



**CENTRE OF TESTING SERVICE INTERNATIONAL**

**OPERATE ACCORDING TO ISO/IEC 17025**

# **LVD TEST REPORT**

**TEST REPORT NUMBER: C3190816006-L**

CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.  
Fl.1&8West,Bldg.B,No.66,QingyiRd.,Hi-TechZone,Ningbo,Zhejiang,China



## Tableofcontents

|                                            |           |
|--------------------------------------------|-----------|
| <b>1. General Information</b>              | <b>2</b>  |
| Notes                                      | 2         |
| Tester                                     | 3         |
| Testinglaboratory                          | 4         |
| Applicationdetails                         | 4         |
| Testitemdescription                        | 5         |
| Test standards                             | 6         |
| <b>2. Technicaltest</b>                    | <b>7</b>  |
| Summaryoftest results                      | 7         |
| Test environment                           | 7         |
| Conformityverification-Summaryofinspection | 8         |
| <b>3. TestResults</b>                      | <b>9</b>  |
| Particulars:testitemvs.testrequirements    | 9         |
| Generalrequirementsandresults              | 10        |
| Annexasstatedinthe standards               | 16        |
| table                                      | 17        |
| <b>Attachments</b>                         | <b>19</b> |



## 1 GeneralInformation

### Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has Passed all the relevant tests conforms to a specification (only telecommunication products).

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5. The test report may only be reproduced or published in full.

Reproduction or publication of extracts from the report requires the prior written approval of the Centre of Testing Service.



# CTS

CENTRE OF TESTING SERVICE

ReportNo.:C3190816006-L

Page3of19

Date:23August2023

## Tester

### Tested by:

23August2023

RockWeng

Date

Name

Signature

### Reviewed by:

23August2023

JesseHuang

Date

Name

Signature

### Approved by:

23August2023

Lei Zhang

Date

Name

Signature



Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

**CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.**

Fl.1&8West,Bldg. B, No.66, Qingyi Rd., Hi-Tech Zone, Ningbo, Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

See Reverse For Terms And Conditions of Service



# CTS

CENTRE OF TESTING SERVICE

ReportNo.:C3190816006-L

Page4of19

Date:23August2023

## Testinglaboratory

### Location

CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.  
Fl.1&8West,Bldg.B,No.66,QingyiRd.,Hi-TechZone,Ningbo,Zhejiang,China Ningbo China  
Telephone: +86-574-87912121  
Telefax: +86-574-87907993

### Testlocation,wheredifferentfromCTS:

Name: ./.  
Street: ./.  
Town: ./.  
Country: ./.  
Telephone: ./.  
Fax: ./.  
Teletex: ./.

## Clientdetails

### Detailsofapplicant

Name :SUPA FLEX PVT LTD  
Street :83/6, Ground Floor, Udyog Nagar  
Town :Mundka, New Delhi 110041  
Country :INDIA  
Telephone :/  
Fax :/  
Teletex :/  
Contact :/  
Telephone :/

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

### CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.

Fl.1&8West,Bldg. B.No.66,Qingyi Rd.,Hi-TechZone,Ningbo,Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service



### Details of manufacturer

Name : ORTA CLAR ELEK. SAN. VE. TIC. LTD. STI  
Street : HADIMKOY MH. IBNI. SINA CD NO.9 34555  
Town : ARNAVUTKOY ISTANBUL  
Country : TURKEY  
Telephone : /  
Fax : /  
Teletex : /  
Contact : /  
Telephone : /

### Details of factory

Name : ORTA CLAR ELEK. SAN. VE. TIC. LTD. STI  
Street : HADIMKOY MH. IBNI. SINA CD NO.9 34555  
Town : ARNAVUTKOY ISTANBUL  
Country : TURKEY

### Dates of application

Date of receipt of application : 19 August 2023  
Date of receipt of test item : 19 August 2023  
Date of test : 19 August 2023 - 23 August 2023

### Test item Description

#### Description of test item

Type of product : Metallic Flexible Conduit  
Model/Type reference : OPCS & LGT with connectors LSRM & DPJ  
Serial number : ---



