4pos MQS Connector with CPA, unsealed

1. OBJECTIVE

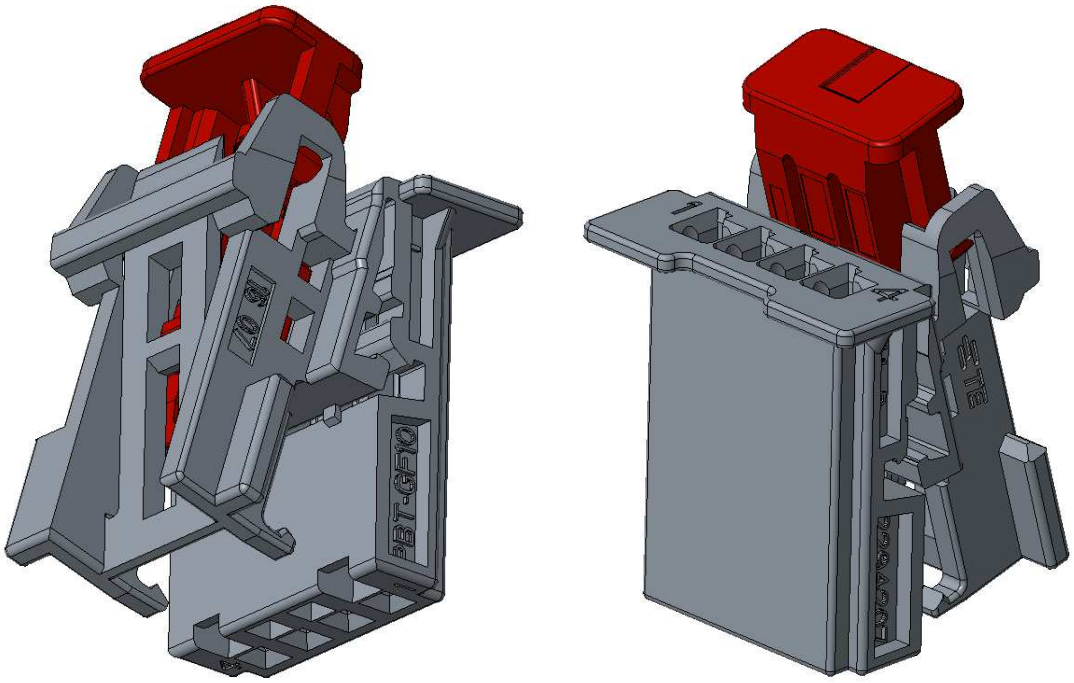
This specification covers the performance, test and quality requirements for the 4 pos. MQS receptacle housing (unsealed version) PN 2294218-X.

This 4 pos. MQS receptacle housing was customer-specific developed for the usage in the automotive industry.

The Terminal Position Assurance (TPA) of the contacts is fulfilled by a flap on the housing. The TPA can be separated after transport from both fixation points. This does not affect the proper locking function of the TPA.

The 4 pos. MQS receptacle housing is loaded with Micro Quadlock System Contacts.

The preferred wire size range goes for MQS from 0.13mm² to 0.75mm². Terminals PNs according to product drawing.



2. APPLICABLE DOCUMENTS

The following documents form part of this specification to the extent specified herein. 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.

- 2294218 Customer Drawing
- SAE/USCAR-2 REVISION 6 Performance Specification for Automotive Electrical Connector Systems
- SAE/USCAR-25 REVISION 3 Ergonomics Specification for Electrical Connections
- 108-18030-0 Product Specification for Micro Quadlock System
- 114-18021 Application Specification for MQS Contact System
- 114-94435 Application Spec for 4 Pos. MQS Receptacle Housing

3. REQUIREMENTS

i. Materials

According to product drawing.

ii. Ratings

A. Nominal Voltage: 14V DC
B. Temperature class: T2 (-40°C to 100°C)
C. Vibration class: V1 (on body or chassis)
D. Sealing class: S1 (unsealed)
E. Mating force class: M2 (45N max)

iii. Performance

The product is designed to meet the mechanical requirements specified below.

5.9.5 - Connector System Mechanical Test Sequence		
Test Sequence ID	**Specification**	**Test procedure**
D – Term.-Conn. Insertion/Retention	• Insertion: 30 N max • Retention (primary lock only): 30 N min • Retention (primary and secondary lock, after moisture conditioning): 60 N min • Forward stop: 25 N min*	SAE/USCAR-2 REV 6
E – Misc. Component Engage/Disengage (CPA)	• Pre-set to lock unmated (partially mated connector): 60 N min • Pre-set to lock mated: 22 N max • Lock to pre-set: 10 N min / 30 N max • Complete removal unmated: 30 N min	SAE/USCAR-2 REV 6
F – Audible Click	• Audible click (with cables and terminals): 5 dB min	SAE/USCAR-2 REV 6
G – Conn./Conn. Mating/Un-mating	• Mating force: 45 N max • Retention force: 80 N min* • Unmating: 75 N max	SAE/USCAR-2 REV 6 SAE/USCAR-25

	• Lock feature disengage: 51 N max*	REV 3
H – Polarization Effectiveness	• Force (connector halves rotated 180°): 150 N min	SAE/USCAR-2 REV 6
I – Drop	-	
J – Cavity Damage	Not applicable	
K – Terminal/Cavity Polarization	-	
L – Header Pin Retention	Not applicable	
M – Mounting Feature Mechanical Strength	Not applicable	
X – Mechanical Assist Integrity	Not applicable	
Y – Conn. Seal Retention – Unmated Connector	Not applicable	
Z – Conn. Seal Retention – Mated Connector	Not applicable	

* Deviation from mentioned Test procedure.

iv. Test sequence

Test	Test sequence				
	D	E	F	G	H
5.1 General	1	1	1	1	1
5.1.8 Visual Inspection	2,4	2,4	2,4	2,4	2,4
5.4.1 Terminal - Connector Insertion/Retention Force	3				
5.4.2 Mating/Unmating Force (Non-mch Assist)				3	
5.4.4 Polarization Feature Effectiveness					3
5.4.5 Miscellaneous Component Engage/Disengage Force		3			
5.4.7 Connector-to-Connector Audible Click			3		

Revision Record					
Rev.	Data	Descrição	Editado	Checado	Aprovado
A	09-Jan-2019	Initial release	R.Kazuo	D.Oliveira	A.Cavallaro