



BS 6623: Part 2: 1986

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British Standard

DTE/DCE interface connectors and pin assignments

Part 2. Specification for 37-pin connector

[Identical with ISO/DIS 4902 and DAD 1]

Description des connecteurs à la jonction entre ETTD et ETCD et affectation des broches
Partie 2. Connecteur 37 broches—Specifications

DÜE/DEE- Schnittstellensteckverbinder und Stiftbelegung
Teil 2. 25- poliger Steckverbinder

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National foreword

This revision of this British Standard has been prepared under the direction of the Office and Information Standards Committee.

As a result of the development of the international standards for pin connectors for DTE/DCE connection by ISO TC 97/SC 6 'Telecommunications and information exchange between systems', a new multi-part British Standard, BS 6623, has been created.

The structure of BS 6623 is as follows:

Part 1. 25-pin DTE/DCE interface connector and pin assignments. Identical with ISO/DIS 2110-1984 and incorporating Draft Addendum 1 on latching and housing devices (TC 97/SC 6 N 3231) as a national appendix. It supersedes BS 4505: Part 5: 1981 which is withdrawn.

Part 2. 37-pin DTE/DCE interface connector and pin assignments. Identical with ISO/DIS 4902-1984 incorporating Draft Addendum 1 on latching and housing devices (TC 97/SC 6 N 3232R). This combined text is in the process of being issued as ISO/DIS 4902.2. It supersedes BS 4505: Part 8: 1981 which is withdrawn.

Part 3. 15-pin DTE/DCE interface connector and pin assignments. Identical with ISO/DIS 4903-1984 incorporating Draft Addendum 1 on latching and housing devices (TC 97/SC 6 N 3234R). This combined text is in the process of being issued as ISO/DIS 4903.2. It supersedes BS 4505: Part 9: 1981 which is withdrawn.

Part 4. 34-pin DTE/DCE interface connector and pin assignments. Identical with ISO 2593-1984 and incorporating Draft Addendum 1 on latching and housing devices as a national appendix. No current British Standard is replaced.

The structure given above is different to that detailed in the foreword of BS 6623: Part 1. This arises because of the subsequent decision by ISO to merge the DIS text and the addenda for ISO/DIS 4902 and ISO/DIS 4903. It should also be noted that a similarly merged text for the 25-pin connector will be issued as ISO/DIS 2110.2.

The decision by the responsible BSI Technical Committee to publish these international drafts as British Standards reflects their international acceptance and stability. It was decided not to await the eventual publication of the international standards and addenda because this would considerably delay the publication of the British Standards. For this reason, the British Standards cannot be dual-numbered with the appropriate international standard. In all cases, however, the text of the British Standard is technically identical with the appropriate text for the ISO/DIS and the related draft addendum.

Any future amendments or addenda to the international standards will be reviewed by the responsible Technical Committee and, if acceptable, published as amendments to the appropriate Parts of BS 6623, in order to maintain technical equivalence.

Apart from certain minor dimensional changes, the main change from BS 4505: Part 8 is the inclusion of CCITT Recommendation V.37, requirements for latching and shielding, and the deletion of requirements for the 9-pin connector, which may be the subject of a separate, future ISO standard.

A brochure giving details of existing and projected British Standard publications for Open Systems Interconnection (OSI) may be obtained from the Sales Department, BSI, Linford Wood, Milton Keynes MK 14 6LE, at no charge.

Terminology and conventions. The text of ISO/DIS 4902 has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'British Standard'.

Cross-references

International standards	Corresponding British Standards
	BS 6623 DTE/DCE interface connectors and pin assignments
ISO/DIS 2110-1984	Part 1: 1985 Specification for 25-pin connector (Identical)
ISO/DIS 4903-1984	Part 3: 1986 Specification for 15-pin connector (Identical)
ISO/261-1973	BS 3643 ISO metric screw threads Part 1: 1981 Principles and basic data (Technically equivalent)

IEC 50 (581) is referred to in annex B which is solely for information. There is no equivalent British Standard.

IEC 48B (CO) 126 'Specification sheet for trapezoidal multiple connectors with round contacts for rack and panel applications' is referred to in 3.1, for information.

