| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

# TEST REPORT

## Standard DIN EN 60309-1:2013

## TUV SUD Test Report

| | |
|---|---|
| Report No.:<br>Date of issue:<br>Project handler: | 028-713182551-000_WALL<br>31.03.2021<br>Matthias Klement |
| Testing laboratory:<br>Address:<br>Testing location: | TÜV SÜD Product Service<br>Daimlerstraße 40 ; 60314 Frankfurt<br>as above |
| Client:<br>Client number:<br>Address:<br>Contact person: | Easee AS<br>5010656586<br>Grenseveien 19<br>4313 Sandnes<br>Rogaland<br>NORWAY<br>Jonas Helmikstol |
| Standard: | This TUV SUD test report form is based on the following requirements:<br>DIN EN 60309-1:2013 |
| TRF number and revision*:* | 00 |
| TRF originated by: | TUV SUD Product Service, Mr. Reinhod Hug *(product specialist)* |
| Copyright blank test report: | This test report is based on the content of the standard (see above). The test report considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by TUV SUD Product Service.<br>TUV SUD Group 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. |
| General disclaimer: | This test report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. |
| Scheme:<br><br>Non-standard test method:<br>National deviations: | ☐ TUV Mark ☒ without certification<br>☐ GS Mark ☐ NRTL Mark ☐ EU-Directive<br>☐ No ☐ Yes, see details under Summary of testing<br>Without / keine |
| Number of pages *(Report)*:<br>Number of pages *(Attachments)*: | 19<br>- |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | |
|---|---|
| Compiled by: | *SIGN-ID 482195*<br>31.03.2021<br>**Matthias Klement** |
| | *(Printed Name and Signature)* |
| Approved by: | *SIGN-ID 488744*<br>**Reinhold Hug** |
| | *(Printed Name and Signature)* |
| Test sample:<br>Type of test object:<br>Trademark:<br>Model and/or type reference: | MUC-481635-1, FFM-552333<br>EV Charging Robot<br>Easee<br>EVSE |
| Rating(s): | 1.4 – 22 kW charging power<br>Advanced load balancing<br>Integradted RCD Type-B<br>RFID / NFC-reader<br>Type 2 socket |
| Manufacturer:<br>Manufacturer number:<br>Address: | Same as client<br>5010656586<br>Grenseveien 19<br>4313 Sandnes<br>Rogaland<br>NORWAY |
| Sub-contractors/ tests (clause):<br>Name: | N/A<br>N/A |
| Order description: | ☐ Complete test according to TRF<br>☒ Partial test according to manufacturer's specifications<br>☐ Preliminary test<br>☐ Spot check<br>☐ Others: |
| Date of order:<br>Date of receipt of test item:<br>Date(s) of performance of test: | 2020-02-11<br>2020-03-24 Munich, 2020-04-02 Frankfurt<br>28.05.2020 – 10.03.2021 |
| Test item particulars:<br>EVSE for mode 3 charging (wall charger for electrical vehicles) Easee Charger | |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
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**Purpose of the product** (Description of intended use):

Charging EV

**Characteristic data** *(not shown on the marking plate)*:

Charging

Charging power: 1.4 – 22 kW

Charging connector: Type 2

Number of phases: 1, 2 or 3

Voltage: 230V / 400V AC (+ - 10%)

Automatic locking of the charger connector

Built-in energy meter

Easee Home: Up to 3 charging robots on the same cable

Easee Charge: Fullly scalable

Safety:

Built-in RCD Type B (30mA AC / 6 mA DC)

RCD device is automatically reset by disconnecting the charging cable

Degree of protection: IP54

Impact resistance: IK10

Fire class: UL94

Insulation class: II

Surge class: III

General

Dimensions: H:256 x W:193 x D:106

Operating temperature: -30°C til 40°C

Weight: 1.5 kg

Attachments:

-

*General remarks:*

*"(see remark #)" refers to a remark appended to the report.*
*"(see appended table)" refers to a table appended to the report.*
*Throughout this report **a comma** is used as the decimal separator.*
*The test results presented in this report relate only to the object tested.*

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

**Summary of testing:**

Tested according following clauses of DIN EN 60309-1:2013:

9 Protection against electric shock
10 Provision for earthing
11 Terminals
13 Resistance to aging of rubber and thermoplastic material
14 General construction
15 Construction of socket outlets
20 Breaking capacity
21 Normal operation
22 Temperature rise
23 Flexible cables and their connections
25 Screws, current-carrying parts and connections
26 Creepage distances, clearances and distances through sealing compound
27 Resistance to heat, fire and tracking

☐ deviation(s) found
☒ no deviations found

**Additional information on Non-standard test method(s)**

Sub clause: None

Page: None

Rational:

**If additional information is necessary, please provide**

The test contains only the assessment of the plug-in connection of the main-connection.

