








<b>Prüfbericht-Nr.:</b> Test report no.:	<b>NN211P78 001</b>	<b>Auftrags-Nr.:</b> Order no.:	168336085	Seite 1 von 29 Page 1 of 29
<b>Kunden-Referenz-Nr.:</b> Client reference no.:	N/A	<b>Auftragsdatum:</b> Order date:	2021-09-18	
<b>Auftraggeber:</b> Client:	RENHAO WEIYE TECHNOLOGY (WUHAN) CO.,LTD NO.78, Luoyu Road, Hongshan District Wuhan City, 430070 Hubei P.R.China			
<b>Prüfgegenstand:</b> Test item:	Plug for Conductive Charging of Electric Vehicles			
<b>Bezeichnung / Typ-Nr.:</b> Identification / Type no.:	See page 6			
<b>Auftrags-Inhalt:</b> Order content:	Type test			
<b>Prüfgrundlage:</b> Test specification:	EN 62196-1:2014 EN 62196-2:2017			
<b>Wareneingangsdatum:</b> Date of sample receipt:	2021-09-15			
<b>Prüfmuster-Nr.:</b> Test sample no.:	A003129612-001-009			
<b>Prüfzeitraum:</b> Testing period:	2021-09-20- 2022-01-05			
<b>Ort der Prüfung:</b> Place of testing:	TÜV Rheinland (Shanghai) Co., Ltd.			
<b>Prüflaboratorium:</b> Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
<b>Prüfergebnis*:</b> Test result*:	Pass			
<b>geprüft von:</b> tested by:	X <u>Debb Zhou</u>	<b>genehmigt von:</b> authorized by:	X <u>Allen Chen</u>	
<b>Datum:</b> Date:	2022-01-29	<b>Ausstellungsdatum:</b> Issue date:	2022-01-29	
<b>Stellung / Position:</b>	Debbie Zhou /PE	<b>Stellung / Position:</b>	Allen Chen / TC	
<b>Sonstiges /</b> Other:	Supervised by Leo Yang <u>Leo Yang</u>  This report was issued for type tests of Plug for Conductive Charging of Electric Vehicles.			
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
<p><b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b>  <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				



<b>TEST REPORT</b> <b>IEC 62196-2</b> <b>Plugs, socket-outlets, vehicle connectors and vehicle inlets –</b> <b>Conductive charging of electric vehicles</b> <b>Part 2: Dimensional compatibility and interchangeability requirements</b> <b>for a.c. pin and contact-tube accessories</b>	
<b>Report Number.....</b>	NN211P78 001
<b>Date of issue.....</b>	See cover page
<b>Total number of pages .....</b>	See cover page
<b>Name of Testing Laboratory preparing the Report .....</b>	TÜV Rheinland (Shenzhen) Co., Ltd.
<b>Applicant's name .....</b>	RENHAO WEIYE TECHNOLOGY (WUHAN) CO.,LTD
<b>Address.....</b>	NO.78, Luoyu Road, Hongshan District Wuhan City,430070 Hubei P.R.China
<b>Test specification:</b>	
<b>Standard .....</b>	IEC 62196-2:2016 for use in conjunction with IEC 62196-1:2014
<b>Test procedure .....</b>	Type test
<b>Non-standard test method .....</b>	N/A
<b>Test Report Form No. ....</b>	IEC62196_2B
<b>Test Report Form(s) Originator ....</b>	VDE Testing and Certification Institute
<b>Master TRF .....</b>	Dated 2016-11
<b>Copyright © 2016 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.</b>	
This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.	
<b>This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.</b>	
<b>General disclaimer:</b>	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

<b>Test item description</b> .....	Plug for Conductive Charging of Electric Vehicles	
<b>Trade Mark</b> .....	 <b>RENHOTEC</b>	
<b>Manufacturer</b> .....	Dongguan Dosin Hardware Electronics Co.,Ltd.	
<b>Model/Type reference</b> .....	See page 6	
<b>Ratings</b> .....	See page 6	
<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>		
<input checked="" type="checkbox"/>	<b>Testing Laboratory:</b>	See page 4
<b>Testing location/ address</b> .....		See page 4
<b>Tested by (name, function, signature)</b> .....		See cover page
<b>Approved by (name, function, signature)</b> ...		See cover page
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 1:</b>	
<b>Testing location/ address</b> .....		
<b>Tested by (name, function, signature)</b> .....		
<b>Approved by (name, function, signature)</b> ...		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 2:</b>	
<b>Testing location/ address</b> .....		
<b>Tested by (name + signature)</b> .....		
<b>Witnessed by (name, function, signature) .:</b>		
<b>Approved by (name, function, signature)</b> ...		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 3:</b>	
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 4:</b>	
<b>Testing location/ address</b> .....		
<b>Tested by (name, function, signature)</b> .....		
<b>Witnessed by (name, function, signature) .:</b>		
<b>Approved by (name, function, signature)</b> ...		
<b>Supervised by (name, function, signature) :</b>		

<b>List of Attachments (including a total number of pages in each attachment):</b> Attachment 1: Additional requirements according to EN 17186:2019 (4 pages); Attachment 2: Photo documentation (6 pages).	
<b>Summary of testing:</b>	
<b>Tests performed (name of test and test clause):</b> 1. All tests were performed on EPT-32X; 2. Additional tests of clause 22, 23, 24, 25.3, 26.4 were performed on EPT-20X, clause 25.3, 26.4 were performed on EPS-32X, EPS-20X; Appendix 1: Common modification according to EN 62196-1:2014 (1 page); The product fulfils the requirements of EN 62196-1:2014; EN 62196-2:2017.	<b>Testing location:</b> TÜV Rheinland (Shanghai) Co., Ltd. No.177, 178, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China
<b>Summary of compliance with National Differences (List of countries addressed):</b> N/A	
<b>Copy of marking plate:</b> On product body	
  	
Renhao Weiye Technology (Wuhan) Co., Ltd Name: plug Number: EPT-32X Specification: 32A 480V AC IP class: IP54 Standard: IEC62196.2-2016	Renhao Weiye Technology (Wuhan) Co., Ltd Name: plug Number: EPS-32X Specification: 32A 250V AC IP class: IP54 Standard: IEC62196.2-2016
Renhao Weiye Technology (Wuhan) Co., Ltd Name: plug Number: EPT-20X Specification: 20A 480V AC IP class: IP54 Standard: IEC62196.2-2016	Renhao Weiye Technology (Wuhan) Co., Ltd Name: plug Number: EPS-20X Specification: 20A 250V AC IP class: IP54 Standard: IEC62196.2-2016
In user manual:	
 Dongguan Dosin Hardware Electronics Co.,Ltd. Yongfu Kechuang Central Industrial Park, Nanzha District 5, Humen Town, Dongguan, China	
<b>Remark:</b>	
1. Markings of all models are identical except model numbers, ratings and pin configurations	
2.  is identifier according to EN 17186:2019.	

<b>Test item particulars</b> .....: Plug for Conductive Charging of Electric Vehicles	
<b>Type of accessory</b>	
▪ <b>Socket-outlets</b> .....	<del>yes</del> / no
▪ <b>Vehicle inlets</b> .....	<del>yes</del> / no
▪ <b>Plugs</b> .....	yes / <del>no</del>
▪ <b>Vehicle connectors</b> .....	<del>yes</del> / no
- <b>Number of poles</b> .....	See page 6
- <b>Rated current</b> .....	See page 6
- <b>Rated operating voltage</b> .....	See page 6
- <b>Degree of protection</b> .....	IP54
- <b>Interlocking facilities (with/without interlock)</b> .....	<del>with interlock</del> / without interlock
- <b>Type of interlock (electrical/mechanical)</b> .....	<del>electrical</del> / <del>mechanical</del>
- <b>Standard sheet</b> .....	2-IIb
- <b>Type of terminal</b> .....	N/A
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object .....	N/A
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>Testing</b> .....	
<b>Date of receipt of test item</b> .....	See cover page
<b>Date (s) of performance of tests</b> .....	See cover page
<b>General remarks:</b>	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60335-1:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....:	<input type="checkbox"/> <b>Yes</b> <input checked="" type="checkbox"/> <b>Not applicable</b>

**When differences exist; they shall be identified in the General product information section.**

**Name and address of factory (ies) .....**: Dongguan Dosin Hardware Electronics Co.,Ltd.  
Yongfu Kechuang Central Industrial Park, Nanzha  
District 5, Humen Town, Dongguan, China

**General product information:**

Plug for Conductive Charging of Electric Vehicles, IP54, non-rewirable; without breaking capacity, comply with standard sheet 2-IIb. These plugs are to be used at an ambient temperature between -35 °C and +50 °C.

