

SPECIFICATION

FOR

EUROPEAN JUMPER CORDSET (PB FR)

CORD : H05VV-F 3X0.75mm² PVC LEAD FREE

CUSTOMER : VPE/FARNELL

CUSTOMER'S PART No. : 2490171

VOLEX'S SPEC. REF. No. : 152522/5

ISSUE No. : 003

DATE : 14TH JULY 2015

CUSTOMER APPROVED :

| | |
|-----------------|--|
| APPROVED BY : | |
| SIGNATURE : | |
| APPROVED DATE : | |
| No. OF PAGES : | |



Volex (Asia) Pte Ltd

35 Tampines St. 92

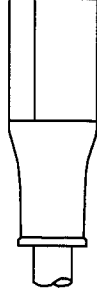
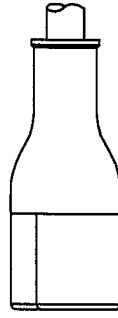
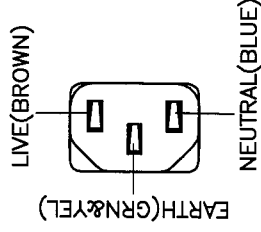
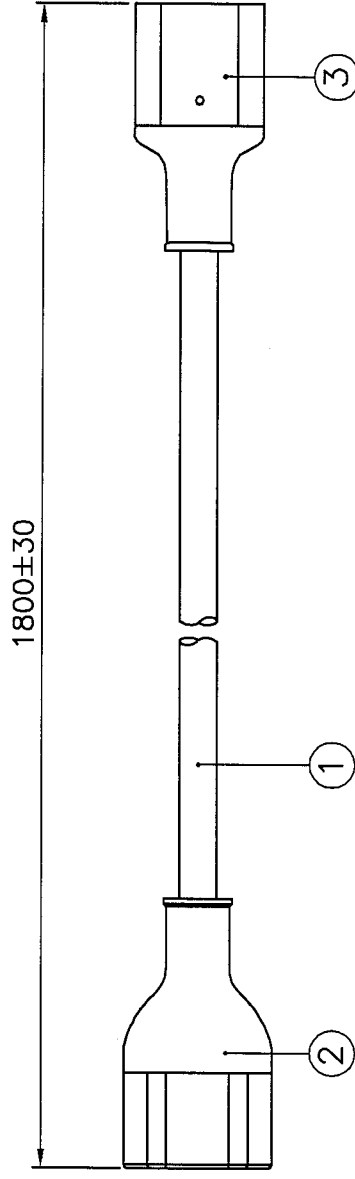
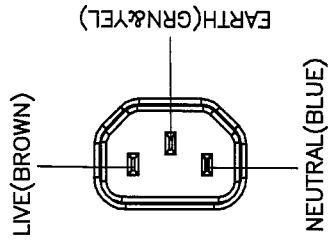
Singapore 528880

Tel : (65) 6788 7833

Fax : (65) 6788 7822

AMENDMENT RECORD

[illegible]



APPROVED SOURCE FOR CABLE

1. BAO HING(SHENZHEN).

NOTE:

- ALL DIMENSIONS IN mm.
- THE CORD SHALL COMPLY WITH EN 50525-2-11.
- THE MOLDED PLUG CONNECTOR SHALL COMPLY WITH IEC 60320-2-2/EN 60320-2-2 & IEC 60320-1/EN 60320-1.
- THE MOLDED CONNECTOR SHALL COMPLY WITH IEC 60320-1 OR EN 60320-1.
- THIS PART CAN BE MANUFACTURED AT ANY LOCATION WHICH HAS SAFETY APPROVAL.

