

ประกาศกระทรวงอุตสาหกรรม

ฉบับที่ ๔๘๖๖ (พ.ศ. ๒๕๕๙)

ออกตามความในพระราชบัญญัติมาตรฐานผลิตภัณฑ์อุตสาหกรรม

พ.ศ. ๒๕๑๑

เรื่อง กำหนดมาตรฐานผลิตภัณฑ์อุตสาหกรรม

เต้าเสียบ เต้ารับ - จ่าย ตัวต่อยานยนต์ และเต้ารับยานยนต์ -

การประจุไฟฟ้าผ่านตัวนำของยานยนต์ไฟฟ้า เล่ม ๓

ข้อกำหนดความเข้ากันได้เชิงมิติ และการสับเปลี่ยนได้ สำหรับขาเสียบ

และท่อหน้าสัมผัสคู่เต้าต่อยานยนต์ไฟฟ้ากระแสตรง และกระแสสลับ/กระแสตรง

อาศัยอำนาจตามความในมาตรา ๑๕ แห่งพระราชบัญญัติมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. ๒๕๑๑ ซึ่งแก้ไขเพิ่มเติมโดยพระราชบัญญัติมาตรฐานผลิตภัณฑ์อุตสาหกรรม (ฉบับที่ ๗) พ.ศ. ๒๕๕๘ รัฐมนตรีว่าการกระทรวงอุตสาหกรรมออกประกาศกำหนดมาตรฐานผลิตภัณฑ์อุตสาหกรรม เต้าเสียบ เต้ารับ - จ่าย ตัวต่อยานยนต์ และเต้ารับยานยนต์ - การประจุไฟฟ้าผ่านตัวนำของยานยนต์ไฟฟ้า เล่ม ๓ ข้อกำหนดความเข้ากันได้เชิงมิติ และการสับเปลี่ยนได้ สำหรับขาเสียบ และท่อหน้าสัมผัสคู่เต้าต่อยานยนต์ไฟฟ้ากระแสตรง และกระแสสลับ/กระแสตรง มาตรฐานเลขที่ มอก. ๒๗๔๙ เล่ม ๓ - ๒๕๕๙ ไว้ดังมีรายละเอียดต่อท้ายประกาศนี้

ทั้งนี้ ให้มีผลตั้งแต่วันที่ประกาศในราชกิจจานุเบกษาเป็นต้นไป

ประกาศ ณ วันที่ ๖ กันยายน พ.ศ. ๒๕๕๙

อรรชกา สีบุญเรือง

รัฐมนตรีว่าการกระทรวงอุตสาหกรรม

มาตรฐานผลิตภัณฑ์อุตสาหกรรม เต้าเสียบ เต้ารับ-จ่าย ตัวต่อยานยนต์ และเต้ารับยานยนต์ – การประจุไฟฟ้าผ่านตัวนำของยานยนต์ไฟฟ้า

เล่ม 3 ข้อกำหนด ความเข้ากันได้เชิงมิติ และการสับเปลี่ยนได้ สำหรับขาเสียบ และท่อหน้าสัมผัสคู่เต้าต่อยานยนต์ไฟฟ้ากระแสตรง และกระแสสลับ/กระแสตรง

0. บททั่วไป

มาตรฐานผลิตภัณฑ์อุตสาหกรรมนี้กำหนดขึ้นโดยรับ IEC 62196-3 Edition 1.0 (2014-06) Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 3: Dimensional compatibility and interchangeability requirements for d.c. and a.c./d.c. pin and contact-tube vehicle couplers มาใช้โดยวิธีพิมพ์ซ้ำ (reprint) ในระดับดัดแปร (modify) โดยใช้ IEC ฉบับภาษาอังกฤษเป็นหลัก โดยมีรายละเอียดการดัดแปรตามรายการดังนี้

0.1 ขอบข่าย

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 1 โดยเพิ่มเติมข้อความ ดังนี้

มาตรฐานผลิตภัณฑ์อุตสาหกรรมนี้

- กำหนดผลิตภัณฑ์อุตสาหกรรมเต้าเสียบ เต้ารับ-จ่าย ตัวต่อยานยนต์ และเต้ารับยานยนต์ สำหรับการประจุไฟฟ้าผ่านตัวนำของยานยนต์ไฟฟ้า configuration FF เป็นมาตรฐานของประเทศไทย สำหรับรถโดยสารไฟฟ้า

0.2 เอกสารอ้างอิง

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 2

0.3 บทนิยาม

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 3

0.4 ทัวไป

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 4 โดยมีรายละเอียดการดัดแปรตาม มอก. 2749 เล่ม 1 ข้อ 0.4

0.5 พิกัด

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 5

0.6 การเชื่อมต่อระหว่างแหล่งจ่ายกำลังไฟฟ้ากับยานยนต์ไฟฟ้า

- รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 6
- 0.7 การจำแนกประเภทของอุปกรณ์เสริม
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 7
- 0.8 การทำเครื่องหมายและฉลาก
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 8
- 0.9 มิติ
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 9
- 0.10 การป้องกันการช็อกไฟฟ้า
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 10
- 0.11 ขนาดและสีของตัวนำลงดินป้องกัน
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 11
- 0.12 การจัดเตรียมสำหรับลงดินป้องกัน
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 12
- 0.13 ขั้วต่อ
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 13
- 0.14 อินเทอร์ล็อก
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 14
- 0.15 ความทนต่อการเร่งอายุของยางและวัสดุเทอร์มอพลาสติก
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 15
- 0.16 การสร้างทั่วไป
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 16
- 0.17 การสร้างเต้ารับ-จ่าย
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 17
- 0.18 การสร้างเต้าเสียบและตัวต่อยานยนต์
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 18
- 0.19 การสร้างเต้ารับยานยนต์
รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 19
- 0.20 ระดับการป้องกัน

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014ข้อ 20

0.21 ความต้านทานฉนวนและความคงทนได้อิเล็กทริก

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014ข้อ 21

0.22 ความสามารถตัดกระแส

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014ข้อ 22

0.23 การทำงานปกติ

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 23

0.24 อุณหภูมิที่เพิ่มขึ้น

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 24

0.25 สายไฟฟ้าอ่อนและการเชื่อมต่อ

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 25

0.26 ความแข็งแรงทางกล

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 26

0.27 หมุดเกลียว ส่วนนำกระแสไฟฟ้า และสิ่งต่อวงจร

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 27

0.28 ระยะห่างตามฉนวน ระยะห่างในอากาศ และระยะห่าง

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 28

0.29 ความทนความร้อน ติดไฟ และการเกิดรอยทางไฟฟ้า

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 29

0.30 การกักความร้อนและความทนต่อการเกิดสนิม

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 30

0.31 การทดสอบความทนของกระแสไฟฟ้าลัดวงจรแบบมีเงื่อนไข

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014ข้อ 31

0.32 ความเข้ากันได้ทางแม่เหล็กไฟฟ้า

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014ข้อ 32

0.33 ยานยนต์ขับเคลื่อน

รายละเอียดให้เป็นไปตาม IEC 62196-3:2014 ข้อ 33

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CONTENTS

FOREWORD	3
INTRODUCTION.....	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 General.....	7
5 Ratings	7
6 Connection between the power supply and the electric vehicle	7
7 Classification of accessories	9
8 Marking.....	10
9 Dimensions	10
10 Protection against electric shock.....	10
11 Size and colour of earthing conductors.....	10
12 Provision for earthing	10
13 Terminals	11
14 Interlocks	11
15 Resistance to aging of rubber and thermoplastic material.....	11
16 General construction	11
17 Construction of socket-outlets	11
18 Construction of plugs and vehicle connectors.....	12
19 Construction of vehicle inlets.....	12
20 Degrees of protection	12
21 Insulation resistance and dielectric strength.....	12
22 Breaking capacity.....	12
23 Normal operation	12
24 Temperature rise.....	12
25 Flexible cables and their connection.....	13
26 Mechanical strength	13
27 Screws, current-carrying parts and connections	14
28 Creepage distances, clearances and distances	14
29 Resistance to heat, to fire and to tracking	14
30 Corrosion and resistance to rusting.....	14
31 Conditional short-circuit current withstand test	14
32 Electromagnetic compatibility	14
33 Vehicle driveover	14
Bibliography	15
Table 301 – Compatibility of mating accessories at vehicle	9
Table 302 – Interface Overview	10

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PLUGS, SOCKET-OUTLETS, VEHICLE
CONNECTORS AND VEHICLE INLETS–
CONDUCTIVE CHARGING OF ELECTRIC VEHICLES –**

**Part 3: Dimensional compatibility and interchangeability requirements
for d.c. and a.c./d.c. pin and contact-tube vehicle couplers**

FOREWORD

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International Standard IEC 62196-3 has been prepared by subcommittee 23H: Plugs, socket-outlets and couplers for industrial and similar applications, and for electric vehicles, of IEC technical committee 23: Electrical accessories.

The text of this standard is based on the following documents:

FDIS	Report on voting
23H/303/FDIS	23H/306/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 62196 series, under the general title *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles*, can be found on the IEC website.

This part of IEC 62196 is to be read in conjunction with IEC 62196-1. The clauses of the particular requirements in Part 3 supplement or modify the corresponding clauses in Part 1. Where the text indicates an "addition" to or a "replacement" of the relevant requirement, test specification or explanation of Part 1, these changes are made to the relevant text of Part 1, which then becomes part of the standard.

Subclauses, figures, tables or notes which are additional to those in IEC 62196-1 are numbered starting from 301.

In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type*;
- notes: in smaller roman type.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Responding to global challenges of CO₂ reduction and energy security, the automobile industries have been accelerating the development and commercialization of electric vehicles and hybrid electric vehicles.

In addition to the prevailing hybrid electric vehicles, battery electric vehicles including plug-in hybrid electric vehicles are going to be mass-marketed.

To support the diffusion of such vehicles, this standard provides the standard interface configurations of vehicle couplers to be used in conductive charging of electric vehicles, taking the most frequent charging situations into consideration.

IEC 62196 is divided into several parts as follows:

- Part 1: General requirements, comprising clauses of a general character.
- Part 2: Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories.
- Part 3: Dimensional compatibility and interchangeability requirements for d.c. and a.c./d.c. pin and contact-tube vehicle couplers.

**PLUGS, SOCKET-OUTLETS, VEHICLE
CONNECTORS AND VEHICLE INLETS –
CONDUCTIVE CHARGING OF ELECTRIC VEHICLES –**

**Part 3: Dimensional compatibility and interchangeability requirements
for d.c. and a.c./d.c. pin and contact-tube vehicle couplers**

1 Scope

This part of IEC 62196 is applicable to vehicle couplers with pins and contact-tubes of standardized configuration, herein also referred to as "accessories", intended for use in electric vehicle conductive charging systems which incorporate control means, with rated operating voltage up to 1 500 V d.c. and rated current up to 250 A, and 1 000 V a.c. and rated current up to 250 A.

This part of IEC 62196 applies to high power d.c. interfaces and combined a.c./d.c. interfaces of vehicle couplers specified in IEC 62196-1:2014, and intended for use in conductive charging systems for circuits specified in IEC 61851-1:2010, and IEC 61851-23:2014.

The d.c. vehicle connectors covered by this part of the standard are used only in charging mode 4, according to Case C in Clause 6.2 of IEC 61851-1:2010, Figure 3 in Clause 6.3.1 of IEC 61851-1:2010 and IEC 62196-2:2011.

The d.c. vehicle inlets covered by this part of the standard are used only in charging mode 4, according to Case C in Clause 6.2 of IEC 61851-1:2010, Figure 3 in Clause 6.3.1 of IEC 61851-1:2010.

These vehicle couplers are intended to be used for circuits similar to those specified in IEC 61851-23 which operate at different voltages and which may include ELV and communication signals.

This part of IEC 62196 applies to the vehicle couplers to be used in an ambient temperature of between -30 °C and +50 °C.

NOTE 1 In some countries, other requirements may apply.

NOTE 2 In the following country, -35 °C applies: SE.

These vehicle couplers are intended to be connected only to cables with copper or copper-alloy conductors.

2 Normative references

Clause 2 of IEC 62196-1:2014 applies, except as follows.

Additional normative reference:

IEC 62196-2:2011, *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 2: Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories*

3 Terms and definitions

Clause 3 of IEC 62196-1:2014 applies.

4 General

Clause 4 of IEC 62196-1:2014 applies.

5 Ratings

Clause 5 of IEC 62196-1:2014 applies.

6 Connection between the power supply and the electric vehicle

Clause 6 of IEC 62196-1:2014 applies, except as follows:

6.4 Universal interface

Not applicable.

6.5 Basic interface

Not applicable.

6.6 D.C. configurations

Replacement:

For all d.c. configurations, the d.c. interface may contain up to 12 power or signal contacts, with only one physical configuration of contact positions. The electrical ratings and their function are described in Table 4 of 62196-1. They shall be used in a system according to IEC 61851-23:2014, Annex AA "D.C. electric vehicle charging station of System A" or Annex BB "D.C. Electric vehicle charging station of System B" respectively. See the corresponding standard sheets for additional interface details.

6.7 Contact sequencing

Addition:

For all d.c. interfaces, the contact sequence during the connection process shall be:

- Protective Earth (if any)
- d.c. power contacts
- Isolation monitor contacts:

NOTE 1 if provided, isolation monitor contacts shall mate before or simultaneously with the control pilot contact.

- Proximity detection or connection switch contact

NOTE 2 if provided, proximity detection or connection switch contacts shall mate before or simultaneously with the control pilot contact.

- Control pilot contact

During disconnection the order shall be reversed.

Additional subclause:

6.301 Configuration EE and FF combined interface

A combined interface extends the use of a basic interface for a.c. and d.c. charging. D.C. charging can be achieved by providing additional d.c. power contacts to supply d.c. energy to the electric vehicle.

The basic portion of the combined vehicle inlet can be used with a basic connector for a.c. charging only or a combined vehicle connector for d.c. charging.

Combined couplers shall only be used for d.c. charging with the "d.c. electric vehicle charging station of System C" described in IEC 61851-23:2014, Annex CC.

General requirements and ratings for all contacts are given in IEC 62196-1:2014, Table 5.

If the a.c. or d.c. ratings of a mating connector and inlet differ, the coupler (mating pair) shall be used at the lower rating of either the vehicle connector or vehicle inlet of the mating accessory.

Ratings and requirements for the use of the combined interface with a.c. are defined in IEC 62196-2:2011.

Electric vehicles with a combined vehicle inlet shall withstand a.c. voltage at the power contacts of the basic portion.

NOTE This requirement will be withdrawn when an equivalent update is included in ISO 17409.

Table 301 – Compatibility of mating accessories at vehicle

		Vehicle connector							
		Type 1	Type 2	Type 3	Configuration AA	Configuration BB	Configuration EE	Configuration FF	Universal, high power a.c.
Vehicle inlet	Type 1	Yes	-	-	-	-	-	-	-
	Type 2	-	Yes	-	-	-	-	-	-
	Type 3	-	-	Yes	-	-	-	-	-
	Configuration AA	-	-	-	Yes	-	-	-	-
	Configuration BB	-	-	-	-	Yes	-	-	-
	Configuration EE	Yes	-	-	-	-	Yes	-	-
	Configuration FF	-	Yes	-	-	-	-	Yes	-
	Universal, high power a.c.	-	-	-	-	-	-	-	Yes
	Universal, high power d.c.	-	-	-	-	-	-	-	Yes
NOTE 1 For Type 1, Type 2 and Type 3 refer to the corresponding standard sheets in IEC 62196-2:2011.									
NOTE 2 For Configurations AA, BB, EE, and FF, refer to the corresponding standards sheets.									
NOTE 3 For Universal high power a.c. and Universal high power d.c., refer to IEC 62196-1:2014.									

7 Classification of accessories

Clause 7 of IEC 62196-1:2014 applies, except as follows:

7.1 Replacement:

- Vehicle connectors,
- Vehicle inlets.

7.5 Replacement:

As specified in Clause 6 and IEC 61851-1:2010:

- Combined interface

Additional subclause:

7.301 According to the standard sheets used:

- Configuration AA
- Configuration BB
- Configuration EE
a.c. corresponding to Type 1 in IEC 62196-2:2011 and d.c.
- Configuration FF

a.c. corresponding to Type 2 in IEC 62196-2:2011 and d.c.

8 Marking

Clause 8 of IEC 62196-1:2014 applies.

9 Dimensions

Clause 9 of IEC 62196-1:2014 applies, except as follows:

9.1 Replacement:

The vehicle connector and vehicle inlet shall comply with the relevant configuration shown in Table 302:

Table 302 – Interface Overview

Configuration	Dimensions described in	Max. Rated Voltage V d.c.	Max. Rated Current A	Shall only be used with d.c. charging station according to
AA	Standard Sheets 3-I	600	200	IEC 61851-23:2014, Annex AA
BB	Standard Sheets 3-II	750	250	IEC 61851-23:2014, Annex BB
EE	Standard Sheets 3-III	600	200	IEC 61851-23:2014, Annex CC
FF	Standard Sheets 3-IV	1 000	200	IEC 61851-23:2014, Annex CC

10 Protection against electric shock

Clause 10 of IEC 62196-1:2014 applies, except as follows:

Additional subclauses:

10.301 For configuration AA, vehicle couplers shall be used only with the isolated d.c. electric vehicle charging station as specified in IEC 61851-23.

