Design Validation Plan and Report

DVP Number	Dept #
PRJ-14-1332_FK	5388 Global Automotive Division
Plan Date	**Plan Originator**
13-Feb-18	Chris Raybold - TE Conductivity

Component	P/N	UPG Number	Concurrence	Manager Appv'l
Terminal, 0.50mm Locking Lance	TE P/N 2272196-2 (0.35sqmm Cu-R2PVC) and 2272196-1 (0.13sqmm CuMg-R2PVC) per GMW 15626, Nov 2012			Jacob P Bushon CVE - 01MAR18

Model Year	Application	Controlling Document	Source	Report Date	Reporting Engineer
2017	BCM, FoDM, CSM	GMW3191, June 2012 (Class T2, V1). USCAR21, rev 3, and TE drawing 2272196	TE Connectivity	15-Feb-18	Chris Raybold

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample Qty	Sample Type	Timing Start	Timing Compl	Samples Tested Qty	Samples Tested Type	Samples Tested Stage	Actual Results	NOTES
GMW3191, June 2012 -- NOTE: Conditioning per 3.2.1.e shall be done for engineering information only															
Start of Terminal Mechanical Tests															
26A	4.2.1	**Crack Corrosion**			N/A				N/A	N/A					**Not Applicable** -- per 4.2.1.1 this test is for terminals made from unplated copper-zinc alloy with copper content ≤ 70%.
26B	4.2.2	**Crimp/Weld Integrity**	USCAR21	See Below	TE	PV		C	16Dec16	2Feb17				PASS	**See USCAR21 section below**
26C	4.2.3	**Terminal-to-Terminal Engagement Force**	4.2.3.5	Document Only	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	PASS	2272196-2 20160620ACL 2272196-1 20170802ACL
26C	3.4	Visual Examination	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	PASS	
26C	4.2.3	Terminal-to-Terminal Engagement Force **The target is to have the MAX AVERAGE not to exceed 2N when measuring 10 or more samples with male blades that conform to EWCAP-001 with plating of 0.76-1.5µm electroplated Sn over 0.76µm Min Ni.**	4.2.3.5	Document Only	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	2272196-2: PASS Fmin=1.55N Fmax=2.13N Fmean=1.76N Fstdev = 0.17N Test 20160620ACL 2272196-1: PASS Fmin=1.78N Fmax=2.23N Fmean=1.94N Fstdev =0.15N Test 20170802ACL	The size of the terminal makes it difficult to align pin to terminal. Testing was performed with the female terminals in housing to help align the terminal with the pin.

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
26C	3.4	Visual Examination	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	PASS	
26D	4.2.6	**Terminal Cavity Polarization** Terminal insertion at 90° from horizontal is clearly not possible. Therefore only need to test 180°from correct insertion. (F >15N)	4.2.6.4	No Failure	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	PASS	2272196-2 20160620ACL 2272196-1 20160439ACL
26D	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	PASS	
26D	4.2.6	**Terminal Cavity Polarization**	4.2.6.4	No Failure	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	2272196-2: PASS Contact did not seat through 15N. Test 20160620ACL 22721961: PASS* Contact did not seat through 7.11N. Test 20160439ACL	Terminal insertion at 90° from horizontal is clearly not possible. Therefore only need to test 180° from horizontal. *Wire buckled before reaching the spec. minimum. Contact did not seat
26D	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	PASS	
26E	4.2.7	**Terminal Bend Resistance** Five up, five down, and 5 to one side due to symmetry Apply 3N load per table 7	4.2.7.4	No Damage	TE	PV	15	C	16Dec16	2Feb17	15	D	PV	PASS	2272196-2 20160620ACL
26E	3.4	Visual Examination	3.4.1.7	No Defects	TE	PV	15	C	16Dec16	2Feb17	15	D	PV	PASS	
26E	4.2.7	Terminal Bend Resistance 3 N applied force per table 7	4.2.7.4	No Damage	TE	PV	15	C	16Dec16	2Feb17	15	D	PV	2272196-2: PASS 0° PASS 90° PASS 180° PASS Test 20160620ACL	5 down, 5 up, and 5 to one side due to symmetry to each wire size specified above
26E	3.4	Visual Examination	3.4.1.7	No Defects	TE	PV	15	C	16Dec16	2Feb17	15	D	PV	PASS	
26F	4.5.2	**Terminal Push-out Force** (male terminals only)	4.5.2.5	No Failures	N/A				N/A	N/A					**Not Applicable** -- Stitched or molded in male terminals only

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
End of Terminal Mechanical Tests															
Start of Terminal Electrical Tests															
27A	4.3.1	**Maximum Current Rating** 10 samples of 2272196-2 crimped to 0.35sqmm wire subjected to max current rating per 4.3.1 10 samples of 2272196-2 crimped to 0.35sqmm wire subjected to conditioning per 3.2.1c (mate 10 times) and then perform max current rating per 4.3.1	4.3.1.5	Document derating Only	TE	PV	20	C	16Dec16	7Apr17	20	D	PV	PASS	Female Terminals 20 - 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire Male Terminal: 20 -- 2138862-2
27A	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, and g	None	Condition seq	TE	PV	10	C	16Dec16	7Apr17	20	D	PV	Complete	
27A	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	20	C	16Dec16	7Apr17	20	D	PV	PASS	
27A	4.3.1	**Maximum Current Rating (unconditioned samples)**	4.3.1.5	Document derating Only	TE	PV	10	C	16Dec16	7Apr17	20	D	PV	PASS	Derating curves shown in Appendix C
27A	4.3.1	**Maximum Current Rating of conditioned samples**	4.3.1.5	Document derating Only	TE	PV	10	C	16Dec16	7Apr17	20	D	PV	PASS See Appendix B 2272196-2: Test 20160621ACL 2272196-1: Test 20160440ACL	The current rating should be within 90% of the current rating of the same wire size of the unconditioned part. Derating curves shown in Appendix B
27A	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	20	C	16Dec16	7Apr17	20	D	PV	PASS	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
27B	4.3.3	**Voltage Drop** R = 25.0mΩ max per USCAR-2 To be conditioned prior to test per section 3.2.1 c (mate 10 times) then perform testing.	4.3.3.4	No Failures	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	PASS	2272196-2 20160621ACL 2272196-1 20170329ACL
27B	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, c, and g	None	Condition seq	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	Complete	
27B	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	PASS	
27B	4.3.3	**Voltage Drop** R = 25.0mΩ max per USCAR-2 Current = 2A (0.35sqmm Wire) Current = 1A (0.13sqmm Wire)	4.3.3.4	No Failures	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	2272196-2: Pass Rmin=9.29 mΩ Rmax=15.65 mΩ Rmean=11.605 mΩ Rstdev =1.74 mΩ Test 20160621ACL 2272196-1: Pass Rmin=6.34 mΩ Rmax=7.7 mΩ Rmean=7.01 mΩ Rstdev =0.473 mΩ Test 20160440ACL	
27B	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	PASS	
27C	4.3.4	**1008-Hour Current Cycling** Temp shall not exceed Temp Class 2 (+105°C) nor shall dry circuit exceed 25.0mΩ during test **To be conditioned prior to test per section 3.2.1 c (mate 10 times) then perform testing.**	4.3.4.5	No Failures	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	PASS	2272196-2 20160621ACL 2272196-1 20170083ACL