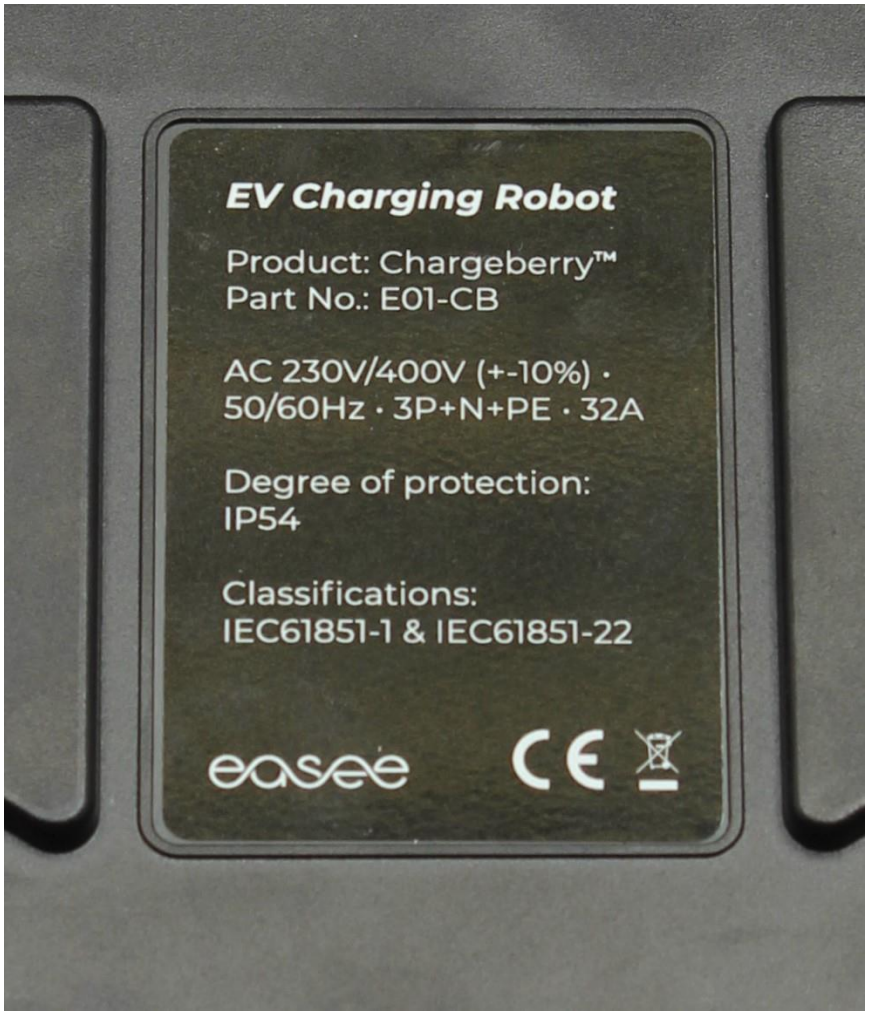
The assessment based on the applicable clauses of the standard.

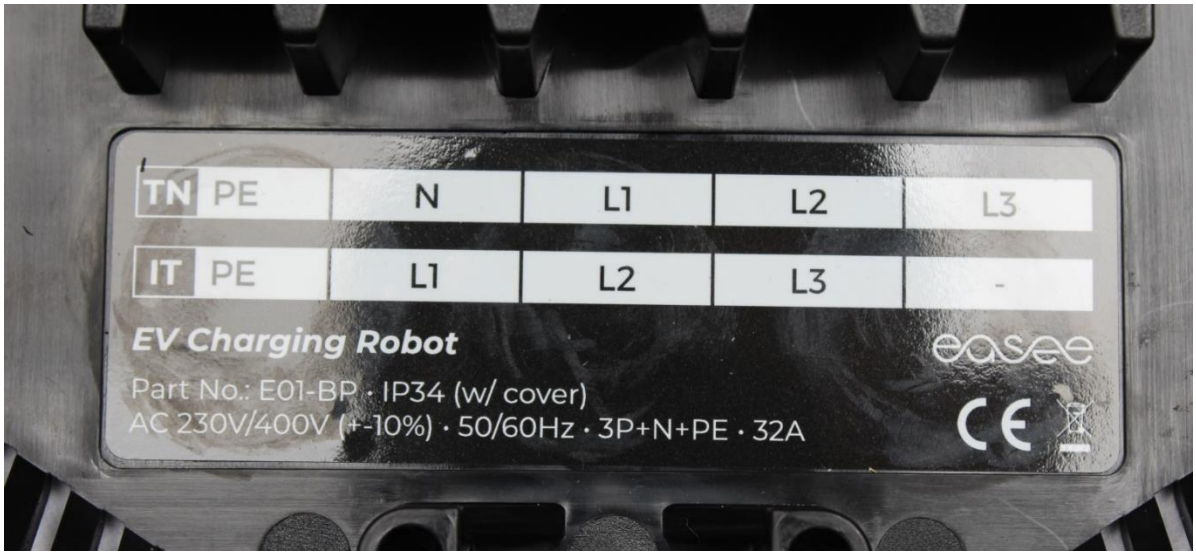
The actual standard DIN EN 62752 for plug-in connection of an in-cable control and protection device (IC-CPD) does not provide requirements for the terminals for connection to supply mains. Therefor the applicable requirements of DIN EN 60309-1 were tested.

