POWERFIT-POWERLOCK 660A

ITT POWERLOCK线上公头 LINE SOURCE 与 KUPO POWERFIT面板母座 PANEL DRAIN 互配载流及温升测试

ITT POWERLOCK LINE SOURCE–KUPO POWERFIT PANEL DRAIN INTERCONNECTION TEMPERATURE-RISE TEST

相关第三方报告 / ASSOCIATED THIRD PARTY REPORT NUMBER	测试日期 / TEST DATE
SEMT Report No. 2026JC (KP) 023	2026.11.18 ~ 2026.11.19

01 目的与范围 / PURPOSE AND SCOPE

目的 / Purpose

验证 KUPO POWERFIT与 ITT POWERLOCK组成的 660A 互配连接组件在规定电流条件下的载流能力及温升性能，评估所测配置在持续通电运行状态下的热稳定性。

To evaluate the current-carrying capability and temperature-rise performance of the 660A interconnection between KUPO POWERFIT and ITT POWERLOCK connectors, and assess the thermal stability of the tested configuration during continuous operation under the specified current conditions.

范围 / Scope

本测试针对 KUPO POWERFIT 与 ITT POWERLOCK 连接器的互配连接组件进行额定电流下的载流及温升测试，监测连接端子、导体、连接器外壳及电缆连接部位等关键位置的温度变化，评估不同品牌连接器互配连接时的温升表现及热稳定性。

This test evaluates the current-carrying and temperature-rise performance of interconnected KUPO POWERFIT and ITT Powerlock connectors under rated current conditions. Temperature measurements are conducted at critical locations, including connection terminals, conductors, connector housings, and cable termination points, to assess the thermal performance and stability of cross-brand connector interconnections.

02 测试依据与验收准则 / TEST BASIS & ACCEPTANCE CRITERIA

验收说明 / Acceptance statement

在规定测试条件下，产品以 660~675A 电流持续运行 3 小时，测试各关键点温升，并确认结果符合：IEC EN61984:2009 / BS EN 61984:2009 连接器 安全要求和试验。

Under specified test conditions, the product was energized at 660~675A for 3 hours. Temperature rise at critical points was measured and verified to comply with the allowable limits specified in IEC EN61984:2009/ BS EN 61984:2009.

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03 测试样品 / TESTED SAMPLES

序号 ITEM	产品 编号 PRODUCT PART NUMBER	配置 CONFIGURATION
1	NLDFT-1-BN-L-C185-M40B	ITT POWERLOCK 660A 线上公头 LINE SOURCE，配 500 MCM（约 253 mm^2）电缆 ITT POWERLOCK 660A LINE SOURCE WITH 500 MCM (APPROX. 253 mm^2) CABLE
2	PFPD-1BN-T7	KUPO POWERFIT 750A 面板母座，配 400 mm^2 电缆 KUPO POWERFIT 750A PANEL DRAIN WITH 400 mm^2 CABLE

04 测试设备 / TESTING EQUIPMENT

设备名称 INSTRUMENT	校准日期 CALIBRATION DATE
大电流发生器 HIGH-CURRENT GENERATOR	2026.7.28
多路温度测试仪 MULTI-CHANNEL TEMPERATURE TESTER	2026.7.12
钳形万用表 CLAMP-ON MULTIMETER	2026.7.12

05 测试条件 / TEST PARAMETERS & CONDITIONS

测试参数 PARAMETER	测试条件 CONDITION
环境温度 AMBIENT TEMPERATURE	19.2 °C
试验电流 TEST CURRENT	664 A
试验电压 TEST VOLTAGE	0.374 V
试验频率 TEST FREQUENCY	50 Hz
试验持续时间: TEST RUN DURATION	3 hours

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06 评估汇总 / EVALUATION SUMMARY

准则 CRITERION	结果 RESULT	判定 ASSESSMENT
最大允许温度 MAXIMUM ALLOWABLE TEMPERATURE	125 °C	
最高记录温升（高于环境温度） MAXIMUM RECORDED TEMPERATURE RISE	27.0 °C	通过 PASS
外壳最高记录温升（高于环境温度） MAXIMUM RECORDED TEMPERATURE RISE OF OUTER CASING	14.5 °C	通过 PASS
温升在 IEC EN 61984:2009 / BS EN 61984:2009 允许范围内。 TEMPERATURE RISE WITHIN IEC EN 61984:2009 / BS EN 61984:2009 ALLOWABLE LIMITS		通过 PASS
所测互配组件温升性能评估 TEMPERATURE-RISE ASSESSMENT OF THE TESTED ASSEMBLY		通过 PASS

