

Series 921 Super ITS™ Connectors and Accessories  
 Technical Reference  
 Product Specification



Technical Reference

B

DESCRIPTION	REQUIREMENT	PROCEDURE																					
Contact Resistance	<p>Low level: the low signal level contact resistance of mated contact pairs shall be measured in accordance with VG95234-1 (Para. 5.10.1).</p> <p><b>CONTACT RESISTANCE</b></p> <table border="1"> <thead> <tr> <th>Contact Size</th> <th>Contact Resistance (mΩ Max.)</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>6</td> </tr> <tr> <td>12</td> <td>3</td> </tr> <tr> <td>8</td> <td>1</td> </tr> <tr> <td>4</td> <td>0.5</td> </tr> <tr> <td>1/0</td> <td>0.2</td> </tr> </tbody> </table>	Contact Size	Contact Resistance (mΩ Max.)	16	6	12	3	8	1	4	0.5	1/0	0.2	VG95234-1									
Contact Size	Contact Resistance (mΩ Max.)																						
16	6																						
12	3																						
8	1																						
4	0.5																						
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Contact Retention	<p><b>CONTACT RETENTION</b></p> <table border="1"> <thead> <tr> <th>Contact Size</th> <th>Min. Pounds</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>25</td> </tr> <tr> <td>12</td> <td>30</td> </tr> <tr> <td>8</td> <td>50</td> </tr> <tr> <td>4</td> <td>60</td> </tr> <tr> <td>1/0</td> <td>75</td> </tr> </tbody> </table>	Contact Size	Min. Pounds	16	25	12	30	8	50	4	60	1/0	75	EIA-364-29 MethodB									
Contact Size	Min. Pounds																						
16	25																						
12	30																						
8	50																						
4	60																						
1/0	75																						
Current Rating	<p><b>CURRENT RATING</b></p> <table border="1"> <thead> <tr> <th>Contact Size</th> <th>Rated Current (20°C)</th> <th>Rated Current (80°C)</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>25</td> <td>15</td> </tr> <tr> <td>12</td> <td>50</td> <td>28</td> </tr> <tr> <td>8</td> <td>90</td> <td>70</td> </tr> <tr> <td>4</td> <td>160</td> <td>130</td> </tr> <tr> <td>1/0</td> <td>300</td> <td>250</td> </tr> <tr> <td>2/0</td> <td>330</td> <td>280</td> </tr> </tbody> </table>	Contact Size	Rated Current (20°C)	Rated Current (80°C)	16	25	15	12	50	28	8	90	70	4	160	130	1/0	300	250	2/0	330	280	EIA-364-70
Contact Size	Rated Current (20°C)	Rated Current (80°C)																					
16	25	15																					
12	50	28																					
8	90	70																					
4	160	130																					
1/0	300	250																					
2/0	330	280																					
Dielectric Withstanding Voltage at Sea Level	<p><b>Service Rating E</b>                      No breakdown or flashover at 4000 Vac RMS - 50 Hz                      2 mA max. leakage current</p> <p><b>Service Rating B</b>                      No breakdown or flashover at 4500 Vac RMS - 50 Hz                      2 mA max. leakage current</p>	MIL-DTL-5015H																					



## Series 921 Super ITS™ Connectors and Accessories

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DESCRIPTION	REQUIREMENT	PROCEDURE
Dynamic Corrosion	The connectors shall be subjected at 50 cycles of mating/unmating then at XXXh of salt spray (see platings limit for the hour of test) and then other 50 cycles of mating/unmating shall be performed. Connectors shall show no exposure of the basis metal. Connectors shall meet DWV, contact resistance, shell to shell resistance.	MIL-DTL-5015H
High Impact Shock	No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test. 3 shock for each directions; 300G, 3ms	MIL-DTL-38999L
Ingress Protection, Mated	IP67 rating IP69K rating.	IEC-60529 DIN 40050-9
Insert Retention	Unmated connector. 100 ± 5 pounds per square inch with a 25 pounds minimum force.	MIL-DTL-38999L
Insulation Resistance at Ambient Temperature	The measure of the insulation resistance shall be done after 30 min at 200°C with 500 Vdc. Insulation resistance shall be greater than 1000 MΩ.	MIL-DTL-5015H
Insulation Resistance at Elevated Temperature	The measure of the insulation resistance shall be done after 30 min at 200°C with 500 Vdc. Insulation resistance shall be greater than 1000 MΩ.	EIA-364-21
Mechanical Durability, at Ambient Temperature	The connectors shall be subjected at 2000 cycles of mating/unmating.	MIL-DTL-5015H

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DESCRIPTION	REQUIREMENT	PROCEDURE
Moisture Resistance	In accordance with EIA-364-31 method IV. The insulation resistance shall be not less than 100 MΩ.	MIL-DTL-5015H
Operating Temperature	See plating operating temperature.	
Shell Conductivity	The overall DC resistance shall be $R \leq 5m\Omega$	MIL-DTL-5015H
Thermal Shock	The connectors shall be subjected at 5 cycles of thermal shock (30min + 30 min). For the temperature see the platings limit. Following thermal shock, connector shall meet contact resistance, DWV, insulation resistance and shell to shell resistance requirement.	MIL-DTL-5015H
Vibration, Random, at Ambient Temperature	The connector shall be subjected to a random vibration in accordance with EIA-364-28 test condition VI letter J: 43,92G No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	EIA364-28
Vibration, Sine	Mated connectors shall not be damaged and there shall be no loosening of parts due to vibration. Counterpart connectors shall be retained in full engagement. The interruption of electrical continuity shall be not longer than 10 microseconds.	MIL-DTL-5015H
Water Pressure	The connectors shall be submerged in water at 1 bar of pressure for 12h. The connectors shall show no evidence of entrance of water.	VG95234



