

Translated English of Chinese Standard: GB/T 20234.2-2015

www.ChineseStandard.net

Sales@ChineseStandard.net

GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 43.040.99
T 35

GB/T 20234.2-2015

Replacing GB/T 20234.2-2011

Connection Set for Conductive Charging of Electric Vehicles - Part 2: AC Charging Coupler

电动汽车传导充电用连接装置

第 2 部分: 交流充电接口

GB/T 20234.2-2015 How to BUY & immediately GET a full-copy of this standard?

1. www.ChineseStandard.net;
2. Search --> Add to Cart --> Checkout (3-steps);
3. No action is required - Full-copy of this standard will be automatically & immediately delivered to your EMAIL address in 0~25 minutes.
4. Support: Sales@ChineseStandard.net. Wayne, Sales manager

Issued on: December 28, 2015

Implemented on: January 1, 2016

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;**

Standardization Administration Committee.

Table of Contents

Foreword	3
1 Scope	5
2 Normative References.....	5
3 Terminologies and Definitions.....	5
4 General Requirements	5
5 Rated Values of AC Charging Coupler	6
6 Functions of Charging Coupler.....	6
7 Dimensions.....	8
Appendix A (Normative) Structure Dimensions of Charging Coupler	10
Appendix B (Informative) Examples for Installation Dimensions of Vehicle-socket and Supply-socket in Charging Mode 3	14
Appendix C (Normative) Spatial Size Requirements of Vehicle-plug and Supply-plug in Charging Mode 3.....	17
Bibliography	19

Foreword

GB/T 20234 "Connection Set of Conductive Charging for Electric Vehicles" consists of 3 parts:

- Part 1: General Requirements;
- Part 2: AC charging coupler;
- Part 3: DC charging coupler.

This Part is Part 2 of GB/T 20234.

This Part was drafted in accordance with the rules given in GB/T 1.1-2009.

This Part replaces "Connection Set of Conductive Charging for Electric Vehicles - Part 2: AC Charging Coupler" (GB/T 20234.2-2011). Compared with GB/T 20234.2-2011, the main technical changes are as follows:

- The requirement "the rated current shall not exceed 32A" was modified to "the rated current shall not exceed 63A" (see Chapter 1);
- 10A and 63A were added among the rated current values of charging coupler (see Table 1);
- The function of spare contact was extended to three-phase charging function (see Table 2);
- R4 resistance was added (see Figure 3);
- The content of control pilot circuit and control principle was deleted (see Appendix A of 2011 edition);
- Some dimensions of control pilot contact and mechanical lock of charging coupler were modified; drainage holes (optional) in socket were added; seal ring was modified as optional (see Appendix A);
- The spatial size requirements of plug were modified and adjusted as a normative appendix (see Appendix C).

This Part was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This Part shall be under the jurisdiction of the National Technical Committee on Automobiles of Standardization Administration of China (SAC/TC 114).

Main drafting organizations of this Part: China Automotive Technology & Research Center, State Grid Corporation of China AND China National Electric Apparatus Research Institute Co., Ltd.

Participating drafting organizations of this Part: China Electricity Council, Nanjing Nari Group Corporation, BYD Auto Industry Company Limited, SAIC Motor Corporation Limited R&D Center, Xuji Group Corporation, China Electric Power Research Institute, BYD Daimler New Technology Co., Ltd., Suzhou Chilye Environmental Protection Science and Technology Co., Ltd., China FAW Group Corporation R&D Center, Chongqing Chang'an New Energy Automobile Co., Ltd., Amphenol PCD Shenzhen Co., Ltd., Nanjing Phoenix Contact Co., Ltd., Potevio New Energy Co., Ltd. AND Anhui Jianghuai Automobile Co., Ltd.

Chief drafters of this Part: Lian Yubo, Zhou Rong, Wu Bin, Wang Hongjun, Zhu Daoping, Zhao Xiang, Yin Jiatong, Huang Wei, Liu Yongdong, Shao Zhehai, Meng Xiangfeng, Zhang Tianqiang, Shi Shuanglong, Lv Guowei, Yuan Changrong, Wang Zhicheng, Xu Xiao, Zhou Guangrong, Shuai Qiangjun, Chen Ling, Tang Wuwu, Li Xiaoqiang, Chen Xiaonan, Zhao Jiuzhi and Wu Zhiqiang.

