Door Zone Module - Connector Series

Contents

1 SCOPE

1.1 Content

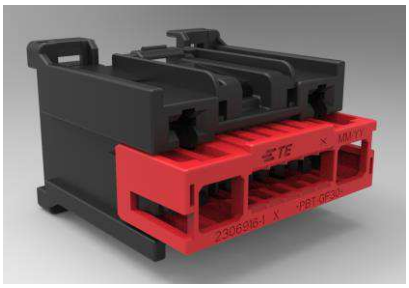
This specification covers the performance, tests, and quality requirements of the Door Zone Module Connector Series.

Applicable Terminals for the Door Zone Module Connector Series:

Generation Y (0.13mm² - 0,75mm²) see Application Specification 114-94563

MCP 2.8 (1mm²-4mm²) see Application Specification 114-94563

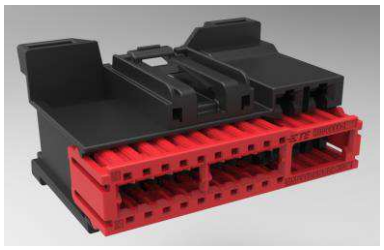
1.1.1 14 Way Hybrid Female Connector

14 Way Hybrid Female Connector Assembly	**TE-PNs**: 0-2306914-1 0-2306914-2 0-2306914-3 1-2306914-1 1-2306914-2 1-2306914-3	
14 Way Hybrid Wire Cover	**TE-PNs:** 2306917-1 2306917-2 2306917-3	 

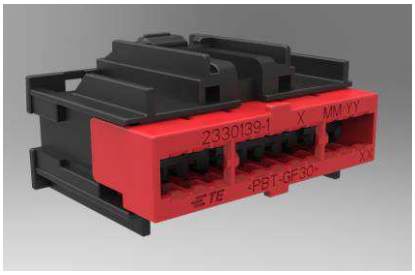
1.1.2 24 Way Gen Y Female Connector

24 Way Gen Y Female Connector Assembly	**TE-PNs:** 0-2306908-1 1-2306908-1	
22/24 Way Wire Cover	**TE-PN:** 2306911-1 2306911-2	 

1.1.3 24 Way Hybrid Female Connector

24 Way Hybrid Female Connector System Assembly	**TE-PNs:** 0-2330142-1 0-2330142-2 0-2330142-3 1-2330142-1 1-2330142-2 1-2330142-3	
24 Way Wire Cover	**TE-PNs:** 2330144-1 2330144-2	 

1.1.4 22 Way Gen Y Female Connector

22 Way Gen Y Female Connector Assembly	**TE-PNs:** 2330140-1	
22/24 Way Wire Cover	**TE-PN:** 2306911-1	

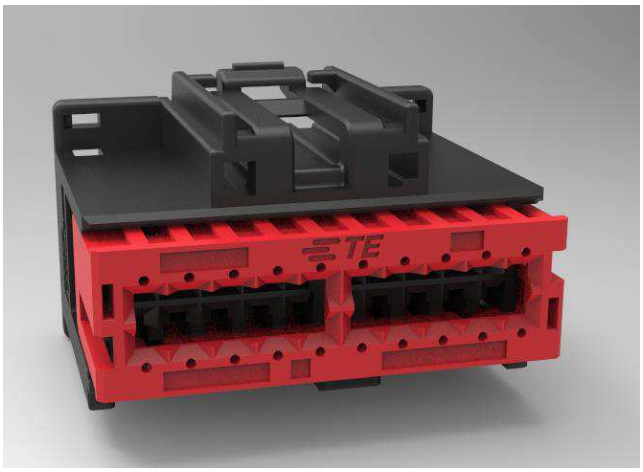
1.1.5 22 Way Gen Y Female Connector (without wire cover option)

22 Way Gen Y Female Connector Assembly	**TE-PNs:** 0-2208021-1 0-2208021-2 0-2208021-3 0-2208021-4	

1.1.6 24 Way Hybrid Connector (without wire cover option)

24 Way Hybrid Female Connector Assembly	**TE-PNs:** 0-2236269-1 0-2236269-2 0-2236269-3 1-2236269-1 1-2236269-2 1-2236269-3	

1.3.7 20 Way Gen Y Female Connector (without wire cover option)

20 Way Gen Y Female Connector Assembly	**TE-PNs:** 0-2236266-1 0-2236266-2 1-2236266-1 1-2236266-2	

1.2 Qualification

Temperature Classification T2:	-40°C to +100°C
Sealing Classification S1:	Unsealed
Vibration Classification V1:	Chassis Profile

(USCAR 2 - Revision 6 – with exceptions)

2 APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. In the events of conflict between the requirements of this specification and the product drawing or of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1 TE Documents

THIS APPLICATION SPECIFICATION IS BASED ON THE LATEST VALID CUSTOMER DRAWINGS.

14 Way Hybrid Female Connector System

C2306914 14 Way Hybrid Female Connector Assembly
C2306917 14 Way Wire Cover

24 Way Gen. Y Female Connector System

C2306908 24 Way Female Connector Assembly
C2306911 22/24 Way Wire Cover

24 Way Hybrid Female Connector System

C2330142 24 Way Hybrid Female Connector Assembly
C2330144 24 Way Wire Cover

22 Way Gen. Y Female Connector System

C2330140 22 Way Female Connector Assembly
C2306911 22/24 Way Wire Cover

22 Way Gen. Y Female Connector System (without wire cover option)

C2208021 22 Way Female Connector Assembly

24 Way Hybrid Female Connector System (without wire cover option)

C2236269 24 Way Hybrid Female Connector Assembly

20 Way Gen. Y Female Connector System (without wire cover option)

C2236266 20 Way Gen Y Female Connector Assembly

Application Specification:
114-94563 / Door Zone Module Connector Series
114-13183 / Generation Y Terminal
114-18148 / MCP 2.8 Terminal

Product Specification
108-2296 / Generation Y Terminal
108-18513 / MCP 2.8 Terminal

2.2 Other Documents

USCAR 2 Rev.6

3 REQUIREMENTS

3.1 Design and Construction

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

3.2 Materials

Descriptions for material see customer drawings.