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
27C	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1a, b, & c	None	Condition seq	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	Complete	
27C	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	PASS	
27C	4.3.2	**Dry Circuit** R = 25.0mΩ max per USCAR-2	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	2272196-2: Pass* Initial Rmin=7.7 mΩ Rmax=10.61 mΩ Rmean=9.12 mΩ Rstdev = 0.903 mΩ Test 20160621ACL 2272196-1: Pass Initial Rmin=6.55 mΩ Rmax=9.35 mΩ Rmean=8.14 mΩ Rstdev = 0.912 mΩ Test 20170083ACL	*Test sample 8 was excluded from this data because the contact rotated 90 degrees during test. The max resistance of sample 8 was 22.67mΩ with the terminal inserted improperly.
27C	4.3.4	**1008-Hour Current Cycling**	4.3.4.5	See notes	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	2272196-2: PASS Tmax = 64.1°C Test 20160621ACL 2272196-1: PASS Tmax = 55.39°C Test 2017083ACL	Temp shall not exceed Temp Class 2 (+105°C) nor shall dry circuit exceed 25.0mΩ during test. Sample 8*: Tmax = 86.7°. Test Current to be 5.5A

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
27C	4.3.2	**Dry Circuit** R = 25.0mΩ max per USCAR-2	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	2272196-2: Pass After 1008h Rmin=8.28 mΩ Rmax=10.47 mΩ Rmean=9.57 mΩ Rstdev = 0.712 mΩ Test 20160621ACL 2272196-1: Pass After 1008h Rmin=6.87 mΩ Rmax=11.76 mΩ Rmean=9.32 mΩ Rstdev = 1.51 mΩ Test 20170083ACL	
27C	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	PASS	
27D	4.4.5	**Heavy Duty Test** Temperature class 2 - test temperature 80°C	4.4.5.5	No Failures	TE	PV	6	C	16Dec16	10Jul17	6	D	PV	PASS	**Female Terminals:** (500mm leads) 6 -- 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire. **unsealed plug:** 1-- 2141404-1 20 posn **Unsealed Header:** 1 -- 2208165-1 20 posn
27D	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	6	C	16Dec16	10Jul17	6	D	PV	PASS	
27D	4.3.2	**Dry Circuit** R = 25.0mΩ max per USCAR-2	4.3.2.5	No Failures	TE	PV	6	C	16Dec16	10Jul17	6	D	PV	2272196-2: Pass Rmax=9.80 mΩ Test 20160621ACL 2272196-1:Pass Rmax=6.11 mΩ Test 20160440ACL	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
27D	4.4.5	**Heavy Duty Tes**t Temperature class 2 - test temperature 80°C	4.4.5.5	No Failures	TE	PV	6	C	16Dec16	10Jul17	6	D	PV	Complete	Test Current = 3.3A (derated current at 80 deg from DV testing)
27D	4.3.2	**Dry Circuit** R = 25.0mΩ max per USCAR-2	4.3.2.5	No Failures	TE	PV	6	C	16Dec16	10Jul17	6	D	PV	2272196-2: Pass Rmax=9.71 mΩ Test 20160621ACL 2272196-1:Pass Rmax=6.17 mΩ Test 20160440ACL	
27D	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	6	C	16Dec16	10Jul17	6	D	PV	PASS	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
End of Terminal Electrical Tests															
Start of Connector System Mechanical Tests															
28A	4.2.4	**Terminal-to-Connector Engagement Force** Only perform 4.2.4.4.1 TPA in open position. Force =15N max Connector housing will be conditioned per 3.2.1f, and g prior to test. No need to condition terminal *TPA fully seated test not being performed (testing to qualify terminal not plastic)*	4.2.4.5	No failures	TE	PV	20	C	16Dec16	2Feb17	20	D	PV	PASS	2272196-2 20160620ACL 2272196-1 20160439ACL Housing 2141404-1 20 posn
28A	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1a, b, f, & g	None	Condition seq	TE	PV	20	C	16Dec16	2Feb17	20	D	PV	Complete	
28A	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	20	C	16Dec16	2Feb17	20	D	PV	PASS	
28A	4.2.4	**Terminal-to-Connector Engagement Force with TPA in open position** 15N Max	4.2.4.5	No failures	TE	PV	10	C	16Dec16	2Feb17	20	D	PV	2272196-2: PASS Fmin=1.55N Fmax=3.56N Fmean=2.25N Fstdev = .63N Test 20160620ACL 2272196-1: PASS Fmin=1.03N Fmax=1.45N Fmean=1.20N Fstdev = .16N Test 20160439ACL	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
28A	4.2.4	**Terminal-to-Connector Forward Stop Test**	4.2.4.5	No failures	TE	PV	10	C	16Dec16	2Feb17	20	D	PV	2272196-2: PASS* Fmin=3.32N Fmax=11.03N Fmean=9.10N Fstdev =2.22N Test 20160620ACL 2272196-1: PASS* Fmin=5.34N Fmax=6.83N Fmean=6.01N Fstdev = .51N Test 20160439ACL	*All wires buckled before max push through force was reached. No damage to plastic or terminal was seen.
28A	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	20	C	16Dec16	2Feb17	20	D	PV	PASS	
28B	4.2.5	**Terminal-from-Connector Extraction Force** * Primary * Primary & Secondary after moisture conditioning * Primary & Secondary after Temp Age conditioning * Primary & Secondary after HHC conditioning	4.2.5.5	No failures	TE	PV	50	C	16Dec16	2Feb17	50	D	PV		2272196-2 20160620ACL 2272196-1 20160439ACL Housing 2141404-1 20 posn
28B	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1a, b, f, & g	None	Condition seq	TE	PV	50	C	16Dec16	2Feb17	50	D	PV	Complete	
28B	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	50	C	16Dec16	2Feb17	50	D	PV	PASS	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
28B	4.2.5	**Terminal-from-Connector Extraction Force (primary lock only)** NOTE: GMW3191 requirement is 20N	4.2.5.5	No failures	TE	PV	10	C	16Dec16	2Feb17	50	D	PV	2272196-2: PASS Fmin=57.05N Fmax=63.52N Fmean=60.29N Fstdev = 2.32N Test 20160620ACL 2272196-1: PASS Fmin=28.42N Fmax=37.5N Fmean=31.93N Fstdev = 2.582N	
28B	4.2.5	**Terminal-from-Connector Extraction Force (Primary and Secondary)** No failure criteria defined - record value only	4.2.4.5	No failures	TE	PV	10	C	16Dec16	2Feb17	50	D	PV	2272196-2: PASS Fmin=90.77N Fmax=93.29N Fmean=91.87N Fstdev = .82N Test 20160620ACL 2272196-1: PASS Fmin=81.66N Fmax=96.46N Fmean=89.62N Fstdev = 4.45N	
28B	4.2.5	**Terminal-from-Connector Extraction Force (Primary and Secondary after moisture conditioning per section 4.2.5.4, item 8)** NOTE: GMW3191 requirement is 60N minimum.	4.2.4.5	No failures	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	2272196-2: PASS Fmin=88.55N Fmax=93.90N Fmean=91.48N Fstdev = 2.07N Test 20160620ACL 2272196-1: PASS Fmin=84.11N Fmax=93.83N Fmean=89.99N Fstdev = 3.131N Test 20160439ACL	**Exception**: Moisture conditioning will be followed by 1 hour at room ambient temperature and humidity 10 Female terminals 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire. 1 Connector: 2141404-1 (TE NanoMQS 20 position connector) NOTE: Alternating cavities will be pull tested

