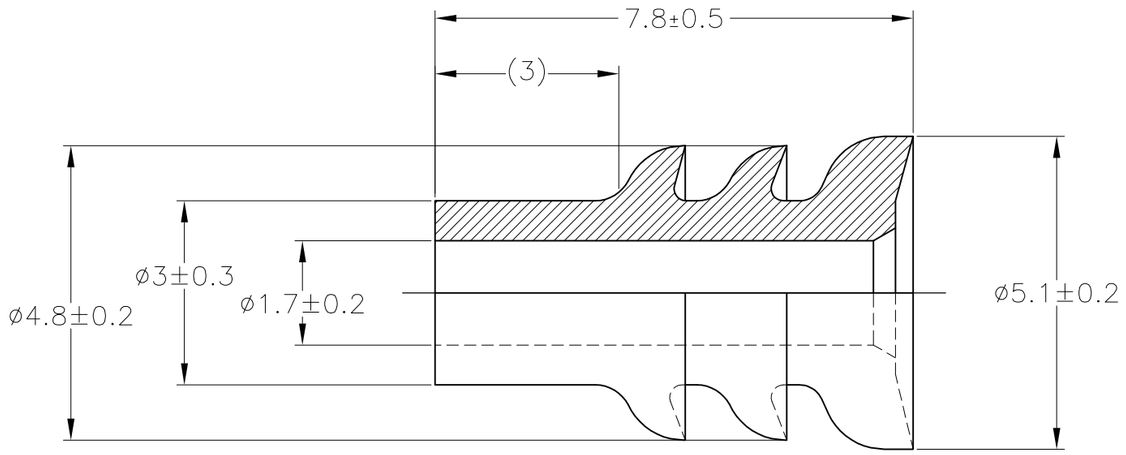
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| LOC | DIST |
|---|---|
| J | |

REVISIONS 変更

| P | LTR | DESCRIPTION | DATE | DWN | APVD |
|---|---|---|---|---|---|
| | A1 | REVISED ECR-14-018935 | 18DEC14 | DM | TK |

勝特力電材超市-龍山店 886-3-5773766
勝特力電材超市-光復店 886-3-5729570
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
http://www.100y.com.tw




1. オイル塗布タイプ
2. 材料；NBR フタル酸フリー

1. OIL COATED TYPE
2. MATERIAL ; NBR NON-BIS TYPE

| MATERIAL | COLOR | PART NUMBER |
|---|---|---|
| NBR 2 | 黒色 (BLACK) | 2822354-2 |
| NBR 1 2 | 黒色 (BLACK) | 2822354-1 |

WIRE RANGE 0.5～1.25mm² (AWG#20-#16)
INSULATION DIA. ø2～ø2.6mm

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS: 単位： 粍 mm

TOLERANCES UNLESS OTHERWISE SPECIFIED: 一般公差

| | |
|---|---|
| 0 PLC | ± - |
| 1 PLC | ± - |
| 2 PLC | ± - |
| 3 PLC | ± - |
| 4 PLC | ± - |
| ANGLES | ± - |

MATERIAL 材料: SEE TABLE
FINISH 仕上: -

DWN D.MATSUURA 06AUG2014
CHK S.IWATANI 06AUG2014
APVD T.KOHNO 06AUG2014
PRODUCT SPEC 製品規格 108-5262 108-5179
APPLICATION SPEC 取付適用規格 —
WEIGHT 0.1 g

TE Connectivity

NAME 名称: 070 TYPE RUBBER PLUG

| SIZE | CAGE CODE | DRAWING NO 番号 | RESTRICTED TO |
|---|---|---|---|
| A3 | 00779 | C-2822354 | — |

CUSTOMER DRAWING | SCALE 尺度 10:1 | SHEET 1 OF 1 | REV A1

**ECONOSEAL "J" Mark II+ Sensor Connector**

This specification may change without notice as a result of product design change and product evaluation testing. The applicable product descriptions and part numbers are as shown in Appendix. 1 :

1. Scope:

1.1 Contents:

This specification covers the requirements for product performance, test methods and quality assurance provisions of ECONOSEAL-J Mark Ⅱ+ Sensor Connector.

