.96	68.13	75.86	62.37	65.16	43.57	46.36	65.47	68.26
15-35	65.13	74.37	46.33	55.57	68.23	77.47	62.54	65.12	43.74	46.32	65.64	68.22
15-97	64.96	72.01	46.16	53.21	68.06	75.11	62.60	65.69	43.80	46.89	65.70	68.79
17-02	77.80	92.64	72.89	87.73	104.09	118.95	74.53	86.09	69.62	81.18	100.82	112.38
17-06	69.07	78.67	64.17	73.77	87.27	96.87	65.11	69.07	60.21	64.17	83.31	87.27
17-08	68.06	76.79	63.16	71.89	86.26	94.99	65.58	70.55	60.68	65.65	83.78	88.75
17-26	68.64	79.43	63.74	74.53	86.84	97.63	65.00	69.03	60.10	64.13	83.20	87.23
17-35	68.88	82.43	63.98	77.53	87.08	100.63	65.03	68.68	60.13	63.78	83.23	86.88
17-75	74.48	85.77	69.58	80.87	92.68	103.97	65.48	71.77	60.58	66.87	83.68	89.97
17-99	68.69	79.25	63.79	74.35	86.89	97.45	65.13	69.29	60.23	64.39	83.33	87.49
19-11	87.04	100.63	67.69	81.28	97.59	111.18	83.63	92.05	64.28	73.45	94.18	103.35
19-32	86.25	99.65	66.90	80.30	96.80	110.20	81.77	86.85	62.42	67.50	92.32	97.40
19-35	86.56	103.01	67.21	83.66	97.11	113.56	81.94	86.51	62.59	67.16	92.49	97.06
21-11	99.71	119.55	81.81	101.65	111.81	131.65	92.45	101.95	74.55	84.05	104.55	114.05
21-16	96.81	112.09	78.91	94.19	108.91	124.19	91.85	99.61	73.95	81.71	103.95	111.71
21-35	97.09	117.75	79.19	99.85	109.19	129.85	91.56	98.00	73.66	80.10	103.66	110.10
21-39	98.47	118.80	80.57	100.90	110.57	130.90	92.67	102.44	74.77	84.54	104.77	114.54
21-41	97.01	114.38	79.11	126.48	109.11	126.48	91.27	97.98	73.37	80.08	103.37	80.08
21-48	103.84	123.82	85.93	105.91	126.02	146.02	90.72	97.62	72.81	79.71	112.92	119.82
21-75	108.72	125.62	90.81	107.71	130.92	147.82	90.72	97.62	72.81	79.71	112.92	119.82
23-21	108.81	132.06	90.61	113.86	122.81	146.06	102.30	115.68	84.10	97.48	116.30	129.68
23-35	107.17	133.32	88.97	115.12	121.17	147.32	100.17	108.32	81.97	90.12	114.17	122.32
23-53	107.23	129.42	89.03	111.22	121.23	143.42	99.81	108.22	81.61	90.02	113.81	122.22
23-55	107.98	131.05	89.78	112.85	121.98	145.05	100.28	109.05	82.08	90.85	114.28	123.05
25-07	133.3	157.7	115.5	172.25	160.06	172.25	108.51	119.45	90.71	101.65	135.27	101.65
25-11	132.31	152.31	114.51	134.51	159.71	179.07	111.51	124.51	93.71	106.71	138.91	151.27
25-19	122.14	154.15	104.34	136.35	136.74	168.75	109.60	123.75	91.80	105.95	124.20	138.35
25-24	121.64	153.00	103.84	135.20	136.24	167.60	110.00	124.44	92.20	106.64	124.60	139.04
25-29	119.96	148.93	102.16	131.13	134.56	163.53	110.97	126.31	93.17	108.51	125.57	140.91
25-35	117.75	150.58	99.95	132.78	132.35	165.18	108.79	118.58	90.99	100.78	123.39	133.18
25-37	119.98	148.26	102.18	162.67	146.74	162.67	108.51	119.40	90.71	101.60	135.27	101.60
25-44	140.35	164.98	122.55	179.58	167.11	179.71	106.81	117.08	89.01	99.28	133.57	99.41
25-43	120.00	150.68	102.20	132.88	134.60	165.28	110.58	125.88	92.78	108.08	125.18	140.48
25-46	122.30	146.14	104.50	128.34	136.90	160.74	107.66	117.82	89.86	100.02	122.26	132.42
25-61	117.05	143.80	99.25	126.00	131.65	158.40	108.51	119.40	90.71	101.60	123.11	155.51
25-08	143.38	175.21	125.58	157.41	157.98	189.81	107.38	119.21	89.58	101.41	121.98	133.81
25-20	128.40	158.62	110.60	140.82	143.00	173.22	106.83	117.08	89.03	99.28	121.43	131.68
25-04	120.80	150.65	103.00	132.85	135.40	165.25	111.60	125.21	93.80	107.41	126.20	139.81

Weight in gram (+/- 15%)

# 8D Series

## D38999 Titanium Series



### Connector part numbers

<b>Basic Series</b>	<b>8D</b>	<b>0</b>	<b>-</b>	<b>11</b>	<b>TT</b>	<b>35</b>	<b>P</b>	<b>N</b>			<b>L</b>
<b>Shell style:</b>											
0: Square flange receptacle											
7: Jam nut receptacle											
5: Plug with RFI shielding											
<b>Type:</b>											
-: Connectors with standard crimp contacts.											
L: Receptacle with long PC tail (male and female size #22D, #20).											
C: Receptacle with short PC tail (male and female #22D, #20, #16).											
S: Receptacle with specific PC tail (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)											
P: Receptacle with solder cup contacts - see page 69, please consult us											
<b>Shell size:</b>											
09, 11, 13, 15, 17, 19, 21, 23, 25											
<b>Plating:</b>											
TT: Without plating											
TF: Nickel											
<b>Contact layout:</b>											
See pages 13 to 19											
<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 75)											
<b>Specification:</b>											
046: Tinned straight PC tail											
251: Connector provided with power contacts (layouts with contact #8)											
022: Fuel tank											
<b>Special custom</b>											
None: Standard plastic cap											
M: Antistatic plastic cap											
L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation.											

Note: PC tail contacts without shoulder also available. Please see page 102.

# 8D Series

## D38999 Titanium Series



### Dimensions

Receptacle type 0										
	Shell size	A Max	B Max	C Max	D Thread	E $\pm 0.3$	F	G	H $\pm 0.2$	J $\pm 0.2$
	09 (A)	20.2	11.4	2.5	M12 x 1-6g	23.8	18.26	15.09	3.25	5.49
11 (B)	M15 x 1-6g				26.2	20.62	18.26	4.93		
13 (C)	M18 x 1-6g				28.6	23.01	20.62	4.4		
15 (D)	M22 x 1-6g				31	24.61	23.01			
17 (E)	M25 x 1-6g				33.3	26.97	24.61			
19 (F)	M28 x 1-6g				36.5	29.36	26.97	4.93		
21 (G)	M31 x 1-6g	39.7	31.75	29.36						
23 (H)	M34 x 1-6g	42.9	34.93	31.75	3.91	6.15				
25 (J)	M37 x 1-6g	46	38.1	34.93						

Receptacle type 7								
	Shell size	A $\pm 0.15$	B Max	C Max	D Thread	E Max	F $\pm 0.4$	$\varnothing G$ Max
	09 (A)	16.53	9.9	3.2	M12 x 1-6g	23	27	30.5
11 (B)	19.07	M15 x 1-6g			26	31.8	35.2	
13 (C)	23.82	M18 x 1-6g			31	34.9	38.4	
15 (D)	26.97	M22 x 1-6g			34	38.1	41.6	
17 (E)	30.15	M25 x 1-6g			37	41.3	44.8	
19 (F)	33.32	M28 x 1-6g			41	46	49.5	
21 (G)	36.50	M31 x 1-6g			46	49.2	52.7	
23 (H)	39.67	55.9			47	52.4	55.9	
25 (J)	42.85	59			51.23	55.6	59	

### Recommended 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 ( $\pm 0.5$ N.m)	4	5	7	8	9	10	12	13	14

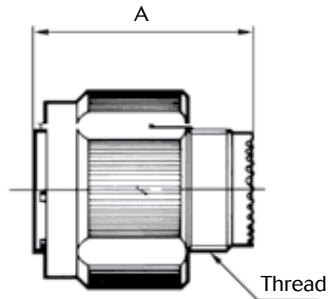
Note: All dimensions are in millimeters (mm)



# 8D Series

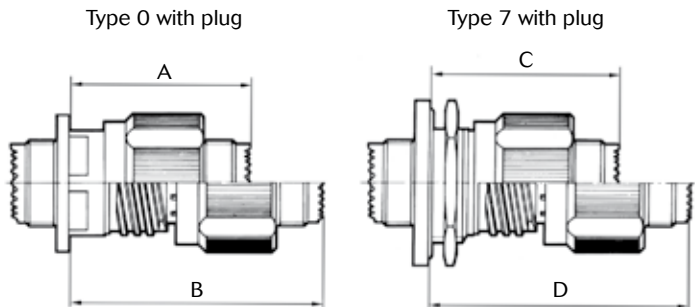
## D38999 Titanium Series

### Plug type 5



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

### 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)			38.50	53.80
13 (C)				
15 (D)				
17 (E)				
19 (F)				
21 (G)	36.00	51.30		
23 (H)				
25 (J)				

# 8D Series

## D38999 Titanium Series



### Receptacle with straight PC tail contacts



		Shell size			09 (A)	11 (B)	13 (C)	15 (C)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
		Contact size	Contact type	PC tail type									
A		#22D	M & F	L & C	0.70								
		#22D	M & F	S	0.50								
		#20	M & F	C	0.70								
		#16	M & F	C	1.12 <sup>±0.03</sup>								
L1	Min	#22D	M	L & C	10.52					10.34			
	Max	#22D	M	L & C	11.46					11.28			
	Min	#22D	F	L & C	10.19					10.01			
	Max	#22D	F	L & C	11.46					11.28			
	Min	#22D	M	S	10.19					10.01			
	Max	#22D	M	S	11.46					11.28			
	Min	#22D	F	S	10.69					10.51			
	Max	#22D	F	S	11.63					11.45			
	Min	#20	M	C	10.36					10.18			
	Max	#20	M	C	11.63					11.45			
	Min	#20	F	C	10.69					10.51			
	Max	#20	F	C	11.63					11.45			
	Min	#16	M	C	10.69					10.51			
	Max	#16	M	C	11.63					11.45			
	Min	#16	F	C	10.69					10.51			
	Max	#16	F	C	11.63					11.45			
L2		#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 <sup>±0.1</sup>								
L3	Min	#22D	M	L & C			9.48					9.59	
	Max	#22D	M	L & C			10.58					10.69	
	Min	#22D	F	L & C			9.15					9.26	
	Max	#22D	F	L & C			10.58					10.69	
	Min	#22D	M	S			9.65					9.76	
	Max	#22D	M	S			10.75					10.86	
	Min	#22D	F	S			9.15					9.26	
	Max	#22D	F	S			10.75					10.86	
	Min	#20	M	C			9.65					9.76	
	Max	#20	M	C			10.75					10.86	
	Min	#20	F	C			9.65					9.76	
	Max	#20	F	C			10.75					10.86	
	Min	#16	M	C			9.64					9.75	
	Max	#16	M	C			10.75					10.86	
	Min	#16	F	C			9.64					9.75	
	Max	#16	F	C			10.75					10.86	

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

# 8D Series

## D38999 Titanium 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	18.23	19.81	14.37	15.95	20.14	21.72	17.81	18.31	13.95	14.45	19.72	20.22
09 98	18.23	19.53	14.37	15.67	20.14	21.44	17.81	18.33	13.95	14.47	19.72	20.24
11 01	23.15	26.09	18.19	21.13	25.63	28.57	22.49	24.49	17.53	19.53	24.97	26.97
11 02	22.78	25.32	17.82	20.36	28.1	30.64	22.16	23.76	17.2	18.8	27.48	29.08
11 04	22.97	26.03	18.01	21.07	25.45	28.51	22.41	24.43	17.45	19.47	24.89	26.91
11 05	23.00	26.21	18.04	21.25	25.24	28.69	22.30	24.21	17.34	19.25	24.78	26.69
11 22	22.64	25.06	17.68	20.10	27.96	30.38	22.36	24.06	17.40	19.10	27.68	29.38
11 35	22.90	26.37	17.94	21.41	25.14	28.85	21.99	23.12	17.03	18.16	24.47	25.60
11 80	25.38	29.86	20.08	24.88	30.66	35.78	22.10	22.86	16.80	17.88	27.38	28.78
11 98	22.87	25.63	17.91	20.67	25.35	28.11	22.03	23.23	17.07	18.27	24.51	25.71
11 99	23.04	26.26	18.06	21.28	25.53	28.75	22.06	23.46	17.08	18.48	24.55	25.95
13 04	32.44	36.22	23.56	27.34	34.11	37.89	31.20	33.10	22.32	24.22	32.87	34.77
13 08	32.82	38.00	23.94	29.12	34.49	39.67	31.70	34.80	22.82	25.92	33.37	36.47
13 26	33.19	38.84	24.31	29.96	34.86	40.51	31.45	34.14	22.57	25.26	33.12	35.81
13 35	32.62	38.39	23.74	29.51	34.29	40.06	31.08	32.89	22.20	24.01	32.75	34.56
13 98	32.48	37.10	23.60	28.22	34.15	38.77	31.08	33.10	22.20	24.22	32.75	34.77
15 05	39.61	44.95	28.77	34.11	41.40	46.74	38.06	41.05	27.22	30.21	39.85	42.84
15 15	40.41	47.57	29.57	36.73	42.20	49.36	38.14	41.19	27.30	30.35	39.93	42.98
15 18	40.62	49.50	29.78	38.66	42.41	51.29	38.10	42.30	27.26	31.46	39.89	44.09
15 19	40.15	47.88	29.31	37.04	41.94	49.67	37.49	40.28	26.65	29.44	39.28	42.07
15 35	40.25	49.49	29.41	38.65	42.04	51.28	37.66	40.24	26.82	29.40	39.45	42.03
15 97	40.08	47.13	29.24	36.29	41.87	48.92	37.72	40.81	26.88	29.97	39.51	42.60
17 02	48.16	58.40	45.20	55.44	63.99	74.23	44.89	51.85	41.93	48.89	60.72	67.68
17 06	43.73	53.33	40.90	50.50	54.23	63.83	39.77	43.73	36.94	40.90	50.27	54.23
17 08	42.72	51.45	39.89	48.62	53.22	61.95	40.24	45.21	37.41	42.38	50.74	55.71
17 26	43.30	54.09	40.47	51.26	53.80	64.59	39.66	43.69	36.83	40.86	50.16	54.19
17 35	43.54	57.09	40.71	54.26	54.04	67.59	39.69	43.34	36.86	40.51	50.19	53.84
17 75	49.14	60.43	46.31	57.60	59.64	70.93	40.14	46.43	37.31	43.60	50.64	56.93
17 99	43.35	53.91	40.52	51.08	53.85	64.41	39.79	43.95	36.96	41.12	50.29	54.45
19 11	55.16	68.75	44.00	57.59	61.25	74.84	51.75	60.17	40.59	66.26	40.59	66.26
19 32	54.37	67.77	43.21	56.61	60.46	73.86	49.89	54.97	38.73	61.06	38.73	61.06
19 35	54.68	71.13	43.52	59.97	60.77	77.22	50.06	54.63	38.90	60.72	38.90	60.72
21 11	64.64	84.48	54.31	74.15	71.62	91.46	57.38	66.88	47.05	73.86	47.05	73.86
21 16	61.74	77.02	51.41	66.69	68.72	84.00	56.78	64.54	46.45	71.52	46.45	71.52
21 35	62.02	82.68	51.69	72.35	69.00	89.66	56.49	62.93	46.16	69.91	46.16	69.91
21 39	63.40	83.73	53.07	73.40	70.38	90.71	57.60	67.37	47.27	74.35	47.27	74.35
21 41	61.94	79.31	51.61	86.29	68.92	86.29	56.20	62.91	45.87	69.89	45.87	69.89
21 48	68.73	88.71	58.4	78.38	81.56	101.54	55.61	62.51	45.28	52.18	68.44	75.34
21 75	73.61	90.51	63.28	80.18	86.44	103.34	55.61	62.51	45.28	52.18	68.44	75.34
23 21	71.07	94.32	60.57	83.82	79.15	102.40	64.56	77.94	54.06	86.02	54.06	86.02
23 35	69.43	95.58	58.93	85.08	77.51	103.66	62.43	70.58	51.93	78.66	51.93	78.66
23 53	69.49	91.68	58.99	81.18	77.57	99.76	62.07	70.48	51.57	78.56	51.57	78.56
23 55	70.24	93.31	59.74	82.81	78.32	101.39	62.54	71.31	52.04	79.39	52.04	79.39
25 07	83.91	117.09	73.64	123.58	99.34	121.8	68.12	78.84	57.85	85.33	83.55	83.55
25 11	91.92	111.92	81.65	101.65	94.65	127.35	71.12	84.12	60.85	73.85	86.55	99.55
25 19	81.78	113.79	71.51	103.52	90.20	122.21	69.24	83.39	58.97	91.81	58.97	91.81
25 24	81.28	112.64	71.01	102.37	89.70	121.06	69.64	84.08	59.37	92.50	59.37	92.50
25 29	79.60	108.57	69.33	98.30	88.02	116.99	70.61	85.95	60.34	94.37	60.34	94.37
25 35	77.39	110.22	67.12	99.95	85.81	118.64	68.43	78.22	58.16	86.64	58.16	86.64
25 37	79.59	107.09	69.32	116.12	95.02	113.36	68.12	79.04	57.85	87.26	83.55	84.50
25 44	99.96	127.50	89.69	134.23	115.39	134.44	66.42	77.85	56.15	86.33	81.85	84.54
25 43	79.64	110.32	69.37	100.05	88.06	118.74	70.22	85.52	59.95	93.94	59.95	93.94
25 46	81.94	105.78	71.67	95.51	90.36	114.20	67.30	77.46	57.03	85.88	57.03	85.88
25 61	76.69	103.44	66.42	93.17	85.11	111.86	68.15	79.04	57.88	87.46	57.88	87.46
25 08	103.02	134.85	92.75	124.58	111.44	143.27	67.02	78.85	56.75	87.27	56.75	87.27
25 20	88.04	118.26	77.77	107.99	96.46	126.68	66.47	76.72	56.20	85.14	56.20	85.14
25 04	80.44	110.29	70.17	100.02	88.86	118.71	71.24	84.85	60.97	93.27	60.97	93.27

Weight in gram (+/- 15%)

\* Please, consult us for weight of receptacles type 77.







# 8D Series

## D38999 Bronze Series

### Connector part numbers

Basic Series	JVS	16	A	11	35	P	N
<b>Shell style:</b>							
00: Square flange receptacle							
07: Jam nut receptacle							
16: Plug with RFI shielding							
<b>Material:</b>							
A: Bronze housing material							
<b>Shell size:</b>							
09, 11, 13, 15, 17, 19, 21, 23, 25							
<b>Contact layout:</b>							
See pages 13 to 19							
<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 75)							
<b>Specification:</b>							
251: Connector provides with power contacts (layouts with contacts #8)							
CI: Printed board mounting contacts							
LI: Receptacle with long PC tail (pin or socket #22D)							
L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation							

### CECC part numbers

Basic Series	C 752 002	B	B	98	M	C	N	A	0	1	G
<b>Shell style:</b>											
A: Plug											
B: Square flange receptacle											
C: Jam nut receptacle											
<b>Shell size:</b>											
09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J											
<b>Contact layout:</b>											
See pages 13 to 19											
<b>Contact type:</b>											
M: Pin											
F: Socket											
<b>Type of contact termination:</b>											
C: Crimp contact											
<b>Orientation:</b>											
N, A, B, C, D, E (see page 75)											
<b>Shell material:</b>											
A: Aluminum bronze											
<b>Supply code:</b>											
0: Connectors supplied with contacts											
1: Connectors supplied without contacts											
<b>Assessment level:</b>											
1: Level 1											
<b>Performance level:</b>											
G: Level G											

Note: C 752 002 refers to the abbreviated form of the CECC 75 201-002 type designation.

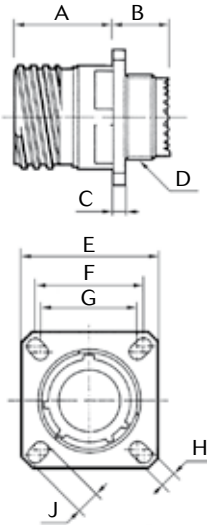
# 8D Series

## D38999 Bronze Series



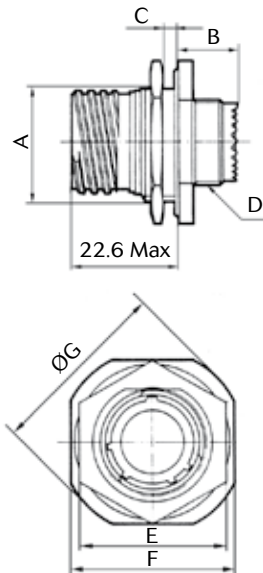
### Dimensions

#### Receptacle type 00 (JVS) or type B (CECC)



Shell size	A Max	B Max	C Max	D Thread	E $\pm 0.3$	F	G	H $\pm 0.2$	J $\pm 0.2$
09 (A)	20.2	11.4	2.5	M12 x 1-6g	23.8	18.26	15.09	3.25	5.49
11 (B)				M15 x 1-6g	26.2	20.62	18.26		4.93
13 (C)				M18 x 1-6g	28.6	23.01	20.62		4.4
15 (D)				M22 x 1-6g	31	24.61	23.01	4.93	
17 (E)				M25 x 1-6g	33.3	26.97	24.61		
19 (F)				M28 x 1-6g	36.5	29.36	26.97		
21 (G)	19.8	11.8	3.2	M31 x 1-6g	39.7	31.75	29.36	3.91	6.15
23 (H)		11.4		M34 x 1-6g	42.9	34.93	31.75		
25 (J)				M37 x 1-6g	46	38.1	34.93		

#### Receptacle type 07 (JVS) or type C (CECC)



Shell size	A $\pm 0.15$	B Max	C Max	D Thread	E Max	F $\pm 0.4$	ØG Max
09 (A)	16.53	9.9	3.2	M12 x 1-6g	23	27	30.5
11 (B)	19.07			M15 x 1-6g	26	31.8	35.2
13 (C)	23.82			M18 x 1-6g	31	34.9	38.4
15 (D)	26.97			M22 x 1-6g	34	38.1	41.6
17 (E)	30.15			M25 x 1-6g	37	41.3	44.8
19 (F)	33.32			M28 x 1-6g	41	46	49.5
21 (G)	36.50			M31 x 1-6g	46	49.2	52.7
23 (H)	39.67			55.9	47	52.4	55.9
25 (J)	42.85			59	51.23	55.6	59

#### Recommended 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 ( $\pm 0.5$ N.m)	4	5	7	8	9	10	12	13	14

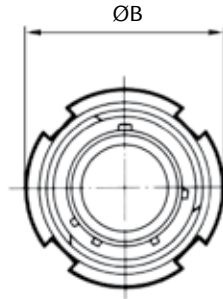
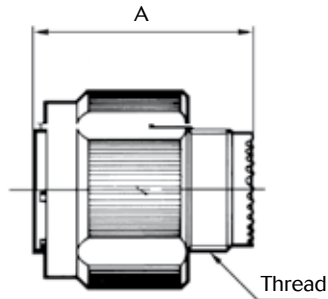
Note: All dimensions are in millimeters (mm)



# 8D Series

## D38999 Bronze Series

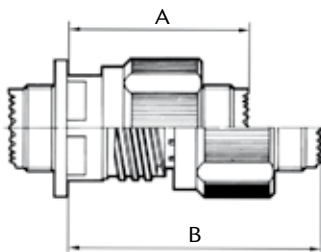
### Plug type 16 (JVS) or type A (CECC)



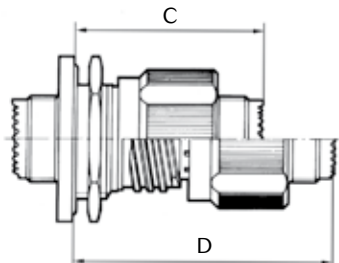
Shell size	A Max	Thread	ØB Max
09 (A)	31.00	M12 x 1-6g	21.10
11 (B)		M15 x 1-6g	23.80
13 (C)		M18 x 1-6g	28.20
15 (D)		M22 x 1-6g	31.40
17 (E)		M25 x 1-6g	36.50
19 (F)		M28 x 1-6g	39.30
21 (G)		M31 x 1-6g	42.50
23 (H)		M34 x 1-6g	45.30
25 (J)		M37 x 1-6g	48.40

### Mated connectors dimensions

Type 0 with plug



Type 7 with plug



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

# 8D Series

## D38999 Bronze Series



### Receptacle with straight PC tail contacts (CI & LI specification)



	Shell size			09 (A)	11 (B)	13 (C)	15 (C)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
	Contact size	Contact type	PC tail type									
A		#22D	M & F	L				0.70				
		#22D	M & F	C				0.50				
		#20	M & F	C				0.70				
		#16	M & F	C				1.12 <sup>±0.03</sup>				
L1	Min	#22D	M	L	10.52				10.34			
	Max	#22D	M	L	11.46				11.28			
	Min	#22D	F	L	10.19				10.01			
	Max	#22D	F	L	11.46				11.28			
	Min	#22D	M	C	10.19				10.01			
	Max	#22D	M	C	11.46				11.28			
	Min	#22D	F	C	10.69				10.51			
	Max	#22D	F	C	11.63				11.45			
	Min	#20	M	C	10.36				10.18			
	Max	#20	M	C	11.63				11.45			
	Min	#20	F	C	10.69				10.51			
	Max	#20	F	C	11.63				11.45			
	Min	#16	M	C	10.69				10.51			
	Max	#16	M	C	11.63				11.45			
L2		#22D	M & F	L				8.50				
		#22D	M & F	C				5.10				
		#20	M & F	C				5.10				
		#16	M & F	C				5 <sup>±0.1</sup>				
L3	Min	#22D	M	L			9.48				9.59	
	Max	#22D	M	L			10.58				10.69	
	Min	#22D	F	L			9.15				9.26	
	Max	#22D	F	L			10.58				10.69	
	Min	#22D	M	C			9.65				9.76	
	Max	#22D	M	C			10.75				10.86	
	Min	#22D	F	C			9.15				9.26	
	Max	#22D	F	C			10.75				10.86	
	Min	#20	M	C			9.65				9.76	
	Max	#20	M	C			10.75				10.86	
	Min	#20	F	C			9.65				9.76	
	Max	#20	F	C			10.75				10.86	
	Min	#16	M	C			9.64				9.75	
	Max	#16	M	C			10.75				10.86	
Min	#16	F	C			9.64				9.75		
Max	#16	F	C			10.75				10.86		

M: Male contact    F: Female contact    L: Long PC tail    C: Short PC tail

Dimensions in millimeters

# 8D Series

## D38999 Bronze Series



### Backshell part numbers

Basic Series	JVS	A	11	E	00	C	CC
<b>Accessory style</b> A : Rear accessory (backshell)							
<b>Shell size:</b> 09, 11, 13, 15, 17, 19, 21, 23, 25							
<b>Accessory type:</b> A: Screened adaptor for use with compression spring or band strap B: Adaptor with strain relief cable clamp E: Screened adaptor with braid trap G: Environmental cone clamp screened adaptor P: Adaptor for heat shrink boot X: Cone clamp screened adaptor							
<b>Cable entry codification (see table below):</b> For B type: 00: Standard, by default choice For other types: 00: Standard, by default choice 03 to 32: Depending on backshell type, please refer to corresponding table							
<b>Angle:</b> A: Straight backshell (orientation by default) B: 45° backshell (except for «B Type» accessory) C: 90° right angle backshell							
<b>Variant:</b> For all types: None: Supplied without any other accessory For E and X type: CC: Cable clamp variant							

### How to built a backshell reference for types A, E or G

Backshell type	Shell size	Standard correspondance		Specific
		Entry codification	Entry size backshell	Other entry cofication
Type A & E	09	00	04	03
	11	00	06	05 to 03
	13	00	08	07 to 04
	15	00	10	09 to 06
	17	00	12	11 to 08
	19	00	13	12 to 09
	21	00	16	15 to 12
	23	00	18	17 to 14
	25	00	20	19 to 16

Backshell type	Shell size	Standard correspondance		Specific
		Entry codification	Entry size backshell	Other entry cofication
Type G	09	00		
	11	00	04	
	13	00	06	04
	15	00	10	08 to 04
	17	00	12	11 to 04
	19	00	12	10 to 04
	21	00	16	12 to 04
	23	00	16	12 to 04
	25	00	16	12 to 04

Examples:

To order a right angle backshell type "A" size 15 with entry size 10 → placed your order with: JVSA 15G00C

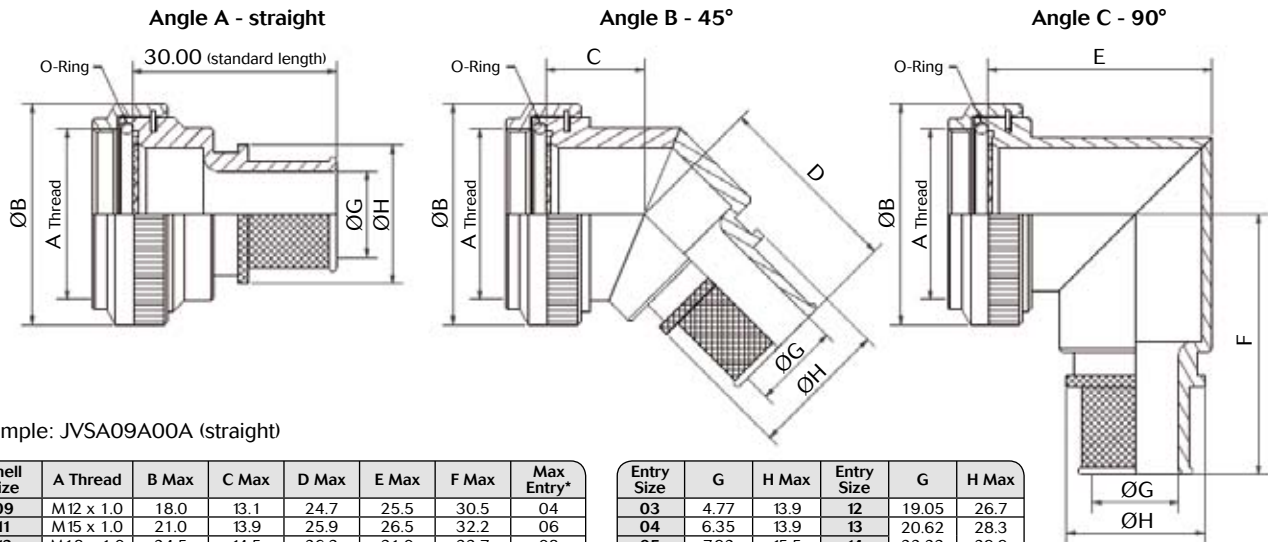
To order a right angle backshell type "A" size 15 with entry size 06 → placed your order with: JVSA 15G06C

