

Series 80 Mighty Mouse Technical Reference Complete Product Specification



DESCRIPTION	REQUIREMENT	PROCEDURE																											
ELECTRICAL																													
Contact resistance	<div>SAE AS39029 Table V</div> <table><thead><tr><th>Wire Size</th><th>Test Current</th><th>Max Voltage Drop</th></tr></thead><tbody><tr><td>12</td><td>23</td><td>42</td></tr><tr><td>14</td><td>17</td><td>40</td></tr><tr><td>16</td><td>13</td><td>49</td></tr><tr><td>20</td><td>7.5</td><td>55</td></tr><tr><td>22</td><td>5</td><td>73</td></tr><tr><td>24</td><td>3</td><td>45</td></tr><tr><td>26</td><td>2</td><td>52</td></tr><tr><td>28</td><td>1.5</td><td>54</td></tr></tbody></table>	Wire Size	Test Current	Max Voltage Drop	12	23	42	14	17	40	16	13	49	20	7.5	55	22	5	73	24	3	45	26	2	52	28	1.5	54	<div>EIA-364-06 IEC 60512-2-1</div> <div>Test current in amperes. Voltage drop in millivolts. Silver-coated copper wire, +25°C.</div>
Wire Size	Test Current	Max Voltage Drop																											
12	23	42																											
14	17	40																											
16	13	49																											
20	7.5	55																											
22	5	73																											
24	3	45																											
26	2	52																											
28	1.5	54																											
Low level contact resistance	<table><thead><tr><th>Wire Size</th><th>Max. Milliohms</th></tr></thead><tbody><tr><td>16</td><td>5</td></tr><tr><td>20</td><td>9</td></tr><tr><td>22</td><td>15</td></tr><tr><td>24</td><td>20</td></tr><tr><td>26</td><td>31</td></tr><tr><td>28</td><td>50</td></tr></tbody></table>	Wire Size	Max. Milliohms	16	5	20	9	22	15	24	20	26	31	28	50	<div>EIA-364-23</div> <div>100 milliamperes maximum and 20 millivolts maximum open circuit voltage</div>													
Wire Size	Max. Milliohms																												
16	5																												
20	9																												
22	15																												
24	20																												
26	31																												
28	50																												
Insulation resistance	5000 megohms minimum	<div>EIA-364-21 IEC-60512-3-1</div> <div>500 volts DC ± 50 volts. Test between adjacent contacts and contacts to shell.</div>																											
Dielectric withstanding voltage, sea level	<div>No breakdown or flashover</div> <table><tbody><tr><td>#23 contacts</td><td>500 volts</td></tr><tr><td>#20HD contacts</td><td>750 volts</td></tr><tr><td>#16 contacts</td><td>1800 volts</td></tr><tr><td>#12 contacts</td><td>1800 volts</td></tr></tbody></table>	#23 contacts	500 volts	#20HD contacts	750 volts	#16 contacts	1800 volts	#12 contacts	1800 volts	<div>EIA-364-20 IEC-60512-4-1</div> <div>AC rms 60 Hz. One minute dwell. Unmated or mated</div>																			
#23 contacts	500 volts																												
#20HD contacts	750 volts																												
#16 contacts	1800 volts																												
#12 contacts	1800 volts																												
Dielectric withstanding voltage, 70,000 feet altitude	<div>No breakdown or flashover</div> <table><tbody><tr><td>#23 contacts</td><td>100 volts</td></tr><tr><td>#20HD contacts</td><td>150 volts</td></tr><tr><td>#16 contacts</td><td>1000 volts</td></tr><tr><td>#12 contacts</td><td>1000 volts</td></tr></tbody></table>	#23 contacts	100 volts	#20HD contacts	150 volts	#16 contacts	1000 volts	#12 contacts	1000 volts	<div>EIA-364-20 IEC-60512-4-1</div> <div>AC rms 60 Hz. One minute dwell. mated condition</div>																			
#23 contacts	100 volts																												
#20HD contacts	150 volts																												
#16 contacts	1000 volts																												
#12 contacts	1000 volts																												
Current carrying capacity	<table><thead><tr><th>Contact Size</th><th>Max Current</th></tr></thead><tbody><tr><td>12</td><td>23</td></tr><tr><td>16</td><td>13</td></tr><tr><td>20</td><td>7.5</td></tr><tr><td>23</td><td>5</td></tr></tbody></table>	Contact Size	Max Current	12	23	16	13	20	7.5	23	5	<div>EIA-364-70 Method 1 IEC-60512-5 Test 9b</div>																	
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Shell-to-shell conductivity, Initial	<p>The maximum voltage drop across a mated pair shall not exceed the values shown.</p> <table><thead><tr><th>Series</th><th>Voltage Drop</th></tr></thead><tbody><tr><td>800</td><td>10</td></tr><tr><td>801</td><td>10</td></tr><tr><td>802</td><td>10</td></tr><tr><td>803</td><td>100</td></tr><tr><td>804</td><td>2</td></tr><tr><td>805</td><td>2</td></tr></tbody></table>	Series	Voltage Drop	800	10	801	10	802	10	803	100	804	2	805	2	EIA-364-83 IEC-60512-2-6 Electroless nickel plated connectors.													