All models are identical except model names, cable configurations and ratings.

**Model difference:**

Type No.	Rated current	Rated voltage	Cables	Phase details	Coding resistor
EPT-20X	20A	480V~ (three-phase)	5×2,5mm <sup>2</sup> +1×0,5mm <sup>2</sup>	L1, L2, L3, N, PE	680Ω
EPS-20X	20A	250V~ (single-phase)	3×2,5mm <sup>2</sup> +1×0,5mm <sup>2</sup>	L1, N, PE	680Ω
EPT-32X	32A	480V~ (three-phase)	5×6,0mm <sup>2</sup> +1×0,5mm <sup>2</sup>	L1, L2, L3, N, PE	220Ω
EPS-32X	32A	250V~ (single-phase)	3×26,0mm <sup>2</sup> +1×0,5mm <sup>2</sup>	L1, N, PE	220Ω

**Remark:**

1. Declared by the applicant, the interlock and retaining device associated with the plug shall be provided during the final installation and the related safety requirement and function shall be evaluated accordingly;

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict

<b>8</b>	<b>MARKING</b>		<b>P</b>
8.1	All accessories marked with the following:		P
	Rated current (A) ..... :	See page 4	P
	Rated operating voltage (V) ..... :	See page 4	P
	Name or trademark of responsible vendor ..... :	See page 4	P
	Degree of protection ..... :	See page 4	P
	Type reference ..... :	See page 4	P
8.2	Symbols comply with the examples		P
8.3	For plugs and connectors, responsible vendor name or trademark and the type reference are visible to the user		P
8.4	For all accessories, rated voltage and rated current markings visible prior to installation		P
	For inlets and socket outlets, responsible vendor name or trademark and type reference visible before installation.		N/A
8.5	Contacts of rewirable accessories marked properly		N/A
8.6	Wiring instructions provided for rewirable accessories		N/A
8.7	Non-rewirable accessories not required to be marked in accordance with 8.5 and 8.6		P
8.8	Marking is indelible and easily legible after the humidity treatment of 20,3, the marking is rubbed vigorously by hand for 15 s with a piece of cloth soaked in water and again for 15 s with a piece of cloth soaked with petroleum spirit.		P
8.9	Cable assemblies with one accessory have all wires identified and are provided with wiring instructions	Wiring instruction is in user manual	P

<b>9</b>	<b>DIMENSIONS</b>		<b>P</b>
9.1	Accessories comply with the relevant standard sheets as specified (IEC 62196-2)		P
	Applicable standard sheet ..... : (IEC 62196-2)	2-IIb	P
9.2	Accessories are compatible only with other standardized accessories of the same type.		P
9.3	It is not possible to make single-pole connections between plugs and socket-outlets or vehicle connectors, and between vehicle inlets and vehicle connectors.		P

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
9.4	It is not possible to engage plugs or vehicle connectors with socket-outlets or vehicle inlets having different ratings, or having different contact combinations unless safe operation is ensured.		P
	Improper connections between different electric vehicle accessories are not possible		P

<b>10</b>	<b>PROTECTION AGAINST ELECTRIC SHOCK</b>		<b>P</b>
10,1	Live parts are not accessible to the user when the accessories are in partial or complete engagement		P
	Contact between a live part of a plug or vehicle inlet and a live part of a socket-outlet or vehicle connector is not possible while any live part is accessible.		P
10,2	Accessories with shutters do not allow access		N/A
	Live contacts automatically screened		N/A
	Operation only by complementary accessories		N/A
	Parts liable fixed against loosening		N/A
	Compliance after tests of cl. 23		N/A
10,3	Design of accessories		P
	a) When inserting the plug or vehicle connector		P
	1) The earth connection is made before the phase connections		P
	2) The control pilot connection is made after phase and neutral connection		P
	3) The proximity contact or connection switch contact is made after the earth contact, and before or simultaneously with the control pilot contact.		P
	b) When withdrawing the plug or vehicle connector		P
	1) The phase and neutral connections are broken before the earth connection is broken		P
	2) The control pilot connection is broken before the phase connection are broken		P
	3) The proximity contact or connection switch contact is broken before the earth contact, and after or simultaneously with the control pilot contact.		P
10,4	It is not possible to inadvertently assemble the contacts of one device into the enclosure of the mating device.		P



IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict

<b>11</b>	<b>SIZE AND COLOUR OF PROTECTIVE EARTHING CONDUCTORS</b>		<b>P</b>
	Size of earthing conductors or neutral conductors are at least the same size as the phase conductors. (IEC 62196-2)		P
	The earth conductor is green/yellow (IEC 62196-2)		P

<b>12</b>	<b>PROVISION FOR EARTHING</b>		<b>P</b>
12.1	Accessories are provided with a protective earthing contact and a protective earthing terminal.		P
	Protective earthing contacts are directly and reliably connected to the protective earthing terminals.		P
12.2	All accessible dead metal parts are reliably connected to the earthing terminal by construction.		N/A
	Impedance of earthing path does not exceed 0,05 $\Omega$ : .....		N/A
12.3	Earthing contact comply with the test of 12.3 (a) or 12.3 (b) to 12.3 (d) : .....	See appended table 12.3	P
	Earthing contacts do not overheat when conducting a current equal to that specified for the phase contacts in accordance with 12.3 (a)		P
	The earthing contact conducted the short time test currents without cracking, breaking or melting in accordance with 12.3 (b) to (d).		N/A
12.4	Earthing contacts are shrouded or guarded against mechanical damage		P
12.5	Data or signal earth contacts can carry 2 A without overheating		P

<b>13</b>	<b>TERMINALS</b>		<b>P</b>
<b>13.1</b>	<b>Common requirements</b>		<b>P</b>
13.1.1	Rewireable accessories are provided with terminals that accept flexible conductors		N/A
13.1.2	Non-rewireable accessories are provided with soldered, welded, crimped or other effective terminations	Crimped	P
	Crimping of soldered conductors is not used unless soldering is outside of crimp area		P
13.1.3	Terminals do not require special preparation		N/A
13.1.4	Terminal materials adequate		N/A

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
13.1.5	Earthing terminal bodies that are not part of the accessory housing or frame have a body made of materials in accordance with 13.1.4		N/A
	Earthing terminal bodies that are part of the accessory housing or frame have clamping means that are made of materials in accordance with 13.1.4		N/A
	If the housing or frame are fabricated of aluminium or it is alloys, combinations of copper and aluminium are avoided or protection is provided.....:		N/A
13.1.6	Terminals are properly fixed and clamping means do not fix any other component		N/A
13.1.7	Terminals are located within proximity of other terminals		N/A
13.1.8	Terminals are located or shielded to avoid contact with screws or conductors		N/A
13.1.9	No risk of accidental contact between live parts between live parts and enclosure parts when conductors fitted as intended		N/A
	No risk of a stranded wire contacting live parts or enclosure parts		N/A
<b>13.2</b>	<b>Screw type terminals</b>		N/A
13.2.1	Screw type terminals allow proper connection of a copper or copper alloy conductor with the proper cross sectional area		N/A
	Depth of pillar terminal hole sufficient		N/A
13.2.2	Screw type terminals have appropriate mechanical strength		N/A
	Screws and nuts for clamping have an ISO thread or a thread comparable in pitch and mechanical strength		N/A
13.2.3	Screw type terminals clamp conductors between metal surfaces and do not damage the conductor		N/A
13.2.4	Lug terminals used with accessories rated at least 60 A and are fitted with spring washers or other means to lock the terminal		N/A
13.2.5	Clamping screws or nuts of earthing terminals are locked against accidental loosening and cannot be loosened without a tool		N/A
<b>13.3</b>	<b>Mechanical tests on terminals</b>		N/A
13.3.1	Terminals comply with the test of 13.3.1		N/A
	Flexing under mechanical load test:		N/A

