6P MCP 2.8 CONNECTOR SEALED

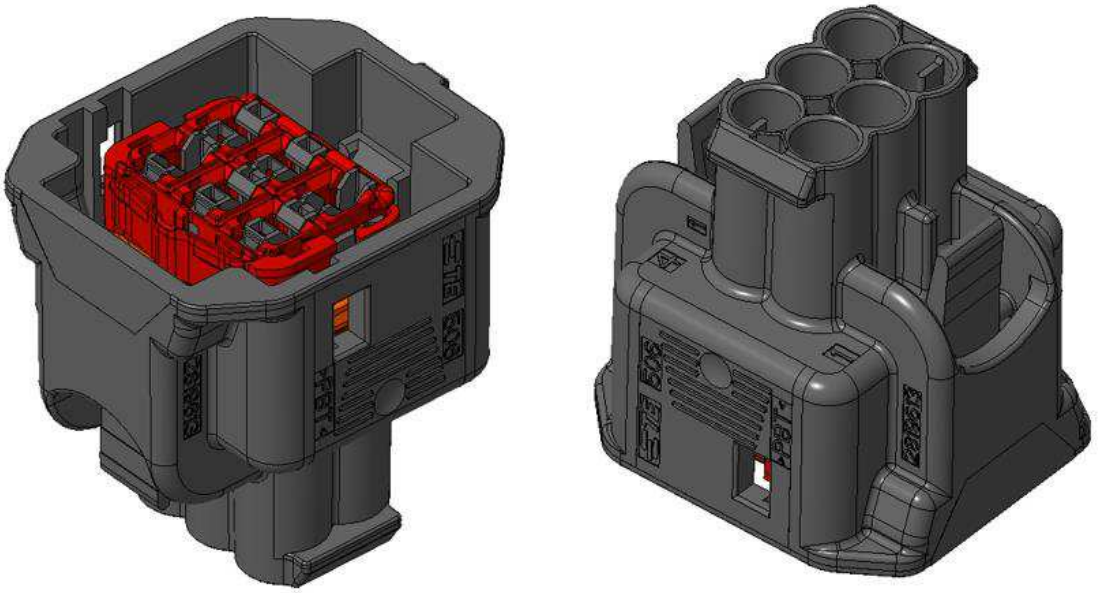
1. OBJECTIVE

This specification covers the performance, test and quality requirements for the 6P MCP 2.8 Connector Sealed PN 2819613-1.

This 6P MCP 2.8 connector was customer-specific developed for the usage in the automotive industry.

The 6P MCP 2.8 receptacle housing is loaded with MCP 2.8 Sealed Contacts.

The preferred wire size range goes for MCP 2.8 from 0.35mm² to 2.50mm². Terminals and seal PNs according to product drawing.



| Indicates Change

Loc. : AP
ECOC : LE10

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.

- 2819613 Customer Drawing
- 114-37023 Application Specification for 6P MCP 2.8 connector
- SAE/USCAR-2 REVISION 6 Performance Specification for Automotive Electrical Connector
- SAE/USCAR-25 REVISION 3 Ergonomics Specification for Electrical Connections
- 108-18717 Product Specification for MCP 2.8 contact
- 114-18387 Application Specification for MCP 2.8 Contact

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: S2 (sealed)
E. Mating force class: M3 (75N max)

iii. Performance

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

5.9.5 - Connector Mechanical Test		
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: 50 N min	SAE/USCAR-2 REV 6
E – Misc Component Engage/Disengage (TPA)	• Engagement: 60 N max (w/ terminal) • Engagement: 15 N min (w/o terminal) • Disengagement: 60 N max (w/ terminal) • TPA removal from connector: 20 N min*	SAE/USCAR-2 REV 6
F – Audible Click	• Audible click (with cables and terminals): no limit specified. Found >66 dB (for reference only).	SAE/USCAR-2 REV 6
G – Conn./Conn. Mating/Un-mating	• Mating force: 75 N max • Retention force: 110 N min • Unmating: 75 N max • Lock feature disengage: 6 N min / 51 N max	SAE/USCAR-2 REV 6 SAE/USCAR-25 REV 3
H – Polarization Effectiveness	• Force (connector halves rotated 180°): 150 N min	SAE/USCAR-2 REV 6
I – Drop Test	• Samples shall meet the Acceptance Criteria of Visual Inspection. • Components shall not be displaced from their intended shipping position	SAE/USCAR-2 REV 6
J – Cavity Damage	-	
K – Terminal/Cavity Polarization	• No damage for terminals inserted in incorrect orientation with a force of 30N	SAE/USCAR-2 REV 6
L – Header Pin Retention	• Not applicable	
M - Mounting Feature Mechanical Strength	• Not applicable	
X – Mechanical Assist Integrity	• Not applicable	
Conn. Seal Retention – Unmated Connector	• Seal retention 10N min	Pull seal at a rate of 50 mm/min
Z – Conn. Seal Retention – Mated Connector	• Not applicable	
5.9.9 – Stand-Alone Sealing Performance Test Sequence		
W – Pressure/Vacuum Stand Alone	• Insulation resistance 100MΩ min at 500VDC • Positive pressure of 48kPa and 28kPa	SAE/USCAR-2 REV 6

* In deviation with specification informed

iv. Test sequence

Test	Test sequence													
	D	E	F	G	H	I	J	K	L	M	X		Z	W
5.1 General	1	1	1	1	1	1		1				1		1
5.1.7 Connector and/or terminal cycling														3
5.1.8 Visual Inspection	2,4	2,4	2,4	2,4	2,4	2,4		2,4				2,4		2,6
5.4.1 Terminal - Connector Insertion/Retention Force	3													
5.4.2 Mating/Unmating Force (Non-mech Assist)				3										
5.4.3 Mating/Unmating Force (Mechanical assist)														
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											
5.4.8 Connector Drop Test						3								
5.4.9 Cavity Damage														
5.4.10 Terminal/Cavity Polarization								3						
5.7.1 Header Pin Retention														
5.7.2 Connector Mounting Feature Mech Strength														
5.4.12 Mechanical Assist Integrity														
5.4.13 Connector Seal Retention – Unmated Conn.												3		
5.4.14 Connector Seal Retention – Mated Conn.														
5.5.1 Insulation resistance														4
5.6.6 Pressure/Vacuum Leak														5

Revision Record					
Rev.	Data	Descrição	Editado	Checado	Aprovado
A	10-Oct-2019	Initial release	G. Bonucci	R. Kazuo	D. Oliveira