

DETAIL SPECIFICATION

**CECC 75 101-809**

SPÉCIFICATION PARTICULIÈRE

BAUARTSPEZIFIKATION

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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**



This CECC Detail Specification was approved on 1994-09-21.

Up-to-date lists and bibliographical references of other detail specifications relating to EN 61076-4:1996 may be obtained on application to the Central Secretariat or to any CENELEC member.

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**CENELEC**

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

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Ref. No. CECC 75 101-809:1996 E

## Foreword

This Detail Specification was prepared by CLC/TC CECC/SC 48B (former WG 25), Low frequency connectors.

It is based, wherever possible, on the Publications of the International Electrotechnical Commission, and in particular on IEC 603-2, Connectors for frequencies below 3 MHz for use with printed boards, Part 2: Two-part connectors for printed boards, for basic grid of 2,54 mm (0,01 in) with common mounting features.

The text of this Detail Specification was circulated to the members of CLC/TC CECC/SC 48B and was approved for publication under the accelerated procedure for the acceptance of detail specifications in accordance with Decisions 10, 11 and 12 of the minutes of the CECC CD meeting in document CECC (Secretariat)1838.

This Detail Specification is to be read in conjunction with EN 61076-4:1996, 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.

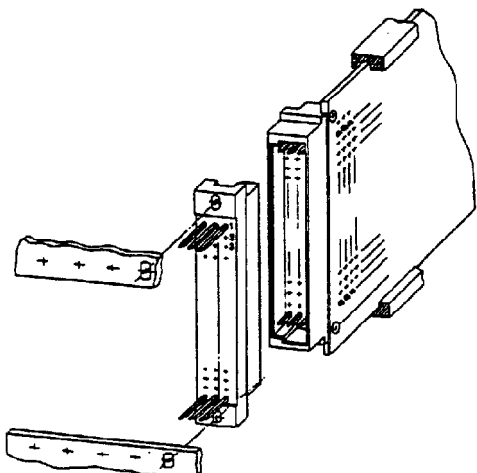
NOTE: EN 61076-4 has replaced EN 175100:1991 for all the relevant detail specifications.

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| <b>CECC WG25: LF Connectors</b><br><br>Specification available from the addresses shown on the inside cover.<br><br><b>ELECTRONIC COMPONENTS OF ASSESSED QUALITY</b><br><br>– DETAIL SPECIFICATION IN ACCORDANCE WITH EN 61076-4:1996 | CECC 75 101 – 809 Issue 1<br><br><br><br><br><br><br><br><br><br>Page 3 of 37 pages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| See 5 for dimensions<br><br>                                                                                                                        | <b>1 SCOPE</b><br><br>Two-part connectors for printed boards having a grid of 2,54 mm, short version in compliance with CECC 75 101–801 Issue 2 (1993), with assessed quality.<br><br>Basic grid 2,54 mm, common mounting features, 16 to 48 contacts, normal (male contacts in free board connectors) and reversed versions<br><br>Terminations: solder, press-in, wrap, press-in + wrap and press-in + wrap + rear plug up<br><br>Performance levels (PL): 1, 2, 3<br><br>Assessment levels: B and G (*)<br><br>Combinations of performance and assessment levels: 1G, 2B, 2G, 3B |

Climatic categories:      PL1      55/125/56  
                                  PL2      55/125/21  
                                  PL3      40/080/00

Electrical characteristics:      see 7.2

Mechanical characteristics:      see 7.3

Ordering information:      see 10

(\*) see 8 and 9

Information about manufacturers who have components qualified to this detail specification is available in the current CECC 00 200 (Register of Firms, Products and Services Approved under the CECC System).