3.3 Ratings

For electrical and mechanical rating see chapter 3.5.

3.4 Performance and test description

The product is designed to meet the electrical, mechanical, and environmental performance requirements specified in USCAR-2 Revision 6 with exceptions. All tests are performed at ambient environmental conditions per USCAR-2 Revision 6 unless otherwise specified.

3.5 Test requirements and procedures summary

3.5.1 Characteristic tests

Mechanical Test USCAR-2 Rev. 6 Terminal to Connector Insertion/Extraction 5.4.1	
Terminal Insertion	Generation Y: 30N Max. MCP 2.8: 30N Max.
Terminal Connector Extraction Force - With Primary Lock	Generation Y: 30N Min. MCP 2.8: 60N Min.
Terminal Connector Extraction Force - With Primary and Secondary Locks - After Moisture	Generation Y: 30N Min. MCP 2.8: 60N Min.

Mechanical Test USCAR-2 Rev. 6 Misc. Component Engage/Disengage 5.4.5	
TPA/PLR Engage (Pre-set to Lock)	60 N Max. (w/terminals installed) 15 N Min. (w/out terminals)
TPA/PLR Disengage (Lock to preset)	60 N Max. 18N Min after initial removal
TPA Removal	25N Min.

Mechanical Test USCAR-2 Rev. 6 Connector to Connector Mating / Un-mating 5.4.2 & 5.4.3

Connector-to Connector Mating Force	Mating (engage) force must meet 75 N max.
Connector-to Connector Un-mating Force	Un-mating force must be less than equal to 75 N with the primary lock disengaged. Un-mating force must be greater than equal to 110 N with the primary lock fully engaged.
Lock deflection Force	Min. 6N – 51N Max

Mechanical Test USCAR-2 Rev. 6 Connector to Connector Audible Click 5.4.7

Audible Click	12d dB Min.

Mechanical Test USCAR-2 Rev. 6 Polarization Feature Effectiveness 5.4.4

Polarization Feature Effectiveness	150N Min.

Mechanical Test USCAR-2 Rev. 6 Connector Drop Test 5.4.8

Connector Drop Test	No deterioration, cracks, deformities etc. that could affect functionality of the part. Components shall not be displaced from their intended shipping position.

Mechanical Test
USCAR-2 Rev. 6 Connector Cavity Damage 5.4.9

Cavity Damage – Force fully applied to TPA	Generation Y: Min. 60N MCP 2.8: Min. 80N
Extraction Force with primary & secondary locks	Generation Y: Min. 60N MCP 2.8: Min. 100N

Connector System Electrical and Environmental
USCAR-2 Rev. 6 Mechanical Shock and Vibration Sequence 5.4.6
(V1: not coupled to engine)

Connector System Electrical and Environmental
USCAR-2 Rev. 6 Thermal Shock Sequence 5.3.2

Dry Cir	lax.
Dry Circuit after Connector Cycling	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Vibration 1st Axis without losing continuity	Yes
Dry Circuit after Vibration 1st Axis	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Vibration 2nd Axis without losing continuity	Yes
Dry Circuit after Vibration 2nd Axis	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Vibration 3rd Axis without losing continuity	Yes
Dry Circuit after Vibration 3rd Axis	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Voltage Drop	Generation Y: U_{max}=50mV MCP 2.8: U_{max}=50mV

Dry Circuit after Connector Cycling	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Thermal Shock without losing continuity	Yes
Dry Circuit after Thermal shock	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Voltage Drop	Generation Y: U_{max}=50mV MCP 2.8: U_{max}=50mV

Connector System Electrical and Environmental
USCAR-2 Rev. 6 Temperature Humidity Cycling 5.5.1

Dry Circuit Resistance Initial	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Dry Circuit after Connector Cycling	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Dry Circuit after Temperature Humidity Cycling	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Voltage Drop	Generation Y: U_{max}=50mV MCP 2.8: U_{max}=50mV
Isolation Resistance	≥ 100 MΩ At 500 VDC
Terminal Extraction	Generation Y: Min. 50N MCP 2.8: Min. 50N

Connector System Electrical and Environmental
USCAR-2 Rev. 6 High Temperature Exposure 5.6.3

Dry Circuit Resistance Initial	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Dry Circuit after Connector Cycling	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Dry Circuit after High Temperature Exposure	Generation Y: 20mΩ Max. MCP 2.8: 5Ω Max.
Voltage Drop	Generation Y: U_{max}=50mV MCP 2.8: U_{max}=50mV

4 QUALITY ASSURANCE PROVISIONS

4.1 Qualification testing

Sample Selection

The samples shall be prepared in accordance with product drawings.
They are selected at random from current production.

Test Groups shall consist of:

See Requirements mentioned in USCAR 2 - Revision 6 for the relevant test groups.

Test Sequence

Qualification inspection must be verified by testing samples as specified in
USCAR 2 - Revision 6

4.2 Requalification Testing

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

4.2 Acceptance

Acceptance is based on verification that the product meets the requirements of USCAR 2 - Revision 6. Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be undertaken, and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.2 Quality conformance inspection

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

Revision	Description	Originator	Approver	Date
A	Initial Release	J. Wagner	B. Becker	6th March 2023