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Smallest cross-sectional area (mm <sup>2</sup> ); height H (mm); mass (kg) .....		N/A
	Largest cross-sectional area (mm <sup>2</sup> ); height H (mm); mass (kg) .....		N/A
	during the test: the conductor does not slip out, no break near clamping unit and no damage		N/A
13.3.2	Terminals comply with the test of 13.3.2		N/A
	Pull test:		N/A
	- min. cross-sectional area (mm <sup>2</sup> ); pull (N) .....		N/A
	- max. cross-sectional area (mm <sup>2</sup> ); pull (N) .....		N/A
	during the test the conductor does not come out		N/A
13.201	Wire connection of components is rewirable or non-rewirable. (IEC 62196-2)		N/A

<b>14</b>	<b>INTERLOCKS</b>		<b>N/A</b>
<b>14.1</b>	<b>Accessories with interlock</b>		<b>N/A</b>
14.1.1	Accessories classified in "not suitable for making and breaking an electrical circuit under load" shall be provided with an interlock.	Shall be checked after final installation	N/A
14.1.2	Plugs and socket-outlets with interlocks shall be so constructed that:		N/A
	- A plug cannot be completely withdrawn from the socket-outlet while the contacts of that socket-outlet are live		N/A
	- the contacts of the socket-outlet cannot be made live until a plug is in proper engagement		N/A
	Vehicle couplers with interlocks shall be so constructed that:		N/A
	- a vehicle connector cannot be completely withdrawn from the vehicle inlet while the contacts of that vehicle connector are live		N/A
	- the contacts of the vehicle connector cannot be made live until the vehicle connector is in proper engagement		N/A
	The power contacts shall not make or break under load		N/A
14.1.3	Accessories with interlock but without latching function (electrical interlock) shall be so constructed that:		N/A

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
	a) the time interval between the opening of the contacts of the control switching device and the opening of the line contacts and neutral contact of the accessory shall be sufficient to ensure that the mechanical switching device interrupts the current before the contacts of the plug are disconnected from the contacts of the socket-outlet		N/A
	b) during the closing operation, the contacts of the control switching device shall close after or simultaneously with the contacts of the main poles.		N/A
14.1.4	Switched socket-outlets with interlock and latching device holding the plug into the socket-outlet (mechanical interlock) shall be so constructed that:		N/A
	- the interlock is linked with the operation of a switch so that the plug can neither be inserted nor withdrawn from the socket-outlet while the contacts of the socket-outlet are live		N/A
	- the contacts of the socket-outlet cannot be made live until a plug is almost completely in engagement		N/A
	Switched vehicle connectors with interlock and latching device holding the vehicle connector onto the vehicle inlet (mechanical interlock) shall be so constructed that:		N/A
	- the interlock is linked with the operation of a switch so that the vehicle connector can neither be inserted nor withdrawn from the vehicle inlet while the contacts of the vehicle connector are live		N/A
	- the contacts of the vehicle connector cannot be made live until it is almost completely in engagement with a vehicle inlet		N/A
	Accessories with interlock and latching device which hold the plug into the socket-outlet or connector are subjected to the test of 14.1.5 and 14.1.6.		N/A
14.1.5	The switched socket-outlet or connector with interlock is fixed to the support so that the axis of separation is vertical and the movement of the plug is downwards.		N/A
	After this test, the total weight shall be maintained for 60 s.		N/A
14.1.6	The switched socket-outlet or connector with interlock is fixed to support so that the axis of separation is horizontal		N/A
	After this test, the total weight shall be maintained for 60 s.		N/A
	The test is repeated three times, rotating the socket-outlet of 90° on the vertical plane each time		N/A

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
	After the test, the switched socket-outlet or vehicle connector with interlock shall show no damage or deformation which may impair the function of the product		N/A
14.2	Accessories with integral switching device		N/A
	Integral switching devices shall comply with IEC 60947-3 as far as it is applicable:		N/A
	- for a.c. application, shall have a rated current, at a utilization category of at least AC-22A		N/A
	- for d.c. application, shall have a rated current, at a utilization category of at least DC-21A		N/A
14.3	Control circuit devices and switching elements		N/A
	Control circuit devices and switching elements, if any, used in the control circuit of an electrically interlocked socket-outlet or connector shall comply with:		N/A
	- IEC 60947-5-1 or		N/A
	- IEC 61058-1		N/A
	Ratings suitable for the load to be controlled		N/A
	Control switching devices according to IEC 61058-1 shall be classified with at least 10 000 cycles		N/A
14.4	Pilot contacts and auxiliary circuits		N/A
	Pilot contacts and auxiliary circuits used for interlocks shall make after the neutral and phase(s) are made		N/A
	Pilot contacts and auxiliary circuits used for interlocks shall break before the phase(s) and neutral are broken		N/A

15	RESISTANCE TO AGEING OF RUBBER AND THERMOPLASTIC MATERIAL		P
	Rubber or thermoplastic enclosures, or elastomeric sealing rings and gaskets are resistant to aging		P
	Material complies with the accelerated ageing test		P
	Test temperature (°C).....:	70 for waterproof cover /strain relief / seal ring/ o-ring/ cap of pin; 80 for other parts	P
	Test duration (hours).....:	240 for waterproof cover /strain relief / seal ring/ o-ring/ cap of pin; 168 for other parts	P
	No cracks in the material are visible		P
	Material is not sticky or greasy		P

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
<b>16</b>	<b>GENERAL CONSTRUCTION</b>		<b>P</b>
16.1	Accessible surfaces are free from sharp edges		P
16.2	Screws or other fastening means for fixing the part carrying the contacts to the mounting surfaces are accessible		P
	This fastening means does not perform any other function		P
16.3	Earthing contact unable to be altered by the user		P
16.4	Socket outlet and vehicle connectors when mounted as in normal use and without a plug and vehicle inlet respectively in position, shall ensure the degree of protection specified on its marked		N/A
	When a plug or vehicle inlet is fully engaged with the socket-outlet or vehicle connector, the lower degree of protection of the two accessories shall be ensured	IP54	P
16.5	Maximum temperatures on accessible parts are not exceeded	See clause 24	P
16.6	Adequate contact pressure is maintained when vehicle connectors and inlets are mated		N/A
16.7	Retaining device that prevents the plug or connector from working out of this mated part is provided		N/A
16.8	Latching device complies with pull test	Shall be checked after final installation	N/A
	Type of device.....:		N/A
	Cable length.....:		N/A
	Weight of device (kg).....:		N/A
	Weight of cable (kg) .....		N/A
	Pull force (kg) .....		N/A
16.9	Locking feature is provided (optional)		N/A
16.10	Conductors can be easily inserted into terminals and secured in rewirable devices		N/A
	Conductors can be positioned so as not to allow contact with uninsulated live parts or reducing spacing in rewirable devices		N/A
	Cover or enclosures of rewirable devices are easily removable and easily fixed after connection of conductors		N/A
16.11	Field serviceable accessories are designed to discourage user servicing		N/A
16.12	Enclosures have adequate mechanical strength and do not work loose during normal use		P

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Enclosures parts cannot be removed without a tool		P
16.13	Cable entries allow introduction of the cable to afford mechanical protection		N/A
16.14	Insulating barriers and the like have adequate mechanical strength, and are secured to the body of the device		N/A
	Insulating barriers and the like are designed such that they cannot be incorrectly replaced		N/A
16.15	The force to insert and withdraw a connector from an inlet is not greater than 100 N		N/A
	Force measured (N).....:		N/A
16.16	Gripping surface is provided		P
<b>17</b>	<b>CONSTRUCTION OF SOCKET-OUTLETS</b>		<b>N/A</b>
<b>17.1</b>	<b>General</b>		<b>N/A</b>
	Socket outlets are enclosed and meet the marked degree of protection when a plug is engaged or not		N/A
	A lid provided to meet the marked degree of protection is provided with springs fabricated of corrosion resistant material		N/A
	Socket outlets designated IP44 are provided with a drain opening meeting the dimensional limits		N/A
	Total enclosure and the marked degree of protection are achieved by means of a lid.		N/A
<b>17.2</b>	<b>Contact tubes</b>		<b>N/A</b>
17.2.1	Total enclosure and the marked degree of protection are achieved by means of a lid.		N/A
	Contact tubes, other than earth contact tubes, are floating		N/A
	Force to withdraw the steel gauge (N)..... :		N/A
17.2.2	The pressure exerted by contact tubes does not affect insertion or withdrawal		N/A
	Maximum withdrawal force (N) ..... :		N/A
<b>18</b>	<b>CONSTRUCTION OF PLUG AND VEHICLE CONNECTORS</b>		<b>P</b>
18.1	Enclosures of plugs and connectors completely cover the terminals and cable ends		P
	Rewireable device connections can be made without removing the core		N/A

