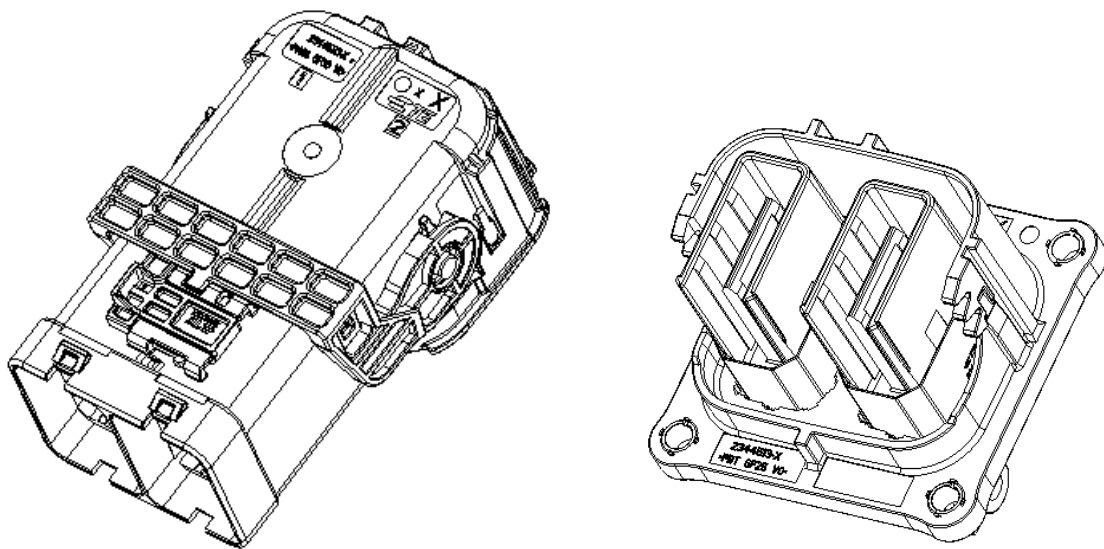



PCON 21 2POS 90DEG PRODUCT SPECIFICATION

PCON 21 两位 90 度高压大电流连接器 产品规范



| | | | | | | | |
|-----|--------------------------------------|-----------|-------------|--------------------------------|---|-------------------|-------------------|
| | | | | |  Shanghai, China | | |
| A3 | Add Terminal PN & Name Changed | A.L | 30OCT23 | PR: D.DI DATE:13JUN2019 | | | |
| A2 | Name Changed | A.L | 28FEB23 | CHK: E.JIANG DATE:31AUG2019 | | | |
| A1 | Update cable seal | W.Z | 30DEC21 | | | | |
| A | Initial released | D.D | 12DEC19 | APP: I.YIN DATE:31AUG2019 | | | |
| LTR | REVISION RECORD | PR | DATE | | Document No.: 108-32575 | LOC: ES | REV: A3 |

CONTENT

| | |
|--|----|
| 1. SCOPE 适用范围..... | 3 |
| 1.1 CONTENT 内容..... | 3 |
| 1.2 QUALIFICATION 鉴定 | 3 |
| 2. APPLICABLE DOCUMENTS 适用文件..... | 3 |
| 2.1 USABLE DOCUMENT 使用文件..... | 3 |
| 2.2 TE SPECIFICATIONS 泰科电子规范 | 3 |
| 2.3 CUSTOMER DRAWINGS | 4 |
| 2.4 SPECIFICATIONS 规范..... | 5 |
| 2.5 OTHER SPECIFICATIONS 其他规范 | 5 |
| 3. REQUIREMENT 要求..... | 6 |
| 3.1 DESIGN AND CONSTRUCTION 设计和结构 | 6 |
| 3.2 MATERIAL 材料 | 6 |
| 3.3 TEST PARAMETERS AND TOLERANCES 测试参数与公差 | 6 |
| 3.4 RATINGS 等级 | 6 |
| 3.5 GENERAL PERFORMANCE AND TEST DESCRIPTION 通用性能和试验描述 | 7 |
| 3.6 TESTS REQUIREMENT AND PROCEDURES SUMMARY 测试要求及方法..... | 7 |
| 3.7 ADDITIONAL TEST PROCEDURES AND TEST RESULTS 附加的测试方法和结果 | 11 |
| 3.8 TEST SEQUENCE 试验顺序 | 11 |
| 4. QUALITY 质量 | 13 |
| 4.1 QUALIFICATION TEST 鉴定 | 13 |
| 4.2 REQUALIFICATION TEST 重新鉴定..... | 13 |
| 4.3 ACCEPTANCE 验收..... | 13 |
| 4.4 QUALITY CONFORMANCE INSPECTION 质量合格检验..... | 13 |
| 5. APPENDIX 附件 | 14 |
| 5.1 DERATING INSIDE HOUSING 成品温升降额曲线..... | 14 |
| 5.2 DYNAMIC LOAD (LV215 S2) 震动性能(LV215 S2)..... | 15 |
| 5.3 CONTACT ENGAGEMENT LENGTH 端子接触长度 | 16 |
| 5.4 STRAIN RELIEF 应力释放..... | 17 |

1. SCOPE 适用范围

1.1 Content 内容

TE Connectivity's touch-proof 2 position high current connector PCON21 and header are designed to meet WG 4.3.3, LV215 specifications, for a metric wire size range from 50mm² up to 95mm² acc. to LV216-2.