# 8D Series

## D38999 Bronze Series



### Type A - Screened adaptor for use with compression spring or band strap



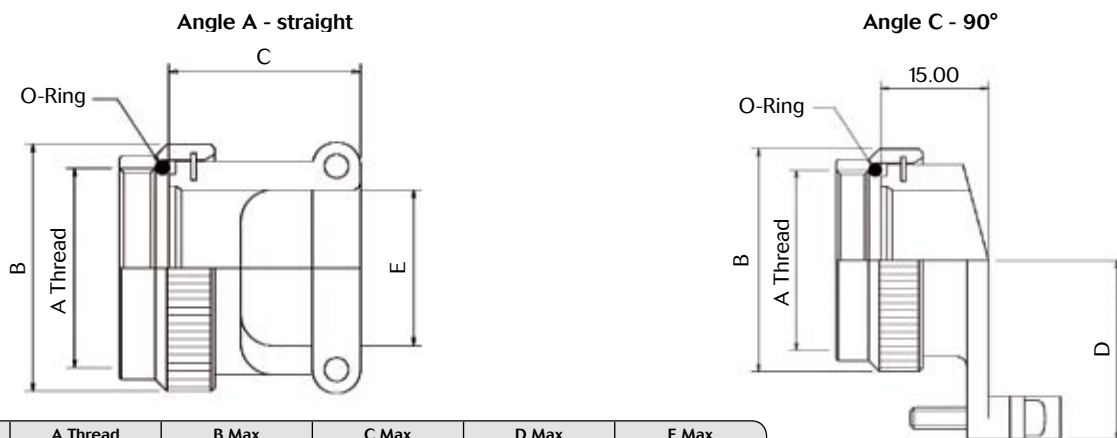
Example: JVSA09A00A (straight)

Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	Max Entry*
09	M12 x 1.0	18.0	13.1	24.7	25.5	30.5	04
11	M15 x 1.0	21.0	13.9	25.9	26.5	32.2	06
13	M18 x 1.0	24.5	14.5	26.3	31.0	33.7	08
15	M22 x 1.0	29.0	15.5	27.2	37.0	35.2	10
17	M25 x 1.0	32.5	16.1	28.0	40.0	36.9	12
19	M28 x 1.0	35.5	16.8	28.3	44.5	38.5	13
21	M31 x 1.0	37.0	17.1	29.1	49.0	40.1	16
23	M34 x 1.0	40.0	17.7	29.5	51.5	41.6	18
25	M37 x 1.0	43.5	18.4	30.4	53.0	43.1	20

Entry Size	G	H Max	Entry Size	G	H Max
03	4.77	13.9	12	19.05	26.7
04	6.35	13.9	13	20.62	28.3
05	7.92	15.5	14	22.23	29.9
06	9.52	17.2	15	23.82	31.5
07	11.10	18.7	16	25.40	33.1
08	12.70	20.3	17	27.00	34.7
09	14.27	21.9	18	28.60	36.3
10	15.88	23.5	19	30.20	37.9
11	17.47	25.1	20	31.80	39.5

\* Recommendation only, please consult us for outside entry size

### Type B - Adaptor with strain relief cable clamp



Shell Size	A Thread	B Max	C Max	D Max	E Max
09	M12 x 1.0	18.0	21.5	20.0	7.0
11	M15 x 1.0	21.0	21.5	21.0	10.5
13	M18 x 1.0	24.5	23.5	22.0	13.4
15	M22 x 1.0	29	23.5	23.0	16.5
17	M25 x 1.0	32.5	24.5	25.0	19.7
19	M28 x 1.0	35.5	27.5	27.5	22.2
21	M31 x 1.0	37.0	34.5	30.0	25.6
23	M34 x 1.0	40.0	37.5	31.5	28.5
25	M37 x 1.0	43.5	37.5	34.5	31.7

Example: JVSA09B00A (straight)

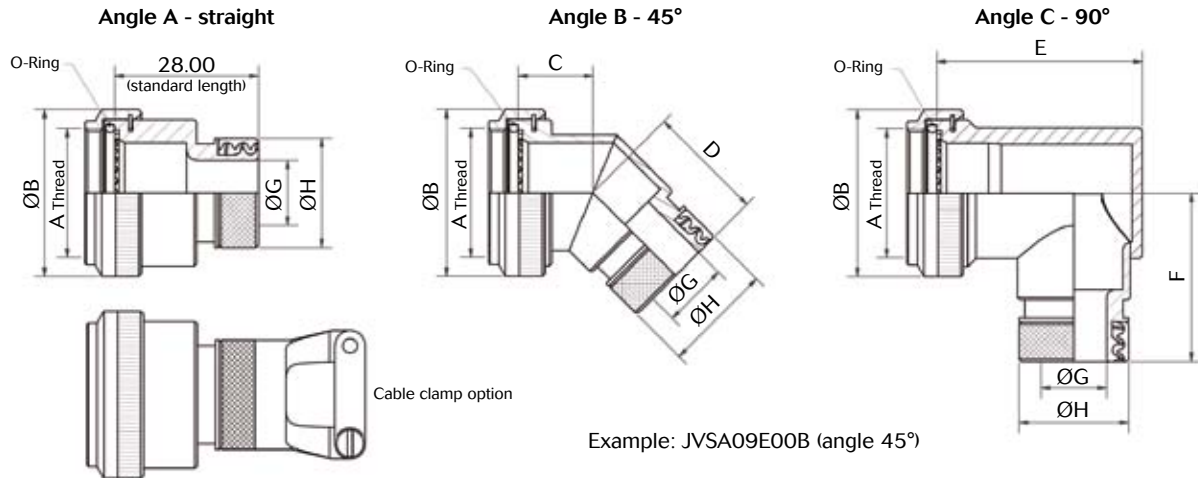
Note: All dimensions are in millimeters (mm)

# 8D Series

## D38999 Bronze Series



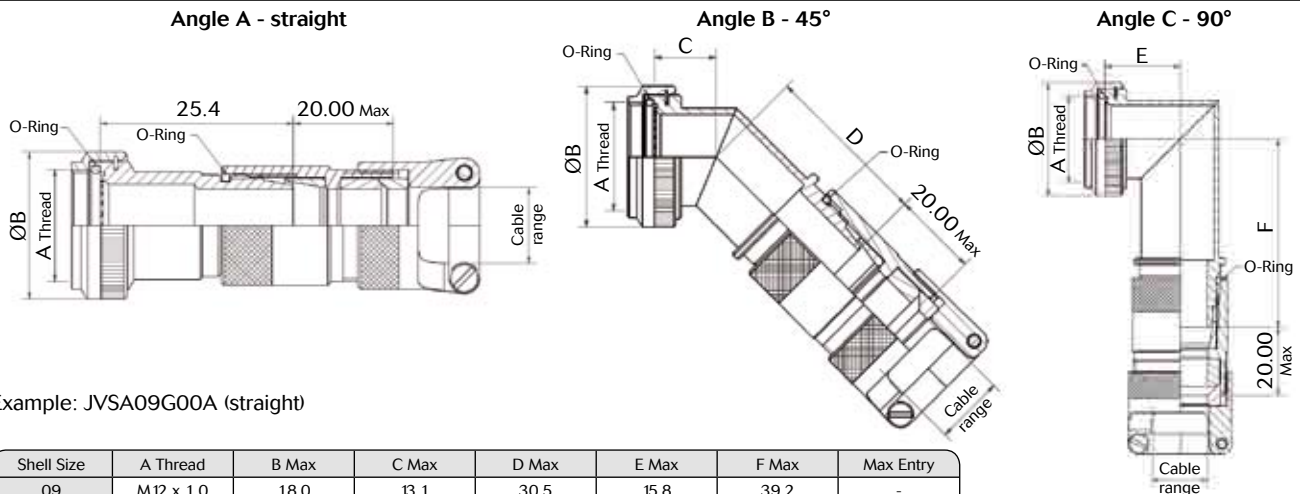
### Type E - Screened adaptor with braid trap



Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	Max Entry
09	M12 x 1.0	18.0	13.1	23.6	25.7	30.5	04
11	M15 x 1.0	21.0	13.9	24.4	26.7	32.2	06
13	M18 x 1.0	24.5	14.5	24.8	31.2	33.7	08
15	M22 x 1.0	29.0	15.5	25.6	37.2	35.2	10
17	M25 x 1.0	32.5	16.1	26.4	40.2	36.9	12
19	M28 x 1.0	35.5	16.8	26.8	44.7	38.5	13
21	M31 x 1.0	37.0	17.1	27.6	49.2	40.1	16
23	M34 x 1.0	40.0	17.7	28.0	51.7	41.6	18
25	M37 x 1.0	43.5	18.4	29.0	53.2	43.1	20

Entry Size	G	H Max	Entry Size	G	H Max
03	4.77	15.0	12	19.05	27.7
04	6.35	15.0	13	20.62	29.3
05	7.92	16.6	14	22.23	30.9
06	9.52	18.2	15	23.82	32.5
07	11.10	19.8	16	25.40	34.1
08	12.70	21.4	17	27.00	35.7
09	14.27	23.0	18	28.60	37.3
10	15.88	24.6	19	30.20	39.1
11	17.47	26.2	20	31.80	40.4

### Type G - Environmental cone clamp screened adaptor



Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	Max Entry
09	M12 x 1.0	18.0	13.1	30.5	15.8	39.2	-
11	M15 x 1.0	21.0	13.9	30.5	17.6	42.3	04
13	M18 x 1.0	24.5	14.5	32.5	19.0	42.8	06
15	M22 x 1.0	29.0	15.5	40.3	21.5	50.5	10
17	M25 x 1.0	32.5	16.1	43.1	23.1	52.8	12
19	M28 x 1.0	35.5	16.8	47.9	24.5	57.1	12
21	M31 x 1.0	37.0	17.1	47.9	25.3	57.1	16
23	M34 x 1.0	40.0	17.7	56.5	27.5	64.7	16
25	M37 x 1.0	43.5	18.4	56.5	28.3	64.7	16

Entry Size	Cable Range
04	3.2 - 7.9
06	6.4 - 11.1
08	9.8 - 14.3
10	8.9 - 15.9
12	12.7 - 19.1
16	15.9 - 23.8

Note: All dimensions are in millimeters (mm)

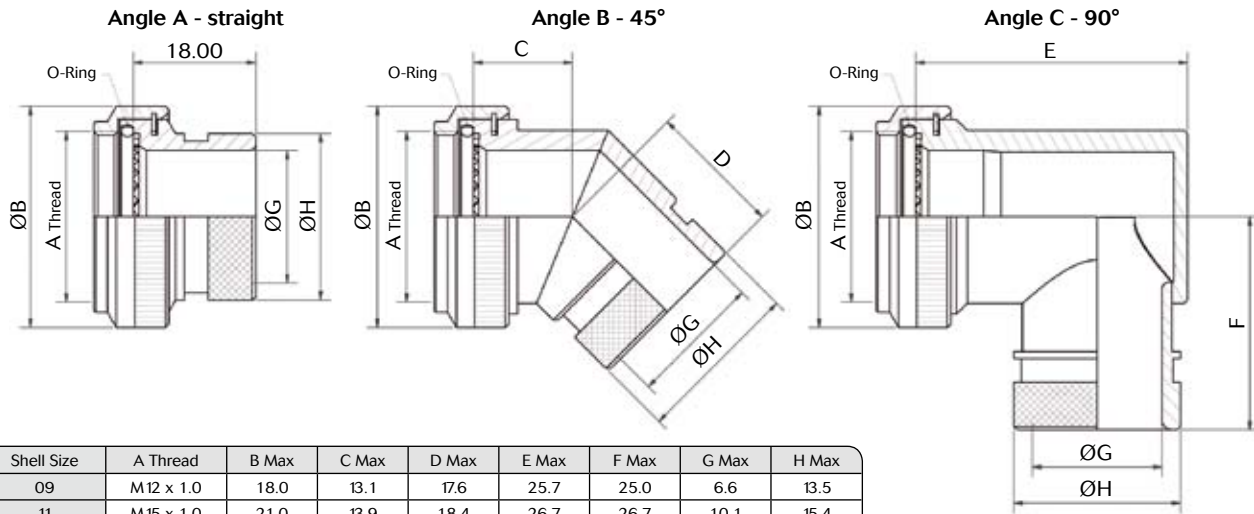


# 8D Series

## D38999 Bronze Series



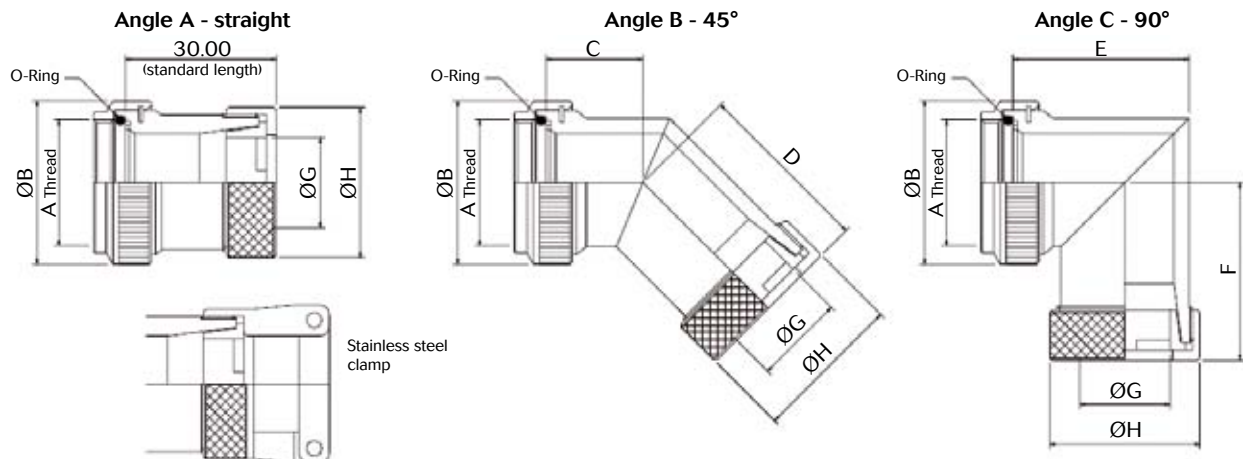
### Type P - Adaptor for heat shrink boot



Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	G Max	H Max
09	M12 x 1.0	18.0	13.1	17.6	25.7	25.0	6.6	13.5
11	M15 x 1.0	21.0	13.9	18.4	26.7	26.7	10.1	15.4
13	M18 x 1.0	24.5	14.5	19.3	31.2	28.2	13.4	19.7
15	M22 x 1.0	29	15.5	19.6	37.2	29.7	16.1	21.3
17	M25 x 1.0	32.5	16.1	20.4	40.2	31.4	19.3	24.5
19	M28 x 1.0	35.5	16.8	20.8	44.7	33.0	21.7	26.5
21	M31 x 1.0	37.0	17.1	21.6	49.2	34.6	25	31.0
23	M34 x 1.0	40.0	17.7	22.5	51.7	36.1	28.1	34.4
25	M37 x 1.0	43.5	18.4	22.9	53.2	37.6	31.3	36.6

Example: JVSA09P00C (angle 90°)

### Type X - Cone clamp screened adaptor



Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	G	H Max
09	M12 x 1.0	18.0	13.1	24.6	22.7	26.5	6.8	16.0
11	M15 x 1.0	21.0	13.9	25.4	26.2	28.2	9.5	19.0
13	M18 x 1.0	24.5	14.5	26.3	29.2	29.7	12.8	22.0
15	M22 x 1.0	27.5	15.5	26.7	32.2	31.2	14.8	25.4
17	M25 x 1.0	31.0	16.1	27.5	35.7	32.9	17.9	28.5
19	M28 x 1.0	34.0	16.8	27.8	39.7	34.5	20.0	32.0
21	M31 x 1.0	37.0	17.1	28.6	42.2	36.1	23.0	35.0
23	M34 x 1.0	40.0	17.7	29.5	45.2	37.6	26.4	38.0
25	M37 x 1.0	43.5	18.4	29.9	48.2	39.1	29.3	41.0

Example: JVSA09X00B (angle 45°)

Note: All dimensions are in millimeters (mm)

# 8D Series

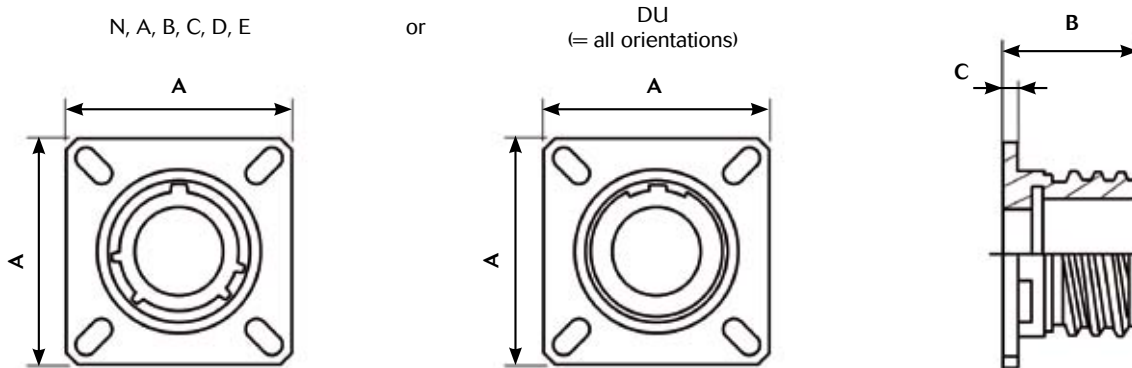
## D38999 Bronze Series



### Dummy receptacle

#### Orientations & dimensions

##### Orientations:

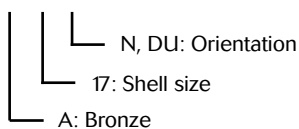


Shell size	9	11	13	15	17	19	21	23	25
A <sup>+0.3</sup> <sub>-0.3</sub>	23.8	26.2	28.6	31	33.3	36.5	39.7	42.9	46
B maxi	24.2	24.2	24.2	24.2	24.2	24.2	24.1	24.1	24.1
C maxi	2.5	2.5	2.5	2.5	2.5	2.5	3.2	3.2	3.2

#### Examples of Part Number:

. JVS BN 02 A 17 N

. JVS BN 02 A 17 DU



Equivalent to CECC blind hole. For information only: CECC75201002AxA00A (x = shell size A, B, C, D, ...)

CECC75201002EA00A (blind hole) = JVSBN02A17DU (through hole)

(no correspondance CECC with N, A, B, C, D, E orientations)

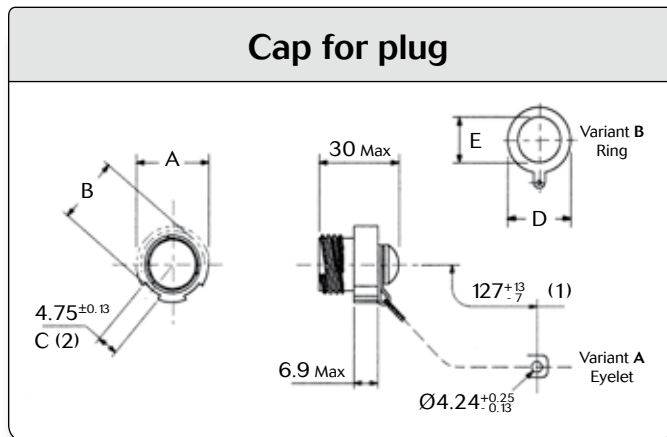
# 8D Series

## D38999 Bronze Series

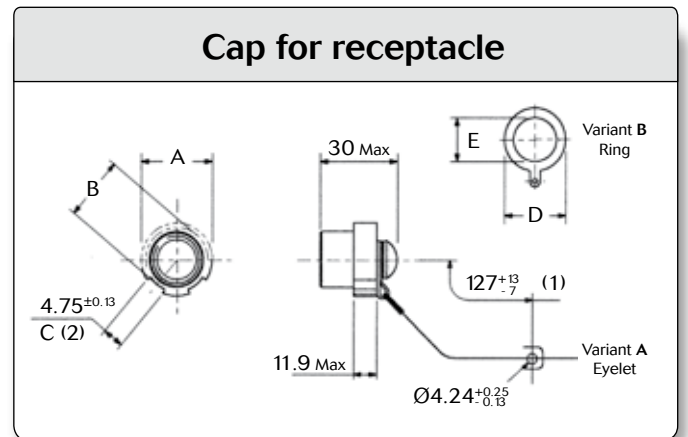


### Caps

Basic Series	JVS	B	09	B	00	A
Accessory style:	B: Protective cap					
Shell size:	09, 11, 13, 15, 17, 19, 21, 23, 25					
Variant:	A: Cap for plug with eyelet (see drawing below) B: Cap for plug with ring (see drawing below) C: Cap for receptacle with eyelet (see drawing below) D: Cap for receptacle with ring (see drawing below)					
Sub variant:	Not applicable					
Material:	A: Bronze					



(1) Flexible metal link - (2) Number of notch on A diameter



(1) Flexible metal link - (2) Number of notch on A diameter

Shell size	A Max	B Max	C	Cap for Plug		Cap for Receptacle	
				D Max	E Min	D Max	E Min
09 (A)	21.1	19.20	8	24.20	13.50	26.80	18.40
11 (B)	23.8	21.80		26.80	18.40	31.60	23.00
13 (C)	28.2	26.10	10	30.50	19.80	36.90	26.20
15 (D)	31.4	29.30		31.60	23.00	40.10	29.40
17 (E)	36.5	34.40	12	36.90	26.20	43.20	32.50
19 (F)	39.3	37.20		40.10	29.40	46.40	35.70
21 (G)	42.5	40.50	16	43.20	32.50	49.20	39.10
23 (H)	45.3	43.10		46.40	35.70	52.80	42.10
25 (J)	48.4	46.10		49.20	39.10	55.50	45.30

Equivalent to CECC, for information CECC75201002Bxy00A (x = shell size, y = variant)

Example: CECC75201002BAC00A = JVSB09C00A

Note: All dimensions are in millimeters (mm)

and Series.



# Common Section





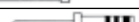



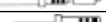

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# 8D Series

## Common Section



### 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 Concentric Twinax	Pin	-	M39029/90 529		
	Socket	-	M39029/91 530		
	Boot	8590-4571	-		
#4 Power	Pin	8599-7598 900 **	-	For wire 25 mm <sup>2</sup>	
	Socket	8599-7599 900 **	-		
	Pin	8599-7534	-	For wire 21.15 mm <sup>2</sup>	
	Socket	8599-7535	-		
	Boot	for cable 16 mm <sup>2</sup>	8599-4594	-	
		for cable 10 mm <sup>2</sup>	8599-4593	-	
Reductor cable 10 mm <sup>2</sup>		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.

# 8D Series

## Common Section



### Crimp contacts



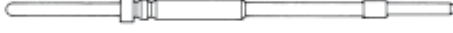








Contact size	Contact type	Contact Ø	Conductor section AWG		Conductor section mm <sup>2</sup>		External Ø over insulator	
			Min	Max	Min	Max	Min	Max
#26	Pin	0.50	30	24	0.055	0.215	0.60	0.83
	Socket							
#22D	Pin	0.76	28	22	0.095	0.34	0.76	1.37
	Socket							
#20	Pin	1.00	24	20	0.21	0.60	1.02	2.11
	Socket							
#16	Pin	1.60	20	16	0.60	1.34	1.65	2.77
	Socket							
#16 Coaxial	Pin	1.60	RG 174 RG 179 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	2.40	RG 174 RG 179 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		-	-	-	-	4.50	6.50
	Boot		-	-	-	-	2.50	4
	Reductor		-	-	-	-	-	-
	Reductor cable 10 mm <sup>2</sup>		-	-	-	-	-	-
#8 Coaxial	Pin	3.64	RG 180 A/U				-	2.80
	Socket							
	Boot							
#8 Concentric Twinax	Pin	5.50	0,76MIL-C17/176 00002 FILECA F.2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002				3.15	3.40
	Socket							
	Boot							
#4 Power	Pin	5.74	-	3	-	25	-	-
	Socket		5	4	16	21.15	-	-
	Pin		-	-	-	-	6.35	7.50
	Socket		-	-	-	-	4	5.80
	Boot		-	-	-	-	-	-
	Reductor cable 10 mm <sup>2</sup>		-	-	-	-	-	-
#4 Power with reduced barrel	Pin	5.74	6		13.3		-	-
	Socket							
	Boot		-	-	-	-		

# 8D Series

## Common Section



### Straight PC tail contacts

Contact size	Contact type	PC tail type	Part number	Profile
#26	Pin		F1P1P3E0020ALY	-
	Socket		F1P1ES32001A00	-
#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

Note: PC tail contacts without shoulder also available. Please see page 102.



# 8D Series

## Common Section



### 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

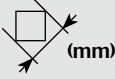


Contact size	Contact type	Part number
#22D	Pin	8599-0750 900
#20	Pin	8599-0077A 900
#16	Pin	8599-7482A 900
#12	Socket	8599-7485A 900

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

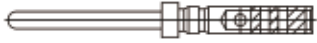

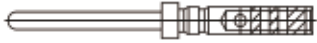





Contact type	Version	Souriau Part Number	Cross Norm	T°	Impedance	Sealing	Release
Pin	PCB mount	ETH1-1237A	-	125°C	100Ω	Sealed	Rear
		ETH1-1501A	-		150Ω		
	Crimp	ETH1-1345A	EN3155-074	200°C	100Ω		
		ETH1-1503A	-		150Ω		
Socket	PCB mount	ETH1-1238A	-	125°C	100Ω		
		ETH1-1502A	-		150Ω		
	Crimp	ETH1-1346A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

# 8D Series

## Common Section

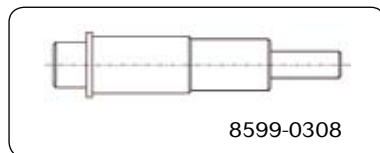


### Thermocouple contacts

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		mm <sup>2</sup>		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	0.75	28	22	0.095	0.34	0.76	1.37
	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	1	24	20	0.21	0.6	1.02	2.11
	Socket	8599-0765 900	8599-0965 900	 Violet / Grey / Yellow							

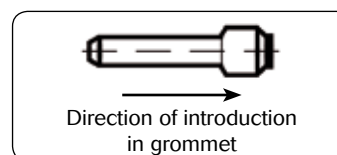
### Dummy contacts

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



### 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



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



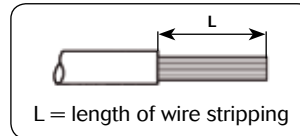
# 8D Series

## Common Section

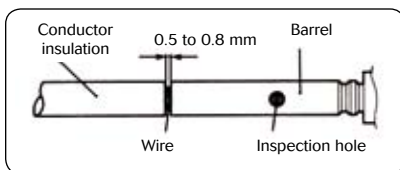
### Wiring instruction

#### Cable preparation and wire stripping

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



#### 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:*

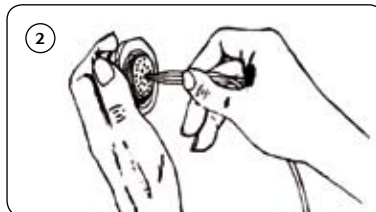
- Slide any accessories over wire strands before carrying out the following operations.
- Contacts are inserted and extracted from the rear of the connector.

#### Insertion of the contacts

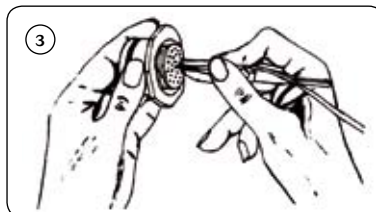
1 - Engage the crimp cable / contact assembly into the longitudinal slot of the plastic tool (coloured tip). Slide the tool down the cable until the tip of the tool abuts the contact retention shoulder.



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

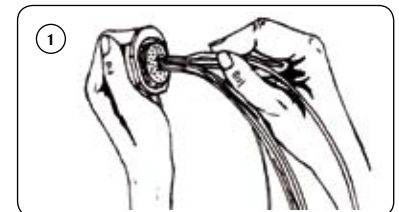


3 - Withdraw the tool (from rear). Check that contact is firmly locked by pulling wire gently. When connector is fully loaded, check the position of contact tips. They should all be in the same plane. Nota: For larger sizes of cable which are stiff enough manual insertion without tool is preferable.



#### Extraction of the contacts

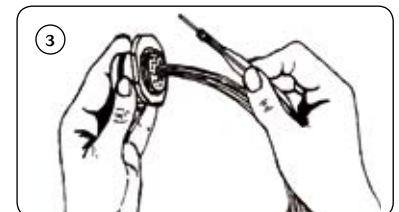
1 - Engage the appropriate cable into the longitudinal slot of the tool with the white tip towards connector.



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.



# 8D Series

## Common Section



### 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			
#26	Pin	-	-	-	8599-0397	-	-	-
	Socket	-	-	-	8599-0398	-	-	-
#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.

# 8D Series

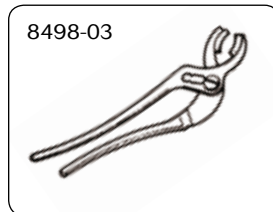
## Common Section



### 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	-	-

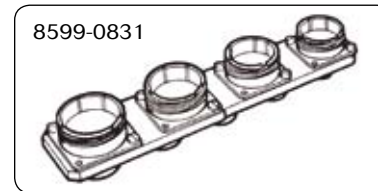
### Backshell tightening tools



8498-03

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

### Tightening support



8599-0831

Part number: **8599-0831**  
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.

