

JAPAN AVIATION ELECTRONICS IND., LTD. 3-1-1 MUSASHINO, AKISHIMA-CITY TOKYO, JAPAN		SPECIFICATION TABLE		NO. JACS-5111-E		1/4											
				CONNECTOR/SERIES													
				JN1 Series													
				APPLICABLE CONNECTOR JN1AS10UL1, JN1ES10SL1, JN1FS10SL*, JN1DS10SL*													
APPLICABLE DWG NO. SJ034676, SJ034677, SJ034678, SJ034679, SJ035966, SJ035967																	
STANDARD DATA			Rev.	Date	Description	DRAWN BY	CHK'D BY	APP'D BY									
Applicable wire	AWG#21~28 (For details, refer to handling manual "JABL-5111-E".)	1	12. Jun. '01	—	E Matsumoto	S. Nao	M. Mafume										
Operating current	3A per contact																
Operating voltage	200VAC																
Dielectric withstanding voltage	900VAC																
Temperature range	-20°C~+125°C																
REMARK								Grade B									
REQUIREMENT		TEST METHOD		REQUIREMENT													
ITEM																	
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>$\phi 0.782 \begin{smallmatrix} 0 \\ -0.003 \end{smallmatrix}$</td> <td>2.26N max</td> </tr> <tr> <td>Separation force</td> <td>$\phi 0.742 \begin{smallmatrix} +0.003 \\ 0 \end{smallmatrix}$</td> <td>0.20N min</td> </tr> </table>						Test pin	Specific value	Engagement force	$\phi 0.782 \begin{smallmatrix} 0 \\ -0.003 \end{smallmatrix}$	2.26N max	Separation force	$\phi 0.742 \begin{smallmatrix} +0.003 \\ 0 \end{smallmatrix}$	0.20N min
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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.														

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 : 29.4N	The contact don't fall out from the insulator.																	
	Crimp tensile strength	Measure the tensile strength of crimped connection part of contacts.	Wire size	tensile strength																
			AWG#21	43.2N min																
			AWG#22, #23	49.0N min																
		AWG#24	34.3N min																	
		AWG#25	26.5N min																	
		AWG#26	20.5N min																	
		AWG#28	13.7N min																	
	Cable tensile strength	The load of 20N shall be applied to the connector cable installed as being used, in the direction shown as figure2.	Item	Specified value																
			Cable tensile strength	20N min																
	Connector breakdown strength	The load of 50N shall be applied to the connector installed as being used, in the direction shown as figure3.	Item	Specified value																
			Connector breakdown strength	50N min																
E l e c t r i c a l	Dielectric withstanding voltage	The test voltage (900VAC) 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.	Wire size	Contact resistance (low level)																
				Initial (mΩ max)																
				After test (mΩ max)																
			AWG#21, #22	20	22															
			AWG#23, #24	25	28															
			AWG#25, #26	31	38															
			AWG#28	50	60															
	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.	Wire size	Test current (A)	Contact resistance (mΩ max)															
					Initial															
					After test															
			AWG#21, #22	3	20	23														
			AWG#23, #24	3	20	23														
			AWG#25, #26	2	26	32														
			AWG#28	1.5	36	43														
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 (900VAC) must satisfy the requirement.		
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3	+125 ⁺³ ₀	30 minutes																		
4	Normal temperature	Within 5 minutes																		
	Humidity	Expose at 95±3% Temperature : 71±2℃ For 14 days	Dielectric withstanding voltage (900VAC) must satisfy the requirement.																	

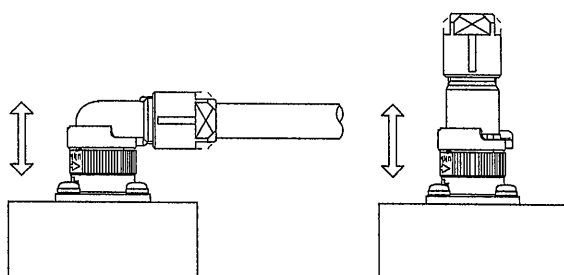
REQUIREMENT		TEST METHOD	REQUIREMENT																																
E n v i r o n m e n t a l	Salt spray (Corrosion)	MIL-STD-202 METHOD 101 condition B After test, the connectors shall be washed with tap water and are dried in the heat wind circulating dryer of 38 ± 3 °C for 24 hours. Salt concentration : 5% Temperature : 35°C Time : 48 hours.	There shall be no corrosion that will affect performance. After test, contact resistance 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.																																
	Resistance to soldering heat	Through hole connection part of receptacle shall be soaked into the solder (pot). Temperature of solder : 260°C Time : 3 seconds.	There shall be no transformation and damages that will affect performance.																																
	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="8">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></tr> <tr> <td>9</td><td>MAKINO SPINDLE LUBRICANT</td><td>Not diluted</td><td>Normal temperature</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	9	MAKINO SPINDLE LUBRICANT	Not diluted	Normal temperature
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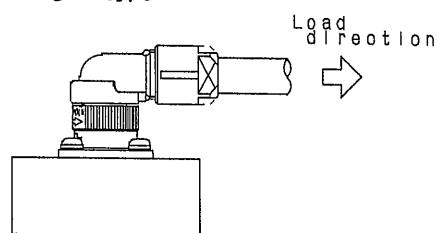
【Figure 1】 Vibration durability