With a 90° cable outlet incorporates the sealed connector system two 21mm Power contacts and an integrated High Voltage Interlock (HVIL) System. The PCON21 connector is available for four different keying or polarizing configurations and incorporates 360° conductive EMI shields to reduce radiated emissions in the application. Assembly is simplified with a lever assist for low insertion force and the housings are molded in orange to denote a high voltage system.

泰科电子的两位防触摸大电流连接器 PCON21 公母端，设计符合 WG 4.3.3, LV215 标准，适用符合 LV216-2 的公制 50mm²到 95mm² 平方的电缆

密封连接系统采用 90°出线，两路 21mm 电源连接和一个高压互锁系统。PCON21 连接器有四种不同的键位，并采用 360 度导电 EMI 屏蔽以减少应用中的辐射。采用杠杆辅助装置，简化装配、降低插拔力，壳体采用橙色警示色代表高压系统

This specification covers the performance, test and quality requirements for TE Connectivity 2 position high current connector PCON21 with 90° Plug and header assembly. (hereinafter referred to as PCON21).

本规范适用于泰科电子 PCON21 两位 90 度高压大电流公母连接器(以下简称 PCON21) 的性能，测试和质量要求。

1.2 Qualification 鉴定

When tests are performed, the following specifications and standards shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

本测试规范依照下面的规范及标准执行。所有的检验应依照合适的检验计划及产品图纸执行。

2. APPLICABLE DOCUMENTS 适用文件

2.1 Usable document 使用文件

In the event of conflict between the requirements of this specification and the drawing, the drawing shall take precedent.

In the event of conflict between the requirement of this specification and the referenced documents, this specification shall take precedent.

在本规范的要求与图纸发生冲突时，以产品图纸为准。在本规范的要求与参考文件发生冲突时，以本规范为准。

2.2 TE specifications 泰科电子规范

TEC-109-1: General requirements for Test Specifications / 测试通用规范

2.3 Customer drawings

Table 1: Customer drawings / 客户图纸

| Shielding Header side (Include interface) / 屏蔽公端(包括应用面板) | |
|---|---------------------------|
| 2344512 | 2POS,21MM,HEADER HSG,ASSY |
| 2357574 | |
| 2384721 | |
| 2393017 | |
| 2391644 | |

| Unshielding Header side (Include interface) / 非屏蔽公端(包括应用面板) | |
|--|---------------------------|
| 2396301 | 2POS,21MM,HEADER HSG,ASSY |

| Shielding Plug side / 屏蔽母端 | |
|-----------------------------------|--|
| 2344520 | 2POS,21MM,PLUG HSG,90 DEG,ASSY,SEALED |
| 2344525 | 2POS,21MM,UPPER HSG,90 DEG,ASSY |
| 2344529 | 2POS,21MM,LOWER HSG,90 DEG,ASSY |
| 2317017 OR 2425991 | 90DEG PCON21 CONTACT 90DEG PCON21 CONTACT (LOCALIZATION OF CHINA) |
| 2344532 | GASKET RING |
| 2344533 | SHIELD CRIMP FERRULE |
| 2367292 | 2POS,21MM,PLUG HSG,90 DEG,ASSY,SEALED |
| 2367295 | 2POS,21MM,CABLE SEAL COVER |

| Unshielding Plug side / 非屏蔽母端 | |
|--------------------------------------|--|
| 2396300 | 2POS,21MM,PLUG HSG,90 DEG,ASSY,SEALED, UNSHIELDING |
| 2344527 | 2POS,21MM,UPPER HSG,90 DEG |
| 2396428 | 2POS,21MM,LOWER HSG,90 DEG |
| 2317017 OR 2425991 | 90DEG PCON21 CONTACT 90DEG PCON21 CONTACT (LOCALIZATION OF CHINA) |
| 2367292 | 2POS,21MM,PLUG HSG,90 DEG,ASSY,SEALED |
| 2367295 | 2POS,21MM,CABLE SEAL COVER |

2.4 Specifications 规范

Table 2: TE-specifications / 泰科规范

| Specifications | Description |
|-----------------------|--|
| 108-32575 | Product Specification PCON21 Contact 90DEG |
| 108-18030 | Product Specification MQS Contact system |
| 114-32326 | Application Specification PCON21 2Pos 90° |
| 114-94511 | Application Specification PCON21 Contact 90DED |
| 114-18021 | Application Specification MQS Contact system |

