

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 150mm<sup>2</sup> cable fed with 500A from the 3000A load. It will be coupled with a Powersafe Panel Source 500A connector on 150mm<sup>2</sup> 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 150mm<sup>2</sup> cable.

1x Powersafe Panel Source 500A connector terminated with 150mm<sup>2</sup> 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



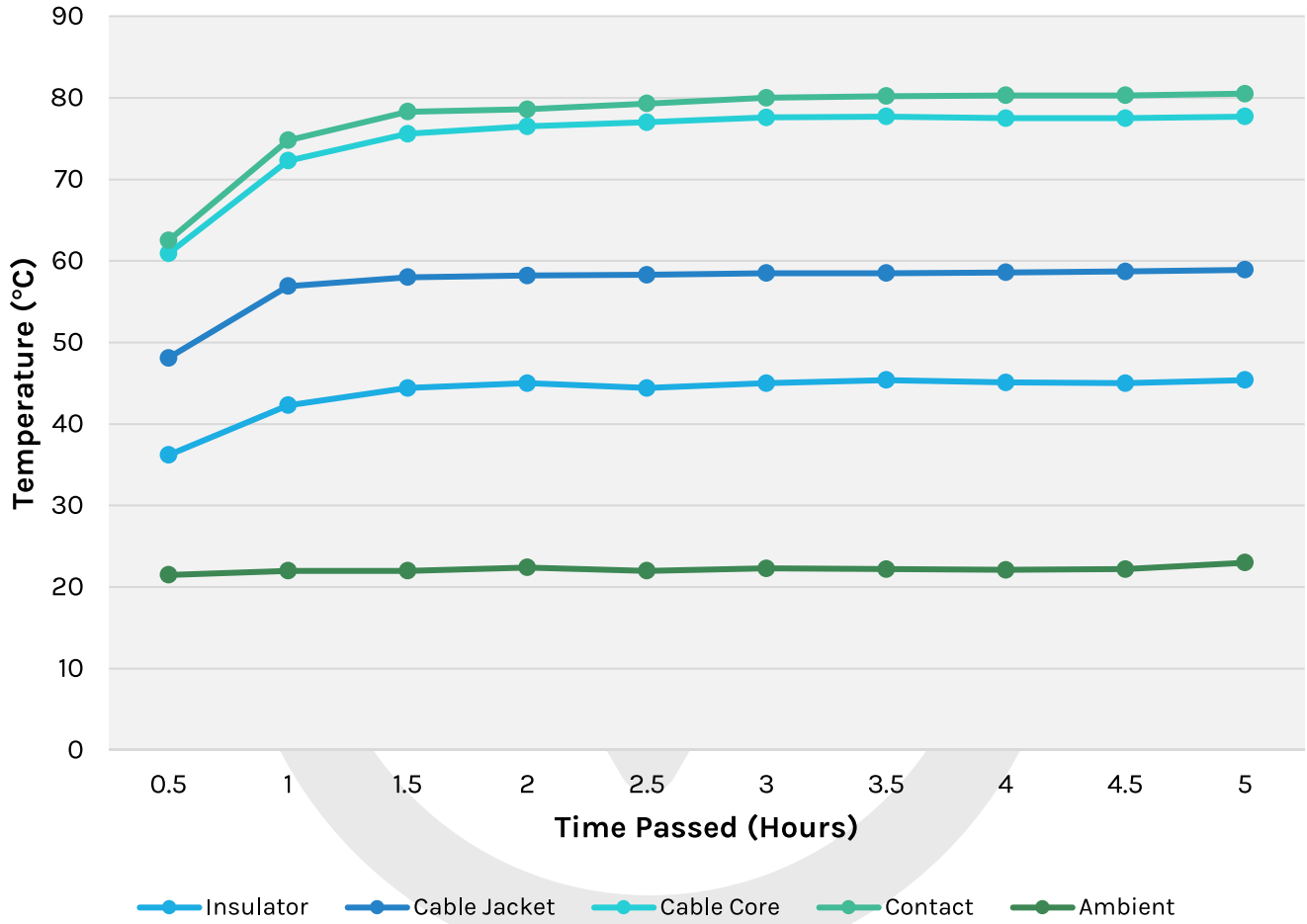
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TIME	INSULATOR	CABLE JACKET	CABLE CORE	CONTACT	AMBIENT	AMPS
0.5	36.2	48.1	60.9	62.5	21.5	505.0
1	42.3	56.9	72.3	74.8	22.0	508.0
1.5	44.4	58.0	75.6	78.3	22.0	507.0
2	45.0	58.2	76.5	78.6	22.4	507.0
2.5	44.4	58.3	77.0	79.3	22.0	509.0
3	45.0	58.5	77.6	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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