10.302 For configuration BB, vehicle couplers shall be used only with either isolated or non-isolated d.c. electric vehicle charging station as specified in IEC 61851-23.

10.303 For configurations EE and FF, vehicle couplers shall be used with either isolated or non-isolated d.c. electric vehicle charging station as specified in IEC 61851-23.

11 Size and colour of earthing conductors

Clause 11 of IEC 62196-1:2014 applies.

12 Provision for earthing

Clause 12 of IEC 62196-1:2014 applies, except as follows:

12.1 Replacement:

Accessories shall be provided with a protective earthing contact and earthing terminal in case that the vehicle is connected galvanically to the mains through this accessory. Protective earthing contacts shall be directly and reliably connected to the protective earthing terminals.

NOTE if the vehicle is connected to the electric vehicle charging station with the insulating device between the vehicle and the mains (e.g. insulating transformer), the vehicle is deemed not to be galvanically connected.

13 Terminals

Clause 13 of IEC 62196-1:2014 applies.

14 Interlocks

Clause 14 of IEC 62196-1:2014 applies, except as follows:

Additional subclause:

14.301 Latching function

Accessories shall be provided with a latching device to prevent the connection to be separated unintentionally or by unauthorized persons.

The interlock function shall be performed by the proper functioning of the latching device.

A means shall be provided to indicate that the interlock is properly engaged.

Compliance is checked by inspection and manual test.

15 Resistance to aging of rubber and thermoplastic material

Clause 15 of IEC 62196-1:2014 applies.

16 General construction

Clause 16 of IEC 62196-1:2014 applies, except as follows.

16.15 Replacement of the first paragraph by:

The force to insert and withdraw a vehicle connector shall be less than 100 N. Means to facilitate the insertion and withdrawal of the vehicle connector from the vehicle inlet may be provided. If a vehicle coupler is equipped with an assist device to reduce this force (e.g. mechanical assist device), the operating force of assist device shall be less than 100 N.

17 Construction of socket-outlets

Clause 17 of IEC 62196-1:2014 does not apply.

18 Construction of plugs and vehicle connectors

Clause 18 of IEC 62196-1:2014 applies.

19 Construction of vehicle inlets

Clause 19 of IEC 62196-1:2014 applies.

20 Degrees of protection

Clause 20 of IEC 62196-1:2014 applies.

21 Insulation resistance and dielectric strength

Clause 21 of IEC 62196-1:2014 applies.

22 Breaking capacity

Clause 22 of IEC 62196-1:2014 applies, except as follows:

22.3 Replacement:

D.C. accessories or the d.c. portions of combined a.c./d.c. accessories are not required to be tested in accordance with 22.3 of 62196-1:2014.

23 Normal operation

Clause 23 of IEC 62196-1:2014 applies, except as follows:

23.2 Addition:

For d.c. vehicle inlets and vehicle connectors the maximum number of operation cycles is 10 000 with no electrical load. In case d.c. vehicle inlets contain an a.c. part, these shall be tested separately with new accessories.

24 Temperature rise

Clause 24 of IEC 62196-1:2014 applies, except as follows:

24.1 Addition, after the first paragraph:

A thermal cut-out in the vehicle connector is optional for d.c. charging.

Replacement of the fourth paragraph by:

The test current is a direct or alternating current of the value shown in Table 18 of IEC 62196-1:2014. For the purposes of the temperature rise test, any thermal cut-out device shall be short circuited (i.e. the test results shall be acceptable without relying on the thermal cut-out).

25 Flexible cables and their connection

Clause 25 of IEC 62196-1:2014 applies except as follows:

Additional subclause:

25.301 Accessories not suitable for making and breaking an electric circuit under load

Accessories that are not suitable for making and breaking under load shall be submitted to the additional following test:

Non-rewirable accessories are tested as delivered.

Rewirable accessories are tested with the maximum and minimum size cables recommended by the manufacturer.

Conductors of the cable of rewirable accessories are introduced into the terminals, the terminal screws being tightened just sufficiently to prevent the conductors from easily changing their position.

The cable anchorage is used in the normal way, clamping screws being tightened with a torque equal to two-thirds of that specified in IEC 62196-1:2014 Clause 27.1. After reassembly of the sample, with cable glands, if any, in position, the component parts shall fit snugly and it shall not be possible to push the cable into the sample to any appreciable extent.

The sample is fixed in the test apparatus so that the axis of the cable is vertical where it enters the sample.

The cable is then subjected once to a pull of 750 N. The pull is applied without jerks for a duration of 1 min.

Immediately afterwards, the cable is subjected to a torque, of the value specified in IEC 62196-1:2014 Table 19, for 1 min.

During the tests, the cable shall not be damaged.

After the tests, the cable shall not have been displaced by more than the values indicated in IEC 62196-1:2014 Table 19. For rewirable accessories, the ends of the conductors shall not have moved noticeably in the terminals; for non-rewirable accessories, there shall be no break in the electrical connections.

For the measurement of the longitudinal displacement, a mark is made on the cable at a distance of approximately 2 cm from the end of the sample or the cable anchorage before starting the tests. If, for non-rewirable accessories, there is no definite end to the sample, an additional mark is made on the body of the sample.

After the tests, the displacement of the mark on the cable in relation to the sample or the cable anchorage is measured.

26 Mechanical strength

Clause 26 of IEC 62196-1:2014 applies.

27 Screws, current-carrying parts and connections

Clause 27 of IEC 62196-1:2014 applies.

28 Creepage distances, clearances and distances

Clause 28 of IEC 62196-1:2014 applies.

29 Resistance to heat, to fire and to tracking

Clause 29 of IEC 62196-1:2014 applies.

30 Corrosion and resistance to rusting

Clause 30 of IEC 62196-1:2014 applies.

31 Conditional short-circuit current withstand test

Clause 31 of IEC 62196-1:2014 does not apply.

32 Electromagnetic compatibility

Clause 32 of IEC 62196-1:2014 applies.

33 Vehicle driveover

Clause 33 of IEC 62196-1:2014 applies, except as follows:

33.3 *Not applicable.*

33.4 *Not applicable.*

Bibliography

ISO 17409, *Electrically propelled road vehicles – Connection to an external electric power supply – Safety specifications*

**STANDARD SHEETS
CONFIGURATION AA
VEHICLE COUPLER 200 A 600 V D.C.**

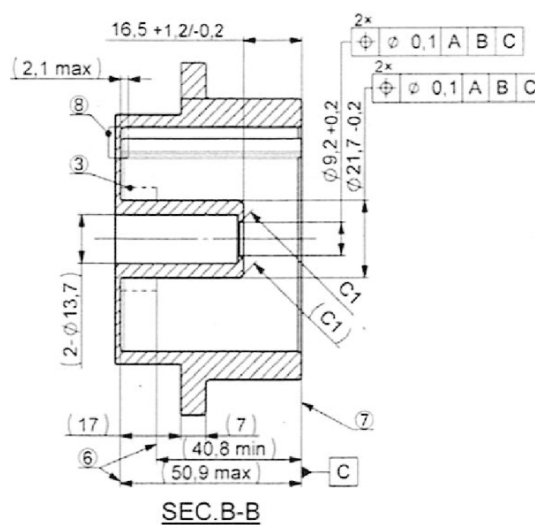
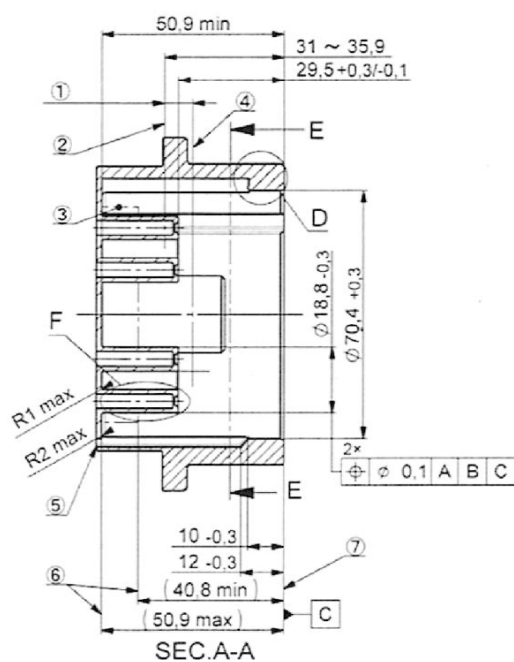
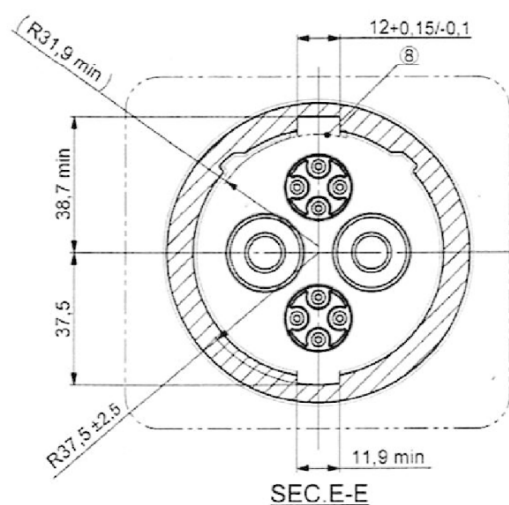
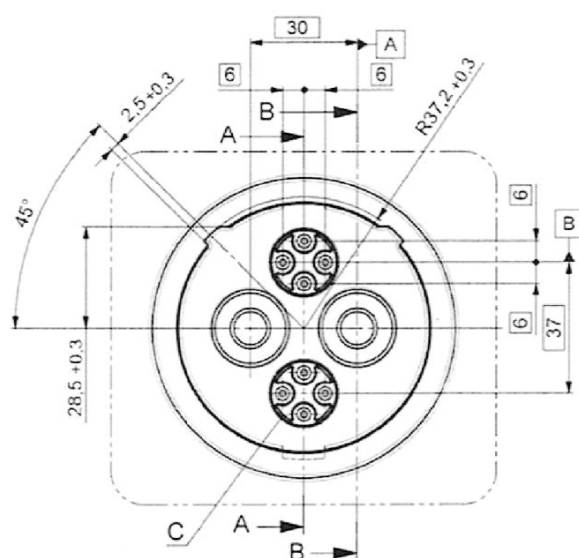
**FEUILLES DE NORME
CONFIGURATION AA
CONNECTEUR DE VÉHICULE 200 A, 600 V C.C.**

**STANDARD SHEET 3-1a
VEHICLE INLET
(Sheet 1)**

**FEUILLE DE NORME 3-1a
SOCLE DE CONNECTEUR DE VÉHICULE
(Feuille 1)**

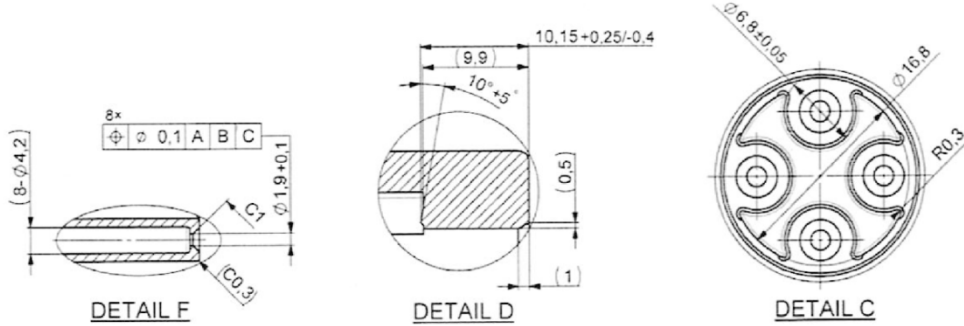
Dimensions in millimetres
Dimensions in parenthesis for reference

Dimensions en millimètres
La valeur entre parenthèses est donnée à des fins de référence



STANDARD SHEET 3-1a
VEHICLE INLET
Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-1a
SOCLE DE CONNECTEUR DE VÉHICULE
Feuille 2 (suite de la Feuille 1)



General tolerance			
10 Max	50 Max	100 Max	Angle
± 0,15	± 0,2	± 0,3	± 30'

Tolérance générale			
10 Max	50 Max	100 Max	Angle
± 0,15	± 0,2	± 0,3	± 30'

Key

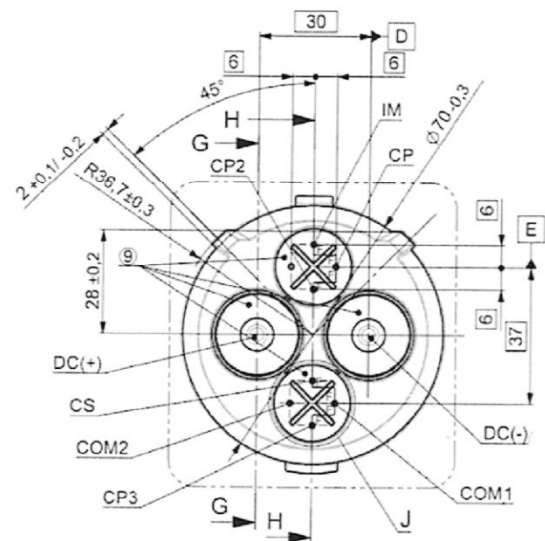
- 1 8 min difference between power and signal terminal contact point at worst case
- 2 Signal terminal contact point
- 3 Packing (if necessary); one of sealing method when coupled with vehicle connector
- 4 Power terminal contact point
- 5 Drain hole
- 6 Sealing area
- 7 Standard datum plane
- 8 Grommet (if necessary)

Légende

- 1 8 min de différence entre le point de contact de la borne d'alimentation et de signalisation dans le cas le plus défavorable
- 2 Point de contact de la borne de signalisation
- 3 Garniture (si nécessaire) une méthode d'étanchéité lors du couplage avec la prise mobile de véhicule
- 4 Point de contact de la borne d'alimentation
- 5 Trou d'écoulement
- 6 Zone d'étanchéité
- 7 Plan de référence normalisé
- 8 Rondelle (si nécessaire)

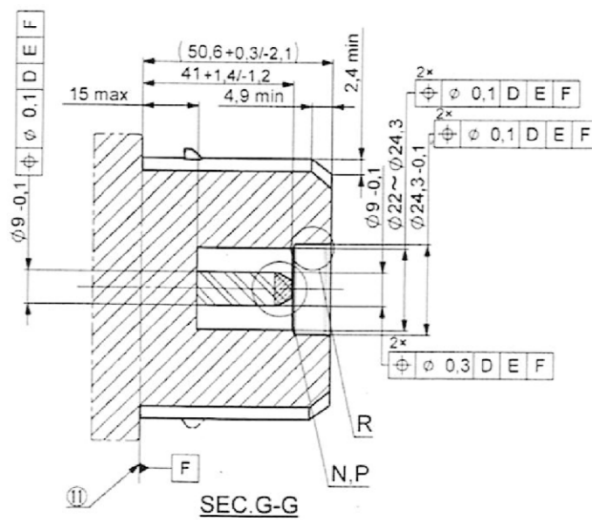
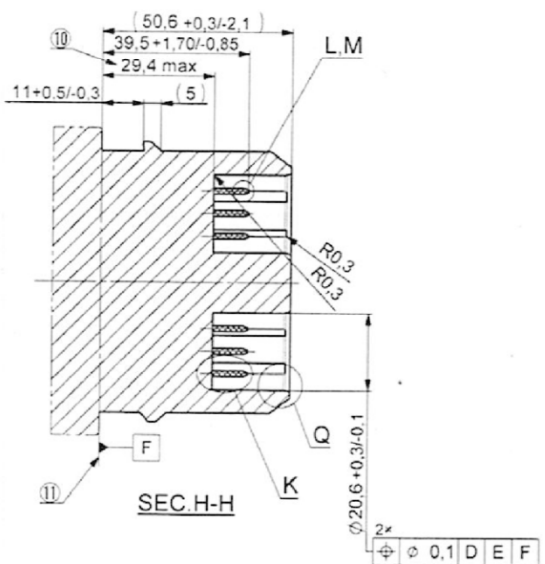
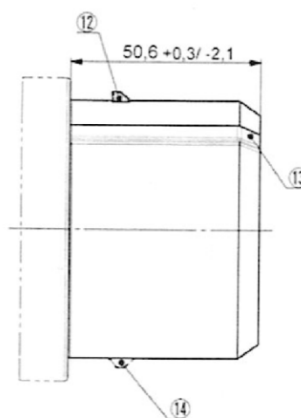
STANDARD SHEET 3-1b
VEHICLE CONNECTOR
Sheet 1

