

ICS 29.120.30

SANS 164-1:2006

ISBN 0-626-17837-1

Edition 5

SOUTH AFRICAN NATIONAL STANDARD

**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.

Published by Standards South Africa
1 dr lategan road groenkloof ☒ private bag x191 pretoria 0001
tel: 012 428 7911 fax: 012 344 1568 international code + 27 12
www.stansa.co.za
© Standards South Africa

standards
SouthAfrica
(a division of SABS)

SANS 164-1:2006

Edition 5

Table of changes

Change No.	Date	Scope

Abstract

Covers the rating and dimensions of the conventional 16 A 250 V a.c. plug and socket-outlet system and socket-outlet adaptors for household and similar purposes, for use in South Africa.

Keywords

adaptors, dimensions, electric plugs, electric sockets, socket-outlets.

Foreword

This South African standard was approved by National Committee StanSA SC 67C, *Electricity distribution systems and components – Electrical accessories*, in accordance with procedures of Standards South Africa, in compliance with annex 3 of the WTO/TBT agreement.

This edition cancels and replaces edition 4 (SABS 164-1:1997).

This part of SANS 164, by reference in SANS 164-0, forms part of the compulsory specification for plugs, socket-outlets and socket-outlet adaptors, as published by Government Notice No. R442 (Government Gazette 18779) of 3 April 1998. Compliance with the dimensions of this part of SANS 164 will be deemed to be compliance with the said compulsory specification.

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: Flat non-rewirable two-pole plugs, 2,5 A 250 V, with cord, for connection of class II equipment.

Part 6: Round two-pole system, 10 A 250 V a.c. and 16 A 250 V a.c., for connection of class II equipment.

Annexes A, B, C, D, E and F form an integral part of this part of SANS 164.

SANS 164-1:2006

Edition 5

Contents

	Page
Abstract	
Keywords	
Foreword	
1 Scope	3
2 Normative reference.....	3
3 Definitions.....	3
4 Requirements.....	3
Annex A (normative) Gauge for the distance from the engagement face to the current-carrying contact tubes of socket-outlets	6
Annex B (normative) Gauge for the distance from the engagement face to the point of first contact with the current-carrying contacts of socket-outlets (no contact gauge).....	7
Annex C (normative) Gauge for the distance from the engagement face to the point of first contact with the current-carrying contacts of socket-outlets (contact gauge).....	8
Annex D (normative) Gauge for proving that it is not possible to make connection between a pin of a plug and a current-carrying contact of a socket-outlet while any other current-carrying pin is accessible	9
Annex E (normative) Gauge for proving that, during insertion of a plug, the earth pin makes connection before either of the current-carrying pins, and that, during plug withdrawal, both current-carrying pins break connection before the earth pin	10
Annex F (normative) "GO" gauges for plugs and socket-outlets.....	11
Bibliography	13

SANS 164-1:2006

Edition 5

This page is intentionally left blank

SANS 164-1:2006

Edition 5

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.

1 Scope

This part of SANS 164 covers the rating and dimensions of the conventional 16 A 250 V a.c. plug and socket-outlet system and socket-outlet adaptors for household and similar purposes, for use in South Africa.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitutes 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 edition of the standard indicated below. Information on currently valid national and international standards can be obtained from Standards South Africa.

SANS 164-0, *Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 0: General and safety requirements.*

3 Definitions

For the purposes of this part of SANS 164, the definitions given in SANS 164-0 apply.

