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		APP'R BY [Signature] 98/8/21	MOLEX EUROPE		SHEET No. 1 OF 15	DATE 97/07/16	
		SCALE ----	PART No.	DWG No. PS-99020-0076		SIZE A	
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1.0 SCOPE

This specification defines the performance for the Junction Box car radio connector style product series.

2.0 PRODUCT DESCRIPTION

2.1 The global car radio junction box series consists of two standard plastic housings with the possibility to have all or individual cavities mated for operation. Within each of the cavities there is an allowance made for the terminal count to be varied, hence increasing the permutations possible depending on the requirements of the end user. Optional fuse loading, ESD grounding contacts, and gateway pins (for electrical monitoring during car radio assembly), are also possible.

Each of the versions has an associated drawing with the exact component layout and their pertaining function.

<u>J. Box type</u>	<u>Dwg. No.</u>
Version 2	SDA-91023
Version 3	SDA-91009

2.2 See SDA-91023, SDA-91009 for materials, plating and markings.

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See drawing and any other sections of this specification for the relevant reference documents.

The connector is governed by reference systems as outlined in the following standards:

- ISO/DIN 10487
- ISO/TCC/WG5 '93.02.11
- DIN 72581 part 3, type C
- ISO 8092-3

In cases where the product specification differs from the drawing the drawing takes precedence.

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4.0 RATINGS

4.1.1	Current Rating	10A maximum per contact.
4.1.2	Voltage rating	12V DC maximum
4.1.3	Durability	Contact cycles A, B, C, D = 30 max. Gateway = 30 max. Fuse = 30 max.
4.1.4	Operating Temperature Range	-40°C to + 85°C
4.1.5	Storage Conditions	-40°C to + 85°C

5.0 PERFORMANCE

See section 7.0 for test sequence

5.1 Electrical Performance

<u>Item</u>	<u>Test Condition</u>	<u>Requirement</u>
5.1.1 Contact Resistance (IEC 512-2-2a)	Mated junction box with open circuit of 20mV, test current 100 mA max. See appendix 2	Maximum contact resistance = 20 mΩ (not including bulk resistance)
5.1.2 Insulation Resistance (IEC 512-2-3a) method B	Unmated junction box (no pcb) Apply 500V DC for 1 min. between adjacent terminals	1000MΩ min.
5.1.3 Dielectric Withstand Strength (IEC 512-2-4a)	Unmated junction box (no pcb) Apply 500V AC for 1 minute between adjacent circuits See appendix 3	No breakdown. Leakage current shall not exceed 1μA.

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5.2 Mechanical Performance

	<u>Item</u>	<u>Test Condition</u>	<u>Requirement</u>
5.2.1	Vibration (IEC 68-2-6/Fc)	10-55-10 Hz. sine, peak to peak = 1.5 mm, 3 directions X, Y & Z 8hrs per directions. See appendix 5	< 1 μ s discontinuity, < 50 m Ω max. change in contact resistance.
5.2.2	Contact Retention (to Junction Box)	Axial load is applied to contacts in housing at a rate of 25-50mm/min.	40N min (all contacts)
5.2.3	Connector Insertion Force	Mate fully loaded connector to junction box at a rate of 25-50mm/min. See appendix 4	See table 1, appendix 4
5.2.4	Connector Removal Force	Unmate fully loaded connector from junction box at a rate of 25-50mm/min. See appendix 4	See table 1, appendix 4

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5.3 Environmental Performance

