

SOUTH AFRICAN NATIONAL STANDARD

**Plug and socket outlet systems for household
and similar purposes for use in South Africa**

Part 0: General and safety requirements

**WARNING — Can only be used
in conjunction with
SANS 60884-1.**

SANS 164-0:2012
Edition 1.2

Table of changes

Change No.	Date	Scope
Amdt 1	2007	Amended to include requirements for incorporated surge protection devices.
Amdt 2	2012	Amended to change the requirements for surge protective devices, and to provide drawings to illustrate common mode and differential mode surge protection.

Foreword

This South African standard was approved by National Committee SABS SC 67C, *Electricity distribution systems and components – Electrical accessories* in accordance with procedures of the SABS Standards Division, in compliance with annex of the WTO/TBT agreement.

This document was published in May 2012.

This document supersedes SANS 164-0:2007 (edition 1.1).

A vertical line in the margin shows where the text has been technically modified by amendment No. 2.

This document is referenced in the *Compulsory specification for plugs, socket-outlets and socket-outlet adaptors*, as published by Government Notice No. R. 1075 (Government Gazette 33763 of 19 November 2010).

SANS 164 consists of the following parts, under the general title *Plug and socket-outlet systems for household and similar purposes for use in South Africa*:

Part 0: General and safety requirements.

Part 1: Conventional system, 16 A 250 V a.c.

Part 2: IEC system, 16 A 250 V a.c.

Part 3: Conventional system, 6 A 250 V a.c.

Part 4: Dedicated system, 16 A 250 V a.c.

Part 5: Two-pole, non-rewirable plugs, 2,5 A 250 V a.c., with cord, for connection of class II equipment.

Part 6: Two-pole systems, 16 A 250 V a.c., for connection of class II equipment.

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Plug and socket-outlet systems for household and similar purposes for use in South Africa

Part 0:

General and safety requirements

1 Scope

This part of SANS 164 covers the specific requirements for plugs, fixed or portable socket-outlets and socket-outlet adaptors, with or without earthing contact, with a rated current not exceeding 16 A and a rated voltage not exceeding 250 V and intended for household and similar purposes either indoors or outdoors in South Africa.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of SANS 164. All standards are subject to revision and, since any reference to a standard is deemed to be a reference to the latest edition of that standard, parties to agreements based on this part of SANS 164 are encouraged to take steps to ensure the use of the most recent editions of the standards indicated below. Information on currently valid national and international standards can be obtained from the SABS Standards Division.

SANS 164-1, *Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 1: Conventional system, 16 A 250 V a.c.*

SANS 164-2, *Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 2: IEC system, 16 A 250 V a.c.*

SANS 164-3, *Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 3: Conventional system, 6 A 250 V a.c.*

SANS 164-4, *Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 4: Dedicated system, 16 A 250 V a.c.*

SANS 164-5, *Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 5: Two-pole, non-rewirable plugs, 2,5 A 250 V a.c., with cord, for connection of class II equipment.*

SANS 164-6, *Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 6: Two-pole systems, 16 A 250 V a.c., for connection of class II equipment.*

SANS 1085, *Wall outlet boxes for the enclosure of electrical accessories.*

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SANS 60670-1/IEC 60670-1, *Boxes and enclosures for electrical accessories for household and similar fixed electrical installations – Part 1: General requirements.* **Amdt 2**

SANS 60884-1/IEC 60884-1, *Plugs and socket-outlets for household and similar purposes – Part 1: General requirements.*

SANS 60884-2-2/IEC 60884-2-2, *Plugs and socket-outlets for household and similar purposes – Part 2-2: Particular requirements for socket-outlets for appliances.*

SANS 60884-2-3/IEC 60884-2-3, *Plugs and socket-outlets for household and similar purposes – Part 2-3: Particular requirements for switched socket-outlets without interlock for fixed installations.*

SANS 60884-2-4/IEC 60884-2-4, *Plugs and socket-outlets for household and similar purposes – Part 2-4: Particular requirements for plugs and socket-outlets for SELV.*

SANS 60884-2-5/IEC 60884-2-5, *Plugs and socket-outlets for household and similar purposes – Part 2-5: Particular requirements for adaptors.*