Dimensions in millimetres
Dimensions in parenthesis for reference



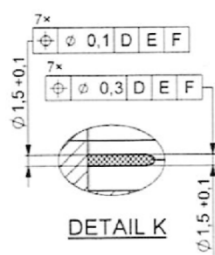
FEUILLE DE NORME 3-Ib
PRISE MOBILE DE VÉHICULE
Feuille 1

Dimensions en millimètres
La valeur entre parenthèses est donnée à des fins de référence



STANDARD SHEET 3-Ib
VEHICLE CONNECTOR
Sheet 2 (continuation of Sheet 1)

Dimensions in millimetres



DETAIL K

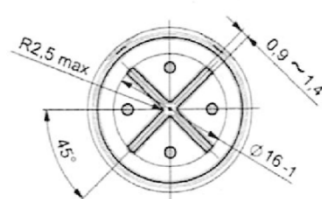
General tolerance			
10 Max	50 Max	100 Max	Angle
± 0,15	± 0,2	± 0,3	± 30'

Key

- 9 Drain hole (if necessary)
- 10 For optional latch outline: 29,5 maximum
- 11 Standard datum plane
- 12 Latch
- 13 Any dimension for guide rib
- 14 Lever stopper (if necessary) (This portion is movable)

FEUILLE DE NORME 3-Ib
PRISE MOBILE DE VÉHICULE
Feuille 2 (suite de la Feuille 1)

Dimensions en millimètres



DETAIL J

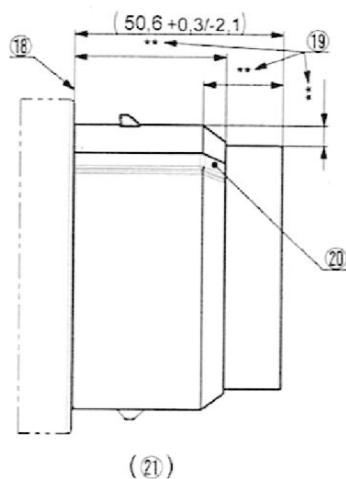
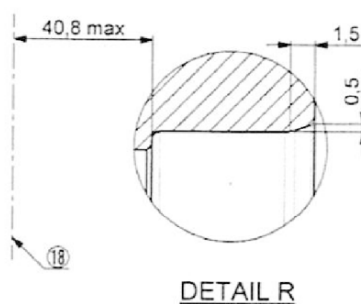
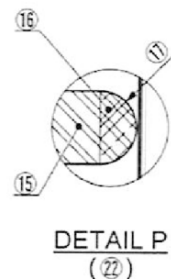
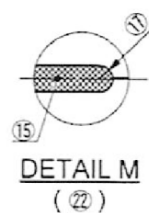
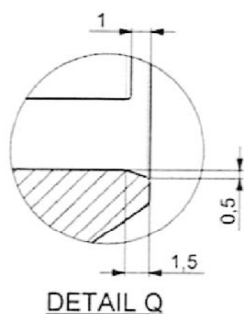
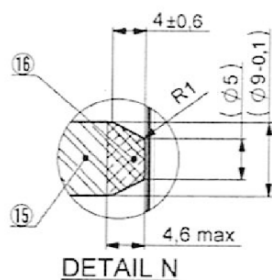
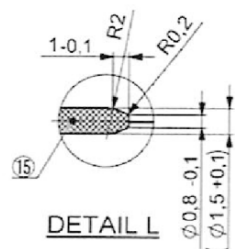
Tolérance générale			
10 Max	50 Max	100 Max	Angle
± 0,15	± 0,2	± 0,3	± 30'

Légende

- 9 Trou d'écoulement (si nécessaire)
- 10 Pour contour du crochet optionnel (Feuille 7) : 29,5 maximum
- 11 Plan de référence normalisé
- 12 Crochet
- 13 Toute dimension de nervure de positionnement
- 14 Arrêt de levier (si nécessaire) (cette portion est mobile)

STANDARD SHEET 3-1b
VEHICLE CONNECTOR
Sheet 3 (continuation of Sheet 2)

Dimensions in millimetres
Dimensions in parenthesis for reference



STANDARD SHEET 3-Ib
VEHICLE CONNECTOR
Sheet 4 (continuation of Sheet 3)

FEUILLE DE NORME 3-Ib
PRISE MOBILE DE VÉHICULE
Feuille 4 (suite de la Feuille 3)

Key

15	Terminal
16	Insulated end cap
17	Full R
18	Standard datum plane
19	Any dimension
20	Any dimension for guide rib
21	Optional for movable terminal design
22	Optional shape

Légende

15	Borne
16	Embout isolant
17	R plein
18	Plan de référence normalisé
19	Toute dimension
20	Toute dimension de nervure de positionnement
21	Option pour borne mobile
22	Forme optionnelle

STANDARD SHEET 3-lc
RETAINING MEANS FOR VEHICLE COUPLER

Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-lc
DISPOSITIF DE RETENUE DE CONNECTEUR DE
VEHICULE

Feuille 2 (suite de la Feuille 1)

Key

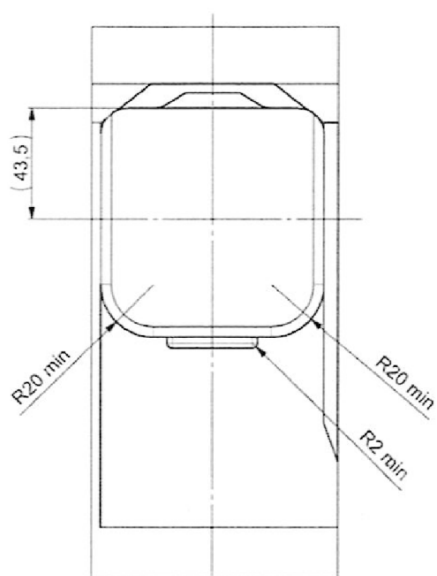
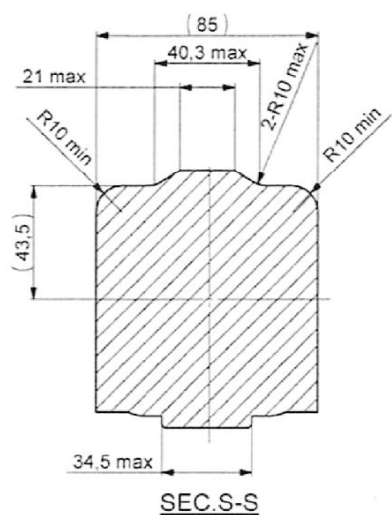
23	Vehicle surface
24	Centre line of vehicle connector
25	Standard datum plane
26	Vehicle connector body shape shall be within these solid lines (The sketches are not intended to restrict design of vehicle connector)
27	Latch

Légende

23	Surface du véhicule
24	Axe du connecteur de véhicule
25	Plan de référence normalisé
26	La forme du corps de la prise mobile de véhicule doit se trouver à l'intérieur de ces lignes pleines (Les dessins ne sont pas destinés à restreindre la conception du corps de la prise mobile de véhicule)
27	Crochet

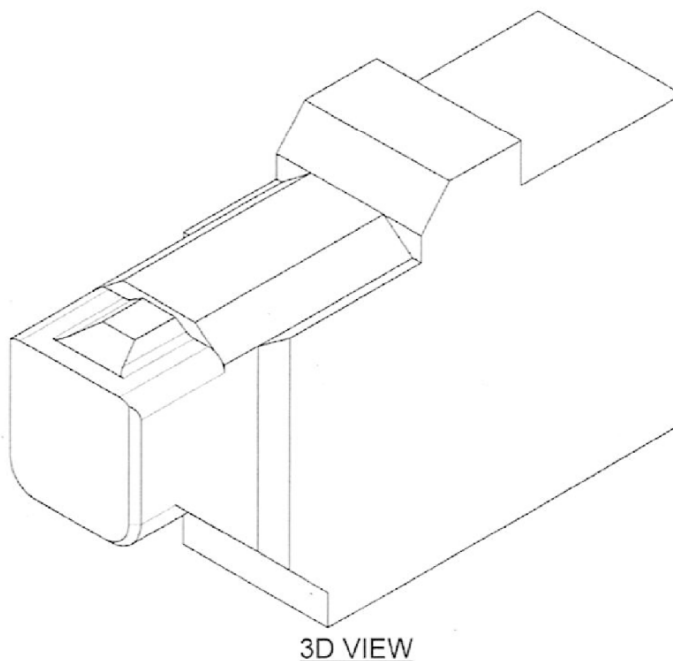
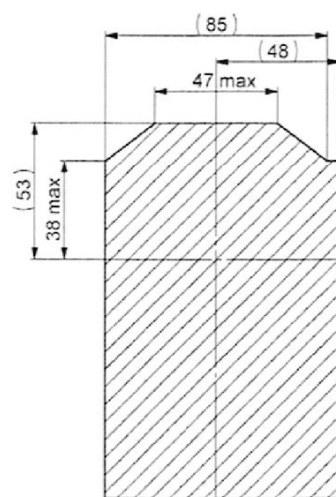
STANDARD SHEET 3-Id
MAXIMUM DIMENSIONS OF VEHICLE
CONNECTOR BODY OUTLINE

Dimensions in millimetres
Dimensions in parenthesis for reference



FEUILLE DE NORME 3-Id
DIMENSIONS MAXIMALES DU CONTOUR DU
CORPS DE LA PRISE MOBILE DE VÉHICULE

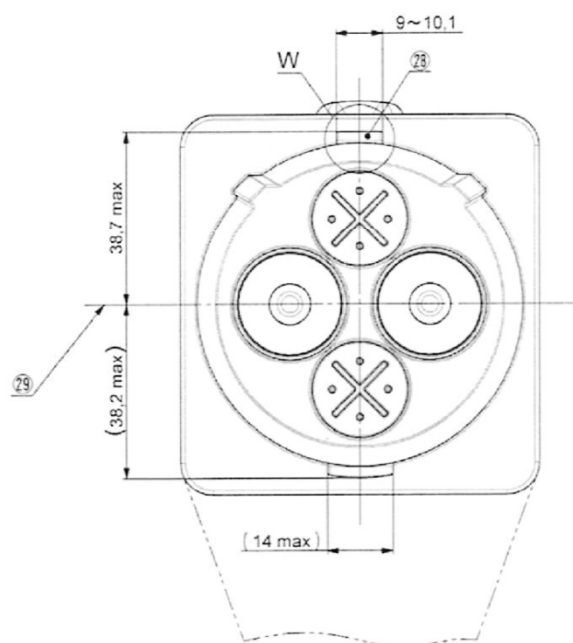
Dimensions en millimètres
La valeur entre parenthèses est donnée à des fins de référence



STANDARD SHEET 3-le
MAXIMUM OUTLINE OF LATCH

Sheet 1

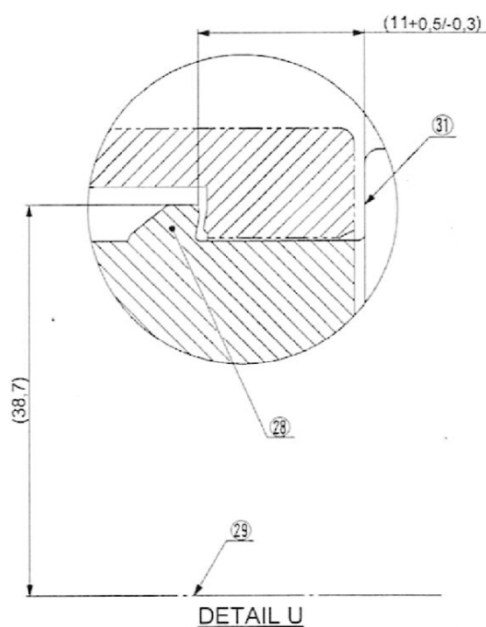
Dimensions in millimetres
Dimensions in parenthesis for reference



FEUILLE DE NORME 3-le
DIMENSIONS MAXIMALES DU CONTOUR DU
CROCHET

Feuille 1

Dimensions en millimètres
La valeur entre parenthèses est donnée à des fins de référence



STANDARD SHEET 3-1e
MAXIMUM OUTLINE OF LATCH

Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-1e
DIMENSIONS MAXIMALES DU CONTOUR DU
CROCHET

Feuille 2 (suite de la Feuille 1)

Key

- 28 Latch (The sketches are not intended to restrict design of latch shape)
- 29 Centre line of vehicle connector
- 30 Optional shape
- 31 Standard datum plane of vehicle connector

Légende

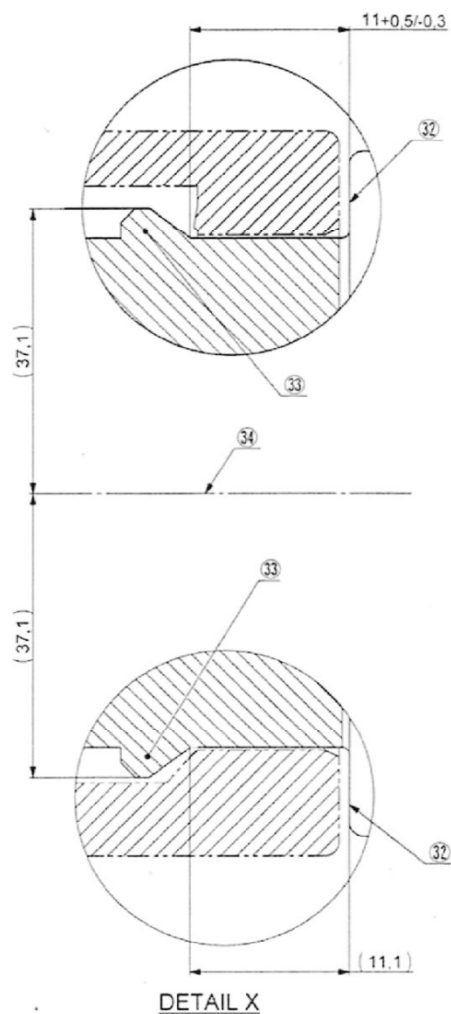
- 28 Crochet (Les dessins ne sont pas destinés à restreindre la conception de la forme du crochet)
- 29 Axe du connecteur de véhicule
- 30 Forme optionnelle
- 31 Plan de référence normalisé de la prise mobile de véhicule

STANDARD SHEET 3-If
OPTIONAL OUTLINE OF LATCH

FEUILLE DE NORME 3-If
CONTOUR DU CROCHET FACULTATIF

Dimensions in millimetres
Dimensions in parenthesis for reference

Dimensions en millimètres
La valeur entre parenthèses est donnée à des fins de référence



Key

- 32 Standard datum plane of vehicle connector
- 33 Latch (the sketches are not intended to govern design of latch shape)
- 34 Centre line of vehicle connector

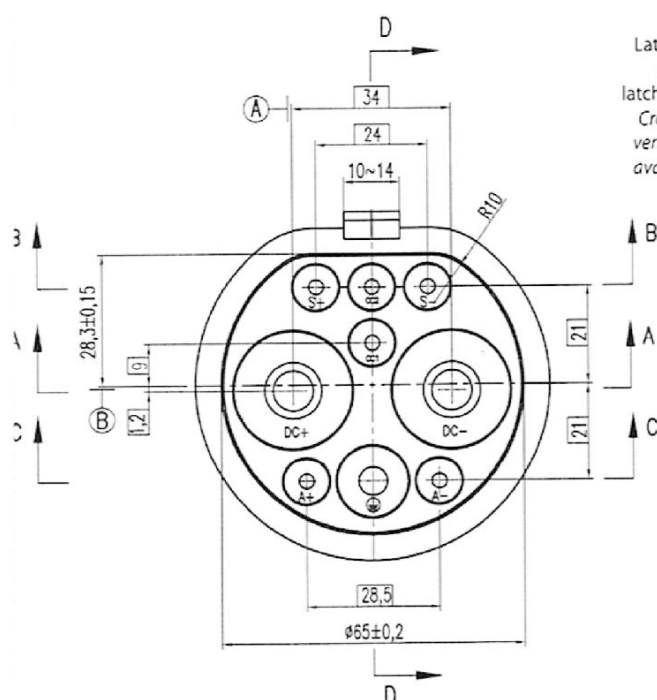
Légende

- 32 Plan de référence normalisé de la prise mobile de véhicule
- 33 Crochet (Les dessins ne sont pas destinés à restreindre la conception de la forme du crochet)
- 34 Axe du connecteur de véhicule

