

JAPAN AVIATION ELECTRONICS IND., LTD. 3-1-1 MUSASHINO, AKISHIMA-CITY TOKYO, JAPAN		SPECIFICATION TABLE		NO. JACS-5111-2-E		1/4											
				CONNECTOR/SERIES													
				JN1 Series													
				APPLICABLE CONNECTOR JN1AS04MK*, JN1FS04FK*, JN1DS04FK*													
APPLICABLE DWG NO.				SJ035649, SJ035650, SJ035610 SJ035666, SJ035968, SJ035969													
STANDARD DATA			Rev.	Date	Description	DRAWN BY	CHK'D BY	APP'D BY									
Applicable wire	Plug : 1.25mm ² max (ϕ 2.7 max) Receptacle : 0.75mm ² max		1	12. Jun. '01	—	E. Matsumoto	S. Nanao	M. Nishimura									
Operating current	5A per contact																
Operating voltage	200VAC (Pollution degree : 3, Over voltage category : III)																
Dielectric withstanding voltage	1250VAC																
Temperature range	-20°C~+125°C																
REMARK								Grade B									
REQUIREMENT		TEST METHOD			REQUIREMENT												
M e c h a n i c a l	Construction, Forms, Dimensions, Materials, Finishes	_____			As specified in applicable drawings.												
	Style	_____			No stain, damages and cracks.												
	Contact engagement and separation forces	Measure the engagement and separation force of a socket contact by test pin. Mating depth : 5mm			<table border="1"> <tr> <td></td> <td>Test pin</td> <td>Specific value</td> </tr> <tr> <td>Engagement force</td> <td>ϕ1.041⁰_{-0.003}</td> <td>5.0N max</td> </tr> <tr> <td>Separation force</td> <td>ϕ0.999^{+0.003}₀</td> <td>0.2N min</td> </tr> </table>					Test pin	Specific value	Engagement force	ϕ 1.041 ⁰ _{-0.003}	5.0N max	Separation force	ϕ 0.999 ^{+0.003} ₀	0.2N min
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	Engagement force	ϕ 1.041 ⁰ _{-0.003}	5.0N max														
	Separation force	ϕ 0.999 ^{+0.003} ₀	0.2N min														
Vibration	The current of 100mA DC is applied to the contacts connected in series, and the current discontinuities are measured Amplitude : 1.52mm or 98m/s ² Frequency : 10~500Hz 10~500~10Hz (15 min/1 cycle) Each 3 hours for 3 axes. (Total : 9 hours)			During this test, no electrical discontinuities more than 1 μ s. After test, parts should show no cracks or looseing.													
Vibration durability	【See Figure 1】 Amplitude : 1.8mm or 14.2m/s ² Frequency : 20Hz 40 hours for 1 axes.			Parts should show no cracks or looseing.													
Shock	The current of 100mA DC is applied to the contacts connected in series, and the current discontinuities are measured. Accelration : 490m/s ² Time : 11ms Wave form : Half-sine 3 times for 3 axis. (Total : 9 times)			Parts should show no cracks or loosig. No electrical discontinuity more than 1 μ s.													

DCF-C-E206-1B (97. 06)

