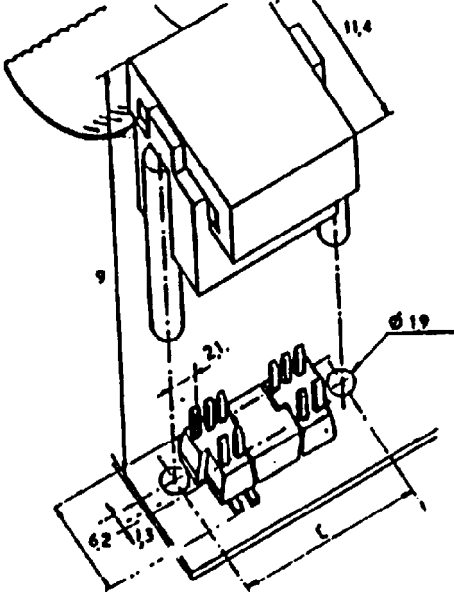


LF CONNECTORS Specification available from: CETRA 26, rue de la Résistance Z.I. La Croix Blanche Guest F- 91700 Sainte-Geneviève-des-Bois	CECC 75 101 . 007 Issue 1
Electronic components of assessed quality - Detail specification in accordance with CECC 75 100 (Issue 1)	Page 2 of 34 pages
	Scope Two parts connectors for printed board for basic grid of mm (0) Modular Fixed Connector for Surface Mounting Technology Insulation Displacement Free Connector for 0.635 mm cable (0.025 IN) Performance levels (PL) : 1 and 2 (*) Assessment level : A Combinations of performance and assessment level : 1A, 2A.

Climatic categories : PL1 40/100/21
 : PL2 55/125/56

Electrical characteristics : see 6
 Ordering information : see 9

(*) see 7 and 8

Information about manufacturers who have components qualified to this detail specification is available in the current CECC 00 200 : (Qualified Products List

CONNECTORS

FOR SURFACE MOUNTING TECHNOLOGY

Connectors for 2 part printed circuit cards with 127 mm (0.05 in) basic grid pitch between adjacent contacts. Modular sockets for surface-mounted components. Insulation displacement connector for 0.635 (0.025 in) cable. The sockets can be mounted by any CMS component mounting machine. Soldering will be performed using reflow method (vapour phase or infra-red). Use standard tools to fit ribbon cable to connector (see pages 12 and 13).

1. FIELD OF APPLICATION

This standard is applicable to a number of plug-in connectors for cable cards.

The socket mounted on the card is equipped with outputs suitable for printed wiring cards in accordance with IEC Publication 326 which use a 1.27 mm (0.05 in) grid as defined in IEC Publication 97.

The sockets have surface-mount style solder contacts.

The connectors have insulation displacement contacts (IDC) for cables with a 0.635 mm pitch.

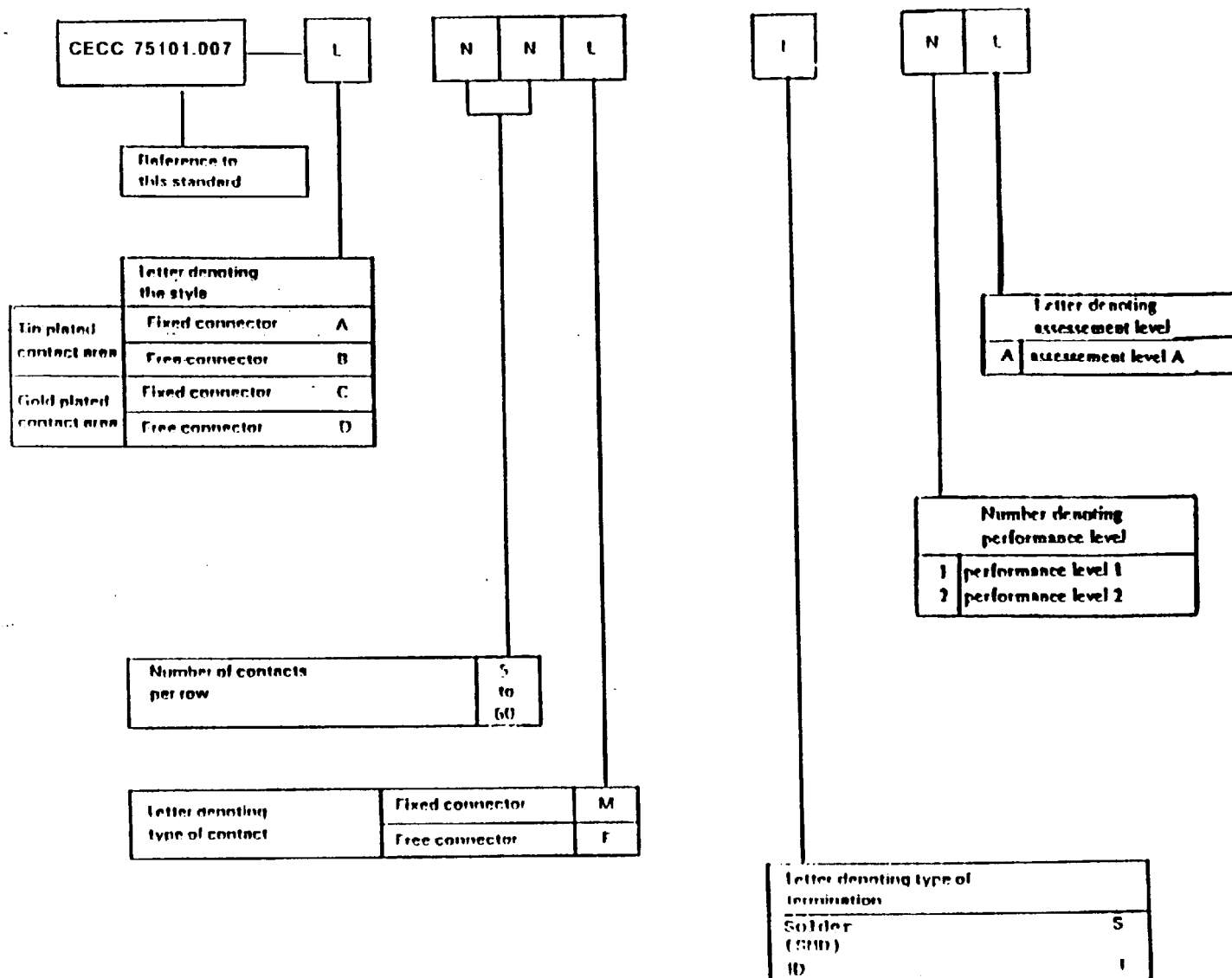
This standard must be used in conjunction with the following IEC Publications:

Publications numbers:

- 50 (581) : International Electrotechnical Vocabulary (IEV), Chapter 581 : Electromechanical Components for Electronic Equipment.
- 97 : Grid System for Printed Circuits.
- 194 : Terms and Definitions for Printed Circuits.
- 326 : Printed Boards.
- 512 : Electromechanical Components for Electronic Equipment : Basic Testing Procedures and Measuring Methods.
- 603-1 : Connectors for frequencies below 3 MHz for Use with Printed Boards, Part 1: General Requirements.
- 603.8 : Insulation displacement connection
- CECC : CECC standard method for the specification of surface mounting components (SMDS).

2. TYPE DESIGNATION

2.1 Connectors, performance level and assessment level, according to this standard, shall be designated by the following system :



Example : Free connector board-to-wire style 10, golden-plated contact area, with 15 female contacts performance level 2 and assessment level A.

CECC 75 101.007 D 15 F 1 2 A

MARKING

COMPLETE REFERENCE VISIBLE ON OR PACKAGING

MARKING ON CONNECTOR									
MANDATORY					OPTIONAL				
CECC 75101-007	D	2	0	F	1	2	D		

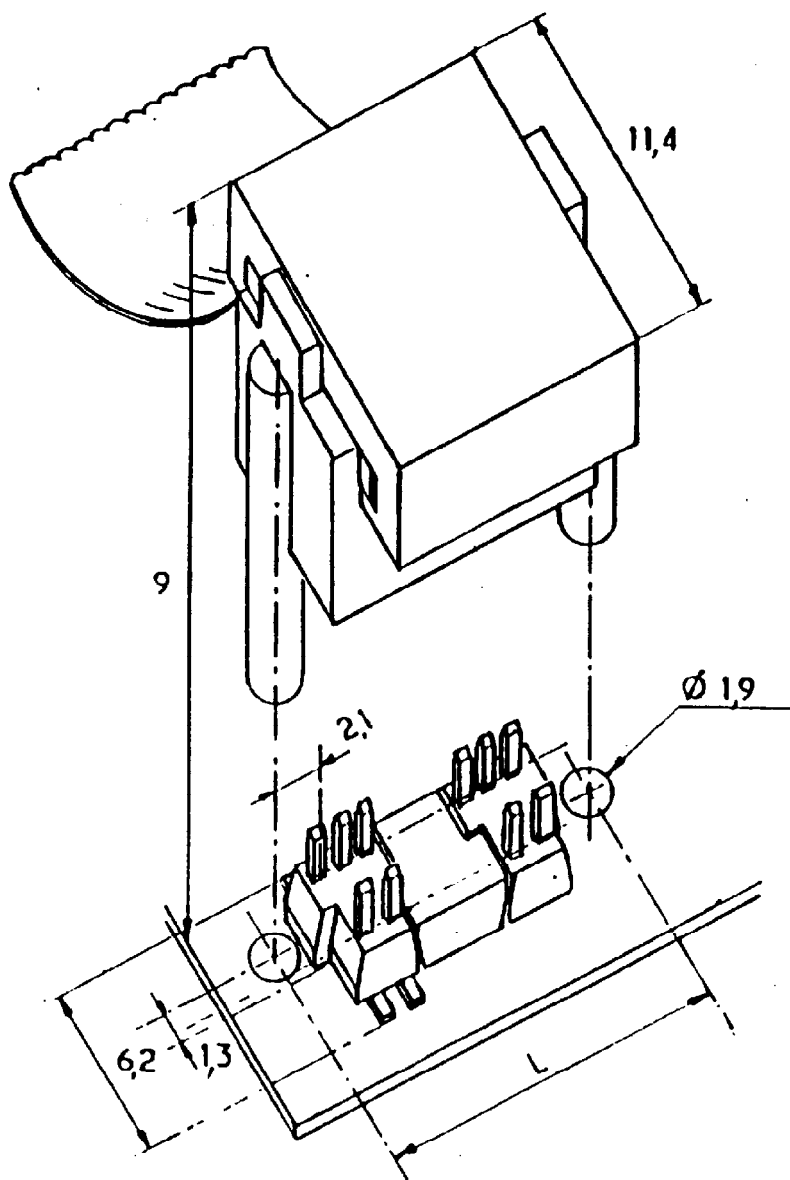
Date

1 0 9 1

CECC.75.101.007

3- Common Features

3-1 Isometric views and values



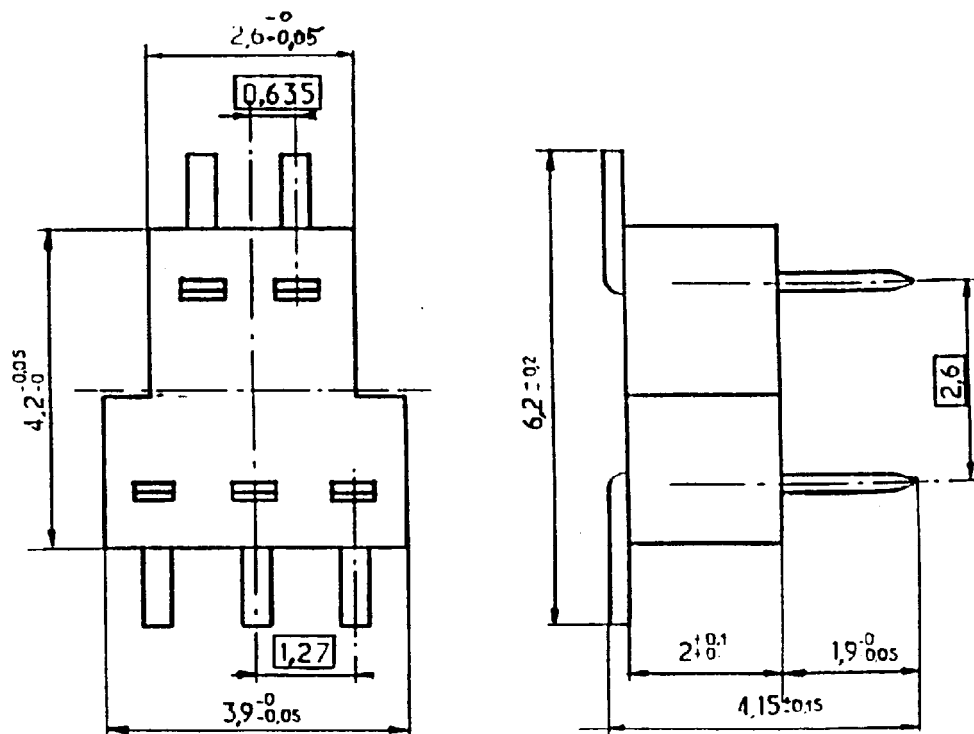
3-2 DIMENSIONS

3-2-1 Reference system

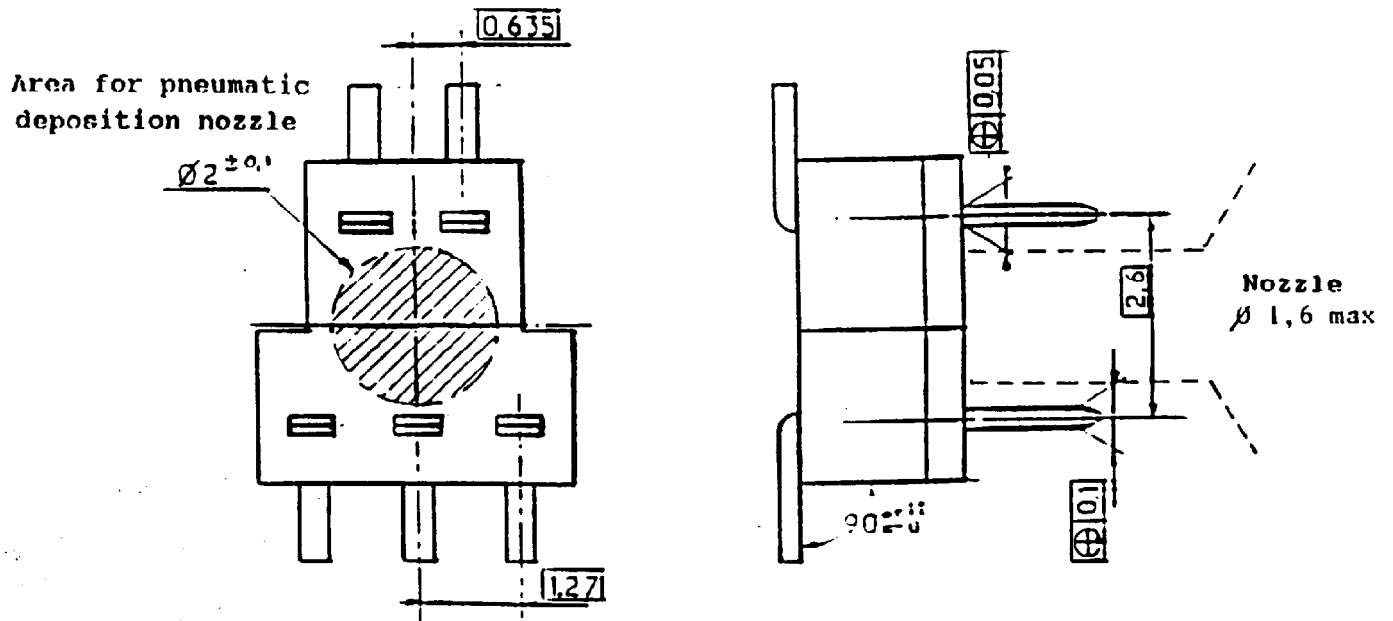
The basic grid of (in) is used as datum system.
The dimensions are defined in sub-clauses 3.1.2 and 3.1.3.

3-2-2 Fixed connector

The distance between consecutive outputs must be a multiple of 1.27 mm (0.05 in).