STANDARD SHEETS CONFIGURATION BB

VEHICLE COUPLER 250 A, 750 V D.C.
STANDARD SHEET 3-IIa
VEHICLE CONNECTOR
Sheet 1

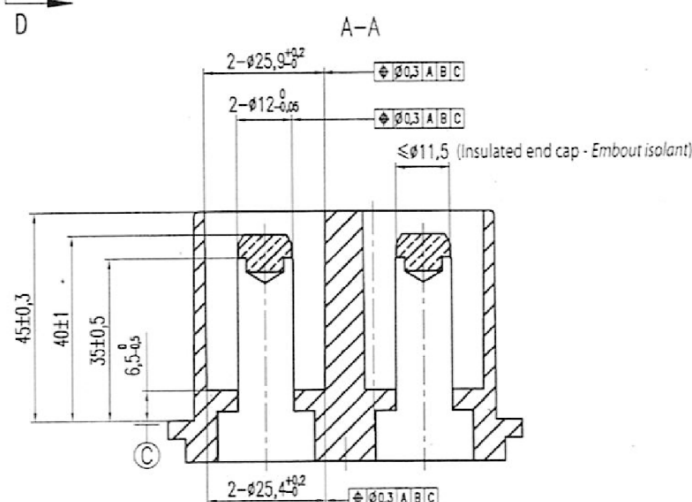
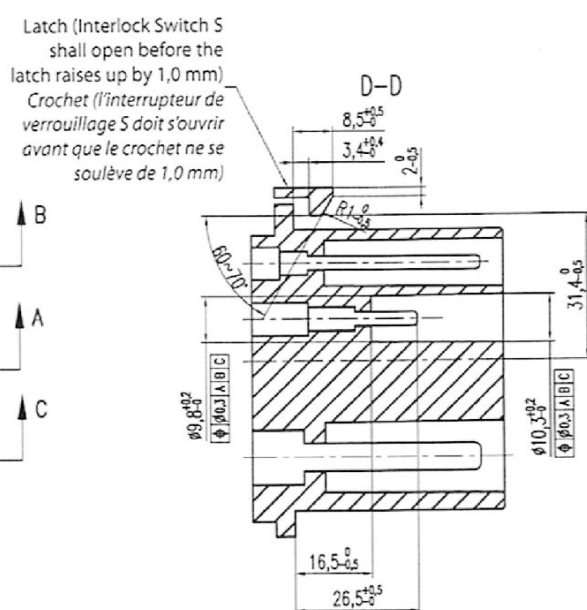
Dimensions in millimetres
Dimensions in parenthesis for reference



FEUILLES DE NORME CONFIGURATION BB

CONNECTEUR DE VÉHICULE 250 A, 750 V C.C.
FEUILLE DE NORME 3-IIa
PRISE MOBILE DE VÉHICULE
Feuille 1

Dimensions en millimètres
La valeur entre parenthèses est donnée à des fins de référence



The dimension of $\phi 65$ is allowed to have draft; after draft, the maximum dimensional position (datum plane C) should comply with the dimensional tolerance requirements

La dimension $\phi 65$ est permise pour la phase de projet; après la phase de projet, la position dimensionnelle maximale (plan de référence C) devrait satisfaire aux exigences de tolérance dimensionnelle.

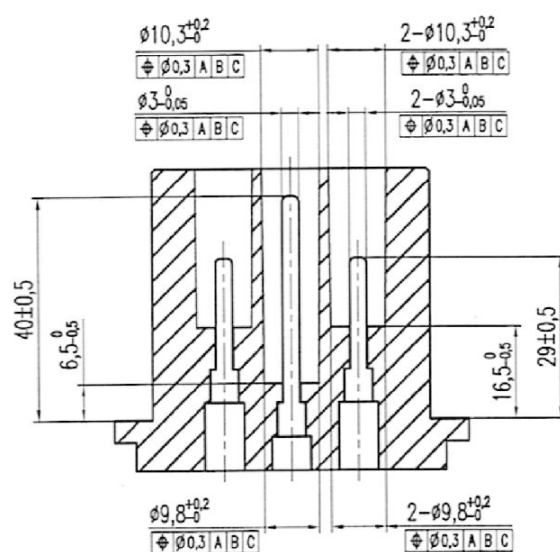
STANDARD SHEET 3-IIa
VEHICLE CONNECTOR
Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-IIa
PRISE MOBILE DE VÉHICULE
Feuille 2 (suite de la Feuille 1)

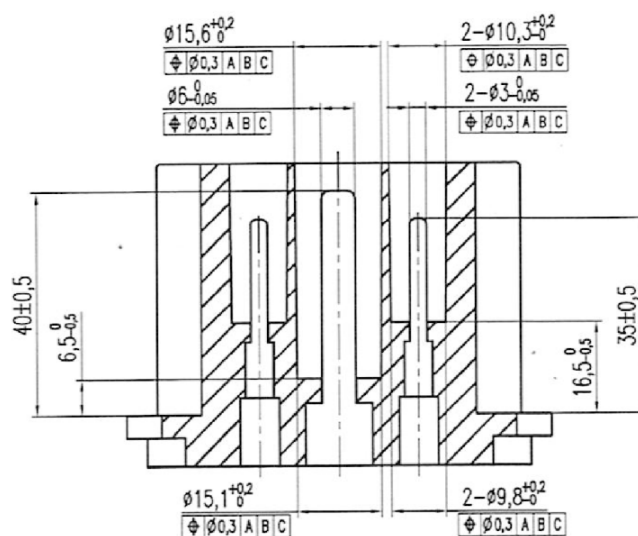
Dimensions in millimetres

Dimensions en millimètres

B-B



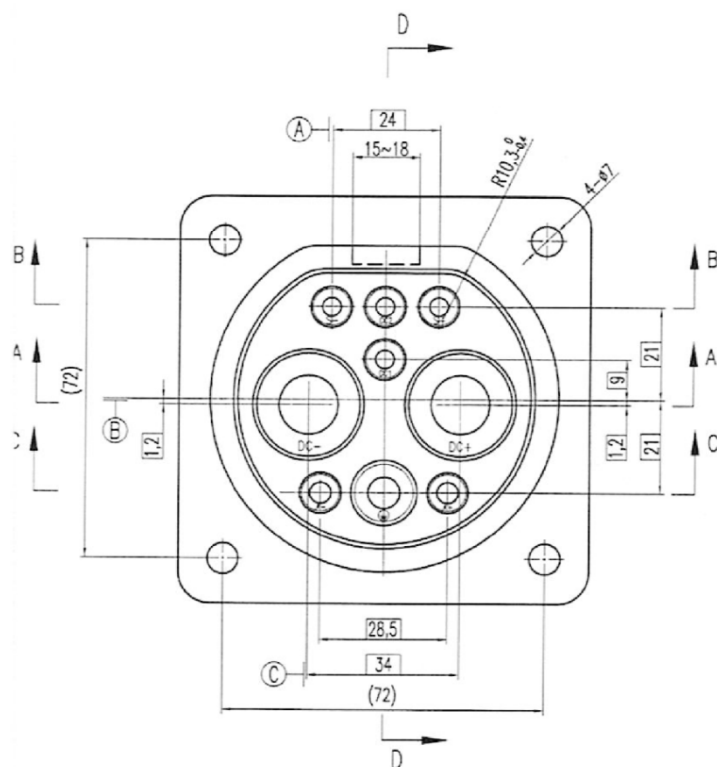
C-C



STANDARD SHEET 3-IIb
VEHICLE INLET

Sheet 1

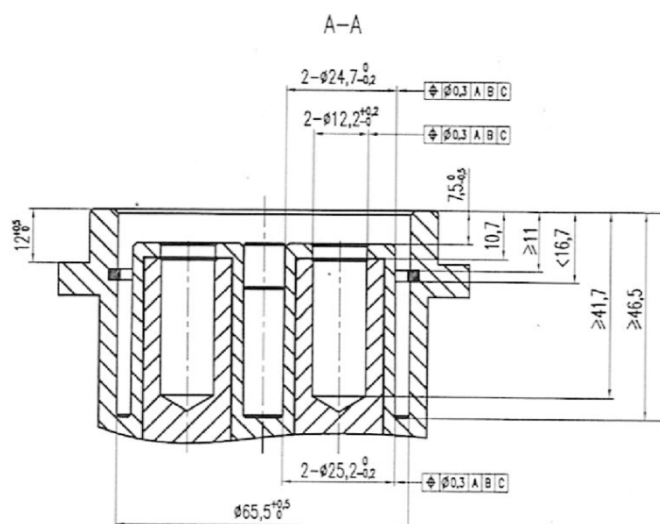
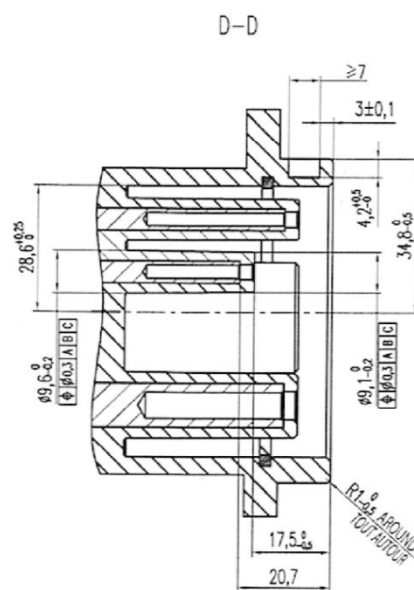
Dimensions in millimetres



FEUILLE DE NORME 3-IIb
SOCLE DE CONNECTEUR DE VÉHICULE

Feuille 1

Dimensions en millimètres

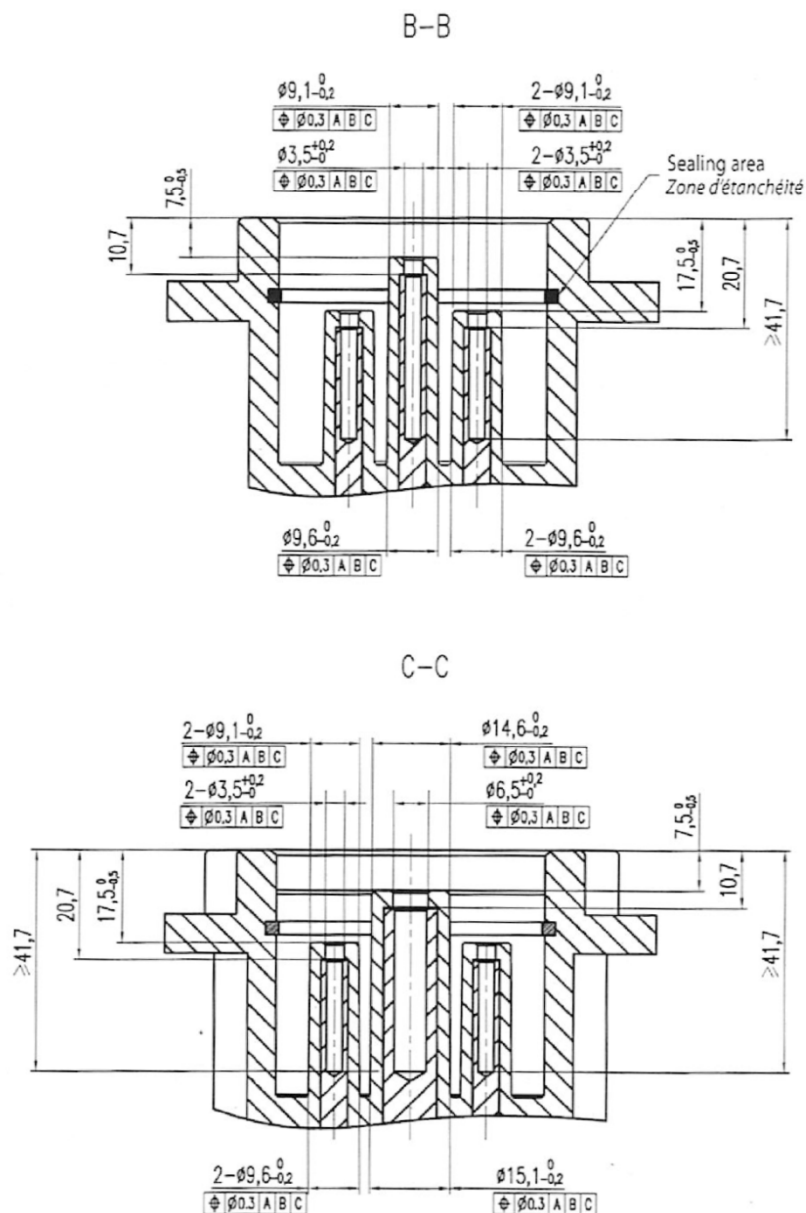


STANDARD SHEET 3-IIb
VEHICLE INLET
Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-IIb
SOCLE DE CONNECTEUR DE VÉHICULE
Feuille 2 (suite de la Feuille 1)

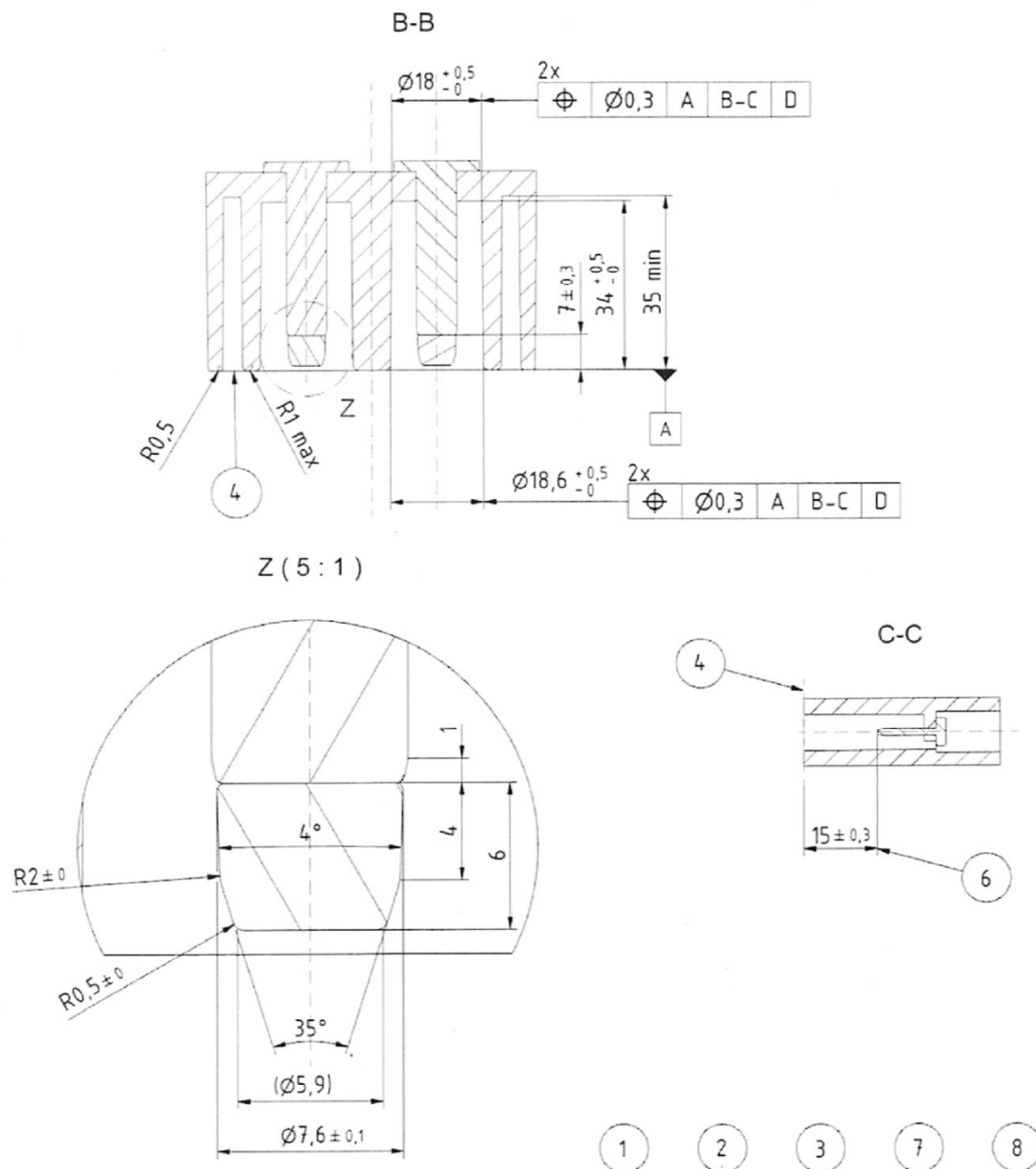
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Dimensions en millimètres



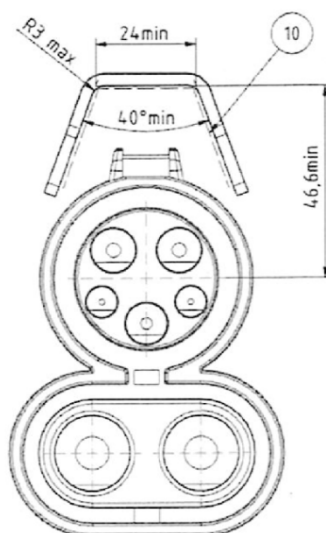
STANDARD SHEET 3-IIIa
VEHICLE INLET
Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-IIIa
SOCLE DE CONNECTEUR DE VÉHICULE
Feuille 2 (suite de la Feuille 1)



