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**enetSEAL+ Connector System**

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**1. SCOPE**

## 1.1. Content

This specification defines the performance, tests, and quality requirements for the TE Connectivity (TE) 2 position 1.2 mm Sealed Ethernet Connector System (enetSEAL+).

## 1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

## 1.3. Qualification Test Results

Successful qualification testing on the subject product line was completed 5FEB2020. The Qualification Test Report number for this testing is 501-151045. This documentation is on file and available from Engineering Practices and Standards (EPS).

**2. APPLICABLE DOCUMENTS AND FORMS**

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies. 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 Documents

- 108-18782: Product Specification (MCON 1.2 mm Contact System)
- 108-94414: Product Specification (RF Connector Requirements up to 100 MHz)
- 114-18464: Application Specification (MCON 1.2 mm Contact System)
- 408-32254: Instruction Sheet (2P Sealed Ethernet Cap Connectors)
- 408-32256: Instruction Sheet (2P Sealed Ethernet Plug Connectors)
- 408-35003: Instruction Sheet (2P Ethernet Termination Workcell)
- 501-151045: Qualification Test Report (2 Position 1.2 mm Sealed Ethernet Connector System)
- 114-151045: Application Specification (enetSEAL+ Connector System)

## 2.2. Industry Documents

- SAE/USCAR-2 (Rev 6): Performance Specification for Automotive Electrical Connector Systems
- SAE/USCAR-25 (Rev 3): Ergonomics Specification for Electrical Connections
- ISO 20653
- OPEN ALLIANCE (Version 2.0): BroadR-Reach® Definitions for Communication Channel

**3. REQUIREMENTS**

## 3.1. Design and Construction

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

## 3.2. Materials

Materials used in the construction of this product shall be specified on the applicable product drawing.

### 3.3. Ratings

- Voltage: 33 volts AC/DC
- Current carrying capability of used contacts see specification: 108-18782
- Temperature: -40 to +125°C

### 3.4. RF Connector Performance Requirements

- See 108-94414 for Performance and Test Descriptions.
- Characteristic Impedance: 100 ohms diff pair
- Frequency Range: 1 to 100 MHz

### 3.5. Test Requirements and Procedures Summary

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Visual inspection	No defects *No dust or fluid ingress	USCAR-2, Section 5.1.8.3
Terminal-connector insertion force	30 N maximum (single terminal) 60 N maximum (two terminals inserted simultaneously)	USCAR-2, Section 5.4.1.3 A
Terminal-connector retention force, primary latching	25 N minimum for plug 40 N minimum for cap	USCAR-2, Section 5.4.1.3 B
Terminal-connector retention force, primary & secondary latching, after moisture conditioning	70 N minimum for plug 60 N minimum for cap	USCAR-2, Section 5.4.1.3 B
Terminal-connector retention force, primary & secondary latching, after cavity damage	60 N minimum for cap	USCAR-2, Section 5.4.1.3 B
Terminal-connector retention force, primary & secondary latching, after Temp/Humidity or High Temp Exposure	50 N minimum	USCAR-2, Section 5.4.1.3 B
TPA Engagement force (Pre-set to Lock)	7 N minimum (w/o terminals) 60 N maximum (w/ terminals)	USCAR-2, Section 5.4.5.2.3 A
TPA Disengagement force (Lock to Pre-set)	60 N maximum (w/ terminals) After 2 cycles: 15 N minimum for plug 10 N minimum for cap	USCAR-2, Section 5.4.5.2.3 B
TPA Removal force (Pre-set to Off)	25 N minimum for plug 7 N minimum for cap	USCAR-2, Section 5.4.5.2.3 B
CPA Engagement force (Pre-set to Lock)	60 Newton minimum (unmated) 22 Newton maximum (mated)	USCAR-2, Section 5.4.5.2.3 A