| 3 | IP40G NL792B BLK | 4100017 | — |
|---|------------------------------------|-------------|--------------|
| | MOLDED CONNECTOR VNC13S (10A 250V) | VNC13S-V | 1 |
| 2 | IP40G NL792B BLK | 4100017 | — |
| | MOLDED PLUG VNC14S (10A 250V) | VNC14S-V | 1 |
| 1 | H05VV-F 3X0.75 BLK PVC LEAD FREE | 1210334 | 1 |
| S/N | DESCRIPTION | ITEM NUMBER | QTY |
| TITLE : EUROPEAN JUMPER CORDSET (PB FR) | | | |
| CUSTOMER : VPE/FARNELL | | | |
| CUSTOMER PART NUMBER : 2490171 | | | |
| Reference Number : 152522/5 (HG07-053-15) | | | |
| SALES : | QA : | ENGRG : | CHECKED BY : |
| Date : | Date : | Date : | Date : |
| | | 15/02/15 | 14/07/15 |
| | | 14/07/15 | 14/07/15 |
| DRAWN BY : MAYING | | | ISSUE |
| 152522/5 (HG07-053-15) | | | 003 |
| SCALE : N.T.S. | | | |
| PAGE : 1/1 | | | |
| Voletex (Asia) Pte Ltd | | | |
| Confidential Property of Voletex. Information disclosed hereon is not to be disclosed to others, reproduced or used for any other purposes except as authorized in writing by an authorized official of Voletex Asia. | | | |

| REV. | DESCRIPTION | DATE |
|------|--------------------------------------|----------|
| E | UPDATE VALUES AS PER PRODUCT SAFETY. | 28/07/04 |
| F | CHANGE THE COMPLIANCE STANDARD | 23/12/13 |
| | PER SAFETY. | |
| | UPDATE FORMAT AS SHOWN. | |

1. PVC FLEXIBLE CORD

1.1 SCOPE

This specification shall be in accordance with EN 50525-2-11. Δ

1.2 CONSTRUCTION

| | |
|------------|------------------------------------|
| CONDUCTOR | ANNEALED COPPER WIRE |
| INSULATION | PVC (BLUE, BROWN AND GREEN&YELLOW) |
| JACKET | PVC |

| ITEM | UNIT | SPEC. VALUE |
|--|--------------------|---------------------------------|
| TEMPERATURE RATING | °C | 70 |
| RATED VOLTAGE | V | 300/500 |
| NO. OF CORE | NO. | 3 |
| CONDUCTOR NOMINAL AREA | mm ² | 0.75 |
| MIN. AVE. THICKNESS OF INSULATION | mm | 0.60 |
| MIN. THICKNESS AT ANY POINT OF INSULATION | mm | 0.44 |
| MIN. AVE. THICKNESS OF JACKET | mm | 0.80 |
| MIN. THICKNESS AT ANY POINT OF JACKET | mm | 0.58 |
| OVERALL DIAMETER OF JACKET | mm | 6.0~7.6 |
| DIELECTRIC-STRENGTH TEST IMMERSED IN WATER 20±5°C FOR MINIMUM 1 HOUR | ON COMPLETED CABLE | — |
| | ON CORES | — |
| VOLTAGE TEST (D.C) | — | 2000V for 15 mins.(minimum) |
| | — | 1500V for 5 mins.(minimum) |
| VOLTAGE TEST (D.C) | — | 5000V d.c. for 5 mins.(minimum) |
| | — | 2000V a.c. for 5 mins.(minimum) |
| INSULATION RESISTANCE TEST (70°C) | MΩ km | >0.011 |
| CONDUCTOR RESISTANCE TEST (20°C) | Ω/km | ≤26 |

TITLE : CABLE SPECIFICATION

EUROPEAN APPROVED POWER SUPPLY CABLE

H05VV-F 3X0.75mm²

SPEC NO. :

CS-038EU

APPROVED BY :

[Signature]

DATE :

30/12/13

CHECKED BY :

[Signature]

DATE :

27/12/13

DRAWN BY :

HONGYAN

DATE :

23/12/13

REVISION :

F

PAGE :

1/1

Δ Volex (Asia) Pte Ltd

Confidential property of Volex.
Information contained herein shall not be disclosed to others,
reproduced or used for any other purposes except as
authorized in writing by an authorized official of Volex Asia.