2. Applicable Documents:

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1 TE Specifications:

| | | |
|---|---|---|
| A. 109-5000 | : | Test Specification, General Requirements for Test Methods |
| B. 114-5082 | : | Application Specification, Crimping .070 & 250 Series Contact for ECONOSEAL-J Mark II+ Connector（Rubber Plug for .070：172746,172888 2822352, 2822354） |
| 114-5230 | : | Application Specification Crimping .070 Series Contact ECONOSEAL-J Mark II+ Connector（Rubber Plug for .070：900324, 900325） |
| C. 501-78560 | : | Qualification Test Report |
| D. 411-5590 | : | ECONOSEAL J Mark II+ Sensor Connector (Rubber Plug for .070：172746, 172888, 2822352, 2822354) |
| 411-5753 | : | ECONOSEAL J Mark II+ Sensor Connector (Rubber Plug for .070：900324, 900325) |


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* : Trademark

2.2 Reference Documents:

| | | | |
|---|---|---|---|
| A. | JASO D 605 | : | Multi-Connectors for Automotive |
| B. | JASO D 7101 | : | Testing Methods for Molded Plastic Parts |
| C. | JIS C 3406 | : | Low Voltage Cables for Automobiles |
| D. | JIS D 0203 | : | Method of moisture, Rain and Spray Test for Automobile Parts |
| E. | JIS D 0204 | : | Method of High and Low Temperature Test for Automobile Parts |
| F. | JIS D 1601 | : | Vibration Testing Method for Electronic Components |
| G. | JIS K 6301 | : | Physical Testing Methods for Vulcanized Rubber |
| H. | JIS K 2202 | : | Motor Gasoline |
| J. | JIS D 0205 | : | General Rules of Weatherability for Automobile Parts |
| K. | JIS R 5210 | : | Portland Cement |

2.3 Definition of Terms:

2.3.1 Contact:

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

2.3.2 Housing:

A dielectric component member of a connector made of insulating material that encapsulate contacts in its contact cavities. In this product line, cap housing (unit) assembled with tab contacts, and plug housing that encapsulates receptacle contacts are available.

2.3.3 Double Lock Plate:

Attached to the housing, this plate is intended to detect improper contact mating as well as to increase contact retention force.

2.3.4 Rubber Plug:

Attached to wire side of receptacle contact, this plug is purposed for water-proofing.

2.3.5 Cavity Plug:

This plug is used for blinding housing holes of unused contact position for such connector as having two or more positions.

2.3.6 Seal Ring:

This ring is attached to plug housing and serves for water-proofing when mated with cap housing.

2.3.7 Connector:

A connector is an assembly of housing and crimped wire contacts with rubber plugs loaded in all contact positions, and further equipped with double lock plate. In this product line, cap housing （unit) assembled with tab contact and plug housing assembled with receptacle contact, seal ring and double lock plate are available.

3. Requirements:

3.1 Design and Construction:

Product shall be of the design, construction and physical dimensions specified in the applicable product drawing.

3.2 Materials:

A. Contact: Brass or Pre-tinned brass, conforming to Copper Alloy 260 of ASTM B 36, or phosphor bronze or pre-tinned phosphor bronze.

B. Housing and Double Lock Plate:

Molded Polybutylene-terephthalate (PBT) conforming to UL 94 V-2

C. Accessories and Hardware:

Rubber Plug: Nitrile Butadiene Rubber or Silicon Rubber
Cavity Plug: Nitrile Butadiene Rubber
Seal Ring: Nitrile Butadiene Rubber or Silicon Rubber

3.3 Ratings:

A. Temperature Rating：

Seal Packing [Nitrile-Butadiene Rubber Type]：

-30℃～105℃（Ambient Temperature + Temperature Rise due to energized current）

Seal Packing [Silicon Rubber Type]：

-40℃～125℃（Ambient Temperature + Temperature Rise due to energized current）

Seal Packing：

Seal-Ring, Rubber-Plug, Cavity-Plug are shown. See Appendix 1

3.3.1 Applicable Wires:

| Part Number | | Applicable Wire Conductor Size ($mm^2$) | Insulation Diameter (mm) |
|---|---|---|---|
| Contact | Rubber Plug | | |
| 171630-1 | 172746-1 | AV and AVS 0.2, 0.3, 0.5 one wire | 1.4～2.4 |
| | 2822352-1 | AV and AVS 0.2, 0.3, 0.5 one wire | 1.4～2.4 |
| | 2822352-2 | AV and AVS 0.2, 0.3, 0.5 one wire | 1.4～2.4 |
| | 900324-4 | AVSS and AVS 0.3, 0.5（Note 1）one wire | 1.4～1.9 |
| 171662-1 | 172888-2 | AV and AVS 0.5, 0.85, 1.25（Note 2）one wire | 2～2.6 |
| | 2822354-1 | AV and AVS 0.5, 0.85, 1.25（Note 2）one wire | 2～2.6 |
| | 2822354-2 | AV and AVS 0.5, 0.85, 1.25（Note 2）one wire | 2～2.6 |
| | 1-900325-9 | AVS0.5, 0.85 and AVSS 1.25 one wire | 2～2.3 |

注 1：0.5 $mm^2$ wire is applicable to AVSS only.

2：1.25 $mm^2$ wire is applicable to AVS only.

3：AVS stands for thin wire for automobile.

4：AVSS stands for super thin wire for automobile.

3.4 Performance and Test Descriptions:

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig.2. All tests shall be performed in the room temperature unless otherwise specified.