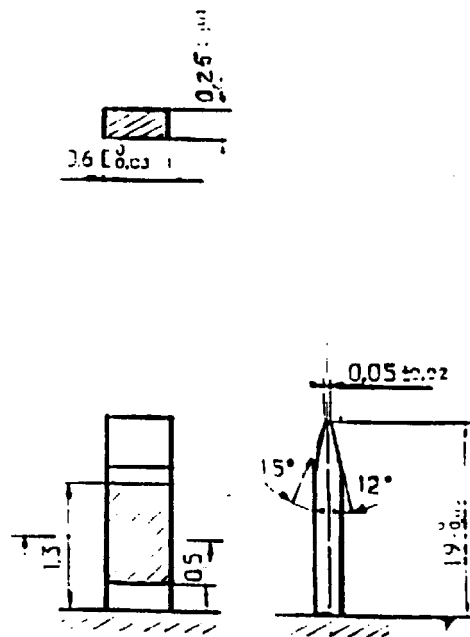


DETAIL OF THE BODY



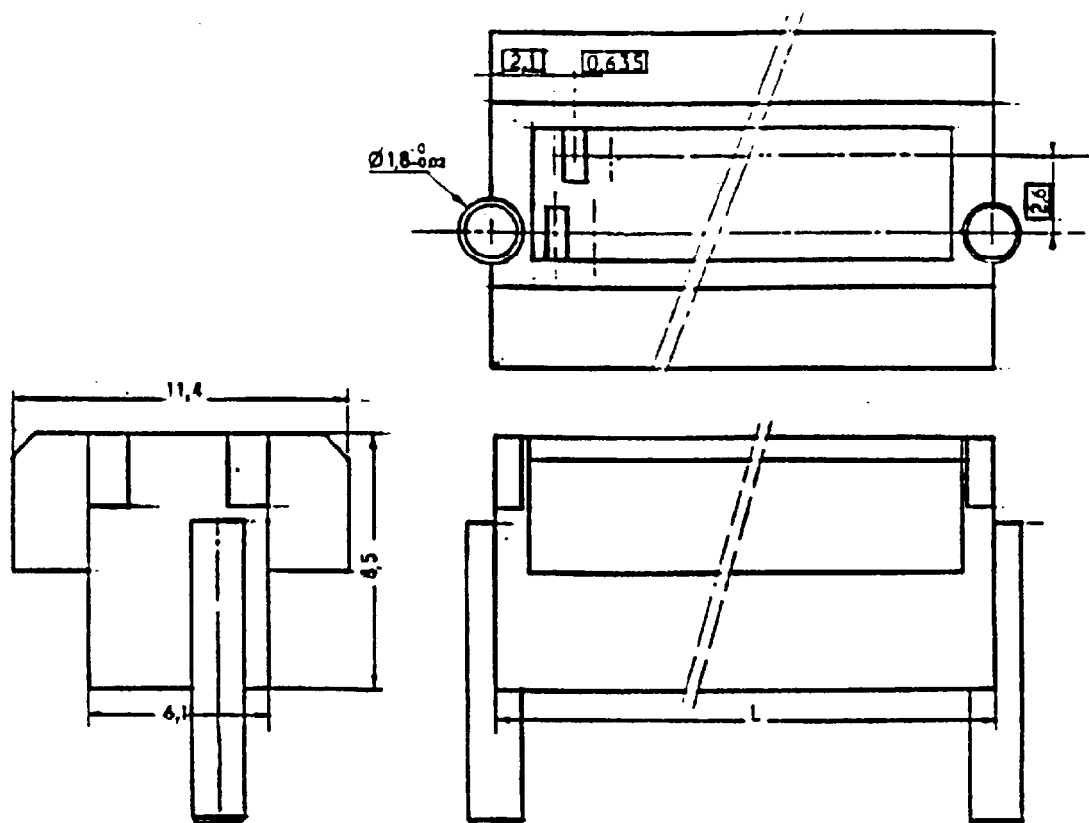
Detail of the male contact

Definition of the fixed connector contact mating zone



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3-2-3 FREE CONNECTOR



Number of B contacts of the free connector

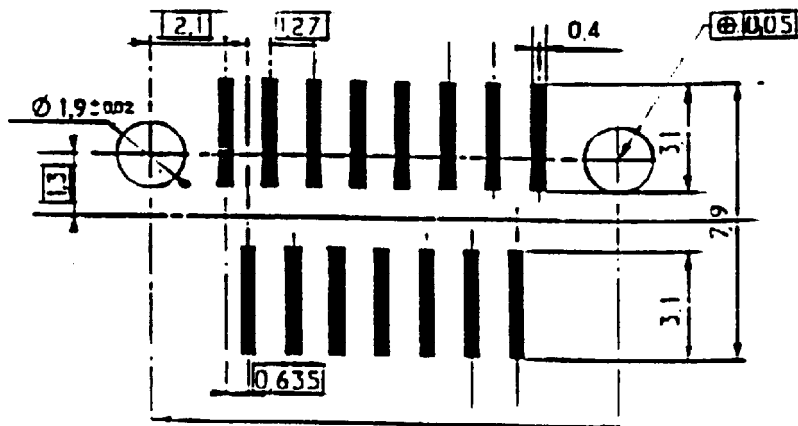
B	5	10	15	20	25	30	35	40	45	50	55	60
L	6.75	9.90	13.10	16.25	19.45	22.60	25.80	28.95	32.15	35.30	38.50	41.70

*See ribbon cable on page 14.