CABLE MARKING

BAO HING (SHENZHEN)

- H05VV-F 3G0.75mm² <VDE> KEMA-KEUR + ∞ + ∞ + ∞
<ÖVE> CEBEC IEMMEQU SABS 1574 (S) (N) (D) (FI)
BAOHING GTSA-3 N14586 CE LF



| REV. | DESCRIPTION | DATE |
|------|---|----------|
| B | ADD IN BAO HING (SU ZHOU). | 22/10/02 |
| C | UPDATE THE FORMAT AS SHOWN. | 18/01/05 |
| | ADD IN '(EU/SAA/SAB/IEC)' ON THE TITLE. | |
| | REMOVE BAO HING (SUZHOU) CABLE | |
| C | MARKING DETAILS. | 18/01/05 |

| | | | | |
|----------------------------------|----------------|----------|----------------------------------|---|
| DRAWN | CONGFANG | 18/01/05 | FILENAME : | TITLE : CABLE MARKING (EU/SAA/SAB/IEC)  |
| CHECK | Wet 18/01/05 | 18/01/05 | CABLE MARKING/ BH/H05/H05VV-F | |
| APPR | chang 18/01/05 | 18/01/05 | 3X0.75 LF- BH | |
| SCALE | N.T.S. | REV. | C | |
| REFERENCE : | | | | Voilex (Asia) Pte Ltd Confidential property of Voilex. Information contained herein shall not be disclosed to others. reproduced or used for any other purposes except as authorized in writing by an authorized official of voilex asia.  |
| H05VV-F 3X0.75mm ² LF | | | | |

3. CONNECTOR

| REV | DESCRIPTION | DATE |
|-----|---------------------------------|----------|
| T | ADD IN CATALOGUE NO. 'VAC14LA'. | 03/06/13 |
| U | ADD IN CATALOGUE NO. 'VNC14S'. | 27/05/15 |

3.1. SCOPE

The connector shall be in accordance with IEC 60320-2-2 / EN 60320-2-2 & IEC 60320-1 / EN 60320-1 : Test specification - appliance couplers.

3.2. CONSTRUCTION

The connector construction shall comply with our catalogue No: VAC14S, VAC14A, VAC20S, VAC14LS, VAC14KC, VAC14KAL, VAC14KAR, VAC14LA, VNC14S, VAC20KAL, VAC20KAR & VAC20KC.

"All Connectors complying to Standard Sheet C14 and C20"

3.3. CHARACTERISTICS

| NO. | TEST ITEM | DESCRIPTION | ACCEPTANCE CRITERIA |
|-----|----------------------------|---|---|
| 1. | Moisture resistance test | Samples are kept in a humidity cabinet containing air with a relative humidity between 91 to 95% and a temperature of 20°C-30°C for a duration of 48 hours. | No damage |
| 2. | Electric strength test | Voltages of 3000V±60V and 1500V±60V, with min. trip current of 100mA is applied for 60s±5s between current-carrying contacts and body and between each contacts respectively after the moisture resistance tests. | No flashover and breakdown |
| 3. | Insulation resistance test | This test is measured with a D.C 500V after the moisture resistance test. Readings are taken after 60s ± 5s of application of voltage. | Min. 5 M Ohm |
| 4. | Glow wire test | Glow wire is applied for 30s with temperature of 750°C on inserts and housings retaining contacts and 650°C on elsewhere. | Flame (if any) shall be self-extinguished within 30s. upon the removal of the glow wire and molten droplets shall not ignite paper. |

| | | | |
|------------|--------|----------|--|
| DRAWN: | MAYING | 27/05/15 | TITLE : EUROPEAN & BRITISH PLUG CONNECTOR |
| CHECK: | Ying | 27/05/15 | |
| APPR: | Feng | 28/05/15 | |
| REV: | U | | |
| REFERENCE: | | | Volex (Asia) Pte Ltd |
| | | | <small>Confidential property of Volex. Information contained herein shall not be disclosed to others, reproduced or used for any other purposes except as authorized in writing by an authorized official of Volex Asia.</small> |