所测互配组件结论 / INTERCONNECTION COMPATIBILITY CONCLUSION

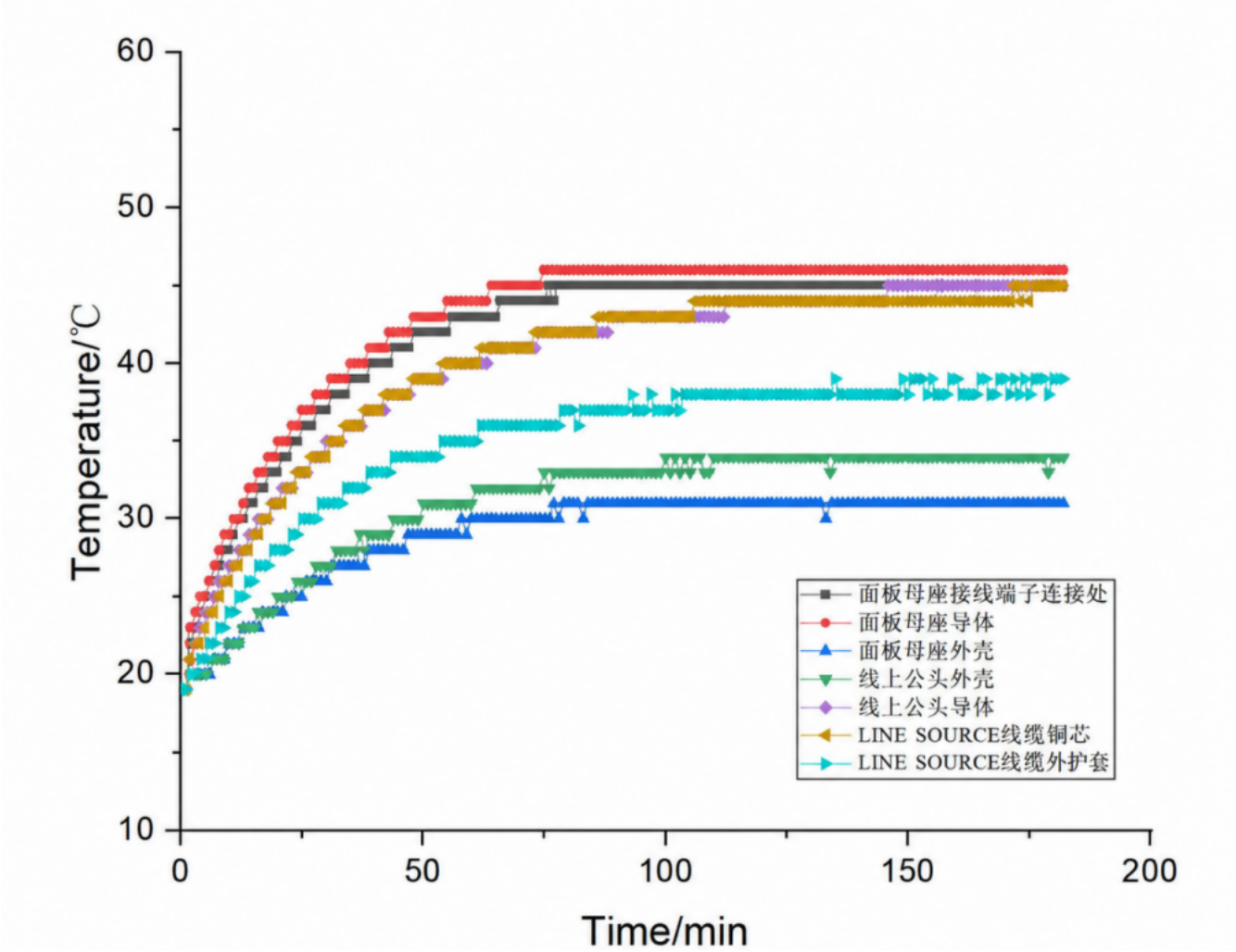
KUPO POWERFIT 与 ITT POWERLOCK 连接器在 660~675A 电流下持续运行 3 小时，各关键测温点的温升均符合 IEC/EN 61984:2009 / BS EN 61984:2009 相关要求，验证了该互配连接配置的热稳定性，并支持其在规定条件下的安全互配使用。

KUPO POWERFIT and ITT POWERLOCK connectors were tested at 660~675A for 3 hours, with temperature rise at all critical points meeting the applicable requirements of IEC/EN 61984:2009 / BS EN 61984:2009. The results confirm the thermal stability of the tested interconnection and support safe cross-brand interoperability under the specified conditions.

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07 温度试验曲线 / TEMPERATURE TEST CURVES



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08 测量结果 / MEASURED RESULTS

序号 NO.	测量点 MEASUREMENT POINT	环境温度 (℃) AMBIENT	实测值 (℃) MEASURED	温度变化* RISE / Δ	测试电流 (A) LOAD (A)
1	ITT POWERLOCK 线上公头 Line Source 接线端子连接处 ITT LINE SOURCE LUG CONNECTION	19.2	45.3	26.1	664
2	ITT POWERLOCK 线上公头 Line Source 导体 ITT LINE SOURCE CONDUCTOR	19.2	46.2	27.0	664
3	ITT POWERLOCK 线上公头 Line Source 外壳 ITT LINE SOURCE CASING	19.2	31.1	11.9	664
4	KUPO POWERFIT 面板母座 Panel Drain 外壳 POWERFIT PANEL DRAIN CASING	19.2	33.7	14.5	664
5	KUPO POWERFIT 面板母座 Panel Drain 导体 POWERFIT PANEL DRAIN CONDUCTOR	19.2	45.3	26.1	664
6	Line Source 线缆铜芯 SOURCE CABLE COPPER CORE	19.2	44.8	25.6	664
7	Line Source 线缆护套 SOURCE CABLE JACKET	19.2	39.4	20.2	664

* 温升 = 实测温度 - 环境温度 / Rise = Measured temperature - Ambient temperature

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