



TEST SUMMARY

Micro-Fit (3.0) Connector System (Wire to Wire & Wire to Board – Gold Plating)

1.0 SCOPE

This Test Specification covers the 3.00 mm (.118 inch) centerline (pitch) connector series terminated with 20-30 AWG wire using crimp technology and gold plating on the contact interfaces.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME, SERIES, AND PART NUMBER(S)

- Micro-Fit (3.0) Receptacle Series : 43025, 43645, 44133 (BMI)
- Micro-Fit (3.0) Plug Series : 43020, 43640, 44300 (BMI)
- Micro-Fit (3.0) Right Angle & Vertical Header Series : 43045, 43650, 44067
- Micro-Fit (3.0) Compliant Pin Vertical Header Series : 44914
- Micro-Fit (3.0) Female Crimp Terminal Series : 43030
- Micro-Fit (3.0) Male Crimp Terminal Series : 43031
- Micro-Fit (3.0) Female Crimp Terminal with Lubricant : 45773

2.1.1 SERIES NUMBERS TESTED

- Micro-Fit (3.0) Receptacle : 43025
- Micro-Fit (3.0) Plug : 43020
- Micro-Fit (3.0) Right Angle & Vertical Headers : 43045
- Micro-Fit (3.0) Female Crimp Terminal : 43030
- Micro-Fit (3.0) Male Crimp Terminal : 43031
- Micro-Fit (3.0) Female Crimp Terminal with Lubricant : 45773

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawings for information on dimensions, materials, plating, and markings.

2.3 PRODUCT SPECIFICATION TITLE AND DOCUMENT NUMBER

- Product Specification Micro-Fit Dual Row Connectors
Document Number: PS-43045
- Product Specification Micro-Fit Single Row Connectors
Document Number: PS-43650
- Product Specification Micro-Fit (3.0) BMI Floating Connector System
Document Number: PS-44300-001

<u>REVISION:</u> A2	<u>ECR/ECN INFORMATION:</u> EC No: 630065 DATE: 2020/01/06	<u>TITLE:</u> TEST SUMMARY MICRO-FIT (3.0) DUAL ROW CONNECTORS (GOLD)	<u>SHEET No.</u> 1 of 11
<u>DOCUMENT NUMBER:</u> TS-43045-002	<u>CREATED / REVISED BY:</u> JEHRISMAN	<u>CHECKED BY:</u> SSOUSEK	<u>APPROVED BY:</u> FSMITH



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3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 TESTING PROCEDURES, SEQUENCES, AND SPECIFICATIONS

NPS-25298-2
 EIA-364-65A
 EIA-364-1000.01
 MIL-STD-202 METHOD 213
 MIL-STD-202 METHOD 204

3.2 OTHER DOCUMENTS AND SPECIFICATIONS

None

4.0 QUALIFICATION

Laboratory conditions and sample selection are in accordance with **EIA-364** and **NPS-25298-2**.

5.0 PERFORMANCE RESULTS

5.1 ELECTRICAL PERFORMANCE RESULTS

WIRE TO WIRE CONFIGURATION

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
1A	CONTACT RESISTANCE (LOW LEVEL)	Initial **	---	17.84 mΩ	17.69 mΩ	18.34 mΩ
		After Vibration Δ mΩ	10 milliohms MAXIMUM	0.05 mΩ	-0.49 mΩ	0.46 mΩ
			No Discontinuity	Discontinuity < 1 microsecond		
		After Mechanical Shock Δ mΩ	10 milliohms MAXIMUM	0.12 mΩ	-0.41 mΩ	0.48 mΩ
			No Discontinuity	Discontinuity < 1 microsecond		

NOTE : ** A PORTION OF THE MEASUREMENT VALUE IS ATTRIBUTED TO THE BULK RESISTANCE OF THE WIRE USED IN SAMPLE PREPARATION.