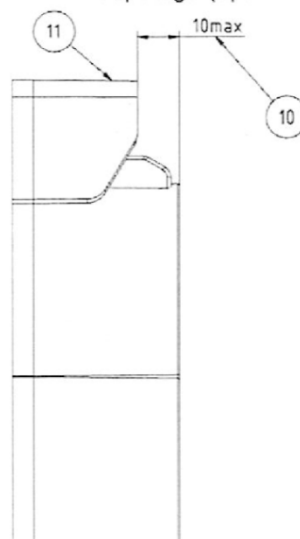
STANDARD SHEET 3-IIIa
VEHICLE INLET
Sheet 3 (continuation of Sheet 2)

DETAIL E
Shroud (optional)



FEUILLE DE NORME 3-IIIa
SOCLE DE CONNECTEUR DE VÉHICULE
Feuille 3 (suite de la Feuille 2)

DETAIL E
Capotage (optionnel)



Key

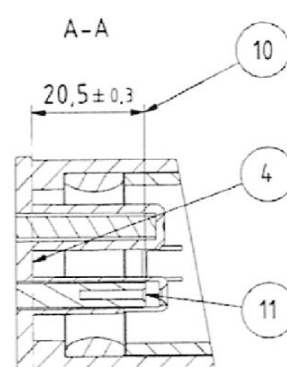
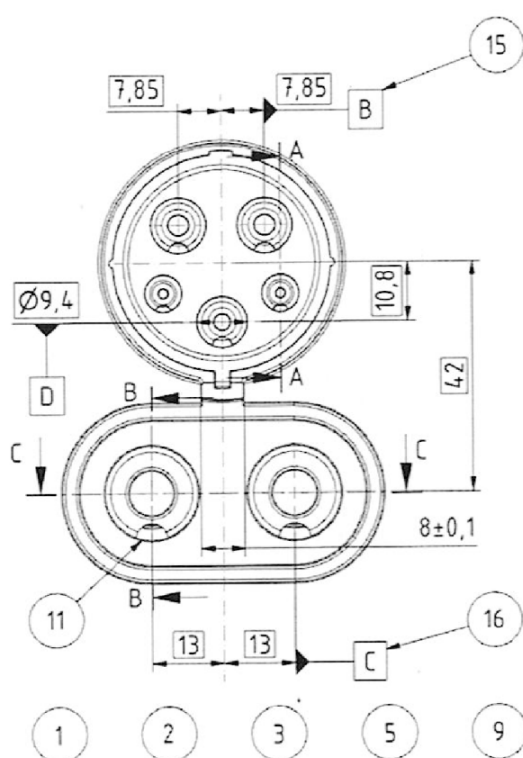
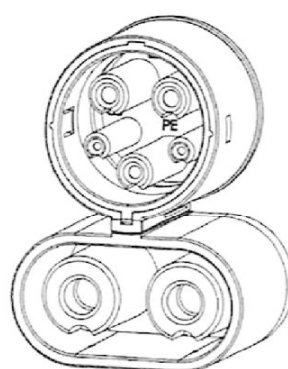
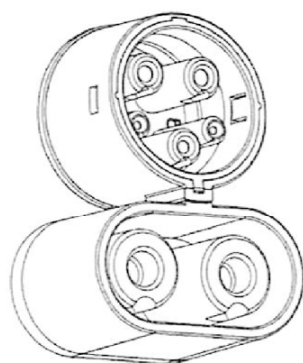
- | | |
|----|---|
| 1 | all dimensions in millimetres |
| 2 | additional dimensions and ratings (a.c. area) according to IEC 62196-2:2011, Standard Sheet 2-I |
| 3 | general tolerance DIN ISO 2768-mH |
| 4 | standard datum plane |
| 5 | space for optional face sealing |
| 6 | dimension for CP contact sequence |
| 7 | undimensioned radii R0,5-0,7 |
| 8 | dimensions in parenthesis for reference |
| 9 | egress of fluid (if needed) |
| 10 | dimension of the shroud according to 62196-2 standard Sheet 2-Ia (Sheet 1) view R |
| 11 | optional shroud to cover the locking mechanism |
| 12 | Out of 2x v3,6 |
| 13 | Out of 2x v8.5 |

Légende

- | | |
|----|--|
| 1 | Dimensions en millimètres |
| 2 | dimensions supplémentaires et caractéristiques nominales (partie c.a.) suivant la feuille de norme 2-I de l'IEC 62196-2:2011 |
| 3 | Tolérance générale ISO 2768-mH |
| 4 | Plan de référence normalisé |
| 5 | Zone pour étanchéité optionnelle |
| 6 | dimensionnel pour la séquence de contacts CP |
| 7 | Rayons non-dimensionnés R0,5-0,7 |
| 8 | Valeur entre parenthèses pour référence |
| 9 | Sortie de fluides (si nécessaire) |
| 10 | Dimensions du capotage suivant l'IEC 62196-2 feuille de norme 2-Ia (Feuille 1) vue R |
| 11 | Capotage optionnel pour couvrir le mécanisme de verrouillage |
| 12 | Hors de 2x v3,6 |
| 13 | Hors de 2x v8.5 |

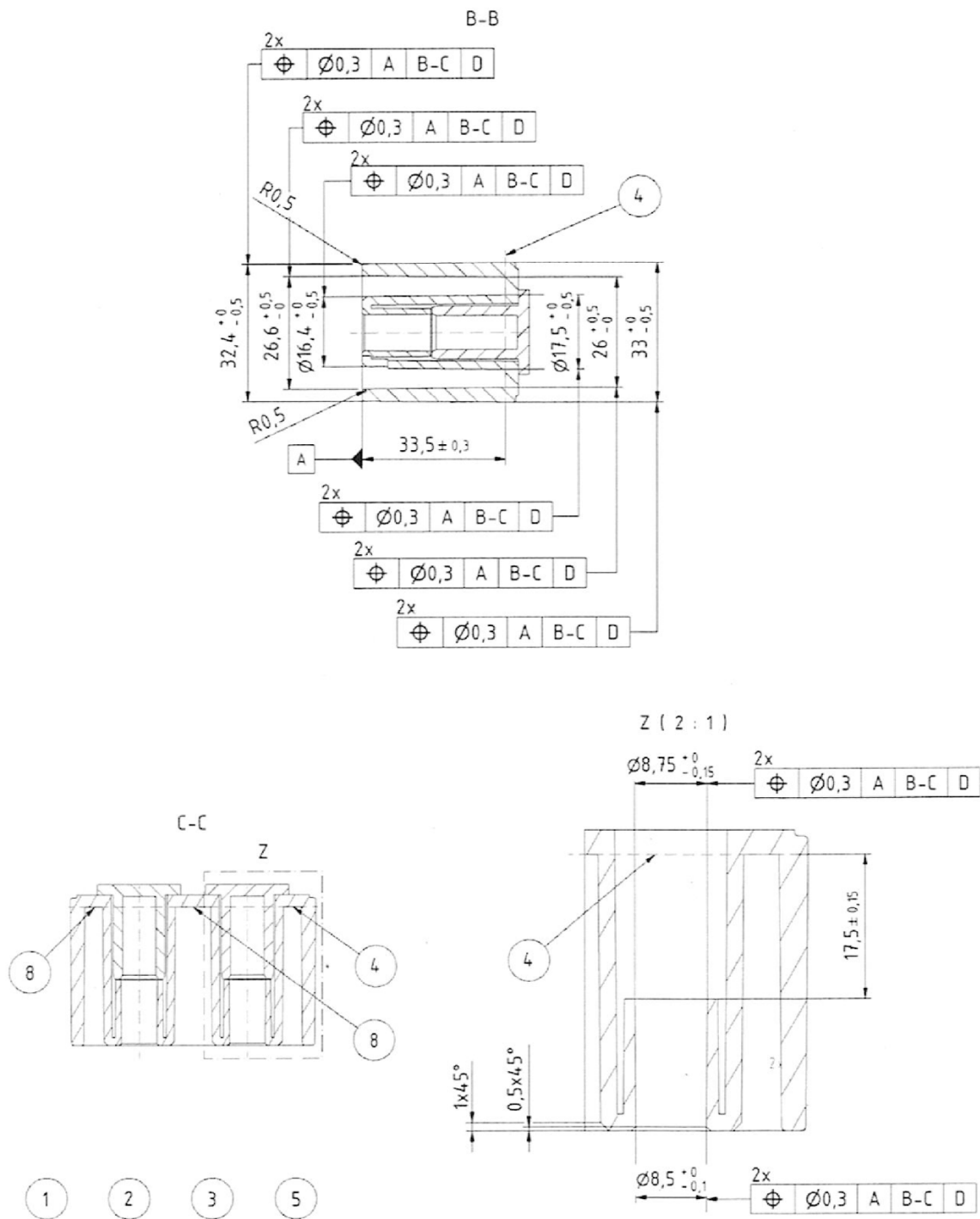
STANDARD SHEET 3-IIIb
VEHICLE CONNECTOR
Sheet 1

FEUILLE DE NORME 3-IIIb
PRISE MOBILE DE VÉHICULE
Feuille 1

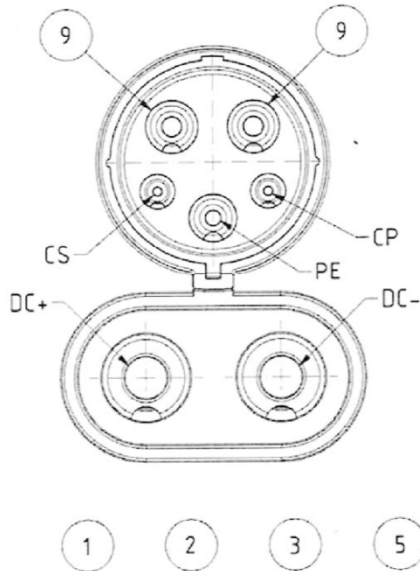


STANDARD SHEET 3-IIIb
VEHICLE CONNECTOR
Sheet 2 (continuation of Sheet 1)

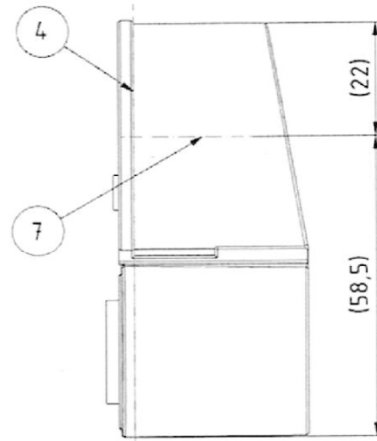
FEUILLE DE NORME 3-IIib
PRISE MOBILE DE VÉHICULE
Feuille 2 (suite de la Feuille 1)



STANDARD SHEET 3-IIIb
VEHICLE CONNECTOR
Sheet 3 (continuation of Sheet 2)



FEUILLE DE NORME 3-IIIb
PRISE MOBILE DE VÉHICULE
Feuille 3 (suite de la Feuille 2)



Key

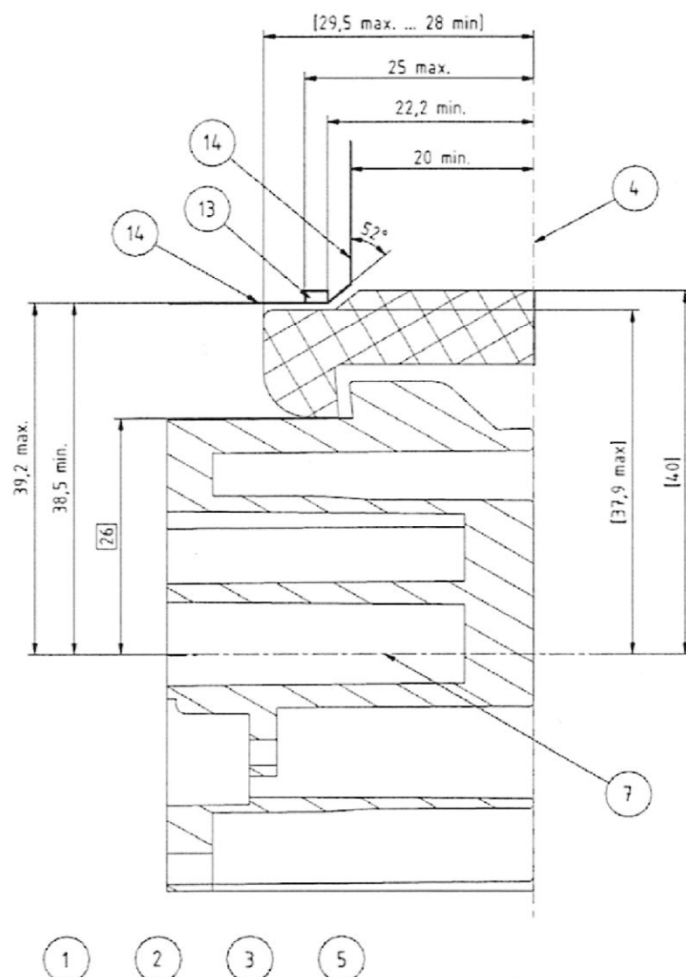
- 1 all dimensions in millimetres
- 2 additional dimensions and ratings (a.c. area) according to IEC 62196-2:2011, Standard Sheet 2-I
- 3 general tolerance DIN ISO 2768-mH
- 4 standard datum plane
- 5 dimensions in parenthesis for reference
- 7 center line (z-axis) of a.c. part
- 8 space for optional face sealing
- 9 L1 and L2/N unused
- 10 vehicle connector shall fit into this area
- 11 egress of fluid (if needed)
- 12 dimension for CP contact sequence
- 13 locking device shall be inside this area
- 15 out of 2x v10,2
- 16 out of 2x v8,5

Légende

- 1 Dimensions en millimètres
- 2 dimensions supplémentaires et caractéristiques nominales (partie c.a.) suivant la feuille de norme 2-1 de l'IEC 62196-2:2011
- 3 Tolerance generale ISO 2768_mH
- 4 Plan de référence normalisé
- 5 La valeur entre parenthèses est donnée à des fins de référence
- 7 Axe (axe Z) de la partie c.a.
- 8 Espace pour étanchéité radiale optionnelle
- 9 L1 et L2/N inutilisés
- 10 La prise mobile du véhicule doit se trouver dans cette zone
- 11 Sortie de fluides (si nécessaire)
- 12 dimensionnel pour la séquence de contacts CP
- 13 Le système de verrouillage doit se trouver à l'intérieur de cette zone
- 15 Hors de 2x v10,2
- 16 Hors de 2x v8,5

STANDARD SHEET 3-IIIc
LOCKING LATCH DETAIL
(mated situation)

FEUILLE DE NORME 3-IIIc
DETAIL DU CROCHET DE VERROUILLAGE
(situation accouplée)



Key

- 1 all dimensions in millimetres
2 additional dimensions and ratings (a.c. area) according to IEC 62196-2 Standard Sheet 2-I
3 general tolerance DIN ISO 2768-mH
4 standard datum plane
5 dimensions in parenthesis for reference
7 center line (z-axis) of a.c. part
13 Out of 2x Ø8,5
14 latch lock zone – locking device shall not exceed this area

Légende

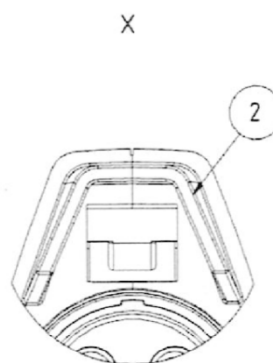
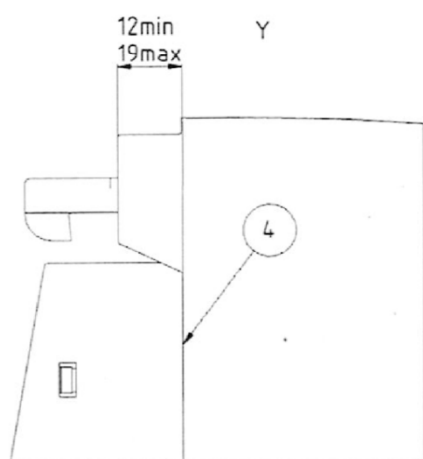
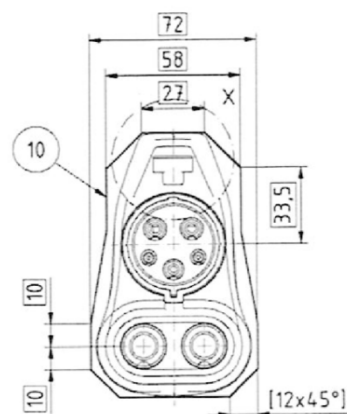
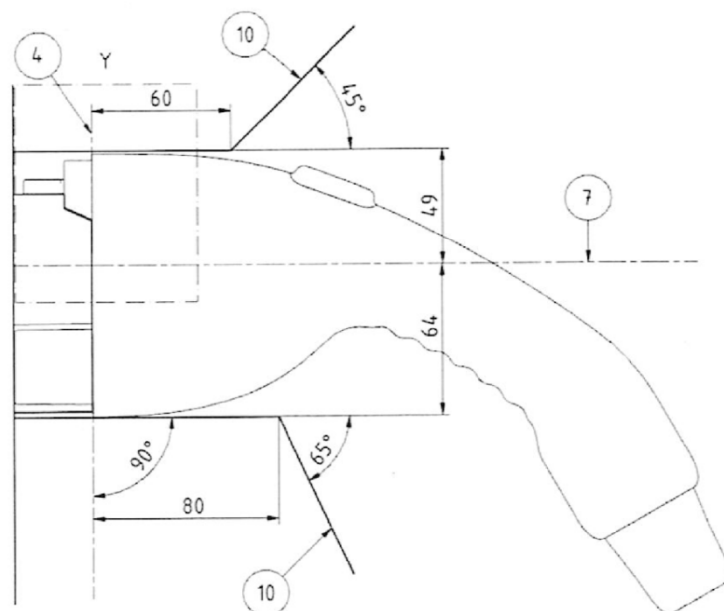
- 1 dimensions en millimètres
2 dimensions supplémentaires et caractéristiques nominales (partie c.a.) suivant la feuille de norme 2-1 de l'IEC 62196-2
3 tolérance générale ISO 2768_mH
4 plan de référence normalisé
5 la valeur entre parenthèses est donnée à des fins de référence
7 axe (axe Z) de la partie c.a.
13 hors de 2x Ø8,5
14 zone du crochet de retenue – le système de verrouillage ne doit pas sortir de cette zone