### Testitemparticulars

|                             |                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test item.....:             | Metallic Flexible Conduit                                                                                                                                                                                                                                                                                                                                                                   |
| Trade Mark.....:            | /                                                                                                                                                                                                                                                                                                                                                                                           |
| Protection Class.....:      | <input type="checkbox"/> Class I; <input type="checkbox"/> ClassII; <input type="checkbox"/> ClassIII. <input checked="" type="checkbox"/> Other: N.A                                                                                                                                                                                                                                       |
| IP Number.....:             | <input checked="" type="checkbox"/> IP_65_: Immersion ___1.5___minthewater;<br>Test for 40 min                                                                                                                                                                                                                                                                                              |
| RatedVoltage(Range).....:   | /                                                                                                                                                                                                                                                                                                                                                                                           |
| RatedWattage.....:          | /                                                                                                                                                                                                                                                                                                                                                                                           |
| Supply Connection.....:     | <input type="checkbox"/> Type X; <input type="checkbox"/> Type Y; <input type="checkbox"/> Type Z; <input type="checkbox"/> Pins; <input type="checkbox"/> Appliance inlet; <input type="checkbox"/> Terminals; <input type="checkbox"/> connecting leads (tails);<br><input type="checkbox"/> Adaptors; <input type="checkbox"/> connectors; <input checked="" type="checkbox"/> Other:N.A |
| ApplianceMobility.....:     | <input type="checkbox"/> Portable Appliance; <input type="checkbox"/> Hand-heldAppliance;<br><input type="checkbox"/> Stationary Appliance; <input checked="" type="checkbox"/> Fixed Appliance;<br><input type="checkbox"/> Built-in Appliance                                                                                                                                             |
| Instructions language.....: | <input type="checkbox"/> English; <input type="checkbox"/> French; <input checked="" type="checkbox"/> Other:N.A                                                                                                                                                                                                                                                                            |

(allinformationswasprovidedbytheapplicantordetectedatthesample) Please see also attachment

### Teststandards

|                                                                                                       |
|-------------------------------------------------------------------------------------------------------|
| <b>EN60529:1991+A1:2000+A2:2013 (onlyIP65test)</b><br>Degreesofprotectionprovidedbyenclosures(IPCode) |
|-------------------------------------------------------------------------------------------------------|



## 2 Technicaltest

### Summaryoftestresults

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



### Testenvironment

|                          |              |
|--------------------------|--------------|
| Temperature:             | 15...25°C    |
| Relativehumiditycontent: | 20...75%     |
| Air pressure:            | 86...103k Pa |
| Details of power supply: | ---          |
| Other parameters:        | ---          |



## Conformityverification-Summaryofinspection

| Clause  | Summary of inspection                                                                                                                   | Test result                         |                                     |                          |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|--------------------------|
|         |                                                                                                                                         | N.A.                                | Pass                                | Fail                     |
| 4       | Designations                                                                                                                            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5       | Degrees of protection against access to hazardous parts and against solid foreign objects indicated by the first characteristic numeral | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6       | Degrees of protection against ingress of water indicated by these second characteristic numeral                                         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7       | Degrees of protection against access to hazardous parts indicated by the additional letter                                              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 8       | Supplementary letters                                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 9       | Examples of designations with the IP Code                                                                                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10      | Marking                                                                                                                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 11      | General requirements for tests                                                                                                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 12      | Tests for protection against access to hazardous parts indicated by the first characteristic numeral                                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 13      | Tests for protection against solid foreign objects indicated by the first characteristic numeral                                        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 14      | Tests for protection against water indicated by the second characteristic numeral                                                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 15      | Tests for protection against access to hazardous parts indicated by the additional letter                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
|         |                                                                                                                                         |                                     |                                     |                          |
| Annexes |                                                                                                                                         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### Test case verdicts

N.A.: Test case does not apply to the test object  
Pass: Test item does meet the requirement