3-3

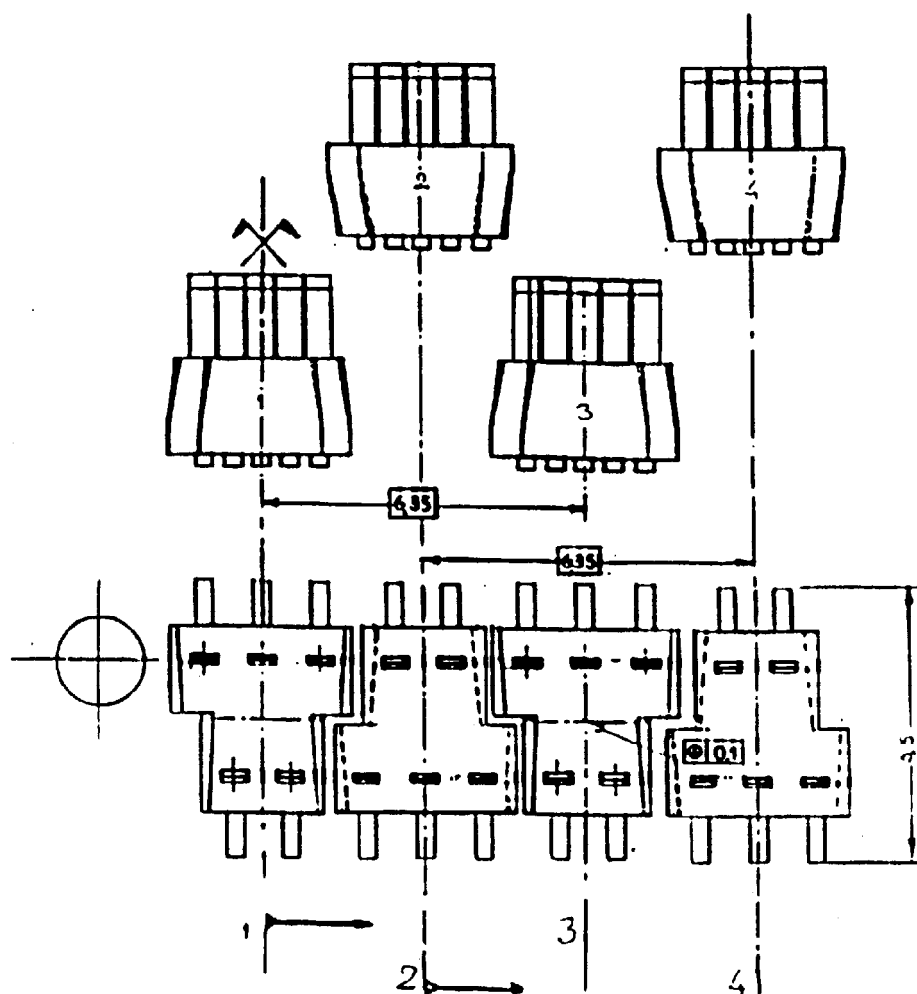
IMPLANTATION ON THE PRINTED CARD

The outputs to be soldered must be compatible with the tracks of the printed card.



Number of B contacts of the connectors (cf. table page 8)

3-4 AUTOMATIC MACHINE MOUNTING OF THE FIXED CONNECTOR



The subbases are mounted in the following sequence:

first, the uneven ranking subbase 1, 3, 5 etc....
secondly, the even ranking subbase 2, 4 etc....

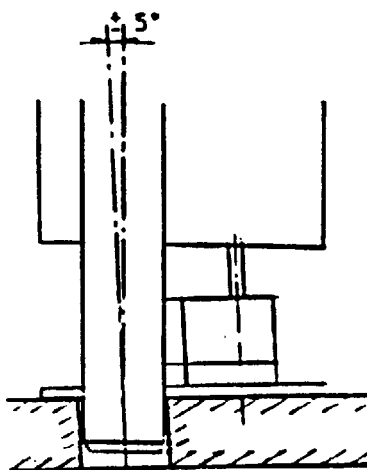
3-5 MATING INFORMATION

Perpendicular to plug-in direction

The design of free and fixed connectors is such that a displacement of at least 0,2 mm (0.0078 in) can be accommodated, provided that the free connector or the fixed connector is float mounted.

Inclination

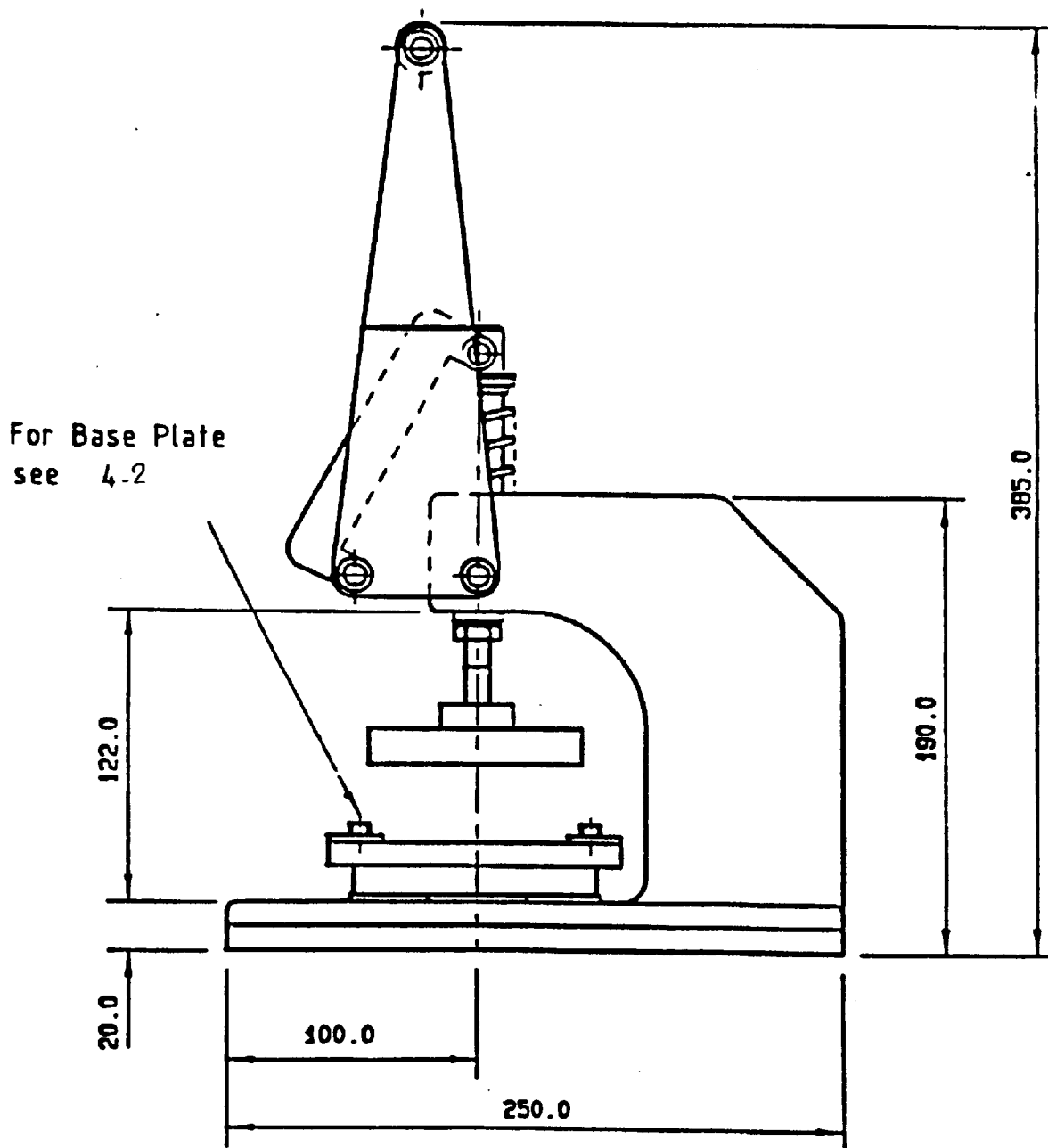
The design of free and fixed connectors is such as to allow for an initial misalignment of $\pm 5^\circ$ in longitudinal axis and $\pm 5^\circ$ in transverse axis.