**Figure 1 (cont.)**

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
CPA Disengagement force. (Lock to Pre-set)	9 to 30 N	USCAR-2, Section 5.4.5.2.3 B
CPA Removal force (Pre-set to Off)	30 N minimum	USCAR-2, Section 5.4.5.2.3 B
Connector-connector audible click	7 dB minimum	USCAR-2, Section 5.4.7.3
Connector-connector audible click (moisture conditioned)	5 dB minimum	USCAR-2, Section 5.4.7.3
Connector-connector mating force	45 N maximum	USCAR-2, Section 5.4.2.3 A USCAR-25, Table 3.1, Class 2
Connector-connector retention force, primary lock engaged, CPA disengaged	110 N minimum	USCAR-2, Section 5.4.2.3 B
Connector-connector un-mating force, primary lock disengaged/disabled	75 N maximum	USCAR-2, Section 5.4.2.3 B
Primary lock deflection force	6 to 51 N	USCAR-2, Section 5.4.2.3 C
Polarization feature effectiveness, mis-mated	No damage, no mating, and no electrical contact. 135 N load for 3 seconds	USCAR-2, Section 5.4.4.3
Connector drop	No damage that could affect functionality.	USCAR-2, Section 5.4.8.3
Cavity damage susceptibility	TPA cannot fully seat with a load of 60 N applied when a terminal is partially seated	USCAR-2, Section 5.4.9.3
Connector mounting feature mechanical strength	No damage to the connector mounting feature from a 50 N load in directions F1 to F5 or a 110 N load in the F6 direction	USCAR-2, Section 5.4.11.3
Connector cycling	No physical damage	USCAR-2, Section 5.1.7.3
Dry circuit resistance	15 milliohms maximum	USCAR-2, Section 5.3.1.3
Voltage drop	15 milliohms maximum	USCAR-2, Section 5.3.2.3
Mechanical shock with continuity monitoring	USCAR-2, Section 5.1.9.4 No discontinuities $\geq 7$ ohms for more than 1 microsecond. See Note.	USCAR-2, Section 5.4.6.3 Class V2 per Table 5.4.6.3A
Vibration with continuity monitoring	USCAR-2, Section 5.1.9.4 No discontinuities $\geq 7$ ohms for more than 1 microsecond. See Note.	USCAR-2, Section 5.4.6.3 Class V2 per Table 5.4.6.3B
Insulation resistance	100 megaohms minimum at 500 volts direct current	USCAR-2, Section 5.5.1.3

**Figure 1 (cont.)**

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
	<p>*Environmental Test Group 4 (2325106-1 samples) were tested in reference to SAE J2030. Acceptance criteria for SAE J2030 were as follows:</p> <p>20 megaohms minimum at 1000 volts direct current.</p>	
Thermal shock with continuity monitoring	USCAR-2, Section 5.1.9.4. No discontinuities $\geq 7$ ohms for more than 1 microsecond. See Note.	USCAR-2, Section 5.6.1.3 -40°C to +125°C, 100 cycles
Temperature/humidity cycling	USCAR-2, Section 5.1.9.4. See Note.	USCAR-2, Section 5.6.2.3 -40°C to +125°C, 320 hours
High temperature exposure	USCAR-2, Section 5.1.9.4. See Note.	USCAR-2, Section 5.6.3.3 +125°C for 1008 hours
Fluid resistance	USCAR-2, Section 5.1.9.4. See Note.  *Fluid not required per USCAR-2	USCAR-2, Section 5.6.4.3 Fluids include: Gasoline Diesel fuel Engine oil Ethanol Power steering fluid ATF Engine coolant Brake fluid Diesel Exhaust Fluid (DEF)  *Roundup Original (23°C, 7.5% Concentration) *Gear Oil 90wt (85°C)
Submersion	No evidence of leakage, USCAR-2, Section 5.1.9.4. See Note.	USCAR-2, Section 5.6.5.3
Pressure/Vacuum leak, initial	No evidence of leakage. 48 kPa (7 psig): pressure and vacuum  *Flange Seal Tested to 28 kPa (4 psig): pressure and vacuum	USCAR-2, Section 5.6.6.3
Pressure/Vacuum leak, after temperature/humidity cycling or high temperature exposure	No evidence of leakage. 28 kPa (4 psig): pressure and vacuum  *Flange Seal Tested to 14 kPa (2 psig): pressure and vacuum	USCAR-2, Section 5.6.6.3

**Figure 1 (cont.)**

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
High Pressure Spray	USCAR-2, Section 5.1.9.4. See Note.	USCAR-2, Section 5.6.7.3 (IPX9K)
IP6K7	No dust or fluid ingress.	ISO 20653
BROADR-REACH Channel Test	<p>Characteristic Impedance Differential Mode: 100Ohm +/-10%, valid for 700ps rise time</p> <p>Return Loss: 1MHz / -18dB 20MHz / -18dB 66MHz / -12.8dB</p> <p>Insertion Loss: 1MHz / -1dB 10MHz / -2.6dB 33MHz / -4.9dB 66MHz / -7.2dB</p> <p>Longitudinal Conversion Loss: 1MHz / -43dB 33MHz / -43dB 50MHz / -39.4dB 200MHz / -27.3dB</p> <p>Longitudinal Conversion Transmission Loss: 1MHz / -43dB 33MHz / -43dB 50MHz / -39.4dB 200MHz / -27.3dB</p>	Open Alliance - IEEE 100BASE-T1 Definitions for Communication Channel Version 1.0 - 2017.
Misc. Component Engage Force	85N Max Engagement Force	USCAR-2 5.4.5
Connector Seal Retention- Unmated Connector	Seal Retains Position, Mating of connector and seal function are not diminished	USCAR2 5.4.13
Header and Adapter Pin Retention (Moisture Conditioned)	50N Min, 0.2mm Displacement	USCAR2 5.7.1