Series	Voltage Drop																												
800	10																												
801	10																												
802	10																												
803	100																												
804	2																												
805	2																												
Shell-to-shell conductivity, after conditioning (48 hours salt spray)	<p>The maximum voltage drop across a mated pair shall not exceed the values shown.</p> <table><thead><tr><th>Series</th><th>Voltage Drop</th></tr></thead><tbody><tr><td>800</td><td>20</td></tr><tr><td>801</td><td>20</td></tr><tr><td>802</td><td>20</td></tr><tr><td>803</td><td>200</td></tr><tr><td>804</td><td>4</td></tr><tr><td>805</td><td>4</td></tr></tbody></table>	Series	Voltage Drop	800	20	801	20	802	20	803	200	804	4	805	4	EIA-364-83 IEC-60512-2-6 Electroless nickel plated connectors.													
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800	20																												
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804	4																												
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Shielding effectiveness, low frequency (100MHz-1000 MHz)	<table><thead><tr><th></th><th colspan="2">dB Min. Attenuation</th></tr><tr><th></th><th>Series 800, 801, 802, 804, 805</th><th>Series 803</th></tr><tr><th>Frequency</th><th></th><th></th></tr></thead><tbody><tr><td>100 MHz</td><td>75</td><td>60</td></tr><tr><td>200 MHz</td><td>70</td><td>55</td></tr><tr><td>300 MHz</td><td>65</td><td>55</td></tr><tr><td>400 MHz</td><td>63</td><td>50</td></tr><tr><td>800 MHz</td><td>58</td><td>45</td></tr><tr><td>1000 MHz</td><td>55</td><td>40</td></tr></tbody></table>		dB Min. Attenuation			Series 800, 801, 802, 804, 805	Series 803	Frequency			100 MHz	75	60	200 MHz	70	55	300 MHz	65	55	400 MHz	63	50	800 MHz	58	45	1000 MHz	55	40	MIL-DTL-38999 para. 4.5.28.1 Electroless nickel plated connectors
	dB Min. Attenuation																												
	Series 800, 801, 802, 804, 805	Series 803																											
Frequency																													
100 MHz	75	60																											
200 MHz	70	55																											
300 MHz	65	55																											
400 MHz	63	50																											
800 MHz	58	45																											
1000 MHz	55	40																											
Shielding effectiveness, high frequency (1Ghz-10GHz)	<table><thead><tr><th></th><th colspan="2">dB Min. Attenuation</th></tr><tr><th></th><th>Series 800, 801, 802, 804</th><th>Series 805</th></tr><tr><th>Frequency</th><th></th><th></th></tr></thead><tbody><tr><td>1 GHz</td><td>55</td><td>85</td></tr><tr><td>3 GHz</td><td>50</td><td>69</td></tr><tr><td>5 GHz</td><td>45</td><td>66</td></tr><tr><td>19 GHz</td><td>40</td><td>65</td></tr></tbody></table>		dB Min. Attenuation			Series 800, 801, 802, 804	Series 805	Frequency			1 GHz	55	85	3 GHz	50	69	5 GHz	45	66	19 GHz	40	65	EIA-364-66 IEC-60512-23-3 Electroless nickel plated connectors						
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19 GHz	40	65																											

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MECHANICAL		
Vibration, sine	No discontinuity of greater than 1 microsecond, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	MIL-STD-202 Method 204, test Condition G 30 g's, 3 axes, 4 hours per axis
Vibration, random	No discontinuity of greater than 1 microsecond, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	EIA-364-28 Test Condition V Letter I IEC-60512-6-4 100 milliamp test current 50- 2,000 Hz 37.80 g rms
Gunfire vibration	No discontinuity of greater than 1 microsecond, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.	MIL-STD-810F Method 519.5
Mechanical shock	No discontinuity of greater than 1 microsecond, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after shock test.	EIA-364-27 Condition D IEC-60512-6-3 3 shocks X 3 axes X 2 directions = 18 shocks 2941 m/s ² (300 g's), 3 ms, half-sine
Mechanical durability, at ambient temperature	No deterioration which will adversely affect the connector after 2000 cycles of mating and unmating. Connectors shall meet contact resistance, insulation resistance, shell-to-shell resistance, DWV, and mating and unmating force.	EIA-364-09 IEC-60512-5 Test 9a
