

# INTERNATIONAL STANDARD

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**13575**

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## **Information technology — Telecommunications and information exchange between systems — 50-pole interface connector mateability dimensions and contact number assignments**

*Technologies de l'information — Télécommunications et échange  
d'information entre systèmes — Dimensions de raccordement du  
connecteur d'interface de 50 pôles et attributions du numéro de contact*



Reference number  
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## Foreword

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# Information technology - Telecommunications and information exchange between systems - 50-pole interface connector mateability dimensions and contact number assignments

## 1 Scope

This International Standard specifies a 50-pole connector, including the necessary mateability dimensions and the assignment of contact numbers, for use at the interface between data terminal equipment (DTE) and data circuit terminating equipment (DCE). It is applicable where the functional characteristics of the interface conform to CCITT Recommendation V.24 and the electrical characteristics conform to ITU-T Recommendation V.12.

## 2 Normative references

The following ITU-T (CCITT) Recommendations and International Standards contain certain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All ITU-T (CCITT) Recommendations and International 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/recommendations indicated below. Members of IEC and ISO maintain registers of currently valid International Standards. The ITU-T Secretariat maintains a list of currently valid ITU-T (CCITT) Recommendations.

CCITT Recommendation V.24: 1988, *List of definitions for interchange circuits between data terminal equipment and data circuit-terminating equipment*.

ITU-T Recommendation V.12: 1995, *Electrical characteristics for balanced interchange circuits with data signalling rates up to 52 Mbit/s*.

ITU-T Recommendation V.130: 1995, *ISDN Terminal Adapter Framework*.

IEC 48B (Sec.):1993, *Detail specification for a range of shielded connectors with trapezoidal shaped shells and non-removable rectangular contacts on a 1,27 x 2,54 mm (0,050 x 0,100 in) centerline*.

## 3 Definitions

For the purposes of this standard the following definitions apply:

**3.1 connector housing** : A part of a connector into which the inserts and contacts are assembled.

**3.2 contact arrangement** : The number, spacing and configuration of contacts in a component.

**3.3 female contact** : A contact intended to make electrical engagement on its inner surface.

**3.4 intermateable connectors** : Two connectors that are capable of being connected to each other electrically and mechanically without regard to their performance.

**3.5 latching device** : A feature incorporated in certain components to provide mechanical retention of their mating parts.

**3.6 male contact** : A contact intended to make electrical engagement on its outer surface.

**3.7 seating plane** : The surface that the connector bottoms on when fully mated.

## 4 Connector

A 50-pole connector shall be provided for the DTE/DCE interface. Figures 1 to 4 illustrate the connector. Only those dimensions that are essential for mating are shown.

The DTE-DCE interface point is defined at the point between the cable connector associated with the cable attached or wired to the DTE and the equipment connector associated with the DCE (see figure 5).

Figure 1 illustrates the cable connector which has 50 male contacts in a connector housing. Figure 2 illustrates the equipment connector which has 50 female contacts in a connector housing. The connector housing on the equipment connector is dimensioned to fit inside the connector housing of the cable connector (see figures 3 and 4). Figures 3 and 4 give contact numbering and illustrate the dimensions and latching mechanism for the cable and equipment connectors respectively.

## 5 Assignment of Contacts

The assignment of contact numbers is given in table 2. The list of interchange circuits is given in table 1.

## 6 Shielding

The 50-pole connector is a shielded connector.

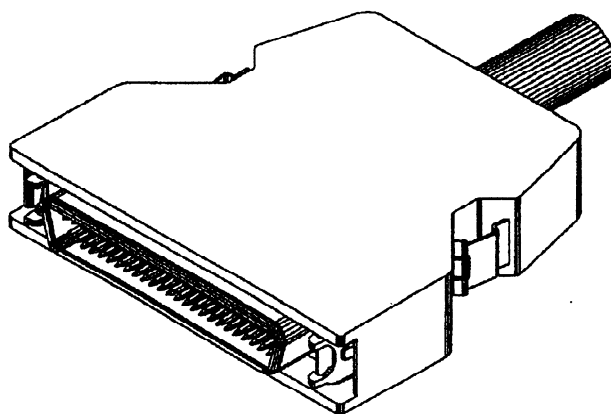
**Table 1 - Interchange Circuits**

|       |                                         |
|-------|-----------------------------------------|
| 102   | Signal common                           |
| 102a  | DTE common return                       |
| 102b  | DCE common return                       |
| 103   | Transmitted data                        |
| 104   | Received data                           |
| 107   | Data set ready                          |
| 108/2 | Data terminal ready                     |
| 113   | Transmitter signal element timing (DTE) |
| 114   | Transmitter signal element timing (DCE) |
| 115   | Receiver signal element timing (DCE)    |
| 142   | Test indicator                          |

