MOLEX | **PRODUCT SPECIFICATION** | MOLEX KOREA

TITLE: .187 S/L CONNECTOR

35161-0100
35718-1610
35718-1710
35718-1810

REV	REVISION RECORD	BY	DATE
D	REVISED	J.S.KANG	95/11/20

PRODUCT SPECIFICATION : .187 SAFE LOCK CONNECTOR		SHEET NO. 1 OF 6	REV. D
WRITTEN BY: J.S.KANG	CHECKED BY: D.K.Cha 21.Nov.95	APPROVED BY:	DATE: 1995.11.20

[1] SCOPE

THIS PRODUCT SPECIFICATION COVERS THE GENERAL REQUIREMENTS FOR THE .187 SAFE LOCK CONNECTOR

[2] PRODUCT DESCRIPTION

[2.1] PRODUCT NAME AND PART NUMBER

PRODUCT NAME	PART NO.	REMARK
.187 SAFE LOCK HSG-1P	35161-0100	POLYESTER
.187 SAFE LOCK REC'(S)	35718-1610	* BRASS * 0.5t TAB FIT
.187 SAFE LOCK REC'(M)	35718-1710	
.187 SAFE LOCK REC'(L)	35718-1810	

[2.2] MATERIALS, PLATINGS & DIMENSIONS
SEE THE APPROPRIATE DRAWINGS FOR INFORMATION ON MATERIALS, PLATINGS AND DIMENSIONS.

[3] RATINGS

[3.1] VOLTAGE RATING : 300VOLTS AC/DC
[3.2] CURRENT RATING : 10A MAX.
[3.3] APPLICABLE WIRES

PART NUMBER	WIRE RANGE	INSULATION DIA.
35718-1610	AWG #24 - #22	2.5 mm MAX.
35718-1710	AWG #20 - #16	3.6 mm MAX.
35718-1810	AWG #20 + #20 AWG #20 + #18 AWG #18 + #18	-----

[4] PERFORMANCE

[4.1] MECHANICAL REQUIREMENT
THE TESTS IN THIS ITEM MUST BE PERFORMED UNDER THE FOLLOWING CONDITIONS.

- TEMPERATURE : 22°C ±3°C
- RELATIVE HUMIDITY : FROM 45% TO 75%
- SPEED OF THE TEST APPARATURE : 25 mm/min.

[4.1.1] INSERTION/WITHDRAWAL FORCES

THE CONNECTION MUST BE MECHANICALLY RELIABLE EVEN AFTER SOME MATING-UNMATING CYCLES BETWEEN THE MALE AND FEMALE TERMINALS. THIS REQUIREMENT IS CHECKED WITH THE FOLLOWING TEST. AXIALLY MATE AND UNMATE 10 TIMES A MALE TAB WITH THE FEMALE TERMINAL HOUSED IN ITS RELEVANT HOUSING, THEN MEASURING THE FORCES AT THE 1st INSERTION AND THE 1st AND 10th WITHDRAWAL.(ACTING ON THE HOUSING) THE MEASURED VALUES MUST COMPLY WITH THOSE ONES IN TABLE 1.

MALE TAB WIDTH	1st INSERTION FORCE	1st WITHDRAWAL FORCE	10th WITHDRAWAL FORCE
4.75 mm	4.0 Kg.f MAX.	0.6 - 3.0 Kg.f	0.5 Kg.f MIN.

(TABLE 1)

[4.1.2] INSERTION FORCE AND RETENTION FORCE OF THE TERMINAL INTO THE HOUSING.

- INSERTION FORCE : 3.0 Kg.f MAX.
- RETENTION FORCE : 4.5 Kg.f MIN.(WHEN PULLED AXIALLY BY THE CABLE)

[4.1.3] TENSILE STRENGTH OF THE CONNECTION WITH THE LOCKING DEVICE ON. PARTS SHALL BE SUBJECTED TO 5 INSERTION-WITHDRAWAL(ACTING ON THE HOUSING) CYCLES. AFTER THE 6th INSERTION APPLY THE FORCE BY PULLING AXIALLY THE CABLE : THE RETENTION FORCE MUST BE $>$ 5.0 Kg.f

[4.1.4] TENSILE REQUIREMENTS OF CRIMP

THE TENSILE STRENGTH OF A CRIMPED WIRE SHALL BE GREATER THAN THE MINIMUM TENSILE STRENGTH SHOWN IN TABLE 2. THE INSULATING SHEATH MUST BE MADE UNSERVICEABLE IN ORDER TO AVOID CONTRIBUTING TO THE STRENGTH.

TABLE 2.

WIRE SIZE	TENSILE STRENGTH OF CRIMP
AWG #24	2.5 Kg.f MIN.
AWG #22	4.0 Kg.f MIN.
AWG #20	6.0 Kg.f MIN.
AWG #18	10.0 Kg.f MIN.
AWG #16	15.0 Kg.f MIN.

[4.2] PHYSICAL-CHEMICAL REQUIREMENTS

[4.2.1] HEATING
THE TEST CAN BE CARRIED OUT AT A ROOM TEMPERATURE OF 22℃ TO 30℃
THE TEMPERATURES INDICATED IN TABLE 3. SHALL NOT BE EXCEEDED.

TABLE 3. TEMPERATURE INCREASE

WIRE SIZE	TEST CURRENT	TEMPERATURE INCREASE
AWG #24	2A	20℃ MAX.
AWG #22	3A	20℃ MAX.
AWG #20	5A	20℃ MAX.
AWG #18	7A	30℃ MAX.
AWG #16	10A	30℃ MAX.