Solderability, PC tail contacts	95% solder coverage. Smooth, bright and even finish.	EIA-364-52 Category 3 IEC-60512-12-1 IEC-68-2-20 Test Ta, method 1 8 hours steam aging prior to test 245° C, 4-5 sec. dwell 10X magnification
Resistance To Soldering Heat	No damage to connector. Connectors shall meet insulation resistance and waterproof sealing requirements.	EIA-364-56 IEC-60512-12-5 Test 12e 260° C, 10 seconds (PC tail)

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DESCRIPTION	REQUIREMENT	PROCEDURE																													
Impact	No impairment of function. Connector shall meet contact resistance, insulation resistance and waterproof sealing.	EIA-364-42 IEC-60512-5 test 7b 1 meter 8 drops																													
Contact retention	<table><tr><th>Contact Size</th><th>Min. Pounds</th><th>Min. Newtons</th></tr><tr><td>23</td><td>6</td><td>27</td></tr><tr><td>20</td><td>15</td><td>67</td></tr><tr><td>20HD</td><td>9</td><td>40</td></tr><tr><td>16</td><td>25</td><td>111</td></tr><tr><td>12</td><td>25</td><td>111</td></tr></table>	Contact Size	Min. Pounds	Min. Newtons	23	6	27	20	15	67	20HD	9	40	16	25	111	12	25	111	EIA-364-29											
Contact Size	Min. Pounds	Min. Newtons																													
23	6	27																													
20	15	67																													
20HD	9	40																													
16	25	111																													
12	25	111																													
Contact separation force	<table><tr><th>Contact Size</th><th>Min. Ounces</th><th>Min. Newtons</th></tr><tr><td>23</td><td>0.5</td><td>0.14</td></tr><tr><td>20</td><td>0.7</td><td>0.19</td></tr><tr><td>16</td><td>2.0</td><td>0.56</td></tr><tr><td>12</td><td>3.0</td><td>0.83</td></tr></table>	Contact Size	Min. Ounces	Min. Newtons	23	0.5	0.14	20	0.7	0.19	16	2.0	0.56	12	3.0	0.83	SAE AS39029														
Contact Size	Min. Ounces	Min. Newtons																													
23	0.5	0.14																													
20	0.7	0.19																													
16	2.0	0.56																													
12	3.0	0.83																													
Coupling torque	<p>Threaded coupling connector coupling torque shall not exceed the following requirements.</p> <table><tr><th colspan="2">Shell Size</th><th rowspan="2">Inch Pound</th></tr><tr><th>Series 800, 801</th><th>Series 805</th></tr><tr><td>5, 6, 7</td><td>8, 9</td><td>8</td></tr><tr><td>8,9</td><td>10, 11</td><td>9</td></tr><tr><td>10</td><td>12</td><td>12</td></tr><tr><td>12, 13</td><td>15</td><td>16</td></tr><tr><td>14, 15,</td><td>18</td><td>28</td></tr><tr><td>16, 17</td><td>19</td><td>24</td></tr><tr><td>21</td><td></td><td>32</td></tr><tr><td></td><td>23</td><td>36</td></tr></table>	Shell Size		Inch Pound	Series 800, 801	Series 805	5, 6, 7	8, 9	8	8,9	10, 11	9	10	12	12	12, 13	15	16	14, 15,	18	28	16, 17	19	24	21		32		23	36	
Shell Size		Inch Pound																													
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21		32																													
	23	36																													
Unmating force (Series 804)	<p>Series 804 quick-disconnect connectors</p> <table><tr><th>Contact Arrangement</th><th>Inch Pound</th></tr><tr><td>5-3</td><td>10.6</td></tr><tr><td>6-4</td><td>10.8</td></tr><tr><td>6-7</td><td>11.4</td></tr><tr><td>7-10</td><td>12.0</td></tr><tr><td>8-13</td><td>12.6</td></tr><tr><td>9-19</td><td>13.8</td></tr><tr><td>10-26</td><td>15.2</td></tr><tr><td>12-37</td><td>17.4</td></tr><tr><td>14-55</td><td>21.0</td></tr></table>	Contact Arrangement	Inch Pound	5-3	10.6	6-4	10.8	6-7	11.4	7-10	12.0	8-13	12.6	9-19	13.8	10-26	15.2	12-37	17.4	14-55	21.0										
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Insert retention	<p>Unmated connectors shall retain their inserts in their proper location in the shell and there shall be no evidence of cracking, breaking, separation from the shell, or loosening of parts.</p> <table><tr><th colspan="3">Shell Size</th><th rowspan="2">Min. Force in Pounds</th></tr><tr><th>Ser. 800, 803, 804</th><th>Ser. 801</th><th>Ser. 805</th></tr><tr><td>5</td><td>5</td><td></td><td>25</td></tr><tr><td>6</td><td>6</td><td>8</td><td>25</td></tr><tr><td>7</td><td>7</td><td>9</td><td>25</td></tr><tr><td>8</td><td>8</td><td>10</td><td>25</td></tr><tr><td>9</td><td>9</td><td>11</td><td>25</td></tr><tr><td>10</td><td>10</td><td>12</td><td>25</td></tr><tr><td>12</td><td>13</td><td>15</td><td>25</td></tr><tr><td>14</td><td>16</td><td>18</td><td>40</td></tr><tr><td>15</td><td>17</td><td>19</td><td>50</td></tr><tr><td></td><td>21</td><td>23</td><td>80</td></tr></table>	Shell Size			Min. Force in Pounds	Ser. 800, 803, 804	Ser. 801	Ser. 805	5	5		25	6	6	8	25	7	7	9	25	8	8	10	25	9	9	11	25	10	10	12	25	12	13	15	25	14	16	18	40	15	17	19	50		21	23	80	EIA-365-35