4 Requirements

4.1 The requirements of SANS 164-0 apply.

4.2 Socket-outlets, socket-outlet adaptors and rewirable plugs shall be rated at 16 A and 250 V a.c.

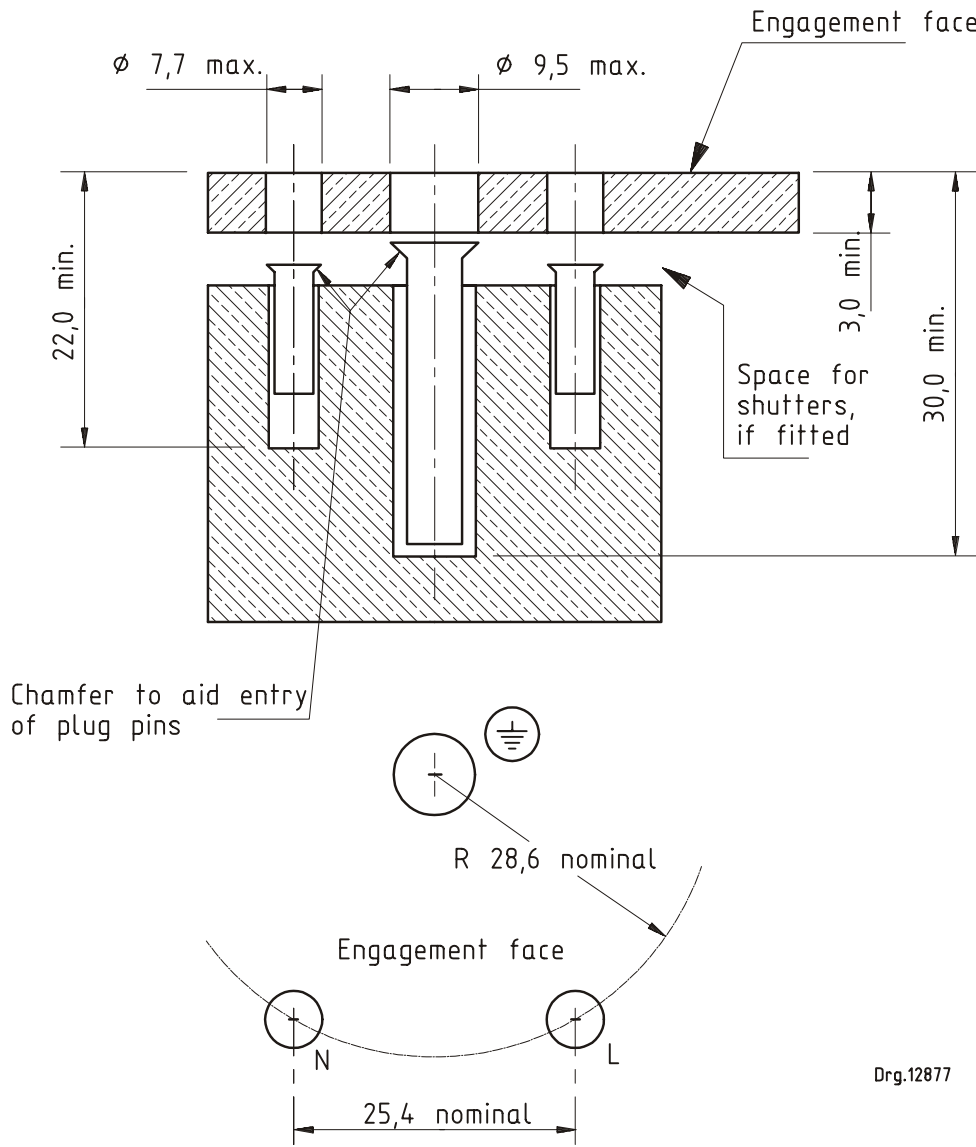
4.3 Plugs and socket-outlets shall comply with the dimensions given on the appropriate of standard sheets 1-1 or 1-2.

Use the gauges given in annexes A to F for checking the dimensions.