4 ASSEMBLING TOOLS

4-1 Termination tool - hand press

Note - Tooling shall be used as prescribed in the manufacturer's instruction.



4-2 **Base plate - for use with termination tool shown in 4.1**

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- 13 -

4.3 Flat ribbon cable incremented 0,635 mm, 30 and 32 gauges,
solid and divided

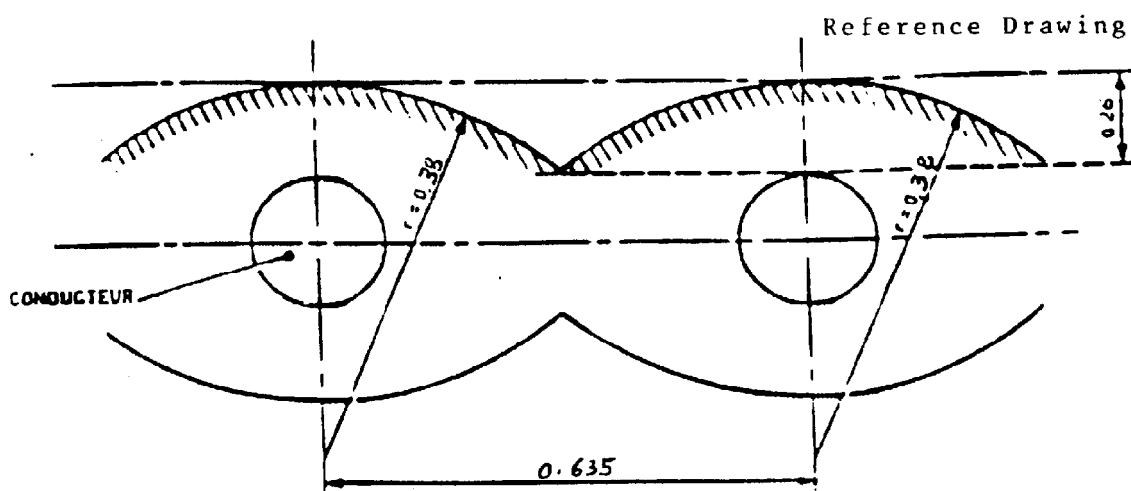


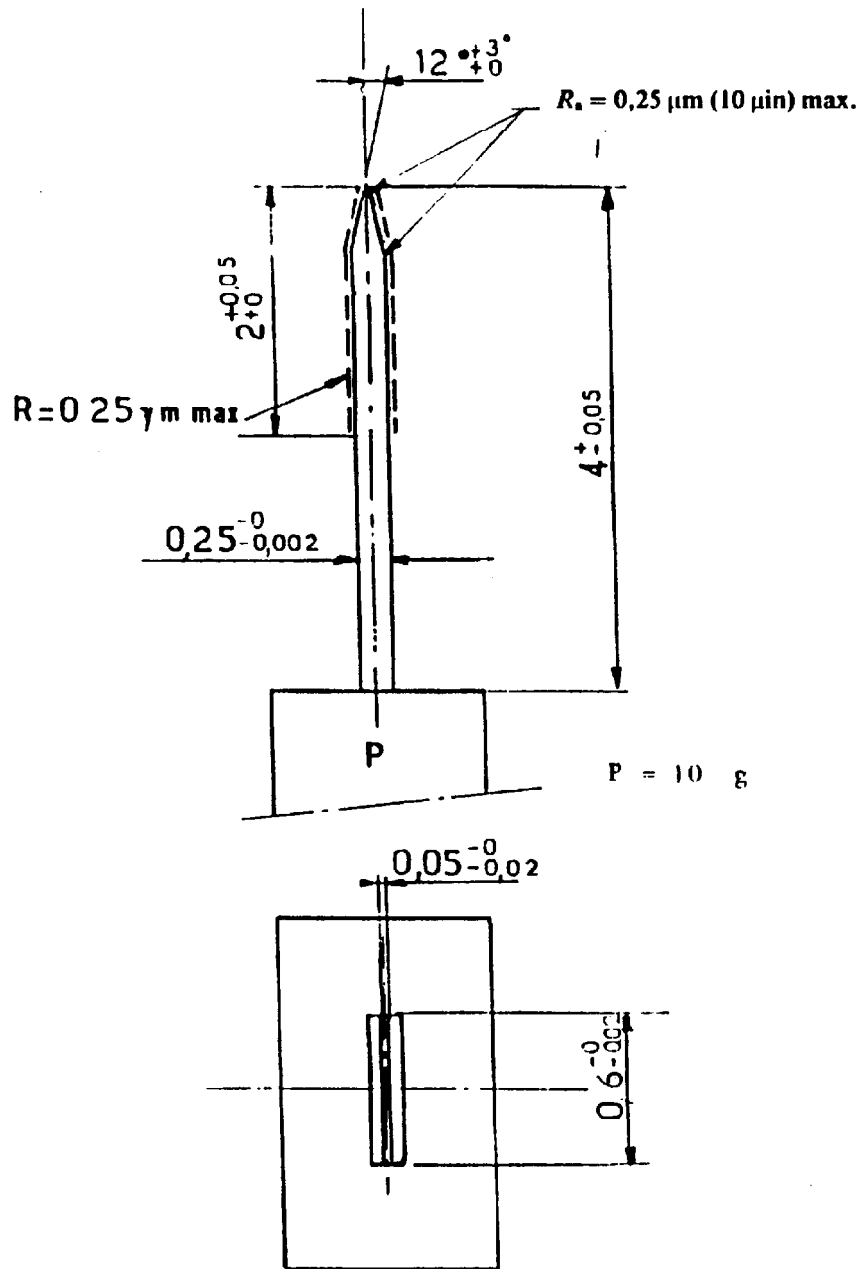
Figure = maximum profile

5 GAUGES AND TEST BOARDS

5.1 Sizing gauge and retention force gauge

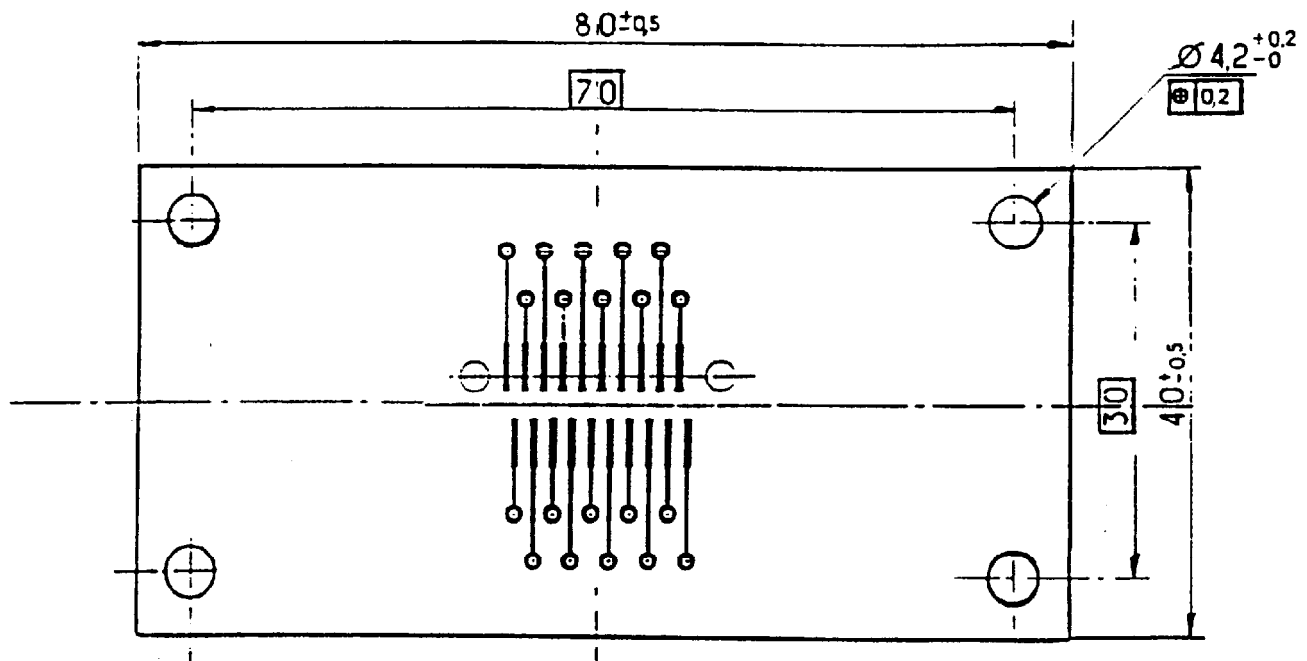
Material: tool steel, hardened.
 = surface roughness according to ISO 468

Mass of gauge used to measure retention force : $P = 10 \text{ g}$



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5-2 TEST CARD for socket



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6 ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS

6.1 Climatic categories

- Climatic categories

Performance Level	Style	Climatic category	Temperature range	Damp heat, steady state