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
28B	4.2.5	**Terminal-from-Connector Extraction Force (Primary and Secondary after Thermal Aging per section 4.4.1) General Applications T2** NOTE: GMW3191 requirement is 50N min	4.2.4.5	No failures		PV	10	C	16Dec16	2Feb17				2272196-2: PASS Fmin=86.73N Fmax=95.99N Fmean=92.08N Fstdev = 2.45N Test 20160620ACL 2272196-1: PASS Fmin=87.64N Fmax=93.81N Fmean=91.65N Fstdev = 2.05N Test 20160439ACL	10 Female terminals 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire 1 Connectors: 2141404-1 (TE NanoMQS 20 position connector) NOTE: Alternating cavities will be pull tested.
28B	4.2.5	**Terminal-from-Connector Extraction Force (Primary and Secondary after Humid Heat Cyclic (HHC) per section 4.4.3)** NOTE: GMW3191 requirement is 50N min	4.2.4.5	No failures		PV	10	C	16Dec16	2Feb17	10	D	PV	2272196-2: PASS Fmin=91.87N Fmax=99.29N Fmean=95.99N Fstdev = 2.678N Test 20160620ACL 2272196-1: PASS Fmin=84.55N Fmax=103.88N Fmean=93.46N Fstdev = 5.211N Test 20160439ACL	Will be done using one connector (10 circuits) from HHC test 30C below. NOTE: Alternating cavities will be pull tested.
28B	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	50	C	16Dec16	2Feb17	50	D	PV	PASS	
28C	4.2.8	**Connector-to-Connector Engagement Force** Fmax = 75 N	4.2.8.5	No Failures	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	PASS	2272196-2 20160620ACL Housing 2141404-1 20 posn
28C	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, d, f, and g	None	Condition seq	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	Complete	
28C	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	20	C	16Dec16	2Feb17	10	D	PV	PASS	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
28C	4.2.8	**Connector-to-Connector Engagement Force** Fmax=75N	4.2.8.5	No Failures	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	2272196-2: PASS Fmin=36.94N Fmax=44.66N Fmean=40.80N Fstdev =2.10N Test 20160620ACL	
28C	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	PASS	
28D	4.2.9	**Terminal Position Assurance (TPA)** TPA removal from connector **(not applicable -- not qualifying connector)** TPA pre-lock to lock with properly assembled terminals TPA pre-lock to lock with one improperly assembled terminal TPA lock to pre-lock with properly assembled terminals **(not applicable -- not qualifying connector)**	4.2.9.5	No failures	TE	PV	20	C	16Dec16	2Feb17	20	D	PV	PASS	2272196-2 20160620ACL 2272196-1 20160439ACL Housing 2141404-1 20 posn
28D	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, d, f, and g	None	Condition seq	TE	PV	20	C	16Dec16	2Feb17	20	D	PV	Complete	
28D	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	20	C	16Dec16	2Feb17	20	D	PV	PASS	
28D	4.2.9.4.1	**TPA Retention** Force to remove ISL from pre-lock to removed position with no terminals installed	4.2.9.5	No failures	N/A										**Not applicable - DVPR to qualify terminal**
28D	4.2.9.4.2	**TPA Pre-lock to lock with properly assembled terminals** GMW3191, June 2012 -- 45N max / 30N min **NOTE:** limited data to support this target at this time	4.2.9.5	No failures	TE										**Not applicable - DVPR to qualify terminal**

