SLOVENSKI STANDARD

SIST EN 175101-809:2005

marec 2005

Podrobna specifikacija – Dvodelni konektorji za plošče tiskanega vezja z rastrom 2,54 mm, kratka različica v skladu s CECC 75101-801, z ocenjeno kakovostjo

Detail specification: Two-part connectors for printed boards having a grid of 2,54 mm, short version in compliance with CECC 75101-801, with assessed quality

ICS 31.220.10

Referenčna številka
SIST EN 175101-809:2005(en)

EUROPEAN STANDARD **EN 175101-809**

NORME EUROPÉENNE

EUROPÄISCHE NORM March 2004

ICS 31.220.10 Supersedes EN 175101-809:1999

English version

Detail specification: Two-part connectors for printed boards having a grid of 2,54 mm, short version in compliance with CECC 75 101-801, with assessed quality

Spécification particulière: Connecteurs en deux parties pour circuits imprimés sur une grille de base de 2,54 mm, version simplifiée en conformité avec la CECC 75 101-801, pour l'assurance de la qualité

Bauartspezifikation: Indirekte Steckverbinder für gedruckte Schaltungen, Raster 2,54 mm, kurze Ausführung entsprechend CECC 75 101-801 mit bewerteter Qualität

This European Standard was approved by CENELEC on 2004-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC
European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 175101-809:2004 E

Foreword

This European Standard was prepared by Reporting Secretariat 48B (former CLC/TC 48B, LF connectors).

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 175101-809 on 2004-02-01.

This European Standard supersedes EN 175101-809:1999.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2005-02-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2007-02-01

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1 Scope

This European Standard applies to two-part connector for printed boards with a basic grid of 2,54 mm, common mounting features and 16 to 48 contacts. A standard style with angled male contacts in the free connector and straight female contacts in the fixed connector and a reversed style with angled female contacts in the free connector and straight male contacts in the fixed connector.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60068-1:1988*, Environmental testing - Part 1: General and guidance*

IEC 60097:1991; *Grid systems for printed circuits*

IEC 60194:1999, *Printed board design, manufacture and assembly - Terms and definitions*

IEC 60326-3:1991, *Printed boards - Part 3: Design and use of printed boards*

IEC 60352-1:1997, *Solderless connections - Part 1: Solderless wrapped connections, General requirements, tests methods and practical guidance*

IEC 60352-5:2001, *Solderless connections - Part 5: Press-in connections - General requirements, test methods and practical guidance*

IEC 60410:1973, *Sampling plans and procedures for inspection by attributes*

IEC 60512-1:2001*, Connectors for electronic equipment - Tests and measurements - Part 1: General*

IEC 60512-1-1:2002, *Connectors for electronic equipment - Tests and measurements - Part 1-1: General examination - Test 1a: Visual examination*

IEC 60512-1-2:2002, *Connectors for electronic equipment - Tests and measurements - Part 1-2: General examination - Test 1b: Examination of dimension and mass*

IEC 60512-2:1985, *Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests*

IEC 60512-2-1:2002, *Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests - Test 2a: Contact resistance - Millivolt level method*

IEC 60512-2-5:2003, *Connectors for electronic equipment - Tests and measurements - Part 2-5: Electrical continuity and contact resistance tests - Test 2e: Contact disturbance*

IEC 60512-3-1:2002, *Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests - Test 3a: Insulation resistance*

IEC 60512-4-1:2003, *Connectors for electronic equipment : Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof*

IEC 60512-4-2:2002, *Connectors for electronic equipment - Tests and measurements - Part 4-2: Voltage stress tests - Test 4b: Partial discharge*

IEC 60512-5:1992, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods - Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests*

IEC 60512-6:1984, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods - Part 6: Climatic tests and soldering tests*

IEC 60512-6-1:2002, *Connectors for electronic equipment - Tests and measurements - Part 6-1: Dynamic stress tests - Test 6a: Acceleration, steady state*

IEC 60512-6-3:2002, *Connectors for electronic equipment - Tests and measurements - Part 6-3: Dynamic stress tests - Test 6c: Shock*