Non-applicable clauses and points are marked with N/A

**Copy of marking plate:**

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |



| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

**Picture of the product:**

**Power supply housing ; Netzanschluss-Gehäuse**





**Name and address of factory (ies)** *(only if certification is provided)*:
Norautron AS
Nedre vei 8, Bygg 25
3183 Horten
Norway

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

**Possible test case verdicts:**

| | |
|---|---|
| test case does not apply to the test object: | N/A (not applicable / not included in the order) |
| test object does meet the requirement: | P (Pass) |
| test object does not meet the requirement: | F (Fail) |

**Possible suffixes to the verdicts:**

| | |
|---|---|
| suffix for detailed information for the client: | C (Comment) |
| suffix for important information for factory inspection: | M (Manufacturing) |

| | | | |
|---|---|---|---|
| 9 | PROTECTION AGAINST ELECTRIC SHOCK | | - |
| 9.1 | Live parts not accessible with test finger | | P |
| | Contact between one pin and contact tube impossible | | P |
| | Conformity to Standard sheet: ensure compliance | Special connection System | N/A |
| 9.2 | Earthing connection: made before phase and neutral connection | Clamp for PE is leveled above the other clamps | P |
| | and broken after phase and neutral | | P |
| | Conformity to Standard sheet: ensure compliance .. : | Special connection System | N/A |
| 9.3 | Impossible assemble plug contacts into enclosure | | N/A |

| | | | |
|---|---|---|---|
| 10 | PROVISION FOR EARTHING | | - |
| 10.1 | Earthing contact provided with earthing terminal | | P |
| | External earthing terminals visible from outside | No metal casing and no external earthing terminals | N/A |
| | Connection reliably | | P |
| | Insulating transformer: not connected to earthing | No insulation transformer in the observed connections | N/A |
| 10.2 | Accessible metal parts: reliably connected | Housing without metal parts | N/A |
| | Resistance not exceed 0.05 Ω I = 25 A ..... : | | N/A |
| 10.3 | Temperature rise: clause 22 | | P |
| 10.4 | Earthing contact protected against mechanical | | P |
| | Not permitted side earthing contacts | | N/A |

