POWERFIT–POWERLOCK 660A

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

ASSOCIATED THIRD-PARTY REPORT NUMBER	TEST DATE
SEMT Report No. 2026JC (KP) 018A	**2026-11-04**

01 PURPOSE AND SCOPE

Purpose

To evaluate the current-carrying capability and temperature-rise performance of the 660 A 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.

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 660–675 A 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	PFPS-1BN-T7	KUPO POWERFIT 750 A panel source, assembled with 400 mm² cable
2	NLDFT-1-BN-L-C240-M40B	ITT POWERLOCK 660 A line drain, assembled with 500 MCM (approximately 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	21.7 °C
Test current	664 A
Test voltage	0.380 V
Test frequency	50 Hz
Test run duration	3 hours

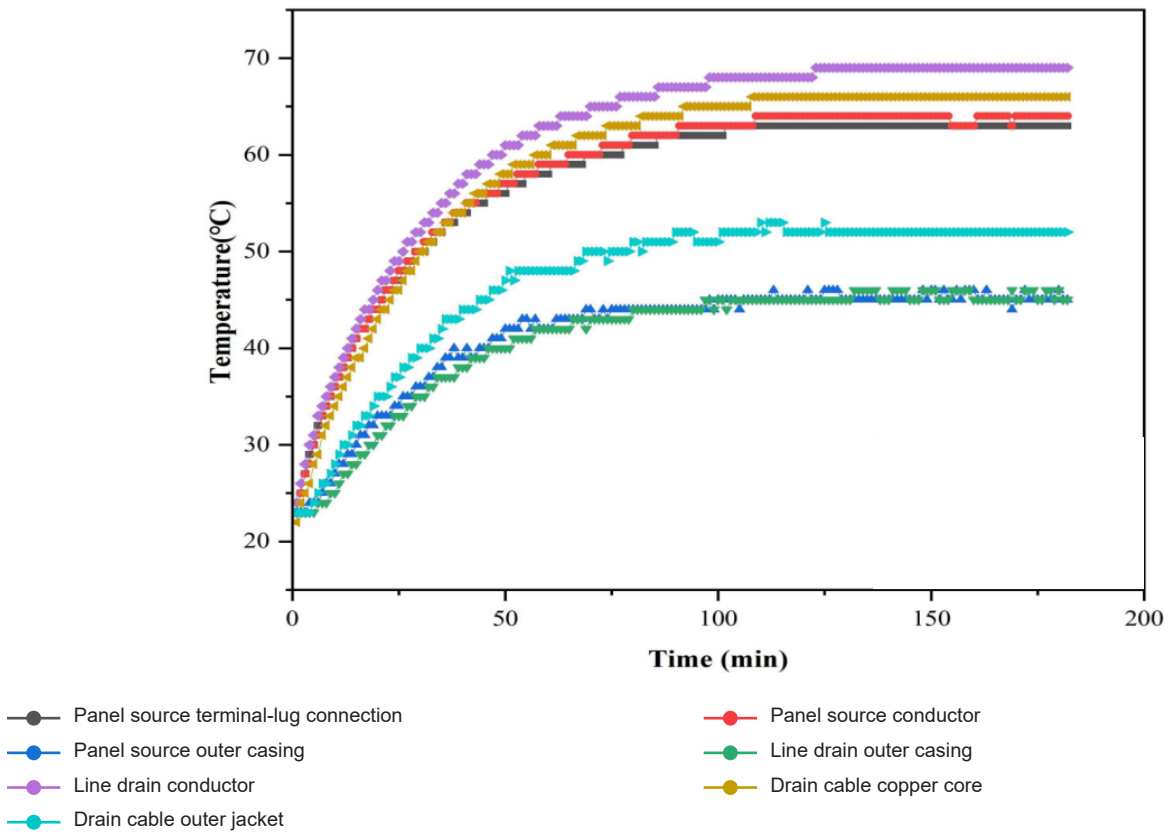
06 EVALUATION SUMMARY

CRITERION	RESULT	ASSESSMENT
Maximum allowable temperature	125 °C	
Maximum recorded temperature rise (above ambient)	47.1 °C	PASS
Maximum recorded temperature rise of outer casing (above ambient)	24.6 °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 660–675 A 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* (°C)	LOAD (A)
1	POWERFIT panel source terminal-lug connection	21.7	63.2	41.5	664
2	POWERFIT panel source conductor	21.7	63.8	42.1	664
3	POWERFIT panel source outer casing	21.7	46.1	24.4	664
4	POWERLOCK line drain outer casing	21.7	46.3	24.6	664
5	POWERLOCK line drain conductor	21.7	68.8	47.1	664
6	Drain cable copper core	21.7	66.0	44.3	664
7	Drain cable outer jacket	21.7	53.1	31.4	664

* Rise = Measured temperature − Ambient temperature

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