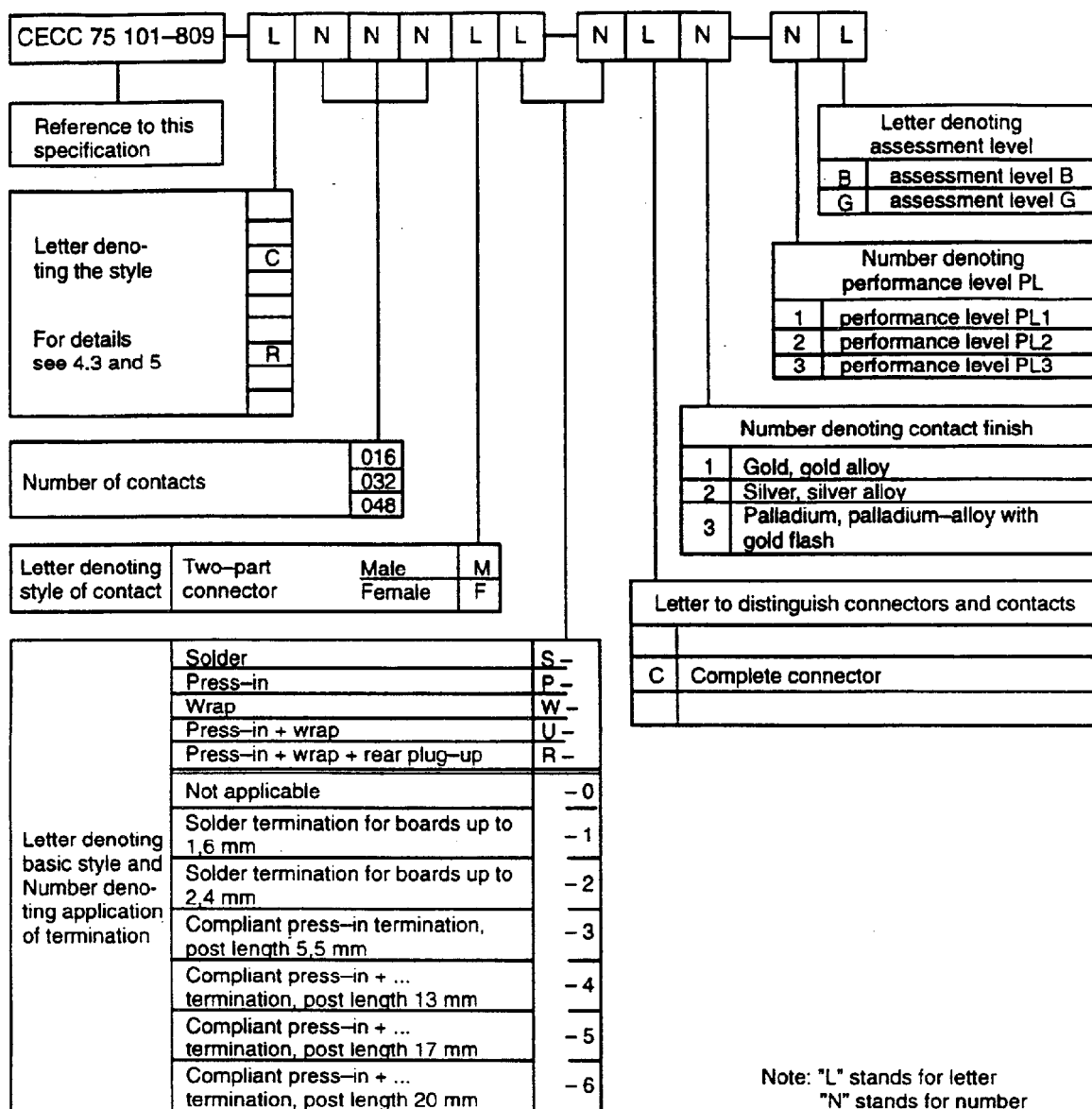
## 2 Related documents

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

- EN 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
- EN 61076-4 (1996): Part 4: Sectional specification - Printed board connectors
- IEC 68-1 (1988): Basic environmental testing procedures  
Part 1: General and guidance
- IEC 97 (1970): Grid system for printed circuits
- IEC 194 (1975): Terms and definitions for printed circuits
- IEC 326-3 (1991): Printed boards  
Part 3: Design and use of printed boards
- IEC 352-1 (1983): Solderless connections  
Part 1: Solderless wrapped connections – General requirements, test methods and practical guidance
- IEC 352-5 (Draft): Solderless connections  
Part 5: Solderless press-in connections – General requirements, test methods and practical guidance
- IEC 410 (1973): Sampling plans and procedures for inspection by attributes
- IEC 512-1 (1984): Electromechanical components for electronic equipment; basic testing procedures and measuring methods  
Part 1: General  
Amendment No. 1 (1988)
- IEC 512-2 (1985): Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests
- IEC 512-3 (1976): Part 3: Current carrying capacity tests
- IEC 512-4 (1976): Part 4: Dynamic stress tests
- IEC 512-5 (1992): Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests
- IEC 512-6 (1984): Part 6: Climatic tests and soldering tests
- IEC 512-7 (1993): Part 7: Mechanical operating tests and sealing tests
- IEC 512-8 (1993): Part 8: Connector tests (mechanical) and mechanical tests on contacts and terminations
- IEC 512-9 (1992): Part 9: Miscellaneous tests
- IEC 603-1 (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  
Amendment No. 1 (1992)
- ISO 272 (1982): Fastener hexagon products widths across flats