WIRE TO BOARD CONFIGURATION

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
1B	CONTACT RESISTANCE (LOW LEVEL)	Initial	---	9.85 mΩ	9.66 mΩ	10.02 mΩ
		After Vibration Δ mΩ	10 milliohms MAXIMUM	-0.07 mΩ	-0.21 mΩ	0.00 mΩ
			No Discontinuity	Discontinuity < 1 microsecond		
		After Mechanical Shock Δ mΩ	10 milliohms MAXIMUM	-0.02 mΩ	-0.15 mΩ	0.09 mΩ
			No Discontinuity	Discontinuity < 1 microsecond		

NOTE : SEE APPENDIX "A" FOR TEST SEQUENCE "1" DESCRIPTION

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TEST SUMMARY

5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

WIRE TO WIRE CONFIGURATION

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
2A	Contact Resistance (Low Level)	Initial **	---	17.84 mΩ	17.70 mΩ	17.98 mΩ
		After Thermal Shock Δ mΩ	10 milliohms MAXIMUM	0.05 mΩ	-0.02 mΩ	0.21 mΩ
		After Cyclic Humidity Δ mΩ	10 milliohms MAXIMUM	0.04 mΩ	-0.08 mΩ	0.64 mΩ

NOTE : ** A PORTION OF THE MEASUREMENT VALUE IS ATTRIBUTED TO THE BULK RESISTANCE OF THE WIRE USED IN SAMPLE PREPARATION.

WIRE TO BOARD CONFIGURATION

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
2B	Contact Resistance (Low Level)	Initial	---	5.01 mΩ	4.83 mΩ	5.36 mΩ
		After Thermal Shock Δ mΩ	10 milliohms MAXIMUM	-0.01 mΩ	-0.15 mΩ	0.16 mΩ
		After Cyclic Humidity Δ mΩ	10 milliohms MAXIMUM	-0.02 mΩ	-0.15 mΩ	0.19 mΩ

ITEM 2C AND 2D:

ALL OF THE SAMPLES USED IN THE SEQUENCE "2" (GROUP 2) INSULATION RESISTANCE AND DIELECTRIC WITHSTANDING VOLTAGE TESTING PASSED WITHOUT FAILURE (WIRE TO WIRE AND WIRE TO BOARD).

NOTE : SEE APPENDIX "A" FOR TEST SEQUENCE "2" DESCRIPTION

WIRE TO WIRE CONFIGURATION

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
3A	Contact Resistance (Low Level)	Initial **	---	17.84 mΩ	17.64 mΩ	19.99 mΩ
		After Thermal Aging Δ mΩ	10 milliohms MAXIMUM	0.07 mΩ	-1.09 mΩ	0.16 mΩ

NOTE : ** A PORTION OF THE MEASUREMENT VALUE IS ATTRIBUTED TO THE BULK RESISTANCE OF THE WIRE USED IN SAMPLE PREPARATION.

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5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

WIRE TO BOARD CONFIGURATION

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
3B	Contact Resistance (Low Level)	Initial	---	4.98 mΩ	4.87 mΩ	5.20 mΩ
		After Thermal Aging Δ mΩ	10 milliohms MAXIMUM	0.03 mΩ	-0.03 mΩ	0.10 mΩ

SEE APPENDIX "A" FOR TEST SEQUENCE "3" DESCRIPTION

43030 FEMALE CRIMP TERMINAL

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
4A L o t 1	Contact Resistance (Low Level)	Initial	---	3.27 mΩ	3.15 mΩ	3.41 mΩ
		After Thermal Age Δ mΩ	10 milliohms MAXIMUM	0.02 mΩ	-0.01 mΩ	0.04 mΩ
		After Tensile Strength Δ mΩ	10 milliohms MAXIMUM	0.02 mΩ	-0.02 mΩ	0.04 mΩ