Fail: Test item does not meet the requirement



### 3 Testresultsbasicstandard(s)

#### Particulars:testitemvs.testrequirements

|                                                                   |                                                                                                                            |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>EN60529</b><br>Degreesofprotectionprovidedbyenclosures(IPCode) |                                                                                                                            |
| <b>Possibletestcaseverdicts:</b>                                  |                                                                                                                            |
| - testcasedoesnotapplytothetestobject.....:N(N/A)                 |                                                                                                                            |
| - testobjectdoesmeettherequirement.....:P(Pass)                   |                                                                                                                            |
| - testobjectdoesnotmeettherequirement.....:F(Fail)                |                                                                                                                            |
| <b>Testspecification:</b>                                         |                                                                                                                            |
| Standard.....:                                                    | <input type="checkbox"/> IEC60529:1989+A1:1999+A2:2013<br><input checked="" type="checkbox"/> EN60529:1991+A1:2000+A2:2013 |
| Testprocedure.....:                                               | LVDDOCapproval.                                                                                                            |
| Non-standardtestmethod.....:                                      | N/A                                                                                                                        |
| <b>TestReportFormNo.....:</b>                                     | <b>EN60529B</b>                                                                                                            |
| TestReportForm(s)Originator.....:                                 | CentreofTestingService                                                                                                     |
| MasterTRF.....:                                                   | DatedMay 2023                                                                                                              |
| Copyrightblanktestreport                                          | CentreofTestingService                                                                                                     |

|                                                                                                            |
|------------------------------------------------------------------------------------------------------------|
| <b>Generalremarks:</b>                                                                                     |
| "(see remark #)" refers to a remark appended to the report.                                                |
| "(seeappendedtable)"referstoatableappendedtothereport.                                                     |
| Throughout thisreportacommiais used asthe decimalseparator.                                                |
| The testresults 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 testing laboratory. |

|     |
|-----|
| --- |
|-----|

## General requirements and results

| EN60529   |                                                                                                                                                |        |         |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------|
| clause    | Requirement-Test                                                                                                                               | Result | Verdict |
| <b>4</b>  | <b>Designations</b>                                                                                                                            |        | —       |
| 4.1       | Arrangement of the IP code                                                                                                                     | IP65   | P       |
| <b>5</b>  | <b>Degrees of protection against access to hazardous parts and against solid foreign objects indicated by the first characteristic numeral</b> |        | —       |
| 5.1       | protection against access to hazardous parts, see table I                                                                                      | IP6X   | P       |
| 5.2       | Protection against solid foreign objects, see table II                                                                                         | IP6X   | P       |
| <b>6</b>  | <b>Degrees of protection against ingress of water indicated by the second characteristic numeral</b>                                           |        | —       |
|           | protection against ingress of water by the second characteristic numeral, see table III                                                        | IPX5   | P       |
| <b>7</b>  | <b>Degrees of protection against access to hazardous parts indicated by the additional letter</b>                                              |        | N       |
| <b>8</b>  | <b>Supplementary letters</b>                                                                                                                   |        | N       |
| <b>9</b>  | <b>Examples of designations with the IP code</b>                                                                                               | IP65   | P       |
| <b>10</b> | <b>Marking</b>                                                                                                                                 |        | —       |
|           | the requirements for markings shall be specified in the relevant product standard.                                                             |        | N       |
|           | Where appropriate, such a standard should also specify the method of marking which is to be used when:                                         |        | N       |
|           | -Each part have a different degree of protection that in the same enclose                                                                      |        | N       |
|           | -The mounting position has an influence on the degree of protection                                                                            |        | N       |
|           | -The maximum immersion depth and time are indicated.                                                                                           |        | N       |
| <b>11</b> | <b>General requirements for tests</b>                                                                                                          |        | —       |

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

**CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.**

Fl.1&8 West,Bldg. B, No.66, Qingyi Rd., Hi-Tech Zone, Ningbo, Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

See Reverse For Terms And Conditions of Service



| EN60529 |                                                                                |        |         |
|---------|--------------------------------------------------------------------------------|--------|---------|
| clause  | Requirement–Test                                                               | Result | Verdict |
|         | Testspereformedaccordingtocl.11,e.g.atmospheric conditions, test samples, etc. |        | P       |