| NO. | TEST ITEM | DESCRIPTION | ACCEPTANCE CRITERIA |
|-----|-----------------------|--|--|
| 5. | Bending test | The sample shall be loaded with a weight of 10N for 0.75mm ² or 20N for 1.00mm ² or bigger and the oscillating member shall be moved backward and forward through an angle of 90°(45° on either side of the vertical) the number of flexing being 20,000. A rated current is applied. For round cord, the sample is turned 90 degree around the axis of cable after 10,000 cycles. The flexing is further completed in this axis. Flat cable is flexed only along the bigger axis of the cable. | There shall be no complete breakage of any of the conductor. Broken conductor shall not have pierced the insulation. |
| 6. | Tumbling test | The sample is dropped from a height of 50cm onto a steel plate(3mm thick) for a total of 500 times. | No damage to impair further use of connector. |
| 7. | Temperature rise test | An alternating current at 1.25 times rated current is passed through the current carrying contacts for 1 hour. This is repeated for connector with earth contact passing current between earth and each of the current carrying contacts. | The temperature rise shall not exceed 45K. |
| 8. | Cord-anchorage test | The cord is subjected to pulls of 50N(2.5A) or 60N(others) for 100 times each time for 1 sec. without jerk. Thereafter the cord is subjected for 1 min. to a torque of 0.15Nm(0.75mm ²) or 0.25Nm(others). | The cord shall not be damaged and shall not be displaced by more than 2mm. |
| 9. | Heat deformation test | Samples are kept for 1 hour in a heating cabinet at temperature of 100±2°C. | No damage to impair further use of connector. |
| 10. | Heat pressure test | A pressure of 20N is applied at a temperature of 100°C ± 2°C for 1 hour. | No damage to impair further use of connector. |
| 11. | Aging test | The samples are kept for 168 hours in a heating cabinet at a temperature of 80±2°C. | No damage & marking shall be legible. |
| 12. | Ball pressure test | A ball of 5mm in diameter is applied on the connector with the following temperature with 20N force for 1 hour. i) 125°C for hot connectors. ii) 125°C for parts retaining current carrying parts and earth circuit. iii) 75°C for other parts for cold connector. The connector is then cooled down to room temperature with cold water. | The diameter of the impression shall not exceed 2mm. |

| | | | |
|------------|--------|----------|--|
| DRAWN: | MAYING | 27/05/15 | TITLE : |
| CHECK: | Ying | 27/05/15 | EUROPEAN & BRITISH |
| APPR: | Feng | 28/05/15 | PLUG CONNECTOR |
| REV: | U | | |
| REFERENCE: | | | Voilex (Asia) Pte Ltd |
| | | | <small>Confidential property of Voilex. Information contained herein shall not be disclosed to others, reproduced or used for any other purposes except as authorized in writing by an authorized official of voilex asia.</small> |

3. CONNECTOR

| REV | DESCRIPTION | DATE |
|-----|------------------------------|----------|
| AS | ADD IN CATALOGUE NO. VNC13S. | 03/04/15 |
| AT | ADD IN CATALOGUE NO. HWC13U. | 29/04/15 |

3.1. SCOPE

The connector shall be in accordance with IEC 60320-1 or EN 60320-1, Test specification - appliance couplers.

3.2. CONSTRUCTION

The connector construction shall comply with our catalogue No: VAC5S, APC5A, APC5S, APC5M, VAC5AR, APC5SM, DLC5A3, V1625, V1625A, VAC19, VAC17S, VSCC13, AVL13, APC13, APC13S, VSC19, V1625LA, VAC19A, VSCC15, APC5SP, APC13F, V1625BS, APC13G, VAC13A, VAC13S, PIC17S, VIC13A, DLC5U3, VAC13KS, SOC5S, V1625H, VAC19KS, DLC5E3, HPC13A, V1625AT, VAC17A, APC5SF, VCC13, VCC5S, APC13H, VCC17S, VAC19H, APC13FH, APC13HC, VAC17KS, DLC5CS3, VNC13S & HWC13U.