IEC 60512-6-4:2002, *Connectors for electronic equipment - Tests and measurements - Part 6-4: Dynamic stress tests - Test 6d: Vibration (sinusoidal)*

IEC 60512-7:1993, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods - Part 7: Mechanical operating tests and sealing tests*

IEC 60512-8:1993, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods - Part 8: Connector tests (mechanical) and mechanical tests on contacts and terminations*

IEC 60512-9:1992, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods - Part 9: Miscellaneous tests*

IEC 60512-11-1:1995, *Electromechanical components for electronic equipment - Basic testing procedures and measuring methods - Part 11: Climatic tests - Section 1: Test 11a - Climatic sequence*

IEC 60512-11-3:2002, *Connectors for electronic equipment - Tests and measurements - Part 11-3: Climatic tests - Test 11c: Damp heat, steady state*

IEC 60512-11-4:2002, *Connectors for electronic equipment - Tests and measurements - Part 11-4: Climatic tests - Test 11d: Rapid change of temperature*

IEC 60512-11-5:2002, *Connectors for electronic equipment - Tests and measurements - Part 11-5: Climatic tests - Test 11e: Mould growth*

IEC 60512-11-8:1995, *Electromechanical components for electronic equipment - Basic testing procedures and measuring methods - Part 11: Climatic tests - Section 8: Test 11h - Sand and dust*

IEC 60512-11-9:2002, *Connectors for electronic equipment - Tests and measurements - Part 11-9: Climatic tests - Test 11i: Dry heat*

IEC 60512-11-10:2002, *Connectors for electronic equipment - Tests and measurements - Part 11-10: Climatic tests - Test 11j: Cold*

IEC 60512-11-11:2002, *Connectors for electronic equipment - Tests and measurements - Part 11-11: Climatic tests - Test 11k: Low air pressure*

IEC 60512-11-12:2002, *Connectors for electronic equipment - Tests and measurements - Part 11-12: Climatic tests - Test 11m: Damp heat, cyclic*

IEC 60512-11-14:2003, *Electromechanical components for electronic equipment - Basic testing procedures and measuring methods - Part 11: Climatic tests - Section 14: Test 11p: Flowing single gas corrosion test*

IEC 60603-1:1991, *Connectors for frequencies below 3 MHz for use with printed boards - Part 1: Generic specification - General requirements and guide for the preparation of detail specifications, with assessed quality*

IEC 60603-1-am1:1992, *Amendment No. 1*

IEC 60603-2: 1995, *Connectors for frequencies below 3 MHz for use with printed boards - Part 2: Detail specification for two-part connectors with assessed quality, for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features*

IEC 61076-1:1995, *Connectors with assessed quality, for use in d.c., low frequency analogue and in digital high speed data applications - Part 1: Generic specification*

IEC 61076-4:1995, *Connectors with assessed quality, for use in d.c., low-frequency analogue and in digital high-speed data applications - Part 4: Sectional specification - Printed board connectors*

