



ESA/SCC 3401



Section



MIL-DTL 38999 Space Grade Circular Connectors



ESA/SCC 3401

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• 38999 Series I, II, III & III Hermetic

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MIL-DTL-38999

Circular connectors and savers

The following lines have been qualified to ESA/SCC 3401 :

- **MIL-DTL-38999 Series I** : bayonet locking «scoop-proof» shell
- **MIL-DTL-38999 Series II** : bayonet locking «low-profile» shell «non scoop-proof»
- **MIL-DTL-38999 Series III** : screw-type locking «scoop-proof» shell

Electrical contact sizes range from # 22 to # 4.



SCC Specification/MIL DTL 38999 class G

ESA/SCC Part numbers	SOURIAU Part numbers	Description
SCC 3401/052	8LTS	Connectors with removable crimp contacts according to 38999 Series I
SCC 3401/044	8TS	Connectors with removable crimp contacts according to 38999 Series II
SCC 3401/058	8975-xxxx	Crimp contacts for 3401/052 and 3401/056
SCC 3401/056	8DS	Connectors with removable crimp contacts according to 38999 Series III
SCC 3401/045	8975-xxxx	Crimp contacts for 3401/044
SCC 3401/057	8DS-H	Hermetic receptacles according to 38999 Series III
SCC 3401/062	-	Backshells for 3401/052, 3401/056 and 3401/044
SCC 3401/066	SN 1767	Triax crimp for 3401/056
SCC 3401/070	8DS	Straight spill version

Quality Assurance Testing

• Qualification

Is the European Source approved to ESA/SCC circular connectors specifications and USA MIL-DTL-38999 Class G QPL Source

• Production control

Visual (100%)

Dimensional (by sampling)

Insulation resistance (100%)

Dielectric withstanding voltage (100%)

Contact retention (100%)

Female contact capability (100%)

• Final production tests

Visual (100%)

Dimensional (by sampling)

Intermateability

• Lot acceptance tests

Two levels are proposed according to the ESA/SC specification 3401 CHART V.

Lot acceptance level shall be specified in the purchase order (LAT1 and LAT2).

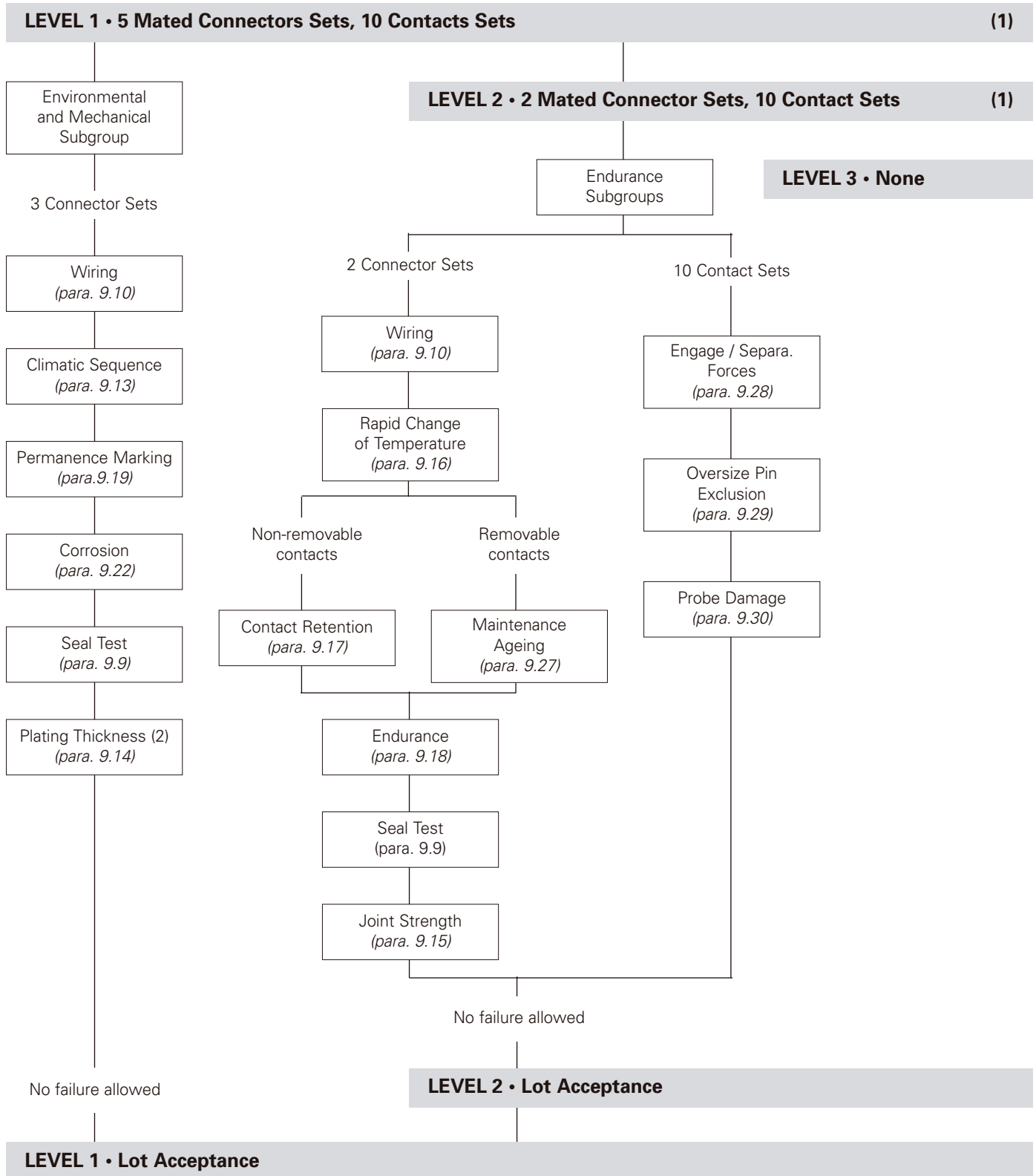
LAT 1 _____ Environmental and mechanical sub-group