1	A, B	40/100/21	- 40 °C to + 100 °C	21 days
2	C, D	55/125/56	- 55 °C to + 125 °C	56 days

6.2 Electrical

6.2.1 Clearance and creepage distances

The permissible operating voltages depend on the application and on applicable or specified safety requirements.

Therefore the clearance and creepage distances are given as operating characteristics.

In practice, reductions in creepage or clearance distances may occur due to the conductive pattern of the printed board or the wiring used and shall be duly taken into account.

- Clearance and creepage distances

Minimum distance between adjacent contacts	
Creepage	Clearance
0,6 mm	0,6 mm
0.025 in	0.025 in

6.2.2 Proof voltage

Conditions: IEC 512-2, Test 4a, Method A;
standard atmospheric conditions;
mated connectors.

Test voltage (contact/contact): Style A, B: 500 V (r.m.s.);
Style C, D: 500 V (r.m.s.).

6.2.3 Current-carrying capacity

Conditions: IEC 512-3, Test 5 b; all contacts.

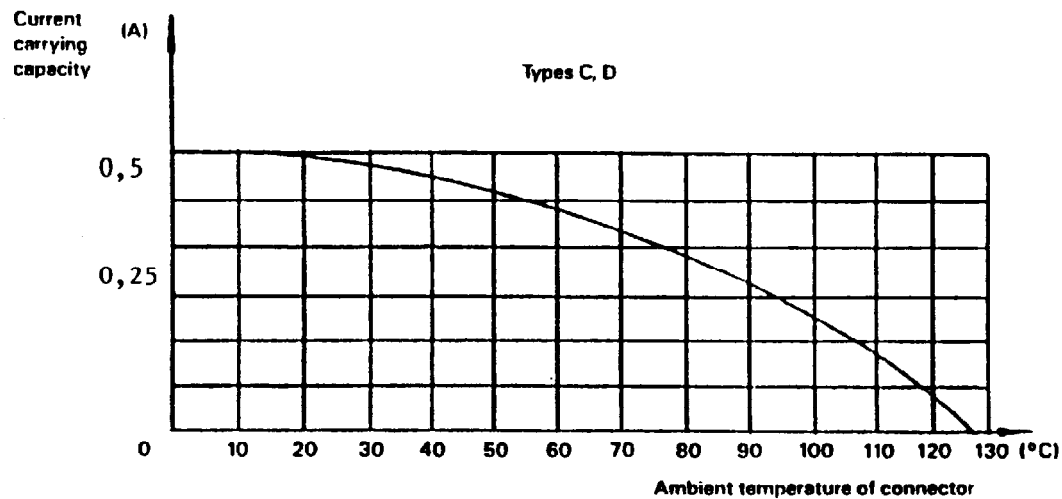
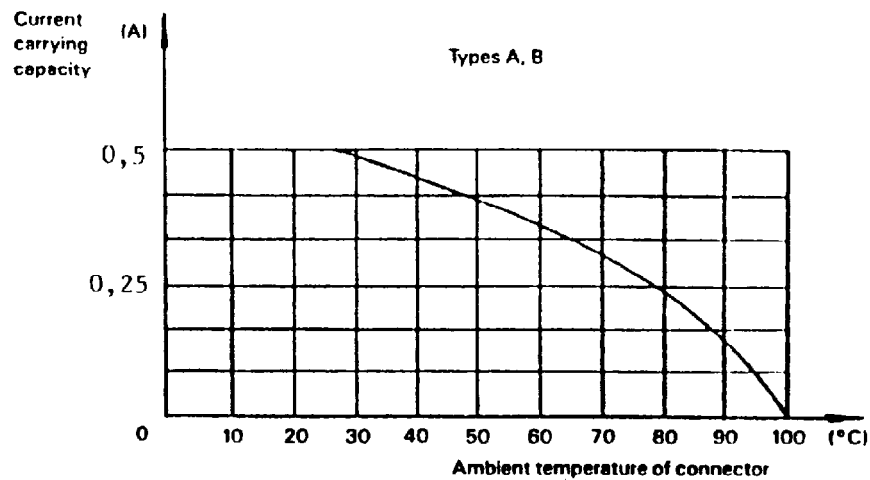


