



Ordering information

MIL/AERO part-numbering system

MIL/Aero series - PCB versions		8MC	N		F25	P	1A7N
Shell material:	None: composite A: aluminum						
Version:	N: MIL grade (electroless Nickel finish) None: without plating <i>For Space Grade plating (gold) - consult our Space Grade microComp® catalog</i>						
Environment:	E: sealed version <i>With P1AxN termination: non standard, consult us</i> <i>With POL3 termination: non standard, consult us</i> T: sealed version, interfacial seal only <i>The interfacial seal is always on the female connector (-S- contact type)</i> None: no sealing						
Shell size & contact layout:	A7: 7 contacts B11: 11 contacts* C13: 13 contacts* D17: 17 contacts* E21: 21 contacts* F25: 25 contacts G33: 33 contacts* H51: 51 contacts J104: 104 contacts						
Contact type:	P: Pin contacts for male connector S: socket contacts for female connector						
Termination code:	OL3: Straight PCB contacts 1A0N: 90° bent PCB contacts, without bracket, with removable drilled bar, 2,54 mm pitch between rows 1A7N: 90° bent PCB contacts, 2,54 mm pitch between rows, with bracket, removable drilled bar and standard jackpost						

MIL/Aero series - Crimp versions		8MC	N	E	F25	S	011B
Shell material:	None: composite A: aluminum						
Version:	N: MIL grade (electroless Nickel finish) None: without plating <i>For Space Grade plating (gold) - consult our Space Grade microComp® catalogue</i>						
Environment:	E: sealed version <i>With P011, P011B or PL termination: grommet</i> <i>With S011, S011B or SL termination: grommet + interfacial seal</i> T: sealed version, interfacial seal only <i>The interfacial seal is always on the female connector (-S- contact type)</i> None: no sealing						
Shell size & contact layout:	A7 : 7 contacts B11 : 11 contacts* C13: 13 contacts* D17: 17 contacts* E21 : 21 contacts* F25: 25 contacts G33: 33 contacts* H51 : 51 contacts J104: 104 contacts						
Contact type:	P: Pin contacts for male connector S: Socket contacts for female connector						
Termination code:	011: Crimp contacts for wire AWG 26 & 28 011B: Crimp contacts for wire AWG 24 & 26 L: delivered without contact						

Insertion/extraction tool 8MCIET is always included with -S011, -S011B, -P011B and -P011 versions, but not with -L versions.
Termination codes -011, -011B and -L are not marked on the connector (only for order)

***Consult us for availability**
Jackscrews kits are never included



Technical characteristics



Electrical

- Contact size: #26
- Contact pitch: 2 mm
- Current rating: 2.5 Amps
- Dielectric Withstanding Voltage
sea level: 600 VRMS
70.000 feet: 200 VRMS
- Insulation resistance: 5,000 MΩ
- Low level contact resistance: 6 mΩ
- Rated current contact resistance: <5 mΩ
- Admissible wire gauge: AWG 24 to 28
- Shielding effectiveness: > 60dB attenuation
from 1 to 500 MHz
- Shell to shell continuity:
Composite version: < 2mΩ
Aluminum version: < 2mΩ

Mechanical

- Endurance / Durability:
500 mating/unmating operations
- Contact retention in insert: 15 N
- Vibration:
Random: 44g
Sine: 20g
- Shock: 50g

Climatic

- Operating temperature range:
-55°C to +175°C
- Storage temperature range
-65°C to +125°C
- Soldering temperature: +260°C
- Salt spray (corrosion):
Composite shell: 2000 hrs
Aluminum shell: 48 hrs
- Flammability: UL 94V-0
(self-extinguishing materials)

Material and finishes:

- Shell: composite (glass fiber reinforced)
material for maximum mechanical resistance)
or Aluminum
- Shell plating: 10μ Ni over Cu
- Contact: copper alloy
- Contact plating: 1.27 μm (50 μin) Au
according to Type 2, Grade C of MIL-DTL-45204
- Insulator: thermoplastic
- Mounting accessories (Jackscrews, jackposts,
clip): stainless steel, passivated per QQ-P-35
- Grommet and seal: silicone rubber
- Drilled bar: thermoplastic