**i** **NOTE**

*Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 2, Figure 3, and Figure 5.*

**Figure 1. Test Requirements and Procedures**

## 3.6. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)												
	1	2	3	4	5	6	7	8	9	10	11	12	
	TEST SEQUENCE (b)												
Visual inspection	1,5	1,8	1,4	1,6	1,3	1,3	1,4	1,3	1,3	1,3	1,3	1,3	1,5
Terminal-connector insertion	2												
Terminal-connector retention with primary latching	3												
Terminal-connector retention with primary and secondary latching, after moisture conditioning	4												
Terminal-connector retention with primary and secondary latching after cavity damage							3						
TPA engagement force, pre-set to lock		2											
TPA disengagement force, lock to pre-set		3											
TPA removal force, pre-set to off		4											
CPA engagement force, pre-set to lock		5											
CPA disengagement force, lock to pre-set		6											
CPA removal force, pre-set to off		7											
Connector-connector audible click			2										
Connector-connector audible click (moisture conditioned)			3										
Connector-connector mating force				2									2
Connector-connector retention force, primary lock engaged, CPA disengaged				3									3
Connector-connector un-mating force, primary lock disengaged/disabled				4									4
Primary lock deflection force				5									
Polarization feature effectiveness, mis-mated					2								
Connector drop						2							
Cavity damage susceptibility							2						
Connector mounting feature mechanical strength								2					
Header and Adapter Pin Retention (Moisture Conditioned)									2				
Misc. Component Engage Force										2			
Connector Seal Retention- Unmated Connector												2	

(a) See Paragraph 4.1.A and Figure 5.

(b) Numbers indicate sequence in which tests were performed.

**Figure 2. Mechanical Test Sequences**

TEST OR EXAMINATION	TEST GROUP (a)								
	1(c)	2(c)	3	4	5	6	7	8	9
	TEST SEQUENCE (b)								
Visual inspection	1,9	1,8	1,8	1,6	1,8	1,8	1,6	1,8	1,3
Connector cycling	2	2	2	2	2	2	2	2	
Dry circuit resistance	3,7	3,6	3,6		3,6	3,6		3,6	
Voltage drop	4,8	4,7	4,7		4,7	4,7		4,7	
Terminal-connector retention with primary and secondary latching after temperature humidity cycling or high temperature exposure			9	7	9				
Mechanical shock with continuity monitoring	5								
Vibration with continuity monitoring	6								
Insulation Resistance				3,5			3,5		
Thermal shock with continuity monitoring		5							
Temperature/humidity cycling			5	4		5	4		
High temperature exposure					5			5	
BROADR-REACH Channel Test									2

- (a) See Paragraph 4.1.A and Figure 6.
- (b) Numbers indicate sequence in which tests are performed.
- (c) Test specimens divided into two groups. The first group is used to measure dry circuit resistance. The second group is used to measure voltage drop and continuity monitoring.

**Figure 3. Electrical Test Sequences**

TEST OR EXAMINATION	TEST GROUP (a)							
	1	2(c)	3(c)	4(d,g)	5(c,e)	6(c,e)	7(c,g)	8(c,g)
	TEST SEQUENCE (b)							
Visual inspection	1,3	1,14	1,14	1,3	1,14	1,14	1,6,11,14, 17,20,21	1,6,11,14, 17,20,21
Connector cycling		2	2		2	2	2	2
Terminal-connector retention with primary and secondary latching after temperature humidity cycling or high temperature exposure		15	15					
Insulation Resistance		3,5,7,9, 11,13	3,5,7,9, 11,13		3,5,7,9, 11,13	3,5,7,9, 11,13	3,5,8,10, 13,16,19	3,5,8,10, 13,16,19
Temperature/humidity cycling		6			6		7	
High temperature exposure			6			6		7
Fluid Resistance	2							
Submersion		10	10		10(f)	10(f)	18	18
Pressure/Vacuum Leak		4,8	4,8		4(h),8(h)	4(h),8(h)	4(h),9(h)	4(h),9(h)
High Pressure Spray		12	12		12(f)	12(f)	15	15
IP6K7				2			12	12