43031 MALE CRIMP TERMINAL

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
4B L o t 1	Contact Resistance (Low Level)	Initial	---	3.31 mΩ	3.17 mΩ	3.40 mΩ
		After Thermal Age Δ mΩ	10 milliohms MAXIMUM	0.02 mΩ	0.00 mΩ	0.04 mΩ
		After Tensile Strength Δ mΩ	10 milliohms MAXIMUM	0.02 mΩ	0.00 mΩ	0.05 mΩ

NOTE : SEE APPENDIX "A" FOR TEST SEQUENCE "4" DESCRIPTION

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5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

43030 FEMALE CRIMP TERMINAL

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
4A L o t 2	Contact Resistance (Low Level)	Initial	---	3.45 mΩ	3.24 mΩ	3.74 mΩ
		After Thermal Age Δ mΩ	10 milliohms MAXIMUM	0.00 mΩ	-0.01 mΩ	0.02 mΩ
		After Gas Tightness Δ mΩ	10 milliohms MAXIMUM	0.01 mΩ	0.00 mΩ	0.05 mΩ

43031 MALE CRIMP TERMINAL

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
4B L o t 2	Contact Resistance (Low Level)	Initial	---	3.48 mΩ	3.25 mΩ	3.73 mΩ
		After Thermal Age Δ mΩ	10 milliohms MAXIMUM	0.01 mΩ	-0.01 mΩ	0.03 mΩ
		After Gas Tightness Δ mΩ	10 milliohms MAXIMUM	0.02 mΩ	-0.01 mΩ	0.05 mΩ

NOTE : SEE APPENDIX "A" FOR TEST SEQUENCE "4" DESCRIPTION

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5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

NOTE: The following Mixed Flowing Gas Testing results are for the MicroFit Female Crimp Terminal 45773 series (43030 series terminal with environmental lube applied).

WIRE TO WIRE CONFIGURATION

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
5A	Contact Resistance (Low Level)	Initial **	---	18.16 mΩ	18.03 mΩ	18.59 mΩ
		After Durability Δ mΩ	10 milliohms MAXIMUM	-0.12 mΩ	-0.67 mΩ	0.03 mΩ
		After Unmated 5 days Δ mΩ	10 milliohms MAXIMUM	-0.05 mΩ	-0.57 mΩ	0.65 mΩ
		After Unmated 10 days Δ mΩ	10 milliohms MAXIMUM	0.05 mΩ	-1.10 mΩ	1.05 mΩ
		After Mated 15 days Δ mΩ	10 milliohms MAXIMUM	0.04 mΩ	-0.12 mΩ	0.24 mΩ
		After Mated 20 days Δ mΩ	10 milliohms MAXIMUM	-0.01 mΩ	-0.99 mΩ	2.57 mΩ
		After Durability Δ mΩ	10 milliohms MAXIMUM	-0.22 mΩ	-2.58 mΩ	0.50 mΩ

NOTE : ** A PORTION OF THE MEASUREMENT VALUE IS ATTRIBUTED TO THE BULK RESISTANCE OF THE WIRE USED IN SAMPLE PREPARATION.

WIRE TO BOARD CONFIGURATION

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
5B	Contact Resistance (Low Level)	Initial	---	5.24 mΩ	5.09 mΩ	5.42 mΩ
		After Durability Δ mΩ	10 milliohms MAXIMUM	-0.01 mΩ	-0.32 mΩ	0.24 mΩ
		After Unmated 5 days Δ mΩ	10 milliohms MAXIMUM	0.03 mΩ	-0.30 mΩ	1.03 mΩ
		After Unmated 10 days Δ mΩ	10 milliohms MAXIMUM	0.00 mΩ	-0.36 mΩ	0.18 mΩ
		After Mated 15 days Δ mΩ	10 milliohms MAXIMUM	0.09 mΩ	-0.33 mΩ	0.58 mΩ
		After Mated 20 days Δ mΩ	10 milliohms MAXIMUM	0.04 mΩ	-0.29 mΩ	0.42 mΩ
		After Durability Δ mΩ	10 milliohms MAXIMUM	0.11 mΩ	-0.11 mΩ	0.39 mΩ