2.5 Other Specifications 其他规范

Table 3: Other Specifications

| Doc number | Edition | Standard: Title, Author |
|-------------------|----------------------------|---|
| DIN EN 60664-1 | 2008-01 | Isolation coordination for equipment within lowvoltage systems - Part 1: Principles, requirements and tests |
| DIN 40050-9 | 1993-05 | Degrees of protection (IP-Code) - Protection of electrical equipment against foreign objects, water and access |
| ISO 20653 | 2006-08 | Road vehicles – Degrees of protection (IPCode) - Protection of electrical equipment against foreign objects, water and access |
| ISO 6469-3 | 2001-01 | Electric road vehicles – Safety specifications. Part 3: Protection of person against electric hazards |
| ISO 16750 | -1: 2006-01 -2: 2010-03 | Electric road vehicles – Environmental conditions and testing for electrical and electronic equipment |

| | | |
|------------|---|---|
| | -3: 2007-07 -4: 2010-04 -5: 2010-04 | |
| SAE J 1742 | 1998-03 (2005-12) | Connections for High Voltage On-Board Road Vehicle, Electrical Wiring Harnesses Test Methods and General Performance Requirements |
| LV 214-1 | 2010-03 | Test specification for motor vehicle connectors |
| LV215-1 | 2009-02 | Electrical/Electronic Requirements of HV Connectors |
| VW80332 | 2017-09 | Motor Vehicle High-Voltage Contacts |
| UL2231-2 | 2012-09 | Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits |
| LV216 | | HV shield cable |

3. REQUIREMENT 要求

3.1 Design and Construction 设计和结构

Products must meet the design, construction and physical dimensions specified in the applicable product drawings.

产品必须满足产品图纸上的设计，结构和尺寸要求。

3.2 Material 材料

Description of the material sees the related customer drawings.

材料描述见相关客户图纸。

3.3 Test parameters and tolerances 测试参数与公差

Table 4: Test parameters and tolerances

| Requirement 要求 | Tolerance 公差 |
|---------------------------|----------------|
| Ambient temperature 环境温度 | 23°C ± 5°C |
| Relative humidity 相对湿度 | 45% to 75% |
| Atmospheric pressure 大气压力 | 100kPa ± 10kPa |

3.4 Ratings 等级

Table 5: Product Ratings / 产品等级

| Description | Range |
|---------------------------------------|----------|
| Max. Voltage according DIN EN 60664-1 | ≤1000VDC |
| Voltage class acc. ISO 6469-3 | B |
| Class 1 equipment acc. ISO 6469-3 | 1 |

| | |
|--|-------------------------|
| Dielectric withstand voltage acc. ISO 6469-3, SAE J 1742 | 3000V |
| Insulation resistance acc. ISO 6469-3, SAE J 1742 | >200M Ω |
| Isolation Group I acc. DIN EN 60664-1 | 600 \leq CTI |
| Pollution degree acc. DIN EN 60664-1 | 2 |
| Ambient temperature | -40°C to 125°C |
| Degrees of protection (IP-Code) against access acc. ISO 20653 | IPXXB |
| Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits | UL finger protection |
| Degrees of protection (IP-Code) against foreign objects and water acc. ISO 20653 | IPX9K,IP67 |
| Color of plastic housing | Orange similar RAL 2003 |
| Durability mating cycle | \geq 20 |

3.5 General Performance and Test description 通用性能和试验描述

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in table 6 and table 7. All testes must be performed at the test condition of the TE test specification TEC-109-1 unless otherwise specified.

产品应能满足表 6 和表 7 中的电气，机械和环境等性能要求。所有试验均需按照 TE 规范 TEC-109-1 中的测试条件进行，除非另有说明。

3.6 Tests requirement and procedures summary 测试要求及方法

Not shown test-details see LV 214 (release 2010-03) and LV215-2 (release 2013-03)

Table 6: Test Requirements and Procedures Summary

| Test Description | Requirement | Procedure |
|-----------------------------|--|-----------------------------|
| PG0 RECEIVING INSPECTION | | |
| E 0.1 Visual inspection | Basic function proven | LV215-2 DIN EN 60512-1-1 |
| E 0.2 Contact resistance | Contact(total resistance including crimp connection): 70mm ² \leq 0.12m Ω ; 95mm ² \leq 0.11m Ω ;50 mm ² \leq 0.36m Ω Shield \leq 7m Ω (for shielding version); HVIL \leq 15m Ω | LV215-2 DIN EN 60512-1-1 |
| E 0.3 Insulation resistance | Insulation resistance at 1kVDC: > 200M Ω | LV215-2 DIN EN 60512-3-1 |