Environmental

- RoHS: compliant

For more information or questions, please contact microcomp@souriau.com



Technical features

Detailed performances

Mechanical			
Description	Requirement		Test method
Endurance / Durability	500 mating/unmating operations Connectors shall meet contact resistance, insulation resistance, DWV, mating and unmating force		MIL-DTL 83513 8 cycles/minute maximum
Insert retention in shell	34,4 N/cm² (50 psi)		MIL-DTL 83513
Tensile test	F>60N for #24 cable, F>45N for #26 cable and F>30N for #28 cable		SAE AS-39029
Vibration	No discontinuity > 1µs, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	Random: 44g	IEC 60068-2-35, test Fda (8h x 3 axis, f1 = 20Hz, f2 = 2000Hz)
		Sine: 20g	IEC 60512-4 test 6d (30min x 3 axis, 10Hz-2000Hz)
Shock and Bump	No discontinuity > 1µs, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after shock and bump tests.	Shock: 50g for 11ms	IEC 60512-4 6c (3 shocks x 3 axis x 2 directions = 18 shocks)
		Bump: 390 m/s²	IEC 60512-4 6b (4,000 ± 10 bumps x 3 axis x 2 directions = 24,000 bump)
Contact insertion/ removal endurance	Contact insertion and withdrawal forces < 13.5 N Contact retention in insert > 15 N		9 cycles insertion/removale
Probe damage	Separation force mini > 0.14 N		IEC 60512-8 test 16A bending moment = 0.9 Ncm
Contact retention in insert	>15 N		An initial force of 10N shall be applied to the engagement end of the contact. Then a force at a rate not exceeding 5N per sec shall be applied: displacement shall then be mesured from the insert face with the contact under load and it shall not exceed 0,3 mm (.012 in) at the required force.
Max engagement force	1,66 N		The maximum diameter test pin or minimum diameter test sleeve shall be engaged to 70% of the depth of the female mating cavity or length of the engagement male contact and separate 3 times. The engagement and separation forces shall be mesured on the third engagement and separation.
Min separation force	0,14 N		



Technical features

Detailed performances

Electrical		
Description	Requirement	Test method
Dielectric Withstanding Voltage (2mA leakage current max) sea level	600 VRMS	MIL-DTL 83513 EIA-364-20
Dielectric Withstanding Voltage (2mA leakage current max) 70,000 feet	200 VRMS	MIL-DTL 83513 IEC 60512 test 4a methB
Insulation resistance	5,000 MΩ	MIL-DTL 83513 EIA-364-21 IEC 60512 test 3a methB MIL-STD 202 test meth 302
Low level contact resistance	6 mΩ	MIL-DTL 83513 EIA 364-06 MIL-STD 202 Meth 307
Rated current contact resistance	5 mΩ	
Overload test	Temperature < 100°C	A current of 3 Amp for AWG 26 and AWG 28 are passed through all contacts of mated connectors for 30s. This was followed by a period of 90 s with no current flowing. This constitutes 1 cycle. The cycle has been repeated 5 times (10 minutes in total).
Shielding effectiveness	>60dB attenuation from 1 to 500 MHz	IEC-60512-23-3
Shell to shell continuity	Composite version < 2mΩ Aluminum versions < 2mΩ	EIA 364-83 EN2591-205

Climatic		
Description	Requirement	Test method
Dry heat	At 125 °C : insulation resistance > 5,000MΩ at 500 VDC	IEC 60068-2-2 test Ba 2 hours at 175°C with sudden change of temperature.
Climatic sequence: Dry heat / Damp heat 1 / Cold test / Low air pressure / Damp heat 2	No breakdown or flashover during low air pressure test, mated and unmated at 150VAC Insulation resistance > 100 MΩ at 500VDC just after Damp heat 2 test	Dry heat: IEC 60068-2-2 test Ba (2 hours at 175°C with sudden change of temperature) Damp heat: IEC 60068-2-30 test Db severity b Cold test: IEC 60068-2-1 test Aa (2 hours at -65°C with sudden change of temperature) Low Air Pressure: IEC 60068-13 test M (33,000m = 108,000 ft)
Storage temperature range	-65°C to +125°C	IEC 60512-6 test 11i for 1.000 h at +125°C
Soldering temperature	+260°C	EIA-364-56 Procedure 3 Test Condition B
Salt spray (corrosion)	No corrosion on the interfaces or mating surfaces after 2000 hours for composite shell and 48 hours for Aluminum shell.	IEC 60068-2-11 test Ka



Technical features

Detailed performances

Others		
Description	Requirement	Test method
Residual Magnetism	< 200 gamma	ESA ESCC 3401 / 9.5
Permanence of marking	No deterioration after 3 immersions of 1mn in solvent with 10 brushings after each immersion	MIL-STD 202 meth 215

Weight

Composite shells are up to 36% lighter than aluminum.