"All connectors complying to Standard Sheet C5, C13, C15, C15A, C17 and C19"

3.3. CHARACTERISTICS

| NO. | TEST ITEM | DESCRIPTION | ACCEPTANCE CRITERIA |
|-----|----------------------------|---|---|
| 1. | Moisture resistance test | Samples are kept in a humidity cabinet containing air with a relative humidity between 91 to 95% and a temperature of 20°C-30°C for a duration of 48 hours. | No damage |
| 2. | Electric strength test | Voltages of 3000V±60V and 1500V±60V, with min. trip current of 100mA is applied for 60s±5s between current-carrying contacts and body and between each contacts respectively after the moisture resistance tests. | No flashover and breakdown |
| 3. | Insulation resistance test | This test is measured with a D.C 500V after the moisture resistance test. Readings are taken after 60s ± 5s of application of voltage. | Min. 5 M Ohm |
| 4. | Withdrawal force test | <p>i) Min. 1.5N (2N for 16A) - A single pin made to the minimum dimension is inserted into the connector. The pin, together with the weight should exert a force of 1.5N (2N for 16A connector). Each individual pole of the connector is tested separately.</p> <p>ii) Max. 50N (60N for 16A) - Insert and withdraw the connector from a socket having pin dimension to the maximum and shroud dimension to the minimum for 10 times. The connector is then inserted again into the socket hang with a total weight of 50N(60N for 16A). The weight consist of a principal weight which is 90% of the total weight and a supplementary weight of 10%.</p> <p>The test is repeated for hot connector with temperature of 120°C±2°C on the pins.</p> | <p>i) The pin with the weight should not be withdrawn from the connector for more than 3 seconds.</p> <p>ii) The connector shall be withdrawn from the socket. If not the supplementary weight is lifted from a height of 5cm and drop. The connector must be withdrawn.</p> <p>The test is repeated after temperature rise test.</p> |

| | | | |
|------------|----------|----------|--|
| DRAWN: | HUIQIONG | 29/04/15 | TITLE: EUROPEAN & BRITISH APPLIANCE COUPLERS |
| CHECK: | Huiqiong | 29/04/15 | |
| APPR: | Feng | 29/04/15 | |
| REV: | AT | | |
| REFERENCE: | | | <i>Volex (Asia) Pte Ltd</i> <i>Confidential property of Volex. Information contained herein shall not be disclosed to others, reproduced or used for any other purposes except as authorized in writing by an authorized official of volex asia.</i> |