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Plugs and connectors can only be assembled or reassembled so as to ensure proper configurations		P
18.2	Parts of a plug or connector do not work loose during normal use		P
	Plugs and connectors cannot be dismantled without a tool		P
18.3	Plugs meet the marked degree of protection when in complete engagement with the socket outlet	IP54	P
	Attached devices used to assist in meeting the degree of protection are not removable without a tool		P
18.4	Vehicle connectors are enclosed when not in engagement with the vehicle inlet		N/A
	Vehicle connectors incorporate means to meet the marked degree of protection when engaged with the vehicle inlet		N/A
	Means provided to meet the marked degree of protection are securely fixed to the connector		N/A
	Lid springs are fabricated of corrosion resistant material		N/A
<b>19</b>	<b>CONSTRUCTION OF VEHICLE INLETS</b>		<b>N/A</b>
19.1	Vehicle inlet incorporate means to ensure the marked degree of protection when mated with a vehicle connector		N/A
	Attached caps provided on inlets meet marked degree of protection when fitted correctly		N/A
	It is not possible to dismantle the inlet or the attached cap without a tool		N/A
19.2	Vehicle Inlet is provided with an earthing contact		N/A
19.3	Vehicle Inlets designated IP44 are provided with a drain opening meeting the dimensional limits		N/A
<b>20</b>	<b>DEGREE OF PROTECTION</b>		<b>P</b>
20,1	Accessories have the required minimum ingress protection rating		P
	Plugs and vehicle connectors when mated are IP 44	IP54	P
	Vehicle inlets mated are IP 44		N/A
	Plugs, vehicle connectors, and socket outlets when not mated are IP 24	IP54	P
	Vehicle Inlets when not mated are IP 55		N/A



IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
20,2	Enclosures comply with the relevant test of IEC 60529 for the IP rating marked on the device		P
20,3	No damage occurs to devices subjected to the humidity conditioning		P
	Humidity (%) ..... : 93		P
	Temperature (°C)..... : 23		P
	Duration (hours)..... : 168		P
<b>21</b>	<b>INSULATION RESISTANCE AND DIELECTRIC STRENGTH</b>		<b>P</b>
21.1	Accessories comply with the insulation resistance and dielectric strength tests		P
21.2	The measured insulation resistance is not less 5 MΩ	See appended table 21.2	P
21.3	The accessory complies with the dielectric strength test	See appended table 21.1	P
21.4	The means for non-interchangeability were not impaired		P
<b>22</b>	<b>BREAKING CAPACITY</b>		<b>P</b>
22.1	Accessories intended to interrupt current have sufficient breaking capacity	Without breaking capacity	N/A
22.2	Mating accessories comply with the breaking capacity test		N/A
	Test current: 1,25 rated current (A: power factor) .... :		N/A
	Test voltage: 1,1 rated operating voltage (V) ..... :		N/A
	Number of cycles..... :		N/A
	No sustained arcing occurs. No damage		N/A
22.3	Mating accessories not suitable for current interruption comply with the fault current breaking capacity test		P
	Test current: 1,25 rated current (A: power factor) .... :	Power factor: 0,8 Test current: 40 for EPT-32X; 20 for EPT-20X	P
	Test voltage: 1,1 rated operating voltage (V) ..... :	AC 528	P
	Number of cycles..... :	3	P
	No sustained arcing occurs. No damage		P

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
<b>23</b>	<b>NORMAL OPERATION</b>		<b>P</b>
23.1	Accessories withstand the mechanical, electrical and thermal stresses of normal use		P
23.2	Test performed with both a.c. and d.c. voltages		P
23.3	The accessories comply with the test		P
	Rated operating voltage (V) .....	AC 480, 3 phase	P
	Rated current (A; power factor).....	32 for EPT-32X, 20 for EPT-20X; 0,6	P
	Number of cycles: with load .....	50	P
	without load .....	10000	P
	No sustained arcing occur		P
	After test, no damage and electric test (§ 21.3) (V)		P
23.4	Lids or other moveable parts that are not operated automatically are also caused to move the required number of cycles		P
<b>24</b>	<b>TEMPERATURE RISE</b>		<b>P</b>
24.1	Temperature rise of terminals and surfaces do not exceed the required limits 50 K	See appended table 24.1	P
	For accessories with coding resistors, each resistor value was tested at the current corresponding to that resistor (IEC 62196-2)		P
24.2	Accessories shall be so constructed that the surface temperatures in normal use are not excessive, as indicated in 16.5		P
<b>25</b>	<b>FLEXIBLE CABLES AND THEIR CONNECTION</b>		<b>P</b>
25.1	Conductors are relieved from strain at the terminals and are protected against abrasion		P
	Cable cannot contact unearthed metal parts		P
<b>25.2</b>	<b>Requirements for plugs and vehicle connectors</b>		<b>P</b>
25.2.1	Suitable flexible cable is provided with non-rewireable devices		P
25.2.2	Rewireable accessory provided with strain relief that prevents twisting of cable		N/A
	Instructions provided to identify parts not provided and explain assembly		N/A
	Cable anchorages do not have any sharp edges		N/A
	Insulating materials are smooth and free from burrs		N/A

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict

25.3	Accessories comply with the cable pull test		P
	Rated current (A) .....	16      32	P
	Pulling force (N) .....	160      200	P
	Torque (Nm) .....	0,6      0,7	P
	Maximum displacement (mm) .....	Max.0      Max.0	P
	During the test, the cable shall not be damaged		P
	After the test, the cable shall not have been displaced by more than the values indicated in table 17.		P

<b>26</b>	<b>MECHANICAL STRENGTH</b>		<b>P</b>
26.1	Accessories have adequate mechanical strength		P
26.2	Accessories maintain their degree or protection after impact testing		N/A
	Ball impact test on enclosure for Socket-outlets and appliance inlets		N/A
	Impact test: 5 blows (fig. 5); energy:	[ ] 1 J      [ ] 2 J	N/A
	- After test, no damage		N/A
	- Accessories higher than IP 44: withstand § 20		N/A
	- Enclosures of thermoplastic mat.: withstand § 21.4		N/A
26.3	Rewirable plugs and connectors, and non-rewirable plugs and connectors:		P
	For rewirable plugs and connectors: Type of cable (IEC 60245-4; mm²) .....		N/A
	8 drops – 1 m, total length of 2,25 m		P
	- After test, no damage		P
	- Accessories higher than IP 44: withstand § 20		P
	- Enclosures of thermoplastic mat.: withstand § 21.4		P
26.4	Non-rewireable accessories comply with the flexing test		P
	Current (A); Force (N) .....	20; 20      32; 25	P
	Number of flexing: 20 000		P
	After the test, no damage		P
26.5	Accessories with screwed cable glands comply with the deformation test		N/A
	Diameter of test rod (mm) .....		N/A
	Force (N) .....		N/A

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
	After the test, no damage		N/A
26.6	Shutters, if provided, comply with the pin force test		N/A
26.7	Isolating caps fixed sufficiently		P
	Test of 26.8 and 26.9 comply with stated criteria		P
	After each of the following tests, the samples shall show no damage as follows:		P
	- no part shall become detached		P
	- no part shall have moved, loosened or deformed to the extent that the samples no longer function or operate as intended		P
	- no uninsulated live part shall become accessible with the probe (Figure 3)		P
	- no reduction shall occur of creepage and clearance between uninsulated live parts of		P
	- no other evidence of damage shall result, that could increase the risk of fire or electric		P
26.8	Temperature test of IEC 60068-2-14, test procedure Nb		P
26.9	Force test on isolating caps at 20 N or 40 N for 1 minute		P