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							Qty	Type	Start	Compl	Qty	Type	Stage		
28D	4.2.9.4.3	**TPA Pre-lock to lock with one improperly assembled terminal** GMW3191, June 2012 -- 60N Min **NOTE**: limited data to support this target at this time	4.2.9.5	No failures	TE	PV	10	C	16Dec16	2Feb17	10	D	PV	2272196-2: PASS TPA didn't seat. Test 20160620ACL 2272196-1: PASS TPA didn't seat. Test 20160439ACL	
28D	4.2.9.4.4	**TPA lock to pre-lock** GMW3191, June 2012 -- 25N Min / 45N Max **NOTE:** limited data to support this target at this time	4.2.9.5	No failures	N/A	PV									**Not applicable - DVPR to qualify terminal**
28D	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	20	C	16Dec16	2Feb17	20	D	PV	PASS	
28E	4.2.10	**Lever and Slide "Open" Position Retention**			N/A				N/A	N/A					**Not Applicable** - Hand mate connector
28F	4.2.11	**Mechanical Assist Integrity**			N/A				N/A	N/A					**Not Applicable** - Hand mate connector
28G	4.2.12	**Connector Mounting Feature Mechanical Strength**			N/A				N/A	N/A					**Not Applicable** - No mounting feature on connector
28H	4.2.13	**Connector Audible Feedback**			N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
28J	4.2.14	**Connector Lock Mechanical Overstress**			N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
28K	4.2.15	**Connector Position Assurance (CPA)**			N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
28L	4.2.16	**Connector Seal Retention - Mated Connector**			N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
28M	4.2.17	**Connector Seal Retention - Unmated Connector**			N/A				N/A	N/A					**Not Applicable** - This is an Unsealed connector
28N	4.2.18	**Locked Connector Disengagement Force**			N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
28P	4.2.19	**Unlocked Connector Disengagement Force** Unmate connector with connector			N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
28Q	4.2.20	**Connector Polarization (coding) Feature Effectiveness**			N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
28R	4.4.6	**Flammability**			N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
28S	4.2.21	**Mechanical Shock** Temperature Class 2 Vibration Class 1 Target Life 2	4.2.21.5	No failures	TE	PV	12	C	16Dec16	16Jun17	12	D	PV	PASS	240 -- 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire 12 -2141404-1 20 posn unsealed plug 12 - 2208165-1 20 posn unsealed Header
28S	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, d, f, and g	None	Condition seq	TE	PV	10	C	16Dec16	16Jun17	10	D	PV	Complete	Labeled Test groups A and B
28S	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1a, b, e, f, & g	None	Condition seq	TE	PV	2	C	16Dec16	16Jun17	2	D	PV	Complete	Labeled Test groups C and D
28S	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	12	C	16Dec16	16Jun17	12	D	PV	PASS	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
28S	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	16Jun17	10	D	PV	2272196-2:PASS Group A: Min=4.84mΩ Max=6.52mΩ Mean=5.81mΩ Min=0.31mΩ Group B: Min=4.81mΩ Max=6.38mΩ Mean=5.81mΩ Min=0.37mΩ Test 20160622ACL	Note: per Specification 5 samples are to be set up to monitor for dry circuit (Test grp A) and 5 for discontinuity (test grp B).
28S	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	PV	2	C	16Dec16	16Jun17	2	D	PV	2272196-2:PASS Group C: Min=5.52mΩ Max=6.38mΩ Mean=5.95mΩ Min=0.28mΩ Group D: Min=5.11mΩ Max=6.39mΩ Mean=5.97mΩ Min=0.31mΩ Test 20160622ACL	Note: per Specification 1 sample is to be set up to monitor for dry circuit (Test grp C) and 1 for discontinuity (test grp D)
28S	4.2.21	**Mechanical Shock** Table 10, test Number 1 25g peak / 15ms half-sine shock waves 132 shocks in each of 6 axis for total of 792 shocks Table 10, test number 2 100g peak / 11ms half-sine shock waves 3 shocks in each of 6 axis for total of 18 shocks	4.2.21.5	No failures	TE	PV	12	C	16Dec16	16Jun17	12	D	PV	2272196-2:PASS No discontinuities were detected. Test 20160622ACL	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
28S	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	21Oct16	24Feb17	10	D	PV	2272196-2:PASS Group A: Min=4.78mΩ Max=6.37mΩ Mean=5.85mΩ Min=0.29mΩ Group B: Min=5.07mΩ Max=6.60mΩ Mean=5.89mΩ Min=0.29mΩ Test 20160622ACL	Note: per Specification 5 samples are to be set up to monitor for dry circuit (Test grp A) and 5 for discontinuity (test grp B).
28S	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	PV	2	C	16Dec16	16Jun17	2	D	PV	2272196-2:PASS Group C: Min=5.14mΩ Max=6.48mΩ Mean=6.05mΩ Min=0.31mΩ Group D: Min=5.43mΩ Max=6.61mΩ Mean=6.02mΩ Min=0.29mΩ Test 20160622ACL	Note: per Specification 1 sample is to be set up to monitor for dry circuit (Test grp C) and 1 for discontinuity (test grp D)
28S	4.4.8	**Vibration with Thermal Cycling** Temp Class 2, Vibration Class 1 Target Life 2 44…48 hours per axis 6 samples monitored for discontinuity No loss of continuity >7mΩ for more than 1µs	4.4.8.5	No Failures	TE	PV	12	C	16Dec16	16Jun17	12	D	PV	Complete	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
28S	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	16Jun17	10	D	PV	2272196-2:PASS Group A: Min=5.4mΩ Max=10.15mΩ Mean=6.46mΩ Min=0.60mΩ Group B: Min=5.67mΩ Max=11.37mΩ Mean=7.24mΩ Min=1.29mΩ Test 20160622ACL	Note: per Specification 5 samples are to be set up to monitor for dry circuit (Test grp A) and 5 for discontinuity (test grp B).
28S	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	PV	2	C	16Dec16	16Jun17	2	D	PV	2272196-2:PASS Group C: Min=6.26mΩ Max=7.50mΩ Mean=6.80mΩ Min=0.35mΩ Group D: Min=5.92mΩ Max=8.07mΩ Mean=6.61mΩ Min=0.60mΩ Test 20160622ACL	Note: per Specification 1 sample is to be set up to monitor for dry circuit (Test grp C) and 1 for discontinuity (test grp D)
28S	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	12	C	16Dec16	16Jun17	12	D	PV	PASS	
End of Connector System Mechanical Tests															
Start of Unsealed Connector Environmental Tests															
30A	4.4.1	**Thermal Aging** **General Applications** **1008 Hours** Temperature Class 2	4.4.1.5	No failures	TE	PV	12	C	16Dec16	15May17	12	D	PV	PASS	2272196-2 20160621ACL

