



250 Flag P/ Lock 2P Housing(Pitch=12mm)

1. Scope :

This specification covers general requirements for performance characteristics and test methods of 250 Series Positive Lock Connector of the part numbers shown in Para.2 .

2. Product Part Numbers and Descriptions :

Product	Part NO.	Applicable Wire (AWG)	Applicable Insulation Diameter (mm)
"250" Flag Positive Lock 2P Housing	1743206 - □	-	-
PCF-112D2M – A1/ B1(Relay)	1721159 - □	-	-
Receptacle Contact	936603 - □	#22 ~ #18	1.5~2.2
	936604 - □	#18 ~ #14	2.2~3.4
	936605 - □	#14	2.8~3.4

Table 1

3. Definitions of Terms :

The terms used in this specification shall be defined as follows :

3.1 Contact

An electrically conductive metallic member, used independently or as a component of a connector assembly to form circuit connection by contacting.

3.2 Housing :

A dielectric component member of a connector and an insulating material that forms encapsulation for contact(s).

3.3 Connector :

An assembly consisting of housing and wire-crimped contacts formed to make circuit connection.

4. Material, Used :

4.1 Contacts :

Contacts shall be fabricated of pre-tinned brass.



4.2 Housing :

Housing shall be molded 6/6 NYLON resin, conforming to UL Flame Retardant Grade of 94V-O

4.3 Customer Tab : (P/N ; 1721159-x) Relay

Customer tab shall be made of 70% copper, 30% zinc brass with or without tin-plating, conforming to JIS H 3100, C2600p- 1/2H.

5. Rating

5.1. Voltage Rating : 250 VAC

5.2 Current Rating : The current rating shall be as follows according to the size of wires connected.

AWG#18 : 7A (Max.)

AWG#16 : 12A (Max.)

AWG#14 : 15A (Max.)

5.3 Temperature Rating : -40 °C to 105 °C

(Ambient temperature + temperature rising due to application of current)

6. Performance Requirements and Test Methods:

Para.	Test Items Paragraph No.	Performance Requirements	Procedures
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6.1	Appearance : (Confirmation of Product.)	No defective abnormalities such as cracks, breakage, damages, loose of parts, rust and fusion that are detrimental to connector functions, shall be present.	Visually, dimensionally and functionally inspect parts for appearance in accordance with applicable Q.I.P (Quality Inspection Procedure) for presence of stated defects.																												
Mechanical Requirements																															
6.2	Crimp Tensile Strength	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">Wire Size</th> <th colspan="2" style="text-align: left;">Tensile Strength</th> </tr> <tr> <th style="text-align: left;">mm²</th> <th style="text-align: left;">(AWG)</th> <th style="text-align: left;">N</th> <th style="text-align: left;">(lbs.)</th> </tr> </thead> <tbody> <tr> <td>0.3</td> <td>(#22)</td> <td>49.0</td> <td>11.02</td> </tr> <tr> <td>0.5</td> <td>(#20)</td> <td>78.5</td> <td>17.64</td> </tr> <tr> <td>0.75</td> <td>(#18)</td> <td>117.7</td> <td>26.5</td> </tr> <tr> <td>1.25</td> <td>(#16)</td> <td>205.9</td> <td>46.3</td> </tr> <tr> <td>2.0</td> <td>(#14)</td> <td>313.8</td> <td>70.56</td> </tr> </tbody> </table> <p>Minimum value required</p>	Wire Size		Tensile Strength		mm ²	(AWG)	N	(lbs.)	0.3	(#22)	49.0	11.02	0.5	(#20)	78.5	17.64	0.75	(#18)	117.7	26.5	1.25	(#16)	205.9	46.3	2.0	(#14)	313.8	70.56	<p>Each sample shall have an applicable wire approximately 100mm long crimped, and the crimp tensile strength shall be measured by pulling it in the direction of its working axis at a rate of 100mm a minute.</p> <p>A minimum tensile load causing the wire to break or come off from the contact shall be taken as the crimp tensile strength.</p> <p>No insulated area of the wire shall be crimped.</p>
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6.3	Contact Locking Strength	78.4 N min.	<p>Engage a contact with the tab having an approximately 100mm of an applicable wire whose cross-sectional area is more than 1.25mm², crimped, lock, secure the tab and pull the wire in the direction of the working axis of the contact at a rate of 100mm a minute.</p> <p>Measure a minimum load which causes the lock mechanism to fail or the contact to be disengaged from the tab because of breakage.</p>																												
6.4	1. Contact Insertion Force 2. Contact Extraction Force	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Insertion Force :</th> <th style="text-align: left;">Initial Extraction Force</th> <th style="text-align: left;">Extraction Force at 6th time</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">53.9 N (max.)</td> <td style="text-align: center;">9.8~39.2N</td> <td style="text-align: center;">9.8~49.0 N</td> </tr> </tbody> </table>	Insertion Force :	Initial Extraction Force	Extraction Force at 6 th time	53.9 N (max.)	9.8~39.2N	9.8~49.0 N	<p>Secure the tab, mount the contact on a tensile tester, test at a rate of 100mm a minute and measure the insertion and extraction force. Note that the contact must be unlocked when measuring the extraction force.</p>																						
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6.5	Temperature Rising	30 °C max.	<p>Mate the wire-crimped contact with tab, and measure by applying test current of rated intensity to the circuit, after the temperature rise becomes stabilized, and probed with the use of thermocouple.</p> <p>The value obtained after deducting the room temperature from the reading, is the temperature rise value.</p>																												
Para.	Test Items Paragraph No.	Performance Requirements	Procedures																												