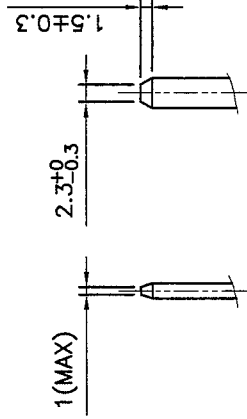
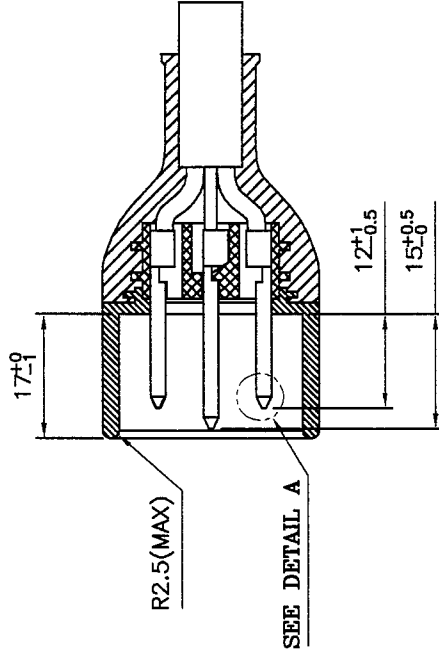
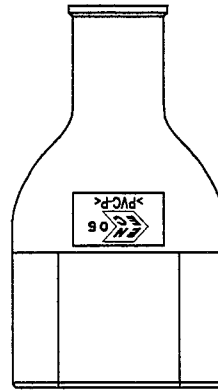
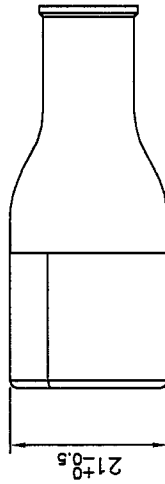
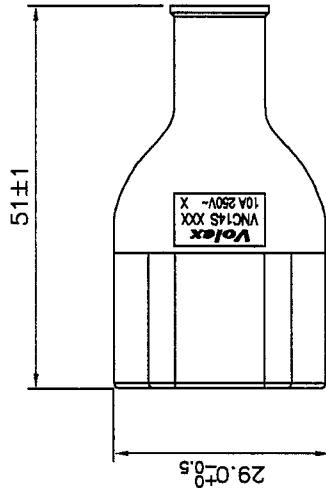
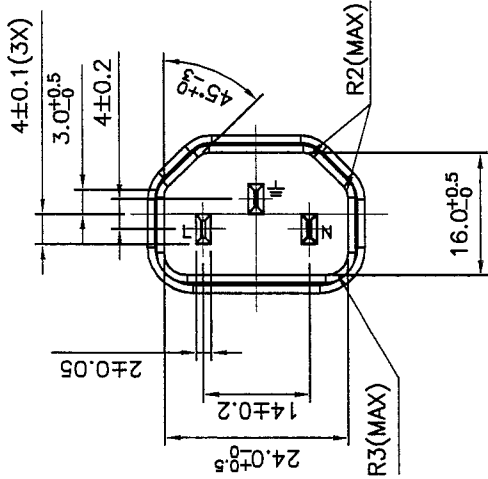
| NO. | TEST ITEM | DESCRIPTION | ACCEPTANCE CRITERIA |
|-----|------------------------|--|---|
| 5. | Glow wire test | Glow wire is applied for 30s with temperature of 750°C on inserts and housings retaining contacts and 650°C on elsewhere. | Flame (if any) shall be self-extinguished within 30s. upon the removal of the glow wire and molten droplets shall not ignite paper. |
| 6. | Bending test | The sample shall be loaded with a weight of 10N for 0.75mm ² or 20N for 1.00mm ² or bigger and the oscillating member shall be moved backward and forward through an angle of 90°(45° on either side of the vertical) the number of flexing being 20,000. A rated current is applied. For round cord, the sample is turned 90 degree around the axis of cable after 10,000 cycles. The flexing is further completed in this axis. Flat cable is flexed only along the bigger axis of the cable. | There shall be no complete breakage of any of the conductor. Broken conductor shall not have pierced the insulation. |
| 7. | Tumbling test | The sample is dropped from a height of 50cm onto a steel plate(3mm thick) for a total of 500 times. | No damage to impair further use of connector. |
| 8. | Breaking capacity test | The connector is connected and disconnected 50 times (100 strokes) with the inlet at a rate of 30 strokes per minute with 275V and 1.25 times of rated current. | No flashover or sustained arcing during the test and no damage to impair further use of connector. |
| 9. | Normal operation test | Test is similar to breaking capacity except that the test voltage is 250V with the connector connected and disconnected with the inlet for 1000 times (2000 strokes) with rated current and 3000 times (6000 strokes) without current. | Withstand electric strength at 1500V for 1 min, and show no damage. |
| 10. | Temperature rise test | An alternating current at 1.25 times rated current is passed through the current carrying contacts for 1 hour. This is repeated for connector with earth contact passing current between earth and each of the current carrying contacts. | The temperature rise shall not exceed 45K. |
| 11. | Cord-anchorage test | The cord is subjected to pulls of 50N(2.5A) or 60N(others) for 100 times each time for 1 sec. without jerk. Thereafter the cord is subjected for 1 min. to a torque of 0.15Nm(0.75mm ²) or 0.25Nm(others). | The cord shall not be damaged and shall not been displaced by more than 2mm. |
| 12. | Heat deformation test | Samples are kept for 1 hour in a heating cabinet at temperature of 100±2°C. | No damage to impair further use of connector. |
| 13. | Heat pressure test | A pressure of 20N is applied at a temperature of 100°C ± 2°C for 1 hour. | No damage to impair further use of connector. |

| | | | |
|------------|----------|----------|--|
| DRAWN: | HUIQIONG | 29/04/15 | TITLE: |
| CHECK: | Huiqiong | 29/04/15 | EUROPEAN & BRITISH |
| APPR: | Feng | 29/04/15 | APPLIANCE COUPLERS |
| REV: | AT | | |
| REFERENCE: | | | Volex (Asia) Pte Ltd |
| | | | Confidential property of Volex. Information contained herein shall not be disclosed to others, reproduced or used for any other purposes except as authorized in writing by an authorized official of volex asia. |