|               |                                                                                                                       |      |   |
|---------------|-----------------------------------------------------------------------------------------------------------------------|------|---|
| <b>12</b>     | <b>Testsforprotectionagainstaccessstohazardouspartsindicatedbythefirst characteristic numeral</b>                     |      | — |
| <b>12.1</b>   | Accessprobes,seethetable VI                                                                                           | IP6X | P |
| <b>12.2</b>   | Use a low-voltage supply in series with a suitable lamp should be connected between the probe and the hazardous parts |      | P |
| <b>12.3.1</b> | LowVoltageappliances(upto1000VAC/1500VDC)                                                                             |      | P |
|               | theprobeshallnotcomeincontactwithliveparts.                                                                           |      | P |
|               | Compliancewasprovedbyacontinuitytestwiththe probe                                                                     |      | P |
|               | <b>A</b> (spherediameter50mmforIP1X,withtestforce 50N±10%)                                                            |      | N |
|               | <b>B</b> (testfingerdiameter12mmforIP2X,withtestforce 10N±10%)                                                        |      | N |
|               | <b>C</b> (stickdiameter2,5mmforIP3X,withtestforce 3N±10%)                                                             |      | N |
|               | <b>D</b> (wirediameter1,0mmforIP4X,IP5X,IP6Xwithtest force 1N±10%)                                                    | IP6X | P |
| <b>12.3.2</b> | HighVoltageappliances(over1000VAC/1500V DC)                                                                           |      | N |
|               | theprobeshallnotcomeneartolifepartsthatclearances are reduced.                                                        |      | N |
|               | Compliancewastestedwiththefollowingprobein conjunction with the high- voltage test                                    |      | N |
|               | <b>A</b> (spherediameter50mmforIP1X,withtestforce 50N±10%)                                                            |      | N |
|               | <b>B</b> (testfingerdiameter12mmforIP2X,withtestforce 10N±10%)                                                        |      | N |
|               | <b>C</b> (stickdiameter2,5mmforIP3X,withtestforce 3N±10%)                                                             |      | N |
|               | <b>D</b> (wirediameter1,0mmforIP4X,IP5X,IP6Xwithtest force 1N±10%)                                                    |      | N |
| <b>12.3.3</b> | LowVoltageapplianceswithhazardousmechanicalparts                                                                      |      | N |
|               | theprobeshallnotcomeincontactwiththesehazardous mechanical parts                                                      |      | N |
|               | Complianceistestedwiththecontinuitytestwiththe probe                                                                  |      | N |
|               | <b>A</b> (spherediameter50mmforIP1X,withtestforce 50N±10%)                                                            |      | N |
|               | <b>B</b> (testfingerdiameter12mmforIP2X,withtestforce 10N±10%)                                                        |      | N |
|               | <b>C</b> (stickdiameter2,5mmforIP3X,withtestforce 3N±10%)                                                             |      | N |

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

**CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.**

Fl.1&amp;8West,Bldg. B.No.66,Qingyi Rd.,Hi-TechZone,Ningbo,Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service



| EN60529 |                                                            |        |         |
|---------|------------------------------------------------------------|--------|---------|
| clause  | Requirement-Test                                           | Result | Verdict |
|         | D(wirediameter1,0mmforIP4X,IP5X,IP6Xwithtest force 1N±10%) |        | N       |

| 13     | Testsforprotectionagainstsolidforeignobjectsindicatedbythefirst characteristic numeral |                  | — |
|--------|----------------------------------------------------------------------------------------|------------------|---|
| 13.1   | TestmeansmustcomplywithTableVII.                                                       | Seeattachedtable | P |
| 13.2   | Allappliances                                                                          | IP6X             | P |
|        | theprobeshallnotpenetrateintheappliancewhenthe probe is applied with the force:        |                  | P |
|        | A(spherediameter50mmwith50NforIP1X)                                                    |                  | N |
|        | B(spherediameter12,5mmwith30NforIP2X)                                                  |                  | N |
|        | C(stickdiameter2,5mmwith3NforIP3X)                                                     |                  | N |
|        | D(wirediameter1,0mmwith1NforIP4X)                                                      |                  | N |
| 13.3   | Acceptanceconditionsforthefirstcharacteristicnumerals 1,2,3,4                          |                  | N |
|        | Theprobedoesnotpassthroughanyopening                                                   |                  | N |
| 13.4   | Dusttestforfirstnumerals5and6                                                          | IP6X             | P |
|        | -Dusttestconditionforenclosurescategory1:Withsup- atmosphere                           |                  | P |
|        | -Category2:withnormalatmosphereatdustchamber                                           |                  | N |
| 13.5.2 | theamountofintrudeddustdoesnotimpairsafety(forIP 5X)                                   |                  | N |
| 13.6.2 | nodustdidintrude(forIP6X)                                                              | IP6X             | P |