<u>Item</u>	<u>Test Condition</u>	<u>Requirement</u>
5.3.1 High Temp. Storage (IEC 68-2-2 Ba)	Temp. = +85 °C Duration = 96 hrs	< 50 mΩ max. change in contact resistance
5.3.2 Cold Temp. Storage (IEC 68-2-1 Aa)	Temp. = -40 °C Duration = 96 hrs	< 50 mΩ max. change in contact resistance
5.3.3 Thermal Cycling (IEC 68-2-14 Na)	Ta= -40°C Tb = 85°C 40 cycles. Time at each temperature value = time for component to reach that value ±2°C	< 50 mΩ max. change in contact resistance
5.3.4 Damp Heat Cyclic (IEC 68-2-30 Db)	Temperature range 25°C ±3°C to 40°C ±2°C. Relative Humidity = 90-95% Approximately 2 hrs/cycle Duration = 504 hrs (2 hrs recovery at standard atmospheric conditions)	< 50 mΩ max. change in contact resistance
5.3.5 Damp Heat Steady State (IEC 68-2-3 Ca)	Temperature = 40°C ±2°C Relative Humidity = 90-95% Duration = 3 weeks	< 50 mΩ max. change in contact resistance
5.3.6 Resistance to H ₂ S (IEC 68-2-43 Kd)	Duration = 48hrs	< 50 mΩ max. change in contact resistance. No visual degradation or discolouration

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<u>Item</u>	<u>Test Condition</u>	<u>Requirement</u>
5.3.7 Resistance to SO ₂ (IEC 68-2-42 Kc)	Duration = 48hrs	< 50 mΩ max. change in contact resistance. No visual degradation or discolouration
5.3.8 Solderability (IEC 68-2-20 Ta)	16 hr steam ageing Solder temp = 235°C Immersion & withdrawal speed = 25mm ±2.5mm/s Immersion time = 2s	Wetted area = 95% of immersed area. Smooth bright solder Pin holes & voids should not be concentrated in one section of wetted area.
5.3.9 De-wetting (IEC 68-2-20)	Immerse in solder bath Solder temp. = 260°C Immersion time = 5s Immersion & withdrawal speed = 25mm ±2.5mm/s Repeat immersion twice	Wetted area = 95% of immersed area. Smooth bright solder Pin holes & voids should not be concentrated in one area.
5.3.10 Resistance to Solder (IEC 68-2-20 Tb)	Immerse to within 2.0-2.5mm of component seating plane. Immersion time = 5s Solder temp. = 260°C	No visual degradation or discolouration on housing part.

6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage per packaging specification ES-99039-0015

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7.0 TEST GROUPINGS

Test Number	Test Item	Group 1	Group 2	Group 3	Group 4
4.1.3	Durability	2			
5.1.1	Contact resistance	1, 4, 6	1, 5	1, 3, 5, 8	
5.1.2	Insulation resistance		2, 6		
5.1.3	Dielectric Withstand Strength		3, 7		
5.2.1	Vibration			7	
5.2.2	Contact Retention				1
5.2.3	Connector Insertion				1
5.2.4	Connector Removal				1
5.3.1	High Temp. Storage			2	
5.3.2	Cold Temp. Storage			4	
5.3.3	Thermal Cycling			6	
5.3.4	Damp Heat cyclic	3			
5.3.5	Damp Heat Steady State		4		
5.3.6	Resistance to H ₂ S	5			
5.3.7	Resistance to SO ₂	5			
5.3.8	Solderability				1
5.3.9	De-wetting				1
5.3.10	Resistance to Solder				1

