

# SUMMARY REPORT

**TITLE: QUALIFICATION TEST ON IL-WX SERIES CONNECTOR**

**CONNECTOR SPECIFICATION: JACS-1339-0**

	Engineering	Quality Assurance
Approved by :	Hayashida	Yajima
Approved by :	Fujino	Kurata
Supervised by :	—	—
Product designed by :	Katou	—
Test conducted by :	Hisamatsu	Niihara

Rev.	Date	DCN No.	Drawn by	Checked by	Approved by
1	30 May 1990	—	Katou	—	Fujino
2	29 May 2003	52212	J. Moritake	—	S. Kashinagi

JAE-CONNECTOR.COM

Reference Only  
**Japan Aviation Electronics Industry, Limited**

# 1. Introduction 試験の概要

## (1) Purpose 試験の目的

This test was performed on 0.8 mm-pitch IL-WX series connector to determine if it meets the requirements of JAE Connector Specification JACS-1339-0.

0.8mm ピッチコネクタ IL-WX シリーズ開発に伴い評価試験を実施した。

## (2) Applicable Specification 適用仕様書

JACS-1339-0

## (3) Period

From : 18 February 1990  
To : 25 March 1990

試験実施期間

自 90 年 2 月 18 日  
至 90 年 3 月 25 日

## (4) Place

Laboratory in Connector Division, Japan Aviation Electronics Industry Limited

試験実施場所

日本航空電子工業(株) 昭島事業所内 コネクタ事業部試験室

## (5) Specimen

試料

No.	Part number 品名	Drawing number 図番	Revision 版数	Quantity 個数	Note 備考
1	IL-WX-6PB-HF IL-WX-12PB-HF IL-WX-18PB-HF	SJ024362	2	5 pieces 5 pieces 5 pieces	
2	IL-WX-20PB-VF IL-WX-30PB-VF	SJ024360	2	19 pieces 6 pieces	
3	IL-WX-6SB-VF IL-WX-12SB-VF IL-WX-18SB-VF IL-WX-20SB-VF IL-WX-30SB-VF	SJ024361	2	5 pieces 5 pieces 5 pieces 18 pieces 6 pieces	

## (6) Conclusion

試験結果

The 0.8 mm-pitch IL-WX series connector meets the electrical, mechanical and environmental performance requirements of JAE product specification JACS-1339-0.

JACS-1339-0 の規格を十分満足している結果が得られた。

## (7) Internal document control number

関連資料

Project No. CDS-89-11328  
TR No. TR-C-1569 *ok*

## Report summary sheet

Specimen: IL-WX\*\*PB-HF, IL-WX\*\*PB-VF, IL-WX\*\*SB-VF

Item no.	Test item 試験項目	Number of specimens 供試個数	Requirement 要求条件	Test procedure 試験方法	Test result 試験結果																														
1	Examination of product, material & finish 構造・寸法・表示・材料・仕上げ		Compliant with product drawing.  図面と相違のないこと。	Visual inspection, slide caliper, etc...  目視、ノギス等	Compliant with product drawing.  相違なし																														
2	Connector insertion force  総合挿入力	Five pieces each  各 5 個	3.43 N × n (maximum) n = number of pins n =芯数 6 pins: 20.58 N (maximum) 12 pins: 41.16 N (maximum) 18 pins: 61.74 N (maximum) 20 pins: 68.6 N (maximum) 30 pins: 102.9 N (maximum)	The force required to mate counterpart connector specimens was measured.  適合コネクタ間にて挿入力を測定する。	<table><tr><td colspan="6">(N)</td></tr><tr><td>No. of pins 芯数</td><td>6</td><td>12</td><td>18</td><td>30</td><td>30</td></tr><tr><td>Ave.</td><td>7.64</td><td>14.7</td><td>25.19</td><td>27.44</td><td>39.40</td></tr><tr><td>Max.</td><td>8.82</td><td>16.56</td><td>28.91</td><td>30.18</td><td>46.06</td></tr><tr><td>Min.</td><td>6.17</td><td>13.03</td><td>21.85</td><td>25.38</td><td>34.79</td></tr></table>	(N)						No. of pins 芯数	6	12	18	30	30	Ave.	7.64	14.7	25.19	27.44	39.40	Max.	8.82	16.56	28.91	30.18	46.06	Min.	6.17	13.03	21.85	25.38	34.79
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No. of pins 芯数	6	12	18	30	30																														
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3	Connector withdrawal force  総合抜去力	Five pieces each  各 5 個	0.49N × n (minimum) n = number of pins n =芯数 6 pins: 2.94 N (minimum) 12 pins: 5.88 N (minimum) 18 pins: 8.82 N (minimum) 20 pins: 9.8 N (minimum) 30 pins: 14.7 N (minimum)	The force required to unmate counterpart connector specimens was measured.  適合コネクタ間にて抜去力を測定する。	<table><tr><td colspan="6">(N)</td></tr><tr><td>No. of pins 芯数</td><td>6</td><td>12</td><td>18</td><td>30</td><td>30</td></tr><tr><td>Ave.</td><td>6.27</td><td>12.84</td><td>18.82</td><td>21.27</td><td>30.77</td></tr><tr><td>Max.</td><td>8.04</td><td>16.76</td><td>26.46</td><td>25.87</td><td>40.77</td></tr><tr><td>Min.</td><td>5.19</td><td>10.78</td><td>15.68</td><td>18.91</td><td>26.75</td></tr></table>	(N)						No. of pins 芯数	6	12	18	30	30	Ave.	6.27	12.84	18.82	21.27	30.77	Max.	8.04	16.76	26.46	25.87	40.77	Min.	5.19	10.78	15.68	18.91	26.75
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4	Contact withdrawal force  単体抜去力	One piece each  各 1 個	0.29 N (minimum)	The force required to withdraw a steel pin from a socket contact specimen was measured.  スティールピンとソケットコンタクト間にて抜去を行う。	<table><tr><td colspan="2">(N)</td></tr><tr><td>Ave.</td><td>1.03</td></tr><tr><td>Max.</td><td>1.20</td></tr><tr><td>Min.</td><td>0.97</td></tr></table>	(N)		Ave.	1.03	Max.	1.20	Min.	0.97																						
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5	Voltage proof  耐電圧	One piece each  各 1 個	One minute. No breakdown or flashover.  1 分間異常のないこと。	A test potential of 500 VAC r.m.s. was applied between adjacent contacts.  近接コンタクト間にて規定電圧 AC500r.m.s.印加	No breakdown or flashover (initial).  初期:異常なし																														
6	Insulation resistance  絶縁抵抗	One piece each  各 1 個	100 MΩ (minimum)	Insulation resistance was measured within one minute between adjacent contacts, using a test voltage of 500 VDC r.m.s.  近接コンタクト間にて規定電圧 DC500r.m.s.印加 1 分以内で測定。	2.0 × 10 <sup>4</sup> MΩ minimum (initial)																														