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14	16	18	40																																														
15	17	19	50																																														
	21	23	80																																														
Residual magnetism	2 μ maximum.	EIA-364-54																																															
ENVIRONMENTAL																																																	
Operating temperature	-65° to +150°C																																																
Water immersion, mated	No evidence of water penetration into mated connectors. ≥ 100 MΩ insulation resistance.	MIL-STD-810F Method 512.4 1 meter immersion 1 hour																																															
Water immersion, open face panel mount receptacles with non-removable printed circuit board or solder cup contacts	Connectors with waterblock potting process (Glenair Modification Code 518 required). 1 X 10 ⁻⁴ cc/second maximum helium leak rate at 1 atmosphere pressure differential following thermal shock conditioning.	EIA-365-02 3 cycles thermal shock -57°C to +71°C 75 min. dwell 5 minute transfer rate																																															
Humidity, cyclic (damp heat, cyclic) (moisture resistance)	No deterioration which will adversely affect the connector. 100 megohms minimum insulation resistance during the final cycle. Following the recovery period, connectors shall meet contact resistance, shell-to-shell resistance and DWV requirements.	EIA-364-31 Condition B Method III IEC-60512-11-12 80-98% RH 10 cycles (10 days) +25° C to +65° C Step 7b vibration deleted. 24 hour recovery period.																																															

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DESCRIPTION	REQUIREMENT	PROCEDURE
21 day humidity (damp heat, long term)	No deterioration which will adversely affect the connector. Following the drying period, connectors shall meet 100 megohms minimum, contact resistance, shell-to-shell resistance, DWV, mating and unmating requirements.	EIA-364-31 Condition C Method II IEC-60512-11-3 Severity C 90-95% RH 40° C Apply 100 volts DC during test. 4 hours drying time at ambient temperature prior to final measurements.
Thermal shock	No mechanical damage or loosening of parts. Following thermal shock, connector shall meet contact resistance, DWV, insulation resistance and shell-to-shell resistance requirements.	EIA-364-32 Test Condition IV IEC-60512-11-4 5 cycles consisting of -65° C 30 minutes, +25° C 5 minutes max., +150° C 30 minutes, +25° C 5 minutes max.
Corrosion (salt mist)	No exposure of base metal. Connectors shall meet DWV and contact resistance requirements following the test.	EIA-364-26 IEC 60512-11-6 5% salt solution 35° C Unmated connectors Code C: 48 hours Code M: 48hours Code MT: 500 hours Code NF: 500 hours Code ZN: 500 hours Code ZNU: 500 hours Code UCR: 500 hours
Sand and dust	Mated connectors shall withstand the effects of blowing sand and dust	MIL-STD-810F, Method 510.4
Fungus	Connector materials shall be fungus inert.	MIL-STD-810F, Method 508.5
Fluid immersion	No visible damage from immersion in various fuels and oils. Connector shall meet coupling torque and dielectric withstanding voltage requirements.	EIA-364-10 Unmated connectors
Altitude immersion	No evidence of moisture on connector interface or contacts. Connector shall meet dielectric withstanding voltage.	EIA-364-03 Wired crimp connectors with supplemental potting. Printed circuit board and solder cup connectors with standard factory-installed potting.
Outgassing	The entire connector assembly shall be capable of meeting a maximum Total Mass Loss (TML) of 1% and a Total Collected Volatile Material Loss (TCVML) of 0.1% following additional processing for outgassing control.	ASTM-E595

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