

TR-05662

Powersafe Panel Source T5



Test Date: 07/07/16 Operator: D.Maclachlan

TYPE AND DESCRIPTION OF TEST

POWERSAFE PANEL SOURCE T5. DIRECT RESISTANCE WITH 500A CURRENT.

OBJECTIVE

The object of this test is to assess the current carrying capacity of the Powersafe Panel Source T5 connector.

TEST METHOD

A specified test current shall be applied to the contacts of the specimen for a minimum period of 3 hours or until equilibrium is reached. (Less than 1 degree per hour).
The Powersafe Connectors will be fed with between 500A and 510A from the 3000A load unit via 2 x 1m lengths of HO7RN-F single core 150mm² cable.

REQUIREMENTS

The connectors must be capable of carrying the specified test current for a minimum period of 3 hours without exceeding the specified temperature rise.

TEST ITEMS

- 1x Powersafe S120 Line Drain Connector terminated with 150mm² cable
- 1x Powersafe Panel Source T5 Connector terminated with A30-M12 Lug on 150mm² cable

EQUIPMENT USED

| INSTRUMENT | DESCRIPTION | CALIBRATION EXPIRY DATE |
|---------------------|---|-------------------------|
| Current Generation | T & R PCU1 Mk3 P.C.I.T.S. (21TE0216) | 20/01/2017 |
| External Load Unit | 3000A Loading Unit | 20/01/2017 |
| Digital Thermometer | YF-160A Thermocoupler + 6 Probes | 04/02/2017 |

