
British Standard

Apparatus with one or more particular functions for connection to certain public switched telephone networks

Part 6. Specification for series connected apparatus

Section 6.1 Apparatus having maximum allowable impairments

Appareils à une ou plusieurs fonctions particulières destinés à être raccordés à certains réseaux téléphoniques publics commutés

Partie 6. Appareils connectés en série — Spécifications

Section 6.1 Dégradations maximales admissibles des appareils

Apparate mit einer oder mehreren Sonderfunktionen zum Anschluß an bestimmte öffentliche Fernsprechnetze

Teil 6. Apparate in Reihenschaltung

Abschnitt 6.1 Apparate mit höchstzulässigem Störpotential

Foreword

This Section of BS 6789 has been prepared under the direction of the Telecommunications Standards Committee. It forms one of a series of British Standards that are being produced following the commencement of liberalization in October 1981 of the supply of certain telecommunications apparatus within the United Kingdom.

This series of standards includes product specifications giving particular requirements for individual items of apparatus, together with standards covering general requirements for the connection of apparatus to the various networks of British Telecommunications and Hull Telephone Department. At the present time, these networks include the public switched telephone network, the telex network, the packet switching service, and private circuits leased from British Telecommunications.

The requirements specified in the standards are intended to ensure that apparatus complying with them, when connected to British Telecommunications or Hull Telephone Department networks, will neither adversely affect any network nor interfere with the service available to other users. The standards include safety requirements only for the protection of personnel operating the network and for the protection of users from hazards that may arise from the connection of the apparatus to the network.

The multi-part standard to which this Section belongs is intended to specify all the additional functions and facilities that require specifying for approval purposes and that may be added to apparatus submitted for approval for use in conjunction with simple telephones or modems on public switched telephone networks. There are a large number of possible permutations in the choice of these facilities to form a particular configuration of apparatus. In order to present a coherent range of specifications that is appropriate to this variety of configurations, Part 1 'Specification for general requirements' of BS 6789 is used as an essential initial specification and the remaining Parts each specify an additional facility. Part 1 of BS 6789 requires the supplier to state which of these facilities is present on the apparatus submitted for approval so that it is clear which of the subsequent Parts are relevant.

Part 6 of BS 6789 specifies requirements for series connected apparatus. It is for use only in conjunction with Part 1 of BS 6789.

This standard is presented to the Secretary of State for designation under Section 22(6) of the British Telecommunications Act, 1984. It is government policy that, once the Secretary of State's designation has entered into force, apparatus within the scope of a designated standard may be connected to British Telecommunications networks only if it conforms to the technical requirements of that standard and any relevant product standard and if it has been approved by the Secretary of State, British Telecommunications or the British Approvals Board for Telecommunications. The Secretary of State will not normally entertain applications for approval of apparatus. Applications for approval of apparatus should be addressed in the first instance to The Director, British Approvals Board for Telecommunications (BABT), Claremont House, 34 Molesey Road, Hersham, Walton-on-Thames, Surrey KT12 4RQ.

In designating this standard, the Secretary of State may, at his discretion, stipulate variations of, or additions to, the requirements of this standard and may also set conditions that have to be complied with as regards the apparatus, or its connection, or use. A copy of the Secretary of State's designation will be included, when available, with all copies of this standard. Any further information on details of the designation of this standard may be obtained from the Department of Trade and Industry, 1-19 Victoria Street, London SW1H 0ET.

Some apparatus may incorporate facilities for which a mandatory standard is necessary, but for which no standard has yet been designated by the Secretary of State. Other apparatus may incorporate innovative features not foreseen when the relevant standard was written and designated and for which that standard is not fully appropriate. The BABT can sometimes deal with cases such as these by writing a 'Special investigation test schedule' (SITS) which has the effect of stating requirements where there is no designated British Standard or of supplementing or varying the requirements in the application of the approved British Standard. Information on any relevant SITS may be obtained from the Director, BABT, at the address given above.

Where this course is not possible, then BT may nevertheless approve apparatus for connection to its networks and should be consulted directly as to its requirements.

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

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Specification

1 Scope

Part 6 of BS 6789 specifies requirements for series apparatus for connection, in series with a subscriber's main apparatus such as a telephone instrument or a data modem, to certain public switched telephone networks (PSTN). The values given in this Section for electrical characteristics are in every case values that represent the maximum impairment that may be introduced between a terminal apparatus and the network termination point (NTP) of a complete branch system. Consequently, if the whole of the allowance for one or more of the characteristics is consumed by a series apparatus conforming with the standard then no other apparatus or leads consuming the same characteristic will be permitted within a Branch System containing such series apparatus.