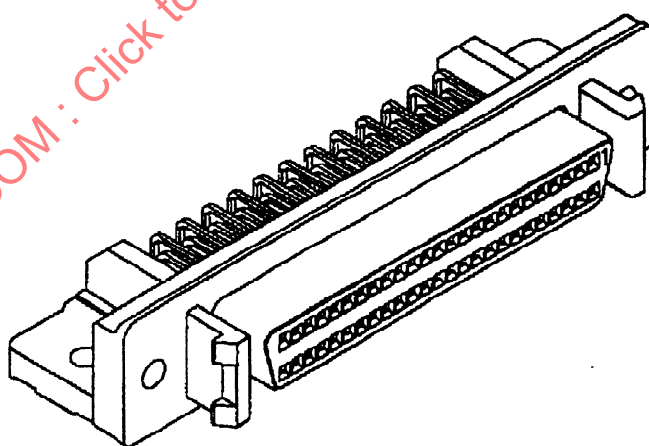
All circuits should have both sides (the A and B) assigned to a twisted pair in the interconnecting cable to minimize cross-talk.

**Table 2 -Assignment of contact numbers**

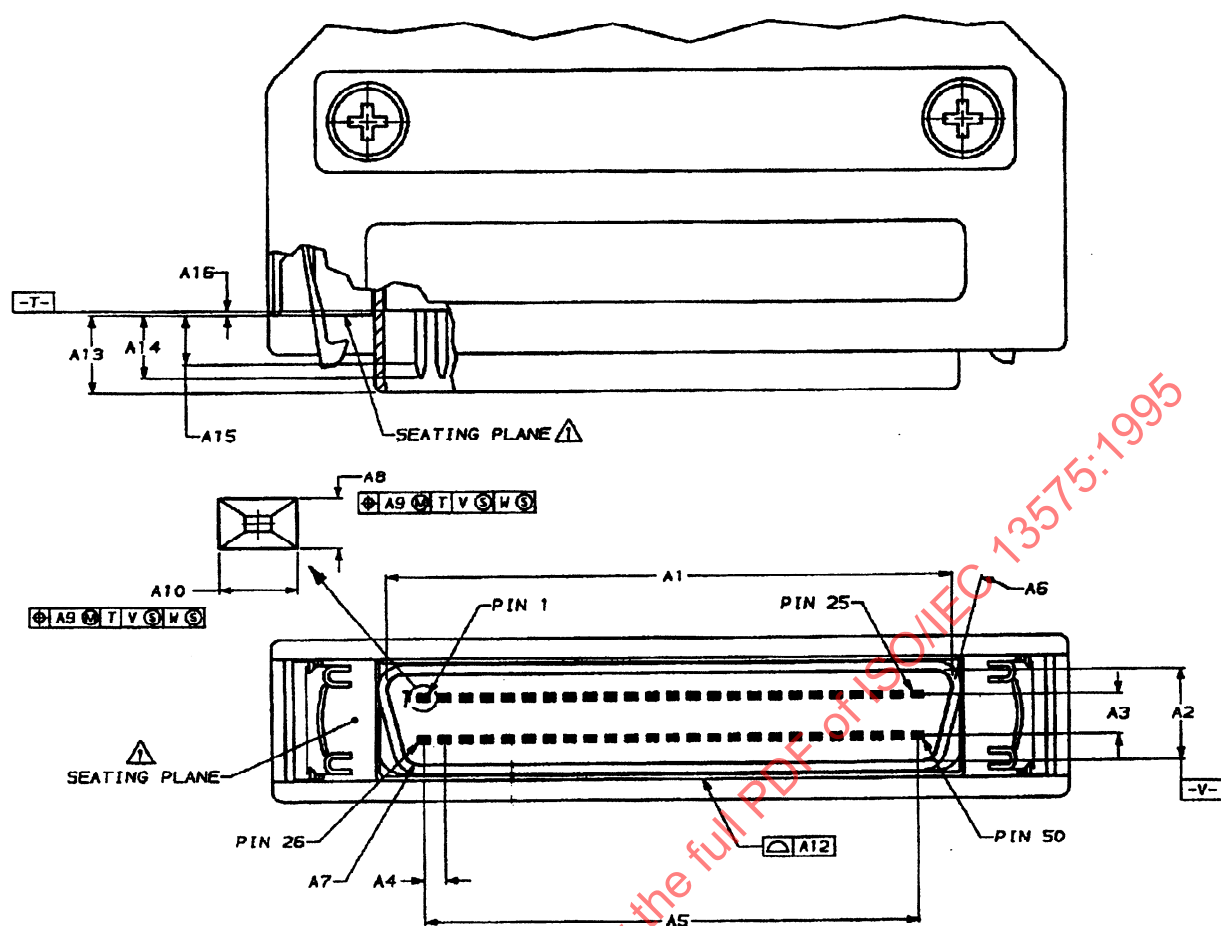
| Contact                     | Circuit | Description                             |
|-----------------------------|---------|-----------------------------------------|
| 1,7,13,19,25,26,32,38,44,50 | 102     | Signal Ground                           |
| 2                           | 115A    | Receiver signal element timing (DCE)    |
| 3                           | 107A    | Data set ready                          |
| 4                           | 104A    | Received data                           |
| 5,30,14 -18, 39-43          |         | (reserved) to DCE                       |
| 6                           | 114A    | Transmitter signal element timing (DCE) |
| 8                           | 108/2A  | Data terminal ready                     |
| 9                           | 113A    | Transmitter signal element timing (DTE) |
| 10                          |         | (reserved for national loopbacks)       |
| 11                          | 103A    | Send data                               |
| 12                          |         | (reserved for national loopbacks)       |
| 24                          |         | Test indicator                          |
| 27                          | 115B    | Receiver signal element timing (DCE)    |
| 28                          | 107B    | Data set ready                          |
| 29                          | 104B    | Received data                           |
| 31                          | 114B    | Transmitter signal element timing (DCE) |
| 33                          | 108/2B  | Data terminal ready                     |
| 34                          | 113B    | Transmitter signal element timing (DTE) |
| 35                          |         | (reserved for national loopbacks)       |
| 36                          | 103B    | Received data                           |
| 37                          |         | (reserved for national loopbacks)       |
| 20-23, 45-48                |         | (reserved) from DCE                     |
| 49                          | 142B    | Test indicator                          |



