	Automotive Division	Form	EUR C04 I02 F18
Product Specification 56-way bended header		Revision: 00 25.03.2004	Page 1/6

In case that the customer requests delivery of samples, prototypes or preliminary delivery before the final release of the product, FCI Automotive disclaims – as far as legally permissible – any warranty and liability and the customer shall defend, indemnify and hold harmless FCI Automotive from any third party (including customer) claims.


Read and approved on (date)

Customer's signature

Shown to customer and copy handed out on (date)

Employee's signature

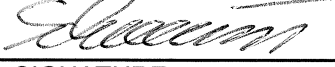

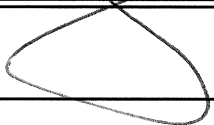
PRODUCT SPECIFICATION NO. 9 901 16 20	REVISION: C 02.02.2009	ECN: 79/09
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	Automotive Division	Form	EUR C04 I02 F18
Product Specification 56-way bended header		Revision: 00 25.03.2004	Page 2/6

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CONTENT

1	Scope	3
1.1	Content.....	3
1.2	Validation	3
2	Applicable documents	3
2.1	Product documents.....	3
2.2	Other documents	3
3	Requirements	3
3.1	Design.....	3
3.2	Materials.....	4
3.3	Technical characteristics	4
3.4	Product validation (PV) tests and performance characteristics	4
3.5	Tests as described in chapter 3.4	5
3.6	Product property related packaging requirements	6
4	Quality provisions	6
4.1	Samples selection	6
4.2	Re-validation testing	6
4.3	Quality inspection	6

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PRODUCT SPECIFICATION NO. 9 901 16 20	REVISION: C 02.02.2009	ECN: 79/09 

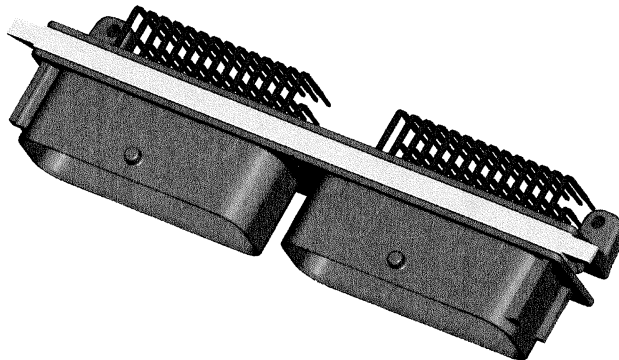
	Automotive Division	Form	EUR C04 I02 F18
Product Specification 56-way bended header		Revision: 00 25.03.2004	Page 3/6

1 Scope

1.1 Content

This specification describes the technical performance qualification tests and quality requirements for

56-way bended header (FCI part number F135200)



1.2 Validation

The validation tests shall be performed using only the specifications and standards mentioned herein. All inspections shall be performed using the applicable validation plan and product drawings.

2 Applicable documents

The following documents are part of this specification. In case of conflict between the requirements of this specification and the product drawing or between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1 Product documents

A. Product drawing: PCC0577534 – 56-way pin header

2.2 Other documents


B. Product specification: RSA 36-05-019 / --E – electrical connections and connectors
C. Interface specification: RSA 7710 00 727 / C01 – plan d’empreinte 56 voies étanche
D. FCI test specification: 9 907 01 60 / A00 – solder ability

3 Requirements

3.1 Design

The product shall comply with the applicable product drawing (refer 2.1).

PRODUCT SPECIFICATION NO. 9 901 16 20	REVISION: C 02.02.2009	ECN: 79/09
--------------------------------------------------------	-----------------------------------------	-----------------------------

	Automotive Division	Form	EUR C04 I02 F18
Product Specification 56-way bended header		Revision: 00 25.03.2004	Page 4/6

3.2 Materials

The material shall be in accordance to the product drawing (refer 2.1).

3.3 Technical characteristics

- A. Nominal voltage 12V DC
- B. Application temperature according RSA 3605019: Class2 (from -40 to 100 °C, test temperature +125°C)
- C. Sealing class according RSA 3605019: waterproof Class 2 (immersion) in mated condition**
- D. Vibration class according RSA 3605019: V1 (given by female connector performance)
- E. Mating cycles: 1

*) ambient temperature plus temperature raise by current

**) no sealing class in unmated condition

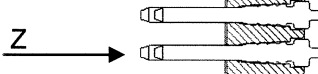
3.4 Product validation (PV) tests and performance characteristics

The product is designed to meet the electrical, mechanical and environmental performance requirements as described in paragraph 3.4.