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
30A	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, d, and g	None	Condition seq	TE	PV	10	C	16Dec16	15May17	10	D	PV	Complete	Test group A
30A	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, d, e, and g	None	Condition seq	TE	ED	2	C	16Dec16	15May17	2	D	PV	Complete	Test group B
30A	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	12	C	16Dec16	15May17	12	D	PV	Pass	
30A	4.3.5	**Isolation Resistance**	4.3.5..5	No Failures	N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
30A	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	15May17	10	D	PV	2272196-2:PASS Min = 4.57 mΩ Max = 6.68 mΩ Mean = 5.914 mΩ StdDev = 0.406 mΩ Test 20160621ACL	Test group A
30A	4.3.2	**Dry Circuit** Information Only	4.3.2.5	No Failures	TE	ED	2	C	16Dec16	15May17	2	D	PV	2272196-2:PASS Min = 4.81 mΩ Max = 6.84 mΩ Mean = 5.910 mΩ StdDev = 0.406 mΩ Test 20160621ACL	Test group B
30A	4.4.1	**Thermal Aging** **General Applications** **1008 hours** Temperature Class 2	4.4.1.5	No failures	TE	PV	12	C	16Dec16	15May17	12	D	PV	Complete Test 20160621ACL	Test groups A and B.
30A	4.3.5	**Isolation Resistance**	4.3.5..5	No failures	N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
30A	4.3.6	**Dielectric Strength**	4.3.6.5		N/A				N/A	N/A					**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
30A	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	15May17	10	D	PV	2272196-2:PASS Min = 5.86 mΩ Max = 10.52 mΩ Mean = 7.48 mΩ StdDev = 0.987 mΩ Test 20160621ACL	Test group A
30A	4.3.2	**Dry Circuit** Information Only	4.3.2.5	No Failures	TE	ED	2	C	16Dec16	15May17	2	D	PV	2272196-2:PASS Min = 6.52 mΩ Max = 11.18 mΩ Mean = 7.877 mΩ StdDev = 0.946 mΩ Test 20160621ACL	Test group B
30A	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	12	C	16Dec16	15May17	12	D	PV	Pass Test 20160621ACL	
30B	4.4.2	**Thermal Shock** Temperature Class 2	4.4.2.5	No failures	TE	PV	12	C	16Dec16	15May17	12	D	PV	Complete Test 20160621ACL	240 -- 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire 12 -2141404-1 20 posn unsealed plug 12 - 2208165-1 20 posn unsealed Header
30B	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, d, f, and g	None	Condition seq	TE	PV	10	C	16Dec16	15May17	10	D	PV	Complete Test 20160621ACL	Test Grp A and B
30B	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, e, f, and g	None	Condition seq	TE	PV	2	C	16Dec16	15May17	2	D	PV	Complete Test 20160621ACL	Test Grp C and D
30B	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	12	C	16Dec16	15May17	12	D	PV	Pass Test 20160621ACL	

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
30B	4.3.5	**Isolation Resistance**	4.3.5..5	No failures	N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
30B	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	15May17	10	D	PV	2272196-2:PASS Min = 4.75 mΩ Max = 6.60 mΩ Mean = 5.94 mΩ StdDev = 0.388 mΩ Test 20160621ACL	Test Grps A and B Note: per Specification 5 samples are to be set up to monitor for dry circuit and 5 for discontinuity
30B	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	ED	2	C	16Dec16	15May17	2	D	PV	2272196-2:PASS Min = 5.19 mΩ Max = 6.38 mΩ Mean = 5.90 mΩ StdDev = 0.329 mΩ Test 20160621ACL	Test Grps C and D Note: per Specification 1 samples are to be set up to monitor for dry circuit and 1 for discontinuity
30B	4.4.2	**Thermal Shock** Temperature Class 2 6 samples monitored for discontinuity No loss of continuity >7mΩ for more than 1µs	4.4.2.5	No failures	TE	PV	12	C	16Dec16	15May17	12	D	PV	PASS: No discontinuities Test 20160621ACL	Test grps A, B, C, and D
30B	4.3.5	**Isolation Resistance**	4.3.5..5	No failures	N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
30B	4.3.6	**Dielectric Strength**	4.3.6.5		N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
30B	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	15May17	10	D	PV	2272196-2:PASS Min = 5.66 mΩ Max = 11.03 mΩ Mean = 6.718 mΩ StdDev = 0.754 mΩ Test 20160621ACL	Test grps A and B Note: per Specification 5 samples are to be set up to monitor for dry circuit and 5 for discontinuity

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
30B	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	ED	2	C	16Dec16	15May17	2	D	PV	2272196-2:PASS Min = 5.68 mΩ Max = 8.26 mΩ Mean = 6.599 mΩ StdDev = 0.600 mΩ Test 20160621ACL	Test grps C and D Note: per Specification 1 samples are to be set up to monitor for dry circuit and 1 for discontinuity
30B	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	12	C	16Dec16	15May17	12	D	PV	PASS Test 20160621ACL	
30C	4.4.3	**Humid Heat Cyclic (HHC)**	4.4.3.5	No failures	TE	PV	13	C	16Dec16	15May17	13	D	PV	PASS Test 20160621ACL	260 -- 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire 13 -2141404-1 20 posn unsealed plug 13 - 2208165-1 20 posn unsealed Header
30C	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, d, and g	None	Condition seq	TE	PV	10	C	16Dec16	15May17	10	D	PV	Complete Test 20160621ACL	Test Grp A
30C	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, e, and g	None	Condition seq	TE	ED	2	C	16Dec16	15May17	2	D	PV	Complete Test 20160621ACL	Test Grp B
30C	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, d, and g	None	Condition seq	TE	PV	1	C	16Dec16	15May17	1	D	PV	Complete Test 20160621ACL	Test Grp C One connector to be used for Terminal retention only. Alternating circuits
30C	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	13	C	16Dec16	15May17	13	D	PV	PASS Test 20160621ACL	
30C	4.3.5	**Isolation Resistance**	4.3.5..5	No failures	N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
30C	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	15May17	10	D	PV	2272196-2:PASS Min = 4.81 mΩ Max = 6.64 mΩ Mean = 6.00 mΩ StdDev = 0.369 mΩ Test 20160621ACL	Test group A
30C	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	ED	2	C	16Dec16	15May17	2	D	PV	2272196-2:PASS Min = 5.12 mΩ Max = 6.53 mΩ Mean = 6.008 mΩ StdDev = 0.336 mΩ Test 20160621ACL	Test group B
30C	4.4.3	**Humid Heat Cyclic (HHC)**	4.4.3.5	No failures	TE	PV	13	C	16Dec16	15May17	13	D	PV	Complete Test 20160621ACL	Test groups A, B, and C
30C	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	13	C	16Dec16	15May17	13	D	PV	PASS Test 20160621ACL	
30C	4.3.5	**Isolation Resistance**	4.3.5..5	No failures	N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
30C	4.3.6	**Dielectric Strength**	4.3.6.5		N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
30C	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	15May17	10	D	PV	2272196-2:PASS Min = 5.49 mΩ Max = 7.66 mΩ Mean = 6.38 mΩ StdDev = 0.445 mΩ Test 20160621ACL	Test group A
30C	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	ED	2	C	16Dec16	15May17	2	D	PV	2272196-2:PASS Min = 5.77 mΩ Max = 7.66 mΩ Mean = 6.32 mΩ StdDev = 0.416 mΩ Test 20160621ACL	Test group B
30C	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	13	C	16Dec16	15May17	13	D	PV	PASS Test 20160621ACL	