SANS 60884-2-6/IEC 60884-2-6, *Plugs and socket-outlets for household and similar purposes – Part 2-6: Particular requirements for switched socket-outlets with interlock for fixed electrical installations.*

SANS 60906-3/IEC 60906-3, *Low-voltage system of plugs and socket-outlets for household and similar purposes – Part 3: SELV plugs and socket-outlets, 16 A 6 V, 12 V, 24 V, 48 V, a.c. and d.c.*

SANS 61643-11, *Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and test methods.* **Amdt 1; amdt 2**

3 Definitions

The definitions given in SANS 60884-1 apply.

4 Requirements

4.1 General

4.1.1 Plugs, socket-outlets and socket-outlet adaptors shall comply with the appropriate requirements of SANS 60884-1, and the relevant of SANS 60884-2-2, SANS 60884-2-3, SANS 60884-2-4, SANS 60884-2-5, and SANS 60884-2-6.

4.1.2 Socket-outlets shall comply with the requirements for increased protection of SANS 60884-1.

4.1.3 A socket-outlet for a fixed installation shall have an earthing contact. A multiple socket-outlet for a fixed installation shall have at least one socket-outlet with an earthing contact.

NOTE Information on the specific application of each type of socket-outlet in a fixed installation and configuration of multiple socket-outlets is given in SANS 10142-1. **Amdt 2**

4.1.4 A dedicated plug shall comply with all relevant requirements of all parts of SANS 60884 when used in combination with both a dedicated socket-outlet (SANS 164-4) and a conventional socket-outlet (SANS 164-1), and a conventional socket-outlet shall comply with all relevant requirements of all parts of SANS 60884 when used in combination with both a conventional plug and a dedicated plug.

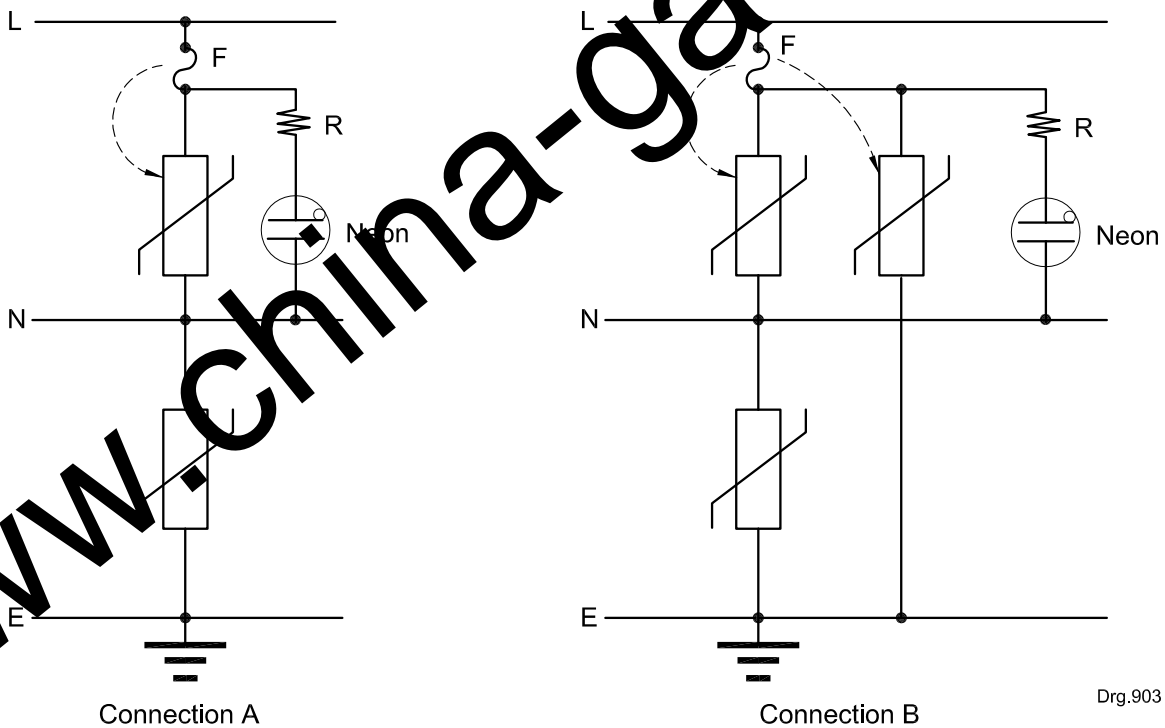
4.1.5 The earth contact of a dedicated socket-outlet shall withstand a torque of 2,6 Nm for one minute in a clockwise direction and then for one minute in an anti-clockwise direction, the torque being applied using a D-shaped earthpin.