3.5 Test Requirements and Procedures Summary:

<table>
<tr><th>Para.</th><th>Test Items</th><th colspan="4">Requirements</th><th>Procedures</th></tr>
<tr><td>3.5.1</td><td>Confirmation of Product</td><td colspan="4">Product shall be conforming to the requirements of applicable product drawing and Application Specification 114-5082, 114-5230</td><td>Visually, dimensionally and functionally inspected per applicable inspection plan.</td></tr>
<tr><td rowspan="4">3.5.2</td><td rowspan="4">Connector Mating Force</td><td rowspan="2">No. of Pos.</td><td colspan="2">Mating Force (max.)</td><td rowspan="4">Measure the force required to mate connector using locking latch by operating at 100mm approx. a minute, with the locking mechanism of housing set in effect.</td></tr>
<tr><td>N</td><td>(kg)</td></tr>
<tr><td>2</td><td>49.1</td><td>5.0</td></tr>
<tr><td>4</td><td>68.7</td><td>7.0</td></tr>
<tr><td rowspan="4">3.5.3</td><td rowspan="4">Connector Unmating Force</td><td rowspan="2">No. of Pos.</td><td colspan="2">Unmating Force (max.)</td><td rowspan="4">Measure the force required to mate connector using locking latch by operating at 100mm approx. a minute, without the locking mechanism of housing set in effect.</td></tr>
<tr><td>N</td><td>(kg)</td></tr>
<tr><td>2</td><td>39.2</td><td>4.0</td></tr>
<tr><td>4</td><td>68.7</td><td>7.0</td></tr>
<tr><td>3.5.4</td><td>Contact Mating Force</td><td colspan="4">2.94～7.85N, (0.3～0.8kg) : per .070 Series Contact.</td><td>Measure the force required to mate contact by operating the head at a rate of 100mm approx. a minute.</td></tr>
<tr><td>3.5.5</td><td>Contact Unmating Force</td><td colspan="4">2.94～7.85N, (0.3～0.8kg) : per .070 Series Contact.</td><td>Apply an axial pull-off load to one of mated contacts. Measure the force required to unmate contact by operating the head at a rate of 100mm approx. a minute.</td></tr>
<tr><td rowspan="4">3.5.6</td><td rowspan="4">Double Lock Plate Loading Force</td><td rowspan="2">No. of Pos.</td><td colspan="2">Loading Force (max.)</td><td rowspan="4">Fix housing of the testing machine, and insert locking plate in axial direction by operating the head at a rate of 100mm approx. a minute. Measure the force required to complete loading of locking plate.</td></tr>
<tr><td>N</td><td>(kg)</td></tr>
<tr><td>2</td><td>49.1</td><td>5.0</td></tr>
<tr><td>4</td><td>49.1</td><td>5.0</td></tr>
</table>

Fig.2 (To be continued)

<table>
<tr><th>Para.</th><th>Test Items</th><th>Requirements</th><th>Procedures</th></tr>
<tr><td>3.5.7</td><td>Termination Resistance (Low Level)</td><td>3mΩ max. (Initial)<br>10mΩ max. (Final)</td><td>Subject mated contacts assembled in housing to close circuit current of 50mA Max. at open circuit voltage of 50mV Max.<br>Fig.7<br>TE Spec. 109-5306</td></tr>
<tr><td>3.5.8</td><td>Termination Resistance (Specified Current)</td><td>Millivolt Drop:<br>3mV/A max. (Initial)<br>10mV/A max. (Final)</td><td>Measure by applying 1A at 12V DC to contacts in mated connectors, by probing at 75mm apart from wire crimp after temperature becomes stabilized.<br>(Probing at Y and Y' in Fig.7) Fig.7.</td></tr>
<tr><td>3.5.9</td><td>Insulation Resistance</td><td>100MΩ min. (Initial)</td><td>Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connectors.<br>Test Potential : 500V DC</td></tr>
<tr><td>3.5.10</td><td>Dielectric Strength</td><td>Connector must withstand test potential of 1.0kVAC for 1 minute. No physical damage shall be evident after the test.</td><td>Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. Fig.3.</td></tr>
<tr><td>3.5.11</td><td>Handling Ergonomics</td><td>No abnormal touch shall be perceived during mating/ unmating, that may cause pain or fatigue on separator's hand.</td><td>Repeat mating and unmating of connectors by hands.</td></tr>
<tr><td>3.5.12</td><td>Crimp Tensile Strength</td><td>
<table>
<tr><th colspan="2">Wire Size</th><th colspan="2">Crimp Tensile (min,)</th></tr>
<tr><th>mm²</th><th>(AWG)</th><th>N</th><th>(kg)</th></tr>
<tr><td>0.2</td><td>#24</td><td>68.7</td><td>7.0</td></tr>
<tr><td>0.3</td><td>#22</td><td>78.5</td><td>8.0</td></tr>
<tr><td>0.5</td><td>#20</td><td>88.3</td><td>9.0</td></tr>
<tr><td>0.85</td><td>#18</td><td>127.5</td><td>13.0</td></tr>
<tr><td>1.25</td><td>#16</td><td>176.6</td><td>18.0</td></tr>
</table>
</td><td>Apply an axial pull-off load to crimped wire of contact secured in the tester, at a rate of 100mm a minute.<br><br>TE Spec. 109-5205</td></tr>
</table>