SANS 164-1:2006

Edition 5

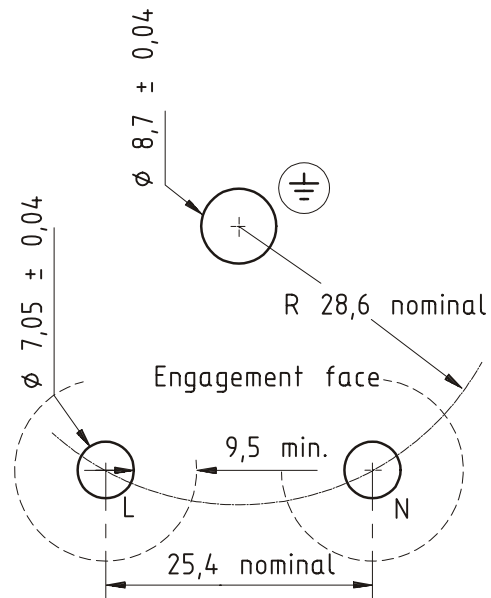
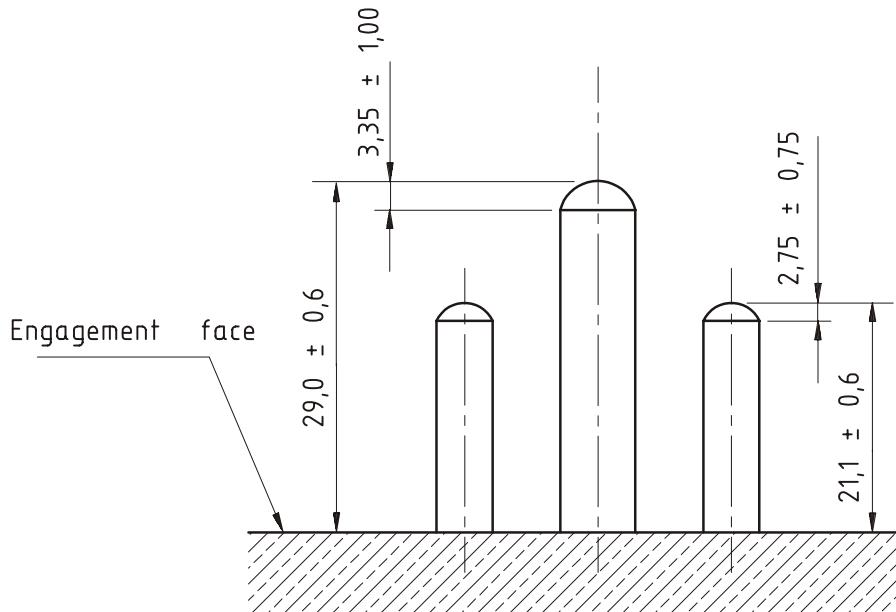
Dimensions in millimetres



Standard sheet 1-1 — 16 A Two-pole and earthing-contact socket-outlets

SANS 164-1:2006
Edition 5

Dimensions in millimetres



Drg.14649

Standard sheet 1-2 — 16 A 250 V Two-pole and earthing-pin plugs

SANS 164-1:2006

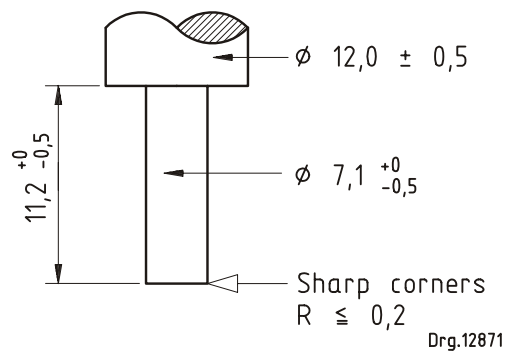
Edition 5

Annex A

(normative)

Gauge for the distance from the engagement face to the current-carrying contact tubes of socket-outlets

Dimensions in millimetres



Insert the gauge as far as possible into the guidance hole of a socket-outlet, with shutters (if any) removed. Move the gauge around the periphery of the guidance hole, and ensure that it does not make contact with the socket-outlet contact tube. Indication of contact shall be by means of a lamp connected between the gauge and the appropriate contact tube. The a.c. or d.c. voltage of the circuit shall be between 12 V and 24 V.

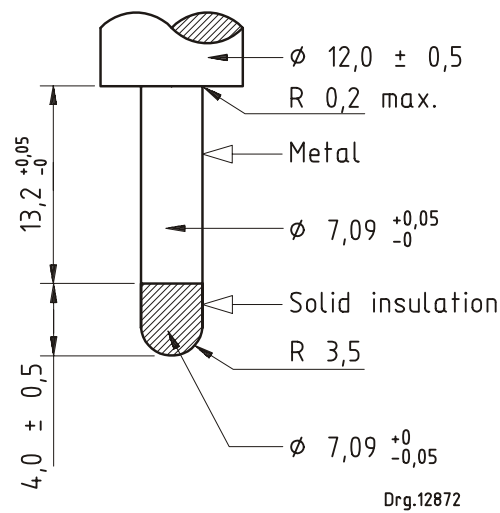
Gauges shall be made of a hard, corrosion-resistant metal such as stainless steel.