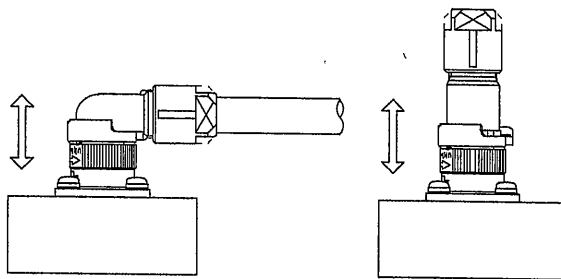
No.		JACS-5111-2-E		2/4																
REQUIREMENT		TEST METHOD		REQUIREMENT																
ITEM																				
M e c h a n i c a l	Durability	Mating and unmating 500 times at a speed not exceeding 600 times per hour.		No mechanical damages during. After test, to satisfy the contact resistance and contact engagement and separation force.																
	Contact retention force	The axial load is applied to the contact from the mating side. Load : 44.1N		The contact don't fall out from the insulator.																
	Cable tensile strength	The load of 20N shall be applied to the connector cable installed as being used, in the direction shown as figure2.		<table><tr><td>Item</td><td>Specified value</td></tr><tr><td>Cable tensile strength</td><td>20N min</td></tr></table>		Item	Specified value	Cable tensile strength	20N min											
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Connector breakdown strength	The load of 50N shall be applied to the connector installed as being used, in the direction shown as figure3.		<table><tr><td>Item</td><td>Specified value</td></tr><tr><td>Connector breakdown strength</td><td>50N min</td></tr></table>		Item	Specified value	Connector breakdown strength	50N min												
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E l e c t r i c a l	Dielectric withstanding voltage	The test voltage (1250VAC) is applied between the nearest two contacts for one minute.		No breakdown discharge.																
	Insulation resistance	The test voltage (500VDC) is applied between the nearest two contacts.		1000MΩ min.																
	Contact resistance (low level)	The voltage drop shall be measured on the connector mated as being used, or on the contacts shown in Fig. 4, and the specified value shall be satisfied. The open voltage of both-end contacts is 20mV and the current run is 100mA DC.		<table><tr><td colspan="2">Contact resistance (low level)</td></tr><tr><td>Initial (mΩ max)</td><td>After test (mΩ max)</td></tr><tr><td>20</td><td>22</td></tr></table>		Contact resistance (low level)		Initial (mΩ max)	After test (mΩ max)	20	22									
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Contact resistance	The voltage drop shall be measured on the connector mated as being used, or on the contacts shown in Fig. 4, and the specified value shall be satisfied.		<table><tr><td></td><td colspan="2">Contact resistance</td></tr><tr><td>Current (A)</td><td>Initial (mΩ max)</td><td>After test (mΩ max)</td></tr><tr><td>5</td><td>20</td><td>23</td></tr></table>			Contact resistance		Current (A)	Initial (mΩ max)	After test (mΩ max)	5	20	23							
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5	20	23																		
E n v i r o n m e n t a l	Temperature cycling	5 cycles. <table><tr><td></td><td>Temperature (°C)</td><td>Time</td></tr><tr><td>1</td><td>-20⁰₋₃</td><td>30 minutes</td></tr><tr><td>2</td><td>Normal temperature</td><td>Within 5 minutes</td></tr><tr><td>3</td><td>+125⁺³₀</td><td>30 minutes</td></tr><tr><td>4</td><td>Normal temperature</td><td>Within 5 minutes</td></tr></table>			Temperature (°C)	Time	1	-20 ⁰ ₋₃	30 minutes	2	Normal temperature	Within 5 minutes	3	+125 ⁺³ ₀	30 minutes	4	Normal temperature	Within 5 minutes	No cracks or damages. After test, dielectric withstanding voltage (1250VAC) must satisfy the requirement.	
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4	Normal temperature	Within 5 minutes																		
	Humidity	Expose at 95±3% Temperature : 71±2°C For 14 days		Dielectric withstanding voltage (1250VAC) must satisfy the requirement.																