Fig.2 (To be continued)

| Para. | Test Items | Requirements | Procedures |
|---|---|---|---|
| 3.5.13 | Contact Retention Force | 98.1N, (10kg) min. | Apply an axial load to 0.85mm², 100mm long crimped contact on housing with the mechanism of locking plate set in effect by operating at a rate of 100mm approx. a minute.<br>Measure the force required to dislodge the contact from housing.<br><br>TE Spec. 109-30 |
| 3.5.14 | Housing Locking Retention Force: | 98.1N, (10kg) min. | Fix mated pair of connectors on testing machine, and apply an axial separating force to one of them. Measure the force required to separate the connectors, with or without breakage of locking leg. |
| 3.5.15 (1/2) | Watertight Sealing | Initial: 4.90N/cm² min.<br>Final: 2.94N/cm² Min.<br><br>Initial: 0.5kg/cm² min.<br>Final: 0.3kg/cm² min. | Rubber Plug for .070 :<br>172746, 172888, 2822352, 2822354<br>Below compressed air into mated pair of connectors through a small hole. For this test, wire ends are sealed with solder and adhesive masking. Please the connector in 30cm deep water, and must withstand the air pressure of 0.1kg／cm² for 30 seconds. Increase pressure at a rate of 0.1kg／cm² each time until air leakage takes place.<br><br>Rubber Plug for .070 :<br>900324, 900325<br>Drill a hole in the connector housing, or pass a plastic tube through one of the connector cavities.<br>Supply compressed air through the hole or the plastic tube to check the connector sealing ability.<br>The lead wire should be treated in one of the following methods : solder the wire ends and seal them with an adhesive (see Fig.4) ; use wires long |

| Para. | Test Items | Requirements | Procedures |
|---|---|---|---|
| 3.5.15 (2/2) | | | enough to extend outside the tester：or use wire of appropriate lengths（250+30/-0 mm）to form a loop for sealing. Insert a dummy wire into the remaining cavity. At measurement, connectors and lead wires will be placed in horizontal and non-load condition, or in the load condition of 30° slope with 30 N（3.06kgf）.（Fig.13）<br>The above load condition means that the load will be put upward, downward and to the side direction, and then the endurance test will be done in the worst condition among those three directions. |
| 3.5.16 | Temperature Life: | Must meet the specified requirements after testing in the sequence specified in Fig.10. | Expose mated connectors under elevated temperature at A±2℃ for 120 hours. Recondition in the room temperature before subsequent measurement. See Fig.*1 |
| 3.5.17 | Resistance to Cold | Must meet the specified requirements after testing in the sequence specified in Fig.10. | Expose mated pair of connectors under the cold atmosphere at －50 ±5℃ for 120 hours. Recondition in the room temperature before the subsequence measurement. |
| 3.5.18 | Resistance to “Kojiri” | Must meet the specified requirements after testing in the sequence specified in Fig.10. | Tightly secure a connector on a sturdy bench, and mate the counterpart connector. In the unmating way, apply 20kg･cm (T) force in right-left directions at every 1mm graduation along the disengaging full stroke. Making one disengagement a cycle repeat for 25 cycles. When the first direction cycles are completed, apply another 25 cycles to the traverse directions or manually repeat mating / unmating of connectors for 50 cycles with Kojiri motion mode. Fig.5. |

