POWERFIT-POWERLOCK 660A

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

ASSOCIATED THIRD-PARTY REPORT NUMBER	TEST DATE
SEMT Report No. 2026JC (KP) 016	2026-10-27

01 PURPOSE AND SCOPE

Purpose

To evaluate the current-carrying capability and temperature-rise performance of the 660A interconnection between a KUPO POWERFIT line source and an ITT POWERLOCK panel drain, fitted with 500 MCM (approximately 253 mm^2) cable, and assess the thermal stability of the tested configuration during continuous operation under the specified current conditions.

Scope

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 TEST BASIS AND ACCEPTANCE CRITERIA

Acceptance statement

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/EN 61984:2009 / BS EN 61984:2009.

03 TESTED SAMPLES

ITEM	PRODUCT PART NUMBER	CONFIGURATION
1	**PFLS-1BN-C300M40**	KUPO POWERFIT 750A line source with 500 MCM (approx. 253 mm²) cable
2	**NPDFT-1-BN-T6**	ITT POWERLOCK 660A panel drain with 500 MCM (approx. 253 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	22.6°C
Test current	663A
Test voltage	0.378V
Test frequency	50 Hz
Test run duration	3 hours

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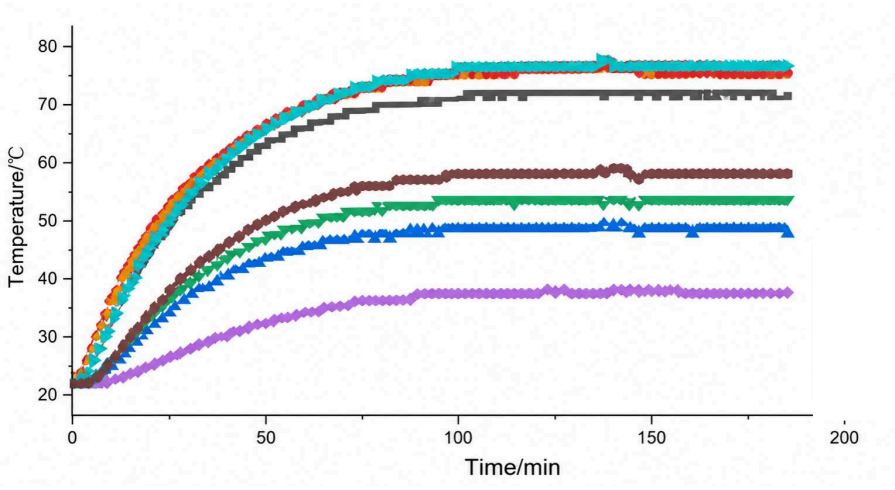
06 EVALUATION SUMMARY

CRITERION	RESULT	ASSESSMENT
Maximum allowable temperature	125°C	
Maximum recorded temperature rise (above ambient)	53.4°C	PASS
Maximum recorded temperature rise of outer casing (above ambient)	31.4°C	PASS
Temperature rise within IEC/EN 61984:2009 / BS EN 61984:2009 allowable limits		PASS
Temperature-rise assessment of the tested assembly		PASS

Interconnection compatibility conclusion

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.

07 TEMPERATURE TEST CURVES



08 MEASURED RESULTS

NO.	MEASUREMENT POINT	AMBIENT (°C)	MEASURED (°C)	RISE / Δ*	LOAD (A)
1	POWERLOCK panel drain lug connection	22.6	72.1	49.5	663
2	POWERLOCK panel drain conductor	22.6	76.0	53.4	663
3	POWERLOCK panel drain casing	22.6	49.7	27.1	663
4	POWERFIT line source casing	22.6	54.0	31.4	663
5	POWERFIT line source conductor	22.6	75.9	53.3	663
6	Source cable copper core	22.6	76.0	53.4	663
7	Source cable jacket	22.6	59.2	36.6	663

* Rise = Measured − Ambient

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