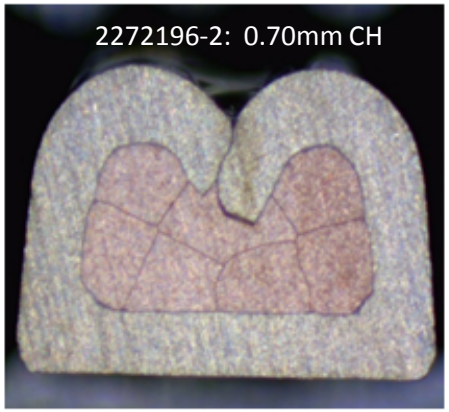
Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
30D	4.4.4	**Humid Heat Constant (HHCO)**	4.4.4.5	No failures	TE	PV	12	C	16Dec16	30Jun17	12	D	PV	PASS Test 20160621ACL	240 -- 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire 12 -2141404-1 20 posn unsealed plug 12 - 2208165-1 20 posn unsealed Header
30D	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, d, and g	None	Condition seq	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	Complete Test 20160621ACL	Test grp A
30D	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, e, and g	None	Condition seq	TE	ED	2	C	16Dec16	30Jun17	2	D	PV	Complete Test 20160621ACL	Test grp B
30D	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	12	C	16Dec16	30Jun17	12	D	PV	PASS Test 20160621ACL	
30D	4.3.5	**Isolation Resistance**	4.3.5..5		N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R
30D	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	2272196-2:PASS Min = 4.92 mΩ Max = 6.78 mΩ Mean = 6.07 mΩ StdDev = 0.323 mΩ Test 20160621ACL	Test grp A
30D	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	ED	2	C	16Dec16	30Jun17	2	D	PV	2272196-2:PASS Min = 5.78 mΩ Max = 7.25 mΩ Mean = 6.24 mΩ StdDev = 0.317 mΩ Test 20160621ACL	Test grp B
30D	4.4.4	**Humid Heat Constant (HHCO)**	4.4.4.5	No failures	TE	PV	12	C	16Dec16	30Jun17	12	D	PV	Complete Test 20160621ACL	Test grps A and B
30D	4.3.5	**Isolation Resistance**	4.3.5..5		N/A										**Not Applicable** - Not pertinent to terminal performance which is being measured with this DVP&R

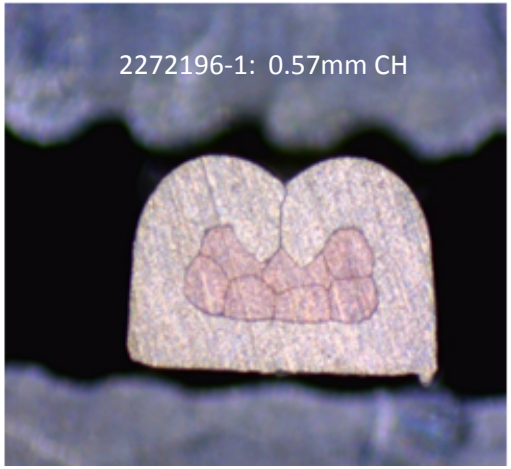
Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	NOTES
							Qty	Type	Start	Compl	Qty	Type	Stage		
30D	4.3.6	**Dielectric Strength**	4.3.6.5		N/A										**Not Applicable** - Not pertinent to terminal
30D	4.3.2	**Dry Circuit** 25.0mΩ per USCAR-2, revision 6	4.3.2.5	No Failures	TE	PV	10	C	16Dec16	30Jun17	10	D	PV	2272196-2:PASS Min = 5.54 mΩ Max = 10.44 mΩ Mean = 6.88 mΩ StdDev = 0.838 mΩ Test 20160621ACL	Test grp A
30D	4.3.2	**Dry Circuit** Information Only	4.3.2.5	Info only	TE	ED	2	C	16Dec16	30Jun17	2	D	PV	2272196-2:PASS Min = 5.66 mΩ Max = 9.29 mΩ Mean = 6.94 mΩ StdDev = 0.912 mΩ Test 20160621ACL	Test grp B
30D	3.4	**Visual Examination**	3.4.1.7	No Defects	TE	PV	12	C	16Dec16	30Jun17	12	D	PV	PASS	
30E	4.4.7	**Corrosion**	4.4.7.5		N/A				N/A	N/A					Not Applicable - Test was performed under 20150054ACL and
30E	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, d, and g	None		N/A				N/A	N/A					Not Applicable
30E	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, c, d, and g	None		N/A				N/A	N/A					Not Applicable
30E	3.2.1	**Conditioning** All connectors subjected to conditioning per 3.2.1.a, b, e, and g	None		N/A				N/A	N/A					Not Applicable
30E	3.4	**Visual Examination**	3.4.1.7		N/A				N/A	N/A					Not Applicable
30E	4.3.5	**Isolation Resistance**	4.3.5..5		N/A				N/A	N/A					Not Applicable

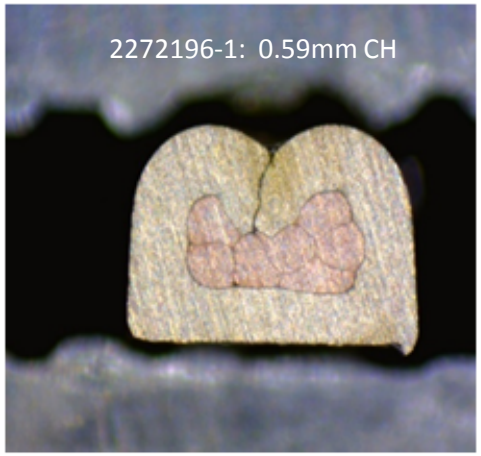
Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
30E	4.3.2	**Dry Circuit** 25.0mΩ	4.3.2.5		N/A				N/A	N/A					Not Applicable
30E	4.3.2	**Dry Circuit** Information Only	4.3.2.5		N/A				N/A	N/A					Not Applicable
30E	4.4.7.4	**Corrosion**	4.4.7.5		N/A				N/A	N/A					Not Applicable
30E	4.3.5	**Isolation Resistance**	4.3.5..5		N/A				N/A	N/A					Not Applicable
30E	4.3.6	**Dielectric Strength**	4.3.6.5		N/A				N/A	N/A					Not Applicable
30E	4.3.2	**Dry Circuit** 25.0mΩ	4.3.2.5		N/A				N/A	N/A					Not Applicable
30E	4.3.2	**Dry Circuit** Information Only	4.3.2.5		N/A				N/A	N/A					Not Applicable
30E	4.2.5.4	**Terminal-from-Connector Extraction Force** **(Primary and Secondary after corrosion per 4.4.7.5.1)** NOTE: Table 6 on page 14 of GMW3191 does not have a published value for after corrosion. I believe intent is 50N min.	4.2.5.5		N/A				N/A	N/A					Not Applicable
30E	3.4	**Visual Examination**	3.4.1.7		N/A				N/A	N/A					Not Applicable
End of Unsealed Connector Environmental Tests															
Start of USCAR21, revision 3															
26B	4.3	Cross-Section Analysis 3 samples per crimp barrel 1 at min CH 1 at nominal CH 1 at max CH	4.3.5	Satisfy visual standards	TE	PV	5	C	16Dec16	24Feb17	5	D	PV	PASS 2272196-2 Test 20160619ACL 2272196-1 Test 20160438ACL	Female Terminals 5 - 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire 5 - 2272196-1 crimped to 0.13sqmm, 7 strand, thin wall wire, CuMg