All tests are performed at room temperature according to IEC 512, unless otherwise specified.

Test Description	Requirement	Procedure for test
1. Visual inspection	To meet the requirements of the product drawing	IEC 512-2, test 1A

ELECTRICAL INSPECTIONS		
2. Voltage test	There shall be no di-electric breakdown or flash-over during the test	RSA 36-05-019/--E: § 6.8 AC voltage: 1000V rms – during one min at a commercial frequency (50Hz).
3. Insulation resistance	>100MΩ	RSA 36-05-019/--E: § 6.7 Test voltage: 500 V DC

MECHANICAL INSPECTIONS		
4. Pin retention force from header housing	Retention force of tabs: > 80 N; Due to the existence of a "worst-case" direction only one direction needs to be tested. Test direction: "Z"	RSA 7710 000 984 /--D Test speed: 35 ± 15 mm/min To be checked in mating direction (worst case): 

PRODUCT SPECIFICATION NO. 9 901 16 20	REVISION: C 02.02.2009	ECN: 79/09
-------------------------------------------------	----------------------------------	----------------------

	Automotive Division	Form	EUR C04 I02 F18
Product Specification 56-way bended header		Revision: 00 25.03.2004	Page 5/6

5. Solderability	Visual control: surface wetted by the solder $\geq 95\%$ No dewetting	Acc. to FCI solderability test specifications 9 907 01 60, test method B: Dip and look test Test conditions: Immersion time: 3-4 s Immersion depth: 3-4 mm
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ENVIRONMENTAL TESTS		
6. Heat / Humidity cycles	Visual inspection: To assure there is no micro crack in plastic or metal part producing damage due to temperature and humidity stress.	RSA 36-05-019/--E: § 6.11; to be done in mated condition with sealed female connector. Test sequence: 10 cycles of 24 hours +23 °C @ 45...75%RH (4h) Transition phase (0.5h) +55 °C @ 95...99%RH (10h) Transition phase (2.5h) -40 °C – no RH control (2h) Transition phase (1.5h) +125 °C – no RH control (2h) Transition phase (1.5h)

3.5 Tests as described in chapter 3.4

Test description	TEST SEQUENCE HEADER		
	A	B	C
	Test sequence		
1. Visual inspection	1,5		1,4
2. Voltage test	2,4		
3. Insulation resistance			2
4. Pin retention force from header housing		1	
5. Solderability			3
6. Heat / Humidity cycles	3		

*) The numbers indicate the sequence in which the tests are performed.

PRODUCT SPECIFICATION NO. 9 901 16 20	REVISION: C 02.02.2009	ECN: 79/09
------------------------------------------	---------------------------	---------------

	Automotive Division	Form	EUR C04 I02 F18
Product Specification 56-way bended header		Revision: 00 25.03.2004	Page 6/6

3.6 Product property related packaging requirements

The packaging must provide a sufficient mechanical protection in order to prevent deterioration of the mechanical and dimensional quality of the product.

STORAGE CONDITIONS:

Storage temperature: -20°C to +60°C

Period of storage: 6 month maximum for headers in unsoldered state.
12 month maximum for the other components.

Atmospheric pressure: -860 to 1060 HPa

Relative humidity: -45% to 75%

4 Quality provisions

4.1 Samples selection

The samples shall be in accordance to the product drawings. They shall be selected at random from current production in the following volume per test groups:

TEST SEQUENCE HEADER:

Test Group A: 4 headers (one per mould cavity)

Test Group B: 4 headers (one per mould cavity)

Test Group C: 8 headers (two per mould cavity)

4.2 Re-validation testing

In case of significant changes on the product or manufacturing process affecting form, fit, function of the product (special characteristics), the quality department shall conduct a re-validation testing of the product according to the above mentioned plan.

4.3 Quality inspection

The quality inspection will be performed in accordance to the applicable FCI Control Plan. The dimensional and functional requirements of the product shall comply with the applicable product drawing and this specification.

PRODUCT SPECIFICATION NO. 9 901 16 20	REVISION: C 02.02.2009	ECN: 79/09
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