### 3 Style designation

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



Example: -- Connector style C, having 48 male contacts with gold alloy contact finish with solder terminations. Complete free board connector for boards up to 1,6 mm, with performance level 2 and assessment level G: CECC 75 101-809-C048MS-1C1-2G

#### 4 Common features

Not applicable.

##### 4.1 Mounting dimensions

###### 4.1.1 Reference system

A line in the mounting plane of the fixed board 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 distances 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 board connectors shall fit into holes in the printed board according to IEC 326-3, located on a grid of 2,54 mm according to IEC 97.

## 4.1.4 Isometric view and values

Table 1 – Isometric view and values

| Reference letter  | Dimension mm   | Legend                                                                                                                                                                                                   |
|-------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (C <sub>1</sub> ) | 55 max.        | Maximum length of the fixed board connector                                                                                                                                                              |
| (M)               | 17,2<br>15,6   | Range of electrical engagement (see KEIN MERKER)<br><i>Note: For information only</i>                                                                                                                    |
| (X <sub>1</sub> ) | 50,1<br>49,9   | Distance between the two mounting holes of the fixed board connector                                                                                                                                     |
| (X <sub>2</sub> ) | 48,36<br>48,16 | Distance between the two mounting holes of the free board connector<br><i>Note: The mounting holes are also located on the grid of 2,54 mm according to IEC 97</i>                                       |
| (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<br><i>Note: Where a pitch of 2 x 2,54mm = 5,08mm is used, the terminations shall be located on even-numbered positions 2, 4, 6 ... 14, 16 only</i> |
| (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 holes and the first row of component holes for the free board connector                                                                                                    |
| (g)               | 5,08           | Distance between a mounting hole and the component hole 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 connector                                                                                                                                |
| (u)               | 14,2<br>12,4   | Range in which reliable contact is ensured<br><i>Note: see 4.2 for mating information</i>                                                                                                                |