Shell max weight* in g (oz)				
	Composite version		Aluminum version	
	Male	Female	Male	Female
A	1.05 (0.037)	1 (0.035)	1.35 (0.048)	1.45 (0.051)
B	1.35 (0.048)	1.25 (0.044)	1.75 (0.062)	1.8 (0.063)
C	1.6 (0.056)	1.45 (0.051)	2.15 (0.076)	2.2 (0.078)
D	1.8 (0.063)	1.65 (0.058)	2.35 (0.083)	2.4 (0.085)
E	2.1 (0.074)	1.88 (0.066)	2.7 (0.095)	2.69 (0.095)
F	2.35 (0.083)	2.1 (0.074)	2.95 (0.104)	2.9 (0.103)
G	2.5 (0.088)	2.2 (0.078)	3.15 (0.111)	3.05 (0.108)
H	3.44 (0.121)	2.95 (0.104)	4.2 (0.148)	4.1 (0.145)
J	6.1 (0.215)	4.75 (0.168)	7.3 (0.257)	6.45 (0.228)

* without contact

Contact max weight in g (oz)		
Contacts	Male	Female
Crimp contacts	0.04 (0.0014)	0.06 (0.0021)
Straight PC tails (spills) contacts	0.08 (0.0028)	
90° PC tails (spills) contacts for shell size A to F*	0.09 (0.0032)	
90° PC tails (spills) contacts for shell size G and H*	0.097 (0.0034)	
90° PC tails (spills) contacts for shell size J*	0.11 (0.0039)	

* average weight

Mating forces

Shell sizes									
	A	B	C	D	E	F	G	H	J
Mating force max (N)	11.9	18.7	22.1	28.9	35.7	42.5	56.1	86.7	178.8



Contact layouts

Shell size	Number of contacts	Front view of male insert
A	7	
B*	11	
C*	13	
D*	17	
E*	21	
F	25	
G*	33	
H	51	
J	104	

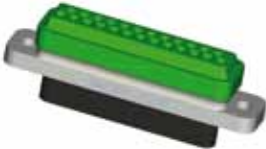
Contact size: #26

Contact pitch: 2.0 mm

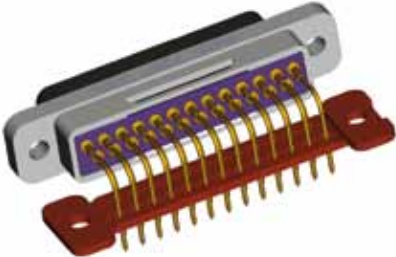
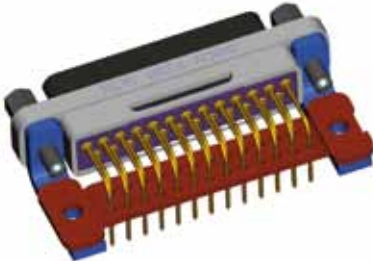
* Consult us for availability.



Contact types

Crimp	Unsealed	Sealed
	Male (–P011and –P011B)	Male with grommet (–E–P011and –E–P011B)
		
	Female (–S011and –S011B)	Female with grommet and interfacial seal (–E–S011 and –E–S011B)
		