NOTE : SEE APPENDIX "A" FOR TEST SEQUENCE "5" DESCRIPTION

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5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

WIRE TO BOARD CONFIGURATION

(43045-1014 mated to 43025-1000 with 43030-0003)(Gold)

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
6	Contact Resistance (Low Level)	Initial	---	6.11 mΩ	5.81 mΩ	6.39 mΩ
		After Salt Spray Δ mΩ	20 mΩ MAXIMUM	-0.11 mΩ	-0.88 mΩ	0.49 mΩ

5.2 MECHANICAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
3C	Contact Normal Force (grams)	Initial	275 g Min	443 g	413 g	466 g
		After Thermal Age	275 g Min	292 g	285 g	297 g

NOTE : SEE APPENDIX "A" FOR TEST SEQUENCE "3" DESCRIPTION

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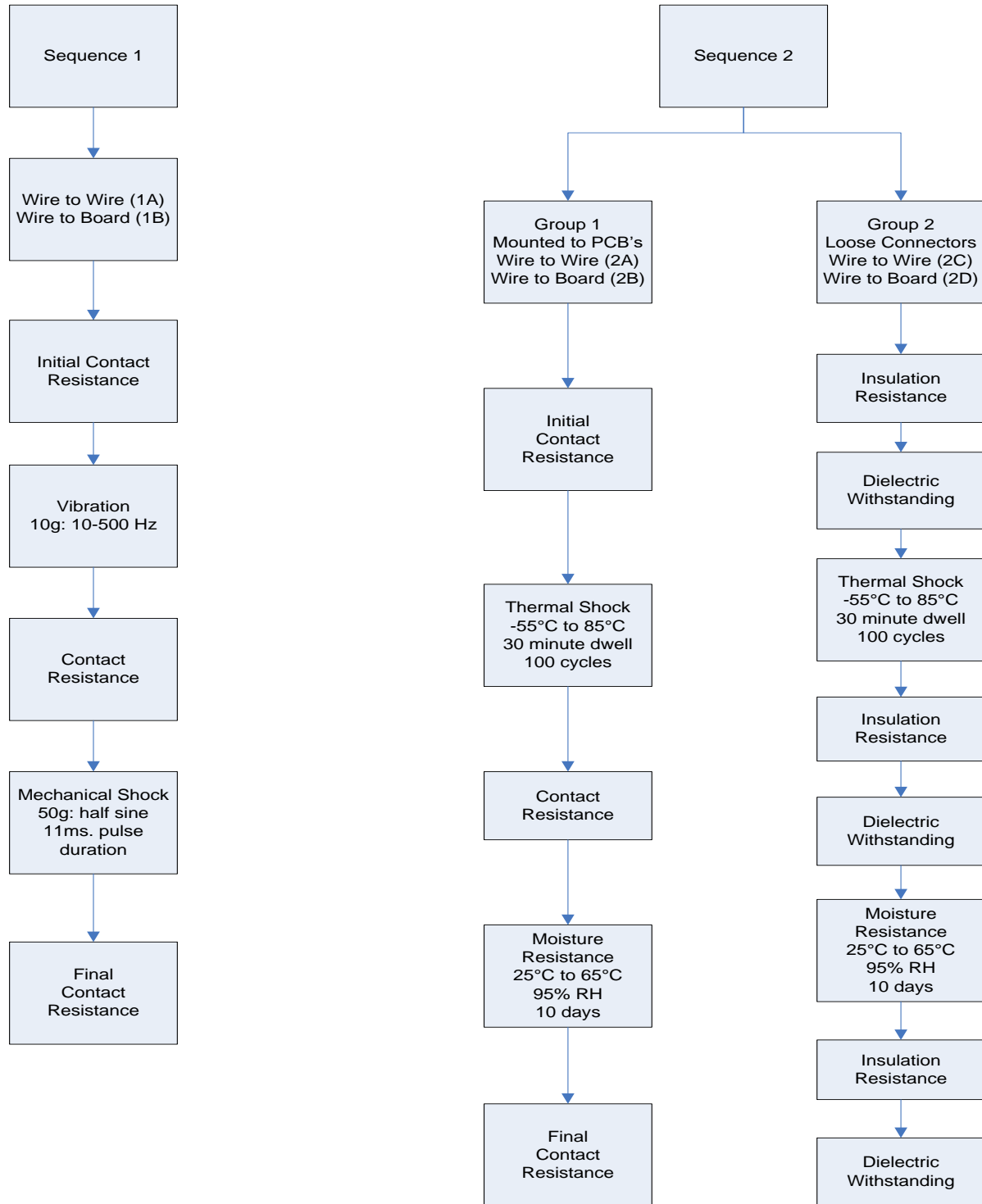
APPENDIX A TEST SEQUENCES