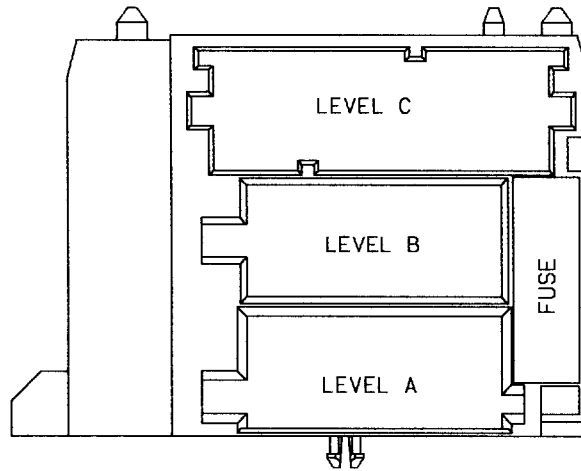
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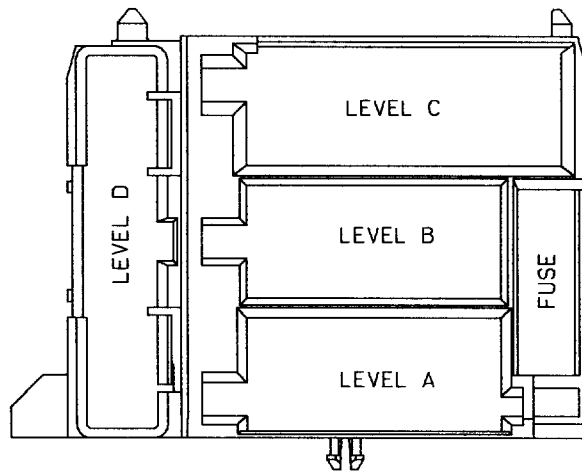
JUNCTION BOX

LEVEL SYMBOLOGY

APPENDIX 1



VERSION 3 JUNCTION BOX



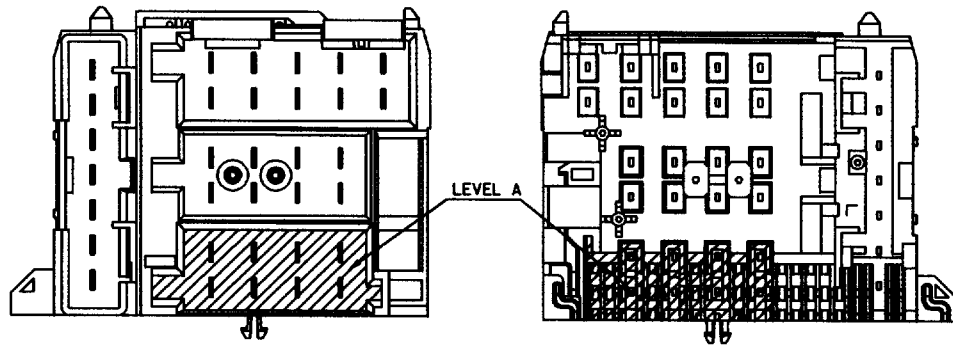
VERSION 2 JUNCTION BOX

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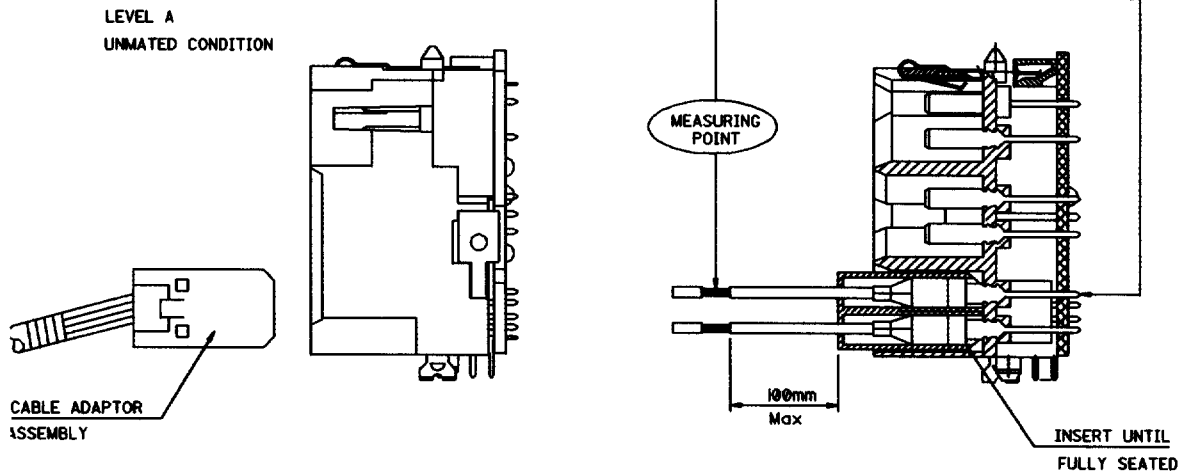


