NUMBER: 10-5307

SECURITY CLASSIFICATION: Customer Release

Product Specification

108-5307

2.0 mm Dia. Ignition Plug Contact for Frame Sensor Device

1. Scope :

1.1 Contents :

This specification covers the requirements for product performance and test methods of AMP 2.0 mm Dia. Ignition Plug Contact for frame Sensor device of the part number specified below.

Part Number	Descriptions	Remarks
175135-☐	Receptacle Contact	for #22 - #18 AWG

2. Materials :

2.1 Receptacle Contact : Pretinned Phosphor Bronze

3. Ratings :

3.1 Voltage Rating : 200 V AC max.

3.2 Current Rating : 5 A max.

3.3 Temperature Rating : −20/+150°C (Temperature rising due to loaded current is included.)

3.4 Applicable Wire Range :

Contact Part No.	Wire Size	
	Conductor mm² (AWG)	Insulation Diameter (mm)
175135-☐	0.3 - 0.89 (#22 - #18)	1.2 - 3.5

LTR	REVISION RECORD	DR	CHK	DATE
0	RFA-1472	[illegible]	[illegible]	12/6/91

DR. 12/6/91 Y. Fujita

CHK.

APP. D. Quave 12/6/91

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4. Quality Assurance Provisions :

4.1 Test Conditions :

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

Temperarture : 15-35 °C
Relative Humidity : 45-75 %
Atmospheric Pressure : 650-800 mmHg

4.2 Test Specimens :

The test specimens to be employed for the testing shall be selected from the normal production, conforming to the applicable drawing (s), and prepared in accordance with AMP Application Specification, 114-5130, using the wires of the sizes specified in Para. 3.4. The samples shall be not reused, unless otherwise specified.

5. Performance Requirements and Test Methods :

<table>
<tr><th>Para.</th><th>Test Items</th><th colspan="3">Requirements</th><th>Procedures</th></tr>
<tr><td>5.1</td><td>Appearance</td><td colspan="3">Product shall be free from the abnormalities such as scratch, cracks, deformation, blister, dirt and burrs that are detrimental to connector functions and merchandising value.</td><td>Visual inspection.</td></tr>
<tr><td rowspan="4">5.2</td><td rowspan="4">Crimp Tensile Strength</td><td>Wire Size mm² (AWG)</td><td colspan="2">Tensile Strength kg (min)</td><td rowspan="4">Apply an axial pull-off load to contact crimped on applicable wire (about 100 mm in length), at a rate of 100 mm a minute. Measure the force required to break wire or separates wire from crimp without insulation barrel</td></tr>
<tr><td>0.3 (#22)</td><td colspan="2">5</td></tr>
<tr><td>0.5 (#20)</td><td colspan="2">7</td></tr>
<tr><td>0.75 (#18)</td><td colspan="2">12</td></tr>
<tr><td rowspan="3">5.3</td><td rowspan="3">Contact insertion Contact Separating Forces</td><td>Ins. Force</td><td colspan="2">Sep. Force</td><td rowspan="3">Apply force to contact with the use of tensile tester at a rate of 100 mm a minute, with ignition plug fixed. Measure the forces required to insert or separate contact.</td></tr>
<tr><td>(kg) (max.)</td><td>Initial (kg)</td><td>10th Cycle (kg)</td></tr>
<tr><td>5.0</td><td>1.0 to 5.0</td><td>0.8 to 5.0</td></tr>
</table>

Para.	Test Items	Requirements	Procedures
5.4	Temperature Rise	30 °C max.	Apply rated current to contact crimped on applicable range of wire, with it mated with plug. Take temperature reading on thermocouple attached to crimp, in stable condition reached. Temperature rise equals the above reading value minus room temperature.
5.5	Termination Resistance (Low Level)	100 m Ω max.	Subject contacts mated with plug to 50 mV open circuit at 100 mA maximum. Measure as indicated in Fig. 1. Calculate resistance values by subtracting resistance of wire (75 mm) and plug (55 mm) from the measured value.

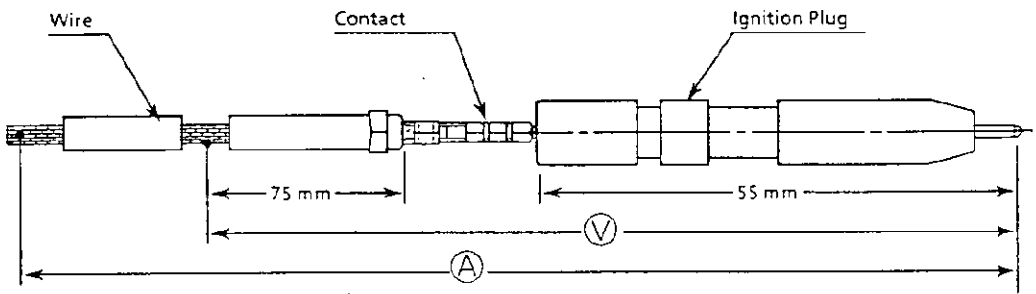

Fig. 1

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Para.	Test Items	Requirements	Procedures
5.6	Vibration Sinusoidal Low Frequency	Termination Resistance, (low level) : 150 mΩ max.	Subject contacts mated with plug to the following conditions as specified in MIL-STD-202, Method 201 with them fixed on vibration tester as indicated in Fig.2 : Frequency : 10-55-10 Hz traversed in 1 minute. Total excursion : 1.5 mm Duration : 2 hours in each of 3 mutually perpendicular axes (X, Y, and Z) Subject samples to termimation resistance (low level) test after vibration test.
5.7	Humidity Steady State	Termination Resistance (low level) : 150 mΩ max.	Subject mated samples to the following conditions as specified in MIL-STD-202, Method 103 : Temperature : 40 °C Humidity : 90 to 95 % Duration : 96 hours Subject low level termination resistance test after the above test.