| | | | |
|---|---|---|---|
| 11 | TERMINALS | | - |
| 11.1.1 | Rewirable accessories accept flexible conductors | | P |
| 11.1.2 | Non-rewirable accessories provided with soldered, welded or crimped connections ..... : | No such connection | N/A |
| 11.1.3 | Terminals without special preparation | Connections with screws are terminals for wire end ferrule<br>Other connections are screwless | P |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 11.1.4 | Terminals: | | - |
| | - copper | | N/A |
| | - alloy 58 % copper (worked cold) or 50 % other parts | U-Tail-Terminal: CuZn37 | P |
| | - other metal not less resistant to corrosion | Clamps certified according UL486A-B and UL486C | P |
| | Steel screws protected against corrosion | | N/A |
| 11.1.5 | Body of earthing terminal: same metal as 11.1.4 | | P |
| | Clamping screws or nuts: same metal as 11.1.4 | | P |
| | Body or earthing terminal protected against corrosion | | N/A |
| 11.1.6 | Terminals properly fixed, not work loose when clamping screws are tightened or loosened | | P |
| | Screws and nuts not serve to fix any other components | | P |
| 11.1.7 | Each terminal located correctly | | P |
| 11.1.8 | Terminals be located or shielded that: | | P |
| | - screws becoming loose from the terminals, not establish electrical connection between live parts and metal parts connected to the earth | | P |
| | - conductors becoming detached from live terminals not touch metal parts connected to the earth | | P |
| | - conductors becoming detached from the earth not touch live parts | | P |
| 11.1.9 | The free wire of a conductor connected to live terminals middle size (specified in Table 3): type; cross-sectional area ($mm^2$) : | Provided wires were used 6$mm^2$ | P |
| | One wire, length 8 mm of a stranded conductor bent in every direction, no contact with: | | P |
| | - accessible metal parts | No such parts | N/A |
| | - not emerge for enclosure | | P |
| | The free wire of a conductor connected to the earthing terminal, not touch any live part | | P |
| 11.2 | | | - |
| 11.2.1 | Terminals allow proper connection of conductors as in Table 3; gauges as in Fig. 13 | | P |
| | other terminals shall be used suitable gauge | Tested with conductors | P |
| | Pillar terminal depth of the hole al least half the diameter of the screw | | P |
| | Lug terminal accept conductor as in Table 3 | | P |
| | Screw type identified by the terminal size as in Table 107 comply with S.S. as in 11.101 | | N/A |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 11.2.2 | Terminals: appropriate mechanical strength (§ 25.1) | | P |
| | Thread of screws or nuts ISO or equivalent | | P |
| 11.2.3 | Conductors clamping between metal surfaces, without damage (test 11.5) | | P |
| 11.2.4 | Lug terminals: only for I ≥ 63 A | According user manual maximum current is 32 A. Not used for this device. | P |
| | Locking means: spring washer or equivalent | | N/A |
| 11.2.5 | Clamping screws or nuts: | | P |
| | Locked against accidental loosening | | P |
| | Not possible loosen without tool | | P |
| 11.3 | Screwless type terminals | | N/A |
| 11.3.1 | Terminals allow proper connection of conductors as in Table 3; gauges as in Fig. 13 | | N/A |
| | other terminals shall be used suitable gauge | | N/A |
| 11.3.2 | Conductors clamping between metal surfaces, without damage (test 11.5 and 11.6) | | N/A |
| 11.3.3 | Terminals: appropriate mechanical strength cross sect: mm²)..... : | | N/A |
| 11.3.4 | The connection or disconnection either by general tool or device integrated; | | N/A |
| | or simple insertion | | N/A |
| | disconnecting other than a pull only | | N/A |
| 11.3.5 | Opening for tool clearly distinguishable | No tool necessary | N/A |
| 11.3.6 | Terminals: | | N/A |
| | - each conductor is clamped individually | | N/A |
| | - the conductors connected or disconnected either at the same time or separately | | N/A |
| | - comply clause 11.5 | | N/A |
| 11.3.7 | Inadequate insertion of the conductor avoided | | N/A |
| 11.3.8 | The connected conductor remains clamped | | N/A |
| | Deflection test (principle of test apparatus shown in figure 19a): | | - |