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DESCRIPTION	REQUIREMENT	PROCEDURE																								
EMI Shielding Effectiveness		VG95234-1																								
Mating and Unmating Torque	<p>The mating and unmating torque of the connectors shall be measured. The bayonet slots shall be greased.</p> <table border="1" data-bbox="524 1134 979 1410"> <thead> <tr> <th rowspan="2">Shell Size</th> <th colspan="2">Admissibles torques</th> </tr> <tr> <th>Close and Open Nm max.</th> <th>Open Nm min.</th> </tr> </thead> <tbody> <tr> <td>24</td> <td rowspan="4">14</td> <td>0,8</td> </tr> <tr> <td>28</td> <td>0,9</td> </tr> <tr> <td>32</td> <td>1</td> </tr> <tr> <td>40</td> <td>1,5</td> </tr> </tbody> </table>	Shell Size	Admissibles torques		Close and Open Nm max.	Open Nm min.	24	14	0,8	28	0,9	32	1	40	1,5											
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	Close and Open Nm max.	Open Nm min.																								
24	14	0,8																								
28		0,9																								
32		1																								
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Socket Contacts. Engagement and Separation Forces	<p>Socket contacts shall be tested in accordance with EIA-364-037. Contacts are permitted to be tested installed in the connectors.</p> <table border="1" data-bbox="490 1535 1014 1856"> <thead> <tr> <th>Contact Mating End Size</th> <th>Min Separation Force (ounces) min Diameter SAE-AS31971 pin</th> <th>Max Average Engagement Force (ounces) Max Diameter SAE-AS31971 pin</th> <th>Max Average Engagement Force (ounces) Max Diameter SAE-AS31971 pin</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>2</td> <td>33</td> <td>48</td> </tr> <tr> <td>12</td> <td>3</td> <td>56</td> <td>80</td> </tr> <tr> <td>8</td> <td>5</td> <td>N/A</td> <td>160</td> </tr> <tr> <td>4</td> <td>10</td> <td>N/A</td> <td>240</td> </tr> <tr> <td>0</td> <td>15</td> <td>N/A</td> <td>320</td> </tr> </tbody> </table>	Contact Mating End Size	Min Separation Force (ounces) min Diameter SAE-AS31971 pin	Max Average Engagement Force (ounces) Max Diameter SAE-AS31971 pin	Max Average Engagement Force (ounces) Max Diameter SAE-AS31971 pin	16	2	33	48	12	3	56	80	8	5	N/A	160	4	10	N/A	240	0	15	N/A	320	MIL-DTL-5015H
Contact Mating End Size	Min Separation Force (ounces) min Diameter SAE-AS31971 pin	Max Average Engagement Force (ounces) Max Diameter SAE-AS31971 pin	Max Average Engagement Force (ounces) Max Diameter SAE-AS31971 pin																							
16	2	33	48																							
12	3	56	80																							
8	5	N/A	160																							
4	10	N/A	240																							
0	15	N/A	320																							



**SHELL MATERIAL AND FINISH**

Code	Material	Finish	Electrical conductivity	Hrs. Salt spary	Operating T range	RoHS Compliant	Ground Spring
<b>F6</b>	Aluminum	Black Electrostatic Paint	Non Conductive	500	-65°C to +200°C	Yes	No
<b>G3</b>	Aluminum	Cadmium, Olive drab	Conductive	500	-65°C to +175°C	No	Yes
<b>MT</b>	Aluminum	Nickel-PTFE	Conductive	1000	-65°C to +175°C	Yes	Yes
<b>M</b>	Aluminum	Electroless Nickel	Conductive	48	-65°C to +200°C	Yes	Yes
<b>G2</b>	Aluminum	Anodize, Hardcoat	Non Conductive	336	-65°C to +200°C	Yes	No
<b>Z1</b>	Stainless Steel	Passivate	Conductive	1000	-65°C to +200°C	Yes	Yes
<b>AB</b>	Marine Bronze	Unplated	Conductive	1000	-65°C to +200°C	Yes	Yes

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**CONTACT TYPE AND PLATING**

Code	Type	Material	Plating	Contact Size	RoHS Compliant	Note
<b>P1</b>	Pin	Copper Alloy	Silver	16, 12, 8, 4, 1/0	Yes	Standard
<b>S1</b>	Socket		Silver		Yes	
<b>P2</b>	Pin		Gold	16, 12	Yes	Optional
<b>S2</b>	Socket		Gold		Yes	

**CURRENT RATING**

Contact Size	Rated current at +20°C (Amperes)	Rated current at +80°C (Amperes)
<b>16</b>	25	15
<b>12</b>	50	28
<b>8</b>	90	70
<b>4</b>	160	130
<b>1/0</b>	300	250
<b>2/0</b>	330	280