CONTACT RESISTANCE MEASUREMENT METHOD

APPENDIX 2



MATED CONDITION

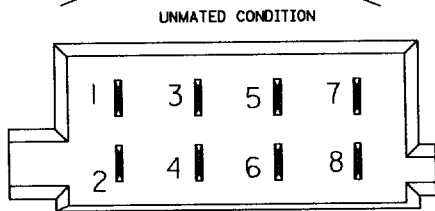
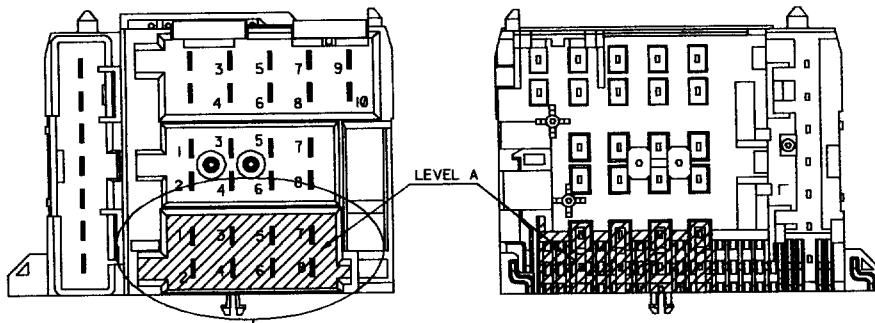


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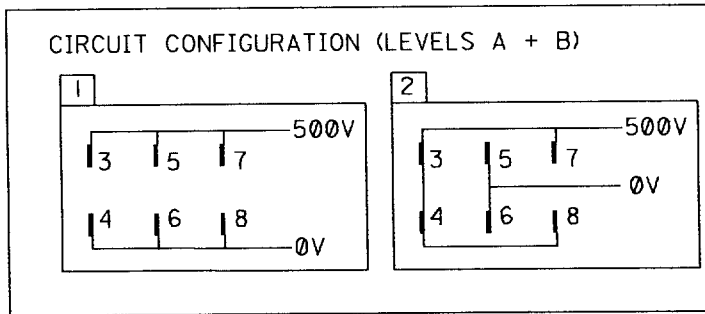


DIELECTRIC STRENGTH MEASUREMENT METHOD (Version 2)