Additional electrical requirements are given in BS 6789 : Section 6.2*; compliance with both Section 6.1 and Section 6.2 is necessary where additional apparatus is to be connected to form a more complex arrangement.

NOTE 1. A British Standard guide for the construction of relevant branch systems for the PSTN is in preparation.

Apparatus that performs a call-routing function (such as PBX, key-systems, dealers' boards and the like) is not within the scope of BS 6789 : Part 6.

This Section does not apply to apparatus for connection to shared service lines or 1 + 1 carrier systems or as extensions on any form of PBX or between the TJF of a PBX and the PSTN lines of the PBX. This Section does however apply to apparatus intended for connection to applicable PBX ports described in BS 6450 : Part 4.

This Section applies in conjunction with BS 6789 : Part 1 and the requirements of this Section are additional to those of Part 1. In particular, those clauses of Part 1 are applicable that state that the requirements of BS 6305 : 1982 apply except where otherwise specified. Clauses 6 and 7 of Part 1, relating to the requirements of BS 6317 : 1982 and BS 6320 : 1982 respectively, are not relevant.

This Section applies to apparatus for household, office and similar general indoor use.

The tests described in this Section are type tests as defined in BS 4778 : 1979.

NOTE 2. The titles of the publications referred to in this standard are listed on the inside back cover.

2 Abbreviations and definitions

For the purposes of this Section of BS 6789, the abbreviations and definitions given in BS 6789 : Part 1 apply together with the following.

NOTE. See figure 1 for arrangement of series connected apparatus.

2.1 main apparatus. Apparatus that can function on its own when connected to the PSTN, i.e. can carry out main communication functions (which may include seizure, holding, signalling, transmission, clearing and ring-detection).

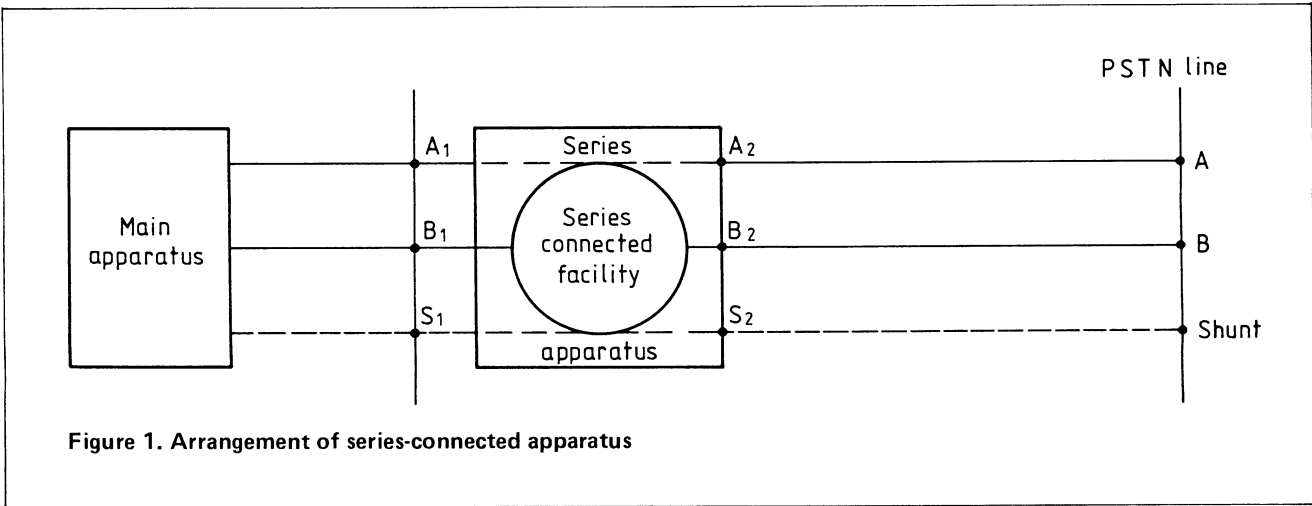
2.2 series apparatus. Apparatus using the series-connection facility to supplement or qualify (by the intention of the user) the main communication function.

NOTE 1. Apparatus containing the series-connection facility will be able to accept lines from the PSTN and provide access to those lines for the main apparatus.

Apparatus that accepts lines from the PSTN and provides access to those lines for main apparatus may also contain a parallel-connection facility (for which the appropriate requirements of BS 6789 : Part 5* will apply) which allows the series apparatus to connect circuit elements across the line wires. For example, a call-logging device that operates by monitoring the change in electrical potential across the line wires may also pass on the line wires via an ohmic path to a socket into which the main apparatus can be plugged.