| | - test current (A) (Table 4-4) ..... : | | N/A |
| | Smallest cross-sectional area (Table 3) (mm²) ..... : | | N/A |
| | Force (N) (table 4-1) ..... : | | N/A |
| | - screwless terminal number..... : | | N/A |
| | - starting point (X = deflection original point) ..... : | | N/A |
| | - requirement: ≤ 2,5 mV | | N/A |
| | Largest cross-sectional area (Table 3) (mm²)..... : | | N/A |
| | Force (N) (table 10) ..... : | | N/A |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - screwless terminal number..... : | | N/A |
| | - starting point (X = deflection original point) ..... : | | N/A |
| | - requirement: ≤ 25 mV | | N/A |
| 11.4 | Insulation piercing terminals (IPT) | | - |
| 11.4.1 | IPT allow proper connection of conductors as in Table 3 and Table 10 | | N/A |
| 11.4.2 | Conductors clamping between metal surfaces, without damage (test 11.5 and 11.6) | | N/A |
| | or between metal part and insulated part (11.5 and 11.7) | | N/A |
| 11.4.3 | IPT appropriate mechanical strength | | N/A |
| | Five insertions and disconnections (mm²)..... : | | N/A |
| | No damage | | N/A |
| 11.4.4 | The connection or disconnection either by general tool or device integrated; | | N/A |
| | disconnecting other than a pull only | | N/A |
| 11.4.5 | Opening for tool clearly distinguishable | | N/A |
| 11.4.6 | IPT: | | N/A |
| | - each conductor is clamped individually | | N/A |
| | - the conductors connected or disconnected either at the same time or separately | | N/A |
| | - Clause 11.5 | | N/A |
| 11.5 | Mechanical tests on terminals | | - |
| 11.5.1 | Flexion test: | | N/A |
| | Smallest cross-sectional area (mm²); height H (mm); mass (kg)..... : | Certified according UL486A-B | — |
| | Largest cross-sectional area (mm²); height H (mm); mass (kg)..... : | Certified according UL486A-B | — |
| | during the test: the conductor does not slip out, no break near clamping unit and no damage | Certified according UL486A-B | N/A |
| 11.5.2 | Pull test: | | N/A- |
| | - min. cross-sectional area (mm²); pull (N)..... : | Certified according UL486A-B | — |
| | - max. cross-sectional area (mm²); pull (N)..... : | Certified according UL486A-B | — |
| | - during the test the conductor does not come out | Certified according UL486A-B | N/A |
| 11.6 | Voltage drop test for screwless type terminals and IPT | | N/A |
| | Temperature (°C) ..... : | | N/A |
| | Smallest cross-sectional area (mm²)..... : | | N/A |
| | Current (A)..... : | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Voltage drop after 192 cycles: | | - |
| | - requirement: 22,5 mV or 1,5 times 24th cycle value: | | N/A |
| | - solid conductors ..... : | | N/A |
| | - stranded conductors ..... : | | N/A |
| | - flexible conductors ..... : | | N/A |
| | Largest cross-sectional area (mm²)..... : | | N/A |
| | C6rrent (A)..... : | | N/A |
| | Voltage drop after 192 cycles: | | - |
| | - requirement: 22,5 mV or 1,5 times 24th cycle value: | | N/A |
| | - solid conductors ..... : | | N/A |
| | - stranded conductors ..... : | | N/A |
| | - flexible conductors ..... : | | N/A |
| 11.7 | Tests for IPT transmitting contact pressure via insulating parts | | N/A |
| 11.7.1 | Same as 11.6 except: | | N/A |
| | - 384 cycles; voltage drop after 48th and 384th cycle; | | N/A |
| | - requirement: 22,5 mV or 1,5 times 48th cycle value : | | N/A |
| 11.7.2 | Short-time withstand current test | | N/A |
| | - cross-sectional area (mm²) ..... : | | N/A |
| | - test current (A) ..... : | | N/A |
| | - duration of the test current (s) ..... : | | N/A |
| | Voltage drop after short-time withstand current test: | | N/A |
| | - cross-section of the conductor (mm²) ..... : | | N/A |
| | - test current (A) ..... : | | N/A |
| | - voltage drop (mV) after short-time withstand current test not exceeding 1,5 times before test ..... : | | N/A |
| | No change, cracks or deformation | | N/A |
| 11.101 | Screw type terminals identified by terminal sizes | | P |
| 11.101.1 | Terminals comply with Standard sheet ..... : | 2-X | P |
| 11.101.2 | Terminals with reduced length of thread (cross sect: mm²) ..... : | | N/A |
| | Pull test: during the test, no movement (N)..... : | | N/A |

