
HG-Q8 – Hood and Housing

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1. Scope

1.1 Content

This specification covers the performance, tests and quality requirements for the hood and housing of heavy duty connectors series HG-Q8. The hood and housings are used with insert HG-Q8.

1.2 Qualification

When tests are performed the following specified specifications and standards shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

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 AMP Documents

- A 109-1: General Requirements for Test Specifications
- B Customer Drawings and Name
1103072 Surface mounted housing bootom entry HG-Q8-Serie
1103071 Hood HG-Q8-Serie
- C Product Specifications
108-74052
- D Application Specification
114-7405X

2.2 Other Documents

- A DIN EN 61984 Connectors – Safety requirements and tests
- B DIN EN 60664-1 Insulation coordination for equipment within low-voltage-systems
- C IEC 60512 Electromechanical components for electronic equipment, basic testing procedures and measuring methods
- D ISO 8092/2 Road Vehicles-Connections for on-board electrical wiring harnesses
- E DIN IEC 68 Electrical engineering, basic environmental testing procedures
- F DIN 40050 Teil 9 Road Vehicles, Protection class, dust test, water test, electronic fitting out

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 in customer drawings.

3.3 Ratings

- A Protection: IP 65
- B Temperature -40°C to 125°C ¹⁾
- D Durability min. 200 cycles

¹⁾ ambient temperature and heating up by current

3.4 Performance and Test Description

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Para. 3.5. All tests are performed at ambient environmental conditions per DIN IEC 60512 unless otherwise specified.

3.5 Test Requirements and Procedures

Test Description Beschreibung	Requirement Anforderung	Procedure Prüfung
Visual- and dimensional examination	Meets requirements of product drawing	IEC 60512-1-1, Test 1a and IEC 60512-1-1, Test 1b
Protection IP	Dust level IP 6X Water level IP X5	EN 61894 Chapter 7.3.6.3

MECHANICAL INSPECTIONS		
Mating and unmating forces of locking system	close : max 150N open : max.150N	Actuating Speed: 20 mm/min
Vibration, sinus	No physical damage No discontinuities greater than $t > 1\mu s$	EN 61373 Frequenz: 5-150 Hz deflection of amplitude: 7,5mm Cross-over frequency: 10 Hz Acceleration: 20m/s ² Testing period: 10 cycle/ axle
Physical shock	No physical damage No discontinuities greater than $t > 1\mu s$	EN 61373 Acceleration: 50m/s ² Duration: 50ms 3 impacts in everyone of the 6 space axis
Resistant against axial cable pull	No physical damage	IEC 60512-9, Test 17c
Resistant against cable torque	No physical damage	IEC 60512-9, Test 17d

ENVIRONMENTAL INSPECTIONS UMWELTPRÜFUNGEN		
Rapid change of temperature	No physical damage	Acc. IEC 60512-11-4, Test 11d, $T_a = -40\text{ °C}$ $T_b = 125\text{ °C}$ $t_a = 1\text{ h}$ $t_b = 1\text{ h}$ Number of cycles : 100
Dry heat, Steady state	No physical damage	Acc. IEC 60512-11-9, Test 11i, Duration time: 120 h; $T = +125\text{ °C max. } 1\text{K/min}$
Damp heat, Steady state	No physical damage	Acc. IEC 60512-11-12, Test 11m, untere Lufttemp.: $T_u: 25\pm 3\text{ °C}$ obere Lufttemp.: $T_o: 40\pm 2\text{ °C}$ Anzahl der Zyklen: 21 Dauer der Zyklen: 12+12 Std. Variante 1

3.6 Qualification and Requalification Test Sequence

Test / Prüfung	Test Group, / Prüfgruppe ¹⁾							
	A	B	C	D	E	F	G	H ³⁾
	Test Sequence / Prüfreihenfolge ²⁾							
Visual- and dimensional examination	1	1	1	1				
Protection IP 6X			4					
Protection IP X5				4				
Mating and unmating forces of locking system	2/5							
Vibration		4						
Physical shock		5						
Resistant against axial cable pull			5					
Resistant against cable torque				5				
Rapid change of temperature	3							
Dry heat		2	2	2				
Damp heat	4	3	3	3				

1) See Para. 4.1 A

2) Numbers indicate sequence in which tests are performed

4 QUALITY ASSURANCE PROVISIONS

4.1 Qualification Testing

A Sample Selection

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

Test Groups shall consist of:

Test Group / Prüfgruppe A : 5	connectors 5xHG-Q8.Sti.C – HG-Q8.Bu.C
Test Group / Prüfgruppe B : 5	connectors 5xHG-Q8.Sti.C – HG-Q8.Bu.C
Test Group / Prüfgruppe C : 5	connectors 5x HG-Q8.Sti.C – HG-Q8.Bu.C
Test Group / Prüfgruppe D : 5	connectors 5xHG-Q8.Sti.C – HG-Q8.Bu.C

Test Group / Prüfgruppe A : 5	Housing - Hood HG-Q8.STS – HG-Q8.AG-LB
Test Group / Prüfgruppe B : 5	Housing - Hood HG-Q8.STO – HG-Q8.AG-LB
Test Group / Prüfgruppe C : 5	Housing - Hood HG-Q8.STO – HG-Q8.AG-LB
Test Group / Prüfgruppe D : 5	Housing - Hood HG-Q8.STO – HG-Q8.AG-LB

B Test Sequence

Qualification inspection shall be verified by testing samples as specified in Para. 3.6.

4.2 Requalification Testing

If changes significantly affecting form, fit, or function are made to 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.

4.3 Acceptance

Acceptance is based on verification that the product meets the requirements of Para. 3.5. Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4 Quality Conformance Inspection

The applicable AMP quality inspection plan will 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.



Product Specification

Stand	Kurzbezeichnung	Name	Datum
A1	New document "design objectives"	T.Schn.	02.06.2005