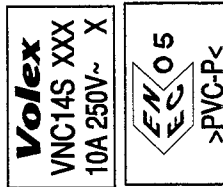
| NO. | TEST ITEM | DESCRIPTION | ACCEPTANCE CRITERIA |
|-----|--------------------|---|--|
| 14. | Aging test | The samples are kept for 168 hours in a heating cabinet at a temperature of $80\pm 2^{\circ}\text{C}$. | No damage & marking shall be legible. |
| 15. | Ball pressure test | <p>A ball of 5mm in diameter is applied on the connector with the following temperature with 20N force for 1 hour.</p> <p>i) 125°C for hot connectors.</p> <p>ii) 125°C for parts retaining current carrying parts and earth circuit.</p> <p>iii) 75°C for other parts for cold connector.</p> <p>The connector is then cooled down to room temperature with cold water.</p> | The diameter of the impression shall not exceed 2mm. |

| | | | |
|------------|-----------|----------|--|
| DRAWN: | HUIQIONG | 29/04/15 | TITLE: EUROPEAN & BRITISH APPLIANCE COUPLERS |
| CHECK: | Hui Qiong | 29/04/15 | |
| APPR: | Feng | 29/04/15 | |
| REV: | AT | | |
| REFERENCE: | | | Volex (Asia) Pte Ltd |
| | | | <small>Confidential property of Volex. Information contained herein shall not be disclosed to others, reproduced or used for any other purposes except as authorized in writing by an authorized official of volex asia.</small> |

| REV. | DESCRIPTION | DATE |
|------|------------------|----------|
| A | INITIAL RELEASE. | 27/05/15 |



DETAIL A



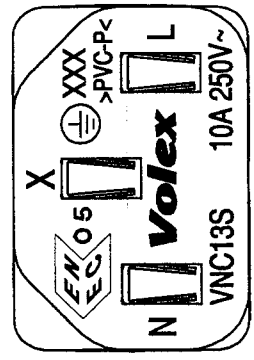
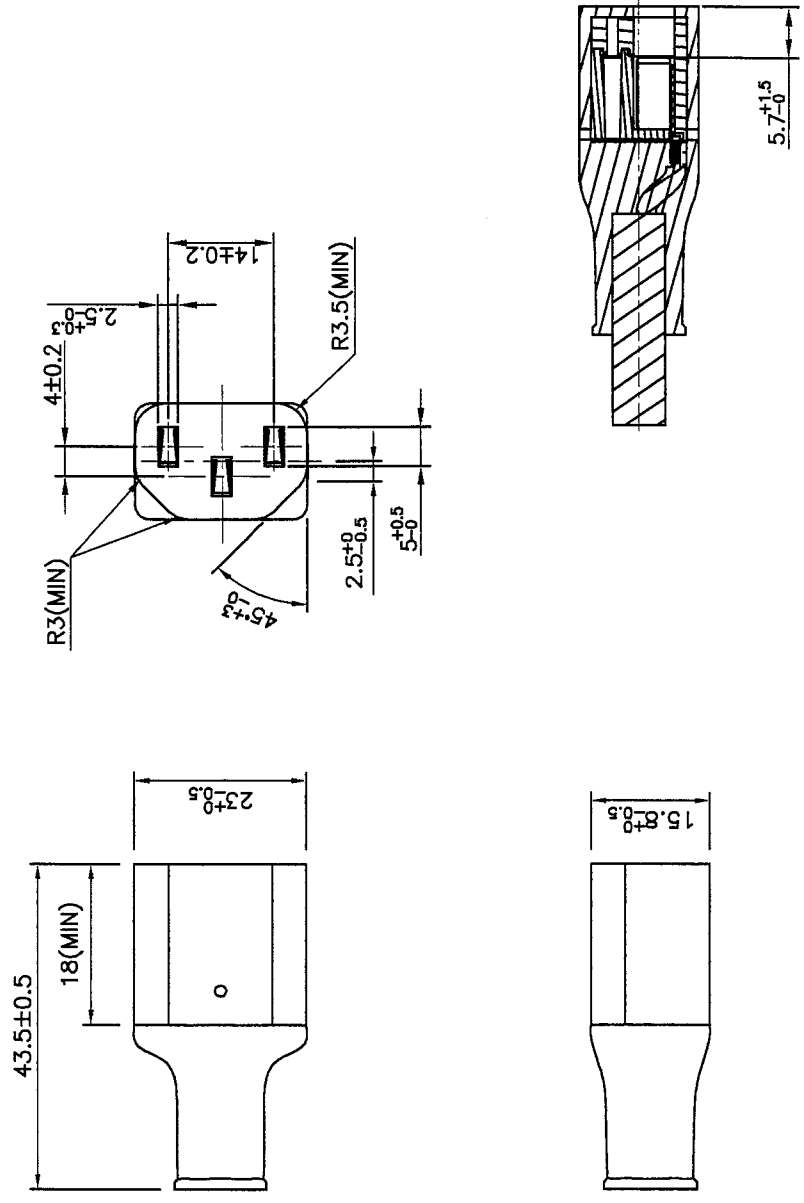
MARKING DETAILS :