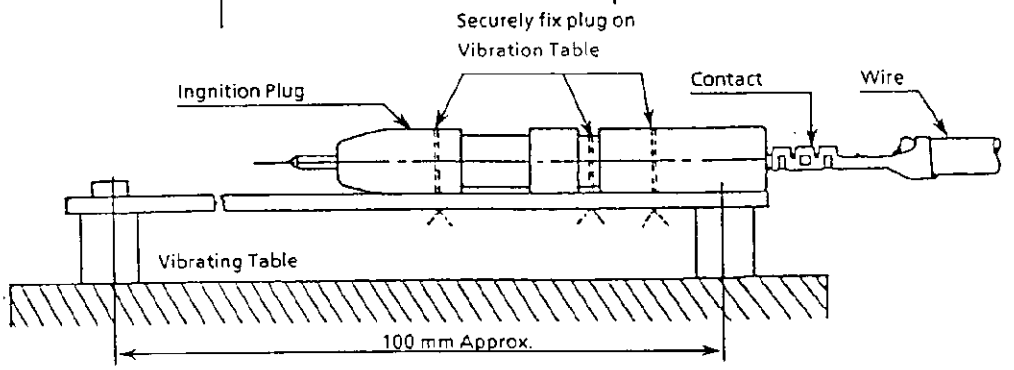


Fig. 2

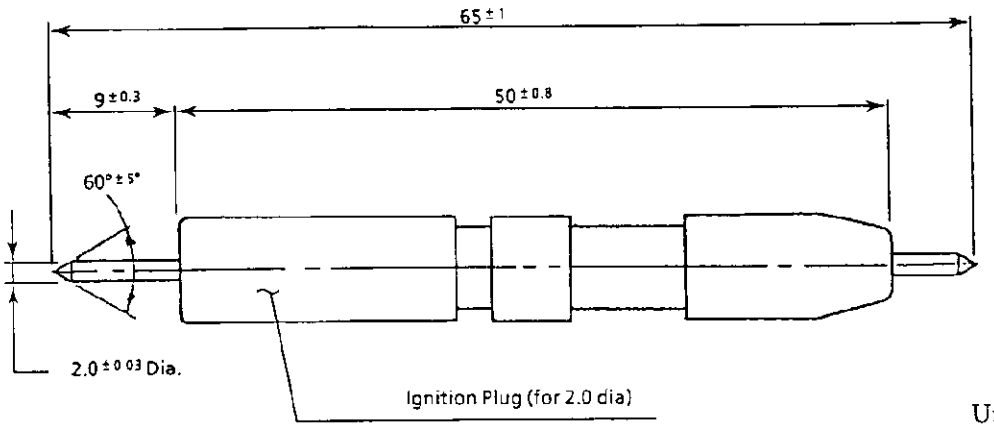
Para.	Test Items	Requirements	Procedures
5.8	Thermal Shock	Termination Resistance (low level) : 150 mΩ max.	Subject mated samples to 25 cycles of the following test conditions as specified in MIL-STD-202, Method 107 : Step of Temp Shift — Exposure Condition 1 — $150 \pm {}^{3}_{0}$ °C, 30 minutes 2 — Room Temp. 5 minutes 3 — $-20 \pm {}^{0}_{3}$ °C 30 minutes 4 — Room Temp. 5 minnutes
5.9	Salt Spray	Termination Resistance (low level) : 15 mΩ max.	Subject mated samples to the following conditions as specified in MIL-STD-202, Method 101, Condition B : Salt concentration : 5 % Temperature : 35 °C Duration : 48 hours Measure termination resistance after samples cleaned in tap water and dried in the room temperature for 1 hour.
5.10	Temperature Life	Termination Resistance (low level) : 150 mΩ max.	Subject mated samples to the following conditions as specified in MIL-STD-202, Method 108 : Temperature : 150 °C Daration : 96 hours Measure termination resistance (low level) on samples after the above exposure test.

6. Product tests and Sequences :

Products tests and sequences, shall be performed in accordance with the following table :

Classification		Test Sequence								
Group / Test Item	Para	I	II	III						IV
Appearance	5.1	1	1	1						
Crimp Tensile Strength	5.2	2								
Contact Insertion Force	5.3		2							
Contact Separating Force	5.3		3							
Temperature Rise	5.4									1
Temperature Resistance Low level	5.5			2	4	6	8	10	12	
Vibration Low frequency	5.6			3						
Humidity	5.7				5					
Thermal Shock	5.8					7				
Salt Spray	5.9						9			
Temperature Life	5.10							11		

7. Mating Plug :
Mating plug to be used for product performance test shall have dimensions as indicated in Fig.3.



Unit : mm

Note : 1. Material for plug shall be heat resistant alloy for high temperature. (YSS-YSTT)
2. Unplated Plug shall be used.

Fig. 3

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