<b>27</b>	<b>SCREWS, CURRENT CARRYING PARTS AND CONNECTIONS</b>		<b>P</b>
27.1	Connections withstand the mechanical stresses occurring in normal use		P
	Screws transmitting contact pressure having a diameter of 3,5 mm, screw into a metal nut or metal insert		N/A
	Screws comply with the engagement test	See appended table 27.1	N/A
	The screws or nuts are tightened and loosened:		N/A
	- ten times for screws in engagement with a thread of insulating material		N/A
	- five times for nuts and other screws		N/A
	Torque applied (Nm) ..... :		N/A
	After the test, the clamping unit shall not have undergone changes that adversely affect its further use		N/A
27.2	Screws engaging threads in insulating material have a suitable length and correct introduction is ensured		P

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
27.3	Contact pressure of electrical connections is not transmitted through insulating material unless insulating material is suitable for this use		P
27.4	Screws and rivets are locked against loosening		P
27.5	Current carrying parts are fabricated of suitable materials		P
27.6	Moving parts of contacts are suitably protected against corrosion		P
<b>28</b>	<b>CREEPAGE DISTANCES, CLEARANCES AND DISTANCE</b>		<b>P</b>
28.1	Creepage distances and clearance comply with IEC 60664-1 and 60664-3, when evaluated in accordance with 28.4	See appended table 28.1	P
28.2	Sealing compounds do not extend outside the cavity in which they are contained		P
28.3	Pollution degree is 4 for outdoor use equipment unless protection is afforded by another means		N/A
	Pollution degree applied..... :	Considered as pollution degree 3	P
28.4	Overvoltage category II applies		P
	Pollution degree 2 on printed wiring boards applies due to the use of protective coatings		N/A
	Pollution degree 1 on printed wiring boards applies due to the use of silicone rubber or potting compounds		N/A
	Clearances were evaluated based on test and measurement in IEC 60664-1		P
	Evaluation of clearance and creepage distances are in accordance with IEC 60664-1, Section 3		P
	Protective coatings were evaluated to IEC 60664-3		N/A
	Primary circuit voltages are evaluated using the next highest value in the table. Interpolation is only allowed for secondary circuits		N/A
	Determination of the dimensions of clearance and creepage distances shall be conducted in accordance with IEC 60664-1:2007, Subclause 6.2		P

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict

<b>29</b>	<b>RESISTANCE TO HEAT, TO FIRE AND TO TRACKING</b>		<b>P</b>
29.1	Accessories are resistant to heat		P
29.2	Devices are heated in cabinet for 1 hour at a temperature of 110 + 5°C and comply with all criteria at the end of the exposure		P
	Marking still be easily legible		P
29.3	Insulating materials comply with the ball pressure test	See appended table 29.3	P
	Temperature (°C)..... :	See appended table 29.3	P
	Maximum deformation diameter (mm)..... :	See appended table 29.3	P
	For materials which deformation, this diameter not exceed 2 mm		P
29.4	External parts of insulating material and insulating material supporting live parts are resistant to abnormal heat and fire in accordance with IEC 60695-2-10	See appended table 29.4	P
	Temperature of glow wire tip (°C) ..... :	See appended table 29.4	P
	No visible flame and no sustained glowing, or		P
	Flame or glowing of the specimen or of the surroundings extinguish within 30 s after the removal of the glow-wire		N/A
	Surrounding parts have not burned away completely		P
	No permanent ignition of the tissue paper		P
29.5	Insulating parts supporting live parts are resistant to tracking in accordance with IEC 60112 PTI test, solution a, 175 V, 50 drops	See appended table 29.5	P
	No flashover or breakdown between electrodes		P

<b>30</b>	<b>CORROSION AND RESISTANCE TO RUSTING</b>		<b>P</b>
	Ferrous parts are protected against rusting		P

<b>31</b>	<b>CONDITIONAL SHORT-CIRCUIT CURRENT WITHSTAND TEST</b>		<b>P</b>
	New socket-outlet and mating plug:		P
	Minimum prospective short-circuit current: 10 kA		P
	or higher if specified by manufacturer		N/A
	During test:		P
	- no risk for operator		P
	- no damage for adjacent equipment;		P

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- no arcing and no flashover between poles;		P
	- no melting of fault detection fuse		P
	After test:		P
	- accessories mechanically operable		P
	- no contact welding preventing normal opening		P
	- dielectric test as § 21.3 (21.2.1 b or 21.2.2 b)		P
<b>32</b>	<b>ELECTROMAGNETIC COMPATIBILITY</b>		N/A
32.1	Immunity		N/A
32.2	Emission		N/A
<b>33</b>	<b>VEHICLE DRIVEOVER</b>		<b>P</b>
33.1	A plug or vehicle connector shall have adequate resistance to damage from being driven over by a vehicle		P
33.2	Accessories wired with the min. size cable of a type recommended by the manufacturer shall be placed on a concrete floor in any normal position of rest	See appended table 33.2	P
33.3	This sub clause of part 1 is not applicable		N/A
33.4	This sub clause of part 1 is not applicable		N/A
<b>201</b>	<b>Components (IEC 62196-2)</b>		<b>P</b>
<b>201.1</b>	<b>Ratings (IEC 62196-2)</b>		<b>P</b>
	A component is used in accordance with its rating established for the intended conditions of use. (IEC 62196-2)		P
<b>201.2</b>	<b>Mechanical assembly (IEC 62196-2)</b>		<b>P</b>
	Loosening of parts in an accessory does not result in a risk of fire, electric shock, injury to persons. (IEC 62196-2)		P
<b>201.3</b>	<b>Current-carrying parts of incorporated components (IEC 62196-2)</b>		<b>P</b>
	Any component uninsulated live part does not turn or shift in position resulting in a reduction of creepage distances, clearances and distances below the minimum required values of IEC 62196-1:2014, Clause 28. (IEC 62196-2)		P
<b>201.4</b>	<b>Electrical connections (IEC 62196-2)</b>		<b>P</b>

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
201.4.1	Requirements described in 201.4.2 to 201.4.4 apply to connections of internal wiring that are factory installed in the accessory. (IEC 62196-2)		P
201.4.2	A splice or connection is mechanically secure and make electrical contact (IEC 62196-2)		P
201.4.3	A soldered connection is mechanically secure (IEC 62196-2)		P
201.4.4	Insulation over a splice is equivalent to the insulation on the wires involved (IEC 62196-2)		P
<b>202</b>	<b>Resistor coding (IEC 62196-2)</b>		<b>P</b>
	Configurations type 2 and type 3b and 3c are provided with coding resistors (IEC 62196-2)		P
	Resistor values and tolerances are in accordance with IEC 61851-1:2010 (IEC 62196-2)		P



IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict

Table 12.3	TABLE: Short Time Test Currents					N/A
Earthing Contact Designation	Device Rating (A)	Test Current (A)	Time (seconds)	Continuity exists (Yes/No)	Results	
Supplementary information:						

Table 21.1	TABLE: Dielectric Strength			P
Test voltage applied between:		Test potential applied (V)	Breakdown / flashover (Yes/No)	
Between all poles connected together and the body		2000	No	
Between each pole in turn and all others, these being connected to the body		2000	No	
Supplementary information:				

Table 21.2	TABLE: Insulation Resistance			P
Test voltage applied between:		Test potential applied (V)	Insulation Resistance (MΩ)	
Between all poles connected together and the body		500	≥1000 (required ≥5)	
Between each pole in turn and all others, these being connected to the body		500	≥1000 (required ≥5)	
Supplementary information:				

Table 24.1	TABLE: Heating Test		P
	Test current (A)..... :	2 for signal; 42 for power (tested on EPT-32X)	—
	Ambient (°C)..... :	See table below	—
Thermocouple Locations	max. temperature measured (°C)	max. temperature limit (°C)	
L1 – L2 – L3			
L1 Terminal	Max.59,8	71,8	
L2 Terminal	Max.59,0	71,8	
L3 Terminal	Max.56,0	71,8	
CP Terminal	Max.47,5	71,8	
Handle	Max.49,2 (corrected to 40 ambient temp.)	60,0	
Enclosure	Max.51,5 (corrected to 40 ambient temp.)	85,0	
Ambient	21,8	—	