NOTES :

- 1.) ALL DIMENSIONS IN mm.
- 2.) X - CAVITY NO. (OPTIONAL)
- 3.) XXX - MANUFACTURING LOCATION.

| | | | | | | |
|---|-------------------|--|--------|----------|--------------------------------|-----------------------|
| HG | HENG GANG (CHINA) | DRAWN | MAYING | 27/05/15 | FILE NAME : | TITLE : |
| SM1/SMI | ZHONGSHAN (CHINA) | CHECK | Ying | 27/05/15 | A-COM/EURO/ GENERAL/VNC14S- | MOLDED PLUG CONNECTOR |
| VH | HANOI (VIETNAM) | APPR | Feng | 28/05/15 | EURO | VNC14S |
| B | BATAM (INDONESIA) | REV. | A | SCALE | N.T.S. | |
| VC | CHENNAI (INDIA) | REFERENCE : | | | | |
| MANUFACTURE LOCATION MARK (* X * IS APPLICABLE ONLY) | | EUROPEAN APPROVAL (ENEC) | | | | |
| | | Volex (Asia) Pte Ltd | | | | |
| | | Confidential property of Volex. Information contained herein shall not be disclosed to others, reproduced or used for any other purposes except as authorized in writing by an authorized official of Volex Asia. | | | | |

| REV. | DESCRIPTION | DATE |
|------|------------------|----------|
| A | INITIAL RELEASE. | 13/04/15 |



MARKING DETAILS :

NOTES :

- 1.) ALL DIMENSIONS IN mm.
- 2.) X - CAVITY NO. (OPTIONAL)
- 3.) XXX - MANUFACTURING LOCATION

| | | | | | | |
|---|-------------------|--|--------|----------|---|---|
| HG | HENG GANG (CHINA) | DRAWN | LI XIA | 13/04/15 | FILE NAME : | TITLE : MOLDED CONNECTOR VNC13S |
| SM1/SMI | ZHONGSHAN (CHINA) | CHECK | LI XIA | 13/04/15 | A-CONN/EURO/ GENERAL/ VNC13S-ENEC | |
| VH | HANOI (VIETNAM) | APPR | LI XIA | 13/04/15 | SCALE N.T.S. | |
| B | BATAM (INDONESIA) | REV. | A | | REFERENCE : | Volex (Asia) Pte Ltd |
| VC | CHENNAI (INDIA) | EUROPEAN APPROVAL (ENEC) | | | | |
| MANUFACTURE LOCATION MARK (' X ' IS APPLICABLE ONLY) | | CONFIDENTIAL PROPERTY OF VOLEX. Information contained herein shall not be disclosed to others, reproduced or used for any other purposes except as authorized in writing by an authorized official of Volex Asia. | | | | |