| SEAL PACKING | NBR | SiR |
|---|---|---|
| A | 120 | 125 |

Fig.*1

Fig.2（To be continued）

<table>
<tr><th>Para.</th><th>Test Items</th><th>Requirements</th><th>Procedures</th></tr>
<tr><td>3.5.19</td><td>Resistance to Liquid Detergents:</td><td>Must meet the specified requirements after testing in the sequence specified in Fig.10.</td><td>Immerse mated connectors into commercially suppliable car washer liquid detergent at 50±2℃ for 2 hours. After the durations, rinse in tap water for 5 minutes, and have it dried before subsequent measurement.</td></tr>
<tr><td>3.5.20</td><td>Resistance to Coolant</td><td>Must meet the specified requirements after testing in the sequence specified in Fig.10.</td><td>Immerse mated connectors into commercially suppliable L.L.C (long life coolant) at 50±2℃ for 2 hours. After the duration, lines in tap water for 5 minutes, and have it dried before subsequent measurement.</td></tr>
<tr><td>3.5.21</td><td>Resistance to Oil</td><td>Must meet the specified requirements after testing in the sequence specified in Fig.10.</td><td>Immerse mated connectors into oils the following in the specified sequence:
<table>
<tr><th>No.</th><th>Oil Names</th><th>Temperature</th><th>Dura-tion</th></tr>
<tr><td>1</td><td>Engine Oil (SAE 10w)</td><td>50±2℃</td><td>60 min.</td></tr>
<tr><td>2</td><td>Kerosene Linse</td><td>Room Temp.</td><td>5 min.</td></tr>
<tr><td>3</td><td>Motor Gasoline</td><td>Room Temp.</td><td>60 min.</td></tr>
<tr><td>4</td><td>Drying w/o Powered Ventilation</td><td>Room Temp.</td><td>AS Req'd</td></tr>
</table></td></tr>
<tr><td>3.5.22</td><td>Resistance to Ozone</td><td>Must meet the specified requirements after testing in the sequence specified in Fig.10.</td><td>Suspend mated connector in a closed container, and expose in ozone atmosphere of 50±5ppm concentration per JIS K 6301 , Para.16, at 40±2℃ for 24 hours. After the duration, recondition in the room temperature, before subsequent measurement. Record cracking condition of tested rubber surfaces, according to JIS K 6301, Para.16.6.</td></tr>
</table>

Fig.2 (To be continued)

| Para. | Test Items | Requirements | Procedures |
|---|---|---|---|
| 3.5.23 | Dust Bombardment | Must meet the specified requirements after testing in the sequence specified in Fig.10. | Subject mated connectors to ejection of Portland cement or Kanto loam dust powder dispersed by compressed air blowing at a rate of 1.5kg per 10 seconds at every other 15 minutes for the total of 1 hour. After completion of duration, repeat mating / unmating for 3 cycles. |
| 3.5.24 | Weather Aging: | Must meet the specified requirements after testing in the sequence specified in Fig.10. | Expose mated connectors under the sunshine carbon are light beam per JIS D 0205, Para.5.4 (WAN-1S), Aging Tester, at 63±3℃ for 150 hours. Record cracking condition of tested rubber surfaces, according to JIS K 6301, Para.16.6. |
| 3.5.25 | Temperature Rising | 50℃ max.<br>Must meet the specified requirements after testing in the sequence specified in Fig.10. | Subject mated connectors with all the contacts series wired, to be energized with the current of the intensity obtained by Fig.6. Measure temperature rising in a draft-free chamber after temperature becomes stabilized. |
| 3.5.26 | Water Sprinkle | Must meet the specified requirements after testing in the sequence specified in Fig.10.<br>Current Leakage:100μA max. | Suspend mated connector in a closed chamber. Subject it to heat at 120±3℃ for 40 minutes followed by sprinkling of water at room temperature for 20 minutes. Making this a cycles, repeat for 48 cycles per JIS D 0203, S1. Energize the contacts with 12V DC, and monitor the circuits for current leakage. Connected 2 meter lead wires are drawn out of the chamber for measurement. |

Fig.2 (To be continued)

| Para. | Test Items | Requirements | Procedures |
|---|---|---|---|
| 3.5.27 | Compound Environ-mental Testing (Optionally performed by customer's requirements) | Must meet the requirements after testing in the sequence specified in Fig.10. | Subject mated connectors, with all the loaded contacts series-wired as shown in Fig.8, to 4.5G's vibration to reciprocate between 20-200 Hz one cycle every 3 minutes for 100 hours each to three axial directions. Measure termination resistance (low level) at completion of each axis vibration cycle. During vibration, apply test current of the intensity obtain by Fig.6, for 45 minutes ON, and 15 minutes OFF for 300 cycles, in the heat cycle test condition to reciprocate between 80±3℃, －30±3℃, in 80-95% R.H. atmosphere. Fig.9. |
| 3.5.28 | Current Cycling | Must meet the specified requirements after testing in the sequence specified in Fig.10. | Subject mated contact to test current of the intensity obtained by Fig.6 applied for 300 cycles intermittently 45 minutes ON, 15 minutes OFF to the series wired contacts. |
| 3.5.29 | Vibration Sinusoidal High Frequency | No electrical discontinuity greater than 1 microsecond shall occur. Fig.10. | Subject mated connectors to 20-200 Hz traversed in 3 minutes with 4.5G accelerated velocity; 2 hours each for "X" and "Y" axis, and 4 hours for "Z" axis. Monitor circuit for electrical discontinuity greater than 1 μ sec. taking place in the series-wired contacts. |

Note Tested products shall be conforming to the requirements of the visual inspection without physical damage, also meeting the requirements of the additional tests specified in the sequence tests specified in Fig.10.