| 14     | Testsforprotectionagainstwaterindicatedbythesecondcharacteristic numeral                                                              |                  | — |
|--------|---------------------------------------------------------------------------------------------------------------------------------------|------------------|---|
| 14.1   | Testmeans,seetheTable VIII                                                                                                            | Seeattachedtable | P |
| 14.2   | TestconditionsmustcomplywithTableVIII                                                                                                 |                  | P |
| 14.2.1 | <b>Proofwiththedropmachine(IPX1)</b>                                                                                                  | IPX5             | N |
|        | testfor10minwithawater-volume-streamof1mm/min on a rotating table (1 round/min distance between applianceandtheaxisofthetableis100mm) |                  | N |
|        | -theingressofwatershallnotimpairsafetyorinterfere with the correct operation of equipment                                             |                  | N |
|        | -thewatershallnotcausetrackingcurrents                                                                                                |                  | N |
|        | -thewatershallnotreachlivepartsorwindingwhichare not build for use in wet conditions                                                  |                  | N |
|        | -thewatershallnotreachtheendofwires                                                                                                   |                  | N |

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

### CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.

Fl.1&8West,Bldg. B.No.66,Qingyi Rd.,Hi-TechZone,Ningbo,Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service



| EN60529       |                                                                                                                                                                           |        |         |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------|
| clause        | Requirement-Test                                                                                                                                                          | Result | Verdict |
|               | -ifthecaseisprovidedwithdrainageholeswatershall not stay in the case and flow without impairing safety                                                                    |        | N       |
|               | -theequipmentpassthedielectricstrengthtest                                                                                                                                |        | N       |
| <b>14.2.2</b> | <b>Proofwiththedropmachine(IPX2)</b>                                                                                                                                      | IPX5   | N       |
|               | testfor10minwithawater-volume-streamof3mm/min on a rotating table (1 round/min distance between applianceandtheaxisofthetableis100mm)                                     |        | N       |
|               | testfor2,5minat4fixedpositionswith15°slope                                                                                                                                |        | N       |
|               | -theingressofwatershallnotimpairsafetyorinterfere with the correct operation of equipment                                                                                 |        | N       |
|               | -thewatershallnotcausetrackingcurrents                                                                                                                                    |        | N       |
|               | -thewatershallnotreachlivepartsorwindingwhichare not build for use in wet conditions                                                                                      |        | N       |
|               | -thewatershallnotreachtheendofwires                                                                                                                                       |        | N       |
|               | -theequipmentpassthedielectricstrengthtest                                                                                                                                |        | N       |
|               | -ifthecaseisprovidedwithdrainageholeswatershall not stay in the case and flow without impairing safety                                                                    |        | N       |
| <b>14.2.3</b> | <b>Proofwiththesprinklingmachine(IPX3)</b>                                                                                                                                | IPX5   | N       |
|               | Testing not less than 5min from - 60 to 60 degree jet angleat0,07l/minperholewithadistanceof200mma showerat10l/min,andthewaterpressurerangeof 50kPa to 150kPa.            |        | N       |
|               | Thetestdurationis1min/m <sup>2</sup>                                                                                                                                      |        | N       |
|               | -theingressofwatershallnotimpairsafetyorinterfere with the correct operation of equipment                                                                                 |        | N       |
|               | -thewatershallnotcausetrackingcurrents                                                                                                                                    |        | N       |
|               | -thewatershallnotreachlivepartsorwindingwhichare not build for use in wet conditions                                                                                      |        | N       |
|               | -thewatershallnotreachtheendofwires                                                                                                                                       |        | N       |
|               | -ifthecaseisprovidedwithdrainageholeswatershall not stay in the case and flow without impairing safety                                                                    |        | N       |
|               | -theequipmentpassthedielectricstrengthtest                                                                                                                                |        | N       |
| <b>14.2.4</b> | <b>Proofwiththesprinklingmachine(IPX4)</b>                                                                                                                                | IPX5   | N       |
|               | Testing not less than 5min from - 180 to 180 degree jet angleat0,07l/minperholewithadistanceof200mma shower at 10 l /min, and the water pressure range of 50kPato 150kPa. |        | N       |
|               | Thetestdurationis10min                                                                                                                                                    |        | N       |
|               | -theingressofwatershallnotimpairsafetyorinterfere with the correct operation of equipment                                                                                 |        | N       |
|               | -thewatershallnotcausetrackingcurrents                                                                                                                                    |        | N       |