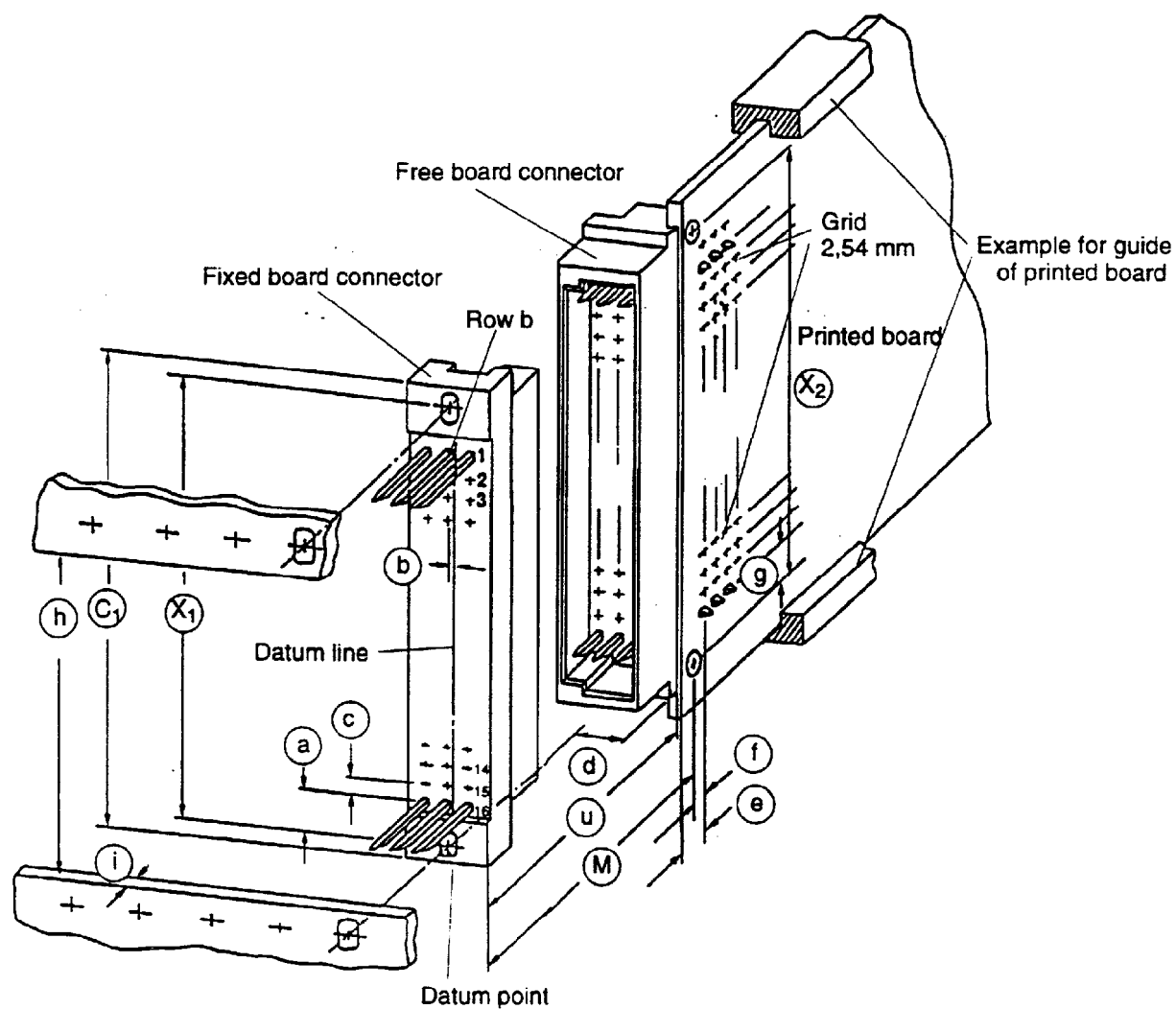


**Figure 1**  
(shown: style C, 48 ways)

## 4.2 Mating information

See 4.2 of IEC 603-2 (draft 3. edition)

### 4.3 Survey of styles

**Table 2 – Survey of styles**

|                                                        |                               |           |        |        |
|--------------------------------------------------------|-------------------------------|-----------|--------|--------|
| Connector style and number of contacts                 | standard styles <sup>1)</sup> | C048      | C032   | C016   |
|                                                        | reversed styles <sup>1)</sup> | R048      | R032   | R016   |
| Smallest pitch of adjacent connectors                  |                               | 12,7 mm   |        |        |
| Current-carrying capacity at 70 °C (see 7.2.3)         |                               | 1 A       |        |        |
| Performance level                                      |                               | 1, 2, 3   |        |        |
| Minimum creepage and clearance distances <sup>2)</sup> |                               |           |        |        |
| between contacts and chassis                           | creepage                      | 1,8 mm    |        |        |
|                                                        | clearance                     | 1,6 mm    |        |        |
| between adjacent                                       | within a row                  | creepage  |        | 3,0 mm |
|                                                        |                               | clearance |        | 3,0 mm |
|                                                        | between rows                  | creepage  | 1,2 mm | 3,0 mm |
|                                                        |                               | clearance | 1,2 mm | 3,0 mm |

1) Standard styles: free board connectors with male contacts  
Reversed styles: fixed board connectors (see Scope) 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 of IEC 603-2 (draft 3. edition)