Annex B

(normative)

**Gauge for the distance from the engagement face to the point of first contact with the current-carrying contacts of socket-outlets
(no contact gauge)**

Dimensions in millimetres



Insert the gauge as far as it will go into the guidance hole of a socket-outlet. The indicator lamp described in annex A shall not light.

NOTE The insulated tips of gauges are for guiding the gauges.

SANS 164-1:2006

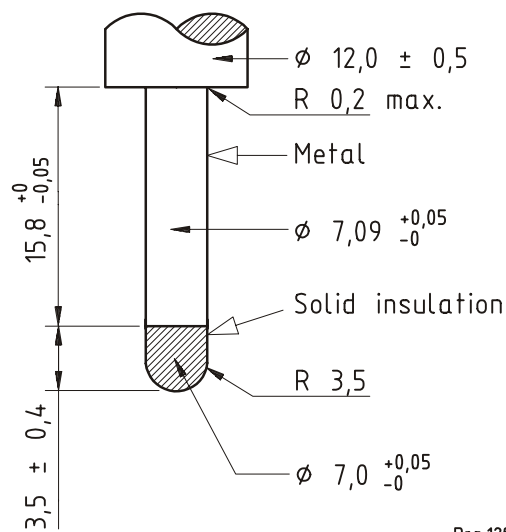
Edition 5

Annex C

(normative)

Gauge for the distance from the engagement face to the point of first contact with the current-carrying contacts of socket-outlets (contact gauge)

Dimensions in millimetres



Drg.12879

Insert the gauge as far as it will go into the guidance hole of a socket-outlet. The indicator lamp described in annex A shall light.

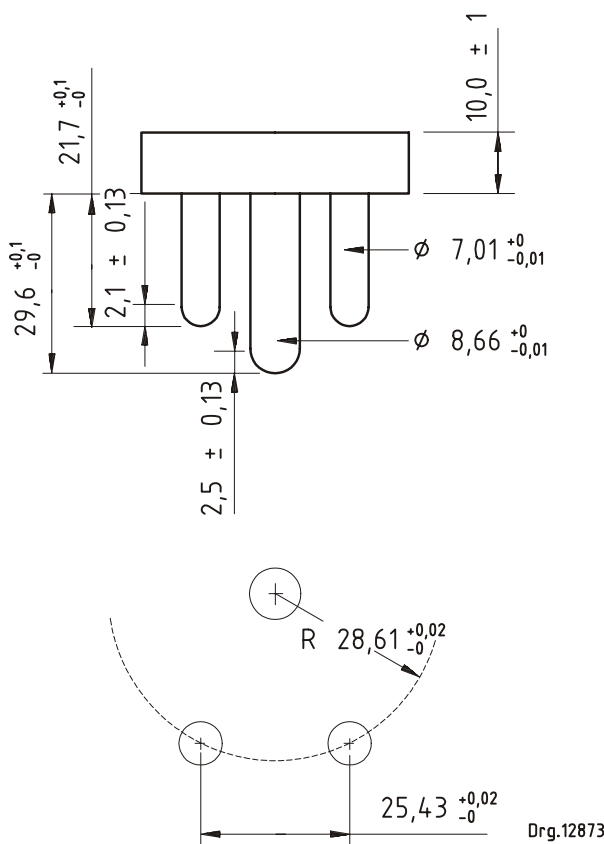
NOTE The insulated tips of gauges are for guiding the gauges.

Annex D

(normative)

Gauge for proving that it is not possible to make connection between a pin of a plug and a current-carrying contact of a socket-outlet while any other current-carrying pin is accessible

Dimensions in millimetres



An indicator lamp as described in annex A shall be connected between a gauge plug and both socket-outlet current-carrying contact tubes. When the earth pin of the gauge plug is inserted into a sample socket-outlet, in all attitudes, the indicator lamp shall not light.

The gauge shall be of a hard, corrosion-resistant metal such as stainless steel.