### Tightening of rear accessories:

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

### Slackening tools



8498-04

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

# 8D Series

## Common Section



### Accessories

#### Gaskets

Shell size	Gasket for receptacles Type 0* (ordered separately)	O ring for receptacle Type 7
9 (A)	8599-5541	AS3582-019
11 (B)	8599-5542	AS3582-022
13 (C)	8599-5543	AS3582-024
15 (D)	8599-5544	AS3582-026
17 (E)	8599-5545	AS3582-028
19 (F)	8599-5546	AS3582-128
21 (G)	8599-5547	AS3582-130
23 (H)	8599-5548	AS3582-132
25 (J)	8599-5549	AS3582-134

\*For front mounting

#### Plastic protective caps\*

Shell size	Caps for receptacles	Caps for plugs	Caps for composite plugs only (J & M)	Antistatic caps for receptacles	Antistatic caps for plugs
9 (A)	70777	8500-5587 A	MS90376-12R	70777N	8500-5587N
11 (B)	MS90376-12R	70198	8500-5598	MS9037612RF	8500-5588N
13 (C)	MS90376-14R	8500-5600	8500-5600	MS9037614RF	8500-5600N
15 (D)	MS90376-16R	8500-5601	8500-5601	MS9037616RF	8500-5601N
17 (E)	70201	8500-5602	8500-5602	70201N	8500-5602N
19 (F)	70209	8500-5592 A	8500-5592 A	8500-5590N	8500-5592N
21 (G)	MS90376-22R	8500-5593 A	8500-5593 A	8500-5591N	8500-5593N
23 (H)	MS90376-24R	8500-5593 A	70472	8500-5592N	8500-5591N
25 (J)	8500-5593 A	J599ABC6009A00	J599ABC6009A00	8500-5593N	8500-5592N

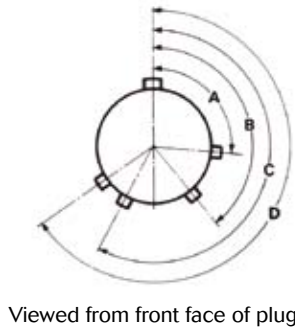
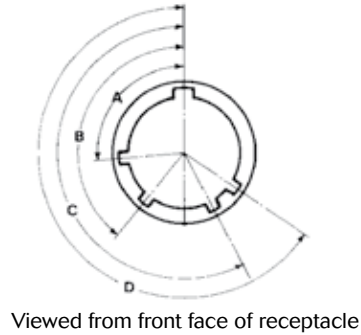
\*Excepted 8D composite version (X): supplied without cap

# 8D Series

## Common Section



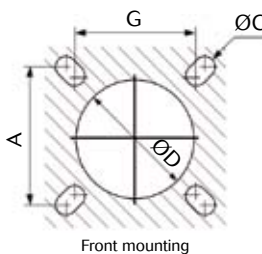
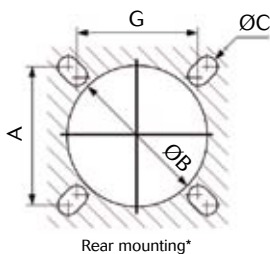
### Orientations



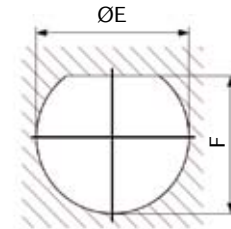
Shell size	Angles	N	A	B	C	D	E	T	V
9 (A)	A°	105	102	80	35	64	91	-	-
	B°	140	132	118	140	155	131		
	C°	215	248	230	205	234	197		
	D°	265	320	312	275	304	240		
11 (B) 15 (D)	A°	95	113	90	53	119	51	-	-
	B°	141	156	145	156	146	141		
	C°	208	182	195	220	176	184		
	D°	236	292	252	255	298	242		
13 (C)	A°	95	113	90	53	119	51	70	75
	B°	141	156	145	156	146	141	136	138
	C°	208	182	195	220	176	184	218	224
	D°	236	292	252	255	298	242	261	268
17 (E) 21 (G)	A°	80	135	49	66	62	79	58	85
	B°	142	170	169	140	145	153	162	150
	C°	196	200	200	200	180	197	188	191
	D°	293	310	244	257	280	272	316	307
19 (F) 23 (H) 25 (J)	A°	80	135	49	66	62	79	-	-
	B°	142	170	169	140	145	153		
	C°	196	200	200	200	180	197		
	D°	293	310	244	257	280	272		

### Panel cut-out

Square flange receptacle (Type 0)



Jam nut receptacle (Type 7)



Shell size	A	G	B min.	C ±0.13	D min.	E ±0.25	F
9 (A)	18.26	15.09	16.66	3.25	13.11	17.78	17.02
11 (B)	20.62	18.26	20.22		15.88	20.96	19.59
13 (C)	23.01	20.62	23.42		19.05	25.65	24.26
15 (D)	24.61	23.01	26.59		23.01	28.83	27.56
17 (E)	26.97	24.61	30.96		25.81	32.01	30.73
19 (F)	29.36	26.97	32.94		28.98	35.18	33.91
21 (G)	31.75	29.36	36.12		32.16	38.35	37.08
23 (H)	34.93	31.75	39.29	3.91	34.93	41.53	40.26
25 (J)	38.10	34.94	42.47*		37.69	44.70	43.43

\* For Type 0 composite shell rear mounting: 43.77 mm.

Max. thickness panel for receptacle: Type 0: front mounting = 3.2 mm, rear mounting = 2.5 mm  
Type 7: 3.2 mm

# 8D Series

## Common Section



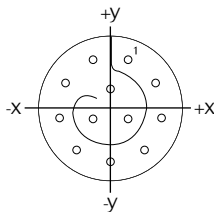
### Coordinates for straight PC tail terminations

#### 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

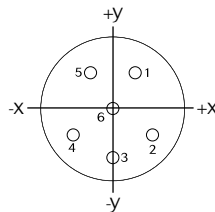
**12**



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

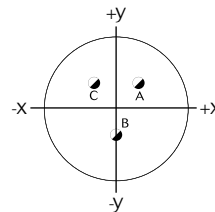
Ctc	X	Y
7	-2.66	-0.47
8	-2.34	+1.35
9	-0.92	+2.54
10	0.00	+1.03
11	+0.89	-0.51
12	-0.89	-0.51

**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

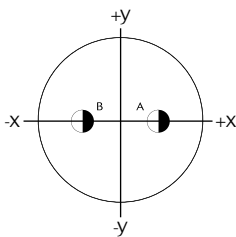
**98**



Ctc	X	Y
A	+1.65	+0.97
B	0.00	-1.90
C	-1.65	+0.97

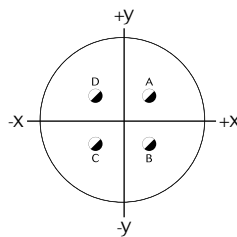
#### 11 / B

**02**



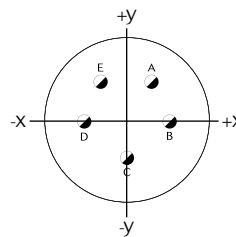
Ctc	X	Y
A	0.00	+2.41
B	0.00	-2.41

**04**



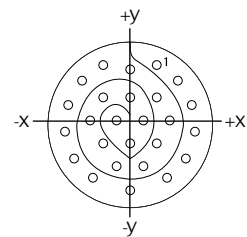
Ctc	X	Y
A	+1.65	+1.65
B	+1.65	-1.65
C	-1.65	-1.65
D	-1.65	+1.65

**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

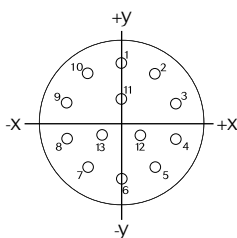
**26**



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



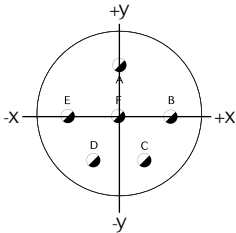
# 8D Series

## Common Section



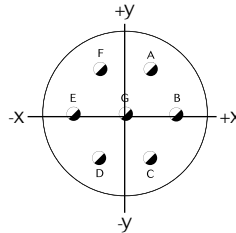
11 / B

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

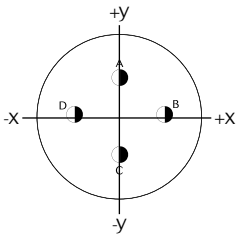
99



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

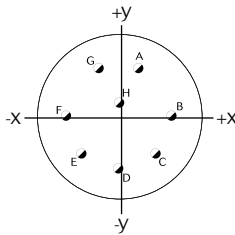
13 / C

04



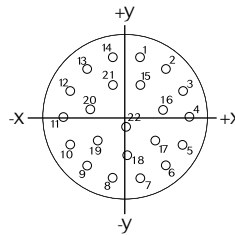
Ctc	X	y
A	0.00	+3.81
B	+3.71	+0.89
C	0.00	-2.11
D	-3.71	+0.89

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

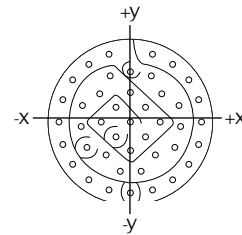
35



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

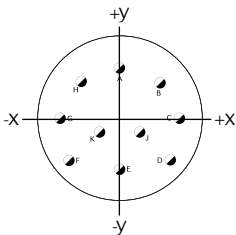
43



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

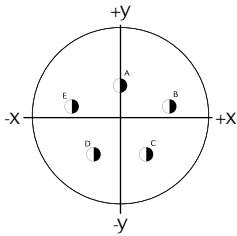
# 8D Series

## Common Section



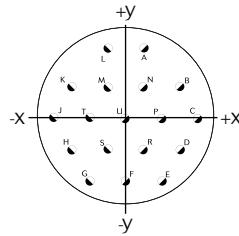
15 / D

05



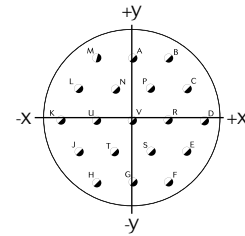
Ctc	X	y
A	0	+2.54
B	+4.42	+0.61
C	+2.39	+3.76
D	-2.39	-3.76
E	-4.42	+0.61

18



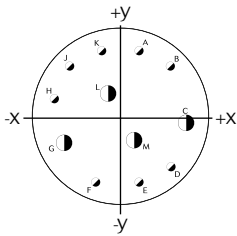
Ctc	X	y
A	+1.65	+6.40
B	+4.95	+2.87
C	+6.60	0.00
D	+4.95	-2.87
E	+3.30	-5.72
F	0.00	-5.72
G	-3.30	-5.72
H	-4.95	-2.87
J	-6.60	0.00
K	-4.95	+2.87
L	-1.65	+6.40
M	-1.65	+2.87
N	+1.65	+2.87
P	+3.30	0.00
R	+1.65	-2.87
S	-1.65	-2.87
T	-3.30	0.00
U	0.00	0.00

19



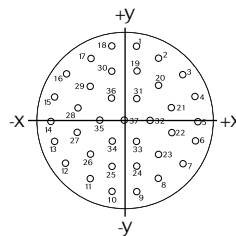
Ctc	X	y
A	0.00	+5.72
B	+3.30	+5.72
C	+4.95	+2.87
D	+6.60	0.00
E	+4.95	-2.87
F	+3.30	-5.72
G	0.00	-5.72
H	-3.30	-5.72
J	-4.95	-2.87
K	-6.60	0.00
L	-4.95	+2.87
M	-3.30	+5.72
N	-1.65	+2.87
P	+1.65	+2.87
R	+3.30	0.00
S	+1.65	-2.87
T	-1.65	-2.87
U	-3.30	0.00
V	0.00	0.00

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
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

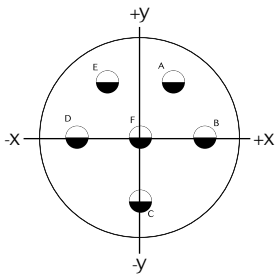
# 8D Series

## Common Section



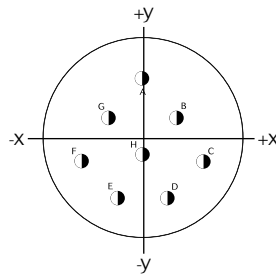
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06



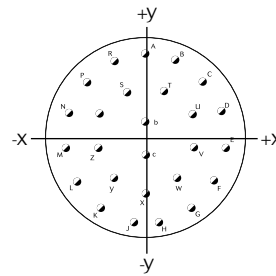
Ctc	X	y
A	+3.07	+5.31
B	+6.12	0.00
C	0.00	-6.12
D	-6.12	0.00
E	-3.07	+5.31
F	0.00	0.00

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

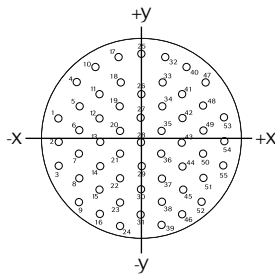
26



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



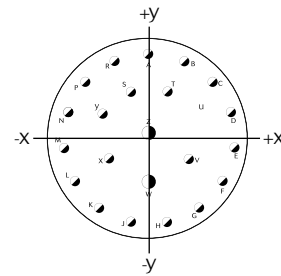
Ctc	X	y
1	-7.92	+2.18
2	-7.92	-0.10
3	-7.92	-2.39
4	-6.15	+5.61
5	-5.94	+3.33
6	-5.94	+1.04
7	-5.94	-1.24
8	-5.94	-3.53
9	-5.94	-5.82
10	-4.37	+7.09
11	-3.96	+4.47
12	-3.96	+2.18

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

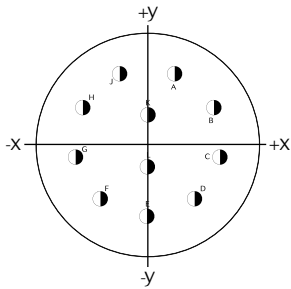
# 8D Series

## Common Section



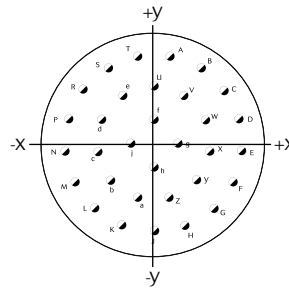
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11



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

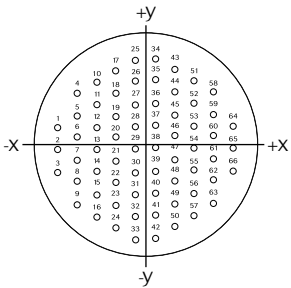
32



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

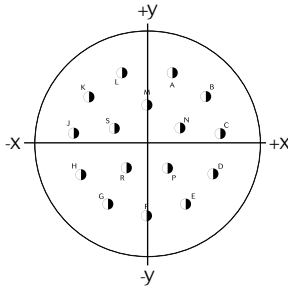
# 8D Series

## Common Section



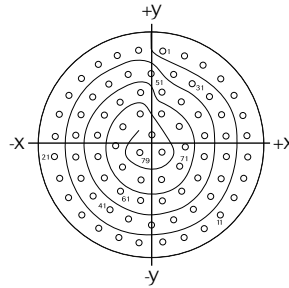
21 / G

16



Ctc	X	y	Ctc	X	y
A	+3.00	+8.18	J	-8.66	+0.91
B	+6.88	+5.36	K	-6.88	+5.36
C	+8.66	+0.91	L	-3.00	+8.18
D	+7.82	-3.81	M	0.00	+4.45
E	+4.62	-7.37	N	+3.91	+1.57
F	0.00	-8.71	P	+2.39	-3.10
G	-4.62	-7.37	R	-2.39	-3.10
H	-7.82	-3.81	S	-3.91	+1.57

35



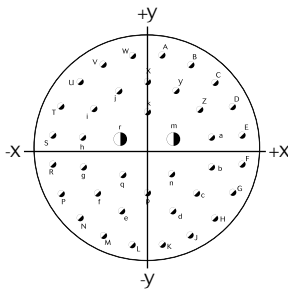
Ctc	X	y
1	+1.35	+10.82
2	+3.71	+10.26
3	+5.89	+9.19
4	+7.77	+7.67
5	+9.27	+5.77
6	+10.31	+3.58
7	+10.85	+1.22
8	+10.85	-1.22
9	+10.31	-3.58
10	+9.27	-5.77
11	+7.77	-7.67
12	+5.89	-9.19
13	+3.71	-10.26

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

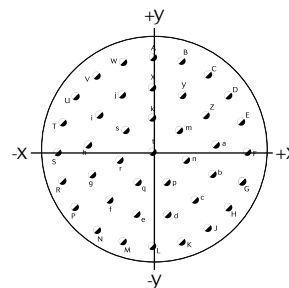
Ctc	X	y
58	+3.40	-5.05
59	+1.22	-6.12
60	-1.22	-6.12
61	-3.40	-5.05
62	-5.28	-3.53
63	-6.02	-1.22
64	-6.02	+1.22
65	-5.28	+3.53
66	-3.40	+5.05
67	-1.22	+3.71
68	+1.22	+3.71
69	+3.18	+2.29
70	+3.94	0.00
71	+3.18	-2.29
72	+1.22	-3.71
73	-1.22	-3.71
74	-3.18	-2.29
75	-3.94	0.00
76	-3.18	+2.29
77	0.00	+1.35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

39



Ctc	X	y	Ctc	X	y	Ctc	X	y
A	+1.65	+10.44	P	-9.42	-4.80	d	+2.84	-6.73
B	+4.80	+9.42	R	-10.44	-1.65	e	-2.84	-6.73
C	+7.47	+7.47	S	-10.44	+1.65	f	-5.51	-4.80
D	+9.42	+4.80	T	-9.42	+4.80	g	-7.11	-1.88
E	+10.44	+1.65	U	-7.47	+7.47	h	-7.11	+1.45
F	+10.44	-1.65	V	-4.80	+9.42	i	-5.89	+4.55
G	+9.42	-4.80	W	-1.65	+10.44	j	-3.20	+6.50
H	+7.47	-7.47	X	0.00	+7.49	k	0.00	+4.17
J	+4.80	-9.42	Y	+3.20	+6.50	m	+2.90	+1.22
K	+1.65	-10.44	Z	+5.89	+4.55	n	+2.69	-2.72
L	-1.65	-10.44	a	+7.11	+1.45	p	0.00	-4.80
M	-4.80	-9.42	b	+7.11	-1.88	q	-2.69	-2.72
N	-7.47	-7.47	c	+5.51	-4.80	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

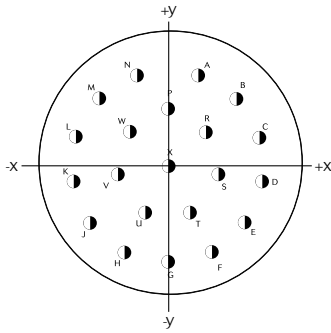
# 8D Series

## Common Section



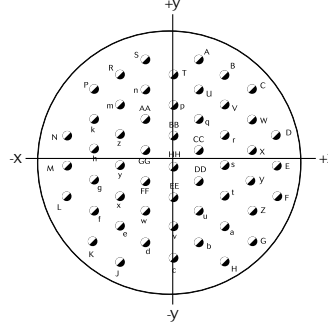
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21



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



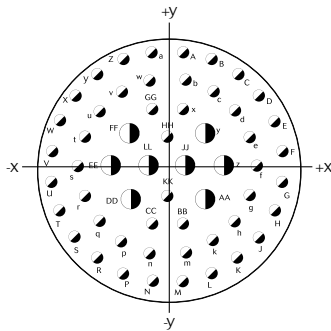
Ctc	X	y
N	-11.43	+3.30
P	-8.53	+8.26
R	-5.72	+9.91
S	-2.84	+11.56
T	0.00	+9.91
U	+2.84	+8.26
V	+5.72	+6.60
W	+8.53	+4.95
X	+8.53	+1.65
Y	+8.53	-1.65
Z	+8.53	-4.95
a	+5.72	-6.60
b	+2.84	-8.26
c	0.00	-9.91
d	-2.84	-8.26
e	-5.72	-6.60
f	-8.53	-4.95
g	-8.53	-1.65
h	-8.53	+1.65
k	-8.53	+4.95
m	-5.72	+6.60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

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

### 25 / J

04



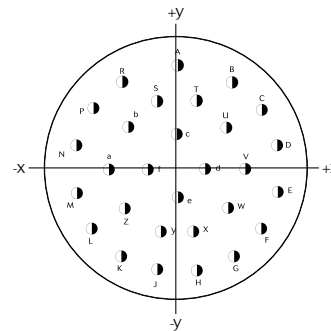
Ctc	X	y
A	+1.75	+13.49
B	+5.16	+12.57
C	+8.23	+10.80
D	+10.77	+8.28
E	+12.52	+5.21
F	+13.49	+1.75
G	+13.49	-1.75

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

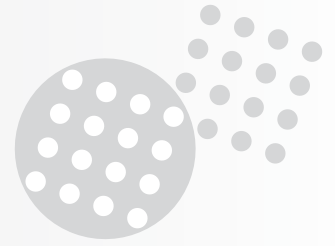
29



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

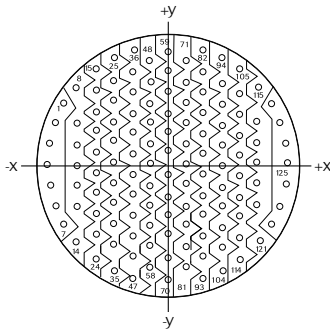
Ctc	X	y
J	-2.31	-11.99
K	-6.68	-10.31
L	-10.03	-7.04
M	-11.91	-2.77
N	-11.91	+2.77
P	-10.03	+7.04
R	-6.55	+10.31
S	-2.31	+8.15
T	+2.31	+8.15
U	+5.79	+4.93
V	+8.10	0.00
W	+6.10	-4.60
X	+2.31	-7.37
Y	-2.31	-7.37
Z	-6.10	-4.60
a	-8.10	0.00
b	-5.79	+4.93
c	0.00	+4.09
d	+3.40	0.00
e	0.00	-3.30
f	-3.40	0.00

# 8D Series Common Section



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

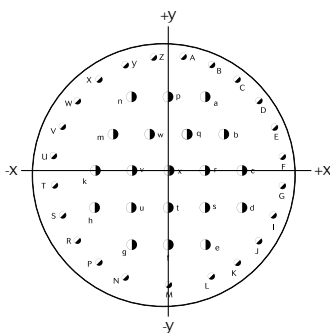
Ctc	X	y
27	-6.32	+7.24
28	-6.32	+4.83
29	-6.32	+2.41
30	-6.32	0.00
31	-6.32	-2.41
32	-6.32	-4.83
33	-6.32	-7.24
34	-6.32	-9.65
35	-6.32	-12.07
36	-4.06	+13.49
37	-4.22	+10.85
38	-4.22	+8.43
39	-4.22	+6.02
40	-4.22	+3.61
41	-4.22	+1.19
42	-4.22	-1.19
43	-4.22	-3.61
44	-4.22	-6.02
45	-4.22	-8.43
46	-4.22	-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

Ctc	X	y
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

Ctc	X	y
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

Ctc	X	y
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

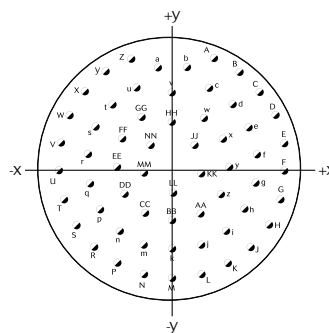
43



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

Ctc	X	y
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

Ctc	X	y
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

Ctc	X	y
V	-13.39	+2.57
W	-12.32	+5.84
X	-10.49	+8.71
Y	-7.98	+11.05
Z	-4.98	+12.70
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

Ctc	X	y
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

and Series.





## 8D Series

# Derived Series

■ Reinforced sealing Series .....	86
■ Hermetic Series .....	88
■ Integrated clinch nuts .....	95
■ Double flange .....	98
■ PCB contacts without shoulder .....	102
■ High density .....	104
■ Quadrax contacts .....	106
■ Power contacts .....	112
■ High power contacts .....	117
■ Optical ELIO® contacts .....	123
■ BMA coaxial contacts .....	130
■ RJ45/USB Series .....	134



# 8D Series

## Reinforced Sealing Series



## Description

- Reinforced sealed receptacle with male or female straight PC tail contacts
- Strong hermetic performance:  
 $10^{-7}$  atm.cm<sup>3</sup>/s
- 100 % scoop proof
- High density connectors
- Compact, low profile design
- Weight saving compared to hermetic version
- Reinforced sealing for harsh environments

## Technical features

### Mechanical

- **Shell plating:**
  - . Aluminum shell:
    - . Black zinc nickel (Z)
    - . Green zinc cobalt (ZC)
    - . Olive drab cadmium (W)
    - . Nickel (F)
  - . Composite shell:
    - . Olive drab cadmium (J)
    - . Nickel (M)
  - . Stainless steel shell:
    - . Nickel (S)
    - . Passivated (K)
  - . Titanium shell:
    - . Nickel (TF)
    - . Without plating (TT)
- **Insulator:** Thermoplastic
- **Interfacial seal:** Silicone elastomer
- **Contacts:** Copper alloy
- **Contacts plating:** Gold over nickel plated
- **Endurance:** 500 mating/unmating operations
- **Shock:** 300g, 3 ms
- **Vibration:**
  - . Sinus: 10 to 2000 Hz-30g, 3x12h
  - . Random: 50 to 2000 Hz, 2x8h

### Electrical

- **Test voltage rating (Vrms) sea level:**  
1300 to 2300Vrms
- **Contact resistance:** From 2 to 14.6m $\Omega$
- **Insulation resistance:**  $\geq 5000M\Omega$  at 500Vdc
- **Shielding:**
  - . 65db - 10GHz (F)
  - . 50db - 10GHz (W)
  - . 85db - 1GHz (F & W)
- **Shell continuity:**
  - . F; TF; S: 1m $\Omega$
  - . Z; ZC; W: 2.5m $\Omega$
  - . J; M: 3m $\Omega$
  - . JVS: 5m $\Omega$
  - . TT; K: 10m $\Omega$

### Climatics

- **Temperature range:** -65°C +125°C
- **Sealing:**  $10^{-7}$  atm.cm<sup>3</sup>/s
- **Salt spray:**
  - . F; S; TF: 48h
  - . ZC: 250h
  - . Z; W; JVS; TT; K; S: 500h
  - . X; J; M: 2000h
- **Damp heat:** MIL C: 10x24h
- **Resistance to fluids:**
  - . According to MIL-DTL-38999 standard:  
Synthetic hydraulic fluid: Skydrol 500 B4



# 8D Series

## Reinforced Sealing Series

### Ordering information

<b>Basic Series:</b>	<b>8DR</b>	<b>0</b>	<b>C</b>	<b>11</b>	<b>F</b>	<b>35</b>	<b>P</b>	<b>N</b>
<b>Shell type:</b>								
<b>0:</b> Square flange receptacle								
<b>1:</b> In line receptacle (8D aluminum only)								
<b>7:</b> Jam nut receptacle (except 8D Composite)								
<b>Contact type:</b>								
<b>C:</b> Receptacle with short PC tail (male and female #22D, #20, #16)								
<b>L:</b> Connector with long PC tail (male and female #22D)								
<b>S:</b> Connector with specific PC Tail (male and female #22D)								
<b>M:</b> Connector with medium PC tail (male #22D)								
<b>P:</b> Connector with solder cup: . Pin: #22D, #20 & #16; Socket: #12 . Socket: #22D, #20 & #16; Pin: #12 - Please consult us								
<b>Shell size:</b>								
<b>09, 11, 13, 15, 17, 19, 21, 23, 25</b>								
<b>Aluminum plating:</b>								
<b>F:</b> Nickel								
<b>Z:</b> Black zinc nickel								
<b>W:</b> Olive drab cadmium								
<b>ZC:</b> Green zinc cobalt								
<b>Composite plating:</b>								
<b>J:</b> Olive drab cadmium								
<b>M:</b> Nickel								
<b>Stainless steel plating:</b>								
<b>K:</b> Passivated								
<b>S:</b> Nickel								
<b>Titanium plating:</b>								
<b>TT:</b> Without plating								
<b>TF:</b> Nickel								
<b>Contact layout:</b>								
See pages 13 to 17								
<b>Contact type:</b>								
<b>P:</b> Male								
<b>S:</b> Female								
<b>Orientation:</b>								
<b>N, A, B, C, D, E</b>								

# 8D Series

## Hermetic Series



## Description

- Glass sealed hermetic:
  - . high hermeticity performance
  - . compact low profile
- Quick screw coupling according to EN3645 and MIL-DTL-38999 Series III standards
- Robust stainless steel adapted for any weld/solder operation
- Various mounting styles:
  - . compact solder mount receptacle
  - . easy to fix square flange receptacle
  - . easy to replace jam nut receptacle
- Signal and power contacts
- Various PCB contact versions available
- Special fuel tank versions for long term fuel immersion
- 230V qualified versions where higher voltage is used to reduce cable weight

## Applications

Any application where a pressure difference must be insured such as:

- aircraft equipment in unpressurized areas (fuel tanks, actuators, ...)
- Pyrotechnic equipments
- Hightech surveillance, cameras

## Technical features

### Mechanical

- **Shell:**
  - . Class Y: passivated stainless steel
  - . Class N: nickel plated stainless steel
- **Seals:** silicone elastomer
- **Contact:** gold plated ferrous alloy
- **Endurance:** 500 mating/unmating operations

### Electrical

- **Max current rating per contact:**

Contact size	22D	20	16	12	8	4
Rating (A)	3	5	10	17	33	60

- **Dielectric withstanding voltage:**

Service	sea level	at 30 000 m
M	1300 Vrms	800 Vrms
I	1800 Vrms	1000 Vrms
II	2300 Vrms	1000 Vrms

- **Shielding:**
  - . Class Y: 45 dB min at 10 GHz
  - . Class N: 65 dB min at 10 GHz
- **Insulation resistance:**  
5000 MΩ (under 500 Vdc)

### Environmental

- **Operating temperature:** -65°C to 200°C
- **Hermeticity:** leak rate  $< 10^{-7}$  atm.cm<sup>3</sup>/s (helium gas test)
- **Salt spray:**
  - . Class Y: 500 hours
  - . Class N: 48 hours
- **Resistance to fluids per MIL-DTL-38999:**
  - . Gasoline JP5 (OTAN 44) - short immersion
  - . Mineral hydraulic fluid MIL-H-5606 (OTAN H515)
  - . Synthetic hydraulic fluid Skydrol 500 B4
- **Fuel immersion version:**
  - . JP5 - long term immersion
  - . 105°C max.