## 5.2 Fixed board connectors

### 5.2.1 Style C

#### 5.2.1.1 Dimensions

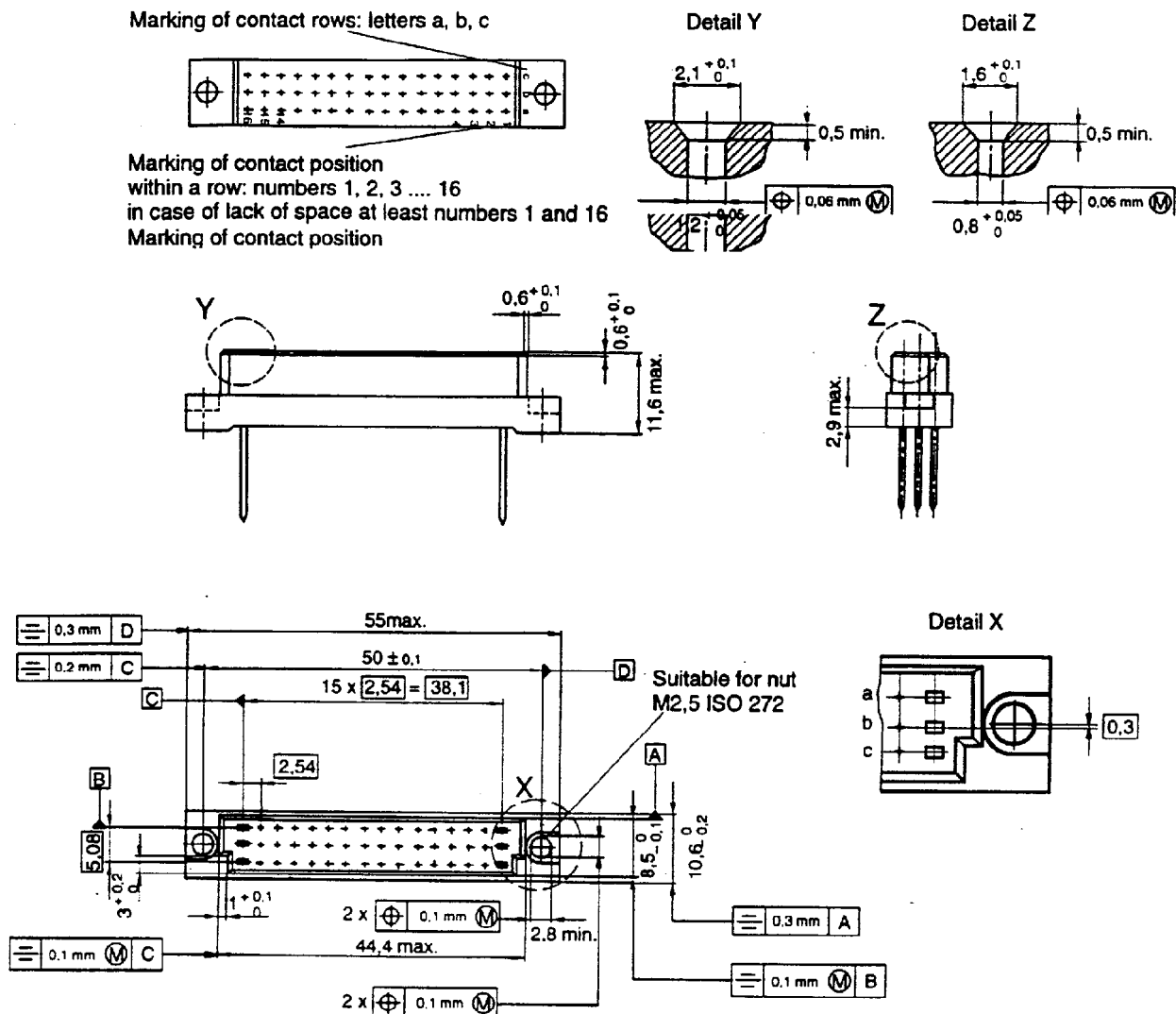


Figure 2 – Style C

#### 5.2.1.2 Terminations

For dimensions of terminations, see Table 4

## 5.2.2 Style R

### 5.2.2.1 Dimensions

Terminations suitable for hole pattern on printed boards (see 5.6)