SANS 164-1:2006

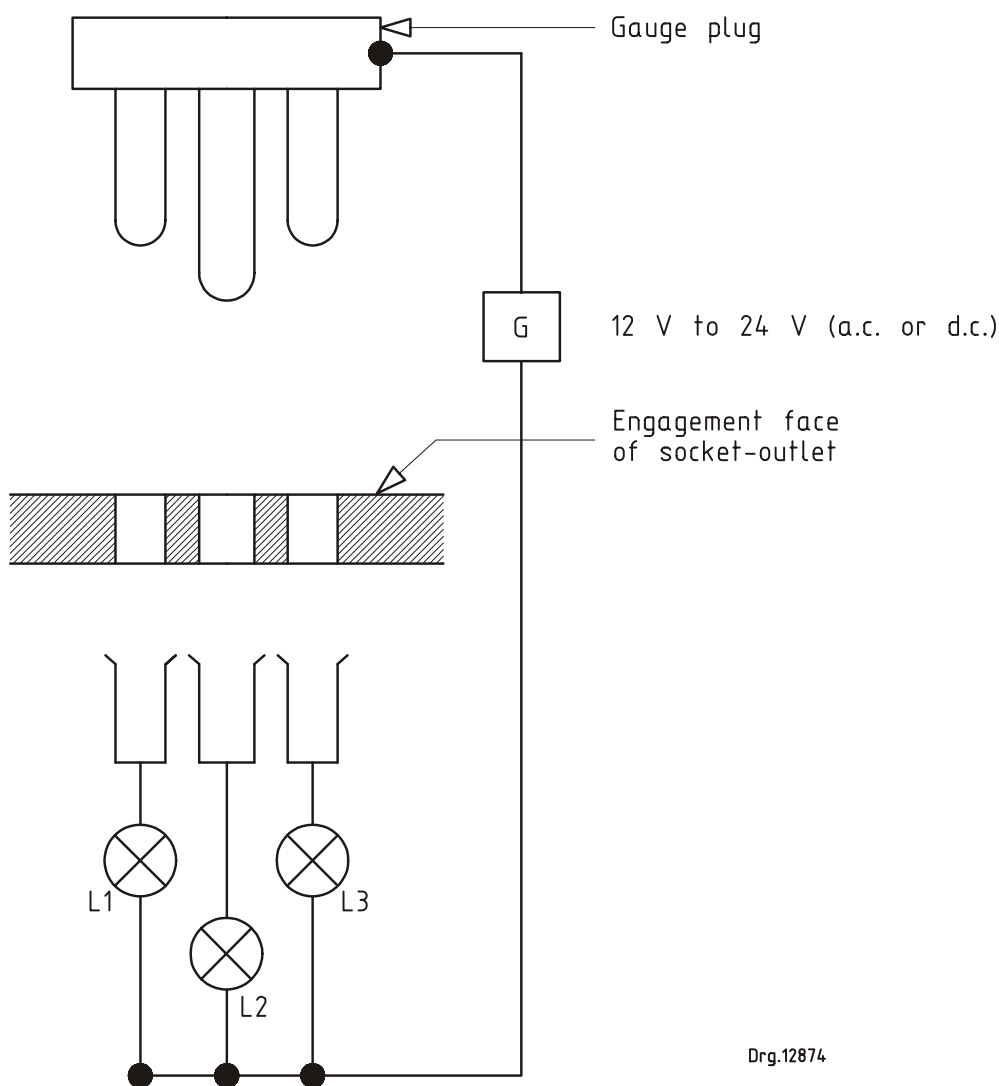
Edition 5

Annex E

(normative)

Gauge for proving that, during insertion of a plug, the earth pin makes connection before either of the current-carrying pins, and that, during plug withdrawal, both current-carrying pins break connection before the earth pin (see requirements for protection against electric shock in SANS 60884-1)

Using the test plug of annex D, connect an indicator lamp as shown below.