The Technical Committee has reviewed the provisions of the CCITT Recommendations, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

NOTE. Copies of the CCITT Recommendations have been retained at the BSI Library, Linford Wood, Milton Keynes MK14 6LE for reference purposes.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

British Standard

DTE/DCE interface connectors and pin assignments

Part 2. Specification for 37-pin connector

1 Scope and field of application

This International Standard specifies the 37-pin connector and the assignment of connector pin numbers at the interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) where CCITT¹⁾ Recommendation V.24 together with Recommendations V.10 and V.11 are applicable.

In addition it specifies the necessary latching by use of the latching blocks, the housing devices and optional connector shielding so that interconnections of DTE/DCE equipment is ensured by compatible connectors.

It also refers to IEC defined connector terms of interest in the Annex B.

NOTE. IEC SC 48B - responsible for the interchangeability and interchangeability of connectors for rack and panel applications - does not at present time undertake efforts on connector latching, housing and other manufacturing means.

2 References

ISO 2110, *Data communication—25-pin DTE/DCE interface connector and pin assignments.*

ISO 4903, *Data communication—15-pin DTE/DCE interface connector and pin assignments.*

CCITT Recommendation V.10 (or X.26), *Electrical characteristics for unbalanced double-current interchange circuits for general use with integrated circuit equipment in the field of data communications.*

CCITT Recommendation V.11 (or X.27), *Electrical characteristics for balanced double-current interchange circuits for general use with integrated circuit equipment in the field of data communications.*

CCITT Recommendation V.24, *List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment (DCE).*

CCITT Recommendation V.28, *Electrical characteristics for unbalanced double-current interchange circuits.*

CCITT Recommendation V.36, *Modems for synchronous data transmission using (60—108 kHz) group band circuits.*

CCITT Recommendation V.37, *Synchronous data transmission at a data signalling rate higher than 72 xbits using 60—80 kHz group band circuits.*

1) International Telegraph and Telephone Consultative Committee.

3 Connectors

Figures 1 to 5 illustrate the 37-pin connector. Only those dimensions that are essential to mating are shown. Figure 1 illustrates the DTE interface connector which has male contacts and a female shell. Figure 2 illustrates the DCE interface connector which has female contacts and a male shell. Contact numbering is specified in these figures. Figure 3 illustrates the dimensions for the pin layout. Figures 4 and 5 illustrate the dimensions of the pin and mating socket respectively.

3.1 Latching block

The latching block, together with its counterpart, is an optional device used to couple and uncouple mating components.

Its use is as follows.

The DCE interface connectors shall be equipped with the two latching blocks as shown in figure 2. As the latching blocks have threaded holes which can act as nuts, the DTE interface connector shall be equipped either with lever devices for latching to the latching blocks on the DCE interface connector, or with screws that fit into the threaded holes in the latching blocks.

The thread of the latching blocks shall be specified in ISO 261 and shown in figure 2.

The specification for the connector in this International Standard is provided for mechanical compatibility only. It is mechanically compatible with the detailed connector specification in the Draft IEC Publication 48B (CO) 126.

In annex A diagrams for finger clearance areas are given to provide guidance for equipment designers. Figure 6 shows the maximum DTE connector outline including all means for latching to the latching blocks. Figure 7 shows the minimum DCE connector spacing when multiple interface arrangements are used.

NOTE. Annex A is not an integral part of this International Standard.

4 Assignment of pin numbers

The pin assignments for the selected interchange circuits specified in CCITT Recommendation V.24 that may be implemented in modems complying with CCITT Recommendations V.36 and V.37 are given in table 1.

Although table 1 provides the total list of interchange circuits designated in all the above listed modem CCITT Recommendations, only the set of interchange circuits required for the particular equipment needs to be implemented. Table 2 gives a list of the applicable interchange circuits and their description. Additionally, notes 5 and 6 for table 1 provide preferred pin assignments for some optional circuits which may be applied for national use.

5 Connector shielding

Connector shielding is optional. If it is used, e.g. owing to national regulations, it shall be effected by: use of a metallic female shell, together with a connector housing and a cable adaptor for the DTE interface connector; or use of a metallic male shell for the DCE interface connector.

6 Interconnecting configurations for mixed use of electrical characteristics

Considerations for interworking of equipment implementing V.10 on one side of the interface with equipment meeting V.11 on the other side of the interface are given in annex 2 of CCITT Recommendations V.10 and V.11. In addition, definition of the category 1 and 2 receiver configurations is provided in V.10.