Fig.2（End）

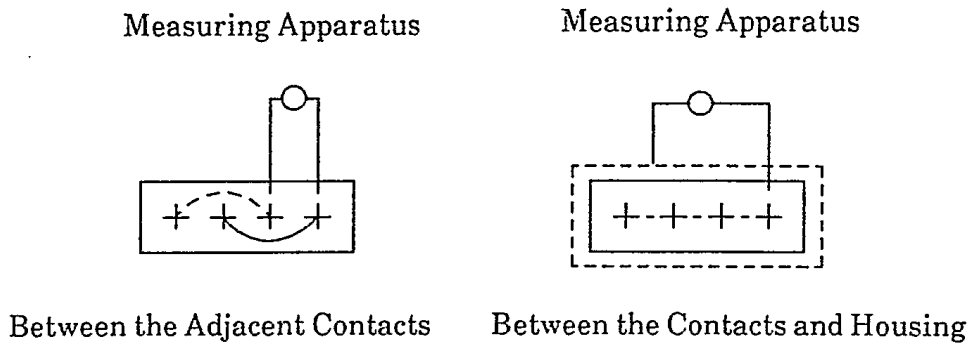



Fig. 3

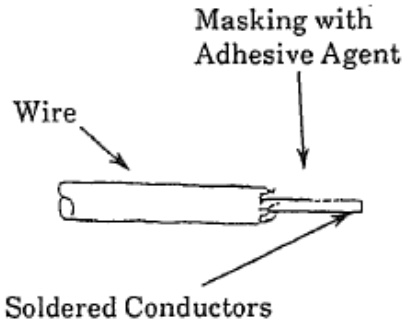



Fig. 4

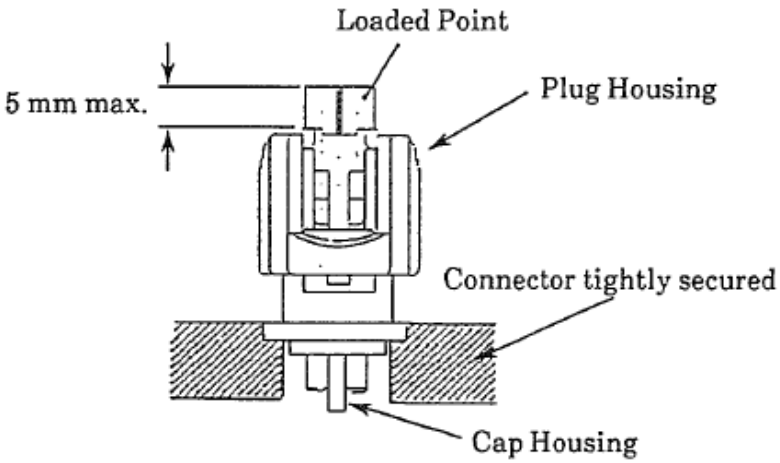



Fig. 5

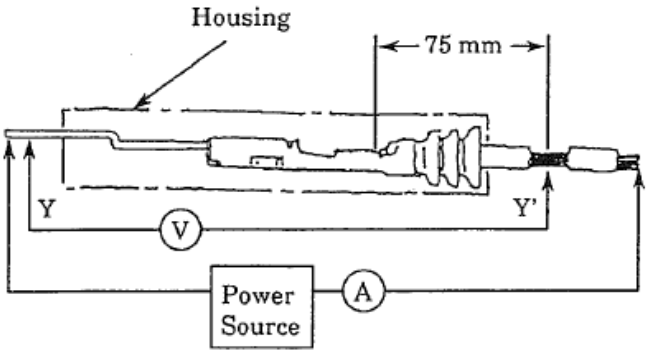
| Wire Size (mm²) | Test Current (DC A) |
|---|---|
| 0.2 | 7 |
| 0.3 | 9 |
| 0.5 | 11 |
| 0.85 | 14.5 |
| 1.25 | 18.5 |

| No. of Posistions | Reduction Coefficient |
|---|---|
| 1 | 1 |
| 2~3 | 0.75 |
| 4 | 0.6 |

Fig. 6

Note Applying current is obtained by calculation by multiplying the current value of applicable wire size and the reduction coefficient according to the number of contact loading of the connector.

Termination Resistance (Low Level) :




Termination resistance is obtained after deducting the millivolt drop of 75 mm-long wire used for termination and tab contact.
Probing point Y' shall be pretreated by uniform soldering in order to stabilize measurement reading during the test.