THE TEST IS PERFORMED BY MAKING AN ALTERNATE CURRENT(THE INTENSITY OF WHICH IS SHOWN IN TABLE 3. TO FLOW THROUGH A MALE-FEMALE CONNECTION CRIMPED TO THE RELEVANT WIRES.
THE TEMPERATURE INCREASE IN THE CONNECTION IS THEN RECORDED IN DIFFERENT POINTS(CRIMPING AND CONTACT AREAS) BY MEANS OF A THIN WIRE THERMOCOUPLE OR THERMAL BLISTER.(WITH ±1℃ PRECISION)

[4.2.2] RESISTANCE TO CORROSION
PUT THE TERMINAL INTO THE THERMOSTATIC CHAMBER AT 35℃ AND SPRAY 5% SOLUTION OF NaCl FOR 24HOURS. AFTER THE TEST, NO SIGN OF OXIDATION MUST APPEAR ON THE SAMPLES, EXCEPT FOR SPOTS ON THE EDGES THAT CAN BE EASILY REMOVED BY RUBBING WITH A DRY CLOTH.

[4.3] ELECTRICAL REQUIREMENTS

[4.3.1] VOLTAGE DROP ON THE BARREL
THE TEST IS PERFORMED BY MAKING A DIRECT CURRENT. WHOSE INTENSITY IS SPECIFIED IN TABLE 4. TO FOLLOW ACROSS THE CRIMPED SECTION. THE VOLTAGE DROP IS MEASURED AFTER 30SEC. FROM THE PASSAGE OF THE CURRENT AND IT MUST BE SURVEYED WITH THE VOLTMETER POINTS PLACED AS SHOWN IN THE FOLLOWING DIAGRAM. THE MAXIMUM ACCEPTABLE VALUES ARE SHOWN IN TABLE 4.

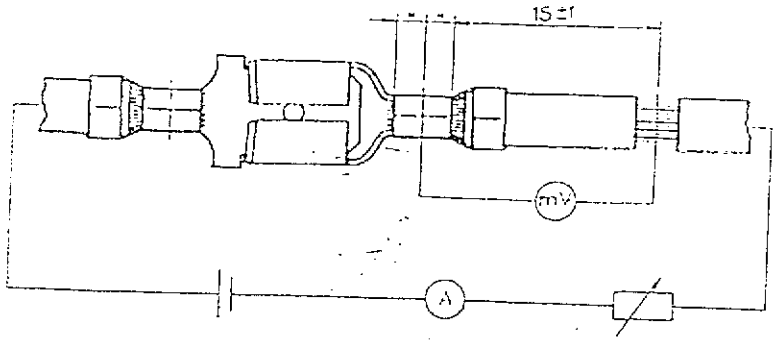
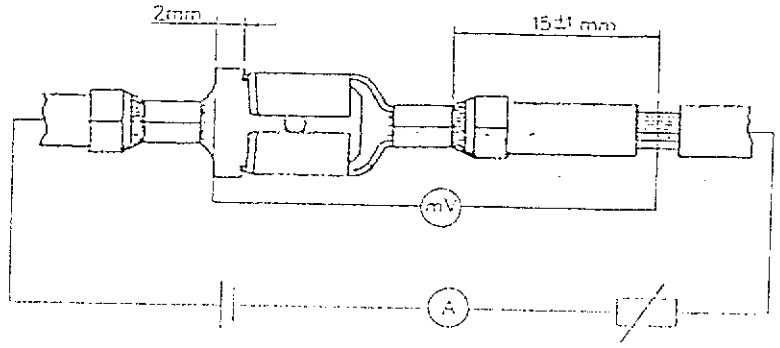


TABLE 4. VOLTAGE DROP IN THE BARREL AND CONNECTION

WIRE SIZE	CURRENT INTENSITY	VOLTAGE DROP IN THE BARREL	VOLTAGE DROP IN THE CONNECTION
AWG #24	2A	2 mV MAX.	4 mV MAX.
AWG #22	3A	3 mV MAX.	6 mV MAX.
AWG #20	5A	4 mV MAX.	8 mV MAX.
AWG #18	7A	5 mV MAX.	10 mV MAX.
AWG #16	10A	7 mV MAX.	14 mV MAX.

[4.3.2] VOLTAGE DROP IN THE CONNECTION
THE TEST IS PERFORMED IN THE SAME WAY AS THE ONE ABOVE.
THE VOLTMETER POINTS ARE PLACED AS SHOWN IN THE FOLLOWING DIAGRAM.
THE MAXIMUM ACCEPTABLE VALUES ARE INDICATED IN TABLE 4.



[4.3.3] VLTAGE DROP IN THE CONNECTION AFTER THE SALT SPRAY TEST
THE CONNECTED TERMINALS ARE KEPT IN THE SALT SPRAY CHAMBER FOR 96 HOURS. ONCE REMOVED FROM THE CHAMBER THE TERMINAL MUST BE CREANED IN DISTILLED WATER AND LEFT TO REST FOR 24 HOURS AT ROOM TEMPERATURE. THE VOLTAGE DROP MEASUREMENT IS PERFORMED AS DESCRIBED IN ITEM [4.3.2].
THE RECORDED VALUES MUST NOT RESULT OVER 50% OF THE INITIAL VALUES.