APPENDIX 3 SHEET 1



CONTACT UNIT CONNECTOR ONLY



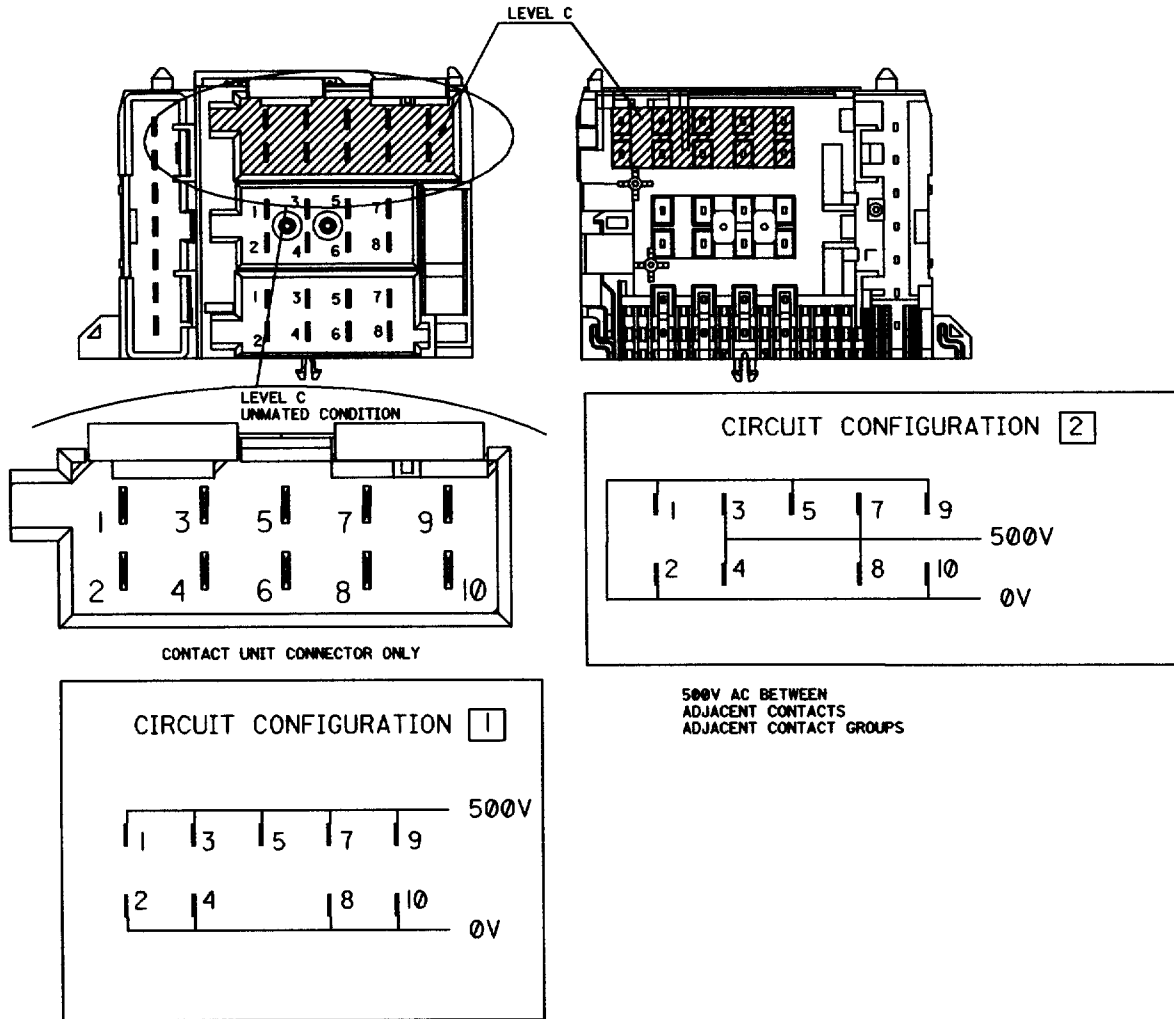
500V AC BETWEEN
ADJACENT CONTACTS
ADJACENT CONTACT GROUPS

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DIELECTRIC STRENGTH MEASUREMENT METHOD (Version 2)