Angle type

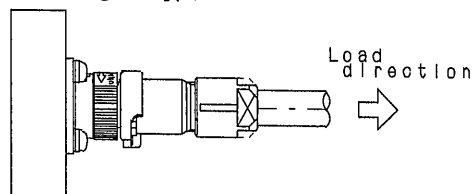
Straight type

【Figure 2】 Cable tensile strength

Angle type

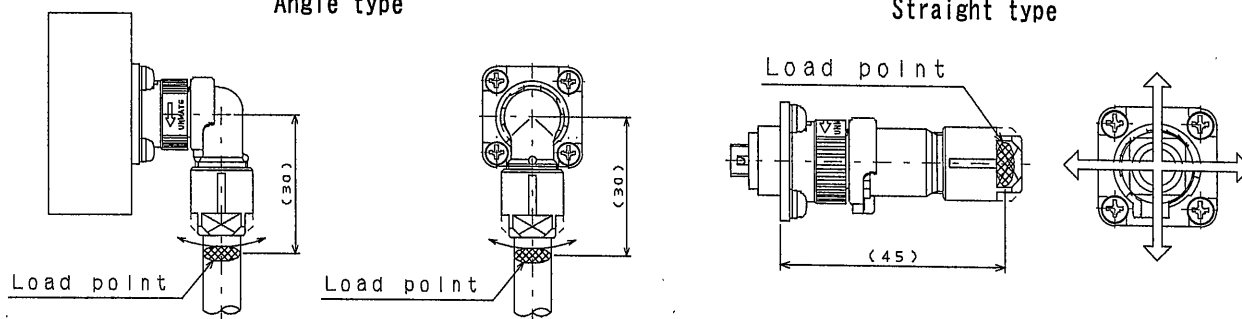
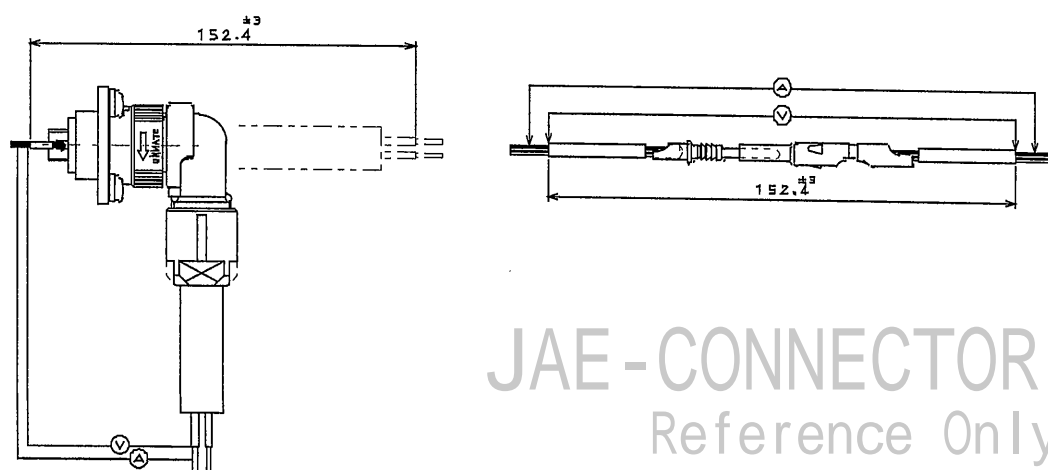


Straight type

【Figure 3】 Connector breakdown strength

Angle type

Straight type

【Figure 4】 Contact resistance

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