# 8D Series

## Hermetic Series



### Contact layouts (matrix)

Shell size	Layout	F38999	8D type 21 Spec. 600*	8D Spec. 022*	Number of contacts					
					#22D	#20	#16	#12	#08	#04
09	09-35				6					
	09-98					3				
11	11-35				13					
	11-98					6				
13	13-04						4			
	13-08					8				
	13-35				22					
	13-98					10				
15	15-19					19				
	15-35				37					
	15-97					8	4			
17	17-08						8			
	17-26					26				
	17-35				55					
19	19-35				66					
21	21-48								4	
23	23-53					53				
25	25-04					48	8			

Souriau's layout

Q Souriau's qualified layout

\* Spec. 600 = 230V qualified connector; Spec. 022 = Fuel tank version

### Orientation

#### Orientations

Viewed from front face of receptacle

Viewed from front face of plug

Shell size	Angles	N	A	B	C	D	E	T	V
9 (A)	A°	105	102	80	35	64	91		
	B°	140	132	118	140	155	131		
	C°	215	248	230	205	234	197	-	-
	D°	265	320	312	275	304	240		
11 (B) 15 (D)	A°	95	113	90	53	119	51		
	B°	141	156	145	156	146	141		
	C°	208	182	195	220	176	184	-	-
	D°	236	292	252	255	298	242		
13 (C)	A°	95	113	90	53	119	51	70	75
	B°	141	156	145	156	146	141	136	138
	C°	208	182	195	220	176	184	218	224
	D°	236	292	252	255	298	242	261	268
17 (E) 21 (G)	A°	80	135	49	66	62	79	58	85
	B°	142	170	169	140	145	153	162	150
	C°	196	200	200	200	180	197	188	191
	D°	293	310	244	257	280	272	316	307
19 (F) 23 (H) 25 (J)	A°	80	135	49	66	62	79		
	B°	142	170	169	140	145	153		
	C°	196	200	200	200	180	197	-	-
	D°	293	310	244	257	280	272		

# 8D Series

## Hermetic Series



### Connector part numbers

#### Standard configuration

<b>Basic Series</b>	<b>F38999</b>	<b>21</b>	<b>y</b>	<b>A</b>	<b>35</b>	<b>P</b>	<b>N</b>	<b>WF</b>
<b>Shell style:</b>								
21: Square flange receptacle								
23: Jam nut receptacle								
25: Solder mount receptacle								
<b>Class:</b>								
y: Passivated stainless steel								
N: Nickel plated stainless steel								
<b>Shell size:</b>								
09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J								
<b>Contact layout:</b>								
See previous page and pages 13 to 17								
<b>Contact type:</b>								
P: Male solder cup								
C: Male PC tail contacts								
<b>Orientation:</b>								
N, A, B, C, D, E, T, V								
<b>Specification:</b>								
WF: Standard								
600: 230V qualified connector (layouts 13-04, 17-08, 21-11 & 21-48 - orientation T & V)								

#### Specific configuration

<b>Basic Series</b>	<b>8D</b>	<b>0</b>	<b>y</b>	<b>13</b>	<b>35</b>	<b>P</b>	<b>N</b>	<b>022</b>
<b>Shell style:</b>								
0: Square flange receptacle								
1: Solder mount receptacle								
7: Jam nut receptacle								
<b>Class:</b>								
y: Passivated stainless steel								
N: Nickel plated stainless steel								
<b>Shell size:</b>								
09, 11, 13, 15, 17, 19, 21, 23, 25								
<b>Contact layout:</b>								
See previous page and pages 13 to 17								
<b>Contact type:</b>								
P: Male solder cup								
C: Male PC tail contacts								
<b>Orientation:</b>								
N, A, B, C, D, E								
<b>Specification:</b>								
022: Fuel tank								
840: Short PC tail contact								
850: Long PC tail contact								

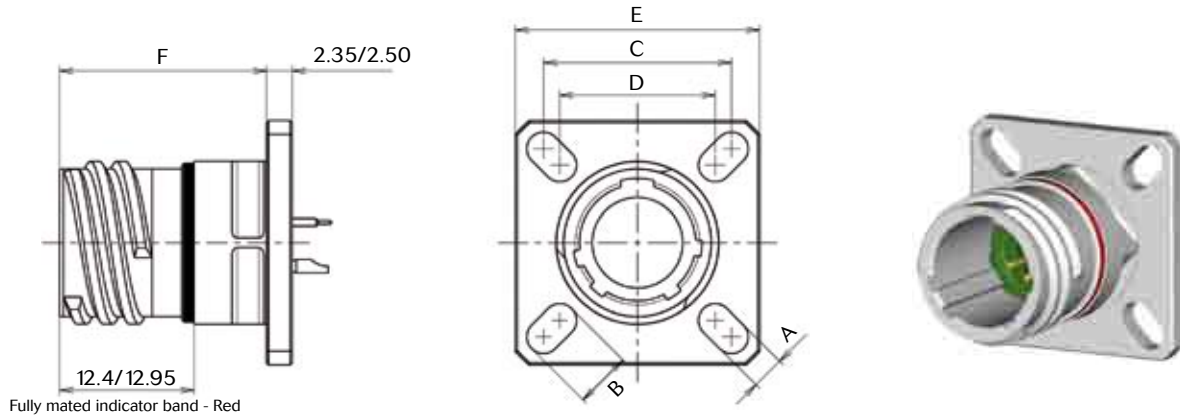
# 8D Series

## Hermetic Series

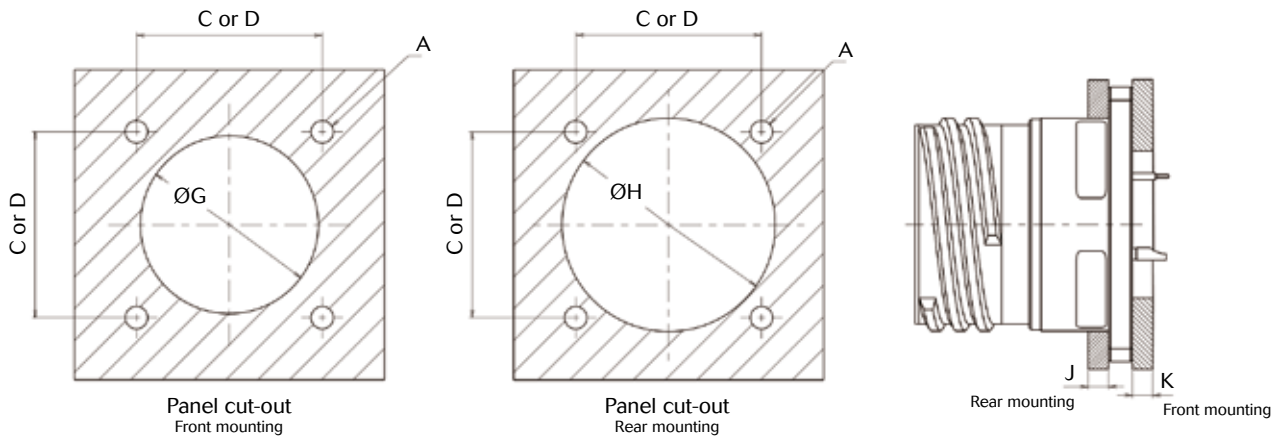


### Dimensions

#### Square flange receptacle (type 21)



Shell size	A ± 0.20	B ± 0.20	C	D	E ± 0.30	F max	Ø G	Ø H	J max	K max
A (9)	3.25	5.49	18.26	15.09	23.80	20.40	13.11	16.66	2.5	3.2
B (11)		4.93	20.62	18.26	26.20		15.88	20.22		
C (13)		23.01	20.62	28.60	19.05		23.42			
D (15)		4.39	24.61	23.01	31.00		23.01	26.59		
E (17)		26.97	24.61	33.30	25.81		30.96			
F (19)		4.93	29.36	26.97	36.50		28.98	32.94		
G (21)	3.91	6.15	31.75	29.36	39.70	32.16	36.12			
H (23)			34.93	31.75	42.90	34.93	39.29			
j (25)			38.10	34.93	46.00	37.69	42.47			



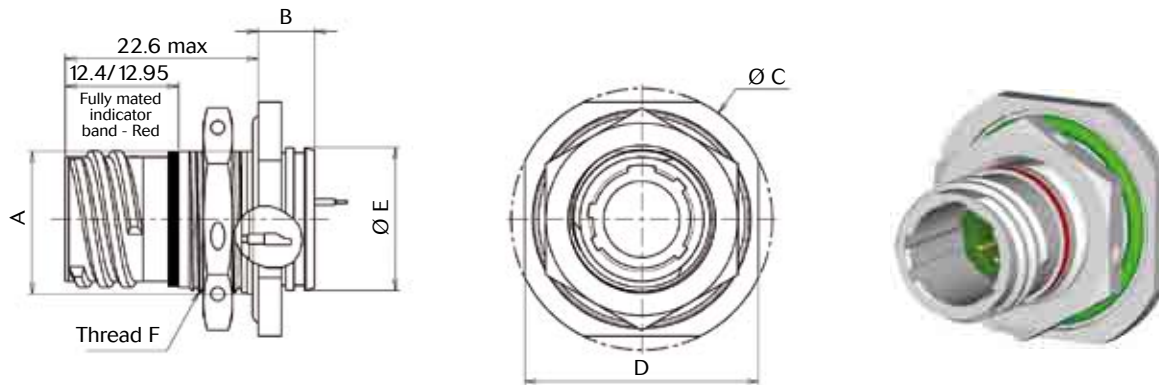
Note: All dimensions are in millimeters (mm)

# 8D Series

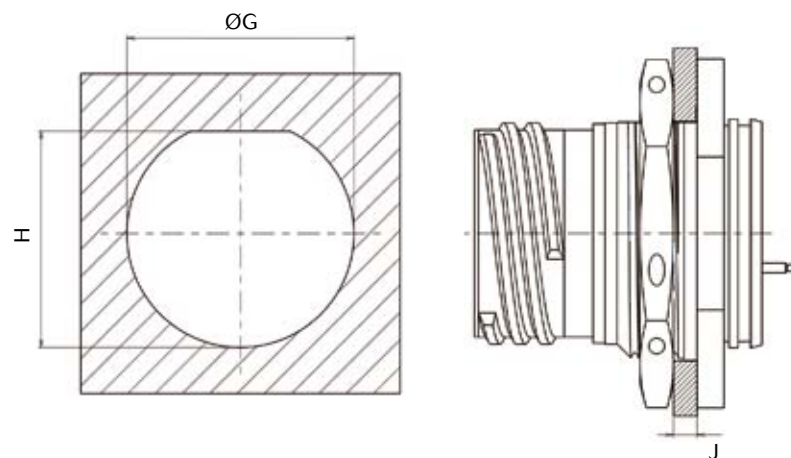
## Hermetic Series



### Jam nut receptacle (type 23)



Shell size	A flat $\pm \begin{smallmatrix} 0.10 \\ -0.15 \end{smallmatrix}$	B max	$\text{Ø C} \pm 0.30$	$\text{Ø D} \pm 0.40$	$\text{Ø E} \pm \begin{smallmatrix} 0.30/0 \end{smallmatrix}$	F thread	$\text{Ø G} \pm 0.25$	H	J
A (9)	16.53	9.10	30.20	27.00	16.30	M17 x 1-6g	17.78	17.02	3.2
B (11)	19.07		34.90	31.80	19.40	M20 x 1-6g	20.96	19.59	
C (13)	23.82		38.10	34.90	22.70	M25 x 1-6g	25.65	24.26	
D (15)	26.97		41.30	38.10	25.90	M28 x 1-6g	28.83	27.56	
E (17)	30.15		44.50	41.30	29.00	M32 x 1-6g	32.01	30.73	
F (19)	33.32	9.70	49.20	46.00	32.20	M35 x 1-6g	35.18	33.91	
G (21)	36.50		52.40	49.20	35.40	M38 x 1-6g	38.35	37.08	
H (23)	39.67		55.60	52.40	38.60	M41 x 1-6g	41.53	40.26	
J (25)	42.85		58.70	55.60	41.70	M44 x 1-6g	44.70	43.43	



Note: All dimensions are in millimeters (mm)

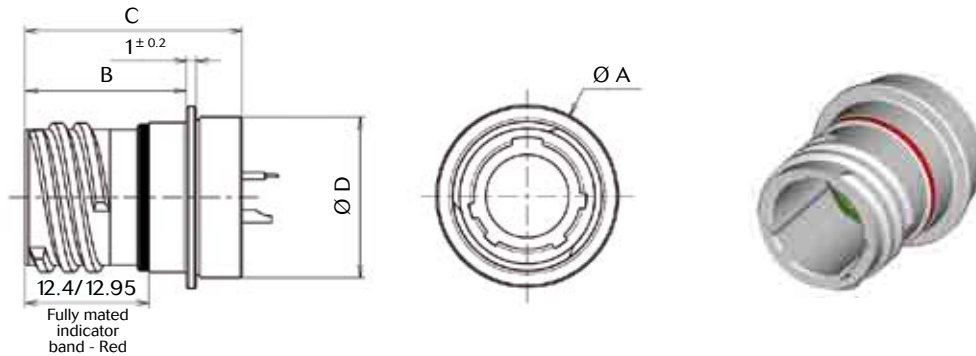


# 8D Series

## Hermetic Series



### Solder mounting receptacle (type 25)



Shell size	Ø A max	B max	C max	D max
A (9)	19.40	17.20	23.80	17.10
B (11)	21.80			19.90
C (13)	24.90			23.10
D (15)	28.10			26.20
E (17)	31.30			29.40
F (19)	33.60			31.80
G (21)	36.80			35.00
H (23)	40.00		24.60	38.20
J (25)	43.20	41.30		

### Maximum connector weights (in gramms)

Shell size	Square flange receptacle	Jam nut receptacle	Solder mount receptacle
09 (A)	23	39	21
11 (B)	28	53	25
13 (C)	35	63	31
15 (D)	41	73	38
17 (E)	57	92	53
19 (F)	60	106	55
21 (G)	65	118	57
23 (H)	75	132	68
25 (J)	91	154	83

Note: All dimensions are in millimeters (mm)

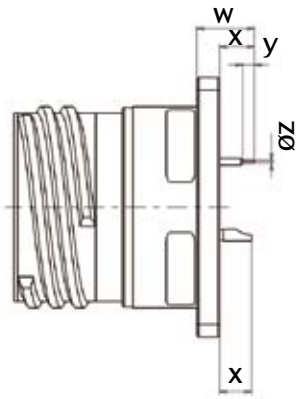
# 8D Series

## Hermetic Series

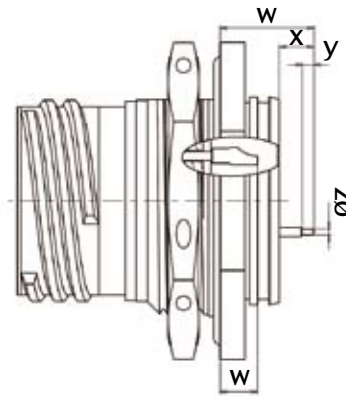


### Contact variations

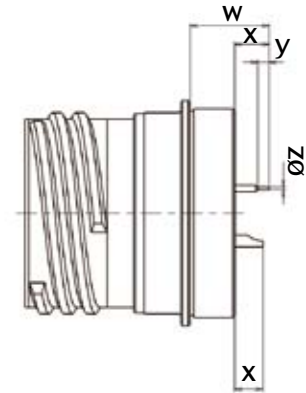
#### Contact variations summary



Type 21: Square flange receptacle



Type 23: Jam nut receptacle



Type 25: Solder mount receptacle

Type of contact	Specification	Type of shell	Contact size	W max	X min	Y min	ØZ max	
Solder cup (P)	WF	21	20 & 22	N/A	3.45	N/A	N/A	
		23	20 & 22	4.5	N/A	N/A	N/A	
		25	20 & 22	N/A	2.3	N/A	N/A	
PC tail (C)	WF	21	16	6.65	3.45	N/A	N/A	
			20			0.89	0.71	
			22			0.89	0.38	
		23	16	11.5	3.3	N/A	N/A	
			20			0.89	0.71	
			22			0.89	0.38	
		25	16	10.75	3.4	N/A	N/A	
			20	12.15		0.89	0.71	
			22	13.55		0.89	0.38	
	840	21	20	8.05	4.85	4.5	0.62	
			22	7.32	4.12	3.82	0.53	
			23	20	11.8	3.6	4.5	0.62
		23	22	10.6	2.4	5.75	0.53	
			25	20	10.15	3.7	4.5	0.62
			22	9.42	2.97	3.82	0.53	
		850	21	20	13	9.8	6	0.62
				22	10.69	7.49	7.35	0.53
			23	20	15.3	7.1	6.25	0.62
	22			16.2	8	9.25	0.45	
	25		20	15.1	8.65	6	0.62	
			22	12.79	6.34	7.35	0.53	

Note: All dimensions are in millimeters (mm)



# 8D Series

## Integrated Clinch Nuts



## Description

- Square flange receptacle with 4 clinch nuts
- Clinch nut are self-locking
- Rear mounting
- Easy to install
- Time saving
- Equivalent MIL level qualification as 38999 Series III
- Clinch nut tested:
  - Impact test (drop 0.4kg from height of 100mm)
  - Push out test (130N during 15s max)
  - Wrench out test (1N/m)

## Technical features

### Mechanical

- **Shell:** Aluminum
- **Shells plating:**  
Cadmium olive drab (W)  
Nickel (F)
- **Insulator:** Thermoplastic
- **Grommet and interfacial seal:**  
Silicone elastomer
- **Contact:** Copper alloy
- **Contact plating:** Gold over nickel plated
- **Endurance:**  
. 500 mating/unmating operations
- **Shock:**  
300g, 3ms according EN2591-D2 method A
- **Vibration:**
  - . Sinus:
    - . 10 à 2000 Hz, 3x12 hrs  
(60g, 140 - 2000 Hz) with T° cycling
  - . Random:
    - . 50 to 2000 Hz, 2x8 Hrs  
(1g2/ Hz, 100 - 2000Hz) at T° max.
    - . 25 to 2000 Hz, 2x8 Hrs  
(5g2/ Hz, 100 - 300Hz) at ambient T°
- **Contact retention:**

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

### Electrical

- **Test voltage rating (Vrms)**

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

- **Contact resistance**

Contact size	22	20	16	12	8	4
Resistance mΩ	14.6	7.3	3.8	3.5	3	2

- **Insulation resistance:**  
≥ 5 000 MΩ (under 500 Vdc)

- **Contact rating:**

Contact size	22	20	16	12	8	4
Rating (A)	5	7.5	13	23	45	80

- **Shell continuity**  
Cadmium olive drab (W): 2.5 Ωh  
Nickel (F): 1 Ωh

- **Shielding:**  
F: 65 db at 10 GHz  
F: 85 db at 1 GHz  
W: 50 db at 10 GHz

### Climatics

- **Temperature range:**  
W: -65°C +175°C  
F: -65°C +200°C
- **Sealing:**  
Mated connectors meet altitude immersion requirements of MIL-DTL-38999.
- **Salt spray:**  
W: 500 Hours  
F: 48 Hours

### Resistance to fluids

- **According to MIL-DTL-38999 standard**
  - . Gasoline: JP5 (OTAN F44)
  - . Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
  - . Synthetic hydraulic fluid: Skydrol 500 B4
- **LD4 (SAE AS 1241)**
  - . Mineral lubricating: MIL-L-7870A (OTAN O142)
  - . Synthetic lubricating: MIL-L-23699 (OTAN O156), MIL-L-7808
  - . Cleaning fluid: MIL-DTL-25769 diluted
  - . De-icing fluid: MIL-A-8243
  - . Extinguishing fluid: Chlorobrométhane
  - . Cooling fluid: Coolanol



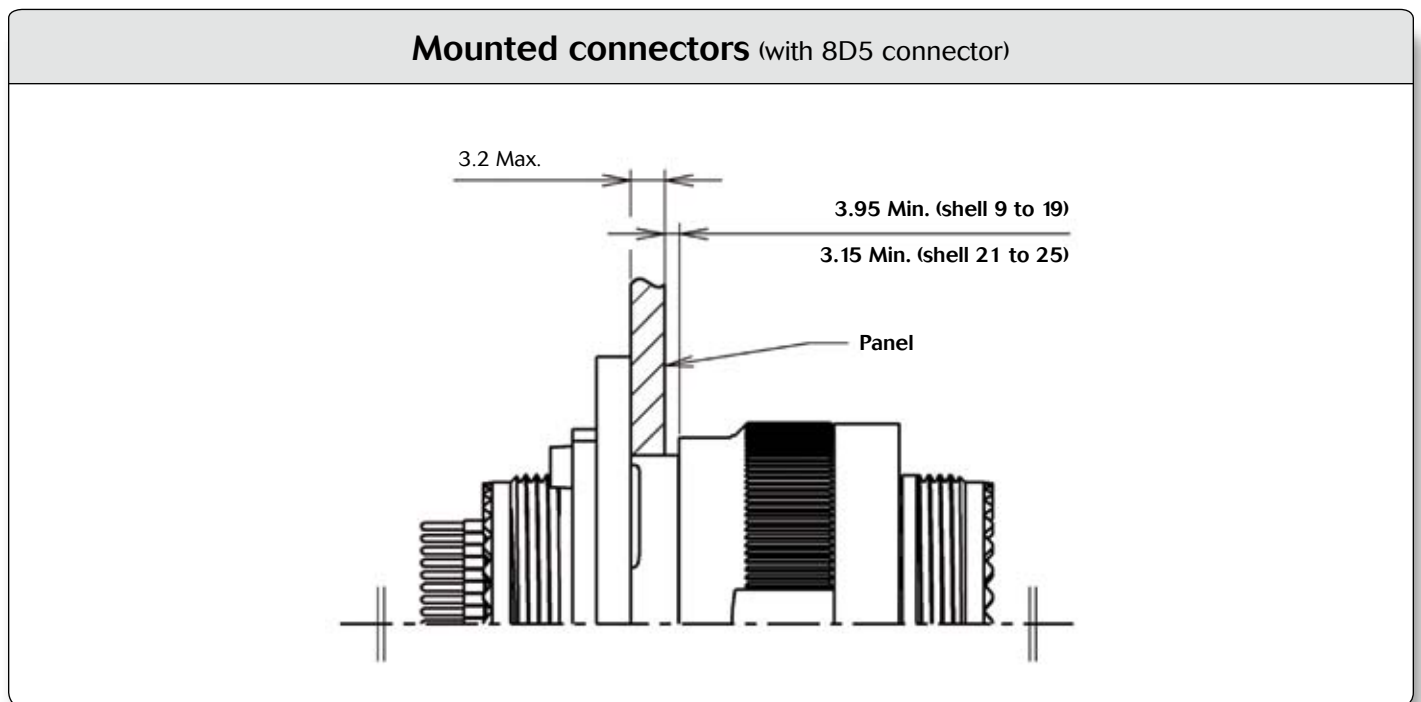
# 8D Series

## Integrated Clinch Nuts

### Ordering information

<b>Basic Series</b>	<b>8D</b>	<b>34</b>	<b>-</b>	<b>19</b>	<b>F</b>	<b>35</b>	<b>S</b>	<b>N</b>
<b>Shell style:</b>								
34: Square flange receptacle with M3 clinch nuts								
39: Square flange receptacle with UNC 4-40 clinch nuts								
<b>Contact length:</b> (consult us)								
-: Connectors with standard crimp contacts								
C: Short PC tail								
L: Long PC tail								
S: Specific PC tail								
<b>Shell size:</b>								
9 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25								
<b>Plating:</b>								
F: Nickel								
W: Olive green cadmium								
<b>Contact layout:</b>								
See pages 13 to 17								
<b>Contact type:</b>								
P: Pin								
S: Socket								
<b>Orientation:</b>								
N, A, B, C, D & E								

### Dimensions



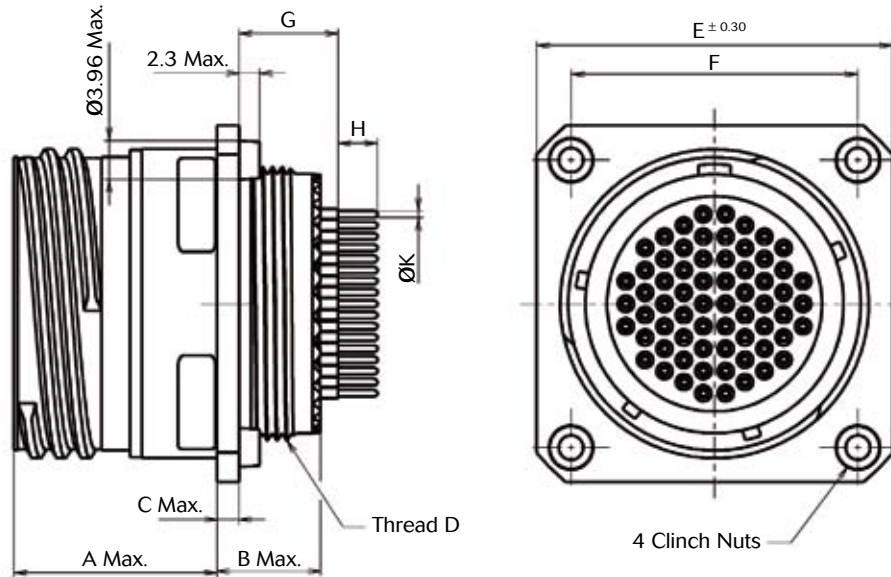
Note: All dimensions are in millimeters (mm)

# 8D Series

## Integrated Clinch Nuts



### Square flange receptacle - type 34 & type 39



Shell Size	A Max	B Max	C Max	D Thread	E ±0.3	F
9	20.90	10.60	2.50	M12x1-6g	27.79	18.26
11				M15x1-6g	30.15	20.62
13				M18x1-6g	32.54	23.01
15				M22x1-6g	34.14	24.61
17				M25x1-6g	36.5	26.97
19				M28x1-6g	38.89	29.36
21	20.10	11.40	3.20	M31x1-6g	41.27	31.75
23				M34x1-6g	44.45	34.93
25				M37x1-6g	47.62	38.1

### Short contact length

For other length please consult us

Shell size	G					H		K	
	#22D		#20		#16	#22D	#20 & #16	#22D & #20	#16
	P	S	P	S	P & S	P & S	P & S	P & S	
9	9.47 / 10.54	9.09 / 10.54	9.64 / 10.71	9.26 / 10.71	9.64 / 10.75	3.8 / 4.0	4.9 / 5.1	0.65 / 0.70	1.09 / 1.15
11									
13									
15									
17									
19									
21	9.58 / 10.65	9.20 / 10.65	9.75 / 10.82	9.37 / 10.82	9.75 / 10.86				
23									
25									

# 8D Series

## Double Flange



## Description

- High level vibration resistance in harsh environments.
- Offers the same level of performance as the MIL-DTL-38999 Series III connector.
- Jam nut receptacle.
- No risk of breaking contacts.
- No risk of micro-cuts.
- Allow direct grounding from PCB to the flange.
- PC tails contacts without shoulder: #16, #20 and #22.

## Technical features

### Mechanical

- **Shell:** Aluminum
- **Shell plating:**
  - . Cadmium olive drab (W)
  - . Nickel (F)
  - . Black zinc nickel (Z)
- **Insulator:** Thermoplastic
- **Grommet and interfacial seal:** Silicone elastomer
- **Contacts:** Copper alloy
- **Contacts plating:** Gold over nickel plated
- **Endurance:** 500 mating cycles
- **Shock:** 300g, 3ms according EN2591-D2 method A
- **Vibration:**
  - . Sinus:
    - . 10 à 2000 Hz, 3x12 hrs (60g, 140 - 2000 Hz) with T° cycling
  - . Random:
    - . 50 to 2000 Hz, 2x8 Hrs (1g2/ Hz, 100 - 2000Hz) at T° max.
    - . 25 to 2000 Hz, 2x8 Hrs (5g2/ Hz, 100 - 300Hz) at ambient T°
- **Contact retention:**

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

### Electrical

- **Test voltage rating (Vrms)**

Service	sea level	at 2 1000 m
M	1 300	800
N	1 000	600
I	1 800	1 000
II	2 300	1 000

- **Contact resistance**

Contact size	22	20	16	12	8	4
Resistance mΩ	14.6	7.3	3.8	3.5	3	2

- **Insulation resistance:** ≥ 5 000 MΩ (under 500 Vdc)

- **Contact rating:**

Contact size	22	20	16	12	8	4
Rating (A)	5	7.5	13	23	45	80

- **Shell continuity:**

- . Cadmium olive drab (W): 2.5 Ωh
- . Nickel (F): 1 Ωh
- . Black zinc nickel (Z): 2.5 Ωh

- **Shielding:**

- . F: 65 db at 10 GHz; 85 db at 1 GHz
- . W: 50 db at 10 GHz
- . Z: Consult us

### Climatics

- **Temperature range:**

- . W: -65°C +175°C
- . F: -65°C +200°C
- . Z: -65°C +200°C

- **Sealing:**

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

- **Salt spray:**

- . W: 500 Hrs
- . F: 48 Hrs
- . Z: 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)**

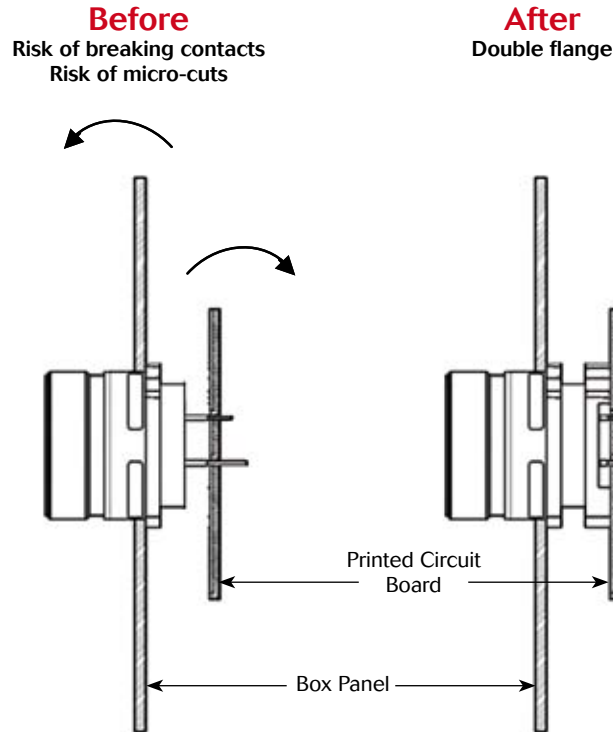
- . Mineral lubricating: MIL-L-7870A (OTAN O142)
- . Synthetic lubricating: MIL-L-23699 (OTAN O156), MIL-L-7808
- . Cleaning fluid: MIL-DTL-25769 diluted
- . De-icing fluid: MIL-A-8243
- . Extinguishing fluid: Chlorobromethane
- . Cooling fluid: Coolanol

# 8D Series

## Double Flange



### Comparison



### Ordering information

Basic Series	8D	87	11	C	17	W	35	P	N	L
Shell type:										
87: Jam nut receptacle										
Length between panel & PCB * (mm)										
Type:										
C: Receptacle with short PC tail										
L: Receptacle with long PC tail										
Shell size:										
09, 11, 13, 15, 17, 19, 21, 23, 25										
Plating:										
W: Olive green cadmium										
F: Nickel (ROHS)										
Z: Zinc nickel										
Contact layout:										
See pages 13 to 17										
Contact type:										
P: Pin										
S: Socket										
Orientation:										
N, A, B, C, D, E										
Specification:										
None: Standard										
L: Without contacts										
For other specification, please contact us										

\* For other length between panel & PCB please consult us.