APPENDIX 3 SHEET 2

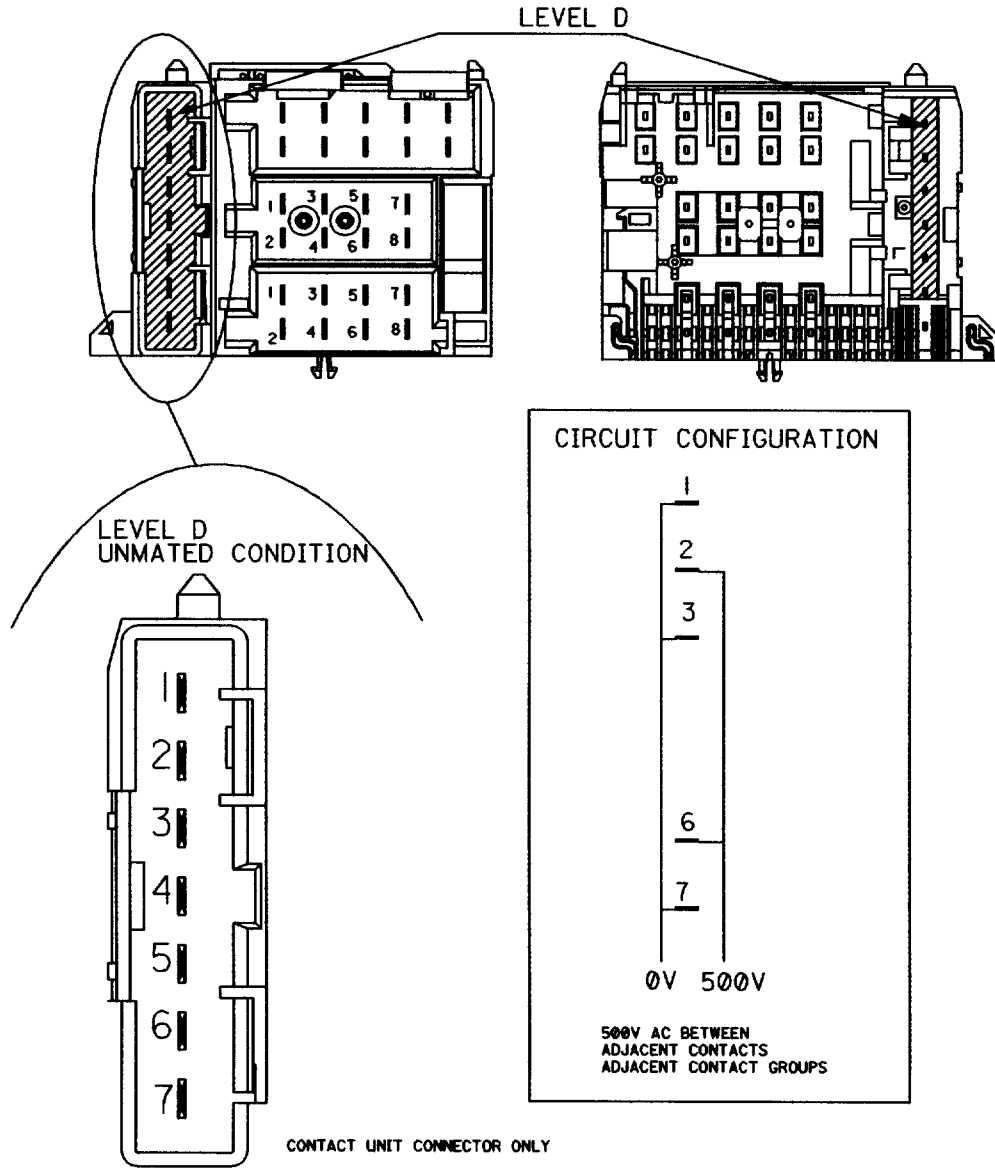


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DIELECTRIC STRENGTH MEASUREMENT METHOD (Version 2)