**Figure 1 — Cable connector (male contacts)**

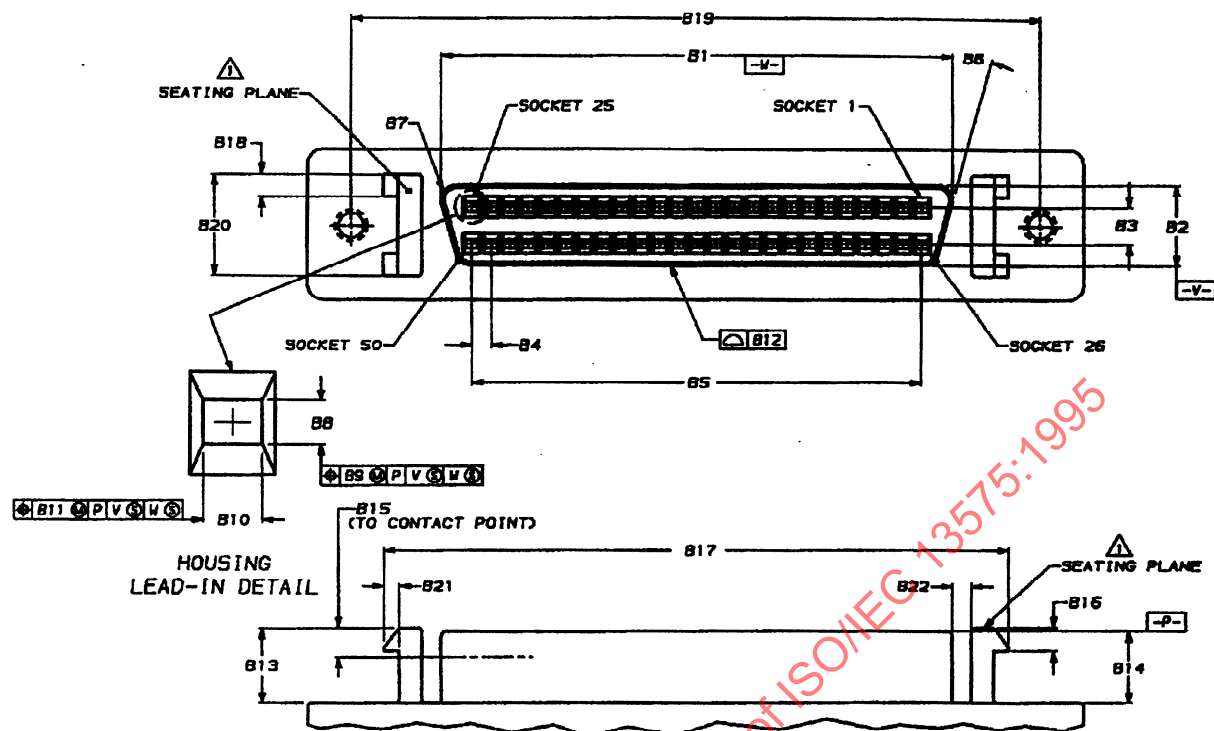


**Figure 2 — Equipment connector (female contacts)**



| 50 POSITION |             |               |
|-------------|-------------|---------------|
| DIMENSIONS  | MILLIMETERS | INCHES        |
| A1          | 34,85       | 1,372         |
| A2          | 5,69        | ,224          |
| A3          | 2,54        | ,100          |
| A4          | 1,27        | ,050          |
| A5          | 30,48       | 1,200         |
| A6          | 15°         | 15°           |
| A7          | 1,04 R      | ,041 R        |
| A8          | 0,40 ± ,01  | 0,156 ± ,0004 |
| A9          | 0,23        | ,009          |
| A10         | 0,60 ± ,03  | ,024 ± ,001   |
| A11         | 0,23        | ,009          |
| A12         | 0,06        | ,002          |
| A13         | 4,90 ± ,10  | ,193 ± ,004   |
| A14         | 4,27 MAX    | ,168 MAX      |
| A15         | 2,64 MIN    | ,104 MIN      |
| A16         | 0,38 MAX    | ,015 MAX      |

Figure 3 — Mating dimensions (cable connector)



| DIMENSIONS | 50 POSITION |                |
|------------|-------------|----------------|
|            | MILLIMETERS | INCHES         |
