# POWERFIT–POWERLOCK 660A

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

| ASSOCIATED THIRD-PARTY REPORT NUMBER | TEST DATE |
| --- | --- |
| **SEMT Report No. 2026JC (KP) 023** | **2026-11-18 to 2026-11-19** |

## 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 | NLDFT-1-BN-L-C185-M40B | ITT POWERLOCK 660 A line source, assembled with 500 MCM (approximately 253 mm²) cable |
| 2 | PFPD-1BN-T7 | KUPO POWERFIT 750 A panel drain, 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 | 19.2 °C |
| Test current | 664 A |
| Test voltage | 0.374 V |
| Test frequency | 50 Hz |
| Test run duration | 3 hours |

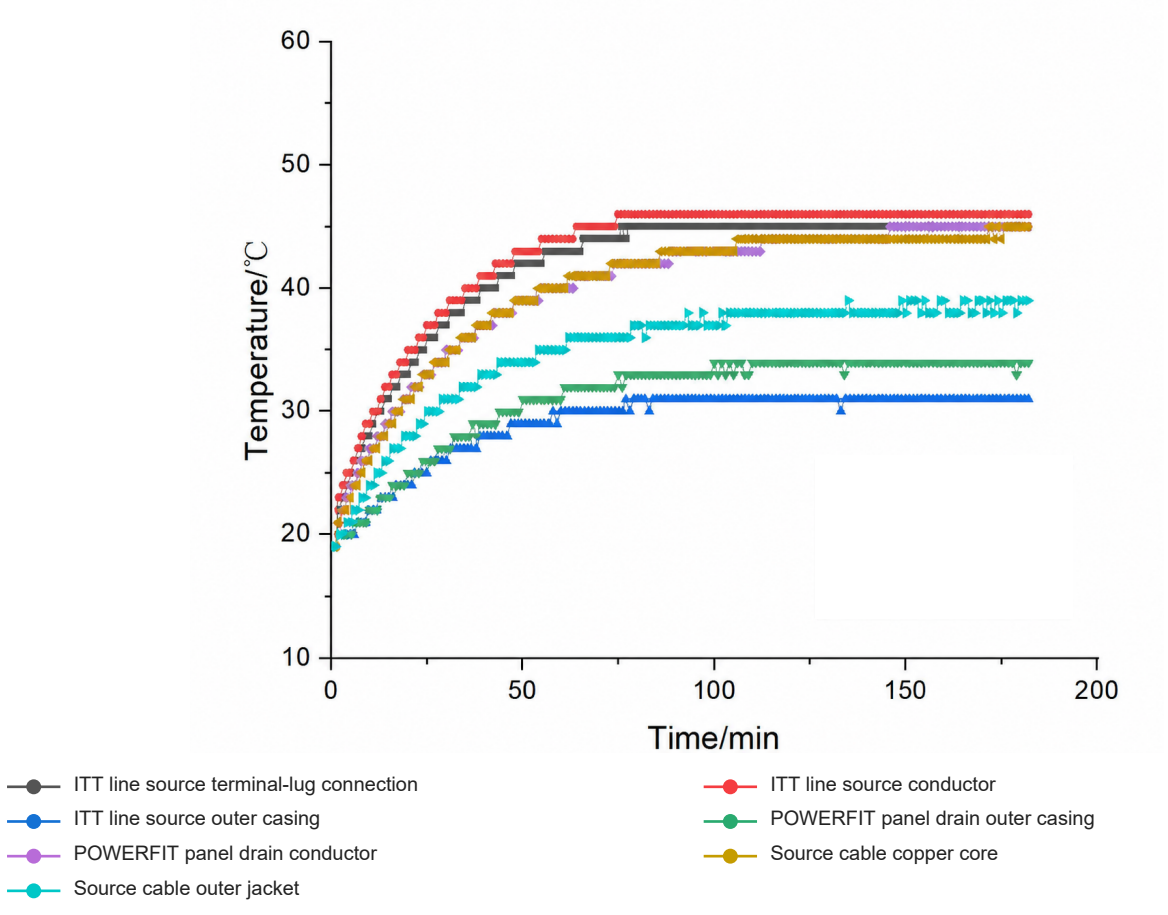
## 06 EVALUATION SUMMARY

| CRITERION | RESULT | ASSESSMENT |
|---|---|---|
| Maximum allowable temperature | 125 °C | |
| Maximum recorded temperature rise (above ambient) | 27.0 °C | PASS |
| Maximum recorded temperature rise of outer casing (above ambient) | 14.5 °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 ΔT* (°C) | LOAD (A) |
|---|---|---|---|---|---|
| 1 | ITT POWERLOCK line source terminal-lug connection | 19.2 | 45.3 | 26.1 | 664 |
| 2 | ITT POWERLOCK line source conductor | 19.2 | 46.2 | 27.0 | 664 |
| 3 | ITT POWERLOCK line source outer casing | 19.2 | 31.1 | 11.9 | 664 |
| 4 | KUPO POWERFIT panel drain outer casing | 19.2 | 33.7 | 14.5 | 664 |
| 5 | KUPO POWERFIT panel drain conductor | 19.2 | 45.3 | 26.1 | 664 |
| 6 | Source cable copper core | 19.2 | 44.8 | 25.6 | 664 |
| 7 | Source cable outer jacket | 19.2 | 39.4 | 20.2 | 664 |

* Rise = Measured temperature − Ambient temperature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