| | | |
|--|---|------------------------------|
| PG 4 CONTACT OVERLAPPING | | |
| E 4.1 Contact engagement length | Values see appendix 5.3 | Theoretical study |
| PG 6 INTERACTION BETWEEN CONTACT AND HOUSING | | |
| E 6.1 Deflection of contacts in the housing cavity | No damage during joining | Theoretical study |
| B 6.1 Drop test | Drop test from 1m height; No damages or impairments of function | LV215-2 DIN EN 60068-2-31 |
| PG 7 HANDING AND FUNCTIONAL RELIABILITY OF THE HOUSINGS | | |
| E 7.1 Error-proof design of housings | Coding/Polarization Test load: 80N | LV214 DIN EN 60512-13-5 |
| E 7.2 Retention force of the housing latch/lock | Retention force of the housing latch mechanism/housing interlock: >350N | LV215-2 DIN EN 60512-15-6 |
| E 7.3 Functionality of CPA | Actuation force to close: 5-30N CPA Efficiency: >80N | DIN EN 60512-15-6 |
| E 7.4 Insertion force or actuation force for insertion with removal aids | Insertion and actuation force: ≤ 75N | DIN EN 60512-15-6 |
| PG 8 MATING AND RETENTION FORCE OF CONTACT PARTS | | |
| E 8.1 Contact insertion forces | Cable assy with PCON21-Contact: Insertion force ≤50N | LV214 |
| E 8.2 Contact removal force from the housing | TPA lock measured Cable assy with PCON21-contact ≥ 250N HVIL-contact ≥ 55N | LV214 |
| PG 9 SKEWED INSERTION ANGLE | | |
| E 9.2 Max. possible insertion inclination | Max. possible insertion inclination warrants the contacting without damage | Theoretical study |
| E 9.3 Examination of housing for scoop-proofing | Live parts must only touch its counter-part while mounting (including insertion chamfers). In case of incorrect insertion of the plug no live parts must be touched | Theoretical study |
| PG 11 MATING CYCLES | | |
| B 11.1 Mating cycles | Connector with HVIL-Contacts 20 Cycles | LV214 |
| PG 13 HOUSING INFLUENCE ON THE DERATING | | |

| | | |
|---|---|---------------------------------------|
| E 13.2 Derating with housing | Dependent on application and cable type different values are possible Max. temperature at contacts 180° C Derating see appendix 5.1 | LV215-2 DIN EN 60512-5-1/2 |
| PG 17 DYNAMIC LOAD | | |
| B 17.2 Dynamic Load Broad-band random | Severity 2: "Body" sealed; Details see appendix 5.2 Slight wear, surface ok. Resistances after testing <ul style="list-style-type: none"> ● Contact $\leq 0.72\text{m}\Omega(50\text{mm}^2)$; $\leq 0.24\text{m}\Omega(70\text{mm}^2)$ $\leq 0.22\text{m}\Omega(95\text{mm}^2)$ ● HVIL-Contact $\leq 15\text{m}\Omega$ ● Shielding cable – aggregate $<7\text{m}\Omega$ (for shielding version) | LV214 DIN EN 60068-2-64 |
| B 17.3 Endurance shock test | 30g; T=6ms; N=6000 Slight wear, surface ok. Resistances after testing <ul style="list-style-type: none"> ● Contact $\leq 0.72\text{m}\Omega(50\text{mm}^2)$ $\leq 0.24\text{m}\Omega(70\text{mm}^2)$; $\leq 0.22\text{m}\Omega(95\text{mm}^2)$ ● HVIL-Contact $\leq 15\text{m}\Omega$ ● Shielding cable – aggregate $<7\text{m}\Omega$ (for shielding version) | LV214 DIN EN 60068-2-27 |
| PG 18A DICING SALT LOAD | | |
| B 18.2 Salt spray, cyclic | Resistances after Salt spray test, not sealed <ul style="list-style-type: none"> ● Contact $\leq 0.72\text{m}\Omega(50\text{mm}^2)$ $\leq 0.24\text{m}\Omega(70\text{mm}^2)$; $\leq 0.22\text{m}\Omega(95\text{mm}^2)$ ● HVIL-Contact $\leq 15\text{m}\Omega$ ● Shielding cable – aggregate $<7\text{m}\Omega$ (for shielding version) | LV215-2 DIN EN 60068-2-52 (SG3) |
| PG 20 CLIMATIC LOAD OF HOUSINGS | | |
| B 20.1 Dry heat | Dry heat 120h / 130°C | LV214 |
| B 20.2 Damp heat | Damp heat 10 days / 40°C / 95% rel. humidity Insulation resistance at 1kVDC: $>200\text{M}\Omega$ | LV214 |
| B 20.3 Climatic cold | Climatic cold 48h / -40°C Plugging / unmating possible at -20°C | LV214 |
| B 20.1 Dry heat | Dry heat 48h / 80°C | LV214 |
| B 6.1 Drop test after aging | Drop test from 1m height; No damages or impairments of function | LV215-2 DIN EN 60068-2-31 |
| PG 21 LONG-TERM AGING | | |
| B 21.1 Long-term aging in dry heat | 1000h at 130°C; Resistances after aging: <ul style="list-style-type: none"> ● Contact $\leq 0.72\text{m}\Omega(50\text{mm}^2)$ $\leq 0.24\text{m}\Omega(70\text{mm}^2)$; $\leq 0.22\text{m}\Omega(95\text{mm}^2)$ ● HVIL-Contact $\leq 15\text{m}\Omega$ ● Shielding cable – aggregate $<7\text{m}\Omega$ | LV215-2 DIN EN 60068-2-2 |