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6.6	Termination Resistance -Low Level	3m Ω Max.(Initial)	Engage a contact with the tab, and measure termination resistance using the circuit shown in Fig.1 The open circuit voltage shall be less than 50mV and closed circuit current less than 50 mV. Termination resistance shall be found by subtracting the resistance of the 75mm wire from the measured reading.
6.7	Low Frequency Vibration	There shall be no electrical discontinuity greater than 1 μsec. Termination resistance - low level : 6 mΩ max.	Series connect a contact, apply a test current of 0.1(A) DC, and test under the following conditions prescribed by method 201, MIL-STD-202. Frequency : 10-55-10 Hz/min. Amplitude (both sides) : 1.5 mm Test time: 2 hours each in directions of working axes X and Y. The sample must meet the requirement of the termination resistance-low level after the test. (Fig.2)
6.8	Humidity Resistance	Termination resistance-low level : 6 m Ω max.	Engage a contact with the tab, and test under the following conditions prescribed by Method 103, MIL-STD-202. Temperature : 40 °C Humidity : 90~95 % Duration : 96 hours The sample must meet the requirement of the termination resistance-low level after the test.
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6.9	Heat Shock	Termination resistance-low level : 6 m Ω max.	<p>Engage a contact with the tab and test 25 cycles continuously conditions prescribed by Method 107, MIL-STD-202</p> <p>The sample must meet the requirement of the termination resistance-low level after the test.</p> <table border="1" data-bbox="962 600 1374 936"> <thead> <tr> <th data-bbox="962 600 1166 658">Sequence of Test</th> <th data-bbox="1166 600 1374 658">Test Conditions</th> </tr> </thead> <tbody> <tr> <td data-bbox="962 658 1166 723">1</td> <td data-bbox="1166 658 1374 723">105+3/-0°C, 0.5 h</td> </tr> <tr> <td data-bbox="962 723 1166 813">2</td> <td data-bbox="1166 723 1374 813">Room temperature, less than 5min.</td> </tr> <tr> <td data-bbox="962 813 1166 880">3</td> <td data-bbox="1166 813 1374 880">-40+0/-3°C, 0.5 h</td> </tr> <tr> <td data-bbox="962 880 1166 936">4</td> <td data-bbox="1166 880 1374 936">Room temperature</td> </tr> </tbody> </table>	Sequence of Test	Test Conditions	1	105+3/-0°C, 0.5 h	2	Room temperature, less than 5min.	3	-40+0/-3°C, 0.5 h	4	Room temperature
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6.10	Salt Spray	Termination resistance-low level : 6 m Ω max.	<p>Engage a contact with the tab and test under the following conditions prescribed by Method 101, MIL-STD-202.</p> <p>Salt concentration : 15 %</p> <p>Temperature : 35°C</p> <p>Time : 96 h</p> <p>After the test, rinse the sample in water, sit it for one hour for drying at room temperature, and measure the termination resistance-low level.</p>										
6.11	Resistance to "Kojiri "	Temperature Rise 30°C max.	<p>Secure crimped-contact-loaded housing on the test fixture, and after applying static pull-off load of 29.4 N to it, which is mated with securely fixed tab contact for 96 hours, apply " Kojiri " test motions.</p> <p>With the test load removed, apply temperature rise test conditioning per Para. 6.5</p>										