NOTE 2. Except when an intentional qualification of the main communication function has been invoked by the user (such as diverting or barring of calls) the series apparatus does not impede any of the main communication functions.

NOTE 3. Series apparatus may contain other facilities (besides series-connection) that may be the subject of other standards or Parts of BS 6789. It may also include any of the main communication functions such as seizure, holding, signalling, transmission, clearing and ring-detection.



* In preparation.

NOTE 4. Series apparatus containing the series-connection facility may include call-diverters, call-barring devices, route-selectors, automatic diallers, network-protection barriers, repertory diallers, load-speaking telephones, and telephone-answering and recording machines.

NOTE 5. The series apparatus as defined here is the subject of this Section of BS 6789; in places in the text where the meaning is obvious it is referred to simply as 'the apparatus'.

NOTE 6. A 'modem' might be regarded as series apparatus if it includes a series-connection facility such as a relay or a switch which can give PSTN access alternatively to, for instance, a separate telephone instrument or to the modem proper.

2.3 series-connection facility. The facility enabling a main apparatus to be connected to the PSTN via a series apparatus so as to give the series apparatus access to the line to perform functions involving interception of the electrical conditions between the main apparatus and the PSTN.

NOTE. The series-connection facility allows the series apparatus to interpose circuit elements in the line wires between the PSTN and the main apparatus. These may for instance be current-detecting elements or switch contacts or simple ohmic paths.

2.4 relevant branch system (RBS) for PSTN lines.

A telecommunication system, other than a public telecommunication system, that:

- (a) is run under a licence granted or having effect as if granted under Section 7 of the Telecommunications Act (1984);
- (b) is connected to one or more PSTN lines;
- (c) is such that any apparatus which forms part of the RBS or is connected via it, is so connected that no signals of any kind may be conveyed between that apparatus and a PSTN circuit or vice versa except by means of other apparatus that does not materially affect the electrical conditions presented to one another by that apparatus and the PSTN line.

For the purposes of this definition any apparatus is treated as connected to a PSTN line if it is connected to a Relevant Branch System (RBS) for PSTN lines that is itself connected to a PSTN line or is regarded as being so connected by virtue of this provision.

NOTE. Unless provided otherwise in the licence referred to in (a) above, all the apparatus comprised in or connected to a RBS needs to be apparatus approved for that purpose. Items such as wiring and accessories, e.g. junction boxes, that cannot be said to satisfy compatibility or safety requirements prior to installation need to be installed safely and in such a way that the criterion of (c) above is met. All other apparatus needs to be type-approved in the usual way or be the subject of individual approval and their incorporation within a RBS for PSTN lines needs to comply with the transmission and signalling requirements of the appropriate British Standard guide* for a RBS for PSTN lines.

*In preparation.

3 General operating and test conditions

NOTE. Except where otherwise specified, the electrical characteristics specified in this Section refer to a series apparatus when it is connected between a main apparatus and a line to the public switched telephone network.

3.1 Line polarity

The requirements of this Section for the electrical characteristics of the series apparatus shall be met independently of line polarity.

Compliance shall be checked by reversal of the line wires connected to the A and B terminals of the apparatus under test between individual tests as appropriate.

3.2 Modes of operation

The series apparatus shall provide a mode of operation in which the main apparatus is capable of performing such normal functions of call establishment, call clearing and signal transmission as are present or a selection of such functions as are defined in the instructions for use.

Compliance shall be checked by inspection.

3.3 Test conditions

In the tests specified in clause 7, in addition to the connections of the series apparatus, an apparatus shall be provided by the supplier for connection when necessary to simulate the functions of a mains apparatus, including a loop-disconnect signalling function if appropriate under 7.4.2.

The supplier shall provide information on the connection and operation of the apparatus provided to simulate a main apparatus.

NOTE. Connection to the series apparatus is not restricted to the particular simulating apparatus provided for the tests.

4 Marking

4.1 In addition to the requirements of clause 9 of BS 6789 : Part 1 : 1984 and thereby of clause 5 of BS 6305 : 1982, the following requirements of 4.2 and 4.3 apply.

4.2 For single-line or multi-line series apparatus having cable terminations or terminal connections to either the PSTN or the main apparatus in accordance with clause 6 of this Section, each PSTN line connection and main apparatus connection and the A, B and (if appropriate) the shunt wires shall be identifiable.