Fig.7 Measurement of Termination Resistance

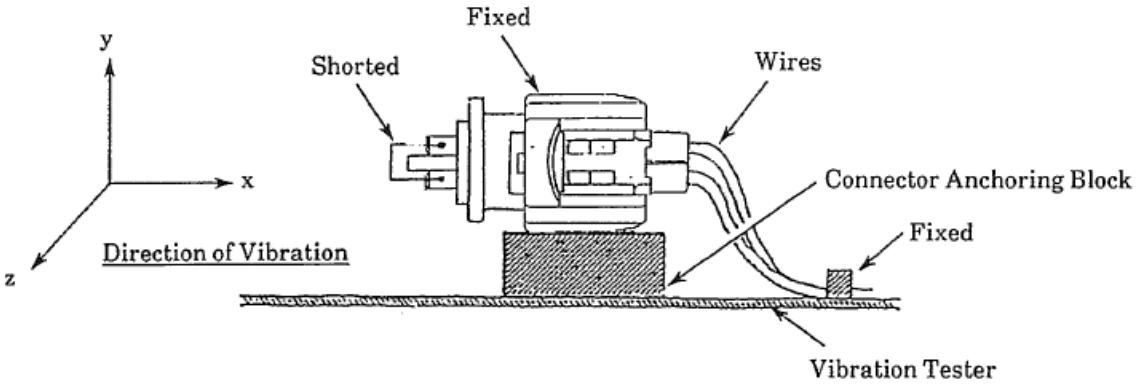



Fig.8

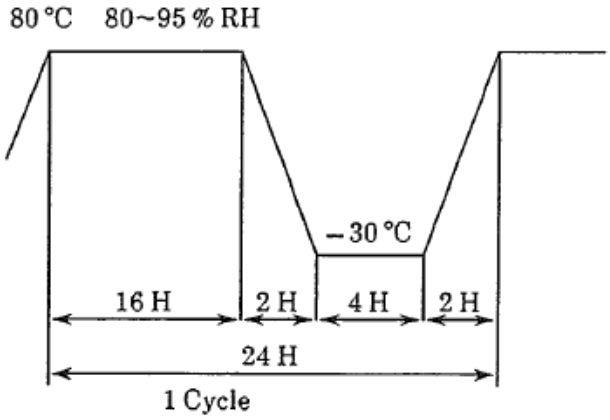



Fig.9

4. Product Qualification and Requalification Testing:

| Test of Examination | Sample Groups | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | Test Sequence | | | | | | | | | | | |
| Confirmation of Product | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1,4 | 1,4 | 1 | 1 |
| Connector Mating Force | | | | 2,10 | | | | | | | | |
| Contact Mating Force | 2 | | | | | | | | | | | |
| Connector Unmating Force | | | | 4,11 | | | | | | | | |
| Contact Unmating Force | 3 | | | | | | | | | | | |
| Double Lock Plate Loading Force | | | 2 | | | | | | | | | |
| Termination Resistance (Low Level) | | | | 3,6 8 | | 2,6 8,10 | | | 2,5 | 2,5 | 2,4 | 2,4 |
| Termination Resistance (Specified Current) | | | | | 2,5 | | 2,5 7 | | | | | |
| Watertight Sealing | | | | 9 | | 12 | 8 | 3 | 6 | 6 | | |
| Insulation Resistance | | | | | | 3,11 | | | | | | |
| Dielectric Strength | | | | | 4 | | | | | | | |
| Handling Ergonomics | | | | | | | 3 | | | | | |
| Contact Retention Force | | | 3 | | | | | | | | | |
| Housing Locking Retention Force | | | | 12 | | | | | | | | |
| Temperature Life | | | | 5 | | | | | | | | |
| Resistance to Cold | | | | 7 | | | | | | | | |
| Water Sprinkle | | | | | | | | 2 | | | | |
| Resistance to Kojiri | | | | | | | 4 | | | | | |
| Crimp Tensile Strength | | 2 | | | | | | | | | | |
| Composite Environmental Test | | | | | | | 6 | | | | | |
| Resistance to Liquid Detergents | | | | | | 4 | | | | | | |
| Resistance to Coolant | | | | | | 5 | | | | | | |
| Resistance to Oil | | | | | | 7 | | | | | | |
| Resistance to Ozone | | | | | | | | | 3 | | | |
| Weather Aging | | | | | | | | | | 3 | | |
| Dust Bombardment | | | | | | 9 | | | | | | |
| Temperature Rise | | | | | 3 | | | | | | | |
| Vibration Sinusoidal High Frequency | | | | | | | | | | | 3 | |
| Current Cycling | | | | | | | | | | | | 3 |

The numbers in the columns indicate the sequence in which the tests are performed.

Fig.10

5. Quality Assurance Provisions:

5.1 Test Conditions:

Unless otherwise specified all the tests shall be performed in any combination of the following test conditions.

| | |
|---|---|
| Temperature | 15～35℃ |
| Relative Humidity | 45～75% |
| Atmospheric Pressure | 650～800mmHg |

Fig.11

5.2 Sample Preparation:

5.2.1 Samples:

The samples to be employed for the tests shall be prepared in accordance with 114-5082, TE Application Specification, Crimping .070 & .250 Series Contact for ECONOSEAL "J" Mark Ⅱ+ Connector, and 114-5230, Application Specification, Crimping .070 Service Contact for ECONOSEAL "J" Mark II+ Connector, by using the wire specified in Fig.12. No sample shall be reused, unless otherwise specified.