- (a) See Paragraph 4.1.A and Figure 7.
- (b) Numbers indicate sequence in which tests were performed.
- (c) Test specimens divided into two groups. The first group contains the minimum wire size. The second group contains the maximum wire size.
- (d) This sequence was used to test the flange with mounting clip seal separate from the connector interface.
- (e) This sequence of testing does not include the flange seal.
- (f) High Pressure Spray was performed prior to Submersion in some of the test groups.
- (g) For assemblies which use a flange seal, a visual inspection was used to confirm there were no flange seal failures due to dust or fluid ingress.
- (h) The flange seal was tested separate from the peripheral and matte seal. See Figure 1 for more detail.

**Figure 4. Environmental Sealing Test Sequences**



## 4. QUALITY ASSURANCE PROVISIONS

### 4.1. Qualification Testing

#### A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production.

Test Group	Plug Assembly	Mating Assembly	Mounting Clip	Wire Cover	Wire Size	Wire Type	Mated Connector Quantity	Comments	
1	2292906-X	2292937-X	—	—	18/22 AWG	TXL	15	—	
					20/22 AWG	Champlain UTP			
					0.35 mm <sup>2</sup>	Leoni Dacar 546V			
2	2292906-X	2292937-X	—	—	18/22 AWG	TXL	20	—	
					20/22 AWG	Champlain UTP			
					0.35 mm <sup>2</sup>	Leoni Dacar 546V			
3	2292906-X	2292937-X	—	—	—	—	16	No Wire	
	2292906-1	2325106-1	—	—	—	—	16	No Wire	
4	2292906-X	2292937-X	—	—	18/22 AWG	TXL	30	—	
					20/22 AWG	Champlain UTP			
					0.35 mm <sup>2</sup>	Leoni Dacar 546V			
5	2292906-X	2292937-X	—	—	18/22 AWG	TXL	18	—	
					20/22 AWG	Champlain UTP			
					0.35 mm <sup>2</sup>	Leoni Dacar 546V			
6	2292906-X	2292937-X	—	—	—	—	18	No Wire	
7	2292906-X	2292937-X	—	—	18/22 AWG	TXL	5	—	
					20/22 AWG	Champlain UTP			
					0.35 mm <sup>2</sup>	Leoni Dacar 546V			
8	—	2292937-X	1642656-1	—	—	—	30	No Wire	
9	—	2325106-1	—	—	—	—	40	No Wire	
	—	2325103-1	—	—	—	—	40	No Wire	
	—	2325103-7	—	—	—	—	40	No Wire	
10	—	2325106-1	2325098-2	—	—	—	10	No Wire	
	—	2325106-1	2325098-4	—	—	—	10	No Wire	
	—	2325106-1	2325098-8	—	—	—	10	No Wire	
	—	2325102-1	2325098-2	—	—	—	10	No Wire	
	—	2325102-1	2325098-8	—	—	—	10	No Wire	
11	—	2325106-1	—	—	—	—	10	No Wire	
12	2292906-1	2325106-1	—	—	18/22 AWG	TXL	25	—	
					20/22 AWG	Champlain UTP			
					0.35 mm <sup>2</sup>	Leoni Dacar 546V			
	2292906-1	2325103-1	—	—	—	18/22 AWG	TXL	25	—
						20/22 AWG	Champlain UTP		
						0.35 mm <sup>2</sup>	Leoni Dacar 546V		
	2292906-1	2325103-7	—	—	—	18/22 AWG	TXL	25	—
						20/22 AWG	Champlain UTP		
						0.35 mm <sup>2</sup>	Leoni Dacar 546V		
2292906-1	2339032-1	—	—	—	—	—	5	No Wire	