Item no.	Test item 試験項目	Number of specimens 供試個数	Requirement 要求条件	Test procedure 試験方法	Test result 試験結果																												
7	Contact resistance  接触抵抗	Two pieces each  各 2 個	20 mΩ maximum (initial)	Measure with voltage drop method. Voltage: 20 m VDC Current: 1 mA All samples used for this test shall be IL-WX-20 pins. 電圧降下法にて測定 印加電圧: D.C.20mV 印加電流: 1mA 接触抵抗測定サンプルはすべて IL-WX-20 芯を使用する。	<table><tr><td>Initial</td><td>(mΩ)</td></tr><tr><td>Ave.</td><td>6.96</td></tr><tr><td>Max.</td><td>9.00</td></tr><tr><td>Min.</td><td>4.67</td></tr></table>	Initial	(mΩ)	Ave.	6.96	Max.	9.00	Min.	4.67																				
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8	Vibration, shock  耐振性および耐衝撃性	Two pieces each  各 2 個	1. No electrical discontinuity greater than one microsecond during the test. 2. No damage during and after the test.  1. 試験中に 1 μ sec 以上の電流の遮断がないこと。 2. 試験中・後に部品に機械的欠陥が生じないこと。	-Vibration Amplitude: 1.5 mm, 10 Hz to 55 Hz Two hours each for three axes, total six hours. -Shock MIL-STD-202 METHOD 202 490 m/s <sup>2</sup> for three axes Use of appropriate holder is allowed for setting up equipment. ・耐振性 全振巾 1.5mm、10～55Hz 各 2H 3 軸 計 6H ・耐衝撃性 MIL-STD-202 METHOD 202 490 m/s <sup>2</sup> 3 軸 試験においては取付けに適当なホルダーを使用しても良い。	1. No electrical discontinuity greater than one microsecond during the test. 2. No mechanical damage  1. 電流遮断なし 2. 機械的欠陥なし																												
9	Contact retention  コンタクト保持力	One piece each  各 1 個	4.9 N minimum	Contact retention was measured with tensile strength tester.  引張り試験機にて、コンタクト保持力を測定する。	After test 試験後 (N) <table><tr><td>Male contact</td><td>Straight type</td><td>Ave.</td><td>14.31</td></tr><tr><td rowspan="3">ピン</td><td rowspan="3">Right angle type</td><td>Max.</td><td>15.88</td></tr><tr><td>Min.</td><td>12.64</td></tr><tr><td>Ave.</td><td>9.60</td></tr><tr><td rowspan="3">Female contact</td><td rowspan="3"></td><td>Max.</td><td>11.37</td></tr><tr><td>Min.</td><td>8.23</td></tr><tr><td>Ave.</td><td>21.17</td></tr><tr><td>ソケット</td><td></td><td>Max.</td><td>23.81</td></tr><tr><td></td><td></td><td>Min.</td><td>19.21</td></tr></table>	Male contact	Straight type	Ave.	14.31	ピン	Right angle type	Max.	15.88	Min.	12.64	Ave.	9.60	Female contact		Max.	11.37	Min.	8.23	Ave.	21.17	ソケット		Max.	23.81			Min.	19.21
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10	Durability  寿命試験	Two pieces each  各 2 個	Contact resistance: 40 mΩ maximum (after test)  試験後 接触抵抗: 40mΩ 以下	Connector specimens were mated and unmated 30 cycles.  適合コネクタ間にて 30 回の挿抜を行う。	After test 試験後 (mΩ) <table><tr><td>Ave.</td><td>8.10</td></tr><tr><td>Max.</td><td>8.72</td></tr><tr><td>Min.</td><td>7.32</td></tr></table>	Ave.	8.10	Max.	8.72	Min.	7.32																						