5.2.2 Number of Samples:

The number of contact and connector samples shall be consisting of more than 10 pieces contacts for testing contact, and more than 2 sets of connectors for testing connector.

5.2.3 Wires Used:

The wires to be employed for the tests shall be the ones specified in Fig.12

| Wire Size | | Wire Strand Composition | | Cross-Sectional Area | | Remarks |
|---|---|---|---|---|---|---|
| Nominal | AWG | Strand Diameter (mm) | Number of Strands | $mm^2$ | CMA | |
| 0.2 | #24 | 0.20 | 7 | 0.22 | 434 | Wires AV and thin wires (AVS), super thin wires (AVSS) for automobiles. JIS C 3406 |
| 0.3 | #22 | 0.26 | 7 | 0.37 | 733 | |
| 0.5 | #20 | 0.32 | 7 | 0.56 | 1111 | |
| 0.85 | #18 | 0.32 | 11 | 0.88 | 1746 | |
| 1.25 | #16 | 0.32 | 16 | 1.29 | 2540 | |

Fig.12

6.1 Crimping and Assembly Processing:

In order to maintain reliable termination performance of housing and contacts, crimping contact shall be performed in accordance with 114-5082, TE Application Specification, Crimping .070 & .250 Series Contact for ECONOSEAL "J" Mark Ⅱ+ Connector. and 114-5230 Application Specification, Crimping .070 Series Contact for ECONOSEAL "J" Mark II+ Connector.

Manufacturing harness and extracting contacts shall be performed in accordance with Instruction Sheet 411-5590, ECONOSEAL "J" Mark II+ Sensor Connector and 411-5753, ECONOSEAL "J" Mark Ⅱ+ Sensor Connectors.

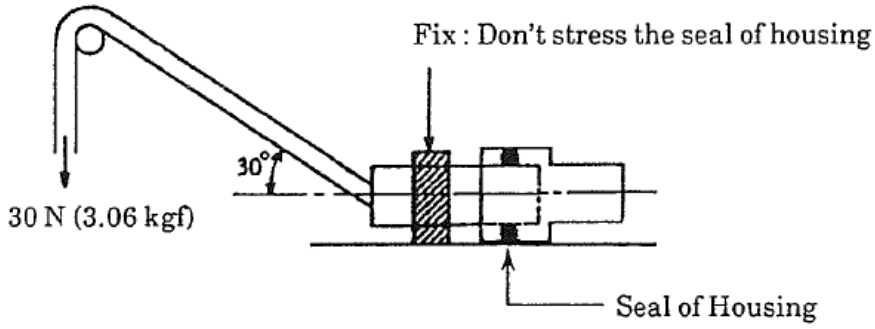



Fig. 13

The applicable product descriptions and part numbers are as shown in Appendix. 1 :

| Part number | Seal Packing | | | Descriptions |
|---|---|---|---|---|
| | NBR | NBR Non-Bis | Silicon Rubber | |
| 178390 | ○ | | | .070 Series 2Position Plug Housing Assembly（B） for TSZ22° |
| 2822363 | | ○ | | |
| 178448 | | | ○ | |
| 174365 | | | | .070 Series 2Position Cap Housing Assembly（B） for TSZ22° |
| 178391 | ○ | | | .070 Series 2Position Plug Housing Assembly（C） for TSZ22° |
| 2822364 | | ○ | | |
| 2260930 | | | ○ | |
| 178392 (*) | ○ | | | .070 Series 2Position Plug Housing Assembly（D） for TSZ22° |
| 2822365(*) | | ○ | | |
| 178449 (*) | | | ○ | |
| 178399 (*) | ○ | | | .070 Series 4Position Plug Housing Assembly（A） for Throttle Sensor |
| 2822636 (*) | | ○ | | |
| 178398 (*) | ○ | | | .070 Series 4Position Plug Housing Assembly（B） for Throttle Sensor |
| 2822385 (*) | | ○ | | |
| 171630 171662 | | | | .070 Series Receptacle Contact |
| 0-172746-1 9-172746-1 | ○ | | | Rubber lug for .070 |
| 2822352-1 2822352-2 | | ○ | | |
| 900324-4 | | | ○ | |
| 0-172888-2 0-172888-3 9-172888-2 | ○ | | | |
| 2822354-1 2822354-2 | | ○ | | |
| 1-172888-3 | | | ○ | |
| 1-900325-9 | | | ○ | |
| 172748 | ○ | | | Cavity Plug for .070 |
| 2822357-1 | | ○ | | |

Appendix 1

(*) Applicable to Test Sequence 1, 2 and 3 only. See Fig. 10.