4.1.6 Surge protective devices (SPDs) incorporated in a plug, in an adaptor or in a portable socket outlet shall comply with the requirements of SANS 61643-11. The SPD shall be a class III device (a metal-oxide varistor or a silicon device) and shall incorporate a thermal disconnect that functions in series with its live connection. The internal connection of SPDs within a plug, in an adaptor or a portable socket-outlet shall be such that the SPDs will provide both common mode and differential mode surge protection. An indicator shall be provided to indicate whether the SPD is operational.

Amdt 1; amdt 2

NOTE Fixed socket-outlets fall within the scope of SANS 10142-1, and incorporated SPDs are covered in that standard.

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Drg.903

Key

- E earth
- F fuse
- L live
- N neutral
- R resistance

Amdt 2

Amdt 2

Figure 1 — Common mode (connection A) and differential mode (connection B)

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4.1.7 Only the metals listed in 26.5 of SANS 60884-1 shall be used in current-carrying parts; however, steel shall not be used for contact pins of plugs, or of adaptors or in socket contacts which are subjected to pin entry.

4.2 Dimensions

4.2.1 The dimensions of a plug shall comply with the plug dimensions given in one of the following:

SANS 164-1, SANS 164-2, SANS 164-3, SANS 164-4, SANS 164-5, SANS 164-6, or SANS 60906-3.

4.2.2 The dimensions of a socket-outlet shall comply with the socket-outlet dimensions of one of the following:

SANS 164-1, SANS 164-2, SANS 164-3, SANS 164-4, SANS 164-6 or SANS 60906-3.

4.2.3 The plug of an adaptor shall comply with the dimensions of SANS 164-1 or SANS 164-2. The earthpin of an adaptor may be of insulation material, provided the adaptor does not include a socket-outlet that will accept a plug with an earthpin. (See also 4.2.5.)

4.2.4 The socket-outlets of an adaptor shall comply with the socket-outlet dimensions of one or more of SANS 164-1, SANS 164-2, SANS 164-3 or SANS 164-6. (See also 4.2.5.)

NOTE A reasonable period will have to be allowed for phasing in of the requirements of 4.2.3 and 4.2.4.

4.2.5 The pins of an adaptor may comply with the dimensions of SANS 164-4, provided all the socket contacts are of the same dedicated type, i.e. no adapting from a dedicated socket-outlet to a non-dedicated socket-outlet, or to another type of dedicated socket-outlet, is permitted.

4.2.6 An adaptor shall not fit into a lampholder.

4.2.7 The means of mounting a fixed socket-outlet in a wall outlet box shall permit rotational adjustment of the socket-outlet relative to the box through an angle of at least 10°.

4.2.8 A socket-outlet for fixed installation, which is not supplied with its own outlet box, shall have mounting centres that comply with SANS 1085.

4.3 Rating

The voltage and current ratings of an accessory shall comply with the requirements of the relevant of SANS 164-1, SANS 164-2, SANS 164-3, SANS 164-4, SANS 164-5, SANS 164-6, or SANS 60906-3.

Bibliography

SANS 10142-1, *The wiring of premises – Part 1: Low-voltage installations.*

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South African National Standards are updated by amendment or revision. Users of South African National Standards should ensure that they possess the latest amendments or editions.

The SABS continuously strives to improve the quality of its products and services and would therefore be grateful if anyone finding an inaccuracy or ambiguity while using this standard would inform the secretary of the technical committee responsible, the identity of which can be found in the foreword.

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