| | | | |
|---|---|---|---|
| 13 | RESISTANCE TO AGEING OF RUBBER AND THERMOPLASTIC MATERIAL | | - |
| | Ageing: | | - |
| | 70 °C – 10 days (240 h) for rubber | Test für O-Ringe an Kontakten | P |
| | 80 °C – 7 days (168 h) for thermoplastic | | P |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | No cracks, nor sticky or greasy; no damage | | P |
| 14 | GENERAL CONSTRUCTION | | |
| 14.1 | Accessible surfaces: no burrs, flashes, sharp edges | | P |
| | Accessories: 63 A- IP 44 or IP66/IP67 and IP 67 | According user manual maximum current is 32 A | N/A |
| | Accessories 125 A: IP66/IP67 and IP 67 | According user manual maximum current is 32 A | N/A |
| 14.2 | Screws and fixing means: easily accessible | | P |
| | Fixing not serve any other purpose | | P |
| 14.3 | Position of earthing or neutral contact: | | P |
| | Not possible for the user alter position | | N |
| 14.4 | Socket-outlets and connectors: ensure IP without plug | | N/A |
| | Plugs or connectors engaged: IP ensured | | N/A |
| 14.101 | Not possible operate phase inverter unintentionally | No phase inverter in examined part | N/A |
| | shall incorporate a latching means | | N/A |
| 15 | CONSTRUCTION OF SOCKET-OUTLETS | | - |
| 15.1 | Contacts ensure adequate contact pressure (§ 22) | Contact is ensured by locking the charging station into tho wall mounted Housing with the socket outlet. | P |
| | - Contact tubes: self-adjusting | | N/A |
| | - contact tubes other than earth: floating | | N/A |
| | - earth contact tubes: not floating | | N/A |
| | Gauge: (live pins) (Ø: mm; force: N) ..... : | | N/A |
| | (earth pin) (Ø: mm; force: N)..... : | | N/A |
| 15.2 | Test plug (pins): not remain (Ø: mm; force: N) ..... : | The locking system of the enclosures provides high forces which are needed for intended usage. | N/A |
| 15.3 | Socket-outlets permit: | | - |
| | - easily introduction into the terminal | | P |
| | - positioning of conductors | | P |
| | - easily fixed of covers or enclosures | | P |
| 15.4 | Parts providing protection against electric shock: | | - |
| | - securely fixed, no possible remove without tool | | P |
| | - have adequate mechanical strength | | P |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 15.5 | Cable entries: allow introduction of conduit.....: | | P |
| 15.6 | Insulating linings: adequate mechanical strength | | N/A |
| 15.7 | - Socket-outlets: totally enclosed without plug | Socket outlet is enclosed only when the lid is attached. | P |
| | - means to ensure IP: securely fixed | | N/A |
| | - lid spring: material corrosion resistant | Lid is removable and not attached to the enclosure. | N/A |
| | IP 44: drain hole Ø >5mm or 20 mm² (mm) ..... : | | N/A |
| 15.8 | Socket-outlets > 50 V a.c. or 120 V d.c. : provided with earthing contact | | P |
| 20 | BREAKING CAPACITY | | - |
| | Accessories without interlock only | Without interlock. | P |
| | Test voltage: 1,1 rated operating voltage (V).....: | 253V | P |
| | Test current: 1,25 rated current (A: power factor).....: | 40A | P |
| | Number of cycles .....: | 50 | P |
| | Plugs and appliance inlets: no tested | 50 | P |
| | No sustained arcing occurs. No damage | This product is not intended to be used to supply inductive loads e.g. a motor with a coil. Therefore a power factor was not used during the testing. | P |
| 21 | NORMAL OPERATION | | - |
| | Rated operating voltage (V).....: | 230 V / 400 V a.c. | P |
| | Rated current (A; power factor) .....: | 32A (This product is not intended to be used to supply inductive loads e.g. a motor with a coil. Therefore a power factor was not used during the testing.) | P |
| | Number of cycles: with load .....: | 1000 | P |
| | without load .....: | 1000 | P |
| | Accessories with interlock: tested without current | | N/A |
| | No sustained arcing occur | | P |
| | - After test, no damage and electric test (§ 19.3) (V) | See appended Table 21 | P |
| | - Lid spring: same number of cycles of accessories : | | N/A |
| | Plugs and appliance inlets: | | - |
| | Phase inverters are tested without load | No phase inverter in examined part | N/A |
| | shall be tested in each position for half cycles | | N/A |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | wires of the cable not be twisted | No wires, pins are directly connected to electronic board | N/A |
| 22 | TEMPERATURE RISE | | - |
| | Test current (A; duration h) ..... : | 1 h | P |
| | Pilot contact 2 A (duration h) ..... : | No Pilot contact | N/A |
| | - Rewirable (cross sect; mm²) ..... : | 6 mm² | P |
| | - Torque (Nm) ..... : | 6 Nm | P |
| | Phase inverter tested in each of the end position | No phase inverter in examined part | N/A |
| | Temperature rise of terminals: not exceed 50 K ..... : | See appended Table 22 | P |
| 23 | FLEXIBLE CABLES AND THEIR CONNECTIONS | | - |
| 23.1 | - Plugs and connectors: cable anchorage | | P |
| | Cable anchorage: insulating material or lining .....: | | P |
| | - Cable anchorage: cable not touch accessible metal | Not metal parts | N/A |
| 23.2.1 | Non-rewirable plugs and connectors: | | N/A |
| | - Cable complying with IEC 60245-4 (Type: IEC 245...) .....: | | N/A |
| | Nom. cross sect. (mm²) .....: | | N/A |
| | - earthing core: colour green/yellow | | N/A |
| | - pilot conductor: at least 1,5 mm² (mm²) .....: | | N/A |
| 23.2.2 | Rewirable plugs and connectors: | | - |
| | - clear how the relief from strain is intended | Description in the installation guide. | P |
| | - no sharp edges to cable | | P |
| | - anchorage or components: properly positioned | | P |
| | - makeshift method: not used | | P |
| | - suitable for different types of cable .....: | | P |
| | Cable inlet with sleeve: insulating material, free | Sealing plug must be fitted before connecting the cable to the backplate of the product. It functions as a Cable inlet. | P |
| | Bell-mouthed opening: Ø > 1,5 times Ø cable (mm): | No such opening | N/A |
| | Helical metal springs: not allowed | | P |
| 23.3 | Pull test: | | P |
| | Type of cable (IEC 60245-4; mm²) .....: | 2,5mm²; Due to the rated current of 32A a 2,5mm² cable is insufficient. | N/A |
| | Type of cable (IEC 60245-4; mm²) .....: | 6mm² | P |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Clamping couple (Nm) .....: | 1,33 Nm | P |
| | Pull: 100 times; torque: 1 min (N, torque Nm).....: | 100 N, torque 0,425 Nm | P |
| | Cable no damage. After test, displacement ≤ 2 mm (mm) .....: | | P |
| 25 | SCREWS, CURRENT –CARRYING PARTS AND CONNECTIONS | | - |
| 25.1 | - Connection: withstand mechanical stresses | | P |
| | - Screws with Ø < 3,5 mm: into metal insert .....: | Screws insert into the metal thread of the terminal. | P |
| | - Thread of insulating material | No such screws | N/A |
| | - Other screws | No such screws | N/A |
| | - Assembly screws (Ø: mm; torque: Nm) .....: | | N/A |
| | - Cable anchorage (Ø: mm; torque: Nm).....: | 5,0 mm; 2 Nm | P |
| | - Terminals (Ø: mm; torque: Nm).....: | 7,8 mm; 7,2 Nm | P |
| 25.2 | Length of engagement: ≥ 3 mm + 1/3 or 8 mm (mm) : | No such screws | N/A |
| 25.3 | Contact pressure: not transmitted through insulating | | P |
| 25.4 | Screws and rivets: locked against loosening | | N/A |
| 25.5 | Current-carrying parts: - copper; or | | N/A |
| | - alloy with 50 % copper; or | | N/A |
| | - material no less suitable .....: | | N/A |
| 25.6 | - Contacts subject sliding action: resistant corrosion | No such contacts | N/A |
| | - springs of contact tubes: resistant to corrosion | No such springs | N/A |