└─ LAT2 _____ Endurance sub-group



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CHART V - Lot Acceptance Tests



Notes :

- (1) For distribution within the sample, see Para. 8.2.2.
 - (2) Hermetic connectors only.
- All Para. refer to ESA/SCC Generic Specification n° 3401.



Materials & Finishes

	Materials	Plating
Shells	Aluminium alloy <i>Hermetic</i> : Passivated stainless steel	Matt Electroless Nickel plated, Burr free Note : 38999 Series II, plug with grounding : shell size 8, 10 and 12 are gold plated body and grounding (1,27 micron gold mini) Nickel plated
Grounding	Beryllium copper	
Insulators	Bounded sandwich thermoset / silicone or Thermoplastic / silicone <i>Hermetic</i> : Sintered glass	Qualified non outgassing materials TML : 1% according to ECSS-Q-70.02A CVCM : 0,1%
Contacts retaining clip	Beryllium copper	
Contacts	Copper alloy. Plating 1,27 <i>Hermetic</i> : Nickel Iron	1,27 micron gold mini. over 2 micron nickel
Backshells	Aluminium alloy	Nickel plated

Electrical characteristics

Characteristics	Symbol	Rating	Unit
Rated current # 22 contacts # 20 contacts # 16 contacts # 12 contacts # 8 contacts # 4 contacts	I	5,0 7,5 13 23 46 80	A
Insulation resistance	RI	≥ 10 000	MΩ
Contact resistance (low level current) All under 10 mA	Rcl max.	8,0	mΩ
Contact resistance (rated current) # 22 contacts # 20 contacts # 16 contacts # 12 contacts # 8 contacts # 4 contacts	Rcr max.	14,0 7,0 4,0 3,5 0,55 0,45	mΩ

Environmental characteristics

Characteristics	Rating	Unit	ESA/SCC 3401 test method
Operating temperature range	-65 to +200	°C	-
Storage temperature	1000 h/200°C	-	Para. 9.21
Thermal shock	from -65 to +200	°C	Para. 9.16
Damp heat	10 cycles 24 h	-	Para. 9.13.3
Mechanical endurance	500	cycles	Para. 9.18
Vibrations	20	g	Para. 9.11
Shock	50 g with an 11 ms duration pulse	-	Para. 9.12.1
Contact retention # 22 contacts # 20 contacts # 16 contacts # 12 contacts # 8 contacts # 4 contacts	44 67 111 111 150 180	N	Para. 9.17
Vacuum test (125°C/24 h)	10 ⁻⁶	Torr	Para. 9.16