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11	Rapid change of temperature  熱衝撃	Two pieces each  各 2 個	After test: 1. Voltage proof: One minute, no breakdown or flashover. 2. Insulation resistance: 500 VDC, one minute 50 MΩ minimum 3. Contact resistance: 40 mΩ minimum  試験後 1. 耐電圧: 1 分間異常のないこと 2. 絶縁抵抗: DC500V 1 分間 50MΩ 以上 3. 接触抵抗: 40mΩ 以下	Connector specimens were subjected to ten cycles of temperature extremes. The temperature extremes were -55°C and 85°C. Each cycle consisted of 30 minutes at each temperature.  -55°C～+85°C 連続 10 サイクル (30 分) (30 分)	After test 試験後 1. Voltage proof: No breakdown or flashover 耐電圧: 異常なし 2. Insulation resistance: 1 × 10 <sup>7</sup> minimum 絶縁抵抗: 1 × 10 <sup>7</sup> 以上 3. Contact resistance (mΩ) 接触抵抗 <table><tr><td>Ave.</td><td>8.20</td></tr><tr><td>Max.</td><td>10.04</td></tr><tr><td>Min.</td><td>6.22</td></tr></table>	Ave.	8.20	Max.	10.04	Min.	6.22
Ave.	8.20										
Max.	10.04										
Min.	6.22										
12	Damp heat, steady state  耐湿性	Two pieces each  各 2 個	Same as above.  同上	Temperature: 60°C Humidity: 90% to 95%RH Duration: 500 hours  温度: 60°C 湿度: 90-95%RH 放置時間: 500h	After test 試験後 4. Voltage proof: No breakdown or flashover 耐電圧: 異常なし 5. Insulation resistance: 2 × 10 <sup>4</sup> minimum 絶縁抵抗: 2 × 10 <sup>4</sup> 以上 6. Contact resistance (mΩ) 接触抵抗 <table><tr><td>Ave.</td><td>7.44</td></tr><tr><td>Max.</td><td>10.28</td></tr><tr><td>Min.</td><td>5.73</td></tr></table>	Ave.	7.44	Max.	10.28	Min.	5.73
Ave.	7.44										
Max.	10.28										
Min.	5.73										
13	Corrosion, salt mist  耐腐食性	Two pieces each  各 2 個	After test: 1. There should be no corrosion detrimental to contact connection. 2. Contact resistance: 40 mΩ maximum  試験後 1. コンタクトの接触に有害な地金の露出のないこと。 2. 接触抵抗: 40mΩ 以下	- Salt concentration: 5% - Temperature: 35°C - Duration: 48 hours  ・塩水濃度: 5% ・温度: 35°C ・放置時間: 48h	After test: 試験後 1. There was no corrosion 有害な地金の露出なし 2. Contact resistance (mΩ) 接触抵抗 <table><tr><td>Ave.</td><td>7.10</td></tr><tr><td>Max.</td><td>8.06</td></tr><tr><td>Min.</td><td>5.00</td></tr></table>	Ave.	7.10	Max.	8.06	Min.	5.00
Ave.	7.10										
Max.	8.06										
Min.	5.00										
14	Resistance to soldering heat 半田耐熱性	Two pieces each  各 2 個	No evidence of abnormality in appearance.  外観等、使用上問題となるような異常のないこと。	With a solder bath at 260°C±5°C, specimens were immersed in the bath for two minutes.  260 ± 5°Cの恒温槽に 2 分間放置	No abnormality after test.  試験後: 異常なし						

Item no.	Test item 試験項目	Number of specimens 供試個数	Requirement 要求条件	Test procedure 試験方法	Test result 試験結果						
15	Solderability  半田付性	Two pieces each  各 2 個	Wet solder coverage: 95% minimum  浸した部分の 95%以上が半田でおおわれていること。	After dipping the connector specimens in applicable flux for five to ten seconds, each specimen was immersed in a solder bath at 230℃ ± 5℃, using a solder of Sn: Pb=60:40. 適合フラックスに 5~10 秒浸漬し、Sn: Pb=60:40 半田 230 ± 5℃に 3 ± 0.5 秒浸漬する。	Excellent after test.  試験後：良好						
16	Dry heat  耐熱性	Two pieces each  各 2 個	Contact resistance: 40 mΩ maximum (after test)  試験後： 接触抵抗：40mΩ 以下	Temperature: 85℃ Duration: 500 hours  温度：85℃ 放置時間：500h	After test 試験後 (mΩ ) <table><tr><td>Ave.</td><td>7.44</td></tr><tr><td>Max.</td><td>10.28</td></tr><tr><td>Min.</td><td>5.73</td></tr></table>	Ave.	7.44	Max.	10.28	Min.	5.73
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