| 26 | CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND | | | |
|---|---|---|---|---|
| 26.1 | Insulation voltage (V) .....: | 400 V | | P |
| | Creepage distances, between live parts: | required (mm) | observed (mm) | - |
| | 1. different polarity .....: | 4 | 14 | P |
| | 2. accessible metal parts .....: | - | - | N/A |
| | - earthing contacts, fixing screws .....: | 4 | 33 | P |
| | - external assembly screws .....: | 4 | - | N/A |
| | Clearances, between live parts: | | | - |
| | 3. different polarity .....: | 4 | 14 | P |
| | 4. accessible metal parts not listed under it. 5 .....: | - | - | N/A |
| | - earthing contacts, fixing screws .....: | 4 | - | N/A |
| | - external assembly screws .....: | 4 | - | N/A |
| | 5. metal enclosures, if not lined .....: | - | - | N/A |

| IEC 60309-1 & 2 | | | | |
|---|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | | Verdict |
| | - surface on which the base is mounted .....: | - | - | N/A |
| | 6. bottom of any conductors recess .....: | - | - | N/A |
| | Distance through sealing compound, between live parts covered with at least: | | | N/A |
| | 7. 2,5 mm of sealing compound and surface .....: | - | - | N/A |
| | 8. 2 mm of sealing compound and any conductor : | - | - | N/A |
| 26.2 | Sealing compound: not protrude above edge .....: | No sealing compound | | N/A |
| 27 | RESISTANCE TO HEAT, TO FIRE AND TRACKING | | | - |
| 27.2 | 1 h – 100 °C No change impairing further use | | | P |
| | Marking still easily legible | | | P |
| 27.3 | Ball pressure test according to IEC 60695-10-2 | | | - |
| | Diameter of impression shall not exceed 2 mm | | | — |
| | - Parts supporting live parts of rewirable accessories (125 °C; mm).....: | 1,1 mm | | P |
| | - other parts (80 °C; mm).....: | | | N/A |
| 27.4 | Glow wire test according to IEC 60695-2-11 | | | - |
| | - parts not necessary to retain current-carrying parts and earthing circuit in position, even though they are in contact with them (650°C).....: | Enclosure holding the O-Rings of the pins. | | P |
| | No visible flame, or extinguish within 30 s (s) .....: | No ignition | | P |
| | - parts necessary to retain current-carrying parts and earthing circuit in position (850°C).....: | 1: Enclosure holding the terminals and U-Tail terminals in their position.<br>2: Terminal lid | | P |
| | No visible flame, or extinguish within 30 s (s) .....: | 1: 5 s<br>2: 10s | | P |
| 27.5 | Tracking test according to IEC 60112 | CTI: 175-249 V<br>(E210499 UL746 PLC3) | | N/A |
| | Solution a – 175 V – 50 drops | | | N/A |
| | - insulating parts supporting live parts | | | N/A |
| | No flashover or breakdown | | | N/A |
| 29 | CONDITIONAL SHORT-CIRCUIT CURRENT WITHSTAND TEST | | | - |
| | Min. conditional short-circuit current: 10 kA | | | P |
| | New socket-outlet and mating plug: | | | P |
| | Minimum prospective short-circuit current: 10 kA | | | P |
| | or higher if specified by manufacturer | | | N/A |
| | Protective device: “gG” type fuse (Type).....: | 32_gG | | P |
| | Prospective short-circuit current: > 10 kA (kA).....: | 10078 A | | P |