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
<b>L1 – PE</b>			
L1 Terminal	Max.50,6	73,1	
PE Terminal	Max.51,2	73,1	
CP Terminal	Max.39,7	73,1	
Handle	Max. 44,3 (corrected to 40 ambient temp.)	60,0	
Enclosure	Max. 43,3 (corrected to 40 ambient temp.)	85,0	
Ambient	23,1	—	
<b>L3 – N</b>			
L3 Terminal	Max.48,7	72,4	
N Terminal	Max.50,4	72,4	
CP Terminal	Max.38,5	72,4	
Handle	Max. 45,4 (corrected to 40 ambient temp.)	60,0	
Enclosure	Max. 43,9 (corrected to 40 ambient temp.)	85,0	
Ambient	22,4	—	
<b>Supplementary information:</b>			

Table 24.1	TABLE: Heating Test		P
	Test current (A)..... :	2 for signal; 22 for power (tested on EPT-20X)	—
	Ambient (°C)..... :	See table below	—
Thermocouple Locations	max. temperature measured (°C)	max. temperature limit (°C)	
L1 – L2 – L3			
L1 Terminal	Max.60,6	77,7	
L2 Terminal	Max.57,2	77,7	
L3 Terminal	Max.57,3	77,7	
CP Terminal	Max.40,3	77,7	
Handle	Max.44,7 (corrected to 40 ambient temp.)	60,0	
Enclosure	Max.43,9 (corrected to 40 ambient temp.)	85,0	
Ambient	27,7	—	
L1 – PE			
L1 Terminal	Max.54,0	73,6	
PE Terminal	Max.52,5	73,6	

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
CP Terminal	Max.36,6	73,6	
Handle	Max.46,0 (corrected to 40 ambient temp.)	60,0	
Enclosure	Max.44,9 (corrected to 40 ambient temp.)	85,0	
Ambient	23,6	—	
<b>L3 – N</b>			
L3 Terminal	Max.52,3	73,7	
N Terminal	Max.50,5	73,7	
CP Terminal	Max.36,1	73,7	
Handle	Max.44,9 (corrected to 40 ambient temp.)	60,0	
Enclosure	Max.46,7(corrected to 40 ambient temp.)	85,0	
Ambient	23,7	—	
<b>Supplementary information:</b>			

Table 27.1	TABLE: Threaded Part Torque Test				N/A
Threaded part identification		Diameter of thread (mm)	Column number ( I, II, or III)	Applied torque (Nm)	
Supplementary information:					

Table 28.1	TABLE: Clearance And Creepage Distance Measurements						P
	Rated voltage (V) ..... :			See page 5		—	
	Pollution degree..... :			3		—	
	Overvoltage category..... :			II		—	
	Insulation group..... :			IIIa		—	
clearance cl and creepage distance dcr at/of:		Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
Between live parts of different polarity		—	480	3,0	>3,9	7,7	>10,01
Between live parts and accessible metal parts		—	250	3,0	>3,9	8,0	>10,4
Between live parts and earthing contacts, fixing screws and similar devices		—	250	1,5	>1,95	4,0	>5,2
Supplementary information:							

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict

Table 29.3	TABLE: Ball Pressure Test of Thermoplastics		P
Allowed impression diameter (mm) .....:		2	—
Part	Test temperature (°C)	Impression diameter (mm)	
Enclosure	80	Max.0,8	
Contact base/ base cover	125	Max.1,0	
Supplementary information:			

Table 29.4	TABLE: Glow-wire Test				P
part under test	material designation	test temperature (°C)	visible flame and sustained glowing (Y/N)	flames and glowing extinction time	ignition of the tissue paper (Y/N)
Enclosure	PC	650	N	-	N
Contact base/ base cover	PA66	850	Y	35	N
Sealing cover	Silicon	650	N	-	N
Cable sealing	Silicon	650	N	-	N
Supplementary information:					

Table 29.5	TABLE: Tracking Test			P
part under test	material designation	test voltage (V)	flashover / breakdown (Yes/No)	
Contact base/ base cover	PA66	175	No	
Supplementary information:				



Table 33.2	TABLE: Vehicle Drive Over Test		P
	Tire Size ..... :	P225/75R15	—
	Force Applied (N) ..... :	5000	—
	Tire Pressure (kPa) ..... :	220	
	Velocity (km/h) ..... :	8	
Sample Number		Orientation	Results / Observations
A		Front	Pass
B		Back	Pass
C		Middle	Pass
Supplementary information:			

IEC 62196-2			
Clause	Requirement + Test	Result - Remark	Verdict
<b>9</b>	<b>DIMENSIONS</b>		—
9.1	Addition to subclause 9.2:		—
	9.2.Z1 If other non-EV standardized accessories may be physically joined together with the EV accessories, these shall not be able to function.		N/A

## Attachment 2: Additional requirements according to EN 17186:2019

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

**IDENTIFICATION OF VEHICLES AND INFRASTRUCTURES COMPATIBILITY  
- GRAPHICAL EXPRESSION FOR CONSUMER INFORMATION ON EV POWER  
SUPPLY  
EN 17186:2019**

<b>5</b>	<b>General identifier requirements</b>		—
5.1	Shape of identifier		P
	A single hexagonal, regular and horizontal shape of identifier has been selected for all kind of electrical interfaces.		P
	The shape for all electrical interfaces is a regular and horizontal hexagon.		P
5.2	Colour scheme for electrical interfaces		P
	The identifier shall be executed according to Annex A:		P
	— for the plug and socket-outlet, in black symbol with a white/silver internal background and a black outline;		P
	— for the vehicle connector and vehicle inlet, in a white/silver symbol with black internal background and a white/silver outline.		N/A
5.3	Size		P
	The minimum size of the identifier is defined for a potential need of more than one identifier to be put on a vehicle which can regularly use more than one electrical interface offered on the market, in combination with the available space.		P
	In order for the consumer to recognize the electrical interface when approaching the connecting point, a larger minimum size is set for the EV charging station.		N/A
	The size of the identifier shall be:		P
	— a minimum of 13 mm in diameter (width), with an outer line thickness of at least 1,4 points, for placement on the plug, on the vehicle connector, on the vehicle in the immediate proximity of the vehicle inlet, in the vehicle manual, and at the selection device;	Min.13mm (Width)	P
	— a minimum of 30 mm in diameter (width), with an outer line thickness of at least 3,2 points, for placement on the EV charging station adjacent to the socket outlet and in the vehicle dealership.		N/A
	The font size of the symbol shall be scalable to the size of the shape, but the minimum being 14 points for the 13 mm diameter and 32 points for 30 mm diameter.	Min.14 points, Min.4,94mm in height	P

Attachment 2: Additional requirements according to EN 17186:2019			
Clause	Requirement + Test	Result - Remark	Verdict
5.4	Compatibility categorization		P
	The electrical interface is categorized by a symbol.		P
	The symbol consists of a single letter in normal, Latin script. The symbol shall be based on an Arial Bold font.		P
	The symbol shall be placed in the middle of the shape		P
	The symbol categorization is provided by the Annex B		P
5.5	Durability		P
	The label on the car shall have a 10-year lifetime and shall be readable	Lazered on body of connector	P
	Labels on the EV charging station and the cable shall have a 10-year lifetime and shall be readable when tested in accordance with EN 62196-1:2014, 8.8		P
<b>6</b>	<b>Label description</b>		—
6.1	General		P
	The implementation of Directive 2014/94/EU provides information that is additional and complementary to legal metrology, national regulations and other information		P
	For recognition by newcomers at a connection point, especially consumers driving throughout Europe, the form and expression of such national information should be similar throughout Europe.		P
6.2	Basic label with mandatory identifier content		P
6.2.1	Content of the label		P
	The content of the basic label is only composed of the mandatory part (identifier) with no optional information.		P
6.2.2	Design of the label		P
	The design is mandatory.		P
	The height of section B is 130 % of the height of the hexagon.		P
	The minimum width of the rectangle containing an identifier is 130 % of the width of the hexagon. The maximum width of the rectangle containing an identifier is 300 % of the width of the hexagon.		
6.3	Full label with mandatory identifier and possibly optional information	for the EV charging station only	N/A
6.3.1	Content of the label		N/A
	Table 1 describes the content of the complete label, composed of a mandatory part and optional information		N/A