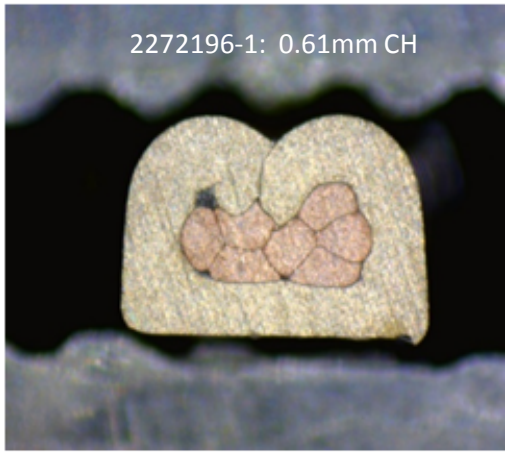
Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
26B	4.4	Conductor Crimp Pull-Out Force 60 samples per crimp barrel 20 at min CH 20 at nominal CH 20 at max CH **0.35sqmm (Average - 3 * S.D) >= 50N**	4.4.5	No failures	TE	PV	100	C	16Dec16	24Feb17	100	D	PV	mean-3 SD: 2272196-2: PASS 0.68CH: 73.11N 0.70CH: 78.26N 0.72CH: 79.45N Test 20160619ACL 2272196-1: PASS 0.57CH: 69.46N 0.59CH: 77.28N 0.61CH: 75.67N Test 20160438ACL	Female Terminals 60 - 2272196-2 crimped to 0.35sqmm, 7 strand, thin wall wire

Item No.	Procedure or Standard	Test Description	Acceptance Criteria	Target Test Requirements	Test Responsibility	Test Stage	Sample		Timing		Samples Tested			Actual Results	**NOTES**
							Qty	Type	Start	Compl	Qty	Type	Stage		
26B	4.5.2	Accelerated Environmental Exposure Test 30 samples per crimp barrel 10 at min CH 10 at nominal CH 10 at max CH 0.35sqmm 1.18mΩ initial and 1.07mΩ change 0.13sqmm 1.99mΩ initial and 1.80mΩ change (NOTE: Values calculated using the formulas in USCAR21-rev3 Equation 4.5.2.5-1A and -1B) for Phos. Bronze (9% IACS conductivity)	4.5.2.5	No failures	TE	PV	50	C	16Dec16	24Feb17	50	D	PV	Initial Resistance: 2272196-2:PASS 0.68CH: 0.80mΩ 0.70CH: 0.69mΩ 0.72CH: 0.63mΩ 2272196-1:PASS 0.57CH: 1.20mΩ 0.59CH: 1.27mΩ 0.61CH: 1.45mΩ Delta After TS: 2272196-2:PASS 0.68CH: -0.34mΩ 0.70CH: -0.56mΩ 0.72CH: -0.29mΩ 2272196-1:PASS 0.57CH: -0.42mΩ 0.59CH: -0.60mΩ 0.61CH: -0.88mΩ Delta Final: 2272196-2:PASS 0.68CH: -0.35mΩ 0.70CH: -0.46mΩ 0.72CH: 0.61mΩ 2272196-1:PASS 0.57CH: 1.25mΩ 0.59CH: 1.19mΩ 0.61CH: 1.10mΩ Test 20160619ACL and 20160438ACL	2272196-2: 20160619ACL 2272196-1: 20160438ACL
End of USCAR21, revision 3															