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A.1 TEST SEQUENCES

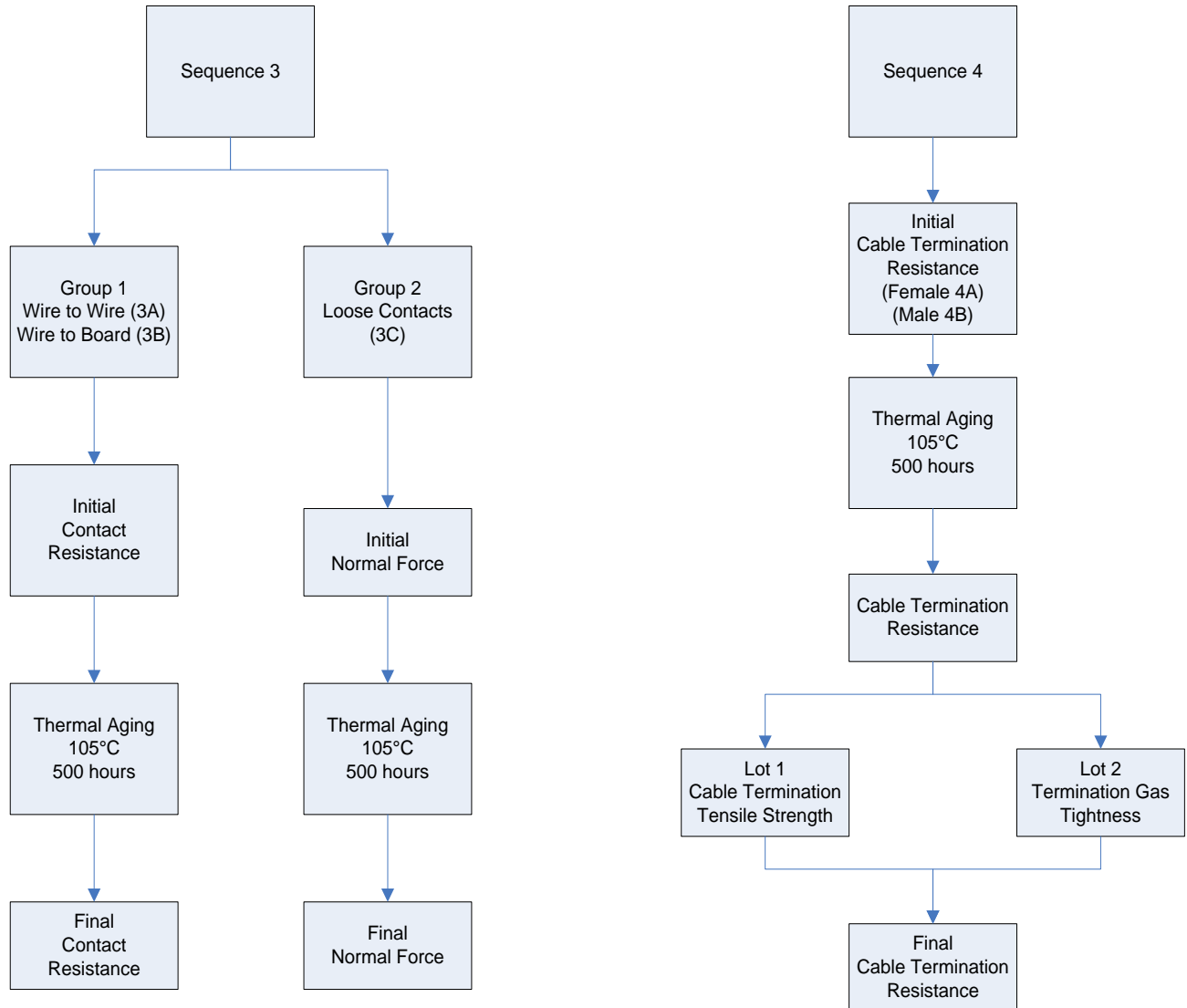


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A.1 TEST SEQUENCES (continued)