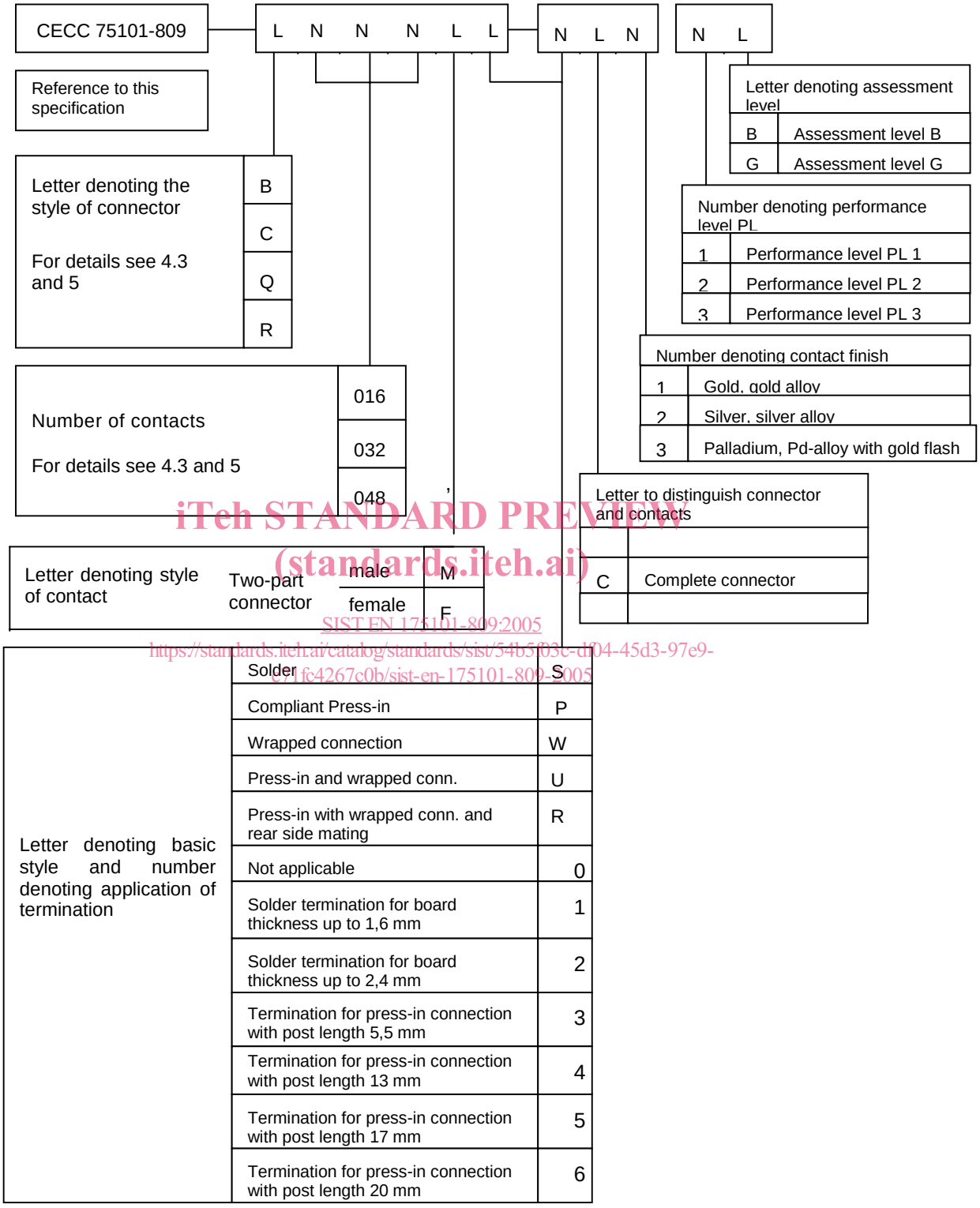
ISO 272:1982, *Fasteners - Hexagon products - Widths across flats*

ISO 468:1982, *Surface roughness – Parameters, their values and general rules for specifying requirements*

IEC QC 001002:1986, *Rules of procedure of the IEC Quality Assessment System for Electronic Components (IECQ); Amendment 2: 1994*

3 Style designation

Connectors according to this specification shall be designated by the following system:



NOTE "L" stands for letter
"N" stands for number

Example: Connector style C, having 48 gold plated male contacts with solder terminals. Complete board-mounted connector for boards up to 1,6mm, with performance level 2 and assessment level G: CECC 75101-809-C048MS-1C1-2G.

4 Common features

4.1 Mounting dimensions

4.1.1 Reference system

A line in the mounting plane of the fixed connector and passing through the position of the centres of the mounting holes is used as a datum line. The nominal centre of the mounting hole near contact No. 16 is used as datum point.

With reference to this datum system, the dimensions in 4.1.2 and 4.1.3 are defined.

4.1.2 Fixed board connector

4.1.2.1 Position of the terminations

The centre distance of the terminations shall be 2,54 mm or multiples thereof. The terminations shall be located so as to permit automatic wiring techniques.

