42-pos.-coupling

for Junior-Power-Timer Contact/Micro-Timer Contact and Stitch Tab

Design Objectives

- For SAAB only-

SAAB SERIES JPT CONNECTORS

The product described in this document has not been fully tested to insure conformance to the requirements outlined below. Therfore AMP Incorporated takes no representations or warranty, expressed or implied, that the product will comply with these requirements. Further AMP Incorporated may change these requirements based on the results of additional testing and evaluation. Contact AMP Engineering for further details.

1. SCOPE

1.1. CONTENT

This specification covers the performance, tests and quality requirements for the 42-position-coupling (including 36 Junior-Power-Timer Contact / Stitch Tabs 2,8 mm and 6 Micro-Timer Contact / Stitch Tab 1,6 mm) 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 963226 42 pos. Receptacle Housing
PN 963224 42 pos. Tab Header
PN 963225 Facial Seal for 42 pos. coupling
PN 962371 Cover for 42/29 pos. Receptacle Housing

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Product Code : ------

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NO 108-18104-1 | REV B | LOC

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TITLE 42 POS. COUPLING FOR JUNIOR-POWER-TIMER/MICRO-TIMER AND STITCH-TAB

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, 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.

2.2.1. AMP DOCUMENTS

a. 109-1: General requirements for test specifications
b. Product drawing 963226
c. Product drawing 962224
d. Product drawing 963225
e. Product drawing 962371

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

Junior-Power-Timer Contact:	pre tin plated CuSn or CuFe
Micro-Timer II Contact:	pre tin plated CuSn or CuFe
Stitch Tab:	pre tin plated CuSn

3.2.2. HOUSINGS

Receptacle Housing:	glasfilled PBT
Tab Header:	glasfilled PBT
Slide:	glasfilled PBT
Facial Seal:	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
MATERIAL TEST ACC. TO GM12590, SECTION 7.1.1.	ACC. TO GM 12590, SECTION 7.1.1. / 7.1.2.1. / 7.1.2.2. CADMIUMFREE, ASBESTOSFREE
MARKING ACC. TO GM12590, SECTION 7.1.3.	ACC. TO GM 12590, SECTION 7.1.3.
MOUNTING FORCE OF CONNECTOR ACC. TO GM 12590, SECTION 7.2.1, 7.2.1.1. FIRST AND ELEVENTH CONNECTION CONNECTOR FULLY MATED WITH CONTACTS WITH TIN PLATED SURFACE CONSTANT SPEED OF 100mm/min	F ≤ 150N
RETENTION FORCE OF CONNECTOR ACC. TO GM 12590, SECTION 7.2.1, 7.2.1.1. FIRST AND ELEVENTH DISCONNECTION CONNECTOR FULLY MATED WITH CONTACTS WITH TIN PLATED SURFACE CONSTANT SPEED OF 100mm/min	F ≤ 150N
TERMINAL RETENTION IN HOUSING ACC. TO GM 12590, SECTION 7.2.4. CONSTANT SPEED OF 100mm/min ALL LOCKING DEVICES EFFECTIVE	Junior-Power-Timer Contact/Tab 2,8 * 0,8: F > 60N Micro-Timer II Contact/Tab 1,6 *0,6: F > 40N
TENSILE STRENGTH ACC. TO GM 12590, SECTION 7.2.2. CONSTANT SPEED OF 100mm/min	ACC. TO GM 12590, SECTION 7.2.2. 0.5mm^2: F ≥ 90N 1.0mm^2: F ≥ 180N
CHECKING OF POLARIZATON AND WRONG MATING-POSSIBILITIES OF CONNECTORS TRYING TO FIT CONNECTOR HALFS TOGETHER 90°, 180° AND 270° TURNED CONSTANT SPEED OF 100mm/min F = 150N	NO MATING OF PARTS
VOLTAGE DROP ACC. TO GM 12590, SECTION 7.3.2.	ACC. TO GM 12590, SECTION 7.3.2. ΔR / R ≤ 5, Rü ≤ 10mΩ
INSULATION RESISTANCE ACC. TO GM 12590, SECTION 7.4.1.	R > 200MΩ

Table 1

TEST DESCRIPTION	REQUIREMENT
CURRENT LOADABILITY ACC. TO GM 12590, SECTION 7.5.1. 2.5mm², 24A	ACC. TO GM 12590, SECTION 7.5.1.
DIELECTRIC WITHSTAND VOLTAGE ACC. TO GM 12590, SECTION 7.4.2. A.C. VOLTAGE OF 1kV	ACC. TO GM 12590, SECTION 7.4.2.
TEMPERATURE TEST ACC. TO GM 12590, SECTION 7.5.2. TEMPERATURE CLASS: C	ACC. TO GM12590, SECTION 7.5.2. SEE REQUIREMENTS FOR VOLTAGE DROP AND TERMINAL RETENTION IN HOUSING
TEMPERATURE CYCLING TEST ACC. TO GM 12590, SECTION 7.5.3. TEMPERATURE CLASS: C	ACC. TO GM12590, SECTION 7.5.3. SEE REQUIREMENTS FOR VOLTAGE DROP AND TERMINAL RETENTION IN HOUSING
HUMIDITY TEST ACC. TO GM 12590, SECTION 7.7	ACC TO GM 12590, SECTION 7.7. SEE REQUIREMENTS FOR VOLTAGE DROP
CORROSION TEST ACC. TO GM 12590, SECTION 7.8. 2 WEEK CYCLE	ACC TO GM 12590, SECTION 7.8. SEE REQUIREMENTS FOR VOLTAGE DROP
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_{ms} = 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 AND VOLTAGE DROP ACC. TO GM 12590, SECTION 7.10, 7.10.2. SEE REQUIREMENTS FOR VISUAL EXAMINATION NO CONTACT INTERRUPTION DURING VIBRATION CONTACT RESISTANCE: $\Delta R / R \leq 5$, Rü $\leq 10m\Omega$ NO SIGNS OF FRETTING CORROSION OR ABRASION CAUSING MISFUNCTION ON SURFACE OF TERMINALS VISIBLE
WATER TIGHTNESS ACC. TO GM 12590, SECTION 7.9., 7.9.1 SEALED CONNECTOR TESTING TO BE REPEATED AFTER AGEING	ACC. TO GM 12590, SECTION 7.9., 7.9.1 NO COLOURCHANGE AT H_2O-INDICATION-PASTE

Table 1

3.5. TEST SEQUENCE

TEST									FUNCT. REQUIREMENT SECTION 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.
MATERIAL TEST	7.1.1.	3							7.1.1.
MARKING	7.1.3.	4							7.1.3.
POLARIZATION CHECK	(SEE TABLE 1)	5							(SEE TABLE 1)
MOUNTING FORCE	7.2.1.	6							(SEE TABLE 1)
RETENTION FORCE	7.2.1.	7							(SEE TABLE 1)
TENSILE STRENGTH	7.2.2.	8							(SEE TABLE 1)
TERMINAL RETENTION	7.2.4.	9		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		7.9.1.

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 6 samples of each part number at least, testgroups D and E shall contain 3 samples, testgroup F shall contain 6 samples at least.

B. TEST SEQUENCE

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

C. ACCEPTANCE

All samples tested in accordance with this specifiaction shall meet the stated tolerance limit.

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.

4.2. 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.