Guidance concerning possible interconnecting configurations that may be applied is given in annex C.

Guidance concerning adaptation necessary when there is a need for a DTE or DCE implementing V.10 characteristics to interwork with a DCE or DTE implementing V.28 characteristics, is given in annex D. Any adapters required to accomplish the interworking with V.28 and ISO 2110 shall be provided with the equipment meeting ISO 4902. No revisions or modifications shall be required in the existing equipment using V.28 electrical characteristics.

The annex D interworking between V.10 and V.28 characteristics is not required in CCITT Recommendations V.36 and V.37.

NOTE. Annexes C and D are not an integral part of this International Standard.

Table 1 — Pin assignments

First segment assignment ²⁾			Second segment assignment ²⁾			Receiver category ⁴⁾	Direction to	
Pin number	Circuit number	Interchange points ³⁾	Pin number	Circuit number	Interchange points ³⁾		DTE	DCE
1	See note 1	—	20	102b	C-B'	—	—	—
2	N	A-A'	21	N	See note 5	2	X	—
3	N	A-A'	22	103	B/C-B'	See note 5	1	X
4	103	A-A'	23	114	B/C-B'	1	X	—
5	114	A-A'	24	104	B/C-B'	1	X	—
6	104	A-A'	25	105	B/C-B'	1	—	X
7	105	A-A'	26	115	B/C-B'	1	X	—
8	115	A-A'	27	106	B/C-B'	1	X	—
9	106	A-A'	28	N	A-A'	2	—	X
10	141	A-A'	29	107	B/C-B'	1	X	—
11	107	A-A'	30	F	—	—	—	X
12	F	A-A'	31	109	B/C-B'	1	X	—
13	109	A-A'	32	N	A-A'	2	—	X
14	140	A-A'	33	N	A-A'	2	X	—
15	N	A-A'	34	N	A-A'	2	—	X
16	111	A-A'	35	113	B/C-A'	1	—	X
17	113	A-A'	36	N	A-A'	2	X	—
18	142	A-A'	37	102a	C-B'	—	—	X
19	102	C-C'						

Legend: N — Pin number permanently reserved for national use. (See note 6).

F — Pin number reserved for future international standardization and should not be used for national use.

NOTES

1 Pin 1 is assigned for connecting the shields between tandem sections of the shielded interface cable. The shield may be connected either to protective ground or to signal ground at either the DTE or DCE or both in accordance with national regulations.

Signal ground may be further connected to protective ground in accordance with national safety regulations. Caution should be exercised to prevent establishment of ground loops carrying high currents.

2 The pin assignments for each segment have been aligned to specify pairing and connection to multipaired interconnecting cable. Each row of the table presents the respectively paired pins, i.e. 2 and 20, 3 and 21, etc.

3 A, A', B, B', C and C' indicate the associated interchange points as designated in figure 2 of CCITT Recommendations V.10 and V.11. Where B/C is indicated in table 1, the B designation applies only when a V.11 generator is used and the C designation applies only when a V.10 generator is used. (See annex B.)

4 The receiver categories are as designated in V.10. Where category 1 receivers apply, either V.10 or V.11 generators may be used. Only V.11 generators may be used for circuits 103, 104, 113, 114, 115. Where category 2 receivers apply, V.10 generators are used.

5 Pins 3 and 21, which are permanently reserved for national use, may each be used individually for interconnection of A-A' interchange points with category 2 receivers. These two circuits must be in the same direction. Alternatively pins 3 and 21 may be combined for interconnection of a pair of interchange points with one category 1 receiver. In this case, pin 21 would be used to interconnect interchange points B/C-B' while pin 3 interconnects interchange points A-A'.

6 Preferred assignments of circuits which may be applied for national use are as follows:

Pin number	Circuit number	Description
2	112	Data signalling rate selector (DCE source)
28	135*	Terminal available for service
32	116	Select standby
33	110	Data signal quality detector
34	136*	New signal
36	117	Standby indicator

* These circuits are a subject of further study and have not been approved by the CCITT.