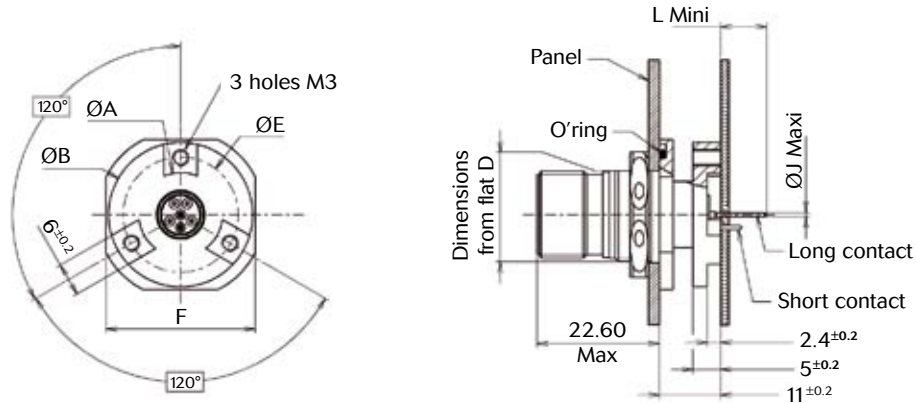
# 8D Series

## Double Flange



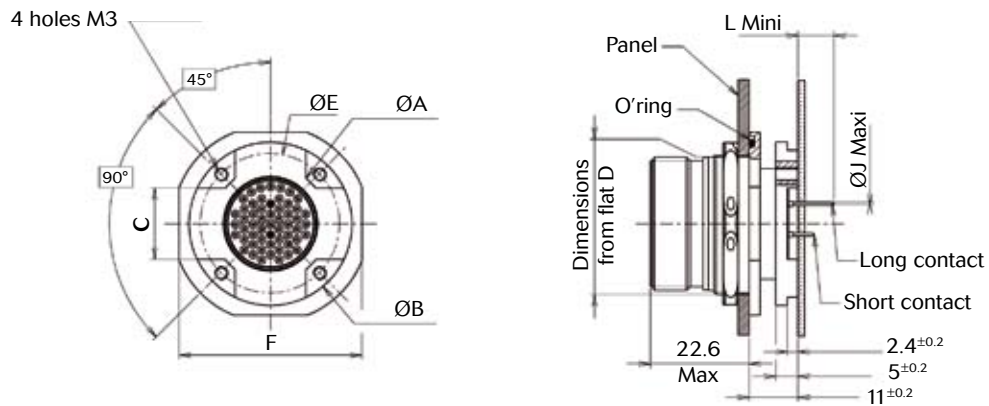
### Dimensions

#### Jam nut receptacle (type 87) - Size 9 & 11



Shell size	ØA ± 0.15	ØB ± 0.15	D ± 0.15	ØE	F ± 0.4
9	15.10	26.00	16.53	20.50	27.00
11	19.90	30.80	19.07	25.20	31.80

#### Jam nut receptacle (type 87) - Size 13 to 25



Shell size	ØA ± 0.15	ØB ± 0.15	C <sup>+0</sup> <sub>-0.2</sub>	D ± 0.15	ØE	F ± 0.4
13	19.90	30.80	12	23.82	25.25	34.90
15	23.00	33.90	14	26.97	28.42	38.10
17	26.00	36.80	16	30.15	31.42	41.30
19	29.50	40.40	18	33.32	35.03	46.00
21	32.50	43.20	20	36.50	37.82	49.20
23	35.50	46.50	23	39.67	41.12	52.40
25	38.60	49.60	25	42.85	44.30	55.60

Note: All dimensions are in millimeters (mm)



# 8D Series

## Double Flange



### Straight PC tail contacts

Contact size	Contact type	PC tail length	L min	ØJ max
22D	P	L	7.1	0.7
	S			
	P	C	3.6	
	S			
20	P	L	7.1	0.9
	S			
	P	C	3.6	
	S			
16	P	L	7.1	1.35
	S			
	P	C	3.6	
	S			
12	P	L	-	-
	S			
	P	C	3.6	1.7
	S			

# 8D Series

## PCB Contacts without Shoulder



### Description

- 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

### Ordering information

#### 8D Series connector with PCB contacts without shoulder

<b>Basic Series:</b>	<b>8D</b>	<b>0</b>	<b>C</b>	<b>11</b>	<b>F</b>	<b>35</b>	<b>P</b>	<b>N</b>	<b>M</b>	<b>900</b>
<b>Shell type:</b>										
0: Square flange wall mounting receptacle										
7: Jam nut receptacle										
34: Square flange wall mounting receptacle with M3 clinch nuts										
39: Square flange wall mounting receptacle with UNC 4-40 clinch nuts										
8711: Jam nut double flange receptacle										
<b>PCB contact without shoulder type:</b> (see next page for information & dimensions)										
C: Short PC tail										
M: Medium PC tail										
L: Long PC tail										
<b>shell size:</b> 09, 11, 13, 15, 17, 19, 21, 23, 25										
<b>8D aluminum plating:</b>										
F: Nickel										
Z: Black zinc nickel										
W: Olive green cadmium										
ZC: Green zinc cobalt										
<b>8D composite plating:</b>										
J: Olive green cadmium										
M: Nickel										
X: Without plating										
<b>8D stainless steel plating:</b>										
K: Passivated										
S: Nickel										
<b>8D titanium plating:</b>										
TT: Without plating										
TF: Nickel										
<b>Contact layout:</b> See pages 13 to 17										
<b>Contact type:</b>										
P: Male										
S: Female										
<b>Orientation:</b> N, A, B, C, D, E										
<b>Special custom:</b>										
None: Standard plastic cap										
M: Antistatic plastic cap										
<b>8D0, 8D7, 8D34 &amp; 8D39 contact plating:</b>										
900: Contact without shoulder with gold plated barrel (termination area)										
901: Contact without shoulder with tin plated barrel (termination area)										
<b>8D8711 contact plating:</b>										
None: Contact without shoulder with gold plated barrel (termination area)										
580: Contact without shoulder with tin plated barrel (termination area)										

Note: For JVS (8D Bronze Series, please consult us)

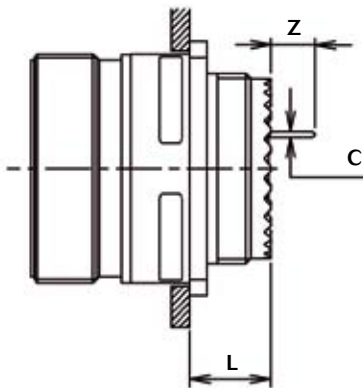
# 8D Series

## PCB Contacts without Shoulder

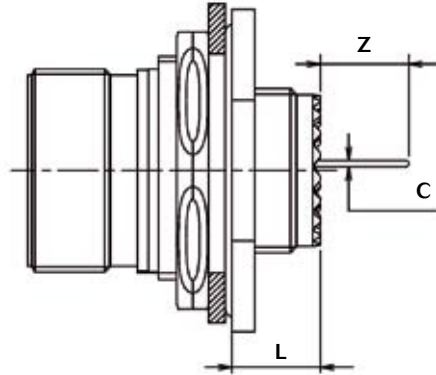


### 8D Series

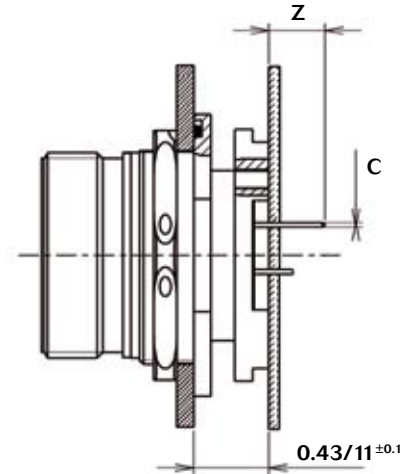
**Square flange receptacle**  
8D0  
8D34 (with M3 clinch nuts)  
8D39 (with UNC 4-40 clinch nuts)



**Jam nut receptacle**  
8D7



**Jam nut double flange receptacle**  
8D8711



Contact size	Contact Type		Ø C Max	Square flange receptacle 8D0 / 8D34		Jam nut receptacle 8D7	
				Z Min	Z Max	Z Min	Z Max
#22D & #20	Pin	C: Short PC tail	0.50	3.96	4.88	3.56	4.63
		M: Medium PC tail	0.50	5.99	6.91	5.59	6.66
		L: Long PC tail	0.50	7.51	8.43	7.11	8.18
#22D & #20	Socket	C: Short PC tail	0.50	3.96	5.21	3.56	4.81
		M: Medium PC tail	0.50	5.99	7.24	5.59	6.84
		L: Long PC tail	0.50	7.51	8.76	7.11	8.36

Contact size	Contact Type		Ø C Max	Double flange receptacle 8D8711
				Z Min
#22D	Pin & Socket	C: Short PC tail	0.70	3.60
		L: Long PC tail	0.70	7.10
#20	Pin & Socket	C: Short PC tail	0.90	3.60
		L: Long PC tail	0.90	7.10

Shell type	Square flange receptacle 8D0 / 8D34		Jam nut receptacle 8D7
Shell size	9 to 19	21 to 25	9 to 25
L Max	10.7	11.5	9.90

Note: All dimensions are in millimeters (mm)

# 8D Series

## High Density



## Description

- Derived from standards:
  - MIL-DTL-38999 Series III (8D)
- 100% scoop proof
- Available in 3 shell sizes
- Contacts #26 for cable AWG 26 to 30 (24 to 30 under request)
- Double flange & clinch nut version available

## Technical features

### Mechanical

- **Shell:**
  - . Aluminium, Composite, Stainless steel
- **Shell plating:**
  - . 8D Aluminum:
    - Cadmium olive drab (W)
    - Nickel (F)
    - Black zinc nickel (Z)
  - . 8D Composite:
    - Cadmium olive drab (J)
    - Nickel (M)
- **Insulator:** Thermoplastic
- **Seal:** Liquid Silicone rubber
- **Contact:** Copper alloy
- **Contact plating:** Gold
- **Endurance:** 500 matings/unmatings
- **Shock & Vibration:**
  - According to 38999 specification

### Electrical

- **Contact resistance:**
  - Size 26: 16 m $\Omega$
- **Insulation resistance:**
  - $\geq 5000\text{m}\Omega$  (at 500Vdc)
- **Contact rating:**
  - Size 26: 3Amp
- **Shell continuity:**
  - . Aluminum shell:
    - Cadmium olive drab (W): 2.5 m $\Omega$
    - Nickel (F): 1 m $\Omega$
    - Black zinc nickel (Z): 2.5 m $\Omega$
  - . Composite shell:
    - Cadmium olive drab (J): 3 m $\Omega$
    - Nickel (M): 3 m $\Omega$
  - . Stainless steel shell:
    - Passivated (K): 10 m $\Omega$
    - Nickel (S): 1 m $\Omega$

### Environmental

- **Temperature range:**
  - 55 $^{\circ}$ c to +175 $^{\circ}$ C
  - 55 $^{\circ}$ c to +200 $^{\circ}$ C (Nickel version)
- **Sealing mated connectors:**
  - IP 67 (1 metre for 30 min minimum)
- **Salt spray:**
  - . Aluminum shell:
    - W: 500 Hrs
    - F: 48 Hrs
    - Z: 500 Hrs
  - . Composite shell: 2000 Hrs
  - . Stainless steel shell: 500 Hrs

### Resistance to fluids

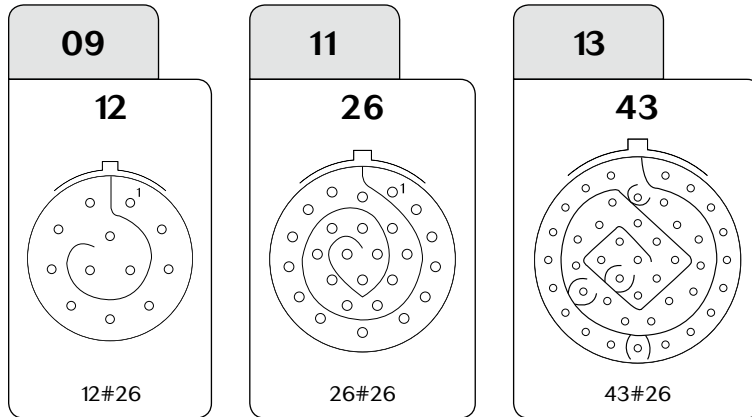
- **According to MIL-DTL-38999 standard**
  - . Gasoline: JP5 (OTAN F44)
  - . Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
  - . Synthetic hydraulic fluid: Skydrol 500 B4
- **LD4 (SAE AS 1241)**
  - . Mineral lubricating: MIL-L-7870A (OTAN 0142)
  - . Synthetic lubricating: MIL-L-23699 (OTAN 0156), MIL-L-7808
  - . Cleaning fluid: MIL-DTL-25769 diluted
  - . De-icing fluid: MIL-A-8243
  - . Extinguishing fluid: Chlorobrométhane
  - . Cooling fluid: Coolanol



# 8D Series

## High Density

### Contact layouts



PCB hole drilling and position information  
See pages 76 & 77.

### Ordering information

#### 8D Series

Basic Series	8D	0	-	11	W	35	P	N
<b>Shell style:</b>								
0: Square flange receptacle								
1: In line receptacle (Aluminum only)								
7: Jam nut receptacle (Aluminum, Stainless steel & Titanium only)								
5: Plug with RFI shielding								
<b>Type:</b>								
--: Connectors with standard crimp contacts								
L: Receptacle with PC tail (available with Pin contact only)								
<b>Shell size: 09, 11, 13</b>								
<b>Plating:</b>								
W: Olive drab cadmium (Aluminum only)								
F: Nickel (Aluminum only)								
Z: Black zinc nickel (Aluminum only)								
J: Olive drab cadmium (Composite only)								
M: Nickel (Composite only)								
<b>Contact layout:</b> See previous page								
<b>Contact type:</b>								
P: Pin								
S: Socket								
<b>Orientation: N, A, B, C, D, E</b>								
<b>Specifications:</b>								
L: Delivered without contact								
900 (mandatory for PC tail version): PC tail contacts without shoulder								
901 (mandatory for PC tail version): Tin plated PC tail contacts without shoulder								

### Contact, tooling & accessories

See «Common Section» page 65.

### Recommended cable

Standard military cable as M22759 or EN2267 and derived.

# 8D Series Quadrax Contacts



## Description

- Front and rear removable versions available.
- Crimp and PC tail versions available.
- Standard #8 cavity insertion and removal tools.
- Ground connection of the cable braid to the shell possible through the external shell of the # 8 contact.
- Compatible with star quad cable.
- Characteristic impedance of 100 Ohms.

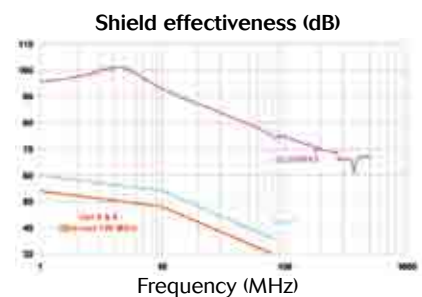
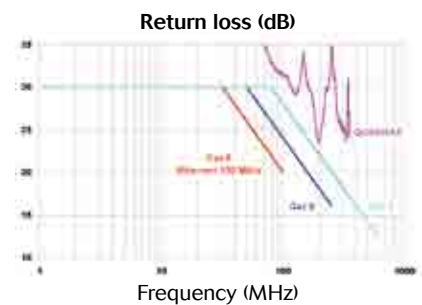
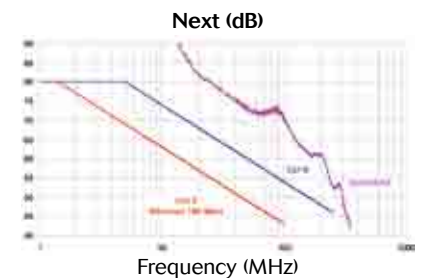
## Technical features

### Mechanical

- **Operating temperature:**  
-65°C up to 150°C
- **Inner contact:**  
copper alloy
- **Contact body:**  
copper alloy
- **Contact insulator:**  
thermoplastic resin
- **Contact plating:**  
gold over nickel
- **Shell plating:**
  - Aluminum shell:
    - Cadmium olive drab (W)
    - Nickel (F)
    - Black zinc nickel (Z)
    - Green zinc cobalt (ZO)
  - 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)
  - Bronze shell:
    - Without plating

### Electrical

- **ISO/IEC 11801 category 6 compliant:**  
next (cross talk): > 46 db at 250 MHz  
return loss: > 16 db at 250 MHz  
shield effectiveness: > 36 db at 80 MHz
  - **Contact to shell continuity:**  
< 10 mΩ
  - **Contact resistance (low level):**  
initial 15 mΩ  
after tests 30 mΩ
  - **Dielectric withstanding voltage:**
- | Altitude  | Service I |
|-----------|-----------|
| sea level | 500 Vrms  |
| 21 000 m  | 125 Vrms  |
- **Insulation resistance:**  
at ambient temperature: > 5000 MΩ  
at high temperature: > 1000 MΩ
  - **#24 contact cable size acceptance:**  
AWG 22 to AWG 26





# 8D Series

## Quadrax Contacts

### Ordering information

#### Aluminum, Composite, Stainless steel & Titanium connector

Basic Series	8D	0	Q	11	W	81	P	N	621
<b>Shell style:</b>									
0: Square flange receptacle									
5: Plug									
7: Jam nut receptacle									
<b>Type:</b>									
C: Quadrax PC tail contacts*									
Q: Quadrax crimp contacts									
<b>Shell size:</b> 9 - 11 - 17 - 19 - 21 - 23 - 25									
<b>Plating:</b>									
<b>Aluminum shell:</b>									
W: Olive green cadmium									
F: Nickel									
Z: Black zinc nickel									
ZC: Green zinc cobalt									
<b>Composite shell:</b>									
J: Olive green cadmium									
M: Nickel									
X: Without plating									
<b>Stainless steel shell:</b>									
K: Passivated									
S: Nickel									
<b>Titanium shell:</b>									
TF: Nickel									
TT: Without plating									
<b>Contact layout:</b> See next page									
<b>Contact type:</b>									
P: Pin                    A: Connector supplied without quadrax pin contact									
S: Socket                B: Connector supplied without quadrax socket contact									
<b>Orientation:</b> N, A, B, C, D & E									
<b>Specification:</b>									
284: Quadrax grounded PC tail contact (100Ω)*					408: Quadrax not grounded crimp contact (150Ω)				
308: Quadrax not grounded PC tail contact (100Ω)					620: Quadrax grounded crimp contact (100Ω)*				
384: Quadrax grounded crimp contact (150Ω)*					621: Quadrax not grounded crimp contact (100Ω)				

#### Bronze connector

Basic Series	JVS	C	00A	09	35	P	N	284
<b>Type:</b>								
C: Quadrax PC tail contacts*								
Q: Quadrax crimp contacts								
<b>Shell style:</b>								
00A: Square flange receptacle								
16A: Plug								
07A: Jam nut receptacle								
<b>Shell size:</b> 9 - 11 - 17 - 19 - 21 - 23 - 25								
<b>Contact layout:</b> See next page								
<b>Contact type:</b>								
P: Pin                    A: Connector supplied without quadrax pin contact								
S: Socket                B: Connector supplied without quadrax socket contact								
<b>Orientation:</b> N, A, B, C, D & E								
<b>Specification:</b>								
284: Quadrax grounded contact (100Ω)*				408: Quadrax not grounded crimp contact (150Ω)				
308: Quadrax not grounded contact (100Ω)				620: Quadrax grounded crimp contact (100Ω)*				
384: Quadrax grounded contact (150Ω)*				621: Quadrax not grounded crimp contact (100Ω)				

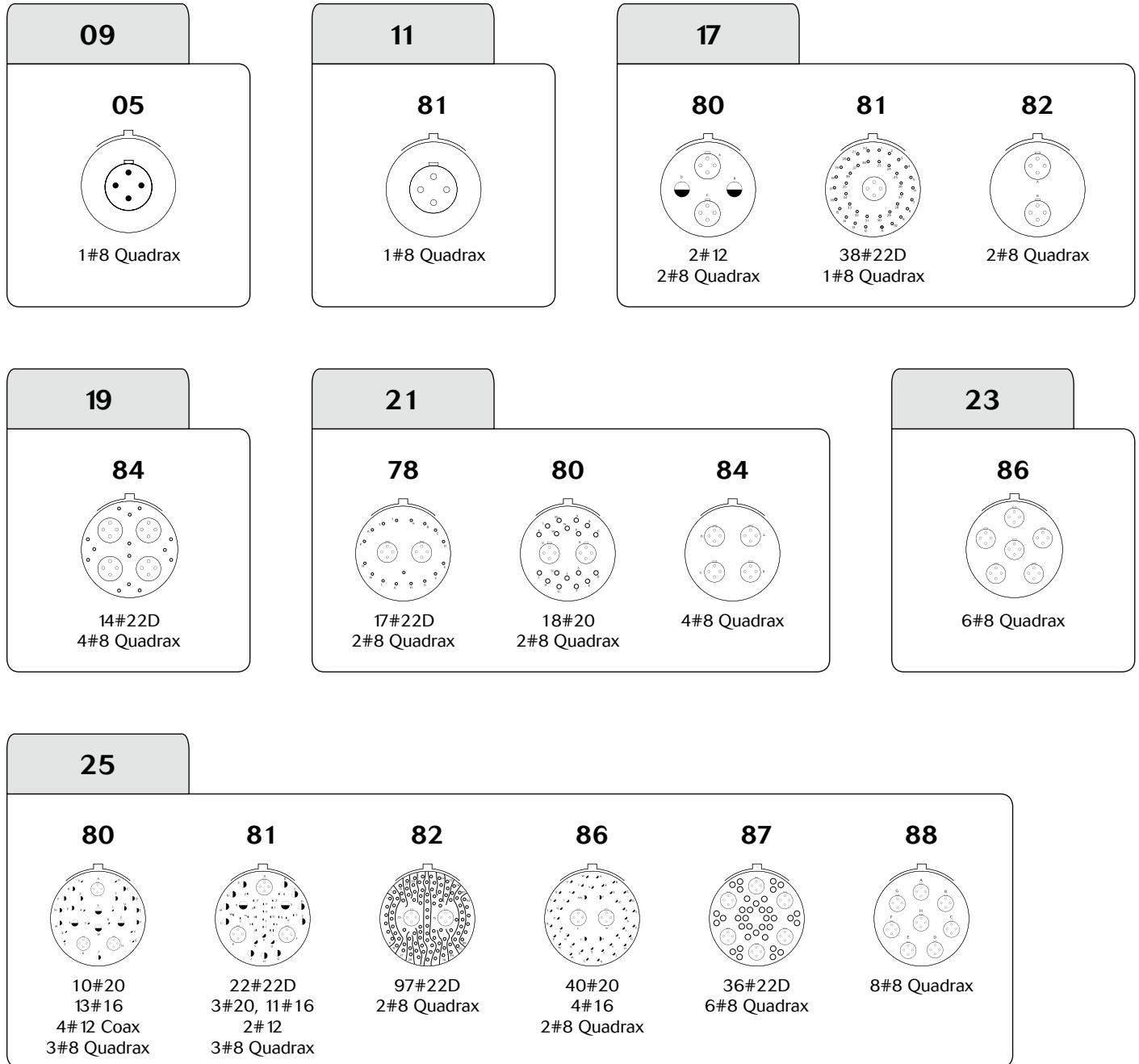
\* For PC tail contacts or grounded versions please consult us.

# 8D Series

## Quadrax Contacts



### Contact layouts





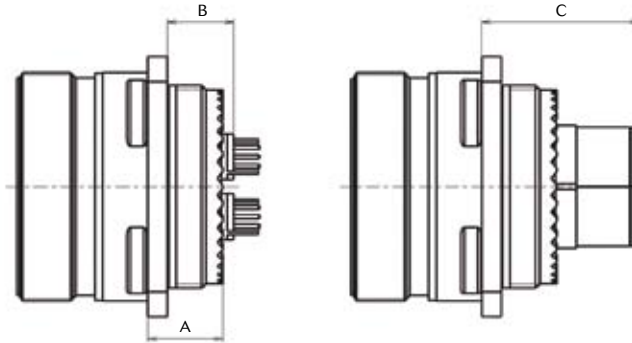
# 8D Series

## Quadrax Contacts



### Dimensions

#### Square flange receptacle - Type 0

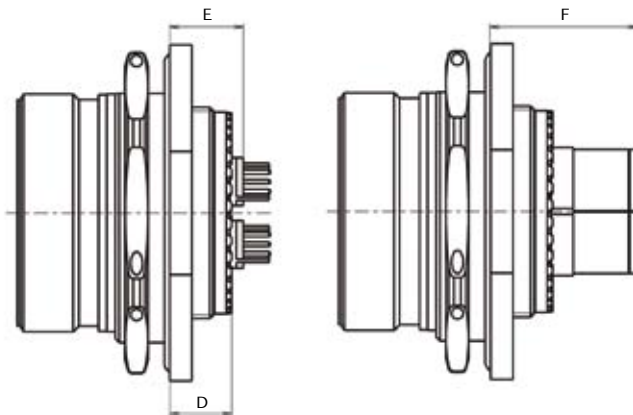


PC Tail contacts

Crimp contacts

Shell size	A Max			B Min			B Max			C Max
	Aluminum	Composite	Stainless steel, Titanium & Bronze	Aluminum	Composite	Stainless steel, Titanium & Bronze	Aluminum	Composite	Stainless steel, Titanium & Bronze	All materials
11 to 19	10.72	11.96	11.4	11.5	12.5	12	13.5	13.5	14	29
21 to 25	11.54	12.76	11.8	12	14.5	12.5	14	15.5	14.5	30

#### Jam nut receptacle - Type 7

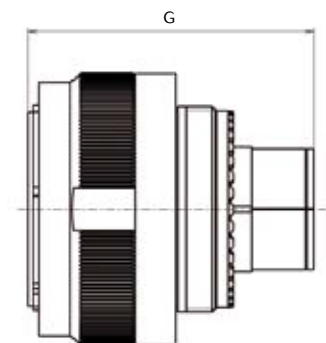


PC Tail contacts

Crimp contacts

Material	Aluminum, Stainless steel, Titanium & Bronze			
Shell size	D Max	E Min	E Max	F Max
11 to 25	9.9	9.5	12	27

#### Plug - Type 5



All materials

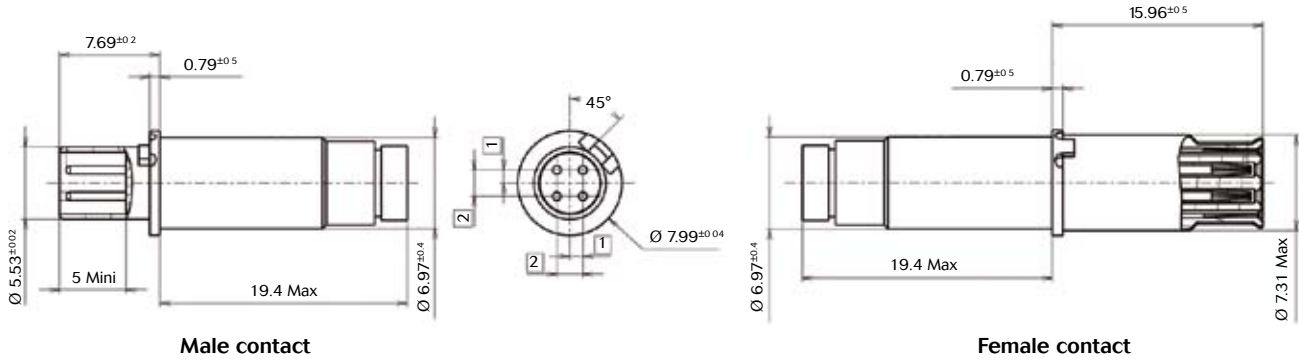
Shell size	G Max
11 to 25	48

Note: All dimensions are in millimeters (mm)

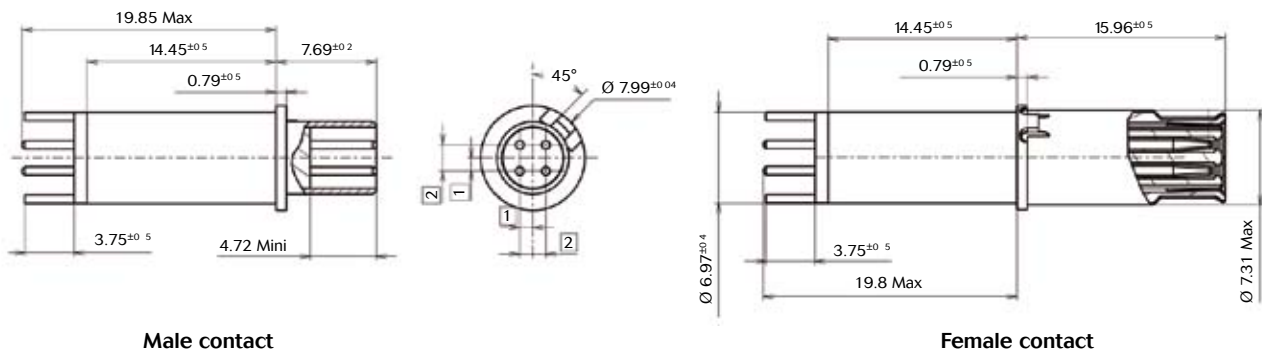
# 8D Series Quadrax Contacts



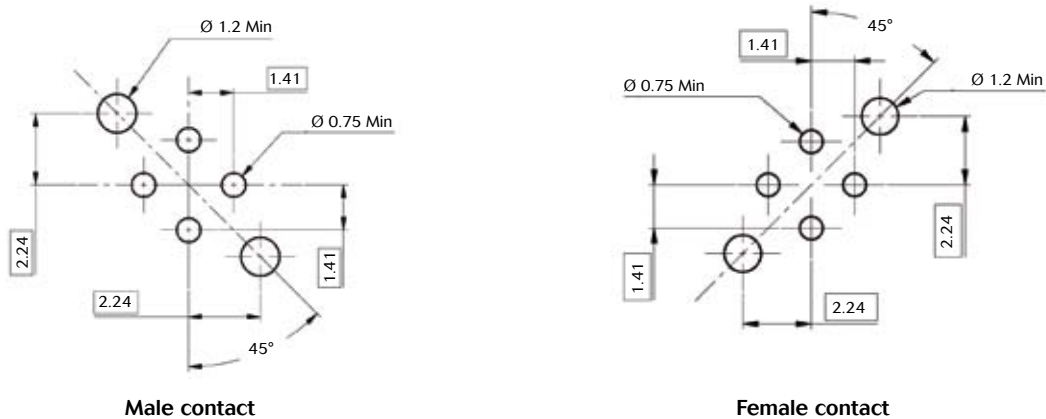
## Quadrax crimp contact



## Quadrax PCB contact



## Drill dimensions for PCB mount



Note: All dimensions are in millimeters (mm)



# 8D Series

## Quadrax Contacts

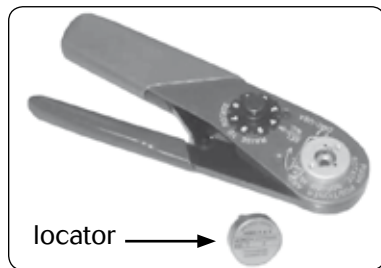
### Contact ordering information

In-line alignment key. All crimp contacts are sealed thru a sealing boot. Crimp contacts ordered separately are delivered with sealing boot.

