PRODUCT SPECIFCATION FOR:

42 POS. MIXED DOOR-TO-BODY CONNECTOR

-- FOR SAAB ONLY --

1. SCOPE

1.1. CONTENT

This specification covers the performance, tests and quality requirements for the 42 pos. mixed connector, for door-to-body application used by SAAB

1.2. QUALIFICATION

When tests are performed on the subject product line, the procedures specified in AMP 109- series specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawings.

2. REFERENCES

2.1. APPLICABLE PRODUCTS

2.1.1. AMP PRODUCTS

The following AMP products are covered by this specification

PN 968393, 42 pos. mixed tabhousing
PN 965662, retainer for 42 pos. rec. housing
PN 965663, retainer for 42 pos. tabhousing
PN 967637, 42 pos. mixed rec. housing
PN 967378, sealing for 42 pos. connector

(relevant dash-numbering is getting obvious by customer drawings)

2.2. APPLICABLE DOCUMENTS

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

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Product Code : 1061 /2004

-	-	-	-	DR A. MACHILL 24 JAN 96	AMP Deutschland GmbH D-63225 Langen		
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-	-	-	-	CHK H. BOUDA 28 AUG 96			
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-	-	-	-	PAGE 1 OF 6	TITLE 42 POS. MIXED DOOR-TO-BODY CONNECTOR		
A	RELEASE EG00-1030-96	D.K.	30AUG96				
LTR	REVISION RECORD	APP	DATE				

2.2.1. AMP DOCUMENTS

a. 109-1: General requirements for test specifications
b. Product drawing 968393
c. Product drawing 965662
d. Product drawing 965663
e. Product drawing 967637
f. Product drawing 967378

2.2.2. OTHER DOCUMENTS

a. GME 12590, 3rd. DRAFT

3. REQUIREMENTS

3.1. DESIGN AND CONSTRUCTION

Product shall be of the design, construction and physical dimensions specified on the applicable product drawings.

3.2. MATERIAL

3.2.1. CONTACTS

MT2 / 1.6mm Tab: CuSn4, pretin plated
JPT / 2.8mm Tab: CuSn4, pretin plated
SPT / 5.8mm Tab: CuFe2, pretin plated

3.2.2. HOUSINGS

Receptacle housings: glasfilled PBT
Slides: glasfilled PBT
Retainers: glasfilled PBT
Facial sealing: silicone-rubber

3.3. PERFORMANCE AND TEST DESCRIPTION

Connectors shall be designed to meet the electrical, mechanical and environmental performance requirements specified in 3.4.

3.4. TEST REQUIREMENTS AND PROCEDURES SUMMARY

TEST DESCRIPTION	REQUIREMENT
DELIVERY-CONDITIONS ACC. TO GM 12590, SECTION 7.1.4.	ACC. TO GM 12590, SECTION 7.1.4. TO CHECK WITHOUT OPTICAL EQUIPMENT
VISUAL EXAMINATION ACC. TO GM 12590, SECTION 7.1.5.	ACC. TO GM 12590, SECTION 7.1.5. TO CHECK WITHOUT OPTICAL EQUIPMENT
MOUNTING FORCE OF CONNECTOR ACC. TO GM 12590, SECTION 7.2.1, 7.2.1.1. FIRST CONNECTION CONNECTOR FULLY MATED WITH CONTACTS WITH TIN PLATED SURFACE, SPEED 100mm/min	F < 140N
RETENTION FORCE OF CONNECTOR ACC. TO GM 12590, SECTION 7.2.1, 7.2.1.1. FIRST DISCONNECTION CONNECTOR FULLY MATED WITH CONTACTS WITH TIN PLATED SURFACE, SPEED 100mm/min	F < 120N
TERMINAL RETENTION IN HOUSING ACC. TO GM 12590, SECTION 7.2.4. CONSTANT SPEED OF 25mm/min ALL LOCKING DEVICES EFFECTIVE	1.6mm TAB / MT2: F > 40N 2.8mm TAB / JPT: F > 60N 5.8mm TAB / SPT: F > 70N
VOLTAGE DROP ACC. TO GM 12590, SECTION 7.3.2.	ACC. TO GM 12590, SECTION 7.3.2. $R_{INITIAL} \leq 10m\Omega$, $\Delta R / R_{AFTER} \leq 5$
INSULATION RESISTANCE ACC. TO GM 12590, SECTION 7.4.1.	R > 1MΩ
CURRENT LOADABILITY ACC. TO GM 12590, SECTION 7.5.1. 1.6mm TAB / MT2: 1.0mm², 5A 2.8mm TAB / JPT: 2.5mm², 12.5A 5.8mm TAB / SPT: 4.0mm², 20A CONNECTOR FULLY LOADED, CURRENT ON ALL CONTACTS	ACC. TO GM 12590, SECTION 7.5.1.
TEMPERATURE TEST ACC. TO GM 12590, SECTION 7.5.2. TEMPERATURE CLASS: E	ACC. TO GM12590, SECTION 7.5.2. SEE REQUIREMENTS FOR VOLTAGE DROP AND RETENTION FORCE
TEMPERATURE CYCLING TEST ACC. TO GM 12590, SECTION 7.5.3. TEMPERATURE CLASS: E	ACC. TO GM12590, SECTION 7.5.3. SEE REQUIREMENTS FOR VOLTAGE DROP AND RETENTION FORCE