Table 3—List of interchange circuits

Circuit number	Description
102	Signal ground or common return
102a	DTE common return
102b	DCE common return
103	Transmitted data
104	Received data
105	Request to send
106	Ready for sending
107	Data set ready
109	Data channel received line signal detector
111	Data signalling rate selector (DTE source)
113	Transmitter signal element timing (DTE source)
114	Transmitter signal element timing (DCE source)
115	Receiver signal element timing (DCE source)
140	Remote loopback for point-to-point circuits
141	Local loopback
142	Test indicator

Dimensions in millimetres

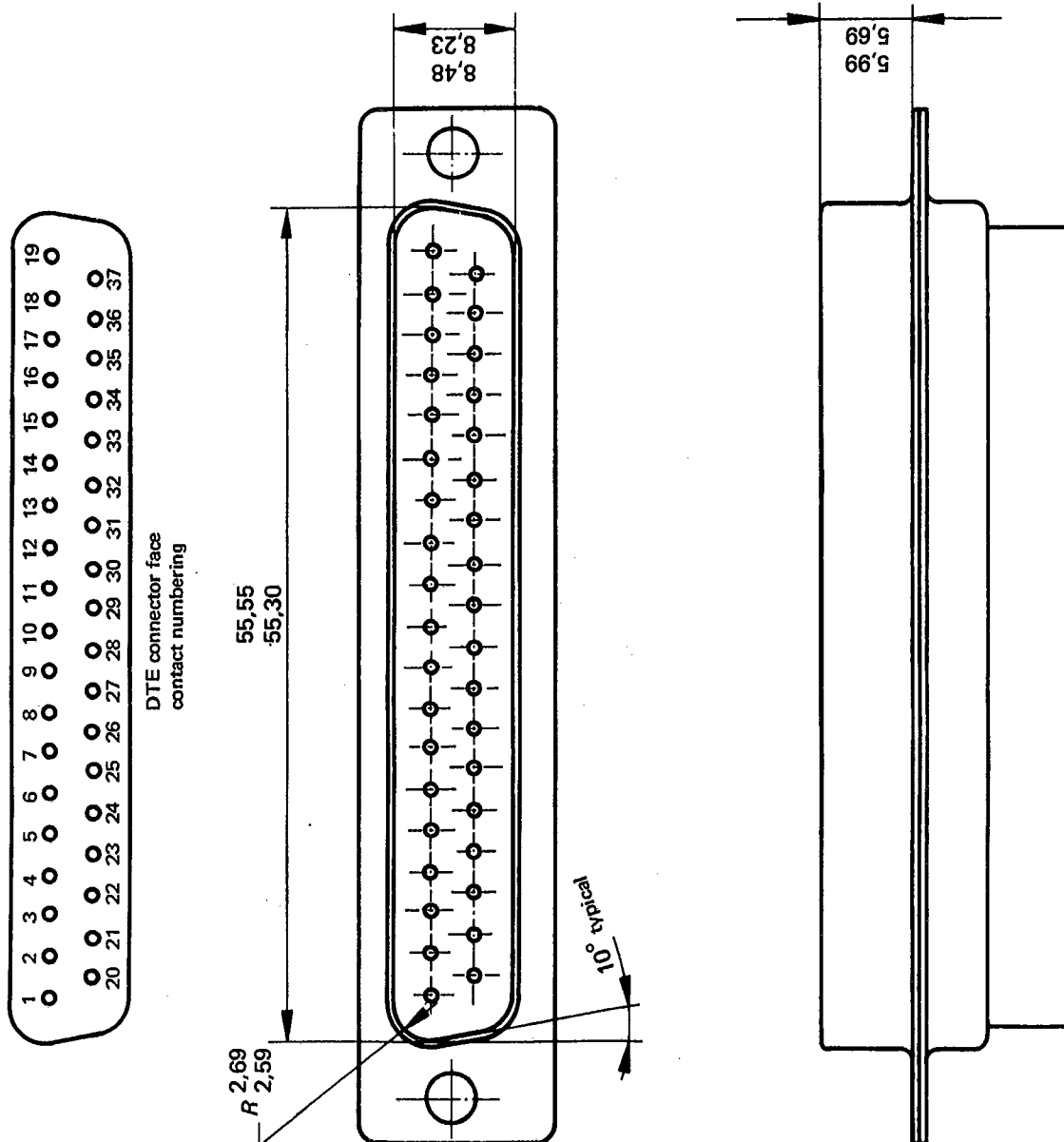


Figure 1 — DTE 37-pin interface connector