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

**CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.**

Fl.1&8West,Bldg. B.No.66,Qingyi Rd.,Hi-TechZone,Ningbo,Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service



| EN60529       |                                                                                                                 |        |         |
|---------------|-----------------------------------------------------------------------------------------------------------------|--------|---------|
| clause        | Requirement-Test                                                                                                | Result | Verdict |
|               | -thewatershallnotreachlivepartsorwindingwhichare not build for use in wet conditions                            |        | N       |
|               | -thewatershallnotreachtheendofwires                                                                             |        | N       |
|               | -ifthecaseisprovidedwithdrainageholeswatershall not stay in the case and flow without impairing safety          |        | N       |
|               | -theequipmentpassthedielectricstrengthtest                                                                      |        | N       |
| <b>14.2.5</b> | <b>Proofwithajetnozzle (IPX5)</b>                                                                               | IPX5   | N       |
|               | testwithanozzlewithadiameterof6,3mmat12,5l/min in a distance of 2,5m to 3m for 1 min/m <sup>2</sup> per surface |        | N       |
|               | Minimumtestduration:3min                                                                                        |        | N       |
|               | -theingressofwatershallnotimpairsafetyorinterfere with the correct operation of equipment                       |        | N       |
|               | -thewatershallnotcausetrackingcurrents                                                                          |        | N       |
|               | -thewatershallnotreachlivepartsorwindingwhichare not build for use in wet conditions                            |        | N       |
|               | -thewatershallnotreachtheendofwires                                                                             |        | N       |
|               | -ifthecaseisprovidedwithdrainageholeswatershall not stay in the case and flow without impairing safety          |        | N       |
|               | -theequipmentpassthedielectricstrengthtest                                                                      |        | N       |
| <b>14.2.6</b> | <b>Proofwithajetnozzle (IPX6)</b>                                                                               | IPX5   | N       |
|               | testwithanozzlewithadiameterof12,5mmat100l/min in a distance of 2,5m to 3m for 1 min/m <sup>2</sup> per surface |        | N       |
|               | Minimumtestduration:3min                                                                                        |        | N       |
|               | -theingressofwatershallnotimpairsafetyorinterfere with the correct operation of equipment                       |        | N       |
|               | -thewatershallnotcausetrackingcurrents                                                                          |        | N       |
|               | -thewatershallnotreachlivepartsorwindingwhichare not build for use in wet conditions                            |        | N       |
|               | -thewatershallnotreachtheendofwires                                                                             |        | N       |
|               | -ifthecaseisprovidedwithdrainageholeswatershall not stay in the case and flow without impairing safety          |        | N       |
|               | -theequipmentpassthedielectricstrengthtest                                                                      |        | N       |
| <b>14.2.7</b> | <b>Temporaryimmersing(IPX7)</b>                                                                                 | IPX5   | N       |
|               | testwithcaseswithaheightupto850mmintestdeep of 1000mm for 30min                                                 |        | N       |
|               | testwithcaseswithaheightover850mmat150mm water over the top for 30min                                           |        | N       |
|               | -theingressofwatershallnotimpairsafetyorinterfere with the correct operation of equipment                       |        | N       |
|               | -thewatershallnotcausetrackingcurrents                                                                          |        | N       |
|               | -thewatershallnotreachlivepartsorwindingwhichare not build for use in wet conditions                            |        | N       |

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

**CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.**

Fl.1&8West,Bldg. B, No.66, Qingyi Rd., Hi-Tech Zone, Ningbo, Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service



