

TR-05659

PowersafeConnectors (530A Test)



Test Date: 11/07/16 Operator: D.Maclachlan

TYPE AND DESCRIPTION OF TEST

POWERSAFE 500A CONNECTORS. DIRECT RESISTANCE WITH 530A CURRENT.

OBJECTIVE

The object of this test is to assess the current carrying capacity of the Powersafe 500amp Connectors.

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 test will consist of a mated pair of Powersafe Connectors (Line Source to Line Drain) terminated onto 150mm² cables that are attached to the 3000amp load unit. A current of 530amps will be used for this test.

REQUIREMENTS

The mated 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 SLS-X-XX-S120-M40A terminated onto 150mm² cable.
1x Powersafe SLD-X-XX-S120-M40A terminated onto 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 + 5 Probes	04/02/2017



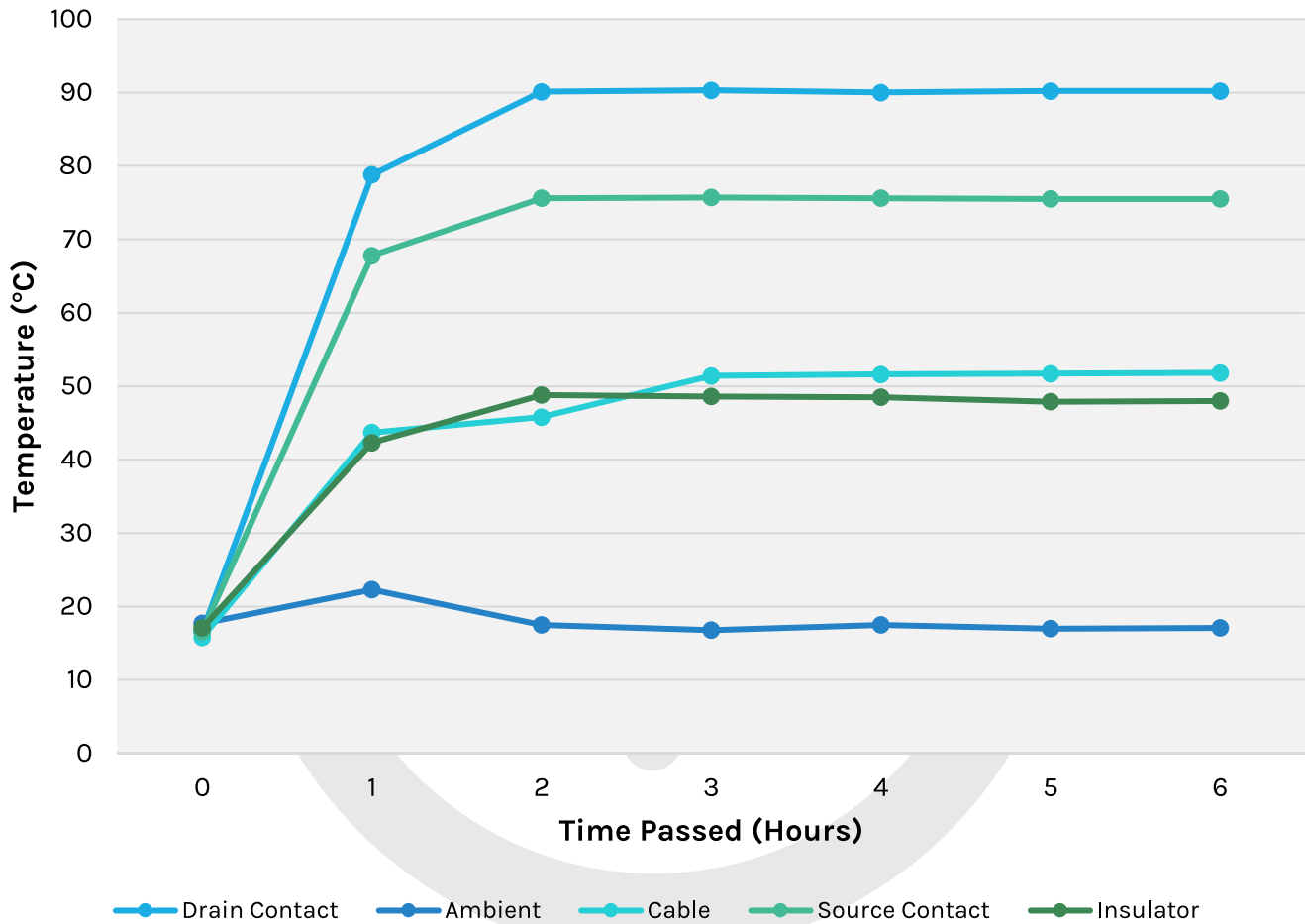
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PHASE 3

TIME	DRAIN CONTACT	AMBIENT	CABLE	SOURCE CONTACT	INSULATOR	AMPS
0	16.6	17.7	15.8	16.6	17.1	530.0
1	78.8	22.3	43.7	67.8	42.3	530.0
2	90.1	17.5	45.8	75.6	48.8	530.0
3	90.3	16.8	51.4	75.7	48.6	532.0
4	90.0	17.5	51.6	75.6	48.5	530.0
5	90.2	17.0	51.7	75.5	47.9	530.0
6	90.2	17.1	51.8	75.5	48.0	532.0

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FINAL RESULTS

PROBE POSITION	TEMPERATURE (C)	T (MEASURED-AMBIENT)	AMPS
Ambient	17.1	N/A	N/A
Cable Core (P1)	51.8	34.7	532A
Drain Contact (P2)	90.2	73.1	532A
Source Contact (P3)	75.5	58.4	532A
Insulator (P4)	48.0	30.9	532A

CONCLUSION

MEASUREMENT	RESULT
Maximum Allowable Temperature	125°C
Maximum Recorded Temperature Rise @ Insulator Body (above ambient)	30.9°C
Maximum Allowable Temperature of Contacts	125°C
Maximum Recorded Temperature Rise (above ambient)	73.1°C
TEMPERATURE RISE WITHIN EN, BS AND VDE ALLOWABLE LIMITS.	PASS



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