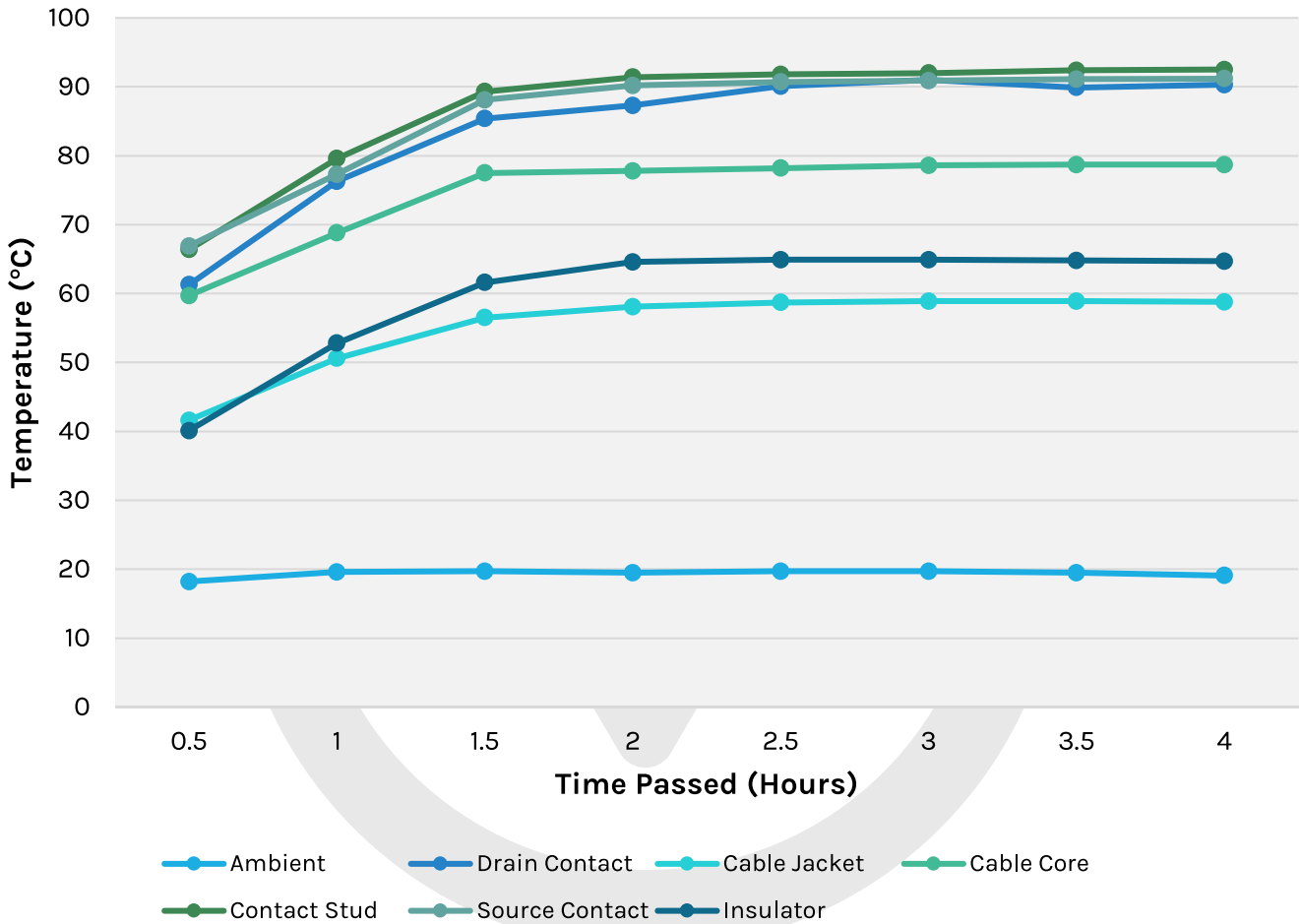


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| TIME | AMBIENT | DRAIN CONTACT | CABLE JACKET | CABLE CORE | CONTACT STUD | SOURCE CONTACT | INSULATOR | AMPS |
|------|---------|---------------|--------------|------------|--------------|----------------|-----------|-------|
| 0.5 | 18.2 | 61.3 | 41.6 | 59.7 | 66.4 | 66.9 | 40.1 | 504.0 |
| 1 | 19.6 | 76.3 | 50.6 | 68.8 | 79.6 | 77.3 | 52.8 | 502.0 |
| 1.5 | 19.7 | 85.4 | 56.5 | 77.5 | 89.3 | 88.1 | 61.6 | 504.0 |
| 2 | 19.5 | 87.3 | 58.1 | 77.8 | 91.4 | 90.2 | 64.6 | 502.0 |
| 2.5 | 19.7 | 90.1 | 58.7 | 78.2 | 91.8 | 90.7 | 64.9 | 505.0 |
| 3 | 19.7 | 91.0 | 58.9 | 78.6 | 92.0 | 90.9 | 64.9 | 505.0 |
| 3.5 | 19.5 | 89.9 | 58.9 | 78.7 | 92.4 | 91.1 | 64.8 | 507.0 |
| 4 | 19.1 | 90.3 | 58.8 | 78.7 | 92.5 | 91.2 | 64.7 | 507.0 |

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FINAL RESULTS

| PROBE POSITION | TEMPERATURE (C) | T (MEASURED-AMBIENT) | AMPS |
|-----------------------------|-----------------|----------------------|------|
| Ambient | 19.1 | N/A | N/A |
| Line Drain Contact (P1) | 90.3 | 71.2 | 507A |
| Cable Jacket (P2) | 58.8 | 39.7 | 507A |
| Cable Core (P3) | 78.7 | 59.6 | 507A |
| Panel Contact Stud (P4) | 92.5 | 73.4 | 507A |
| Panel Source Contact (P5) | 91.2 | 72.1 | 507A |
| Panel Source Insulator (P6) | 64.7 | 45.6 | 507A |

CONCLUSION

| MEASUREMENT | RESULT |
|---|--------|
| Maximum Allowable Temperature | 125°C |
| Maximum Recorded Temperature Rise @ Insulated Body (above ambient) | 45.6°C |
| Maximum Allowable Temperature of Contacts | 125°C |
| Maximum Recorded Temperature Rise (above ambient) | 73.4°C |
| TEMPERATURE RISE WITHIN BS EN 61984 -2009 AND VDE ALLOWABLE LIMITS. | PASS |



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