**Figure 5. Sample Quantities for Mechanical Test Sequences**

Test Group	Plug Assembly	Mating Assembly	Mounting Clip	Wire Cover	Wire Size	Wire Type	Mated Connector Quantity	Comments
1	2292906-X	2292937-X	—	—	18 AWG	TXL	12	Max Wire
	2292906-1	2325106-1	2325098-2	—	18 AWG	TXL	10	Max Wire
	2292906-1	2325106-1	2325098-4	—	18 AWG	TXL	10	Max Wire
	2292906-1	2325106-1	2325098-8	—	18 AWG	TXL	10	Max Wire
	2292906-1	2325103-1	—	—	18 AWG	TXL	6	Max Wire
	2292906-1	2325103-7	—	—	18 AWG	TXL	6	Max Wire
	2292906-1	2325102-1	2325098-2	—	18 AWG	TXL	6	Max Wire
	2292906-1	2325102-1	2325098-8	—	18 AWG	TXL	6	Max Wire
	2292906-1	2325102-7	—	—	18 AWG	TXL	6	Max Wire
	2292906-1	2339032-1	—	—	18 AWG	TXL	12	Max Wire
	2292906-1	2339032-7	—	—	18 AWG	TXL	12	Max Wire
	2292906-1	2366735-2	—	—	18 AWG	TXL	6	Max Wire
2	2292906-X	2292937-X	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2325106-1	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2325103-1	—	—	18 AWG	TXL	9	Max Wire
	2292906-1	2339032-1	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2339032-7	—	—	18 AWG	TXL	10	Max Wire
3	2292906-X	2292937-X	—	—	22 AWG	TXL	5	Min Wire
	2292906-1	2339032-1	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2339032-7	—	—	18 AWG	TXL	10	Max Wire
3A	2292906-1	2366735-4	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2366735-3	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2366735-1	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2366735-2	—	—	18 AWG	TXL	5	Max Wire
3B	2292906-1	2366735-4	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2366735-3	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2366735-1	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2366735-2	—	—	18 AWG	TXL	5	Max Wire
4	2292906-X	2292937-X	—	—	22 AWG	TXL	5	Min Wire
	2292906-1	2339032-1	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2366735-3	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2366735-1	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2366735-2	—	—	18 AWG	TXL	5	Max Wire
5	2292906-X	2292937-X	—	—	22 AWG	TXL	10	Min Wire
	2292906-1	2339032-1	—	—	22 AWG	TXL	10	Min Wire
	2292906-1	2339032-7	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2366735-3	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2366735-1	—	—	18 AWG	TXL	5	Max Wire
	2292906-1	2366735-2	—	—	18 AWG	TXL	5	Max Wire
6	2292906-1	2325106-1	—	—	22 AWG	TXL	5	Min Wire
	2292906-1	2325103-1	—	—	22 AWG	TXL	5	Min Wire
	2292906-1	2339032-1	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2339032-7	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2366735-2	—	—	18 AWG	TXL	6	Max Wire
7	2292906-1	2325106-1	—	—	22 AWG	TXL	5	Min Wire
	2292906-1	2325103-1	—	—	22 AWG	TXL	5	Min Wire
8	2292906-1	2325106-1	—	—	22 AWG	TXL	10	Min Wire
	2292906-1	2325103-1	—	—	22 AWG	TXL	10	Min Wire
	2292906-1	2339032-1	—	—	22 AWG	TXL	10	Min Wire
	2292906-1	2339032-7	—	—	22 AWG	TXL	10	Min Wire

Test Group	Plug Assembly	Mating Assembly	Mounting Clip	Wire Cover	Wire Size	Wire Type	Mated Connector Quantity	Comments
9	2292906-1	2325102-1 2325103-7 2325106-1	—	2272168-1	0.35 mm <sup>2</sup>	Leoni Dacar 546V	1 (15m) Channel	Min Wire
					20 AWG	Champlain UTP	1 (15m) Channel	—
					22 AWG	Champlain UTP	1 (15m) Channel	Min Wire
M(a)	2292906-1	2366735-4	—	—	18 AWG	TXL	6	Max Wire
	2292906-1 /2292906-2	2366735-3	—	—	18 AWG	TXL	6	Max Wire
M(b)	2292906-1	2366735-4	—	—	18 AWG	TXL	6	Max Wire
	2292906-1 /2292906-2	2366735-3	—	—	18 AWG	TXL	6	Max Wire