4.1.3 Printed board assembly

4.1.3.1 Position of the grid of the printed board

The termination of the free connector shall fit into holes in the printed board according to IEC 60326-3, located on a grid of 2,54 mm according to IEC 60097.

4.1.4 Isometric view and values

Table 1 – Isometric view and values

Reference letter	Dimensions mm	Legend
C_1	max. 55	Maximum length of the fixed connector
M	17,2 15,6	Range of electrical engagement (see Figure 1) NOTE For information only
X_1	50,1 49,9	Distance between the two mounting holes of the fixed board connector
X_2	48,36 48,16	Distance between the two mounting holes of the free board connector NOTE The mounting holes are also located on the grid of 2,54 mm according to IEC 60097.
a	5,95	Distance between datum point and a line through the centres of the termination no. 16 of the fixed board connector
b	0,3	Distance between datum line and a line through the centres of the termination row „b“ of the fixed board connector
c	n x 2,54	Pitch of the termination of the fixed board connector NOTE Where a pitch of 2 mm x 2,54 mm = 5,08 mm is used, the terminations shall be located on even-numbered positions 2, 4, 6 .....14, 16 only.
d	3,55	Distance between datum line and component side of the printed board
e	5,3	Distance between the edge of the printed board and the first row of component holes for the free board connector
f	2,54	Distance between the mounting hole and the first row of component holes for the free board connector
g	5,08	Distance between the mounting hole and the component holes for the termination no. 1 or no. 16 of the free board connector
h	44,36	Minimum length of mounting cut-out or minimum distance between mounting bars for the fixed board connector
i	2,5	Maximum thickness of mounting panel or bars for the fixed board connectors
u	14,2 12,4	Range in which reliable contact is ensured NOTE See 4.2 for mating information.