STANDARD SHEET 3-IIIId
DIMENSIONS OF VEHICLE CONNECTOR
BODY OUTLINE

Sheet 1

FEUILLE DE NORME 3-IIIId
DIMENSIONS MAXIMALES DU CONTOUR DE LA
PRISE MOBILE DE VÉHICULE

Feuille 1



STANDARD SHEET 3-IIId
DIMENSIONS OF VEHICLE CONNECTOR
BODY OUTLINE

Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-IIId
DIMENSIONS MAXIMALES DU CONTOUR DE LA
PRISE MOBILE DE VÉHICULE

Feuille 2 (suite de la Feuille 1)

Key

1	all dimensions in millimetres
2	additional dimensions and ratings (a.c. area) according to IEC 62196-2 Standard Sheet 2-I
3	general tolerance DIN ISO 2768-mH
4	standard datum plane
5	dimensions in parenthesis for reference
6	undimensioned radii R0,5-0,7
7	center line (z-axis) of a.c. part
10	vehicle connector shall fit into this area

Légende

1	Dimensions en millimètres
2	dimensions supplémentaires et caractéristiques nominales (partie c.a.) suivant la feuille de norme 2-1 de l'IEC 62196-2
3	Tolérance générale ISO 2768_mH
4	Plan de référence normalisé
5	La valeur entre parenthèses est donnée à des fins de référence
6	Rayons non-dimensionnés R0,5-0,7
7	Axe (axe Z) de la partie c.a.
10	La prise mobile du véhicule doit se trouver dans cette zone

**STANDARD SHEETS
CONFIGURATION FF
VEHICLE COUPLER 200 A, 1 000 V D.C.
ALL MODES**

**FEUILLES DE NORME
CONFIGURATION FF
CONNECTEUR DE VÉHICULE 200 A, 1 000 V C.C.
TOUT MODES**

CONTACT FUNCTIONALITY

The functionality for d.c. configuration C Combo-2 charging is defined in the table below.

NOTE The coding for the d.c. charging is described in IEC 61851-23:—, Annex CC.

FONCTIONALITE DES CONTACTS

La fonctionnalité pour la configuration charge en courant continu C Combo 2 est définie dans le tableau ci-dessous.

NOTE Le codage pour la charge en courant continu est décrit dans l'IEC 61851-23:—, Annexe CC.

**Table 303 – Functionality of the contacts
for d.c. configuration FF**

Name according to IEC 62196-2:2011 Standard Sheet 2-II	Functionality
PE	PE ^a
CP	CP ^b
PP	PP ^a
N	optional
L1	optional
L2	optional
L3	optional
DC+	d.c.+
DC–	d.c.–

^a Same function as in IEC 62196-2:2011, Standard Sheets II-2.

^b CP may have an extended function as described in IEC 61851-23, Annex CC

**Tableau 303 – Fonctionnalité des contacts
pour la configuration FF en c.c.**

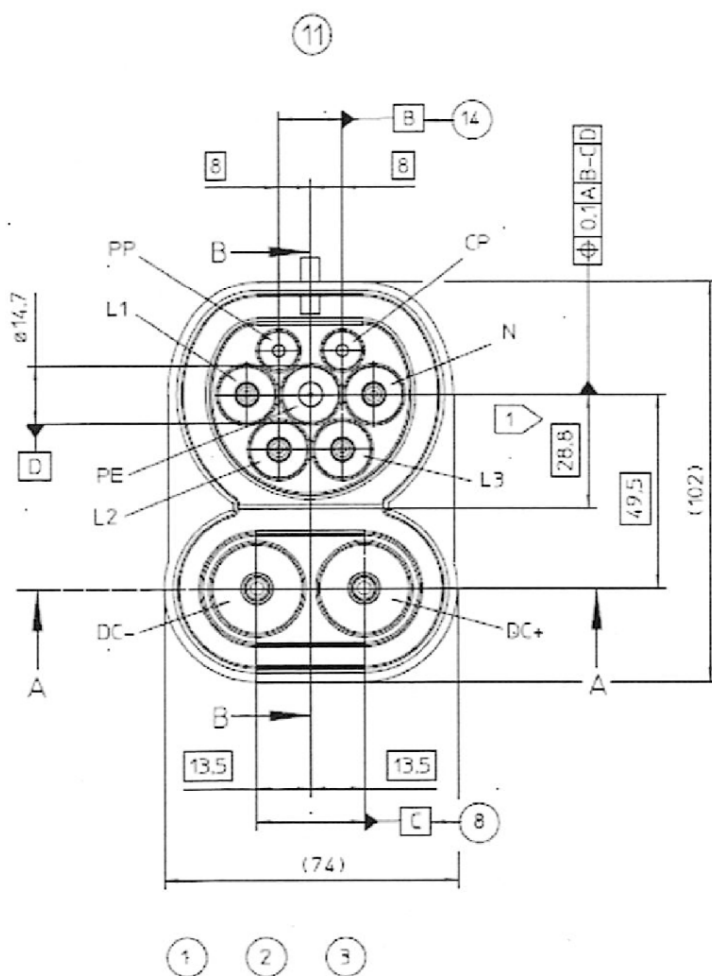
Dénomination suivant l'IEC 62196-2:2011 Feuille de norme 2-II	Fonctionnalité
PE	PE ^a
CP	CP ^b
PP	PP ^a
N	optionnel
L1	optionnel
L2	optionnel
L3	optionnel
DC+	c.c.+
DC–	c.c.–

^a Même fonction que dans la CEI 62196-2:2011, Feuilles de norme II-2.

^b CP peut avoir une fonction étendue telle que décrite dans l'IEC 61851-23, Annexe CC

STANDARD SHEET 3-IVa
VEHICLE INLET
MODES 2, 3 AND 4
Sheet 1

FEUILLE DE NORME 3-IVa
SOCLE DE CONNECTEUR DE VÉHICULE
MODES 2, 3 ET 4
Feuille 1



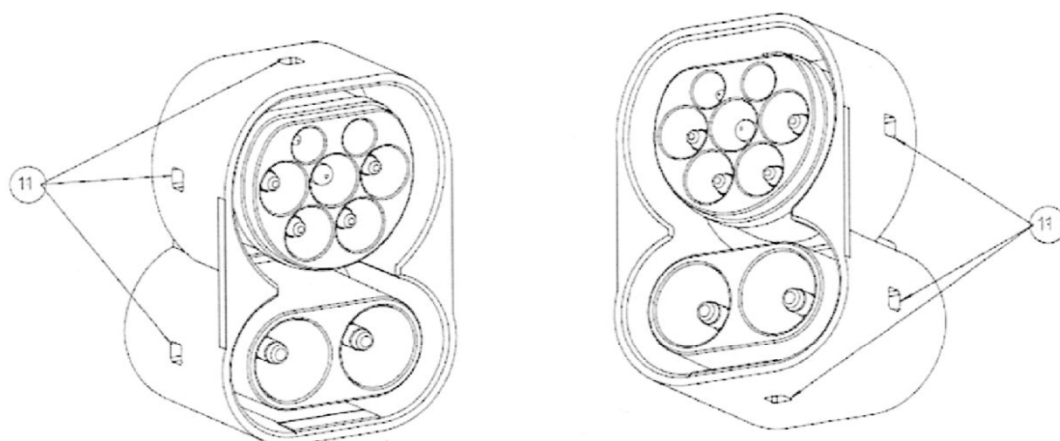
STANDARD SHEET 3-IVa

VEHICLE INLET
MODES 2, 3 AND 4

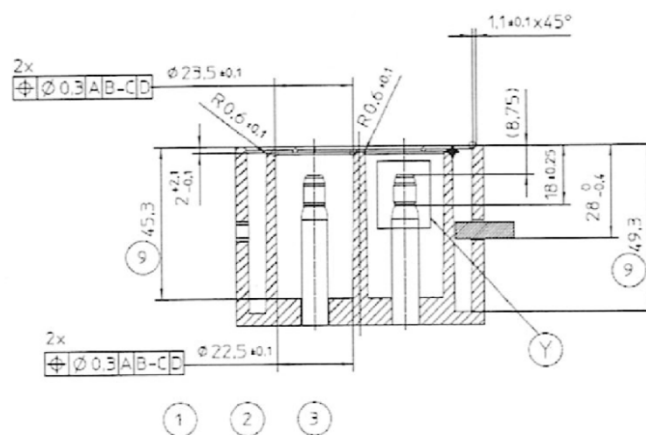
Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-IVa
SOCLE DE CONNECTEUR DE VÉHICULE
MODES 2, 3 ET 4

Feuille 2 (suite de la Feuille 1)



A-A



STANDARD SHEET 3-IVa

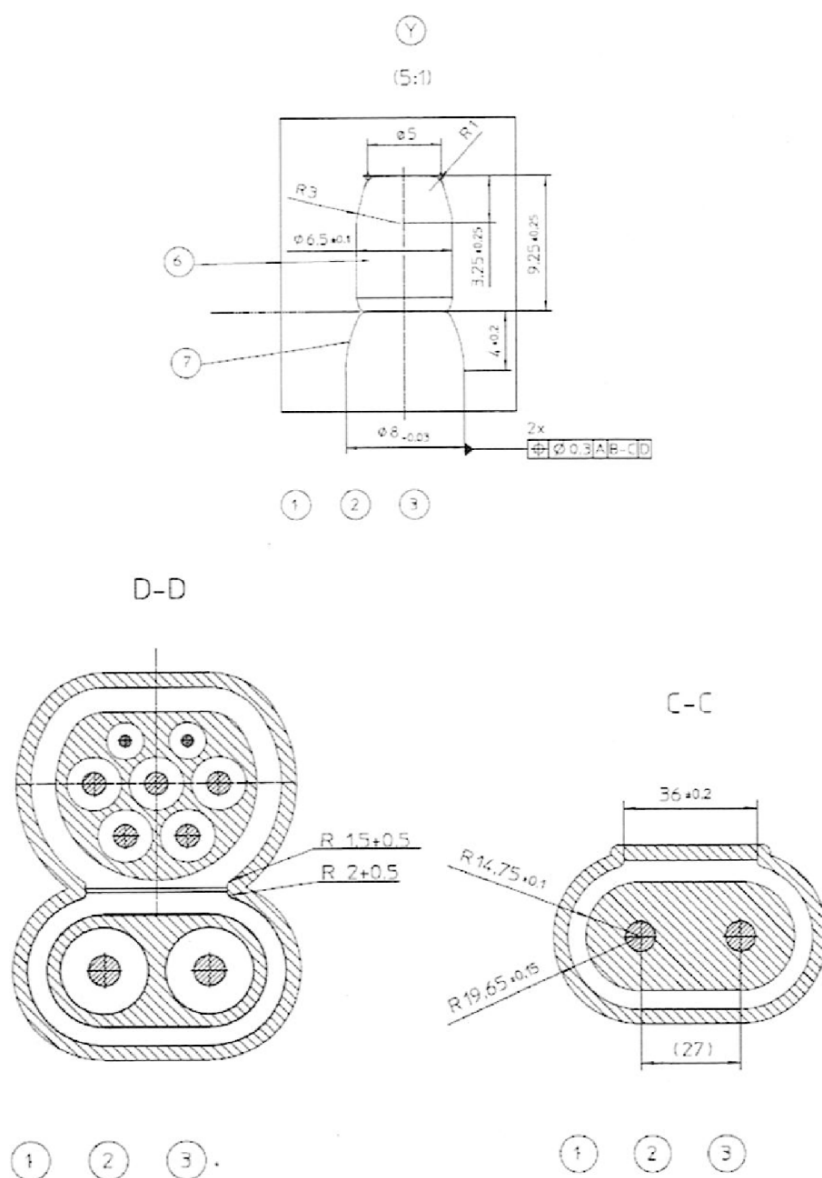
VEHICLE INLET
MODES 2, 3 AND 4

Sheet 3 (continuation of Sheet 2)

FEUILLE DE NORME 3-IVa

SOCLE DE CONNECTEUR DE VÉHICULE
MODES 2, 3 ET 4

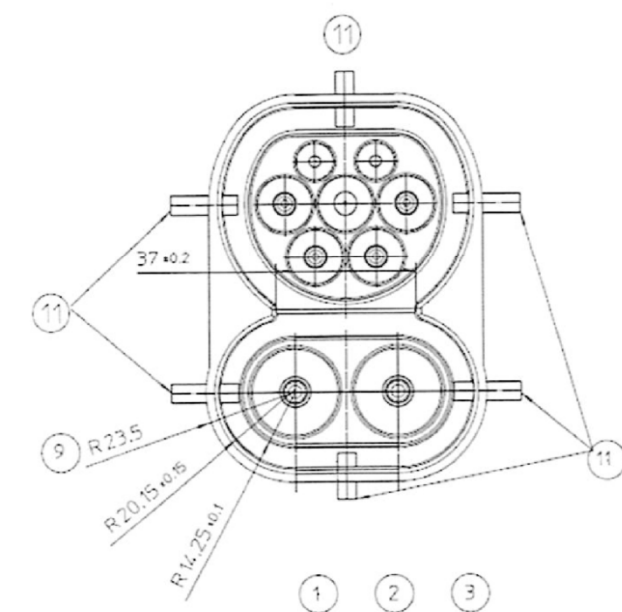
Feuille 3 (suite de la Feuille 2)



STANDARD SHEET 3-IVa

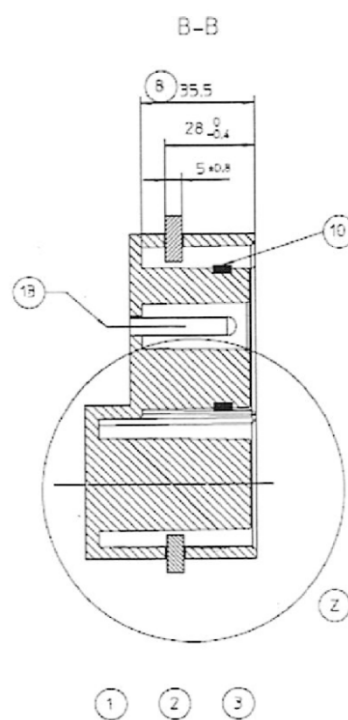
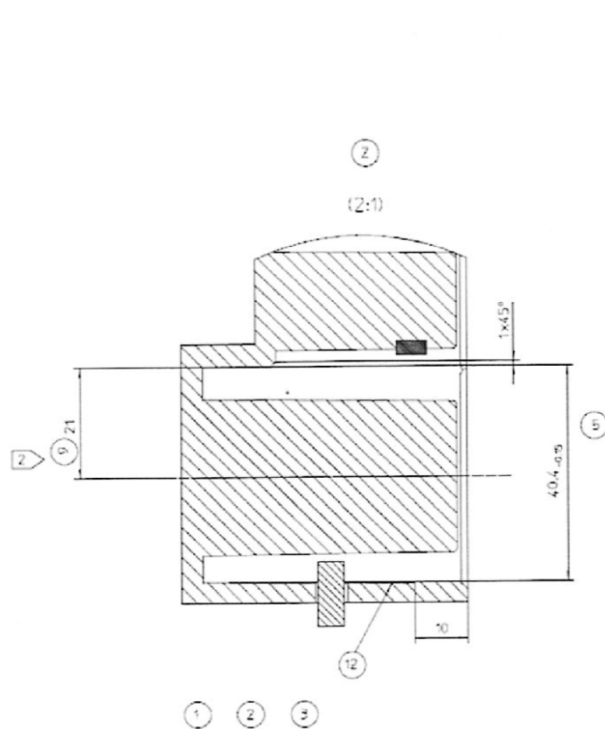
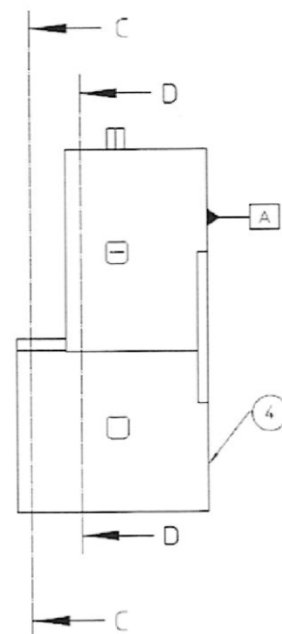
VEHICLE INLET
MODES 2, 3 AND 4