APPENDIX 3 SHEET 3

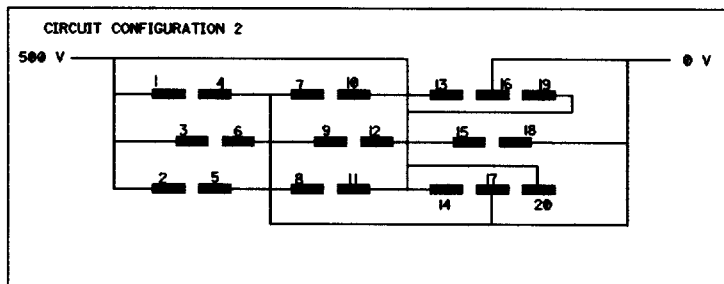
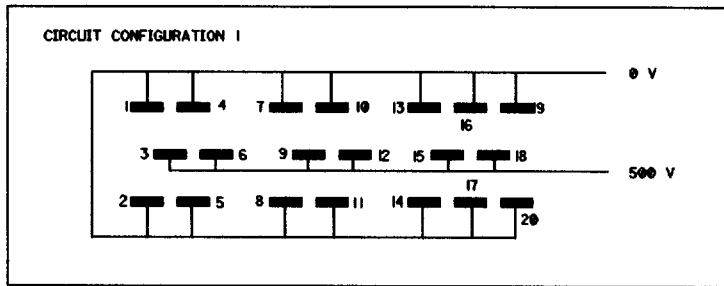
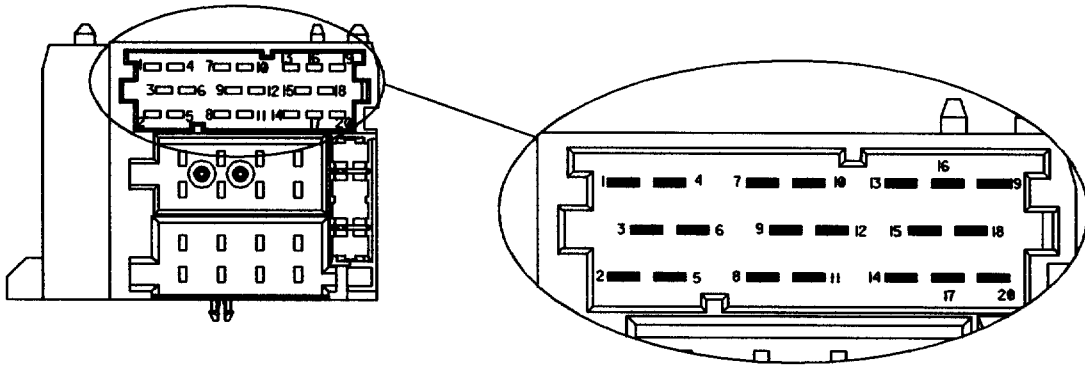


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DIELECTRIC STRENGTH MEASUREMENT METHOD (Version 3)

APPENDIX 3 SHEET 4



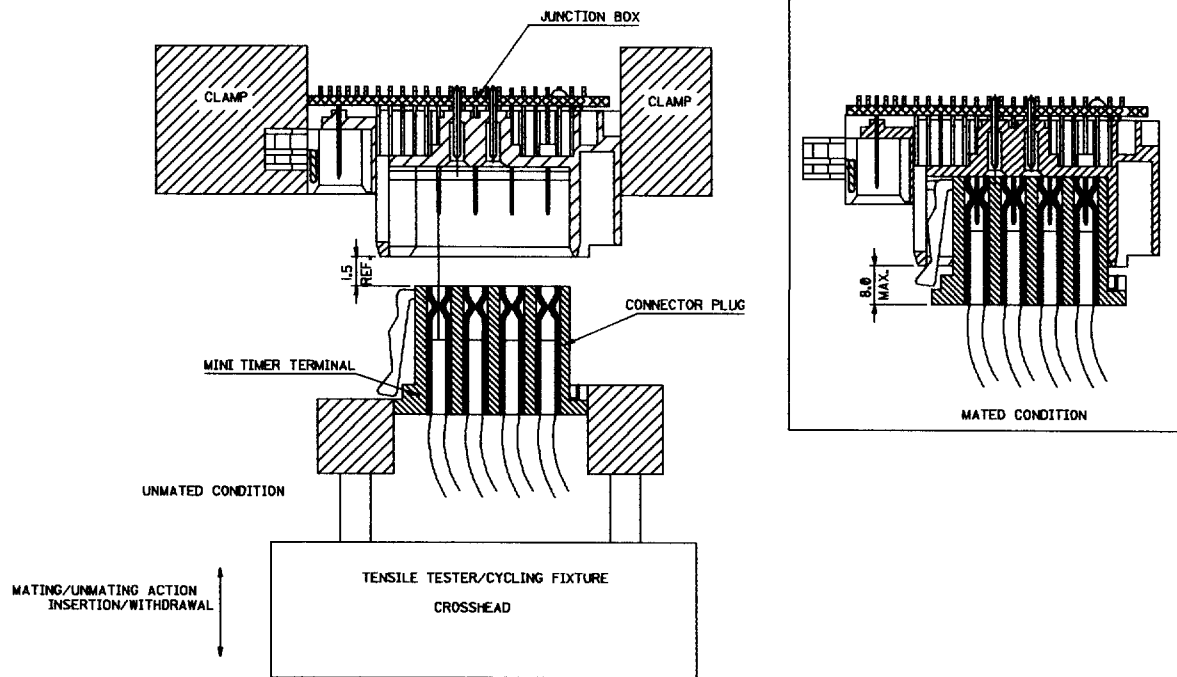
500 V AC BETWEEN ADJACENT
CONTACTS AND CONTACT GROUPS