Contact type		SOURIAU part number	Cross Norm	Impedance	Release	T° Max
PC tail L= 4 <sup>+0</sup> 1mm	Pin	ETH1-1237A	-	100Ω	Rear	125°C
		ETH1-1501A	-	150Ω	Rear	125°C
	Socket	ETH1-1238A	-	100Ω	Rear	125°C
		ETH1-1502A	-	150Ω	Rear	125°C
Crimp	Pin	ETH1-1345A	EN 3155-074	100Ω	Rear	150°C
		ETH1-1503A	-	150Ω	Rear	150°C
	Socket	ETH1-1346A	EN 3155-075	100Ω	Rear	150°C
		ETH1-1504A	-	150Ω	Rear	150°C

### Quadrax tools

- Inner contacts: M22520/2-01 crimping tool and K709 locator
- Outer body: M22520/5-01 crimping tool and M22520/5-45 die set



- Insertion/extraction tool (standard size 8 cavity tools): 8660-197 (metallic) or M81969/14-06 (plastic)



### Recommended cable

impedance	Reference	Cable type	Number of pairs
100Ω	ABS 1503 KD24	Star quad	2

# 8D Series Power Contacts



## Description

- Quick screw coupling connector with removable crimp contact.
- Shell available in aluminum, composite, Stainless steel, Titanium & Bronze.
- Six layouts with different current rating.
- Consult us for power hermetic version.
- High Power offer available on demand.

## Technical features

### Mechanical

- **Shell:** Aluminum alloy, Composite, Bronze, Stainless steel, Titanium.
- **Plating:**
  - Olive green cadmium (W/J),
  - Nickel (F/M/TF/S),
  - Without plating (X for composite, TT for titanium and JVS for Bronze),
  - Passivated (K).
- **Grommet and seal:** Silicon elastomer.
- **Insulator:** Thermoset.
- **Contact body:** Copper Alloy.
- **Contact retention:**
  - #4 = 200N
  - #8 = 111N.
- **Shock:** 300g during 3ms.
- **Endurance:** 500 mating / unmating operations.
- **Vibration:** As per MIL DTL 38999.

### Electrical

- **Dielectric withstanding:**  
Test voltage rating (Vrms).

Service	Sea level	at 21 000 m
M	1 300	800
I	1 800	1 000

- **Insulation Resistance:**  
5000 MΩ under 500 Vdc.
- **Max current rating per contact:**
  - #4 = 80A
  - #8 = 45A.
- **Contact resistance:**
  - #4 = 2mΩ
  - #8 = 3MΩ.
- **Shielding:** As per MIL DTL 38999.
- **Shell continuity:**
  - W = 2.5 mΩ,
  - F = 1mΩ,
  - J, M = 3 mΩ,
  - JVS = 5 mΩ.

### Environmental

- **Temperature range:**  
W, J, X, JVS = - 65°C +175°C,  
F, M, K, S, TT, TF = - 65°C +200°C.
- **Sealing:** As per MIL DTL 38999.
- **Damp Heat:** As per MIL DTL 38999.
- **Salt Spray:**  
W, TT, TF, K, JVS = 500 hours,  
F, S = 48 hours,  
J,M,X = 2000 hours.
- **Fire resistance:**  
As per EN 2591 - c 17 method A.
- **Resistance to fluid:**  
As per MIL DTL 38999.

# 8D Series

## Power Contacts



### Connector part numbers

#### Aluminum, Composite, Stainless steel & Titanium connector

Basic Series	8D	0	-	11	W	80	P	N	251
<b>Style:</b>									
0: Square flange receptacle									
5: Plug with RFI shielding									
7: Jam nut receptacle									
<b>Type:</b> Crimp contact									
<b>Shell size:</b> 11 - 17 - 19 - 21 - 23 - 25									
<b>Plating:</b>									
<b>Aluminum shell:</b>									
W: Olive drab cadmium									
F: Nickel									
ZC: Green zinc cobalt									
Z: Black zinc nickel									
<b>Composite shell:</b>									
J: Olive green cadmium									
M: Nickel									
X: Without plating									
<b>Stainless steel shell:</b>									
K: Corrosion resistant									
S: Nickel									
<b>Titanium shell:</b>									
TT: Without plating									
TF: Nickel									
<b>Contact layouts:</b> See next page									
<b>Contact style:</b>									
P: Pin contact                      A: Male connector supplied without contact									
S: Socket contact                      B: Female connector supplied without contact									
<b>Orientation:</b> N - A - B - C - D - E									
<b>Specification:</b>									
251: To be added for some layouts to be supplied with power contacts (see next page)									

#### Bronze connector







Basic Series	JVS	16	A	11	80	P	N	251
<b>Style:</b>								
00: Square flange receptacle								
07: Jam nut receptacle								
16: Plug								
<b>Material:</b>								
A: Bronze shell material								
<b>Shell size:</b> 11 - 17 - 19 - 21 - 23 - 25								
<b>Contact layouts:</b> See next page								
<b>Contact style:</b>								
P: Pin contact                      A: Male connector supplied without contact								
S: Socket contact                      B: Female connector supplied without contact								
<b>Orientation:</b> N - A - B - C - D - E								
<b>Specification:</b>								
251: To be added for some layouts to be supplied with power contacts (see next page)								

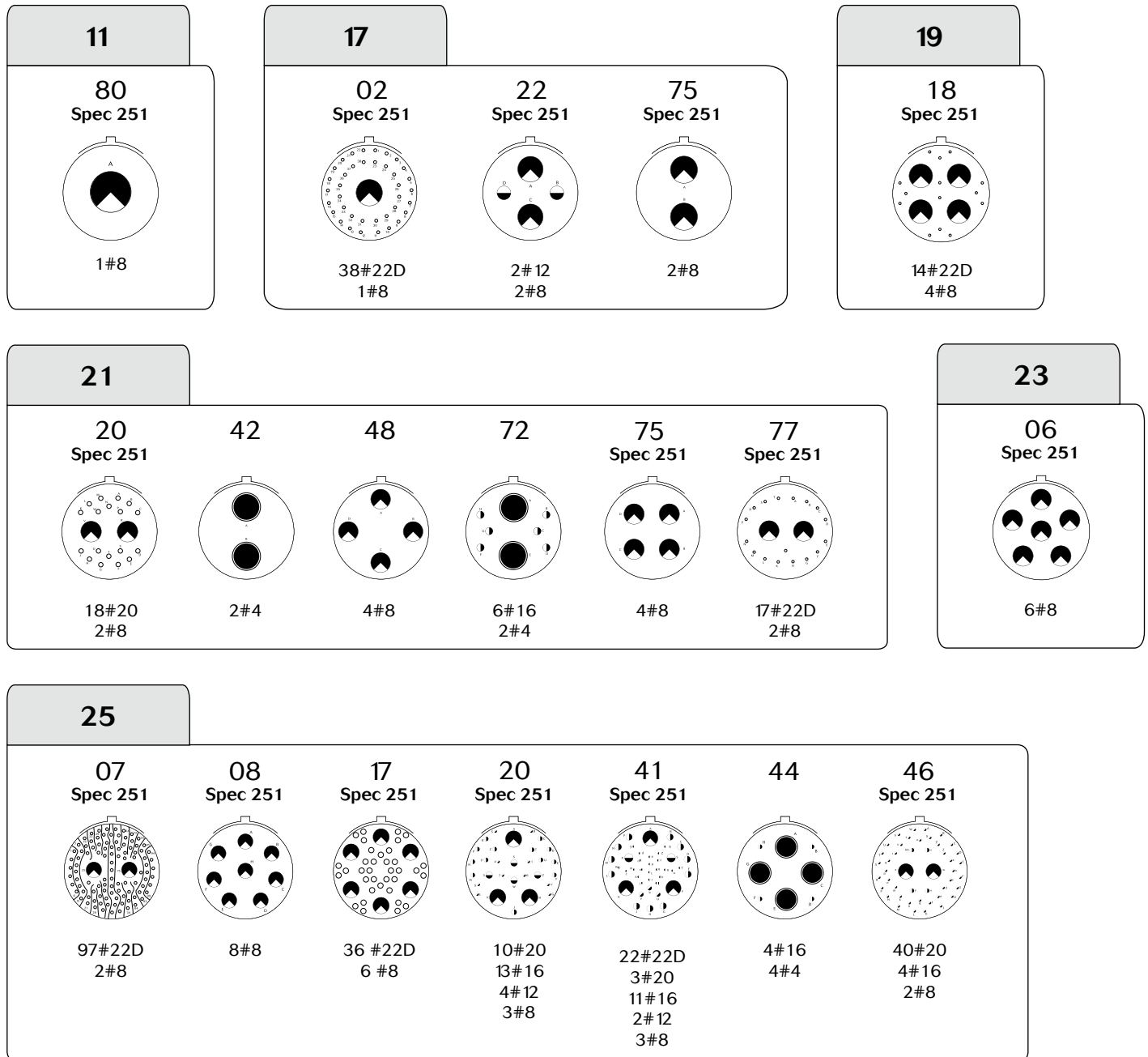
# 8D Series

## Power Contacts



### Contact layouts

-  Contact #22D
-  Contact #12
-  Contact #20
-  Contact #8 Power
-  Contact #16
-  Contact #4 Power

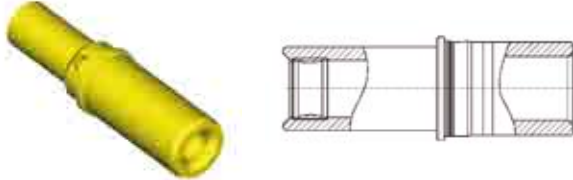


# 8D Series Power Contacts

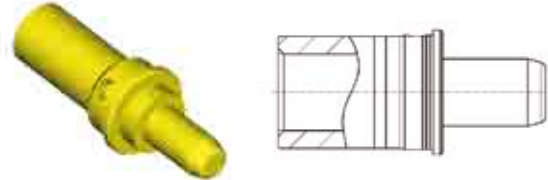


## Contacts

Socket contact



Pin contact



Contact size	Contact type	Contact reference	Cable		Protection	Dimensions	
			Cable size	Cable material		L	D
#4	Male	8599-7534	#4-5 or 10-16mm <sup>2</sup> **	Copper	Au	9.70	5.74
	Female	8599-7535				16.58	8.50
	Male	8599-7598 900 *	for cable 25mm <sup>2</sup> (#3)	Copper	Au	9.70	5.74
	Female	8599-7599 900 *				16.58	8.50
#4 with reduced barrel	Male	8599-7528 900	#6 or 10mm <sup>2</sup> **	Copper	Au	9.70	5.74
	Female	8599-7529 900				16.58	8.50
#8 JVS only	Male	8599-7544	#8 or 10 **	Copper	Au	9.60	3.64
	Female	8599-7541				16.00	7.30
#8	Male	8599-7580	#8 or 10 **	Copper	Au	9.60	3.64
	Female	8599-7581				16.00	7.30

\* Not included in connector P/N. Must be ordered separately.  
\*\* To be used with crimping bucket reducer.

## Sealing boot and crimping bucket reducer



Contact size	Cable size	Cable material	Sealing boot reference
#4	16mm <sup>2</sup>	Copper	8599-4594
	10mm <sup>2</sup>		8599-4593
#8	#8	Copper	8599-4542
	#10		8599-4547



Contact size	Cable size	Reducing sleeve reference
#4	10mm <sup>2</sup>	8400-2352A
#8	#10	8599-7545

# 8D Series Power Contacts



## Power tools

Contact size	Contact type	Contact reference	Cable AWG	Crimping tool	Die set	Locator	Contact extraction tool (metallic)	Contact extraction tool (plastic)
#4	Male	8599-7534	#4-5 or 10-16mm <sup>2</sup> *	M22520/23-01	M22520/23-04	M22520/23-11	8533-8175	M81969/14-07
	Female	8599-7535	#4-5 or 10-16mm <sup>2</sup> *	M22520/23-01	M22520/23-04	M22520/23-11	8533-8175	M81969/14-07
#8 JVS only	Male	8599-7544	#8 or 10 *	M22520/23-01	M22520/23-02	8599-9601	8660-197	M81969/14-12
	Female	8599-7541	#8 or 10 *	M22520/23-01	M22520/23-02	8599-9601	8660-197	M81969/14-12
#8	Male	8599-7580	#8 or 10 *	M22520/23-01	M22520/23-02	8599-9601	8660-197	M81969/14-12
	Female	8599-7581	#8 or 10 *	M22520/23-01	M22520/23-02	8599-9601	8660-197	M81969/14-12

Manual hand tool also existing for power contacts #8.  
\* To be used with crimping bucket reductor.

### Automatic tool for contacts #4 & #8



Crimping tool (M22520/23-01)



Die set (M22520/23-02)



Locator (M22520/23-11)

### Manual hand tool for contacts #8



Crimping tool (M300 BT)



Locator (SP 593)

### Metallic extraction tool



For #4: 8533-8175  
For #8: 8660-197



# 8D Series

## High Power Contacts



### Description

- Threaded coupling connector with single power contact.
- Aluminum shell.
- 3 shell sizes available:
  - size 19: Up to 450 A at 40°C
  - size 23: Up to 650 A at 40°C
  - size 25: Up to 850 A at 40°C
- Silver plated contact.
- Pin contact is equipped with a plastic cap to prevent electrical shock.
- Modular design:
  - . Removable backshell: straight, right angle or threaded contact.
  - . Backshell termination: shrink boot.

### Technical features

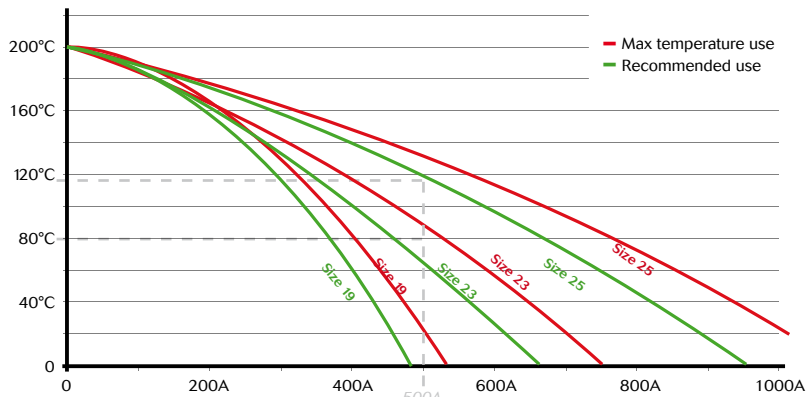
#### Mechanical

- **Shell:** Aluminum alloy
- **Shell plating:**
  - Black zinc nickel (Z)
  - Cadmium olive drab (W)
- **Insulator:** Thermoplastic
- **Grommet and interfacial seal:** Silicone elastomer
- **Contact body:** Copper alloy
- **Endurance:** 500 mating/unmating operations
- **Vibration:**
  - According Def Stan 00-35
  - 4.2 g rms vert - 6h/3 axes

#### Electrical

- **Test voltage** > 1500 V
- **Shell to shell continuity** (no backshell) < 2.5 mΩ
- **EMI** 85 dB @ 1GHz (F)

#### Connector rating



Example for 500A:  
 Shell size 25 with contact diameter 20: max temperature 135°C; recommended 120°C  
 Shell size 23 with contact diameter 18: max temperature 90°C; recommended 80°C  
 Shell size 19 with contact diameter 14: not recommended  
 Wire must be compatible with current and temperature used for the connector.

#### Climatics

- **Temperature range:** -65°C +175°C
- **Sealing:** IP67 on mated connector (1 meter/30 min)
- **Salt spray:** 500 hours

#### Resistance to fluids

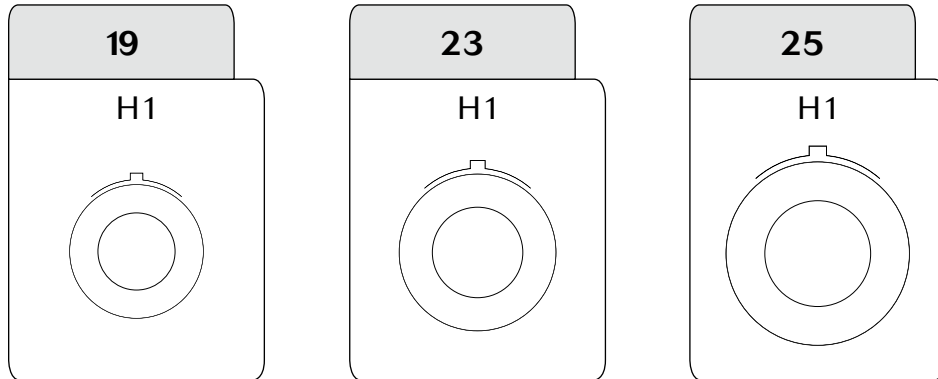
- **According to MIL-DTL-38999 standard**
  - . Gasoline: JP5 (OTAN F44)
  - . Mineral hydrolic fluid: MIL-H-5606 (OTAN H515)
  - . Synthetic hydraulic fluid: Skydrol 500 B4
- **LD4 (SAE AS 1241)**
  - . Mineral Lubricating: MIL-L-7870A (OTAN 0142)
  - . Synthetic Lubricating: MIL-L-23699 (OTAN 0156), MIL-L-7808
  - . Cleaning fluid: MIL-DTL-25769 diluted
  - . De-icing fluid: MIL-A-8243
  - . Extinguishing fluid: Chlorobrométhane
  - . Cooling fluid: Coolanol



# 8D Series

## High Power Contacts

### Contact layouts



Other size: Please consult us.

### Backshell type

Description	
<b>D1:</b> Straight backshell shrink boot & EMI (crimp version)	<b>G0:</b> Backshell low profile (threaded termination)
<b>W0:</b> Without backshell (threaded termination)	<b>R1:</b> Right angle backshell shrink boot & EMI (crimp version)



# 8D Series

## High Power Contacts

### Ordering information

<b>Basic Series</b>	<b>8D</b>	<b>0</b>	<b>25</b>	<b>W</b>	<b>H1</b>	<b>P</b>	<b>N</b>	<b>R1</b>	<b>A</b>
---------------------	-----------	----------	-----------	----------	-----------	----------	----------	-----------	----------

**Style:**  
**0:** Square flange receptacle  
**5:** Plug (available with backshell D1, R1, G0 & W0 Types)  
**7:** Jam nut receptacle

**Shell size:**  
**19, 23, 25**

**Plating:**  
**Z:** Zinc Nickel  
**W:** Olive green cadmium

**H1:** Single power

**Contact style:**  
**P:** Pin contact  
**S:** Socket contact

**Orientation:**  
**N, A, B, C, D, E**

**Backshell type:**  
**D1:** Straight backshell shrink boot & EMI (crimp version)  
**R1:** Right angle backshell shrink boot & EMI (crimp version)  
**G0:** Backshell low profile (threaded termination)  
**W0:** Without backshell (threaded termination)

**Specification for backshells D1 & R1 Types (crimp version):**

Specification	Shell size	Admissible cable (mm)		Barrel diameter (mm ±0.05)
		Outer Ø max	Nominal core Ø	
A	19	17	10.15	10.8
B	19	17	11.1	11.8
C	19	17	12	12.5
D	23	22	14.05	15
E	23	22	16.3	17
	25	26.5		
F	25	26.5	19	20.5

**Specification for backshells G0 & W0 Types (only threaded termination):**

Specification	Shell size	Thread
C	19, 23 & 25	M12

Note: Plug not available with backshell W0 Type. Other thread, please consult us.

Note: For other configuration, please consult us.

# 8D Series

## High Power Contacts



### Dimensions

Plug & receptacles									
8D0 Square flange receptacle			8D5 Plug			8D7 Jam nut receptacle			
Shell size	A <sup>±0.1</sup>	B <sup>±0.1</sup>	C <sup>±0.1</sup>	D <sup>±0.1</sup>	E <sup>±0.1</sup>	F Max	ØG Max	H <sup>±0.25</sup>	ØJ <sup>±0.25</sup>
19	36.5	26.97	29.36	3.29	4.98	41	38.5	45.95	49.15
23	42.9	31.75	34.93	3.96	6.2	47	44.9	52.35	55.55
25	46	34.93	38.1			52	48	55.55	58.65

Backshell D1 type												
With 8D0 (square flange receptacle)				With 8D5 (plug)				With 8D7 (jam nut receptacle)				
Shell size	A Max	B Max	ØC <sup>±0.1</sup>	ØD <sup>±0.1</sup>	E <sup>±0.1</sup>	F <sup>±0.2</sup>	G <sup>±0.2</sup>	H Max	K Max	M <sup>±0.25</sup>	N Max	P Max
19	2.65	20.9	25.6	31.6	2.26	12	4	62.5	62	3.25	22.8	63
23		20.1	32.4	38.6	2.97							
25		35.6	42.1									

Note: All dimensions are in millimeters (mm)

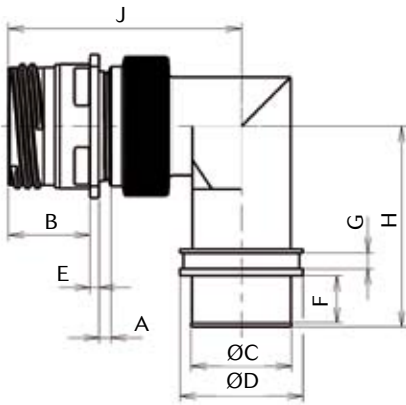
# 8D Series

## High Power Contacts

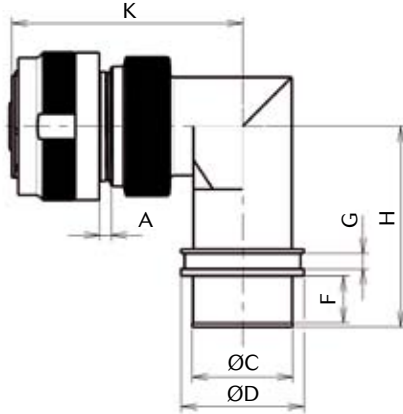


### Backshell R1 type

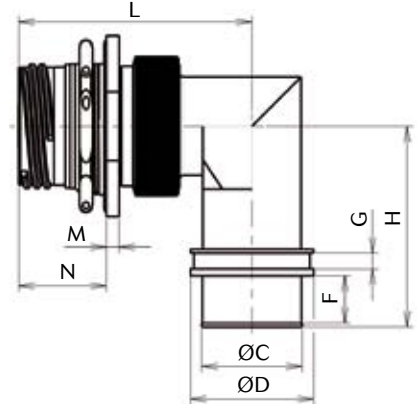
With 8D0  
(square flange receptacle)



With 8D5  
(plug)



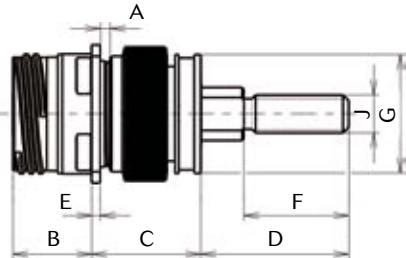
With 8D7  
(jam nut receptacle)



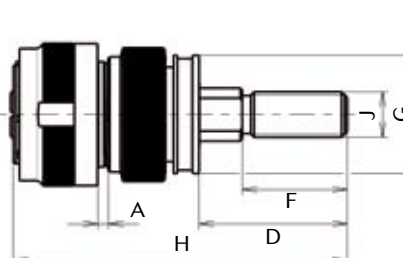
Shell size	A Max	B Max	ØC $\pm 0.1$	ØD $\pm 0.1$	E $\pm 0.1$	F $\pm 0.2$	G $\pm 0.2$	H Max	J Max	K Max	L Max	M $\pm 0.25$	N Max
19	2.85	20.9	25.6	31.3	2.26	12	4	51.1	59.3	58.7	59.6	3.25	22.8
23		20.1	32.4	38.1	2.97			54.4	62.7	62.1	63		
25		35.6	41.3	2.97	56.1			64.3	63.7	64.6			

### Backshell G0 type

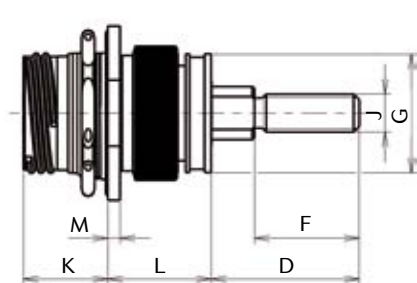
With 8D0  
(square flange receptacle)



With 8D5  
(plug)



With 8D7  
(jam nut receptacle)



Shell size	A Max	B Max	C Max	D Max	E $\pm 0.1$	F $\pm 0.2$	ØG $\pm 0.1$	H Max	J Max	K Max	L Max	M $\pm 0.25$
19	2.65	20.9	29	39.4	2.26	25	31.3	88.1	M12 x 1.75	22.6	27.6	3.25
23		20.1	29.8		2.97		38.1				28.4	
25		41.3	2.97		41.3		28.4					

Note: All dimensions are in millimeters (mm)

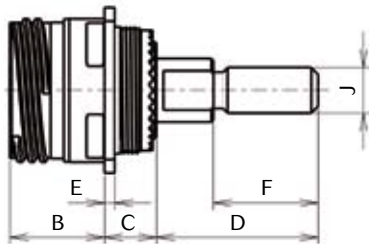
# 8D Series

## High Power Contacts

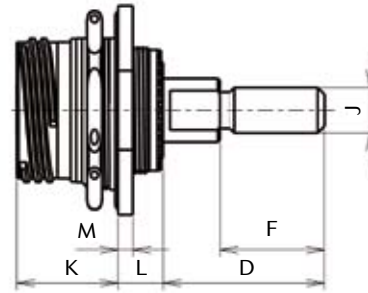


### Backshell W0 type

With 8D0  
(square flange receptacle)



With 8D7  
(jam nut receptacle)



Shell size	B Max	C Max	D Max	$E^{\pm 0.1}$	$F^{\pm 0.2}$	J Max	K Max	L Max	$M^{\pm 0.25}$
19	20.9	14	40	2.26	25	M12 x 1.75	22.6	12	3.25
23	20.1			2.97					
25									

Note: All dimensions are in millimeters (mm)

# 8D Series Optical ELIO® Contacts



## ELIO® contact

- Robust spring-loaded butt-joint optical contact using ST style ferrule (diameter 2.5mm)
- Contact size equivalent to a #16 contact
- Anti-rotation of the contact for better vibration withstanding and optical performance
- Boot-grommet for rear sealing and protection of the cable against excessive bending
- Compatibility with loose and tight structure cables
- High level optical performance even after aging
- Bayonet locking system: no tool needed for mounting/dismounting
- Compatible with singlemode, multimode and POF cable

## Technical features

### Mechanical

- **Endurance:**  
Minimum 500 mating / unmating operations
- **Shock:**  
300 g, 3 ms as per EN 2591-6402 method A
- **Vibration:**  
In MIL-DTL-38999 Series III/EN3645 connectors:  
- Sine 5Hz to 3000Hz as per EN2591-6403 method A  
- Random as per EN2591-6403 method B
- **Cable cyclic flexing\*:**  
100 cycles, load 40N as per EN2591-609
- **Cable pulling\*:** 111N
- **Cable torsion\*:**  
100 cycles, load 40N as per EN2591-611

### Environmental

- **Salt spray:**  
See the connector standard
- **Temperature range\*:**  
- 65°C to +125°C (1000 hours)

- **Rapid temperature change:**  
10 cycles - 65°C / +150°C (30min/30min)
- **Air leakage:**  
Max leakage 16 cm<sup>3</sup>/h, 2 hours, 40kPa differential pressure
- **Damp heat and low temperature:**  
5 cycles of 48h -65°C/+70°C with stage at 40°C with 95% of humidity as per EN2591- 6303 method A