Attachment 2: Additional requirements according to EN 17186:2019			
Clause	Requirement + Test	Result - Remark	Verdict
	A — Product name		N/A
	B — Identifier		N/A
	C — Power		N/A
	D — Additional information		N/A
6.3.2	Design of the label		N/A
	The design is mandatory.		N/A
	The height of section B is 130 % of the height of the hexagon.		N/A
	The minimum width of the rectangle containing an identifier is 130 % of the width of the hexagon. The maximum width of the rectangle containing an identifier is 300 % of the width of the hexagon.		N/A
	The heights of sections A and D are defined from the height of the section B and no more than 50 %.		N/A
	The height of the section C is defined from the height of the section B and no more than 33 %.		N/A
<b>7</b>	<b>Placement of the label</b>		—
7.1	General		P
	The use of the identifier is intended to meet the informational needs of a vehicle user arriving at a connecting point regarding the station/vehicle compatibility so that a consumer can easily identify the electrical interface that their vehicle can use.		P
	The presentation of the identifier shall be clearly visible during normal use, easily legible and displayed to the consumer on the location described in this clause.		P
7.2	Label location on EV charging stations, electric vehicles and detachable cable assembly		P
7.2.1	EV charging station		N/A
	Labels shall be affixed to an EV charging station as follows:		N/A
	— Label according to 6.2 adjacent to socket-outlet(s) or to the storage location(s) of vehicle connector(s) and;		N/A
	— Labels according to 6.1 with the identifier according to Annex B shall be affixed on the vehicle connector of each cable assembly or on a flag attached to each cable in the immediate proximity of the vehicle connector.		N/A
	— Label according to 6.1, in case of a payment or selection terminal that is separate from the EV charging station, it shall be affixed near or as part of the selection device.		N/A
7.2.2	Electric vehicle		N/A



Attachment 2: Additional requirements according to EN 17186:2019			
Clause	Requirement + Test	Result - Remark	Verdict
	Labels with the identifier according to Annex B shall be affixed to an electric vehicle as follows:		N/A
	— near each vehicle inlet and;		N/A
	— on each plug.		N/A
7.2.3	Detachable cable assembly		P
	Labels with the identifier according to Annex B shall be affixed to a detachable cable assembly as follows:		P
	— on the plug and;		P
	— on the vehicle connector.		N/A
7.3	Vehicle manuals and dealerships		N/A
	Information on whether a vehicle can use an electrical interface shall be indicated by use of the identifier in the user manuals and in vehicle dealerships in a way that is common practice and is easy to obtain and understand by the user of the vehicle.		N/A

PHOTO DOCUMENTATION


NN211P78 001

For

Plug for Conductive Charging of Electric Vehicles

EPT-32X, EPT-20X, EPS-32X, EPS-20X

RENHAO WEIYE TECHNOLOGY (WUHAN)  
CO.,LTD

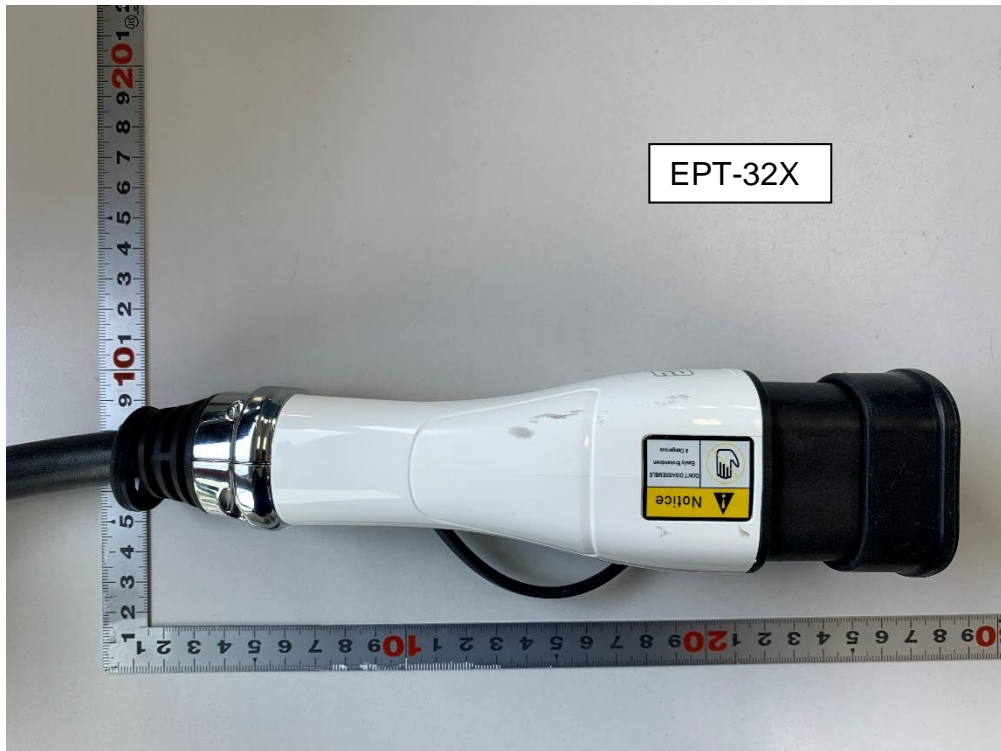


2022-01-21

This documentation consists of 6 pages (excluding this cover page)