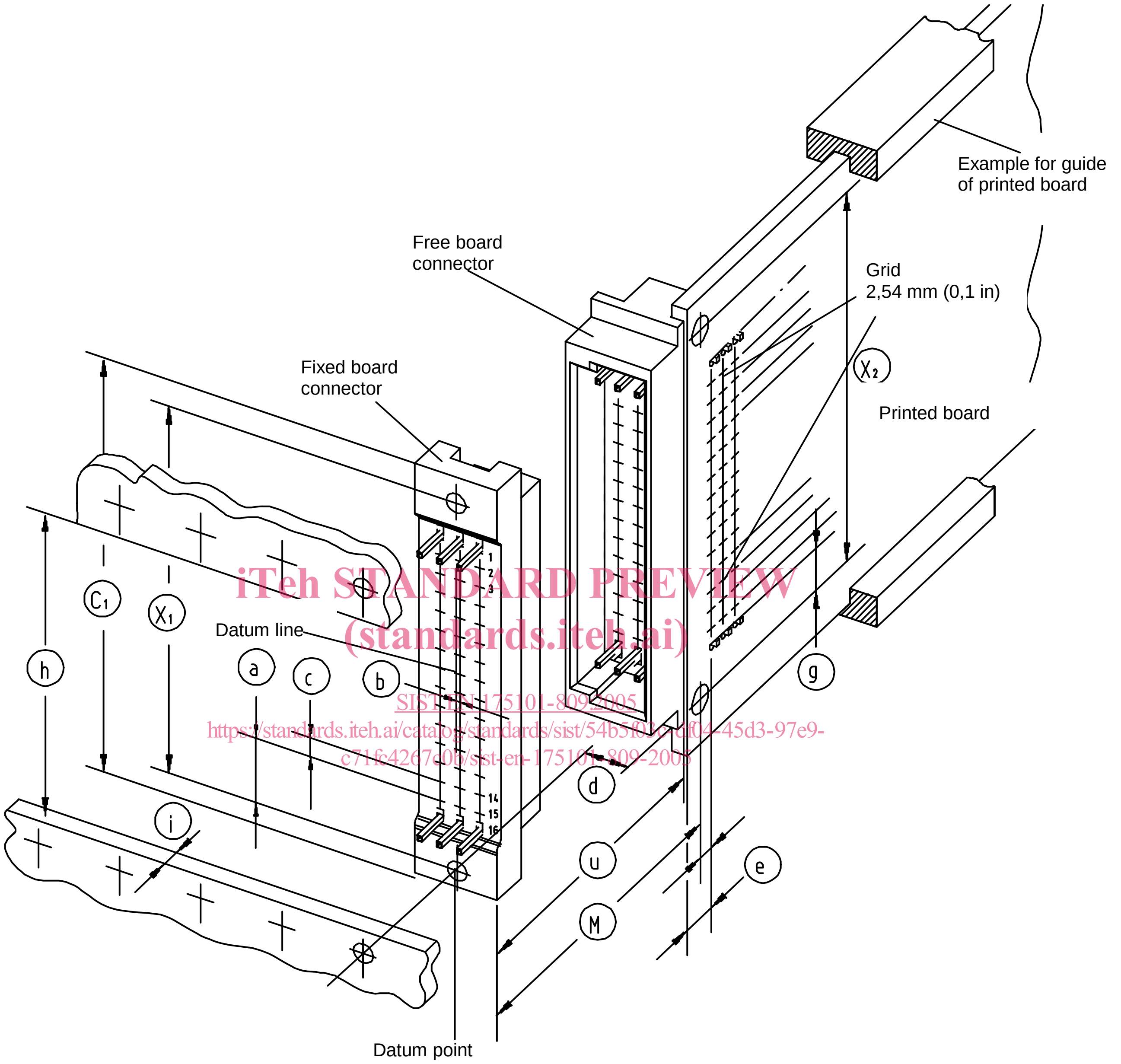


Figure 1 – Isometric view
(Shown: style C, 48 ways)

4.2 Mating information

See 4.2 of IEC 60603-2.

4.3 Survey of styles

Table 2 – Survey of styles

<table>
<tr><td colspan="2" rowspan="2">Connector style and number of contacts</td><td colspan="2">standard styles [1)]</td><td>B032, C048</td><td>C032</td><td>C016</td></tr>
<tr><td colspan="2">reverse styles[1)]</td><td>Q032, R048</td><td>R032</td><td>R016</td></tr>
<tr><td colspan="2" rowspan="2">Smallest pitch of adjacent connectors</td><td colspan="2">Styles C and R [1)]</td><td colspan="3">12,7 mm</td></tr>
<tr><td colspan="2">Styles B and Q[1)]</td><td colspan="3">10,16 mm</td></tr>
<tr><td colspan="4">Current carrying capacity at 70°C (see 7.2.3)</td><td colspan="3">1 A</td></tr>
<tr><td colspan="4">Performance level</td><td colspan="3">1,2,3</td></tr>
<tr><td colspan="7">Minimum creepage and clearance distance [2)]</td></tr>
<tr><td colspan="2" rowspan="2">Between contacts and chassis</td><td colspan="2">Creepage</td><td colspan="3">1,8 mm</td></tr>
<tr><td colspan="2">Clearance</td><td colspan="3">1,6 mm</td></tr>
<tr><td rowspan="4">Between adjacent contacts</td><td rowspan="2">Within a row</td><td>Creepage</td><td colspan="2">1,2 mm</td><td colspan="2">3,0 mm</td></tr>
<tr><td>Clearance</td><td colspan="2">1,2 mm</td><td colspan="2">3,0 mm</td></tr>
<tr><td rowspan="2">Between rows</td><td>Creepage</td><td>1,2 mm</td><td colspan="2">3,0 mm</td></tr>
<tr><td>Clearance</td><td>1,2 mm</td><td colspan="2">3,0 mm</td></tr>
</table>

[1)] Standard styles: free board connector with male contacts

Reverse styles: fixed board connectors with male contacts

[2)] Application information: Permissible operating voltage depends on the application and the applicable or specified safety requirements. Reductions in creepage or clearance distances may occur due to the printed board or the wiring used and shall duly be taken into account.

5 Dimensions

5.1 General

See 5.1 in IEC 60603-2.