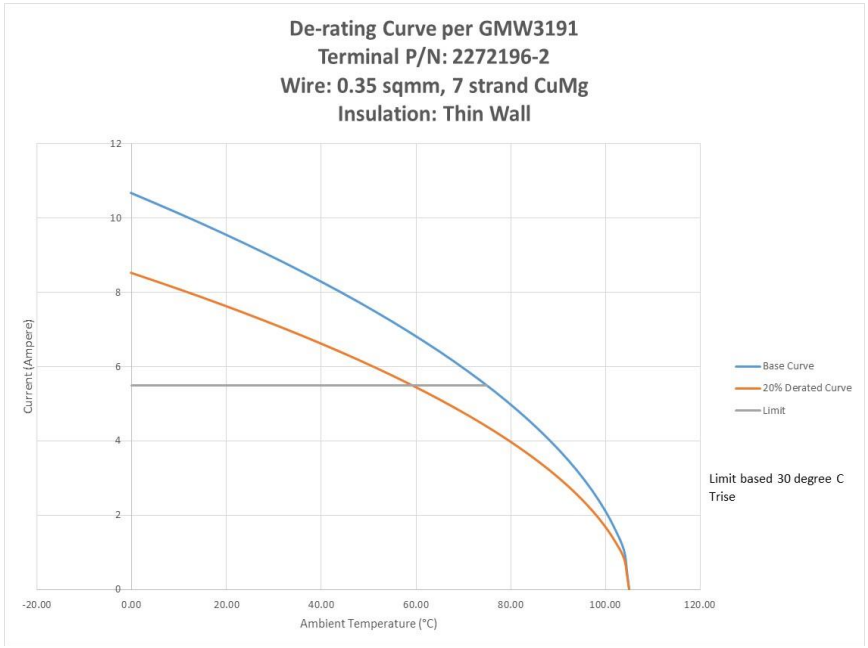


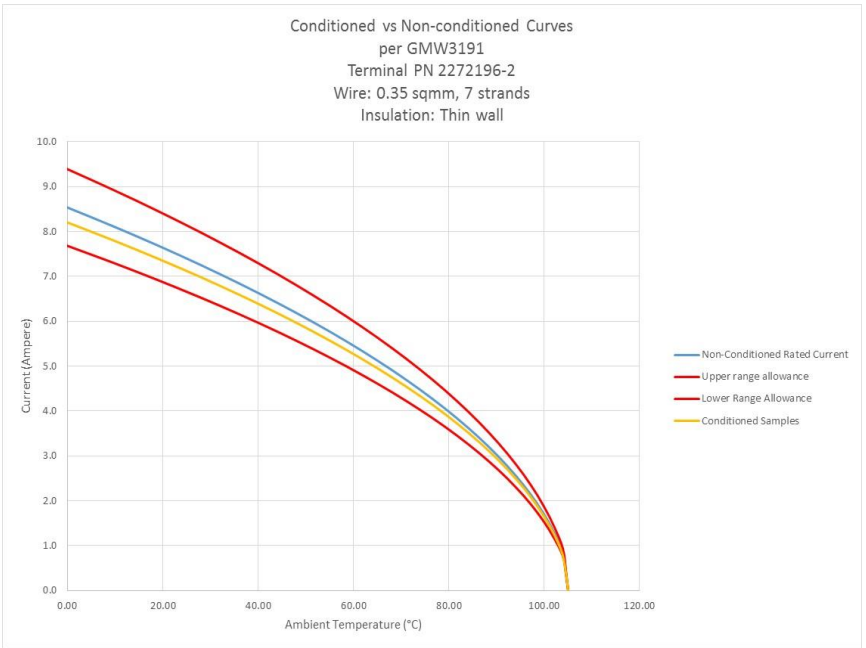


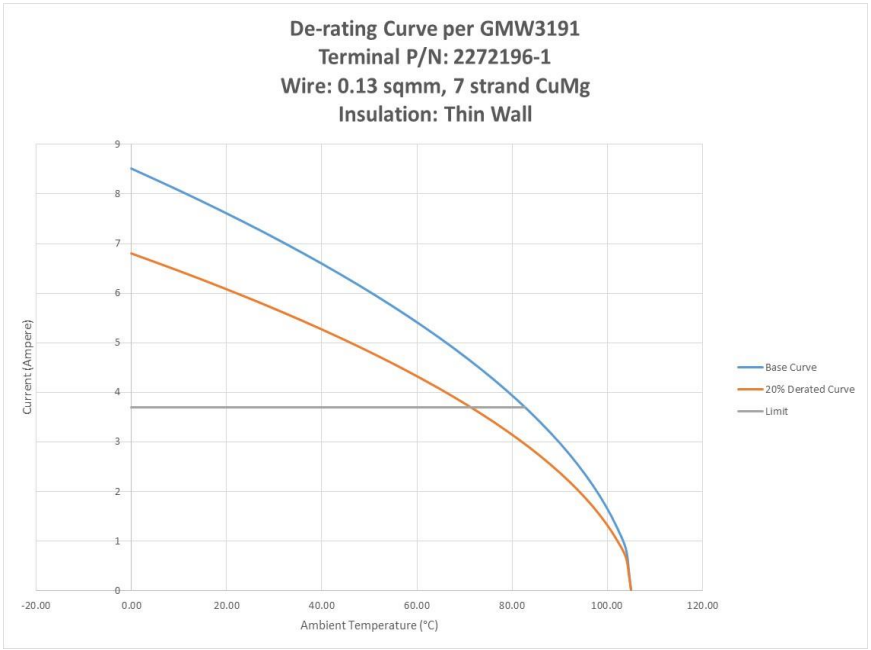


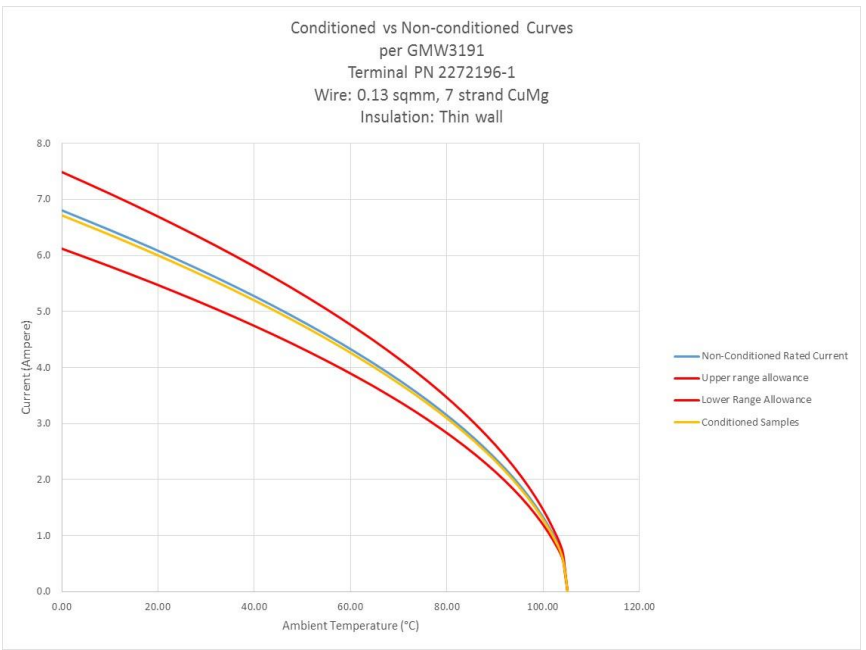


Note: This cross section was not completely in the full compression section of the tapered crimp.


De-rating Curve per GMW3191
Terminal P/N: 2272196-2
Wire: 0.35 sqmm, 7 strand CuMg
Insulation: Thin Wall
Current (Ampere)
Ambient Temperature (°C)
Base Curve
20% Derated Curve
Limit
Limit based 30 degree C Trise


Conditioned vs Non-conditioned Curves
per GMW3191
Terminal PN 2272196-2
Wire: 0.35 sqmm, 7 strands
Insulation: Thin wall
Current (Ampere)
Ambient Temperature (°C)
Non-Conditioned Rated Current
Upper range allowance
Lower Range Allowance
Conditioned Samples


De-rating Curve per GMW3191
Terminal P/N: 2272196-1
Wire: 0.13 sqmm, 7 strand CuMg
Insulation: Thin Wall
Current (Ampere)
Ambient Temperature (°C)
Base Curve
20% Derated Curve
Limit


Conditioned vs Non-conditioned Curves
per GMW3191
Terminal PN 2272196-1
Wire: 0.13 sqmm, 7 strand CuMg
Insulation: Thin wall
Current (Ampere)
Ambient Temperature (°C)
Non-Conditioned Rated Current
Upper range allowance
Lower Range Allowance
Conditioned Samples