POWERFIT-POWERSAFE 800A

KUPO POWERFIT LINE SOURCE – PHASE 3 POWERSAFE PANEL DRAIN INTERCONNECTION TEMPERATURE-RISE TEST

ASSOCIATED THIRD-PARTY REPORT NUMBER	TEST DATE
SEMT Report No. 2026JC (KP) 017	2026-10-28

01 PURPOSE AND SCOPE

Purpose

To evaluate the current-carrying capability and temperature-rise performance of cross-brand interconnections between KUPO POWERFIT and Phase 3 POWERSAFE connectors under rated current conditions, assessing their electrical connection reliability and thermal safety during continuous operation and providing test evidence to support their interoperability and safe use.

Scope

This test evaluates the current-carrying and temperature-rise performance of interconnected KUPO POWERFIT and Phase 3 POWERSAFE 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 TEST BASIS AND ACCEPTANCE CRITERIA

Acceptance statement

Under specified test conditions, the product was energized at 800–815A for 3 hours. Temperature rise at critical points was measured and verified to comply with the allowable limits specified in IEC/EN 61984:2009 / BS EN 61984:2009.

03 TESTED SAMPLES

ITEM	PRODUCT PART NUMBER	CONFIGURATION
1	**PFLS-2BK-C300-400-M40-M50**	KUPO POWERFIT 800A line source connector, assembled with 400 mm² cable
2	**SPD-2-BK-T8**	Phase 3 POWERSAFE 800A panel drain connector, assembled with 400 mm² cable

04 TESTING EQUIPMENT

INSTRUMENT	CALIBRATION DATE
High-current generator	2026-07-28
Multi-channel temperature tester	2026-07-12
Clamp-on multimeter	2026-07-12

05 TEST PARAMETERS AND CONDITIONS

PARAMETER	CONDITION
Ambient temperature	23.0°C
Test current	804A
Test voltage	0.343V
Test frequency	50 Hz
Test run duration	3 hours

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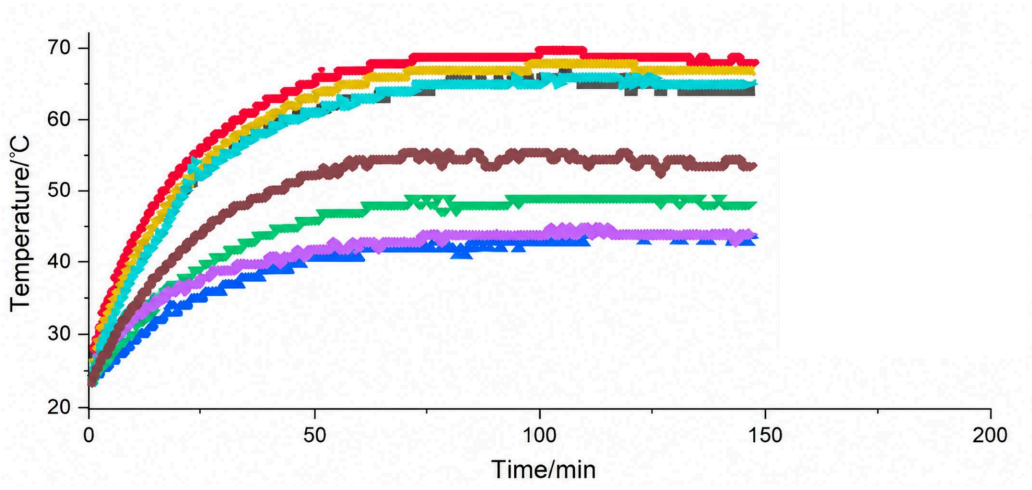
06 EVALUATION SUMMARY

CRITERION	RESULT	ASSESSMENT
Maximum allowable temperature	125°C	
Maximum recorded temperature rise of contacts (above ambient)	47.0°C	PASS
Maximum recorded temperature rise of outer casing (above ambient)	26.1°C	PASS
Temperature rise within IEC/EN 61984:2009 / BS EN 61984:2009 allowable limits		PASS
Cross-brand interconnection compatibility assessment		PASS

Interconnection compatibility conclusion

KUPO POWERFIT and Phase 3 POWERSAFE 800A connectors were tested at 800–815A 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.

07 TEMPERATURE RISE TEST CURVE



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08 MEASURED RESULTS

NO.	MEASUREMENT POINT	AMBIENT (°C)	MEASURED (°C)	RISE / Δ*	LOAD (A)
1	POWERSAFE drain-lug connection point	23.0	67.2	44.2	804
2	POWERSAFE drain conductor	23.0	70.0	47.0	804
3	POWERSAFE drain outer casing	23.0	43.7	20.7	804
4	POWERFIT source outer casing	23.0	49.1	26.1	804
5	POWERFIT source conductor	23.0	68.2	45.2	804
6	Source cable core	23.0	66.0	43.0	804
7	Source cable jacket	23.0	54.8	31.8	804

* Rise = Measured − Ambient

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