| EN60529       |                                                                                                                                                                                                                                                                                                                                       |                                        |         |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------|
| clause        | Requirement-Test                                                                                                                                                                                                                                                                                                                      | Result                                 | Verdict |
|               | -thewatershallnotreachtheendofwires                                                                                                                                                                                                                                                                                                   |                                        | N       |
|               | -ifthecaseisprovidedwithdrainageholeswatershall not stay in the case and flow without impairing safety                                                                                                                                                                                                                                |                                        | N       |
|               | -theequipmentpassthedielectricstrengthtest                                                                                                                                                                                                                                                                                            |                                        | N       |
| <b>14.2.8</b> | <b>Temporaryimmersing(IPX8)</b>                                                                                                                                                                                                                                                                                                       | IPX5                                   | P       |
|               | Unless there is a relevant product standard, the test conditions are subject to agreement between manufactureranduser,buttheyshallbemoresevere than those prescribed in 14.2.7 and they shall take account of the condition that the enclose will be continuouslyimmersedinactualuse.                                                 | Immersion_1.5_min<br>thewaterfor40min. | P       |
| <b>14.2.9</b> | <b>Testforsecondcharacteristicnumeral9byhigh pressure and temperature water jetting (IPX9)</b>                                                                                                                                                                                                                                        | IPX5                                   | N       |
|               | The test is made by spraying the enclosure with a stream of water from a standard test nozzle as shown in Figures 7, 8 and 9.<br>The set-up for measuring the impact force of the water jet is given in Figure 10.<br>The distribution force shall be verified at upper and lower limits of distance tolerance range (see Figure 11). |                                        | N       |
| <b>15</b>     | <b>Testsforprotectionagainstaccesshazardousparts indicated by the additional letter</b>                                                                                                                                                                                                                                               |                                        | N       |



## Annexasstatedinthestandards

| EN60529        |                                                                                                                |               |         |
|----------------|----------------------------------------------------------------------------------------------------------------|---------------|---------|
| Clause         | Requirement-Test                                                                                               | Result-Remark | Verdict |
| <b>ANNEXEA</b> | <b>ExamplesofIPcodingfortheverification ofprotectionlow-voltageequipment against access to hazardous parts</b> |               | P       |
|                | <b>IPcodesofexamplesinannexeA</b>                                                                              |               | P       |
| <b>ANNEXEB</b> | <b>Summaryofresponsibilitiesofrelevant technical committees</b>                                                |               | N       |

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

**CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.**

Fl.1&8West,Bldg. B.No.66,Qingyi Rd.,Hi-TechZone,Ningbo,Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service



## Table

TableV–testconditionsfordegreesofprotectionindicatedbythefirstcharacteristicnumeral

| First characteristic numeral | Testforprotectionagainst                                                                     |                                            |
|------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------|
|                              | Accesstohazardousparts                                                                       | Solidforeignobjects                        |
| 0                            | Notestrequired                                                                               | Notestrequired                             |
| 1                            | Thesphereof50mmΦshallnotfullypenetrateandadequateclearanceshallbekept                        |                                            |
| 2                            | The jointed test finger may penetrate up to its 80mmlength, butadequateclearanceshallbe kept | Thesphereof12.5mmΦshallnot fully penetrate |
| 3                            | Thetestrodof2.5mmΦshallnotpenetrateandadequateclearanceshallbekept                           |                                            |
| 4                            | Thetestwireof1.0mmΦshallnotpenetrateandadequateclearanceshallbekept                          |                                            |
| 5                            | Thetestwireof1.0mmΦshallnotpenetrate and adequate clearance shall be kept                    | Dust–protectedasspecifiedintable II        |
| 6                            | Thetest wire of1.0mmΦshallnotpenetrateand adequate clearance shall be kept                   | Dust–tightasspecifiedintableII             |

TableVII–testmeansforthetestsforprotectionagainstsolidforeignobjects

| First characteristic numeral | Testmeans(objectprobesanddust chamber)                              | Testforce | Testconditions see |
|------------------------------|---------------------------------------------------------------------|-----------|--------------------|
| 0                            | Notestrequired                                                      | --        | --                 |
| 1                            | Rigidspewerwithouthandleorguard<br>$50^{+0,05}_0$ mm diameter.      | 50N±10%   | 13.2               |
| 2                            | Rigidspewerwithouthandleorguard<br>$12,5^{+0,2}_0$ mmdiameter.      | 30N±10%   | 13.2               |
| 3                            | Rigidsteelrod $2,5^{+0,05}_0$ mmdiameter with edges free from burrs | 3N±10%    | 13.2               |
| 4                            | Rigidsteelwire1.0mmdiameterwith edges free from burrs               | 1N±10%    | 13.2               |
| 5                            | Dust chamber figure 2, with or without underpressure                | --        | 13.4+13.5          |
| 6                            | Dust chamber figure 2, withunderpressure                            | --        | 13.4+13.6          |