The previous edition replaced by this Part is:

- GB/T 20234.2-2011.

Connection Set for Conductive Charging of Electric Vehicles - Part 2: AC Charging Coupler

1 Scope

This Part of GB/T 20234 specifies the general requirements, function definitions, type structures, parameters and dimensions of AC charging coupler for conductive charging of electric vehicles

This Part is applicable to AC charging coupler for conductive charging of electric vehicles, of which the rated voltage shall not exceed 440V(AC), the frequency shall be 50Hz, and the rated current shall not exceed 63A(AC).

Note: If the plugs and socket-outlets of AC charging coupler adopt the standardized plugs and socket-outlets complying with GB 2099.1 and GB 1002, then this Part is not applicable to these plugs and socket-outlets.

2 Normative References

The following documents for the application of this document are essential. For dated reference, only the dated edition applies to this document. For undated references, the latest edition (including any amendments) applies to this document.

- | | |
|--------------|--|
| GB/T 18487.1 | Electric Vehicle Conductive Charging System - Part 1: General Requirements |
| GB/T 20234.1 | Connection Set for Conductive Charging of Electric Vehicles - Part 1: General Requirements |

3 Terminologies and Definitions

For the purposes of this document, the terminologies and definitions defined in GB/T 20234.1 apply.

4 General Requirements

The technical requirements and test methods of AC charging coupler shall meet the requirements of GB/T 20234.1.

5 Rated Values of AC Charging Coupler

The rated values of AC charging coupler are detailed in Table 1.

Table 1 Rated Values of AC Charging Coupler


Rated voltage V	Rated current A
250	10/16/32
440	16/32/63

6 Functions of Charging Coupler

6.1 Electrical parameters and functions

7 pairs of contacts are respectively included in vehicle-coupler and supply-coupler in charging mode 3, and their electrical parameters and function definitions are detailed in Table 2.

Table 2 Electrical Parameters and Function Definitions of Contacts

Contact No. /identification	Rated voltage and current	Function definition
1-(L1)	250 V 10 A/16 A/32 A	AC power supply (single-phase)
	440 V 16 A/32 A/63 A	AC power supply (three-phase)
2-(L2)	440 V 16 A/32 A/63 A	AC power supply (three-phase)
3-(L3)	440 V 16 A/32 A/63 A	AC power supply (three-phase)
4-(N)	250 V 10 A/16 A/32 A	Neutral line (single-phase)
	440 V 16 A/32 A/63 A	Neutral line (three-phase)
5-()	-	Protective earthing (PE), for connecting earth wire of power supply equipment and electrical chassis of vehicle
6-(CC)	0 V~30 V 2 A	Charging connection confirmation
7-(CP)	0 V~30 V 2 A	Control pilot

6.2 Contact arrangement mode

The contact arrangement modes of the vehicle-coupler and supply-coupler in charging mode 3 are shown in Figure 1 and Figure 2.

Bibliography

- [1] GB 1002 Single Phase Plugs and Socket-outlets for Household and Similar Purposes - Types Basic Parameters and Dimensions
- [2] GB 2099.1 Plugs and Socket-outlets for Household and Similar Purposes - Part 1: General Requirements

_____ **END** _____

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 3 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

3. <https://www.google.com/search?tbm=bks&q=ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Google Books -- Select your currency.
- Processed by Google (delivery, tax invoice etc.). Delivered in 9 seconds by Google.
- Tips: Download an unprotected **True-PDF** (text-editable) from Google-Books:
 1. <https://play.google.com/books> → 2. Sign in → Google account
 3. Find the **BOOK** you bought → 4. Click "3-dots" → Export
 5. Save as "*.pdf" (Save True-PDF to your local computer for offline reading/printing)

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

Accountable person and shareholder: Wayne Zheng

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----