| IEC 60309-1 & 2 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | During test: - no risk for operator; | | P |
| | - no damage for adjacent equipment; | | P |
| | - no arcing and no flashover between poles; | | P |
| | - no melting of fault detection fuse | | P |
| | After test: - accessories mechanically operable | | P |
| | - no contact welding preventing normal opening | | P |
| | - dielectric test as § 19.3 (19.2.1 b or 19.2.2 b) | | P |

| Clause | Requirement + Test | result – Remark | Verdict |
|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **21** | ***1.1 TABLE: electric strength after endurance*** | | | P |
| | **rated voltage (V) ..... :** | 230V/400V | | — |
| **item** | **test voltage applied between:** | **test voltage (V)** | **flashover / breakdown (Yes/No)** | |
| **a)** | **all pole and the body (with and/or without plug). :** | 1500 | No | |
| **b)** | **each pole and all others ..... :** | 1500 | No | |
| **c)** | **any metal enclosure and metal foil ..... :** | 1500 | No | |
| **supplementary information:** | | | | |

| **22** | **TABLE: Temperature rise** | | **P** |
|---|---|---|---|
| **Specimen** | **Thermocouple Locations** | **measured temperature rise (K)** | **allowed temperature rise (K)** |
| | Power input cable | 25,6 | **50** |
| | Enclosure rear | 21,6 | **50** |
| | Enclosure front | 8,0 | **50** |
| | Terminal N | 41,3 | **50** |
| | Terminal L1 | 46,5 | **50** |
| | Terminal L2 | 47,6 | **50** |
| | Terminal L3 | 44,0 | **50** |
| | Nut N on circuit board | 31,2 | **50** |
| | Nut L1 on circuit board | 33,8 | **50** |
| | Nut L2 on circuit board | 35,1 | **50** |
| | Nut L3 on circuit board | 35,1 | **50** |
| **Supplementary information: measured connections N L1 L2 L3** | | | |

| Clause | Requirement + Test | result – Remark | Verdict |
|---|---|---|---|

| 22 | TABLE: Temperature rise | | P |
|---|---|---|---|
| **Specimen** | **Thermocouple Locations** | **measured temperature rise (K)** | **allowed temperature rise (K)** |
| | Power input cable | 21,8 | **50** |
| | Enclosure rear | 17,4 | **50** |
| | Enclosure front | 2,8 | **50** |
| | Terminal PE | 31,8 | **50** |
| | Terminal N | 34,0 | **50** |
| | Terminal L1 | 35,4 | **50** |
| | Terminal L2 | 31,7 | **50** |
| | Nut PE on circuit board | 22,4 | **50** |
| | Nut N on circuit board | 22,6 | **50** |
| | Nut L1 on circuit board | 24,5 | **50** |
| | Nut L2 on circuit board | 22,0 | **50** |
| **Supplementary information: measured connections for PE N L1 L2** | | | |

| 22 | TABLE: Temperature rise | | P |
|---|---|---|---|
| **Specimen** | **Thermocouple Locations** | **measured temperature rise (K)** | **allowed temperature rise (K)** |
| | Power input cable | 24,5 | **50** |
| | Enclosure rear | 20,1 | **50** |
| | Enclosure front | 3,1 | **50** |
| | Terminal N | 31,5 | **50** |
| | Terminal L1 | 34,5 | **50** |
| | Terminal L2 | 35,1 | **50** |
| | Terminal L3 | 32,0 | **50** |
| | Nut N on circuit board | 21,6 | **50** |
| | Nut L1 on circuit board | 23,8 | **50** |
| | Nut L2 on circuit board | 25,3 | **50** |
| | Nut L3 on circuit board | 22,9 | **50** |
| **Supplementary information: measured connections for N L1 L2 L3** | | | |