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

### CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.

Fl.1&8West,Bldg. B, No.66, Qingyi Rd., Hi-TechZone, Ningbo, Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service



TableVIII-testmeansandmaintestconditionsforthetestsforprotectionagainstwater

| Second characteristic numeral | Test means                                                                                                                                                                                                                               | Waterflow rate                                                     | Duration of test                                          | Test conditions, see     |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------|--------------------------|
| 0                             | Notestrequired                                                                                                                                                                                                                           | --                                                                 | --                                                        | --                       |
| 1                             | Dripboxfigure3enclosure on turntable                                                                                                                                                                                                     | $1^{+0,5}_0$ mm/min                                                | 10min                                                     | 14.2.1                   |
| 2                             | Dripboxfigure3enclosure in 4 fixed positions of 15° tilt                                                                                                                                                                                 | $3^{+0,5}_0$ mm/min                                                | 2.5minfor eachposition of tilt                            | 14.2.2                   |
| 3                             | Oscillatingtubefigure4 spray±60°fromvertical, distance max.200mm<br>Or<br>spray nozzle figure 5 spray±60°fromvertical                                                                                                                    | 0.07 l/min±5% per hole, multiplied by number of holes 10 l/min ±5% | 10min<br><br>1min/m <sup>2</sup><br>Atleast5min           | 14.2.3a)<br><br>14.2.3b) |
| 4                             | Asfor numeral3 spray±180° from vertical                                                                                                                                                                                                  | Asfor numeral3                                                     |                                                           | 14.2.4                   |
| 5                             | Waterjethosenozzlefigure 6 nozzle 6.3 mm diameter distance 2.5m to 3m                                                                                                                                                                    | 12.5l/min±5%                                                       | 1min/m <sup>2</sup><br>Atleast3min                        | 14.2.5                   |
| 6                             | Water jet hose nozzle figure 6 nozzle12.5mmdiameter distance2.5mto 3m                                                                                                                                                                    | 100l/min±5%                                                        | 1min/m <sup>2</sup><br>Atleast3min                        | 14.2.6                   |
| 7                             | Immersiontankwater-level on enclosure:<br>0.15m above top<br>1mabovebottom                                                                                                                                                               | --                                                                 | 30min                                                     | 14.2.7                   |
| 8                             | Immersion tank water-level :by agreement                                                                                                                                                                                                 | Immersion _____<br>ater _____ 1,5_minthew                          | 40Min                                                     | 14.2.8                   |
| 9                             | Fanjetnozzle Figure 7<br>Test of small enclosure on turntable Figure 12<br>Turntable speed(5±1)r/min<br>Sprayat0°,30°,60°,90°Or<br>Test of large enclosure as per intended use<br>Sprayfromallpractical directions<br>Distance(175±25)mm | (15±1)l/min                                                        | 30sper position<br><br>1min/m <sup>2</sup><br>Atleast3min | 14.2.9a)<br><br>14.2.9b) |

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

**CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.**

Fl.1&amp;8West,Bldg. B, No.66, Qingyi Rd., Hi-TechZone, Ningbo, Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service



# CTS

CENTRE OF TESTING SERVICE

ReportNo.:C3190816006-L

Page19of19

Date:23August2023

## Attachments

- Photodocument
- BOM
- CDF(criticaldataform)
- Copiesofcertificatesofcertifiedcomponents
- Instructionmanual
- Circuitdiagram
- Explosionblock
- Otherifnecessary

----- endofreport -----

CopyrightofthisreportisownedbyCentreofTestingServiceandmaynotbereproducedotherthaninfullexceptwiththewrittenapprovaloftheissuing Company.

**CTS(Ningbo)TestingServiceTechnologyCo.,Ltd.**

Fl.1&8West,Bldg. B.No.66,Qingyi Rd.,Hi-TechZone,Ningbo,Zhejiang, China

Tel: +86-574-87912121(16 lines)

Fax: +86-574-87907993

Complaintline: +86-574-87908003

E-mail: cts@cts-lab.com

SeeReverseForTermsAndConditionsof Service

**Type Designation:**  
**Report Number :**

**Metallic Flexible Conduit (OPCS/LSRM) (OPCS/DPJ)**  
**C3190816006-L**



Figure1(externalview-front)



Figure 2(externalview-Front)