| | (for shielding version) Functionality; Contact Removal forces acc. E8.2 | | | | | | | |
|--|--|-----------------------------|--------------------------|------|-------|-------|-------|------------------------------------|
| PG 22B CHEMICAL RESISTANCE | | | | | | | | |
| B 22.1B Chemical Resistance (water-tight design) | Application of media for 48h at specified temperature; only tested at single parts No textural or dimensional change, no impairments of function Insulation resistance >100MΩ | LV214 | | | | | | |
| PG 23 WATER - TIGHTNESS | | | | | | | | |
| B 19.3 Aging in dry heat | 120h at 130°C | DIN EN 60068-2-2 | | | | | | |
| B 19.1 Temperature shock | Period: 144 cycles -40°C / +130°C each 15min | DIN EN 60068-2-14 | | | | | | |
| B 23.1 Immersion with pressure difference | Low pressure: -10kPa, holding time 5min. -50kPa, holding time 5min. Change in pressure:10 kPa/min | LV214 DIN EN 60512-14-5 | | | | | | |
| B 23.2 Immersion with pressure difference | Movement of cable at low pressure: -10kPa, holding time 5min. -50kPa, holding time 5min. | LV214 DIN EN 60512-14-5 | | | | | | |
| B 23.3 Thermal shock test | 30min. in 120°C air; 15min in 0°C Water. 5 cycles | LV214 | | | | | | |
| B 23.4 Degree of protection test / pressure washer test | Severity: IP X9K Test duration per side: 15s Distance to nozzle: 10-15cm Pressure: 80 bar Temperature: 80°C | LV214 DIN 40050-9 | | | | | | |
| E 0.3 Insulation resistance | Insulation resistance at 1000VDC: >200MΩ | LV215-2 DIN EN 60512-3-1 | | | | | | |
| PG 50 EMC – ELECTROMAGNETIC COMPATIBILITY (for shielding version) | | | | | | | | |
| PG 50 EMC- Electromagnetic compatibility | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">Delta-Transfer impedance</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2MHz</td> <td style="text-align: center;"><10mΩ</td> </tr> <tr> <td style="text-align: center;">30MHz</td> <td style="text-align: center;"><50mΩ</td> </tr> </tbody> </table> | Frequency | Delta-Transfer impedance | 2MHz | <10mΩ | 30MHz | <50mΩ | VG 95214-11 LV 215-1 LV215-2 |
| | Frequency | Delta-Transfer impedance | | | | | | |
| | 2MHz | <10mΩ | | | | | | |
| 30MHz | <50mΩ | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| PG 51 IP PROTECTION OPEN CONNECTOR | | | | | | | | |
| PG51 Protection open connector | IP-Protection IPXXB, un-mated (VDE test finger ø12mm) IP-Protection IPXXD, mated | ISO 20653 | | | | | | |

3.7 Additional Test Procedures and Test Results 附加的测试方法和结果

Table 7: Additional test requirements

| Test Description | Requirement | Procedure |
|---|---|--------------------|
| A1 Crimp validation PG1 | Pull out force of shield crimp: >150N Cross section examination: crimp sleeves are well formed | TE-Spec. 109-18212 |
| A2 Crimp validation PG2 | Shield resistance <3mΩ | TE-Spec. 109-18212 |
| Cable used for crimp validation Xinhongye-No.: TEVBA70-04-310/ 70mm ² shield cable | | |
| A3 | UL finger protection | UL2231-2 |
| A5 Retention force further connector parts | Seal cover retention force: >500N Shut bar retention force: >30N Bushing retention force:>50N MQS housing retention force:>60N | TE-Spec. 109-18212 |
| A6 Insertion force further connector parts | TPA 2 nd lock insertion force: 30<F<65N MQS housing insertion force: 20N<F<50N | TE-Spec. 109-18212 |

3.8 Test sequence 试验顺序

Table 8: Test sequence

| Test or Examination | Test group and sequence | | | | | | | | | | | | |
|---|-------------------------|---|---|------|------|------|------|---|------|------|------|------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| visual examination | 1 | 1 | 1 | 1, 3 | 1, 4 | 1, 4 | 1, 5 | 1 | 1 | 1, 9 | 1, 5 | 1 | 1, 4, 7, 9, 12 |
| Contact resistance | 2 | | | | | | 2, 4 | | 2, 4 | | 2, 4 | | |
| Isolation Resistance | 3 | | | | | | | | | 2, 5 | | 2, 4 | 11 |
| Dielectric withstand | 4 | | | | | | | | | | | | |
| crimp cross examination | 5 | | | | | | | | | | | | |
| Temperature Raising | | 2 | | | | | | | | | | | |
| EMC | | | 2 | | | | | | | | | | |
| Drop test | | | | 2 | | | | | | 8 | | | |
| Retention force of the housing latch/lock (unequipped housing) | | | | | 2 | | | | | | | | |
| Insertion force or actuation force for insertion and removal aids | | | | | 3 | | | | | | | | |
| Contact insertion force | | | | | | 2 | | | | | | | |
| Contact removal force | | | | | | 3 | | | | | | | |
| Mating cycles | | | | | | | 3 | | | | | | |
| Analysis of contact surfaces | | | | | | | 6 | | | | | | |

| | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|---|---|---|---|----|
| IP-protection: IPXXB | | | | | | | | | 2 | | | | |
| UL-protection: UL2231 | | | | | | | | | 3 | | | | |
| Salt spray, cyclic SG2 | | | | | | | | | | 3 | | | |
| Dry heat(120h / 130°C) | | | | | | | | | | | 3 | | 2 |
| Damp heat(10 days / 40°C / 95% rel. humidity) | | | | | | | | | | | 4 | | |
| Climatic cold(48h / -40°C Plugging / unmating at -20°C) | | | | | | | | | | | 6 | | |
| Dry heat(48h / 80°C) | | | | | | | | | | | 7 | | |
| Long-term aging in dry heat(1000H at 130°C) | | | | | | | | | | | | 3 | |
| Chemical Resistance | | | | | | | | | | | | | 3 |
| Thermal shock(-40°C/130°C 15min. Respectively, 144 cycles) | | | | | | | | | | | | | 3 |
| Immersion with pressure difference | | | | | | | | | | | | | 5 |
| Line movement during immersion with pressure difference-vacuum | | | | | | | | | | | | | 6 |
| Thermal shock test(5% NaCl, 120°C/30min,0°C/15 min),5 cycles | | | | | | | | | | | | | 8 |
| Degree of protection test/pressure washer test(IPX9K) | | | | | | | | | | | | | 10 |

| Test or Examination | Test group and sequence | |
|---|-------------------------|------|
| | 14 | 15 |
| visual examination | 1, 6 | 1, 7 |
| Contact resistance | 2, 5 | 2, 6 |
| Dynamic load, broad-band random vibration (LV215) | 3 | |
| Endurance shock test | 4 | 5 |
| Dynamic load, broad-band random vibration (ISO) | | 3 |
| Dynamic load, broad-band Sine vibration (ISO) | | 4 |

4. QUALITY 质量

4.1 Qualification test 鉴定

Samples must be in accordance with drawings and be taken in a random way in the production in progress.

样件必须与产品图纸一致，并且是生产过程中随机选取的。

4.2 Requalification test 重新鉴定

If changes significantly affecting form, fit, or function are made to the product or to the manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by product engineering.

如果产品或者制造过程中有显著影响外观，装配和功能的设变，质保需要协调按照原先工程定义的测试顺序，重新验证全部或者部分测试项目。

4.3 Acceptance 验收

Acceptance is based on verification that the product meets the requirements of section 3.6. Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmitted.

归咎于测试设备，样件安装或者操作员的失误的失效不应判定产品不合格。当产品失效发生时，需要有纠正措施以及重新提交样件进行验证。在重新验证前，需确认已有纠正措施。

4.4 Quality conformance inspection 质量合格检验

The applicable TE Connectivity quality inspection plan will specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification

TE Connectivity 的质量检验计划将指定适用的质量标准。尺寸和功能要求，应按照适用的产品图纸和本规范。

5. APPENDIX 附件

5.1 Derating inside housing 成品温升降额曲线

Derating inside housing: Current at contact

Force shield cable, cable length 1m

90% Characteristic curve of measured value

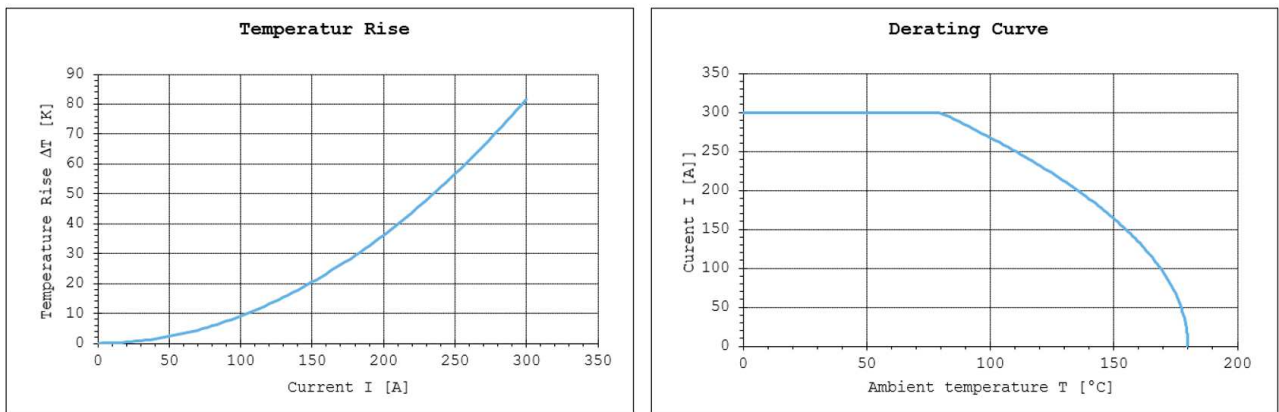


Figure 1: 50mm² Derating and temperature rise – current at shield

Derating inside housing: Current at contact and shield, shield with 10A

Xinhongye 70mm² shield cable, cable length 1m

90% Characteristic curve of measured value

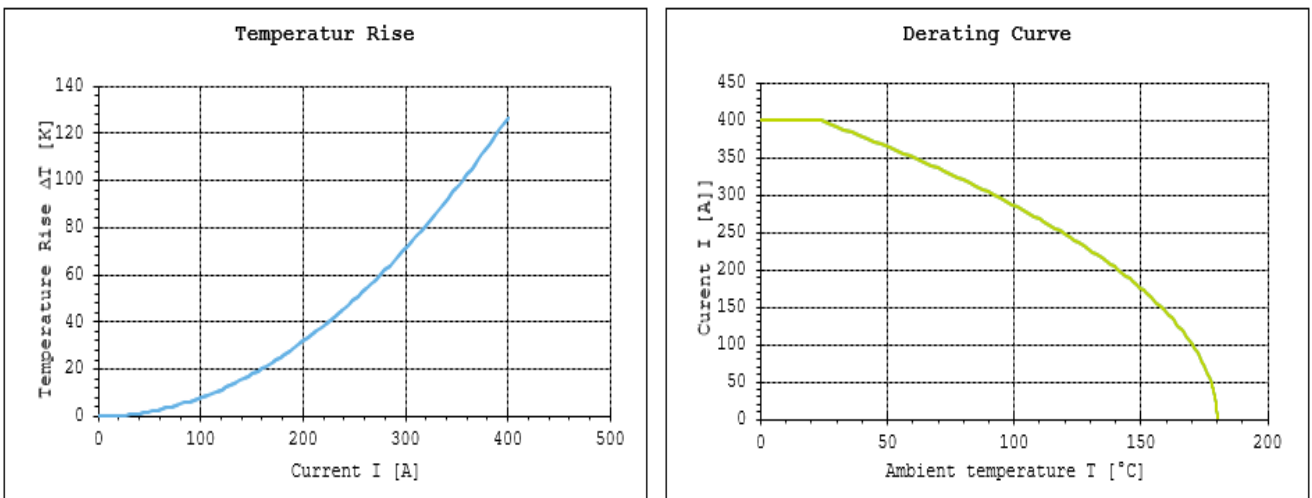


Figure 1: 70mm² Derating and temperature rise – current at shield

Derating inside housing: Current at contact and shield, shield with 10A

Xinhongye 95mm² shield cable, cable length 1m

90% Characteristic curve of measured value

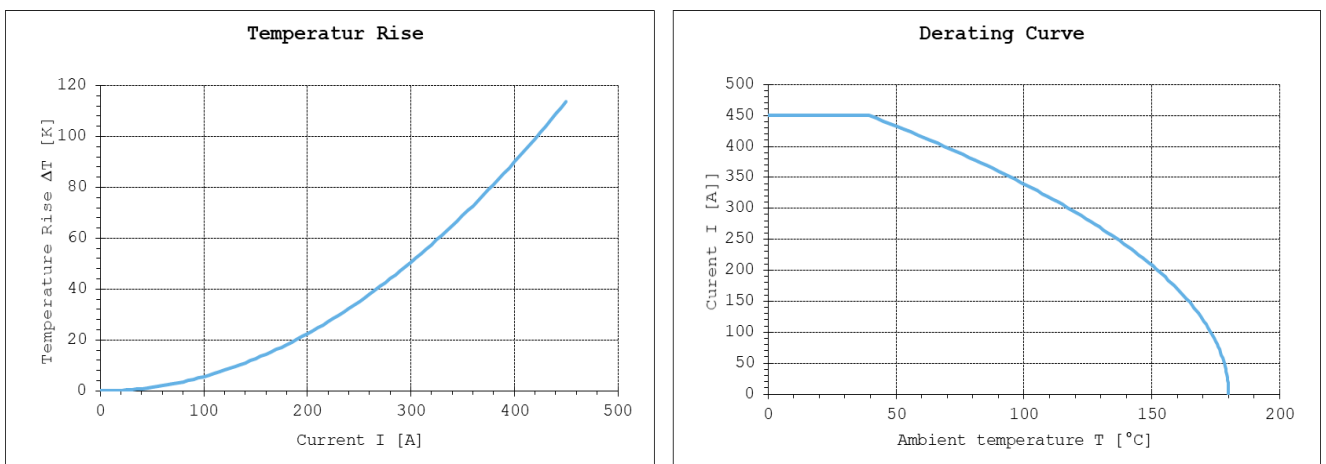


Figure 2: 95mm² Derating and temperature rise – current at shield

5.2 Dynamic load (LV215 S2) 震动性能(LV215 S2)

Dynamic load acc. LV215 (released 2017-09)

Design of vibration device (see picture 2)