TABLE 1

VIBRATION TEST ACC. TO GM 12590, SECTION 7.10, 7.10.2. 3 x 24h RANDOM VIBRATION TEST WITH TEMPERATURE CYCLING. 10Hz - 0.217g 1000Hz - 0.0022g; g_{ges} = 3.26 CONTINUOS MONITORING AND MEASURING OF CONTACT INTERRUPTION MORE THAN 1µs DURING VIBRATION TEMPERATURE CYCLING TEST 3 CYCLES - PERIODICAL FROM -40°C UP TO +85°C; THE DURATION OF THE HIGH RESP. LOW TEMPERATURE IS 3 HOURS; TEMP. GRADIENT 2°C / min CONTACT RESISTANCE MEASUREMENT (20mV METHOD ACC. TO IEC 512, PART 2), INITIAL, AFTER VIBRATION AND BETWEEN EACH DIRECTION CONTINUOS MONITORING AND MEASURING OF CONTACT INTERRUPTION MORE THAN 1µs; ELECTRICAL CONDITION: SUPPLY VOLTAGE: 10V ELECTRICAL LOADING OF CONTACTS: 100mA THRESHOLD VALUE: 2.5V, RESP. 25Ω CONTACT RESISTANCE	ACC. TO GM 12590, SECTION 7.10, 7.10.2. SEE REQUIREMENTS FOR VISUAL EXAMINATION NO CONTACT INTERRUPTION DURING VIBRATION CONTACT RESISTANCE: $\Delta R / R \leq 5$, $R_0 \leq 10m\Omega$ NO SIGNS OF FRETTING CORROSION OR ABRASION CAUSING MISFUNCTION ON SURFACE OF TERMINALS VISIBLE
HUMIDITY TEST ACC. TO GM 12590, SECTION 7.7. CURRENT: 5 A / mm^2	ACC. TO GM 12590, SECTION 7.7. SEE REQUIREMENTS FOR VOLTAGE DROP
CORROSION TEST ACC. TO GM 12590, SECTION 7.8. CURRENT: 5 A / mm^2 1 WEEK CYCLE	ACC. TO GM 12590, SECTION 7.8. SEE REQUIREMENTS FOR VOLTAGE DROP
WATER TIGHTNESS ACC. TO GM 12590, SECTION 7.9, 7.9.2., SEALED CONNECTOR, TESTING TO BE REPEATED AFTER AGEING	ACC. TO GM 12590, SECTION 7.9., 7.9.2.
DIELECTRIC WITHSTAND VOLTAGE ACC. TO GM 12590, SECTION 7.4.2. A.C. VOLTAGE OF 500V	ACC. TO GM 12590, SE CTION 7.4.2.

TABLE 1

3.5. TEST SEQUENCE

TEST		TESTSAMPLE-GROUP							FUNCT. REQUIREMENT OF GM 12590
TITLE	SECT.	A	B	C	D	E	F	G	
DELIVERY CONDITIONS	7.1.4.	1	1	1	1	1	1	1	7.1.4.
VISUAL EXAMINATION	7.1.5.	2	2	2	2,	2	2	2,4	7.1.5.
MOUNTING FORCE	7.2.1.	3							(SEE TABLE 1)
RETENTION FORCE	7.2.1.	4							(SEE TABLE 1)
TERMINAL RETENTION	7.2.4.	5		7					(SEE TABLE 1)
VOLTAGE DROP	7.3.2.		3	6	4	4		5	7.3.2.
INSULATION RESISTANCE	7.4.1.		4						(SEE TABLE 1)
CURRENT LOADABILITY	7.5.1.			3					7.5.1.
DIELECTRIC WITHSTAND VOLTAGE	7.4.2.		5						7.4.2.
TEMPERATURE TEST	7.5.2.			4					7.5.2.
TEMPERATURE CYCLING TEST	7.5.3.			5					7.5.3.
HUMIDITY TEST	7.7.				3				7.7.
CORROSION TEST	7.8.					3			7.8.
VIBRATION TEST	7.10							3	7.10
WATERTIGHTNESS	7.9.2.						3		7.9.2

TABLE 2

4. QUALITY ASSURANCE PROVISIONS

4.1. QUALIFICATION TESTING

A. SAMPLE SELECTION

Contacts shall be prepared in accordance with applicable Instruction Sheets. They shall be selected at random from current production using series tools. All tests group shall contain of two samples of each part number at least.

B. TEST SEQUENCE

Qualification inspection shall be verified by testing samples, as specified in 3.5.

4.2. REQUALIFICATION TESTING

If changes significantly affecting form, fit or function are made to the product or to the manufacturing process, AMP shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by product development.

4.3. ACCEPTANCE

Acceptance is based on verification that that the product meets the requirements of Para. 3.4.
Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective actions 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 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.