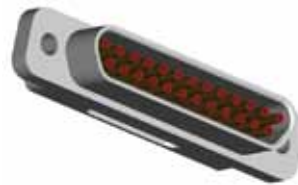
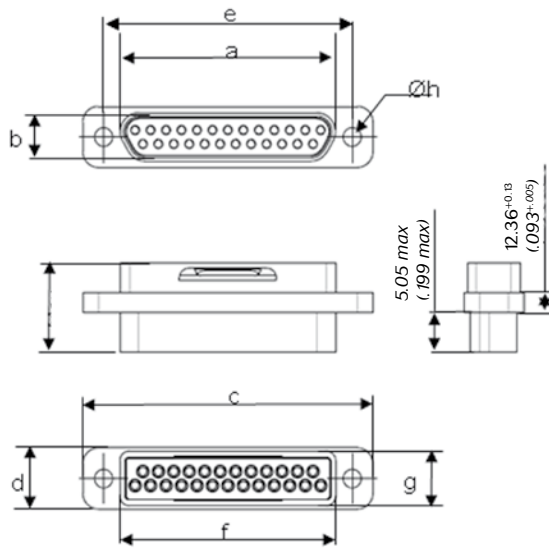
Straight PCB	Straight PCB	
	Male (–POL3)	
		
	Rear view	

90° bent PCB	Male without fixing accessories (–P1A0N)	Male with standard jackposts (– P1A7N)
	 Rear view	 Rear view

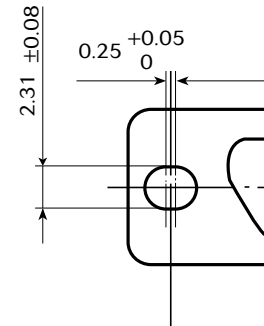


Dimensions

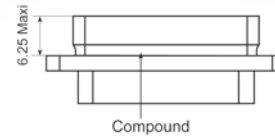
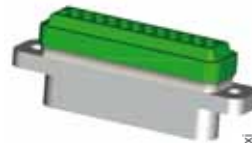
Female shell



Optional Design Oblong Holes Shell Size H



Sealed version (grommet and interfacial seal)



Shell Size	a	b	c		d		e		f		g	h
	Max	Max	min	Max	min	Max	min	Max	min	Max	Max	min
A	10,16 (.400)	6,38 (.251)	19,43 (.765)	19,94 (.785)	7,31 (.288)	7,82 (.307)	14,22 (.559)	14,48 (.570)	9,45 (.372)	10,16 (.400)	6,86 (.270)	2,26 (.089)
B	13,97 (.550)	6,38 (.251)	23,25 (.915)	23,75 (.935)	7,31 (.288)	7,82 (.307)	18,03 (.709)	18,29 (.720)	13,26 (.522)	13,97 (.550)	6,86 (.270)	2,26 (.089)
C	17,78 (.634)	6,38 (.251)	27,05 (1.065)	27,56 (1.085)	7,31 (.288)	7,82 (.307)	21,84 (.859)	22,10 (.870)	17,07 (.672)	17,78 (.700)	6,86 (.270)	2,26 (.089)
D	20,32 (.700)	6,38 (.251)	29,59 (1.165)	30,10 (1.185)	7,31 (.288)	7,82 (.307)	24,38 (.959)	24,64 (.970)	19,61 (.772)	20,32 (.800)	6,86 (.270)	2,26 (.089)
E	24,13 (.950)	6,38 (.251)	33,41 (1.315)	33,91 (1.335)	7,31 (.288)	7,82 (.307)	28,19 (1.149)	28,45 (1.120)	23,42 (.992)	24,13 (.950)	6,86 (.270)	2,26 (.089)
F	27,94 (1.100)	6,38 (.251)	37,21 (1.465)	37,72 (1.485)	7,31 (.288)	7,82 (.307)	32,00 (1.259)	32,26 (1.270)	27,23 (1.072)	27,94 (1.100)	6,86 (.270)	2,26 (.089)
G	26,67 (1.050)	7,47 (.294)	35,95 (1.415)	36,45 (1.435)	8,42 (.331)	8,92 (.351)	30,73 (1.229)	30,99 (1.220)	25,96 (1.022)	26,67 (1.050)	6,86 (.270)	2,26 (.289)
H	38,65 (1.521)	7,47 (.294)	48,05 (1.891)	48,55 (1.911)	8,42 (.331)	8,92 (.351)	43,23 (1.702)	43,49 (1.712)	38,40 (1.512)	38,65 (1.522)	7,87 (.310)	2,26 (.089)
J	46,80 (1.842)	10,94 (.431)	62,25 (2.451)	62,75 (2.470)	12,00 (.472)	12,50 (.492)	54,72 (2.154)	54,98 (1.377)	47,40 (1.866)	47,65 (1.876)	11,25 (.443)	3,70 (.146)

All dimensions in mm (inches)