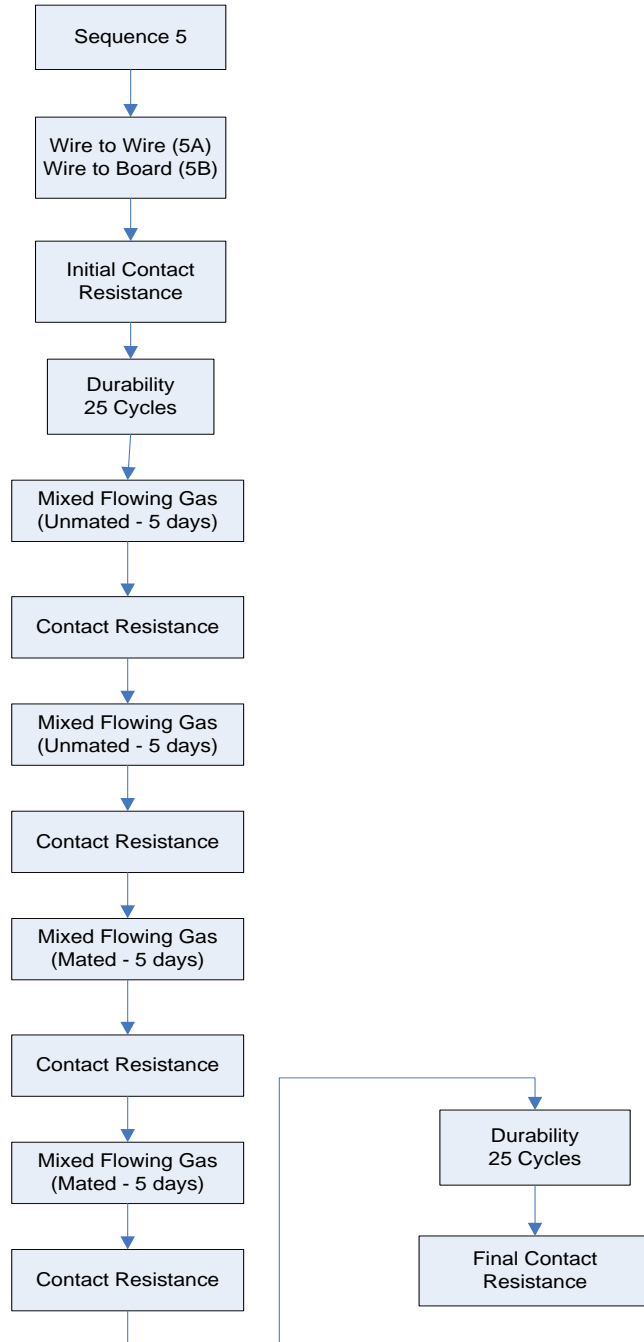


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A.1 TEST SEQUENCES (continued)



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