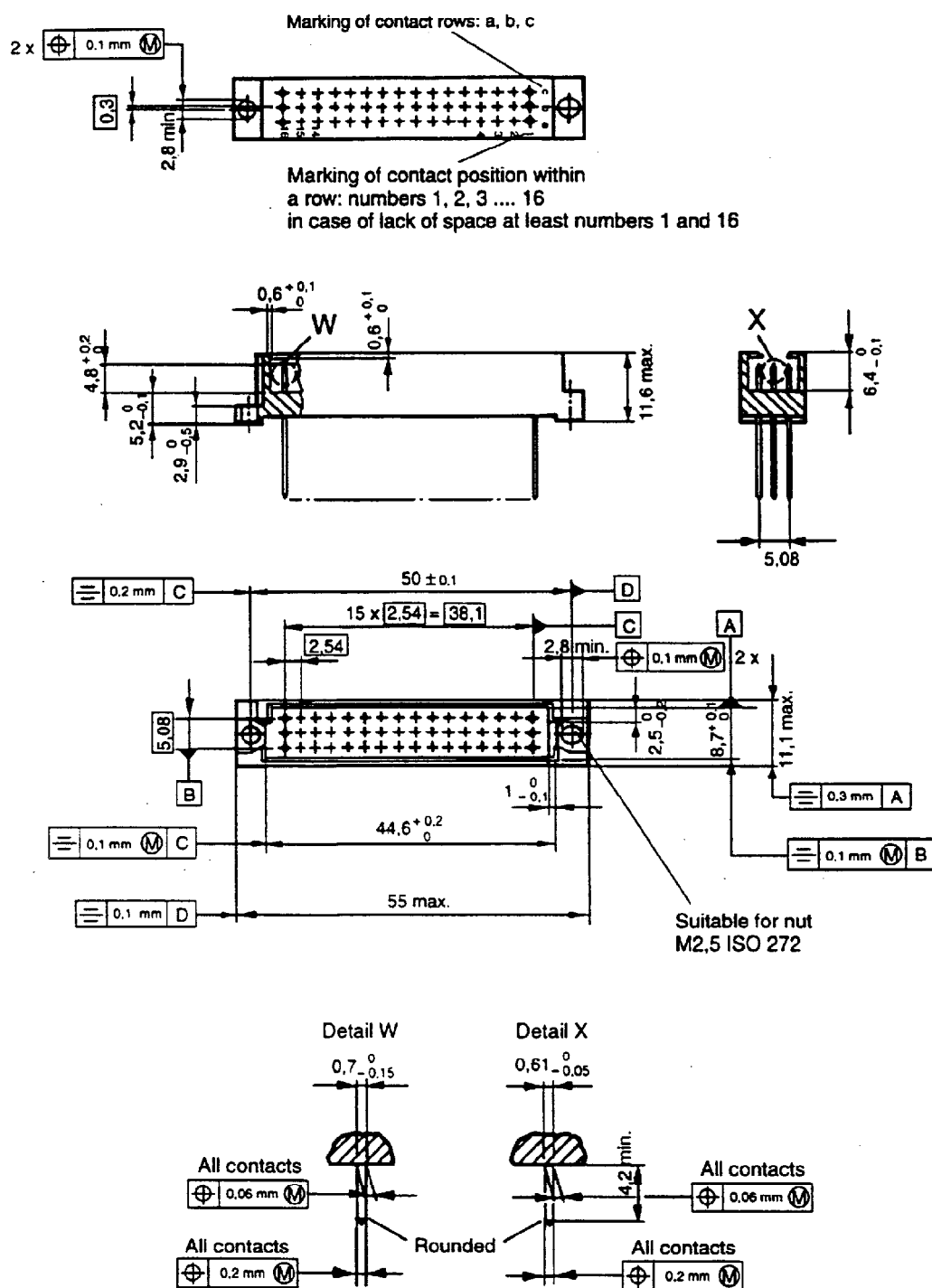


Figure 3 – Style R

**Table 3 – Contact arrangement of styles C and R***Note. – An "x" denotes a contact.*

| Contact No.     | 1     | 2 | 3 | 4 | 5 | 6 | 11 | 12 | 13 | 14 | 15 | 16 | Remarks                                                                                                                         |
|-----------------|-------|---|---|---|---|---|----|----|----|----|----|----|---------------------------------------------------------------------------------------------------------------------------------|
| C 048 and R 048 | row a | x | x | x | x | x | x  | x  | x  | x  | x  | x  |                                                                                                                                 |
|                 | b     | x | x | x | x | x | x  | x  | x  | x  | x  | x  |                                                                                                                                 |
|                 | c     | x | x | x | x | x | x  | x  | x  | x  | x  | x  |                                                                                                                                 |
| C 032 and R 032 | row a | x | x | x | x | x | x  | x  | x  | x  | x  | x  | There are no contacts in row "b" but connectors shall be provided with contact cavities and entries                             |
|                 | b     |   |   |   |   |   |    |    |    |    |    |    |                                                                                                                                 |
|                 | c     | x | x | x | x | x | x  | x  | x  | x  | x  | x  |                                                                                                                                 |
| C 016 and R 016 | row a |   | x |   | x | x | x  |    | x  |    | x  |    | There are no contacts in row "b" and in odd-number positions but connectors shall be provided with contact cavities and entries |
|                 | b     |   |   |   |   |   |    |    |    |    |    |    |                                                                                                                                 |
|                 | c     |   | x |   | x | x |    | x  |    | x  |    | x  |                                                                                                                                 |