Figure 29 - Current-carrying capacity

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6.2.4 Initial contact resistance

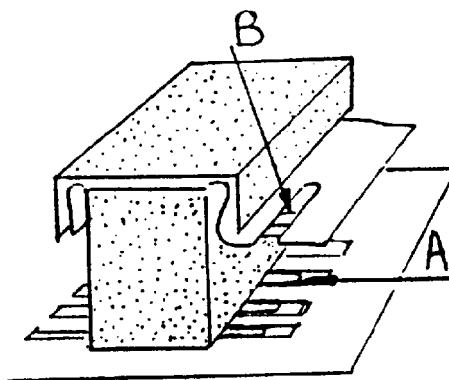
Conditions: IEC 512-2, Test 2a;
 standard atmospheric conditions;
 mated connectors;
 connection points: as shown in Figure
 value:

Performance level	Style	Maximum Value
1	A, B	20 mΩ
2	C, D	15 mΩ

Measurement of contact resistance

For the measurements of contact resistance, the points of connection shall be as follows:

Measurement
 from point A (Test board)
 to point B (on wire).
 The resistance of the wire
 has to be computed



Test Boards (see page 16)

The measurements of contact resistance shall be carried out on the number of contacts specified. Any subsequent measurement of contact resistance shall be made on the same contacts.

6.2.5 Initial insulation resistance

Conditions: IEC 512-2, Test 3a, Method A;
 standard atmospheric conditions;
 test voltage 100 V;
 mated connectors.

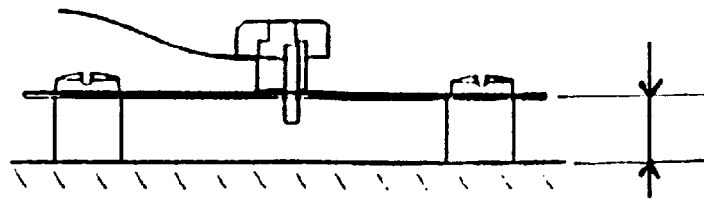
Performance Level	Type	Min. value
1	A, B	1000 MΩ
2	C, D	5000 MΩ

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6-2-6 *Vibration*

Conditions: IEC 512-4, Test 6d.

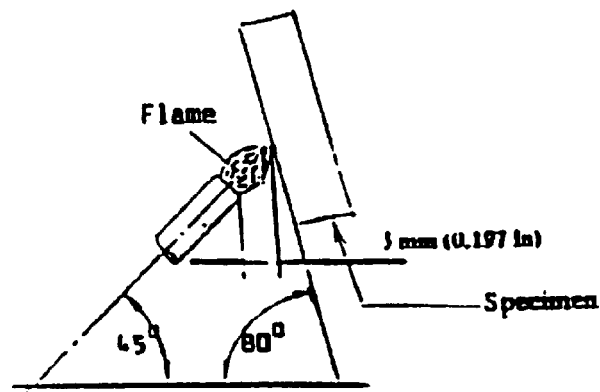
Severity: 10 Hz to 500 Hz, 0,35 mm or 5g, 3 x 2h.

Height =
10 mm $\pm$ 1

Test board : See page 15

6-2-7 *Flame Test equipment*

Conditions: IEC 512-9 Test 20a



- 6-2-8 *Circuit agencement for insulation resistance measurement and damp heat test.*
Not applicable to SMT connectors.

6-2-9 *Insertion and withdrawal force*

Table 16

Style of connectors	Maximum force per contact (N)	
	A, B	C, D
Performance Level	PL 1	PL 2
Board-to-wire	0.30	0.20

6-2-10 *Contact retention force in free connector housing*

Type of contact	Minimum force per contact (N)
Insulation displacement	5

6-2-11 SMD classification

CECC 00 802 2 issue 1 § 6-2

class : B

conditions : 215°C/40s

category : 3

soldering process : vapour phase and infra-red

6-2-12 Resistance to cleaning solvent

Solvent see-sub clause 3.1.1 of IEC 68-2-45
and CECC 00802 § 6-3

6-2-13 Solderability

To simulate storage at standard atmospheric conditions of
12 months

Dry heat storage at 155 °C for 4 h.

See 7-2-1 CECC 00802 issue 1

7. Test schedule

7.1 General

This test schedule shows all tests and the order in which they shall be carried out as well as the requirements to be met (see Sub-clause 7.3).

Unless otherwise specified, mated sets of connectors shall be tested. Care shall be taken to keep a particular combination of connectors together during the complete test sequence, i.e. when unmating is necessary for a certain test, the same connectors as before shall be mated for the subsequent tests.

In the following, a mated set of two connectors is called a "specimen".

For a complete test sequence, 20 specimens are necessary.

The measurements of contact resistance shall be carried out on the number of contacts specified. Any subsequent measurement of contact resistance shall be made on the same contacts.