REQUIREMENT		TEST METHOD	REQUIREMENT																																
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E n v i r o n m e n t a l	Salt spray (Corrosion)	MIL-STD-202 METHOD 101 condition B After test, the connectors shall be washed with tap water and are dried in the heat wind circulating dryer of $38 \pm 3^{\circ}\text{C}$ for 24 hours. Salt concentration : 5% Temperature : 35°C Time : 48 hours.	There shall be no corrosion that will affect performance. After test, contact resistance (low level and constant level) must satisfy the requirement.																																
	Water proof	Carry out the test according to IEC 529, Degree of IP-67.	Should satisfy the requirement of Dielectric withstanding voltage and insulation resistance.																																
	Air leakage (for Receptacle)	Pressure : $2.9 \times 10^4 \text{Pa}$ for 1 minute.	No leakage of air.																																
	Oil-durability	<p>The connector mated as being used shall be soaked into the heated cutting oil for 200 hours as shown below. The heat condition and the oil used are shown in the table below.</p> <table border="1"> <thead> <tr> <th></th><th>Cutting oil name</th><th>Diluted</th><th>Temperature</th></tr> </thead> <tbody> <tr> <td>1</td><td>UNICUT TB15</td><td>Not diluted</td><td rowspan="7">85°C</td></tr> <tr> <td>2</td><td>UNISOLUBLE CC</td><td>1:50</td></tr> <tr> <td>3</td><td>UNISOLUBLE HD</td><td>1:10</td></tr> <tr> <td>4</td><td>YUSHIROKEN EC50</td><td>1:30</td></tr> <tr> <td>5</td><td>YUSHIRON CUT SUPER BX45N</td><td>Not diluted</td></tr> <tr> <td>6</td><td>SYNTILO 9974</td><td>1:10</td></tr> <tr> <td>7</td><td>G40H</td><td>Not diluted</td></tr> <tr> <td>8</td><td>HONILO 481</td><td>Not diluted</td><td rowspan="2">Normal temperature</td></tr> <tr> <td>9</td><td>MAKINO SPINDLE LUBRICANT</td><td>Not diluted</td></tr> </tbody> </table>		Cutting oil name	Diluted	Temperature	1	UNICUT TB15	Not diluted	85°C	2	UNISOLUBLE CC	1:50	3	UNISOLUBLE HD	1:10	4	YUSHIROKEN EC50	1:30	5	YUSHIRON CUT SUPER BX45N	Not diluted	6	SYNTILO 9974	1:10	7	G40H	Not diluted	8	HONILO 481	Not diluted	Normal temperature	9	MAKINO SPINDLE LUBRICANT	Not diluted
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【Figure 1】 Vibration durability

Angle type

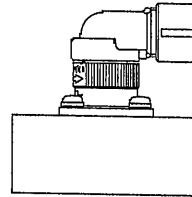
Straight type



【Figure 2】 Cable tensile strength

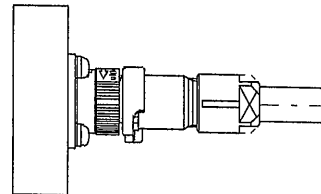
Angle type

Load direction



Straight type

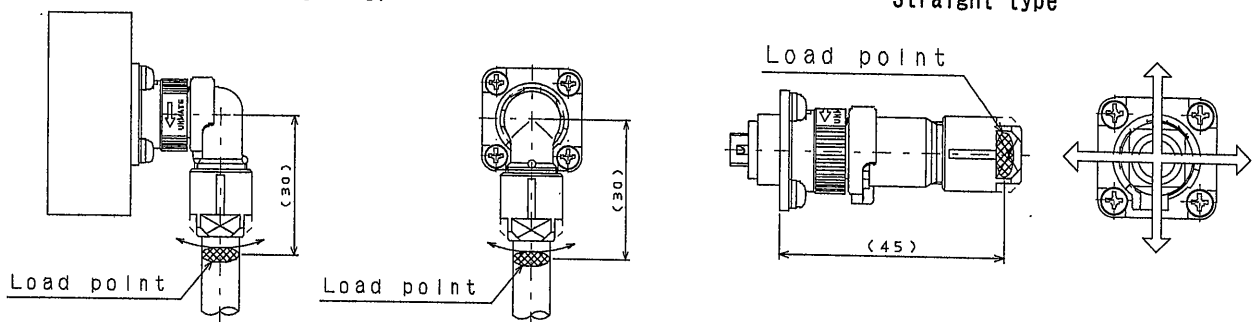
Load direction



【Figure 3】 Connector breakdown strength

Angle type

Straight type



【Figure 4】 Contact resistance