**Figure 6. Sample Quantities for Electrical Test Sequences**

Test Group	Plug Assembly	Mating Assembly	Mounting Clip	Wire Cover	Wire Size	Wire Type	Mated Connector Quantity	Comments	
1	2292906-X	2292937-X	—	—	18/22 AWG	TXL	11	—	
					20 AWG	Champlain UTP			
					0.35 mm <sup>2</sup>	Leoni Dacar 546V			
	2292906-1	2325106-1	2325098-4	—	—	22 AWG	TXL	11	Min Wire
	2292906-1	2325102-1	2325098-4	—	—	22 AWG	TXL	11	Min Wire
	2292906-1	2325102-7	—	—	—	22 AWG	TXL	11	Min Wire
	2292906-1	2339032-1	—	—	—	22 AWG	TXL	3	Min Wire
2292906-1	2366735-2	—	—	—	—	—	19	No Wire	
2292906-1	2376612-1	—	—	2272168-1	22 AWG	TXL	10	Min Wire	
2	2292906-X	2292937-X	—	2272168-1	18/22 AWG	TXL	5/5	Max/Min Wire	
					20 AWG	Champlain UTP	5	—	
					0.35 mm <sup>2</sup>	Leoni Dacar 546V	5	—	
	2292906-1	2366735-2	—	—	—	18 AWG	TXL	10	Min Wire
2292906-1	2376612-1	—	—	2272168-1	22 AWG	TXL	10	Min Wire	
3	2292906-X	2292937-X	—	2272168-1	18/22 AWG	TXL	5/5	Max/Min Wire	
					20 AWG	Champlain UTP	5	—	
	2292906-1	2339032-1	—	—	—	22 AWG	—	10	Min Wire
4	2292906-1	2325106-1	2325098-2	—	—	—	10	Flange Seal Test	
	2292906-1	2325106-1	2325098-4	—	—	—	10	Flange Seal Test	
	2292906-1	2325106-1	2325098-8	—	—	—	10	Flange Seal Test	
	2292906-1	2325102-1	2325098-2	—	18/22 AWG	TXL	3/3	Flange Seal Test	
	2292906-1	2325102-1	2325098-8	—	18/22 AWG	TXL	3/3	Flange Seal Test	
5	2292906-1	2325106-1	—	2272168-1	18/22 AWG	TXL	5/5	Max/Min Wire Does Not Apply to Flange Seal	

Test Group	Plug Assembly	Mating Assembly	Mounting Clip	Wire Cover	Wire Size	Wire Type	Mated Connector Quantity	Comments
6	2292906-1	2325106-1	—	2272168-1	18/22 AWG	TXL	5/5	Max/Min Wire Does Not Apply to Flange Seal
	2292906-1	2366735-1	—	—	18 AWG	TXL	5	Max/ Wire Does Not Apply to Flange Seal
7	2292906-1	2325102-7	—	2272168-1	18/22 AWG	TXL	3/3	Max/Min Wire
	2292906-1	2325103-1	—	2272168-1	18/22 AWG	TXL	3/3	Max/Min Wire
	2292906-1	2325103-7	—	2272168-1	18/22 AWG	TXL	3/3	Max/Min Wire
	2292906-1	2325102-1	—	2272168-1	18/22 AWG	TXL	3/3	Max/Min Wire
	2292906-1	2366735-4	—	—	22 AWG	TXL	10	Min Wire Ag Terminals
	2292906-1	2366735-3	—	—	22 AWG	TXL	10	Min Wire Ag Terminals
	2292906-1	2366735-1	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2366735-2	—	—	22 AWG	TXL	5	Min Wire
8	2292906-1	2325102-7	—	2272168-1	18/22 AWG	TXL	3/3	Max/Min Wire
	2292906-1	2325103-1	—	2272168-1	18/22 AWG	TXL	3/3	Max/Min Wire
	2292906-1	2325103-7	—	2272168-1	18/22 AWG	TXL	3/3	Max/Min Wire
	2292906-1	2325102-1	—	2272168-1	18/22 AWG	TXL	3/3	Max/Min Wire
	2292906-1	2339032-7	—	—	22AWG	TXL	10	Min Wire
	2292906-1	2366735-4	—	—	22 AWG	TXL	10	Min Wire Ag Terminals
	2292906-1	2366735-3	—	—	22 AWG	TXL	10	Min Wire Ag Terminals
	2292906-1	2366735-1	—	—	18 AWG	TXL	10	Max Wire
	2292906-1	2366735-2	—	—	22 AWG	TXL	5	Min Wire

**Figure 7. Sample Quantities for Environmental Test Sequences**

\* : Denotes 2339032 has completed USCAR-2 DV testing, except temperature-humidity exposure. Full PV testing is expected to be completed by Jan2021.

#### B. Test Sequence

- (i) Qualification inspection shall be verified by testing specimens as specified in Figure 2, Figure 3, and Figure 4.

#### 4.2. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequences as determined by development/product, quality and reliability engineering.

#### 4.3. Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

#### 4.4. Quality Conformance Inspection

The applicable quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.