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INSERTION/REMOVAL FORCE

APPENDIX 4



Level	Version 2		Version 3	
	Ins (N/contact)	Rem (N/contact)	Ins (N/contact)	Rem (N/contact)
A	13N max	5N min	13N max	5N min
B	13N max	5N min	13N max	5N min
C	13N max	5N min	6.5N max	1.2N min
D	13N max	5N min	n/a	n/a

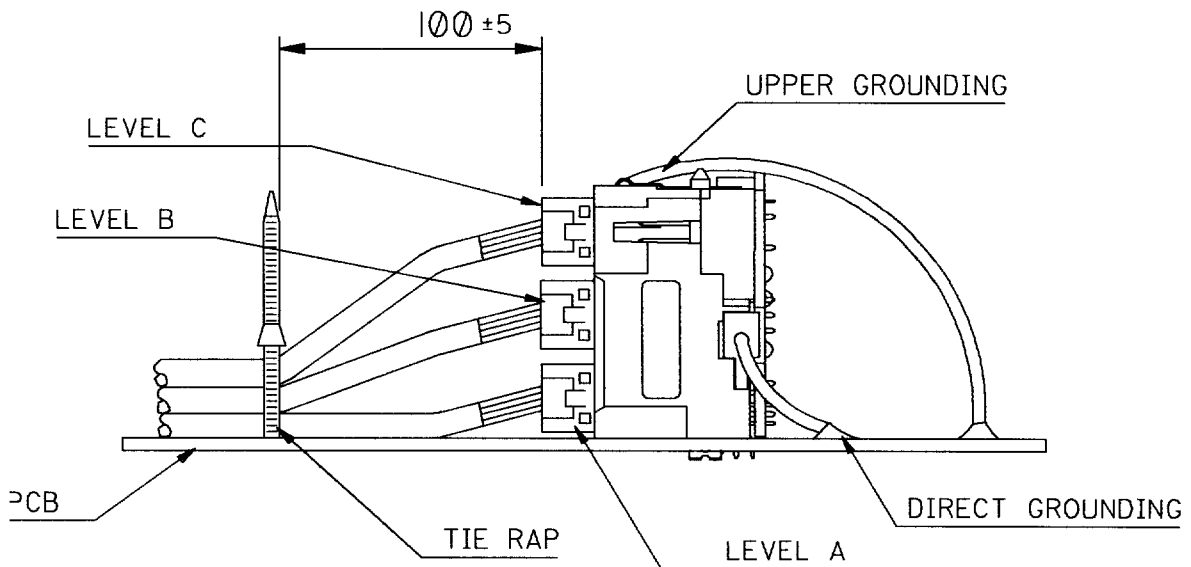
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**VIBRATION
MEASUREMENT METHOD**

**FULLY LOADED JUNCTION BOX
APPENDIX 5**



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