5.2 Fixed board connector

5.2.1 Style B

5.2.1.1 Dimensions

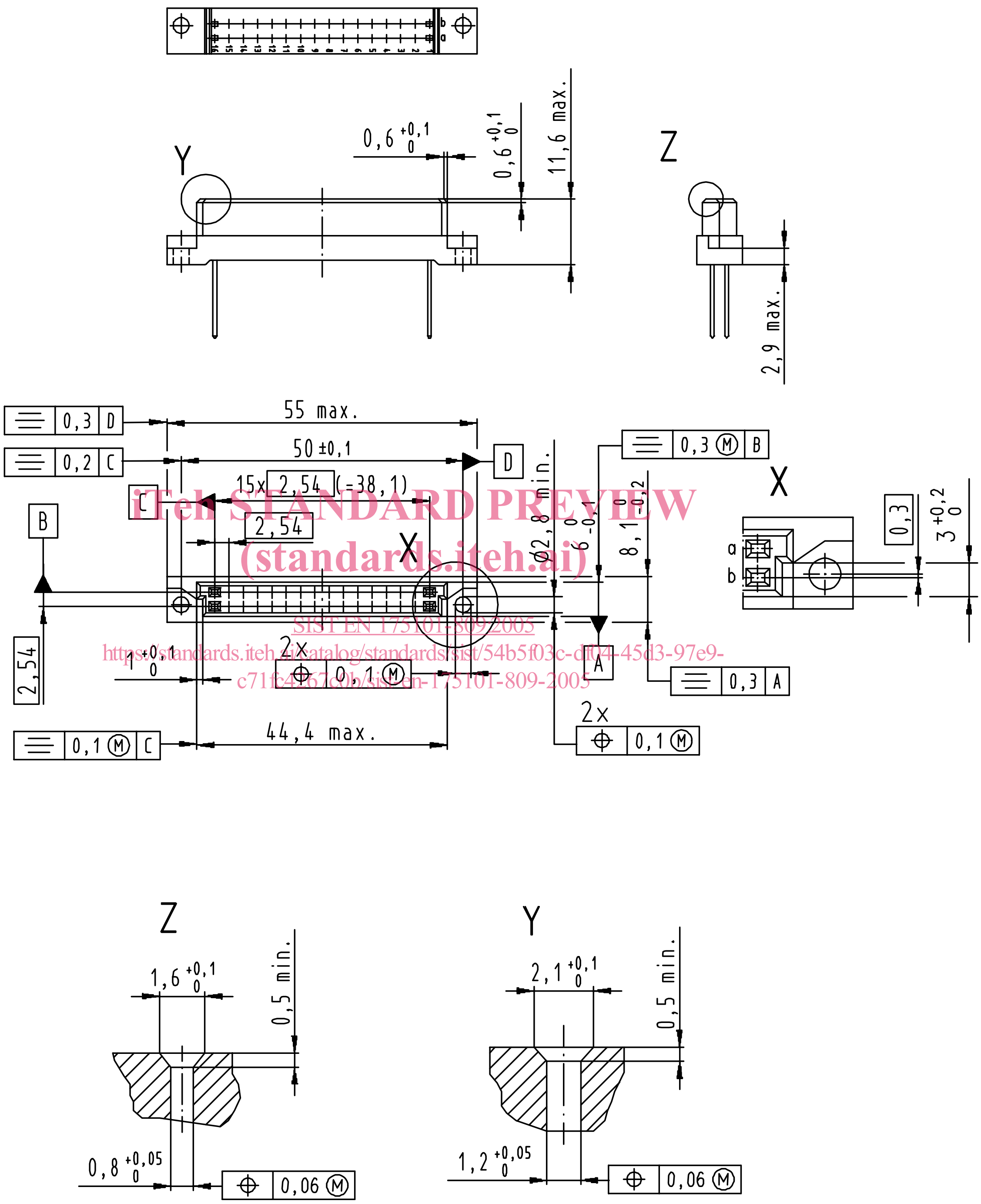


Figure 2 – Style B

5.2.1.2 Terminations

For dimensions of terminations, see Table 4.