### Optical

- **Multimode contact - Insertion Loss (IL):**  
0.1dB typical  
< 0.3dB over 95% of the samples as per EN2591-601,  
< 0.7dB maximum on 100% of the samples after tests
- **Multimode contact - Return Loss (RL):**  
> 21dB before and after tests as per EN2591-605
- **Singlemode contact - Insertion Loss (IL):**  
0.3dB typical  
< 0.5dB over 95% of the samples as per EN2591-601,  
< 0.9dB maximum on 100% of the samples after tests
- **Singlemode contact - Return Loss (RL):**  
> 55dB typical and > 50dB minimum

## Resistance to fluids as per MIL-DTL-38999/EN3645 standard

- **Fuel:** JP5
- **Mineral Hydraulic fluid:**  
MIL-PRF-5606 ( NATO H-515)
- **Synthetic hydraulic fluid:**  
AS1241 (Skydrol 500B4, LD4)
- **Mineral lubricant:**  
MIL-PRF-7870 (NATO O-142)
- **Synthetic lubricant:**  
MIL-PRF-23699 (NATO O-156),  
MIL-PRF-7808 ( NATO O-148)
- **Cleaning fluid:**  
MIL-PRF-87937 diluted, Propanol, white spirit, Azeotrope R113 + Methanol
- **De-icing fluid:**  
AMS 1424 ( NATO S-742)
- **Extinguishing fluid:**  
Chlorobromethane
- **Cooling fluid:**  
Coolanol



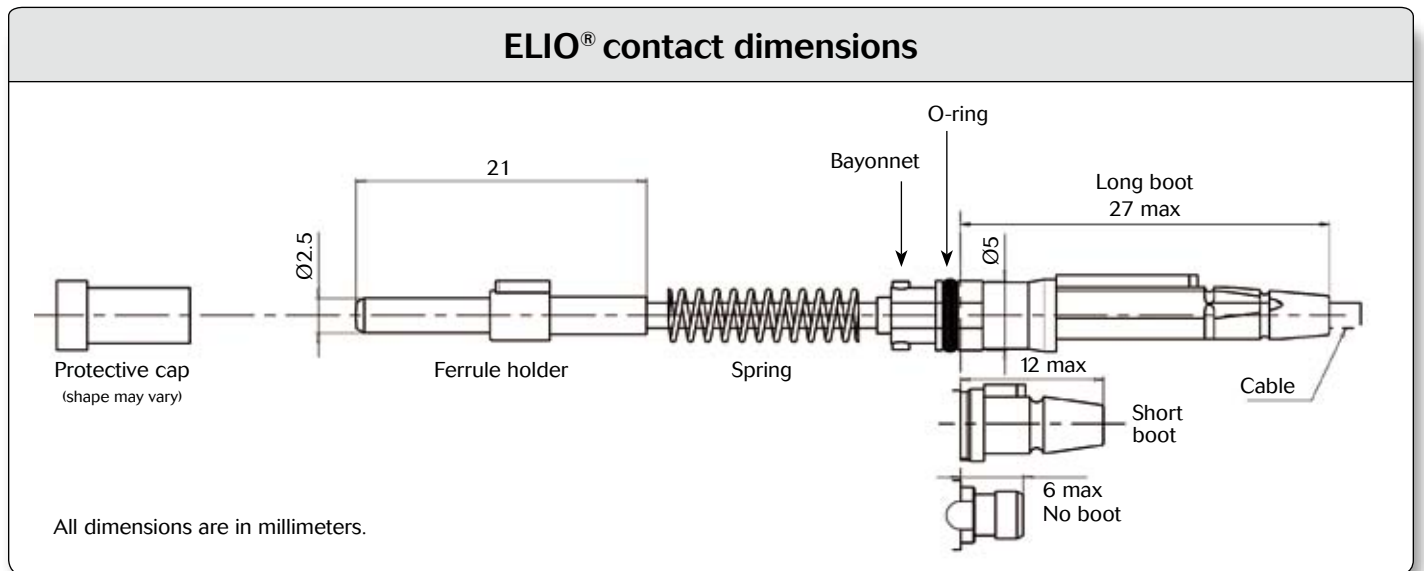
# 8D Series

## Optical ELIO® Contacts

### Ordering information

	ELIO	09	N	G	L	A
<b>Cable external diameter:</b>						
<b>09:</b> 0.9 mm or cable wider than 1.9mm with 0.9mm jacket inside						
<b>18:</b> from 1.5mm to 1.9mm						
<b>Contact sealing:</b>						
<b>W:</b> waterproof (1.8mm +/- 0.1mm cable only)						
<b>N:</b> non waterproof						
<b>Fibre type:</b>						
<b>G:</b> 50 or 62,5/125 µm						
<b>D:</b> 100/140 µm						
<b>E:</b> 9/125 PC						
<i>For POF cable please consult us.</i>						
<b>Boot type:</b>						
<b>L:</b> Long boot						
<b>S:</b> Short boot						
<b>N:</b> No boot (non waterproof version only)						
<b>Contact version index</b>						

Note: For ABS 1379/EN4531 cross reference, please consult us.



### Recommended cables

SOURIAU can offer a wide range of cables in its assemblies, from low cost to high performance aeronautical cables. ELIO® contact is compatible with singlemode and multimode cable, with tactical and breakout cable. ELIO® contact is suitable with loose and tight structure cable.

See Souriau "ELIO® Fiber Optic Technology» catalog.

### Accessories & Tooling

See Souriau "ELIO® Fiber Optic Technology» catalog.

Note: All dimensions are in millimeters (mm)





# 8D Series Optical ELIO® Contacts



## MIL-DTL-38999 Series III/EN3645 with ELIO® high density insert

- Standard MIL-DTL-38999/EN3645 shells without shielding ring (aluminum, composite, stainless steel, bronze)
- Environmental performance as per EN4531 based on MIL-DTL-38999/EN3645
- Temperature range: - 65°C to +125°C (cable limitation)

## Ordering information

### Composite, Aluminum & Stainless Steel

	<b>8D</b>	<b>5</b>	<b>E</b>	<b>11</b>	<b>W</b>	<b>02</b>	<b>A</b>	<b>N</b>
--	-----------	----------	----------	-----------	----------	-----------	----------	----------

**Shell type:**  
**5:** Plug  
**0:** Receptacle with 4-hole square flange fixing  
**7:** Receptacle with single hole jam nut fixing (*aluminum & stainless steel*)

**Designation:**  
**E:** ELIO® optical connector

**Shell size:**  
**09 - 11 - 13 - 15 - 19 - 21**  
**25** (*for aluminum & stainless steel plug only*)

**Plating:**

<b>Aluminum:</b>	<b>Composite:</b>	<b>Stainless steel:</b>
<b>Z:</b> Zinc nickel	<b>J:</b> Olive green cadmium	<b>K:</b> Passivated
<b>ZC:</b> Zinc cobalt	<b>M:</b> Nickel	<b>S:</b> Nickel
<b>W:</b> Olive green cadmium	<b>X:</b> Without plating	
<b>F:</b> Nickel		

**Layouts:** See page 127

**Insert type:**  
**A:** Male insert  
**B:** Female insert with ceramic alignment sleeves

**Polarization:**  
**N, A, B, C, D, E,**  
**U** (universal connector for testing - mates with any other polarization)

**Specification:**  
**None** or **674:** See table beside

Multimode Fiber		Singlemode Fiber	
Male Insert (A)	Female insert (B)	Male Insert (A)	Female insert (B)
<b>None</b>	<b>None</b>	<b>None</b>	<del>None</del>
<del>None</del>	<b>674</b> (for recessed contact position)	<del>None</del>	<b>674</b>

**JVS Bronze Part Number:** Please see Souriau "ELIO® Fiber Optic Technology» catalog.

Note: For ABS/EN4531 cross reference, please consult us.



# 8D Series Optical ELIO® Contacts



## ELIO® AQ Adaptor for Quadrax #8 cavities

- ELIO® AQ is an adaptor to enable the ELIO® contact to fit in any #8 Quadrax cavities in several types of connectors. Therefore, any layout containing #8 cavities can be implemented with the ELIO® fiber optic contact
- Multiple possibilities to mix optical and electrical signals in the same insert
- Temperature range: -65°C to +125°C (cable limitation)
- 100% compliant with ELIO® contact optical performance
- Before use, please ask for "Technical Bulletin N°160 Mounting Instructions ELIO® AQ adaptor"

## Ordering information

Male Insert	Multimode, Singlemode or recessed multimode contact	ELIOAQ6PB		MIL-DTL-38999 Series III EN3645
	Female Insert	Multimode	ELIOAQ6SB	
Singlemode or recessed multimode contact		ELIOAQ6SB674		

Note: Delivered with alignment boot.

## MIL-DTL-38999 Series III/EN3645 with ELIO® AQ Adaptor for Quadrax #8 cavities

- Compatible with standard MIL-DTL-38999 Series III/EN3645 Souriau connectors (aluminum, composite, stainless steel, bronze)
- Design ensures ELIO® optical performance
- Environmental performance as per MIL-DTL-38999 and EN3645 standard
- Temperature range: - 65°C to +125°C (cable limitation)



## Contact layouts

See next page

## Ordering information

Aluminum Series: see page 22  
Composite Series: see page 36  
Stainless steel Series: see page 42  
Bronze Series: see page 54

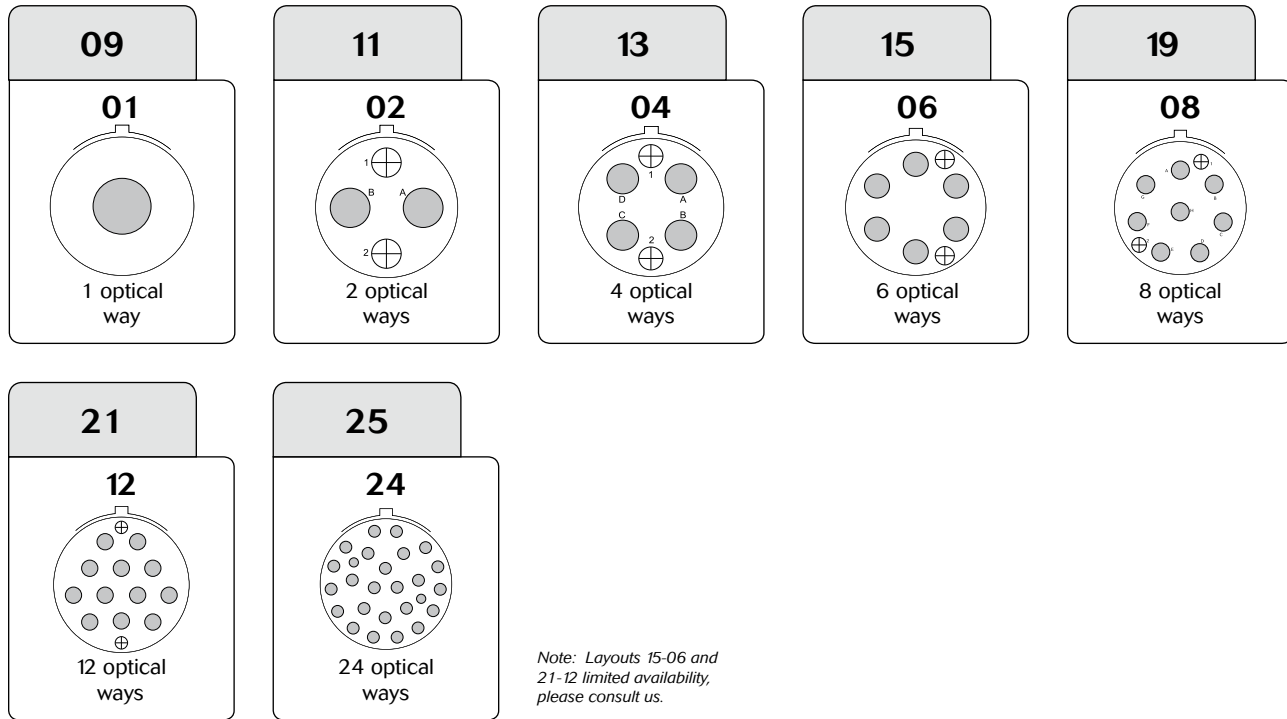


# 8D Series

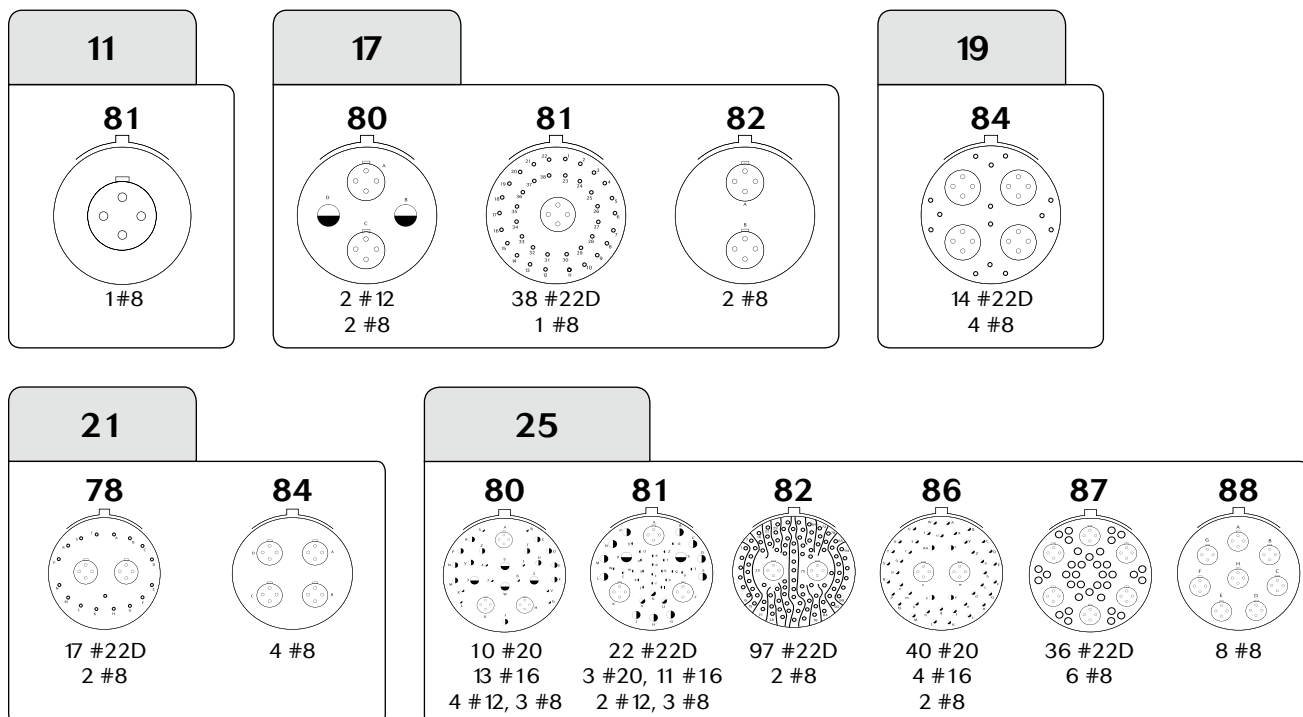
## Optical ELIO® Contacts

### Contact layouts

MIL-DTL-38999 Series III/EN3645 with ELIO® high density insert



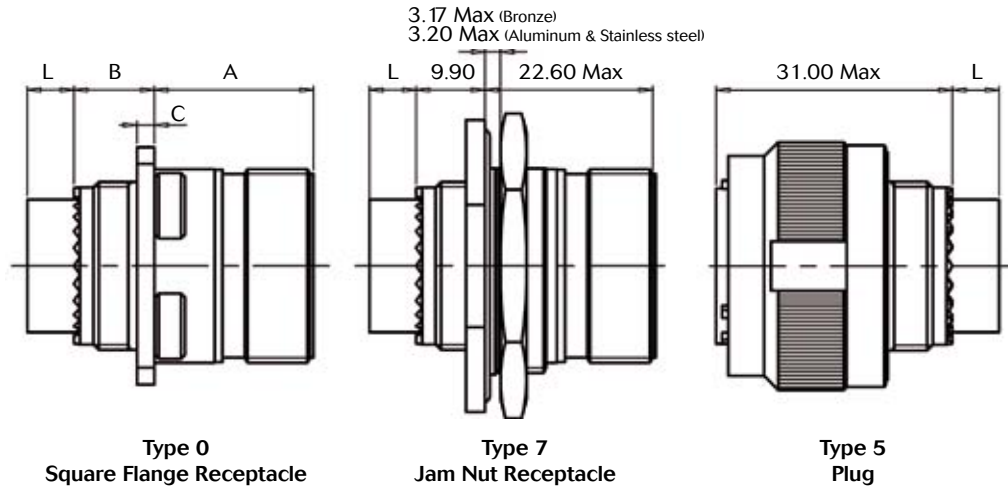
MIL-DTL-38999 Series III/EN3645 with ELIO® AQ



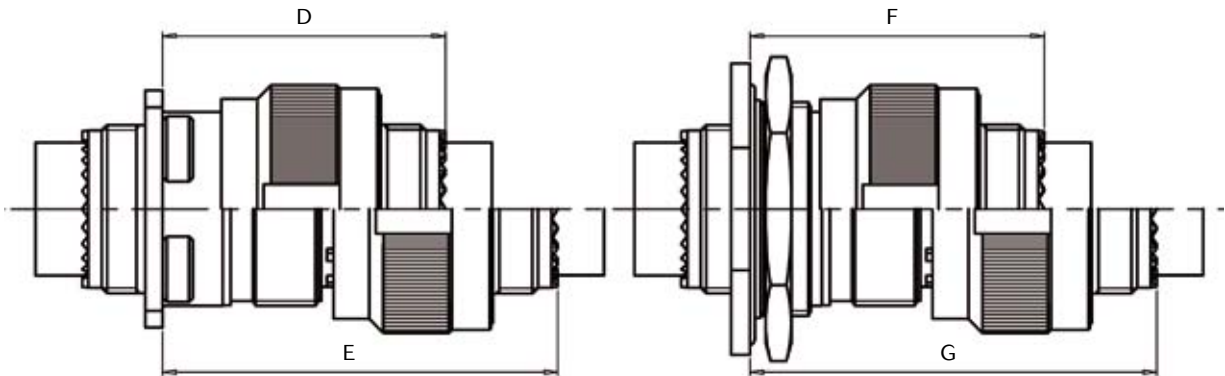
# 8D Series Optical ELIO® Contacts



## Dimensions



	A		B		C		L	
	Shell size 09 to 19	Shell size 25	Shell size 09 to 19	Shell size 25	Shell size 09 to 19	Shell size 25	Male insulator	Female insulator
Receptacle Type 0 & 7 Metal	20.90 Max	20.10 Max	12.50 Max	13.00 Max	2.50 Max	3.20 Max	4 Max	6.60 Max
Receptacle Type 0 Composite	20.90 Max	20.10 Max	12.50 Max	13.00 Max	3.65 Max	4.35 Max		



	D		E		F		G	
	Shell size 09 to 19	Shell size 25	Shell size 09 to 19	Shell size 25	Shell size 09 to 11	Shell size 13 to 25	Shell size 09 to 11	Shell size 13 to 25
Plug + Receptacle Type 0 & 7 Metal	37.00 Max	36.50 Max	52.30 Max	51.50 Max	39.00 Max	39.00 Max	54.00 Max	54.00 Max
Plug + Receptacle Type 0 Composite	37.00 Max	36.50 Max	52.30 Max	51.50 Max	N/A	N/A	N/A	N/A

Note: All dimensions are in millimeters (mm)

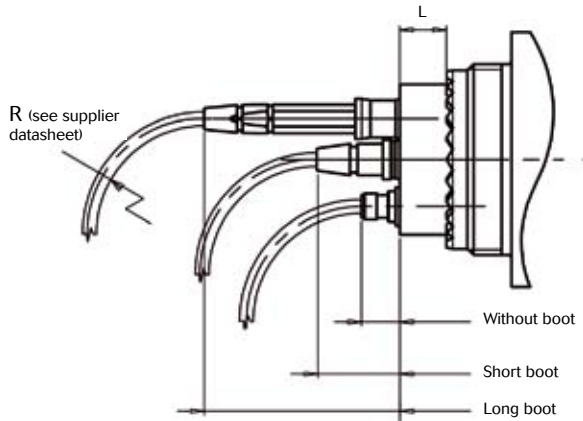
# 8D Series

## Optical ELIO® Contacts

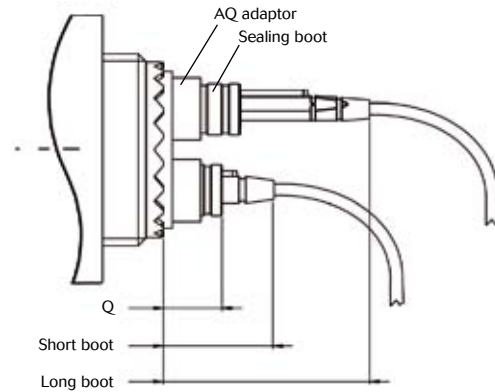


### Dimensions

#### 38999 Series III/EN3645 with ELIO® contacts in ELIO® high-density insert



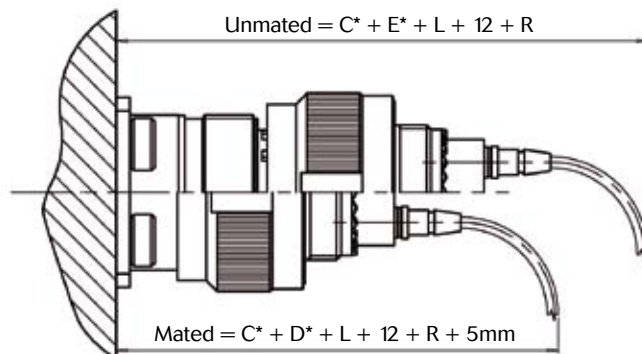
#### 38999 Series III/EN3645 with ELIO® contacts in ELIO® AQ adaptors



	ELIO® high density insert					ELIO® AQ adaptors			
	L		Contact length			Q		Contact length	
	Male insulator	Female insulator	Without boot	Short boot	Long boot	Male insulator	Female insulator	Short boot	Long boot
Plug						11.80 Max	9.10 Max		
Square flange receptacle	4 Max	6.60 Max	6 Max	12 Max	27 Max	12 Max	9.30 Max	17.60 Max	32.60 Max
Jam nut receptacle						11.60 Max	8.90 Max		

### Total length example

Square flange receptacle + plug + ELIO® contacts in ELIO® high-density insert



\* See previous page

# 8D Series BMA Coaxial Contacts



## BMA contact features For .086" flexible cable



### Electrical

- **Impedance:** 50 Ω
- **Frequency range:** DC 18GHz
- **Dielectric withstanding voltage:** 1.5 kVrms, 50Hz (at sea level)
- **Insulation resistance:** ≥ 5 000 MΩ
- **Contact resistance:**
  - . center contact: ≤ 2 mΩ
  - . outer contact: ≤ 2 mΩ
- **Return loss (DC-18GHz):** < -17dB (mated connector)
- **RF leakage interface only (fully mated):** ≥ 90 dB f (GHz) measured at interface with reference planes being in true alignment.
- **RF testing voltage:** 1.0 kVrms, 5 MHz (at sea level)
- **Admissible power:** ≤ 300 W at 3 GHz (at sea level & room T°)

### Climatics

- **Temperature range:** -65°C +125°C
- **Thermal shock:** MIL-STD-202, method 107, condition B
- **Moisture resistance:** MIL-STD-202, method 106

- **Corrosion:** Saltspray test according to MIL-STD-202, method 101, condition B
- **Vibration:** MIL-STD-202, method 204, condition D
- **Shock:** MIL-STD-202, method 213, condition I

!/\ Caution: be careful that your application doesn't exceed contact specification.

## Connector features

### Mechanical

- **Shell material & plating:**
  - . Aluminum: Cadmium olive drab (W)  
Nickel (F)  
Black zinc nickel (Z)  
Green zinc cobalt (ZC)
  - . Composite: Cadmium olive drab (J)  
Nickel (M)  
Without plating (X)
  - . Stainless steel: Passivated (K)  
Nickel (S)
  - . Titanium: Without plating (TT)  
Nickel (TF)
  - . Bronze: Without plating
- **Insulator:** Thermoplastic
- **Grommet and interfacial seal:** Silicone elastomer
- **Contact endurance:** 1000 mating cycles
- **Connector endurance:** 500 mating cycles
- **Shock:** 300g, 3 ms (EN 2591-D2 method A)

## Description

- Quick screw coupling connector
- Shell available in aluminum, composite, Stainless steel, Titanium & Bronze.
- 16 layouts available with coaxial contact.
- D38999 with High Frequency coaxial contact: DC 18GHz.
- Qualified coaxial contact according to MIL-STD-348A/321.
- Removable coaxial contact.
- Contacts delivered with boots.

### Vibration:

- . Sinus:
    - . 10 à 2000 Hz, 3x12 hrs (60g, 140 - 2000 Hz) with T° cycling
  - . Random:
    - . 50 to 2000 Hz, 2x8 Hrs (1g2/ Hz, 100 - 2000Hz) at T° max.
    - . 25 to 2000 Hz, 2x8 Hrs (5g2/ Hz, 100 - 300Hz) at ambient T°
- Test with accessories in acc with EN2591-D3

### Electrical

- **Shell continuity:**
  - . F, S & TF: 1 mΩ . J & M: 3 mΩ
  - . W, Z & ZC: 2.5 mΩ . Bronze: 5 mΩ
  - . K & TT: 10 mΩ
- **Shielding:**
  - . F & M: 85 db at 1 GHz
  - . K & TT: 45 db at 10 Ghz
  - . W & Z: 50 db at 10 GHz
  - . F, S & TF: 65 db at 10 GHz
  - . Bronze: 85 db at 10 GHz
  - . J: 90 db at 10 GHz
  - . ZC: Consult us

### Climatics

- **Temperature range:**
  - . W, ZC, J, X & bronze: -65°C +175°C
  - . F, Z, M, K, S, TT & TF: -65°C +200°C
- **Salt spray:**
  - . F, S & TF: 48 Hours
  - . ZC: 250 Hours
  - . W, Z, K, TT & bronze: 500 Hours
  - . J, M & X: 2000 Hours

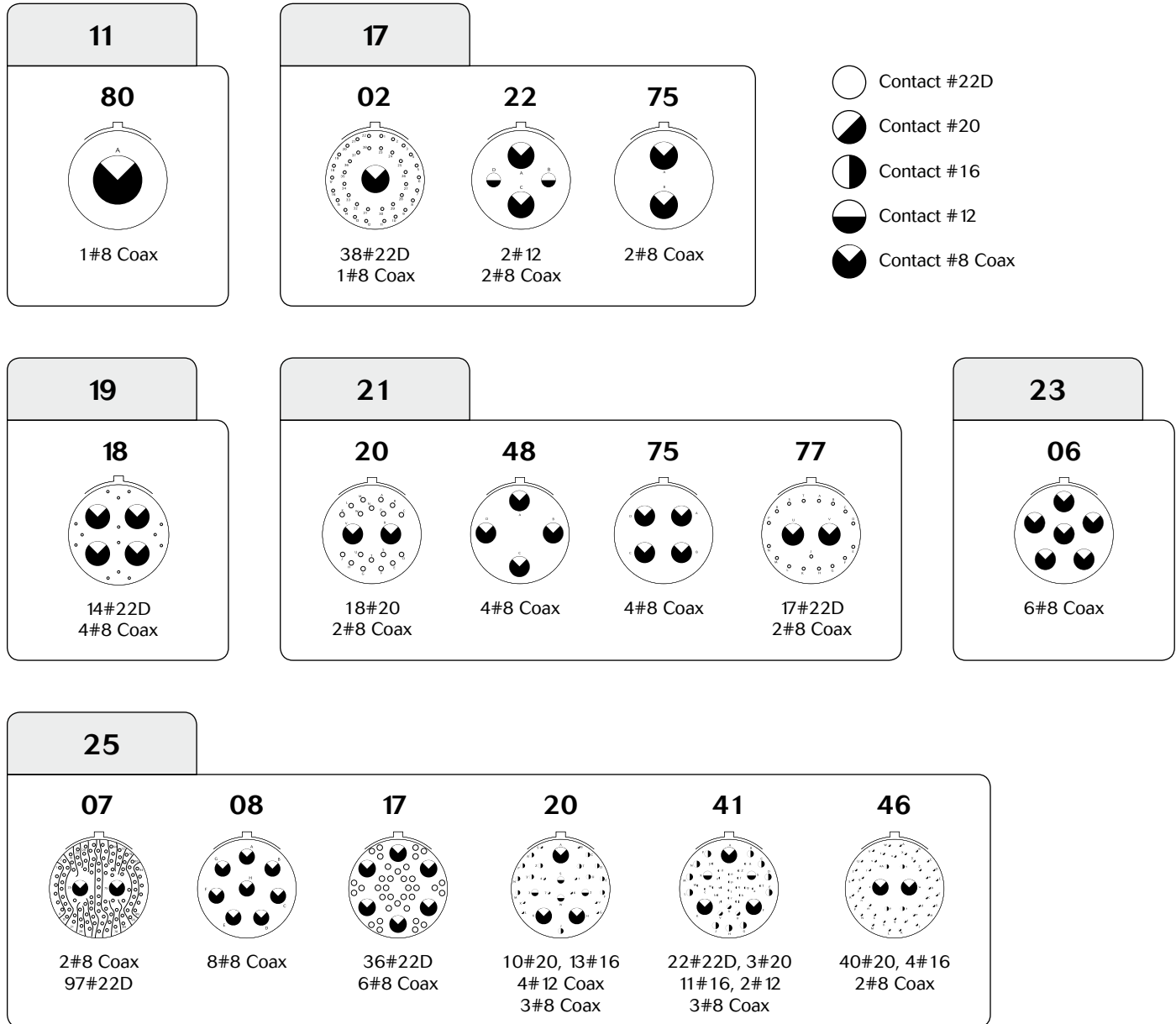
# 8D Series

## BMA Coaxial Contacts



### Contact layouts

Specification 737 mandatory







# 8D Series

## BMA Coaxial Contacts

### Ordering information

<b>Basic Series</b>	<b>8D</b>	<b>0</b>	<b>25</b>	<b>W</b>	<b>46</b>	<b>P</b>	<b>N</b>	<b>737</b>
<b>Shell style:</b>								
0: Square flange receptacle								
1: In line receptacle								
7: Jam nut receptacle								
5: Plug with RFI shielding								
<b>Shell size:</b>								
11, 17, 19, 21, 23, 25								
<b>Aluminum plating:</b>								
W: Olive drab cadmium								
F: Nickel								
Z: Black zinc nickel								
<b>Contact layout:</b>								
See previous page								
<b>Contact type:</b>								
P: Pin								
S: Socket								
<b>Orientation:</b>								
N, A, B, C, D, E								
<b>Specification (mandatory):</b>								
737: Coaxial contacts - for .086" flexible cable								
747: Coaxial contacts - for .141" flexible cable								

For other material and configuration (integrated clinch nuts, double flange, other cables, ...) please consult us.