Fig.1 (END)

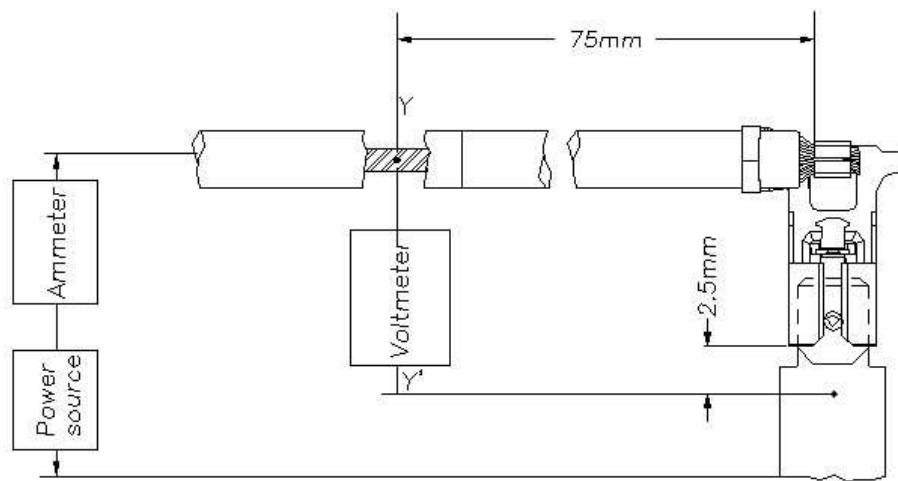


Fig.1

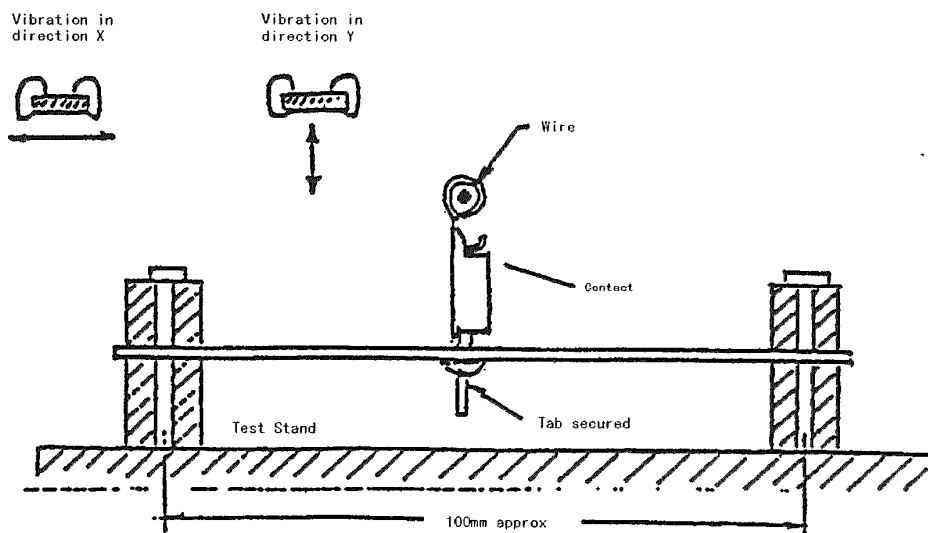


Fig.2

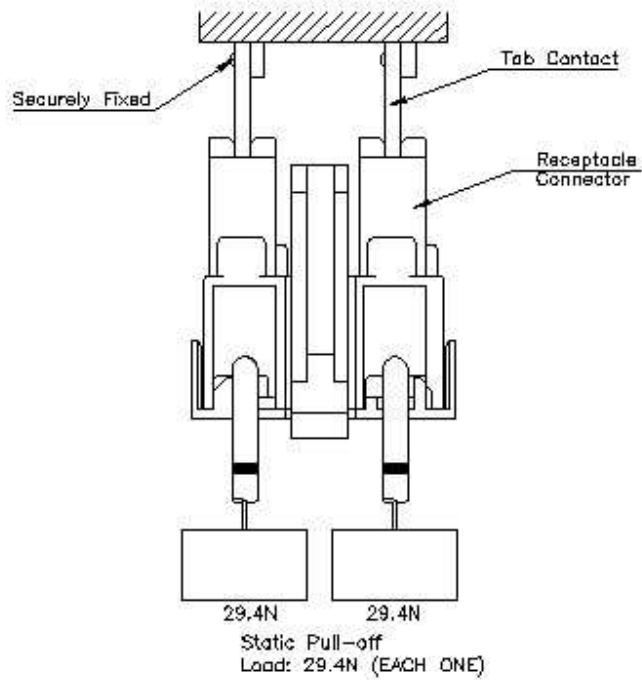


Fig.3

Classification	Group	Item No.	Sequence of Test										
			1	2	3	4	5			6			
Appearance		6.1					1						
Crimp Tensile Strength		6.2	1										
Contact Locking Strength		6.3		1									
Contact Insertion Force		6.4			1								
Contact Extraction Force		6.4			2								
Temperature Rising		6.5				1							