Xinhongye 70mm² shield cable, cable length 500mm

Cable fixed after dimensioning A=200mm, B=250mm

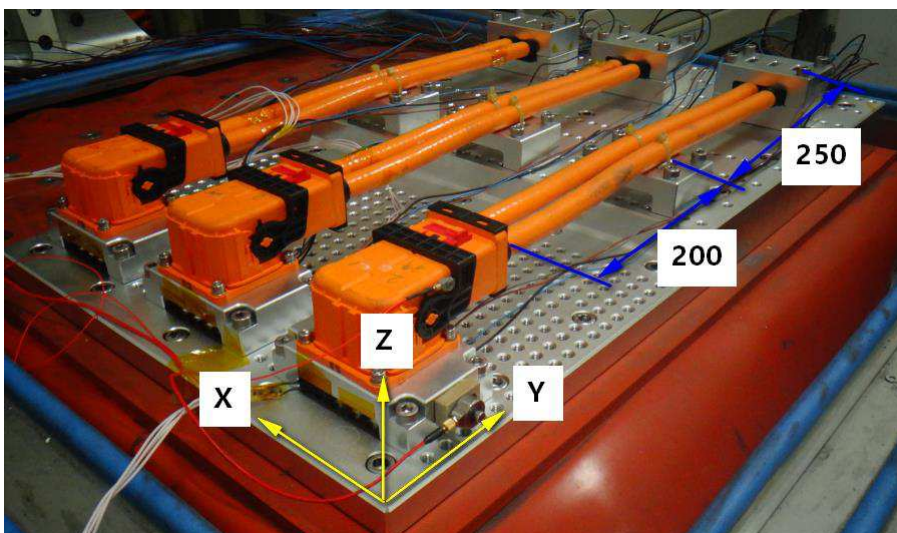
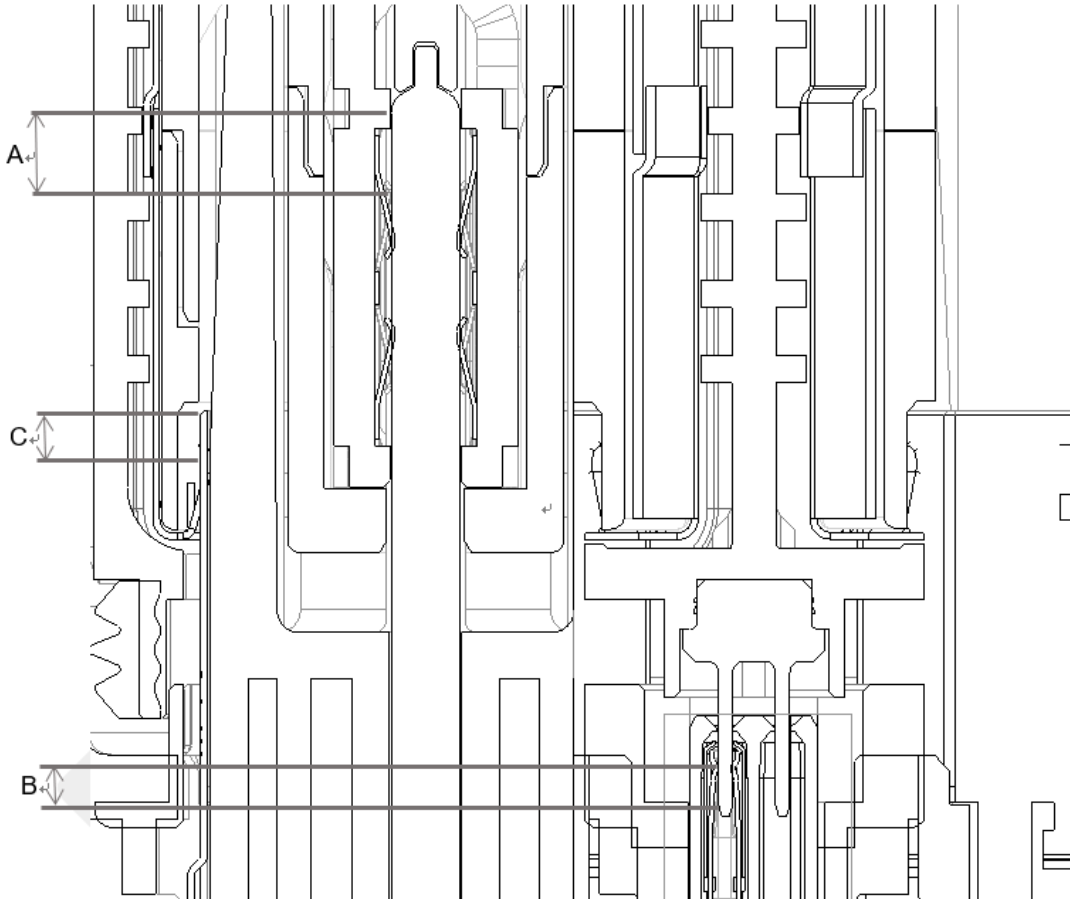


Figure 3: Vibration device (exemplary view)

5.3 Contact engagement length 端子接触长度

- | | | | |
|---|----------------------------------|--------|-------------------|
| A | Contact overlap – Power contact | 电源端子 | $\geq 1\text{mm}$ |
| B | Contact overlap – HVIL contact | 高压互锁端子 | $\geq 1\text{mm}$ |
| C | Contact overlap – Shield contact | 屏蔽接触 | $\geq 1\text{mm}$ |



5.4 Strain Relief 应力释放

System is validated with strain relief at 100mm. Each application has to be evaluated independently with regards to the external influences on the system. Having strain relief, which moves with the connector body, close to the end of the connector will have a positive influence on the performance of the connector. Having strain relief further from the end of the connector or that moves independent of the connector body will have a negative influence on the performance of the connectors.

系统通过 100mm 的应变消除进行验证。每个应用都必须独立评估对系统的外部影响。随连接器主体移动的压力释放，接近连接器的末端将对连接器的性能产生积极影响。应变释放离连接器的末端更远或者连接器主体晃动将对连接器的性能产生负面影响。