### Recommended cables

Designation	Part number	Description	
.086" flexible cable	Multiflex 86	Outer conductor contact	Soldered
.141" flexible cable	Multiflex 141		

For other cables please consult us.

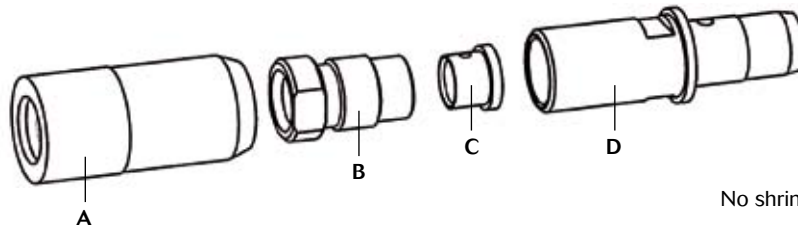


# 8D Series

## BMA Coaxial Contacts



### Assembly Instruction



No shrinking sleeve allowed.

Picture	Process	Feature / Check	Tools required
	<p>Dip the cut length of cable in flux and tin.</p> <p>Cut the jacket to the braid. Remove jacket.</p>	<p>The solder must flow at rear for min. 7 mm.</p>	<p>Stanley blade</p>
	<p>Remove cable dielectric and tinned braid according to diagram.</p> <p>Form tip of centre contact to a 90° cone.</p> <p>Slide Taper sleeve A and nipple B over cable.</p>	<p>Do not damage inner conductor, dielectric and braid of cable.</p>	<p>Stanley blade Tip trimmer</p>
	<p>Slide ferrule C over cable, flush to dielectric.</p> <p>Solder at X.</p> <p>Avoid excessive heat, immediately cool down and clean with alcohol.</p>	<p>If the cable does not fit into the cable entry, use a flat-nose plier to calibrate the braid.</p> <p>Center conductor of cable must be exactly centered.</p>	<p>Soldering iron Solder Flat-nose pliers</p>
	<p>Push prepared cable into connector body D and tighten nipple B.</p> <p>Taper sleeve A will be used for MIL-connector.</p>	<p>Torque: 3 Nm.</p>	<p>Male contact: Torque wrench AF.6 (3 Nm) Spanner AF.5.5</p> <p>Female contact: Torque wrench AF.6 (3 Nm) Spanner AF.6</p>



# 8D Series

## RJ45/USB Series



### Description

- Derived from MIL-DTL-38999 Series III
- True ruggedized RJ45 & USB A solution
- High vibration resistance
- Shock resistant
- IP67
- Shielded
- Available in feed through, solder out and pig tail version
- No tools for cabling
- RoHS version

### Applications

- Data transmission using standard interface
- Flight data transmissions

### Technical features

#### Mechanical

- **Shell material:**
  - Aluminum alloy
  - Composite
- **Shell plating:**
  - Olive drab cadmium
  - Nickel
  - Black zinc nickel
  - Zinc cobalt

- **Insert:**
  - Thermoplastic
- **Contacts:**
  - Copper alloy
- **Contacts plating:**
  - Gold
- **Endurance:**
  - Per MIL-DTL-38999, 500 mating cycles
- **Vibration:**
  - 10-500 Hz 20 g

#### Electrical

- **RJ45:**
  - 10 BaseT, 100 BaseTX and 1000 BaseT
  - Cat 5e per TIA/EIA 568A/B
- **USB:**
  - 10 BaseT and 100 BaseTX
  - Cat 5e per TIA/EIA 568A/B

### Climatic

- **Sealing:**
  - IP67 with protective cap
- **Temperature range:**
  - 40°C to +85°C
- **Fluid resistance:**
  - Per MIL-DTL-38999 with protective cap



# 8D Series

## RJ45/USB Series

### Connector part numbers

<b>Basic Series</b>	<b>8D</b>	<b>0</b>	<b>F</b>	<b>17</b>	<b>W</b>	<b>UA</b>	<b>S</b>	<b>N</b>
<b>Shell type:</b>								
0: Square flange receptacle								
7: Jam nut receptacle (aluminum only)								
<b>Designator:</b>								
F: Feedthrough								
S: Solder out								
C: Pig tail cable receptacle								
<b>Shell size:</b>								
17: USB								
19: RJ45								
<b>Plating:</b>								
W: Olive drab cadmium (aluminum) - 500 hours salt spray								
F: Nickel (aluminum) - 48 hours salt spray								
J: Olive drab cadmium (composite) - 500 hours salt spray								
M: Nickel (composite) - 500 hours salt spray								
Z: Black zinc nickel (aluminum) - 500 hours salt spray								
ZC: Zinc cobalt - 250 hours salt spray								
X: No finish (composite)								
<b>Insert:</b>								
UA: USB type A								
RJ: RJ45								
<b>Contact style:</b>								
S: Socket								
<b>Orientation:</b>								
N, A, B, C, D, E								
<b>Specification code:</b>								
Consult us for custom configuration (cable type, length, termination style)								

### 8D RJ45 Series



Square flange receptacle

Jam nut receptacle

### 8D USB Series



Square flange receptacle

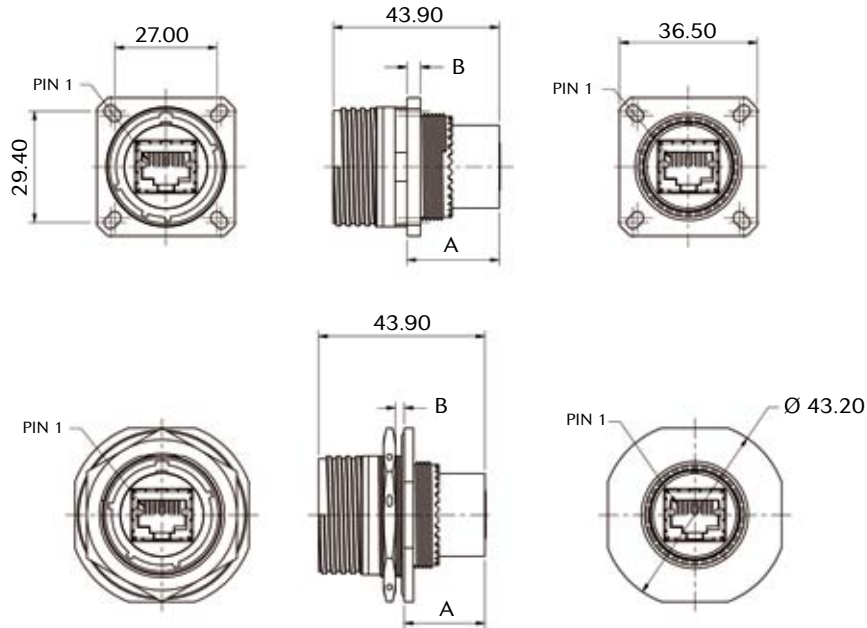
Jam nut receptacle

# 8D Series

## RJ45/USB Series



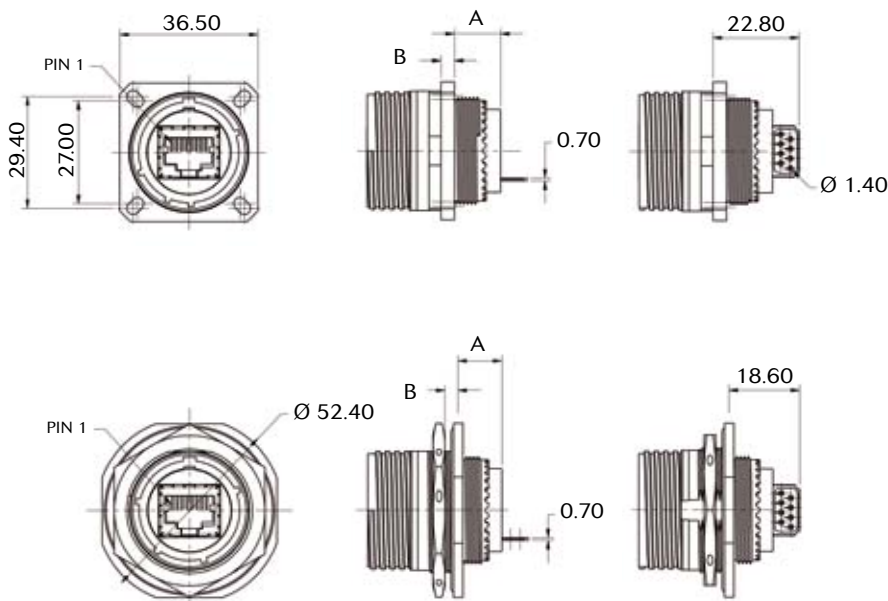
### RJ45 interface - receptacle feedthrough series



Square flange receptacle		
Material	A (max)	B (max)
Aluminum	20.55	2.50
Composite	20.78	3.65

Jam nut receptacle		
Material	A (max)	B (max)
Aluminum	21.34	3.20

### RJ45 interface - receptacle solder out series



Square flange receptacle		
Material	A (max)	B (max)
Aluminum	11.91	2.50
Composite	12.14	3.65

Jam nut receptacle		
Material	A (max)	B (max)
Aluminum	12.70	3.20

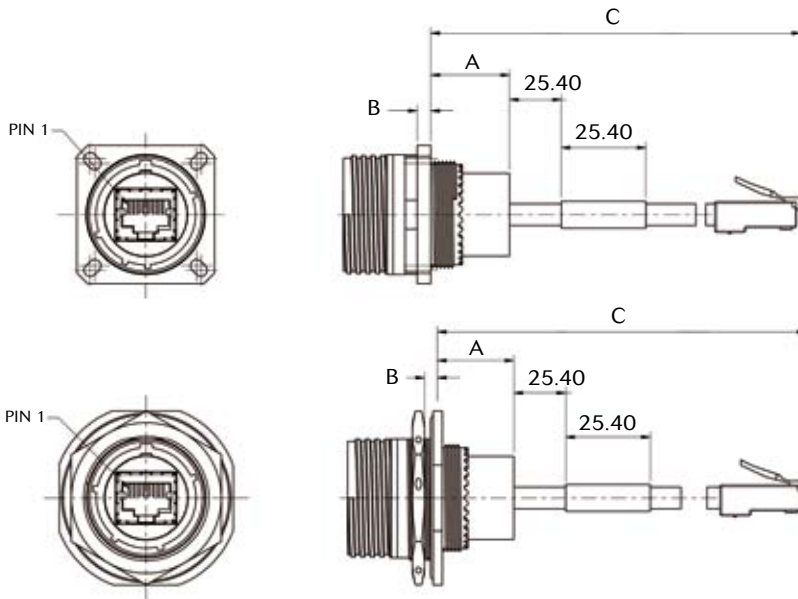
Note: All dimensions are in millimeters (mm)

# 8D Series

## RJ45/USB Series



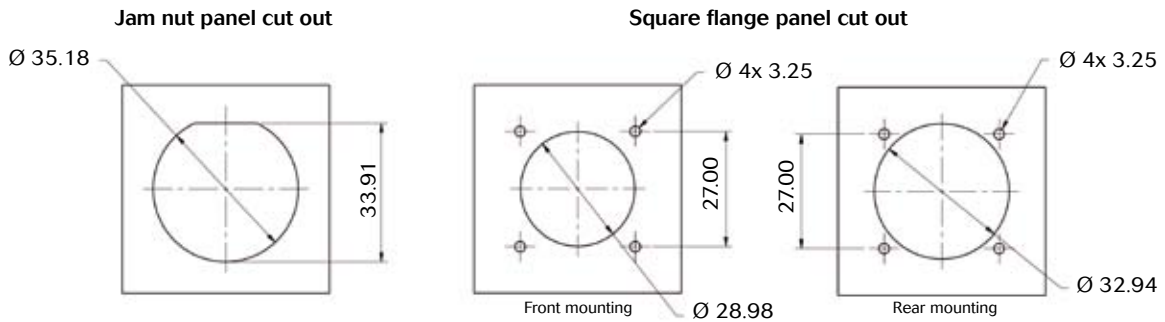
### RJ45 interface - receptacle pigtail series



Square flange receptacle			
Material	A (max)	B (max)	C (max)
Aluminum	20.78	2.50	304.8 ±25.4
Composite	20.78	3.65	304.8 ±25.4

Jam nut receptacle			
Material	A (max)	B (max)	C (max)
Aluminum	21.34	3.20	304.8 ±25.4

### RJ45 interface - receptacle panel cut out



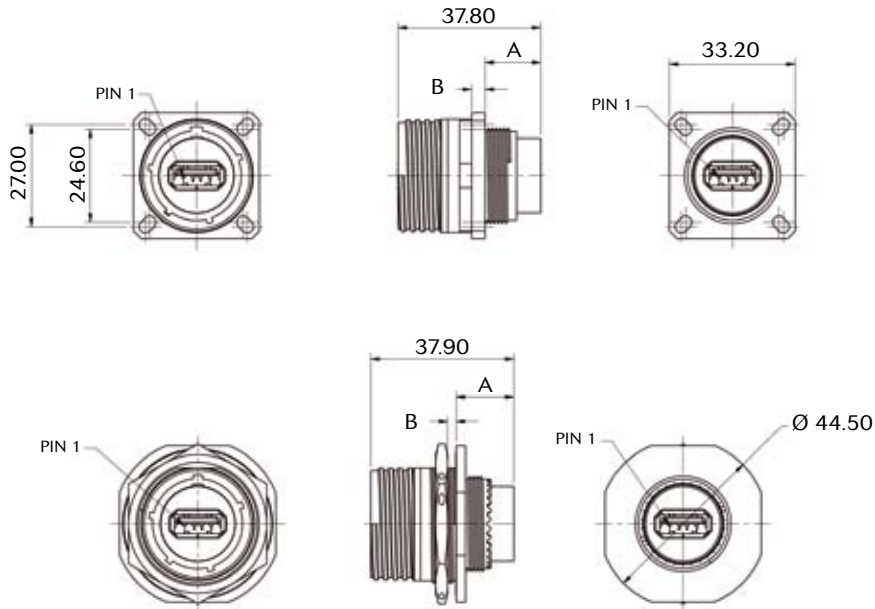
Note: All dimensions are in millimeters (mm)

# 8D Series

## RJ45/USB Series



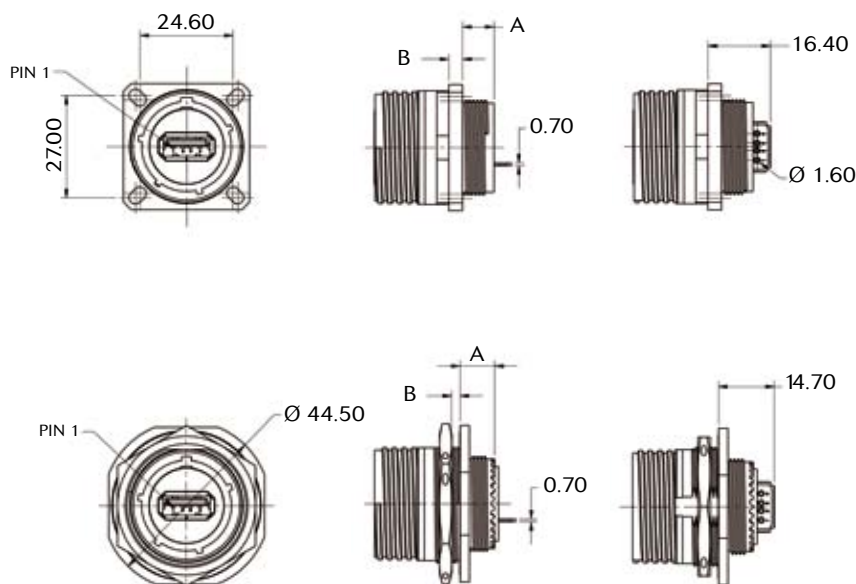
### USB interface - receptacle feedthrough series



Square flange receptacle		
Material	A (max)	B (max)
Aluminum	14.45	2.50
Composite	14.68	3.65

Jam nut receptacle		
Material	A (max)	B (max)
Aluminum	15.24	3.20

### USB interface - receptacle solder out series



Square flange receptacle		
Material	A (max)	B (max)
Aluminum	8.10	2.50
Composite	8.33	3.65

Jam nut receptacle		
Material	A (max)	B (max)
Aluminum	11.94	3.20

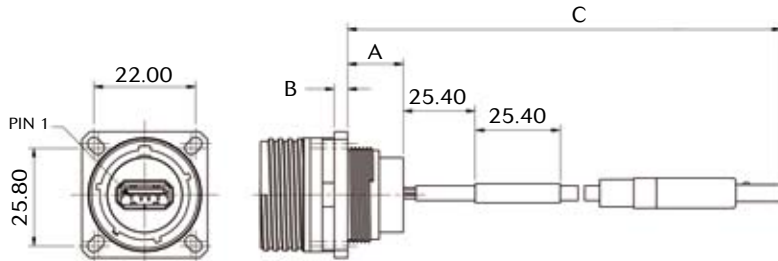
Note: All dimensions are in millimeters (mm)

# 8D Series

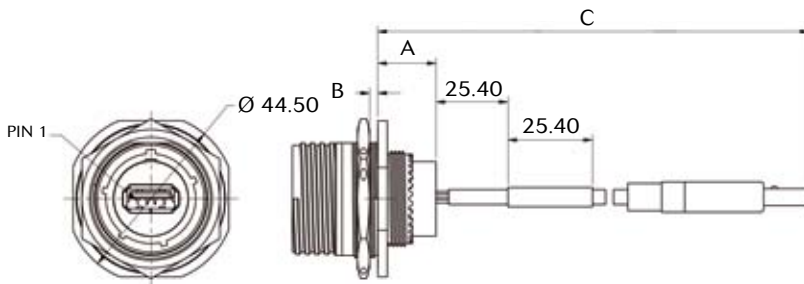
## RJ45/USB Series



### USB interface - receptacle pigtail series

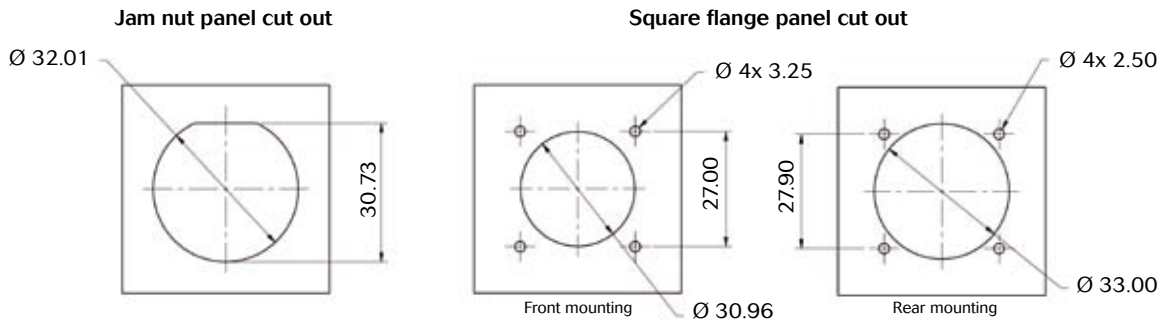


Square flange receptacle			
Material	A (max)	B (max)	C (max)
Aluminum	14.45	2.50	304.8 ±25.4
Composite	14.68	3.65	304.8 ±25.4



Jam nut receptacle			
Material	A (max)	B (max)	C (max)
Aluminum	15.24	3.20	304.8 ±25.4

### USB interface - receptacle panel cut out



Note: All dimensions are in millimeters (mm)

and Series.





## 8D Series

# Range Extension

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# 8D Series

## MIL-DTL-38999 Series III

### Product range extension

#### micr 38999

**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](http://www.souriau.com)

#### 8D Hermetic ELIO® Feedthrough

**The first truly hermetic aluminum 38999 fiber optic feedthrough.**

**Truly hermetic:**

- . Leak rate  $<10^{-9}$  atm.cm<sup>3</sup>/s.

**Weight saving:**

- . Aluminum shell save 30 to 40% of weight vs stainless steel.

**Single and multi way:**

- . Unique multiway hermetic fiber optic feedthrough in the world.

**Intermateable with Souriau's ELIO® connectors:**

- . Airbus A380 spec ABS1379 qualified
- . Intermateable with ARINC 801 and EN4531 standards



See «38999 Series III - Hermetic ELIO® Feedthrough» product news on [www.souriau.com](http://www.souriau.com)



# 8D Series

## MIL-DTL-38999 Series III

### Product range extension

#### Rack & Panel

Sealed rack & panel for blind connection. A 100% scoop proof connector with quick connection in hard-to-reach areas.

**Blind connection:**

- . Easy & fast connection without any coupling/uncoupling between a float-mounting unit & a fixed unit

**Float-mounting unit - rack:**

- . Female crimp contacts.
- . Mounting on the cabinet side.
- . Angular orientation with a key.
- . Possibility to supply rear accessories.

**Misalignment catching:**

- . Longitudinal, axial and angular.



See «38999 Series I - Rack & Panel 8LT» product news on [www.souriau.com](http://www.souriau.com)

#### 230V Connector

The use of higher voltage to reduce cable weight has led to the development of double voltage connectors.

**Robust design and materials:**

- . In high altitude un-pressurized areas, higher voltages increase electrical partial discharges → Risk of contact short circuits. Our 230V connector avoids this risk !

**No possible mismatch:**

- . Specific T and V clocking to avoid mating with a non 230V qualified counterpart.

**Flexible offering:**

- . Available in standard watertight and hermetic connectors with the same performance.
- . Available in composite and stainless steel shells.



See «230 Volt EN3645 Derived Connectors» product news on [www.souriau.com](http://www.souriau.com)



# 8D Series

## MIL-DTL-38999 Series III

### Product range extension

#### 8D8/8D9 Series

**8D8: high vibration performance push-pull connector.**  
**8D9: lanyard release, high performance 38999 quick release.**

**A wide range with excellent performances:**

- . MIL-DTL-38999 layouts and contacts
- . MIL-DTL-38999 Series electric performances
- . Scoop proof
- . Compatible with standard backshells 38999 Series III
- . Very high performance coupling with ball locking concept, check of locking by free ring when mated.

**Easy to connect-disconnect:**

- . 8D8: ideal for restricted space mating.
- . 8D9: simple push to connect - pull to disconnect.

**High vibration performance:**

- . Up to 44g
- . 8D8: ideal for mil-aero and space applications.
- . 8D9: ideal for missiles, inter-stage separation, space probes, UAVs.



See «8D8/8D9 Series - 38999 Push pull/Quick release» catalog on [www.souriau.com](http://www.souriau.com)

#### 8DB: Bulkhead

**“Double Receptacle” mounted on panel allows cable plug connection on both sides of the bulkhead.**  
**Create a permanent sealed barrier on your panel suitable for pressurized or depressurized areas.**

**Easy integration:**

- . Standard 38999 mounting interface (square flange, jam nut)..
- . Easy modular assembly and connection.
- . Time saving for maintenance.
- . The ideal interconnect solution for aircraft pressurized/non pressurized panels.

**Reinforced sealing:**

- . Feedthrough sealing even when unmated ( $10^{-6}$  atm.cm<sup>3</sup>/s).
- . Permanent sealing barrier on panel (O rings).
- . Glass fused hermetic version available ( $<10^{-8}$  atm.cm<sup>3</sup>/s) for fuel tanks/space systems.

**A large platform available:**

- . All 38999 Series III layouts (signal and power contacts).



See «38999 Series III - Bulkhead Feedthrough» catalog on [www.souriau.com](http://www.souriau.com)



# 8D Series

## MIL-DTL-38999 Series III

### Product range extension

#### 8PS Series

**Sealed cable feedthrough. Allows a bundle of cables to cross through the bulkhead without any contact junctions.**

**All cables are individually sealed inside the feedthrough:**

- . For maximum MTBF by eliminating cable termination & contact junction.
- . When maximum continuity is required for copper cables.
- . To suppress contact attenuation with Fiber optic cables.

**Easy and safe installation.**

**Reinforced sealing.**



#### 8D Hermetic Aluminum 38999 Power and Signal Connector

**The unique connecting solution offering hermeticity, great conductivity and mass saving all at once: ideal for power applications.**

**Truly hermetic:**

- . Leak rate  $<10^{-9}$  atm.cm<sup>3</sup>/s.

**Weight saving:**

- . Save 30 to 40% of weight vs stainless steel.

**Outstanding conductivity:**

- . Conductivity 5 times better than regular Fe/Ni contacts.



# 8D Series

## MIL-DTL-38999 Series III



### Product range extension

#### 8D36 Lanyard Release

**Field repairable / MIL-STD-1760 umbilical.**  
**Self-alignment, blind connector mating & safe operational solution to weapon releases.**

**Safe quick disconnect at high speed:**

- . Robust unlocking system : 9.15m/s  $\pm$ 10%.

**Field repairable:**

- . Damaged coupling mechanism can be removed and fully replaced without need to disassemble the electric harness or cable backshell.

**High vibration performances:**

- . Random: 44 G RMS, Sine: 60G with angular separation up to 20° (maximum)



#### 8TFD Filter Connector

**EMI-RFI filters and lightning protection in composite light-weight shell.**

**Space saving:**

- . Complete filter solution in standard shell.
- . No need for filter PCB inside equipment.
- . Smaller equipment envelope required.

**Excellent filter performance:**

- . Excellent performance, comparable to aluminum shell EMI-RFI filter connectors.

**Highly corrosion resistant:**

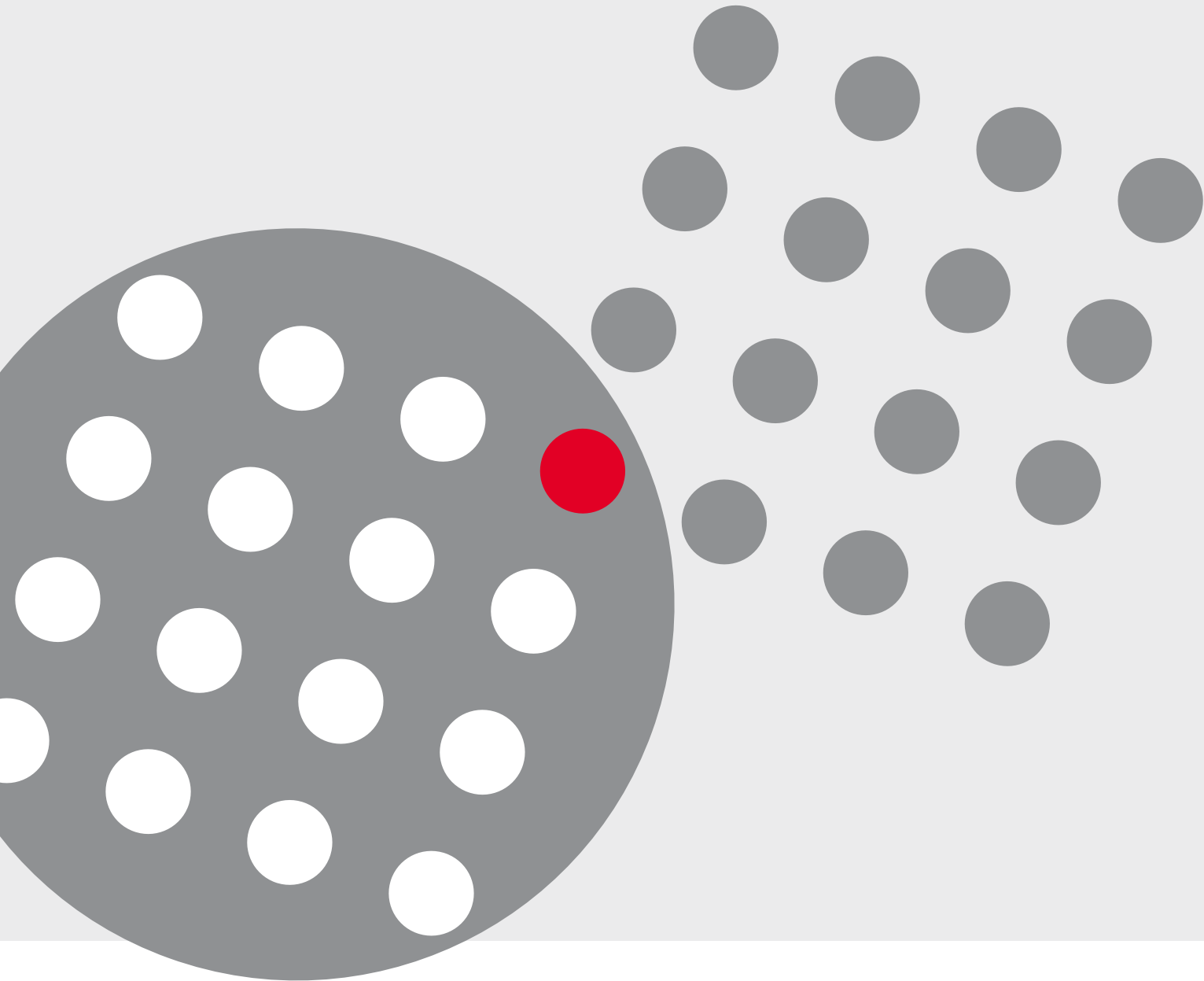
- . 2000 hours salt spray in either nickel or olive drab finish.

**Wide range of layouts available:**

- . SOURIAU EMI-RFI Filter 38999 Series III connectors are available in aluminum, marine bronze, and stainless steel shells.







**SOURIAU**

[www.souriau.com](http://www.souriau.com)

[contactmilaero@souriau.com](mailto:contactmilaero@souriau.com)