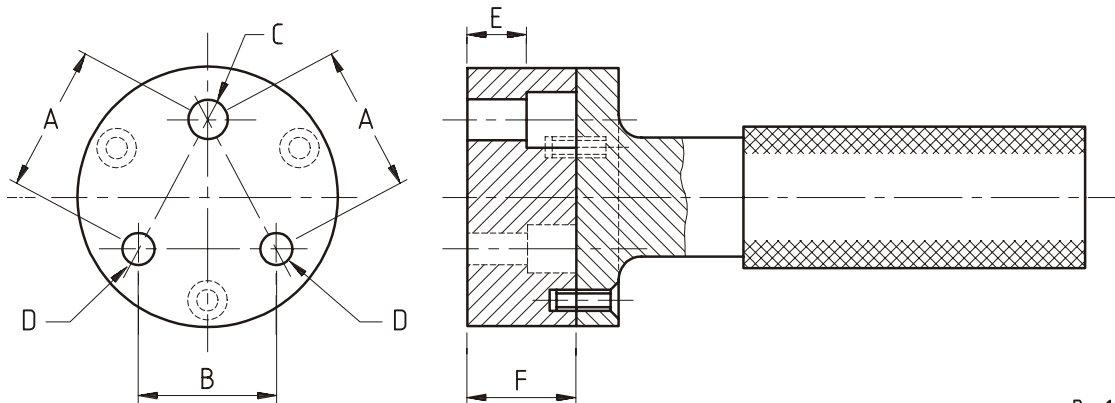
The gauge, when inserted without undue force and at any possible angle, shall cause lamp L2 to light up before either L1 or L3. When the gauge is withdrawn at any possible angle, both lamps L1 and L3 shall "go out" before lamp L2.

Annex F

(normative)

"GO" gauges for plugs and socket-outlets

F.1 "GO" gauge for plugs



Drg.14554

Table F.1 — Dimensions of "GO" gauge for plugs

Dimensions in millimetres

1	2	3	4	5	6	7	8	9	10
Rated current A	A	B	Tolerance for A and B	C	D	Tolerance for C and D	E	F	Tolerance for E and F
16	28,58	25,40	± 0,03	8,87	7,21	+ 0,01 - 0,00	11,10	31	± 0,5

All plugs shall be capable of insertion into the relevant gauge without undue force.

SANS 164-1:2006

Edition 5

Annex F (continued)

F.2 "GO" gauge for socket-outlets

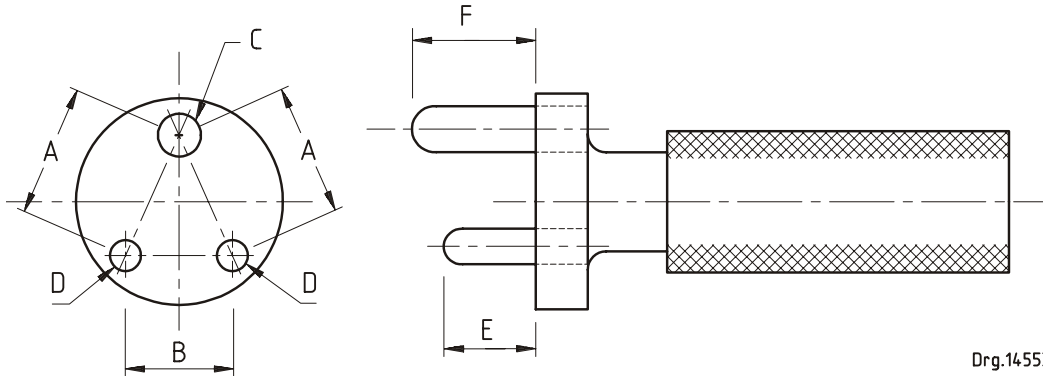


Table F.2 (a) — Dimensions of maximum "GO" gauge for socket-outlets

Dimensions in millimetres

1	2	3	4	5	6	7	8	9	10
Rated current A	A	B	Tolerance for A and B	C	D	Tolerance for C and D	E	F	Tolerance for E and F
16	28,73	25,55	± 0,03	8,74	7,09	+ 0,00 - 0,01	21,8	29,8	+ 0,0 - 0,1

Table F.2 (b) — Dimensions of minimum "GO" gauge for socket-outlets

Dimensions in millimetres

1	2	3	4	5	6	7	8	9	10
Rated current A	A	B	Tolerance for A and B	C	D	Tolerance for C and D	E	F	Tolerance for E and F
16	28,43	25,25	± 0,03	8,74	7,09	+ 0,00 - 0,01	21,8	29,8	+ 0,0 - 0,1

Both maximum and minimum "GO" gauges shall enter all socket-outlets without undue force.

SANS 164-1:2006

Edition 5

Bibliography

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

© Standards South Africa