Sheet 4 (continuation of Sheet 3)



FEUILLE DE NORME 3-IVa
SOCLE DE CONNECTEUR DE VÉHICULE
MODES 2, 3 ET 4

Feuille 4 (suite de la Feuille 3)



STANDARD SHEET 3-IVa

VEHICLE INLET
MODES 2, 3 AND 4*Sheet 5 (continuation of Sheet 4)*FEUILLE DE NORME 3-IVa
SOCLE DE CONNECTEUR DE VÉHICULE
MODES 2, 3 ET 4*Feuille 5 (suite de la Feuille 4)*

Key

1	All dimensions in millimetres
2	Missing dimensions and ratings (a.c. area) according to IEC 62196-2:2011, standard sheet 2-IIIf
3	General tolerance ISO 2768-mH
4	Datum plane
5	If necessary, a deviation from Tab 1 could be accepted, as long as a safe locking is guaranteed by other means. In this case Tab 2 is valid.
6	Insulated end cap
7	Contact
8	From 2 x diameter 8
9	Minimum
10	Area for optional sealing
11	Further possible locking positions
12	Optional phase-out off the step
13	Datum axis PE
14	From 2 x diameter 3

Légende

1	Toutes dimensions en millimètres
2	Dimensions manquantes et caractéristiques nominales (partie c.a.) suivant la CE 62196-2:2011, feuille de norme 2-IIIf
3	Tolérances générales ISO 2768-mH
4	Plan de référence
5	Si nécessaire, une déviation du codage 1 pourrait être acceptée aussi longtemps qu'un verrouillage sûr est garanti par un autre moyen; Dans ce cas, le Codage 2 est valable.
6	Embout isolant
7	Contact
8	De 2 x diamètre 8
9	Minimum
10	Zone pour étanchéité optionnelle
11	Autres positions de verrouillage possibles
12	Élimination optionnelle de la marche
13	Axe de référence PE
14	De 2 x diamètres 3

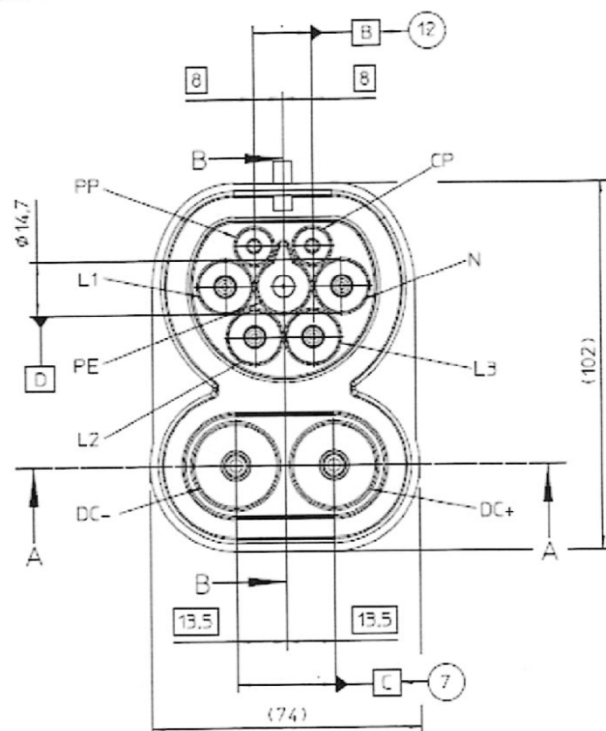
STANDARD SHEET 3-IVb

VEHICLE INLET
ALL MODES

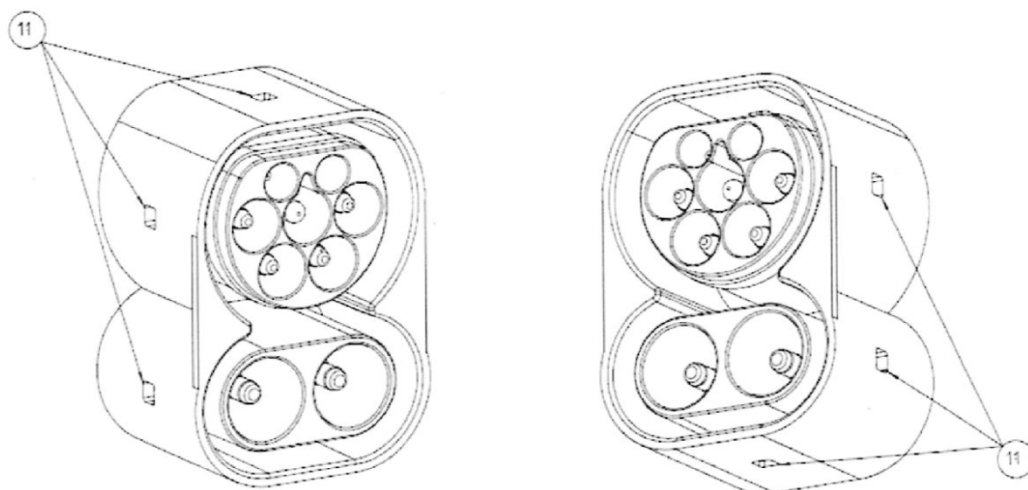
Sheet 1

FEUILLE DE NORME 3-IVb
SOCLE DE CONNECTEUR DE VÉHICULE
TOUS MODES

Feuille 1



1 2 3



STANDARD SHEET 3-IVb

VEHICLE INLET
ALL MODES

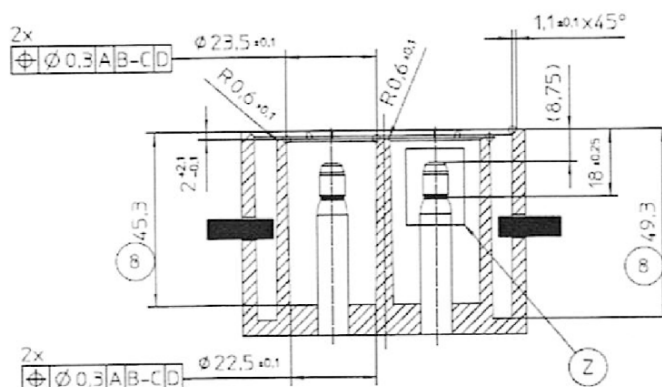
Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-IVb

SOCLE DE CONNECTEUR DE VÉHICULE
TOUS MODES

Feuille 2 (suite de la Feuille 1)

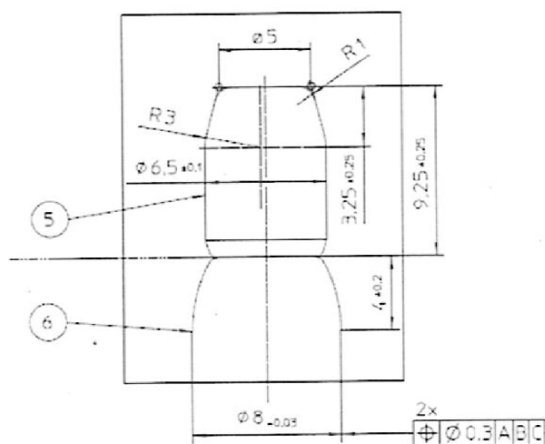
A-A



1 2 3

Z

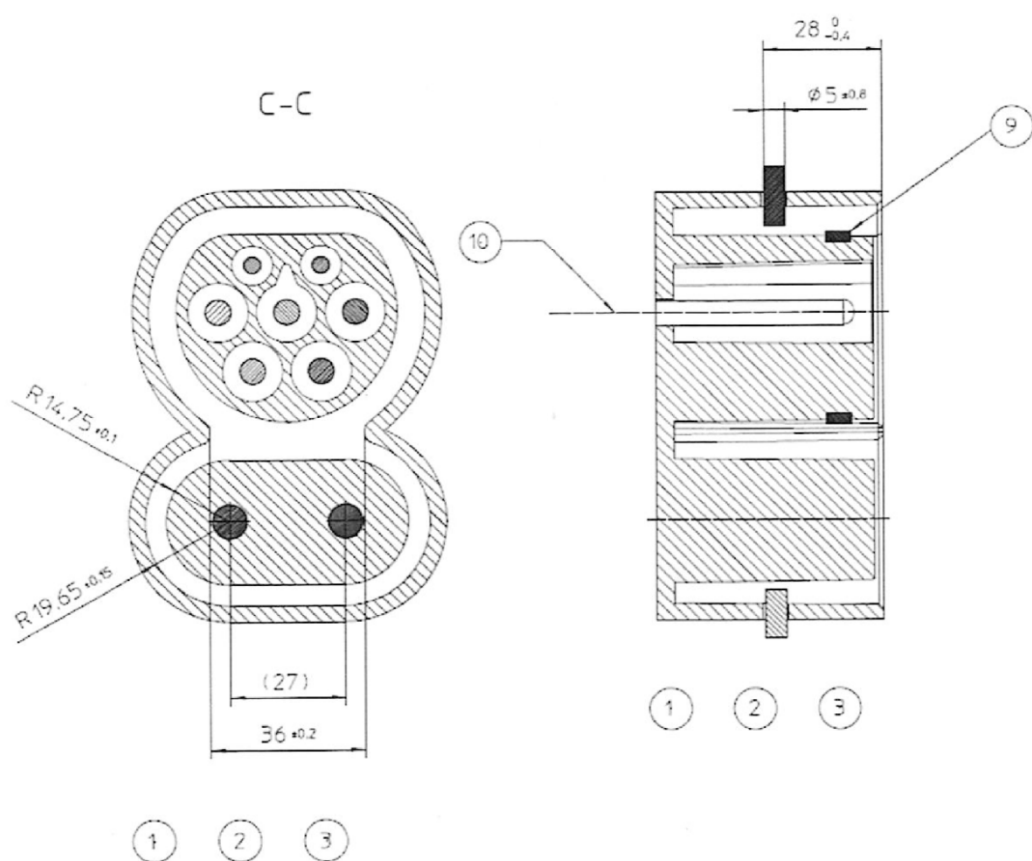
5:1



STANDARD SHEET 3-IVb
VEHICLE INLET
ALL MODES
Sheet 3 (continuation of Sheet 2)

FEUILLE DE NORME 3-IVb
SOCLE DE CONNECTEUR DE VÉHICULE
TOUS MODES
Feuille 3 (suite de la Feuille 2)

B-B



STANDARD SHEET 3-IVb
VEHICLE INLET
ALL MODES
Sheet 3 (continuation of Sheet 2)

FEUILLE DE NORME 3-IVb
SOCLE DE CONNECTEUR DE VÉHICULE
TOUS MODES
Feuille 3 (suite de la Feuille 2)

Key

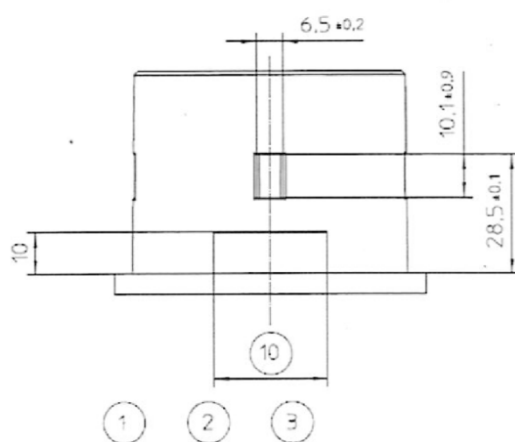
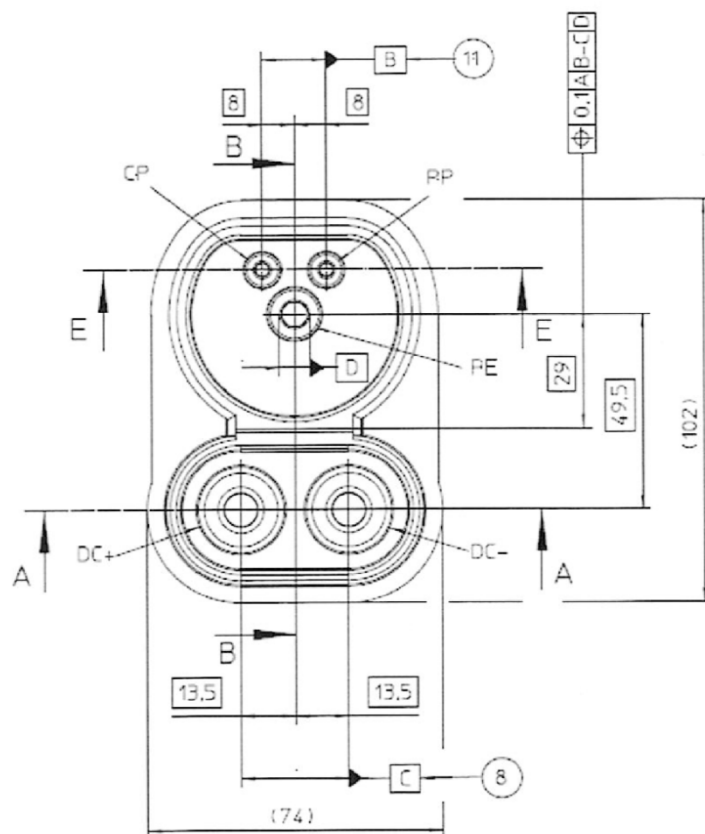
1	All dimensions in millimetres
2	Missing dimensions and ratings (a.c. area) according to IEC 62196-2:2011; standard sheet 2-IIId
3	General tolerance ISO 2768-mH
4	Datum plane
5	Insulated end cap
6	Contact
7	From 2 x diameter 8
8	Minimum
9	Area for optional sealing
10	Datum axis PE
11	Further possible locking positions
12	From 2 x diameter 3

Légende

1	Toutes dimensions en millimètres
2	Dimensions manquantes et caractéristiques nominales (partie c.a.) suivant la CE 62196-2:2011, feuille de norme 2-IIId
3	Tolérances générales ISO 2768-mH
4	Plan de référence
5	Embout isolant
6	Contact
7	De 2 x diamètre 8
8	Minimum
9	Zone pour étanchéité optionnelle
10	Axe de référence PE
11	Autres positions de verrouillage possibles
12	De 2 x diamètre 3

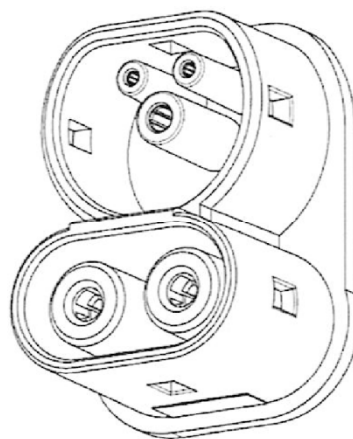
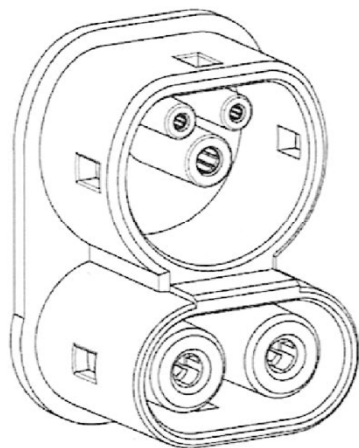
STANDARD SHEET 3-IVc
VEHICLE CONNECTOR - MODE 4
Sheet 1