**Report Number:** NN211P78 001

**Model:** EPT-32X, EPT-20X, EPS-32X, EPS-20X



**Report Number:** NN211P78 001

**Model:** EPT-32X, EPT-20X, EPS-32X, EPS-20X



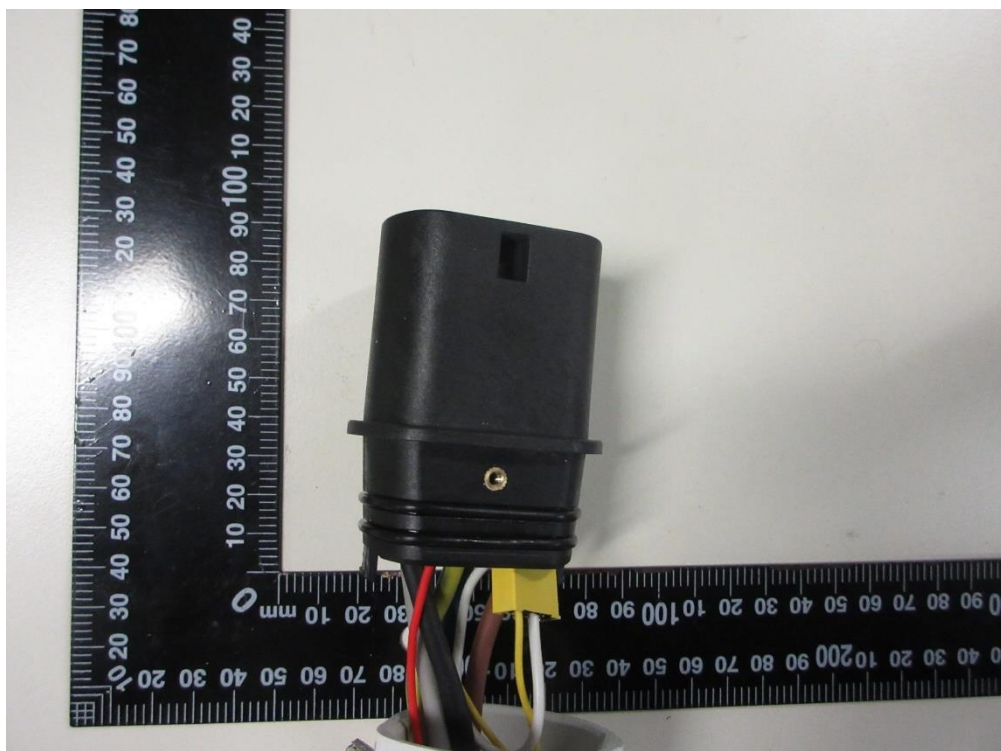
**Report Number:** NN211P78 001

**Model:** EPT-32X, EPT-20X, EPS-32X, EPS-20X



**Report Number:** NN211P78 001

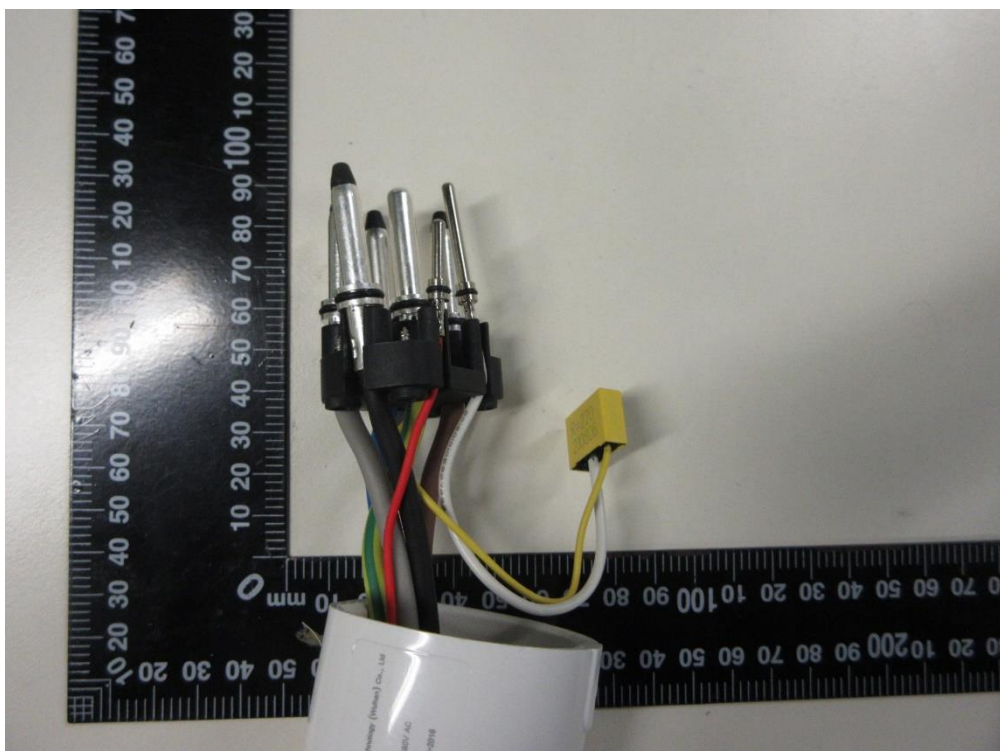
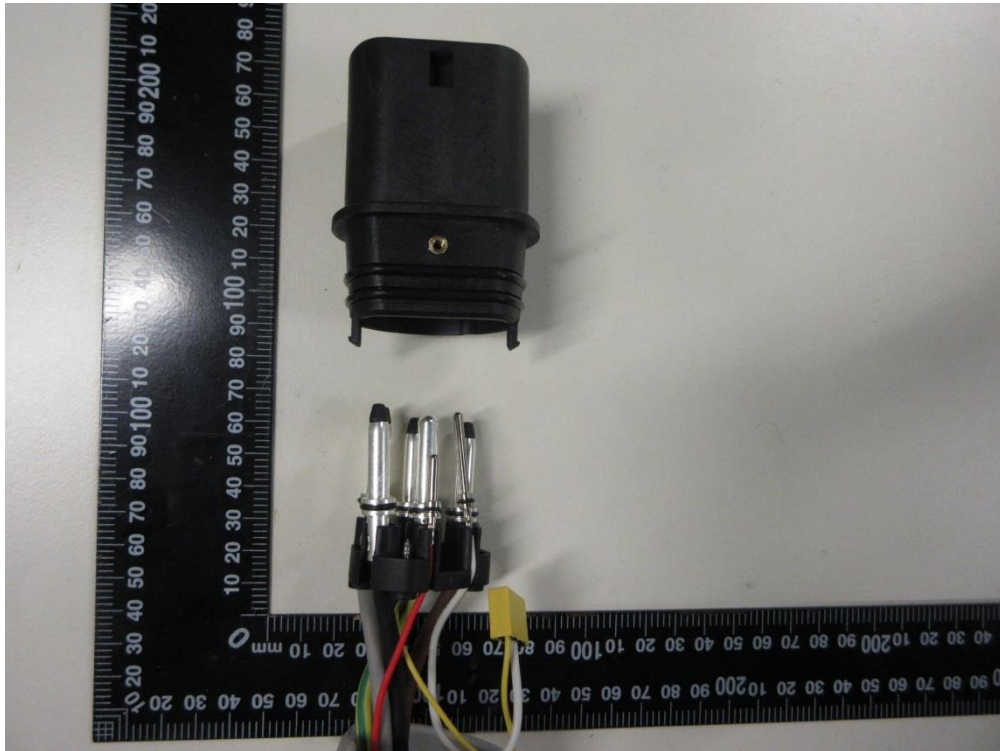
**Model:** EPT-32X, EPT-20X, EPS-32X, EPS-20X



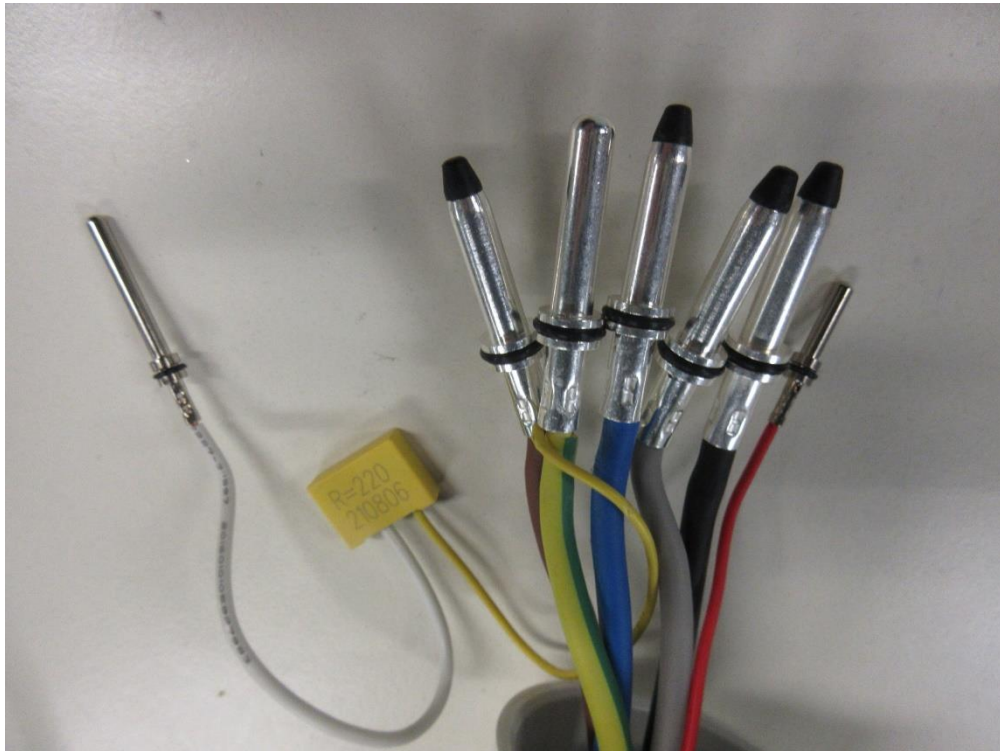


**Report Number:** NN211P78 001

**Model:** EPT-32X, EPT-20X, EPS-32X, EPS-20X



**Report Number:** NN211P78 001

**Model:** EPT-32X, EPT-20X, EPS-32X, EPS-20X

**Remark:**

All models are identical except model numbers, ratings, pin configurations, and cable length.

Type No.	Rated current	Rated voltage	Cables	Phase details	Coding resistor
EPT-20X	20A	480V~ (three-phase)	5×2,5mm <sup>2</sup> +1×0,5mm <sup>2</sup>	L1, L2, L3, N, PE	680Ω
EPS-20X	20A	250V~ (single-phase)	3×2,5mm <sup>2</sup> +1×0,5mm <sup>2</sup>	L1, N, PE	680Ω
EPT-32X	32A	480V~ (three-phase)	5×6,0mm <sup>2</sup> +1×0,5mm <sup>2</sup>	L1, L2, L3, N, PE	220Ω
EPS-32X	32A	250V~ (single-phase)	3×26,0mm <sup>2</sup> +1×0,5mm <sup>2</sup>	L1, N, PE	220Ω