Termination Resistance-Low Level		6.6					2	4	6	8	10		
Low Frequency Vibration		6.7					3						
Humidity Resistance		6.8						5					
Heat Shock		6.9							7				
Salt Spray		6.10								9			
Resistance to "Kojiri"		6.11											1

Table 2

7. Mating Tab

The mating tab shown in Fig.3 shall be used in the performance test .

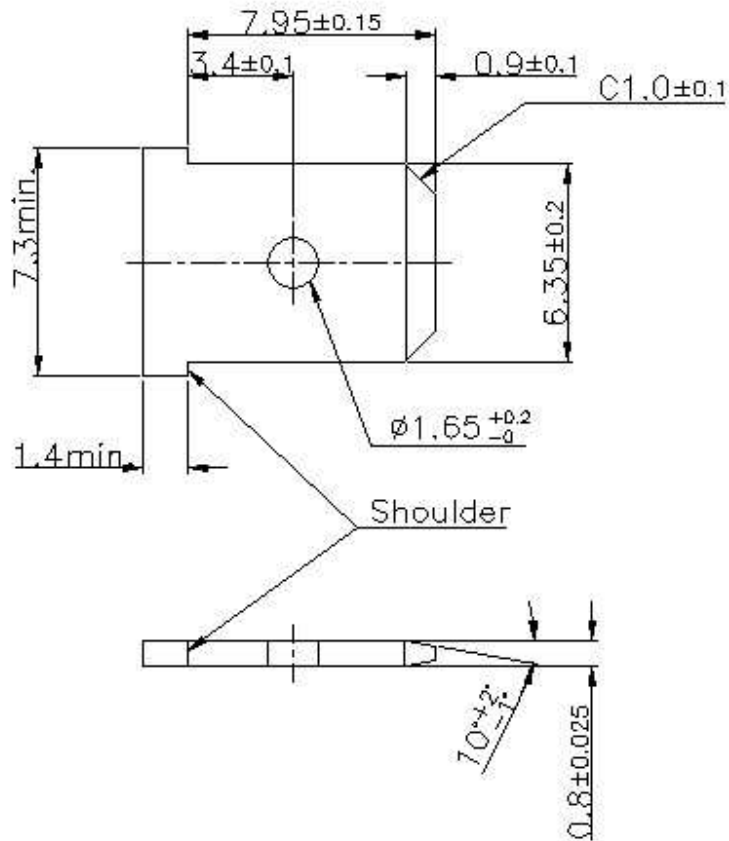


Fig.4

(Notes.)

1. The tab material shall be 7/3 brass (JIS-H-3100, C2600P-1/2H)
2. Not plated tab shall be used.