FEUILLE DE NORME 3-IVc
PRISE MOBILE DE VEHICULE - MODE 4
Feuille 1

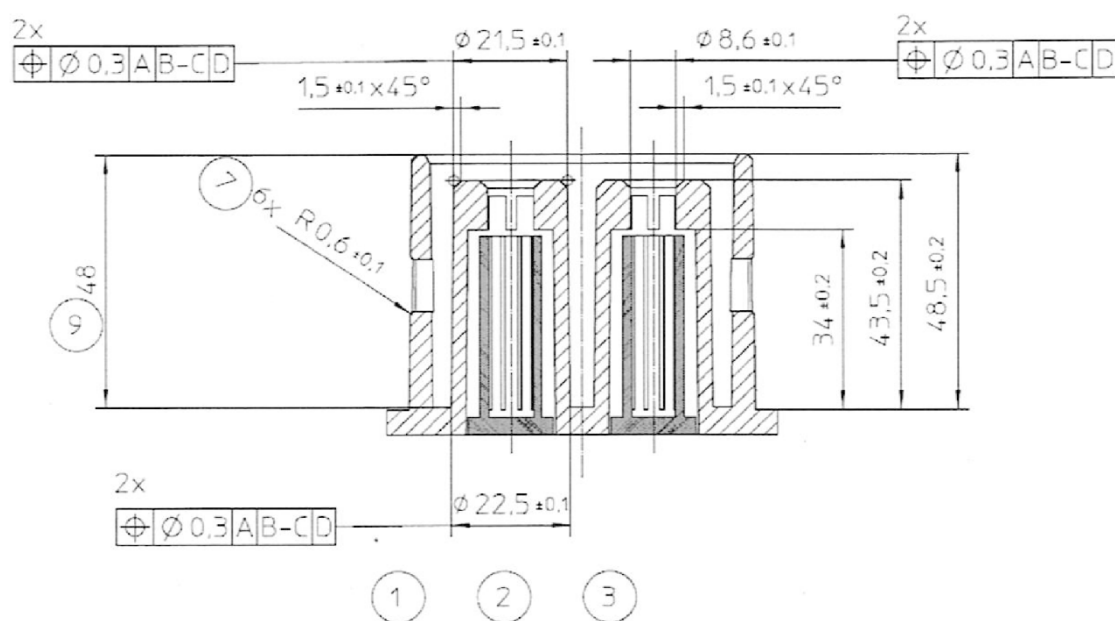


STANDARD SHEET 3-IVc
VEHICLE CONNECTOR - MODE 4
Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-IVc
PRISE MOBILE DE VEHICULE - MODE 4
Feuille 2 (suite de la Feuille 1)

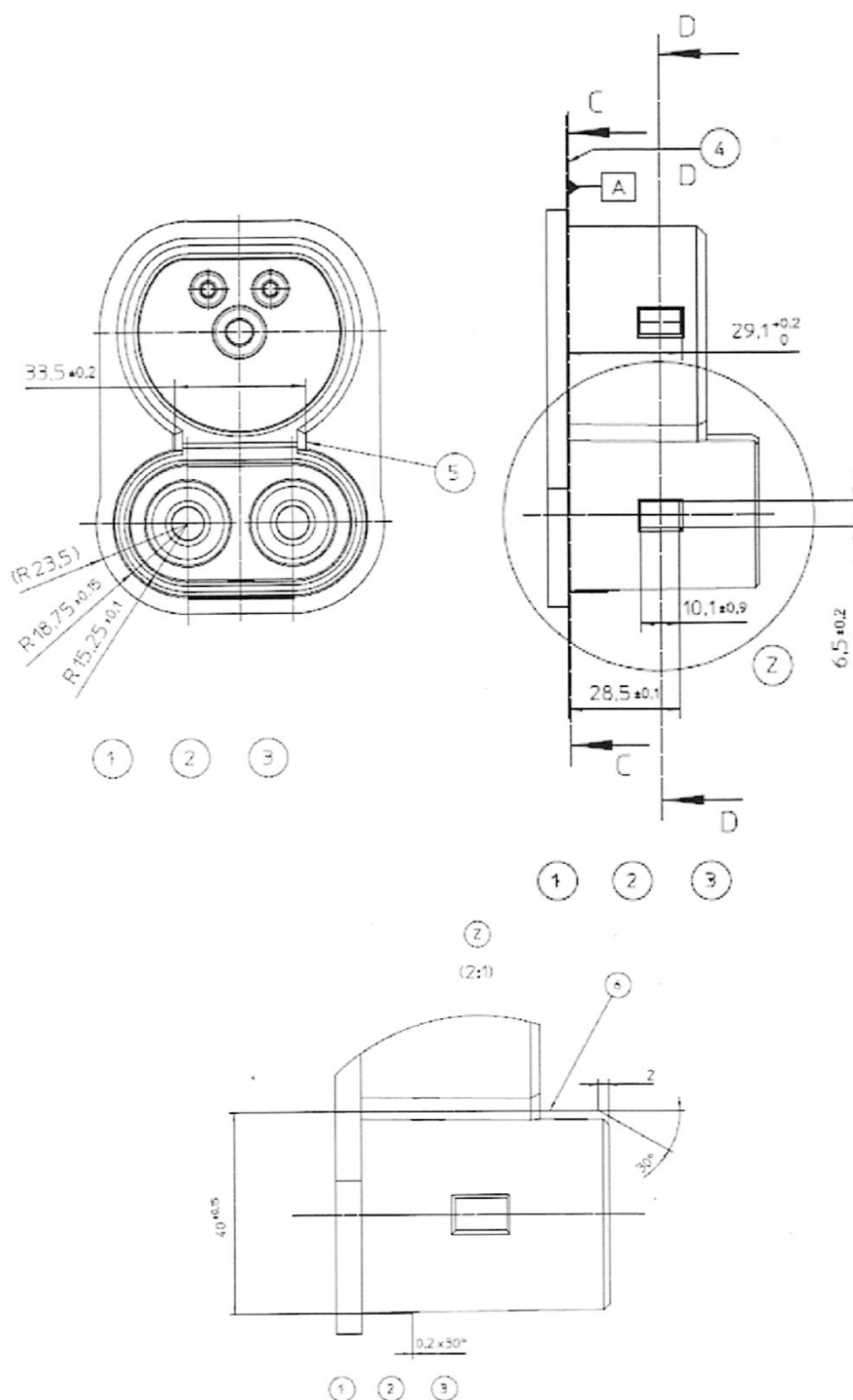


A-A



STANDARD SHEET 3-IVc
VEHICLE CONNECTOR - MODE 4
Sheet 3 (continuation of Sheet 2)

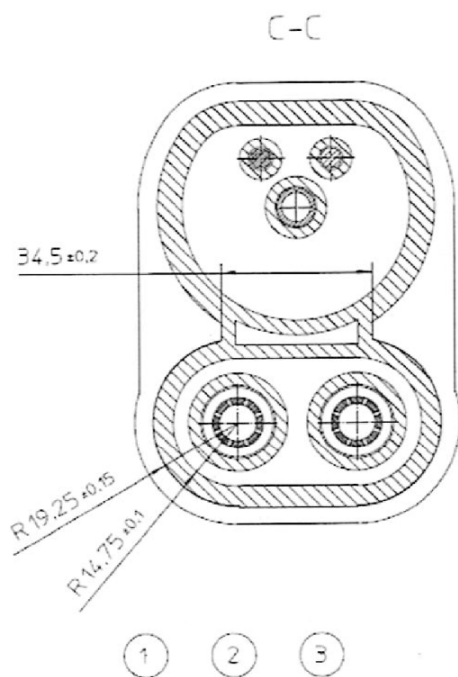
FEUILLE DE NORME 3-IVc
PRISE MOBILE DE VEHICULE - MODE 4
Feuille 3 (suite de la Feuille 2)



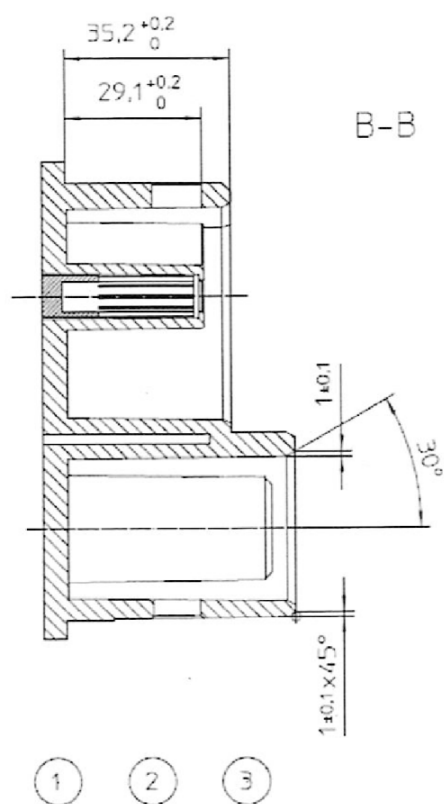
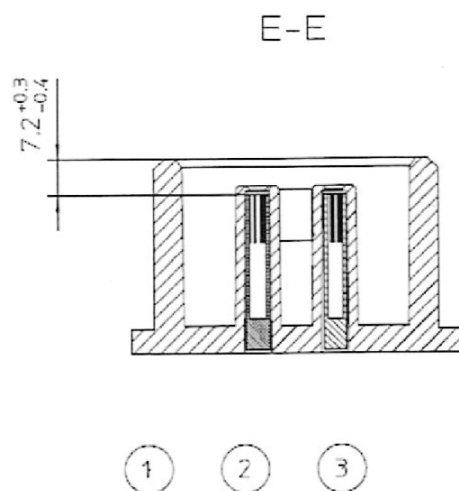
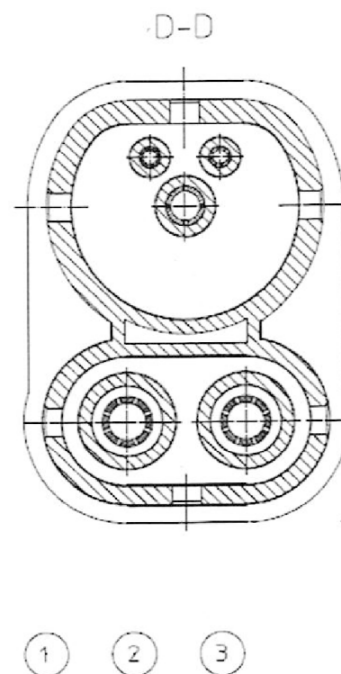
STANDARD SHEET 3-IVc

FEUILLE DE NORME 3-IVc

VEHICLE CONNECTOR - MODE 4
Sheet 4 (continuation of Sheet 3)



PRISE MOBILE DE VEHICULE - MODE 4
Feuille 4 (suite de la Feuille 3)



VEHICLE CONNECTOR - MODE 4
Sheet 5 (continuation of Sheet 4)

PRISE MOBILE DE VEHICULE - MODE 4
Feuille 5 (suite de la Feuille 4)

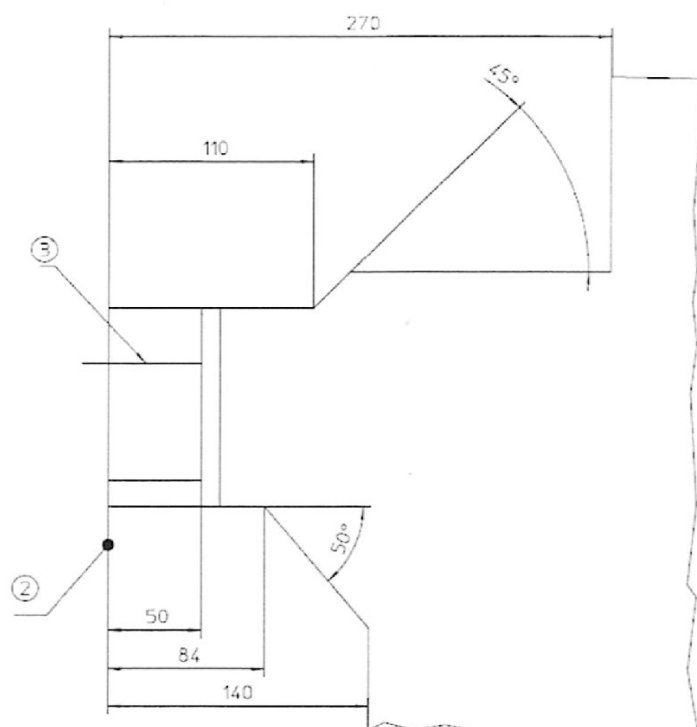
Key

- | | |
|----|--|
| 1 | All dimensions in millimetres |
| 2 | Missing dimensions and ratings (a.c. area) according to IEC 62196-2:2011, standard sheet 2-IIe |
| 3 | General tolerance ISO 2768-mH |
| 4 | Datum plane |
| 5 | Chamfer $2 \pm 0,5 \times 45^\circ$
Radius $R2 \pm 0,5$ |
| 6 | Contour up to the choice of the manufacturer
The lateral projection shall remain unchanged |
| 7 | Rounding off at the locking cut-out |
| 8 | From 2 x diameter 8,6 |
| 9 | Minimum |
| 10 | Minimum 12 mm |
| 11 | From 2 x diameter 3,5 |

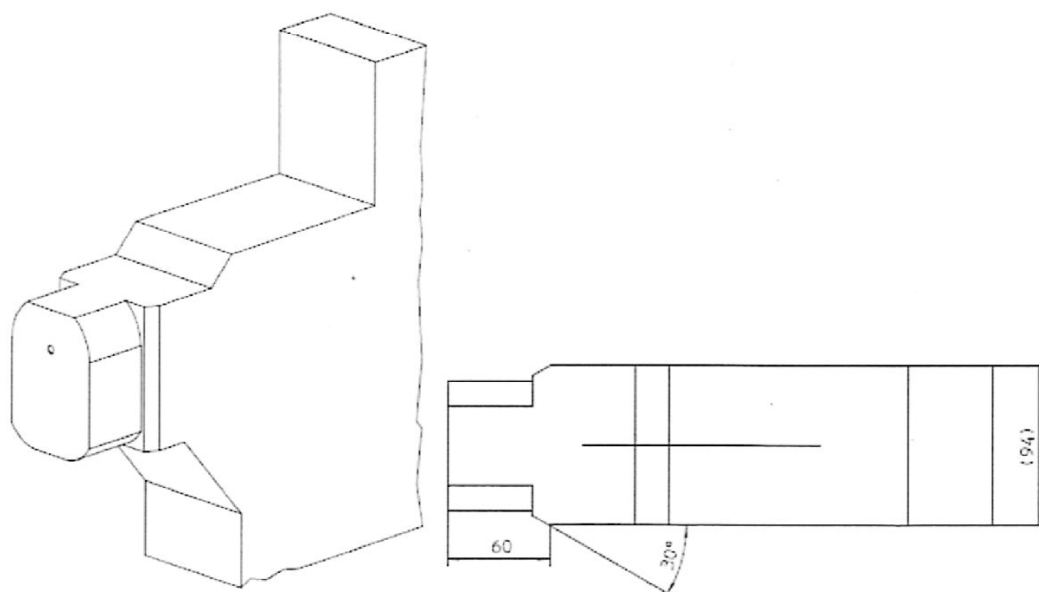
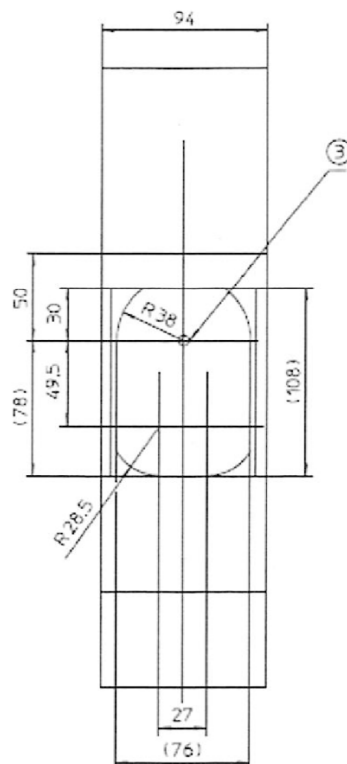
Légende

- | | |
|----|--|
| 1 | Toutes dimensions en millimètres |
| 2 | Dimensions manquantes et caractéristiques nominales (partie c.a.) suivant la CE 62196-2:2011, feuille de norme 2-IIe |
| 3 | Tolerances générales ISO 2768-mH |
| 4 | Plan de référence |
| 5 | Chanfrein $2 \pm 0,5 \times 45^\circ$
Rayon $R2 \pm 0,5$ |
| 6 | Contour au choix du fabricant.
La projection latérale doit rester inchangée |
| 7 | Arrondi du la découpe de verrouillage |
| 8 | De 2 x diameter 8,6 |
| 9 | Minimum |
| 10 | Minimum 12 mm |
| 11 | De 2 x diamètre 3,5 |

STANDARD SHEET 3-IVd
VEHICLE CONNECTOR - RECOMMENDED
PACKAGING ROOM
Sheet 1



FEUILLE DE NORME 3-IVd
PRISE MOBILE DE VEHICULE - VOLUME
ENVELOPPE RECOMMANDE
Feuille 1



STANDARD SHEET 3-IVd
VEHICLE CONNECTOR - RECOMMENDED
PACKAGING ROOM
Sheet 2 (continuation of Sheet 1)

FEUILLE DE NORME 3-IVd
PRISE MOBILE DE VEHICULE - VOLUME
ENVELOPPE RECOMMANDE
Feuille 2 (suite de la Feuille 1)

Key

- 1 All dimensions in millimetres
- 2 Datum plane
- 3 Datum axis PE

Légende

- 1 Toutes dimensions en millimètres
- 2 Plan de référence
- 3 Axe de référence PE