| B1         | 34,70       | 1,366          |
| B2         | 5,54        | ,218           |
| B3         | 2,54        | ,100           |
| B4         | 1,27        | ,050           |
| B5         | 30,48       | 1,200          |
| B6         | 15°         | 15°            |
| B7         | 1,00 R      | ,039 R         |
| B8         | 0,61 ± ,05  | 0,24 ± ,002    |
| B9         | 0,15        | ,005           |
| B10        | 0,86 ± 1,0  | 0,34 ± ,004    |
| B11        | 0,15        | ,006           |
| B12        | 0,05        | ,002           |
| B13        | 5,10 ± ,05  | ,201 ± ,002    |
| B14        | 5,00 ± ,13  | ,197 ± ,005    |
| B15        | 1,85 MAX    | ,073 MAX       |
| B16        | 1,50 MAX    | ,059 ± ,001    |
| B17        | 42,29 ± ,10 | 1,665 ± ,004   |
| B18        | 1,52 MIN    | ,060 MIN       |
| B19        | 46,48 ± ,13 | 1,87870 ± ,005 |
| B20        | 5,99 ± ,08  | ,236 ± ,003    |
| B21        | 0,88 MIN    | ,035 MIN       |
| B22        | 1,27 MIN    | ,050 MIN       |

Figure 4 — Mating dimensions (equipment connector)

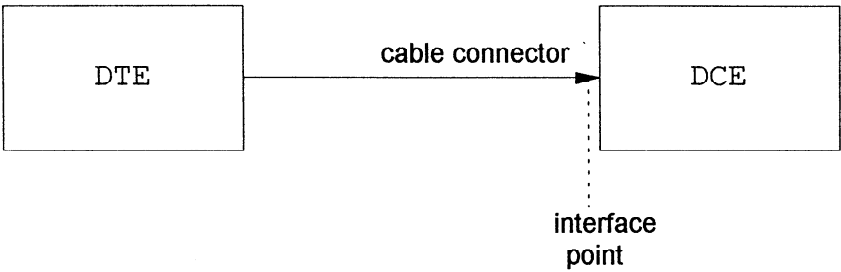


Figure 5 — Interface point

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