

TR-05671

Powersafe Right Angled Connector (500amp testing)



Test Date: 20/07/16

Operator: D.Maclachlan

TYPE AND DESCRIPTION OF TEST

POWERSAFE RIGHT ANGLED CONNECTOR. DIRECT RESISTANCE WITH 500A CURRENT.

OBJECTIVE

The object of this test is to assess the current carrying capacity of the Powersafe Right Angled 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 Right Angled Connector will be terminated with 150mm² (300MCM) cable fed with 500A from the 3000A load. It will be coupled with a Powersafe Panel Source 500A connector on 150mm² (300MCM) cable.

REQUIREMENTS

The Right Angled Connector 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 Right Angled Connector terminated with 150mm² (300MCM) cable.
- 1x Powersafe Panel Source 500A connector terminated with 150mm² (300MCM) 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 + 4 Probes	04/02/2017



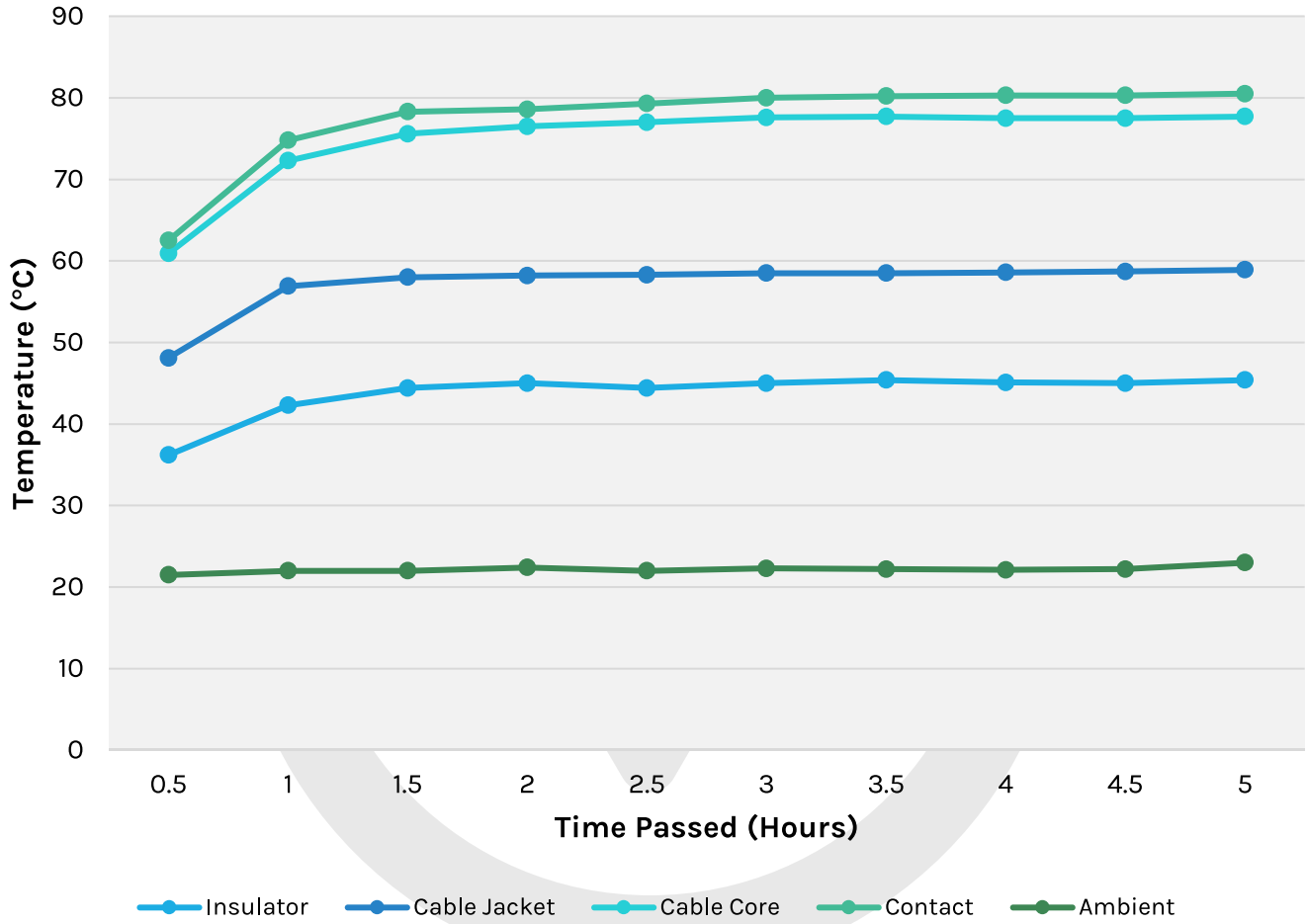
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TIME	INSULATOR	CABLE JACKET	CABLE CORE	CONTACT	AMBIENT	AMPS
0.5	36.2	48.1	60.9	62.5	21.5	505.0
1	42.3	56.9	72.3	74.8	22.0	508.0
1.5	44.4	58.0	75.6	78.3	22.0	507.0
2	45.0	58.2	76.5	78.6	22.4	507.0
2.5	44.4	58.3	77.0	79.3	22.0	509.0
3	45.0	58.5	77.6	80.0	22.3	507.0
3.5	45.4	58.5	77.7	80.2	22.2	511.0
4	45.1	58.6	77.5	80.3	22.1	510.0
4.5	45.0	58.7	77.5	80.3	22.2	510.0
5	45.4	58.9	77.7	80.5	23.0	510.0

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FINAL RESULTS

PROBE POSITION	TEMPERATURE (C)	T (MEASURED-AMBIENT)	AMPS
Ambient	23.0	N/A	510A
Contact (P1)	80.5	57.5	510A
Cable Core (P2)	77.7	54.7	510A
Cable Jacket (P3)	58.9	35.9	510A
Insulator (P4)	45.4	22.4	510A

CONCLUSION

MEASUREMENT	RESULT
Maximum Allowable Temperature	125°C
Maximum Recorded Temperature Rise @ Right Angled Connector Body (above ambient)	22.4°C
Maximum Allowable Temperature of Contacts	125°C
Maximum Recorded Temperature Rise (above ambient)	57.5°C
TEMPERATURE RISE WITHIN EN, BS AND VDE ALLOWABLE LIMITS.	PASS



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