

TR-05656

Powersafe 800A Coupler (800amp testing)



Test Date: 08/07/16

Operator: D.Maclachlan

TYPE AND DESCRIPTION OF TEST

POWERSAFE 800A COUPLER. DIRECT RESISTANCE WITH 800A CURRENT.

OBJECTIVE

The object of this test is to assess the current carrying capacity of the Powersafe 800amp Coupler.

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 Coupler will be fed with 800A from the 3000A load unit via Powersafe Line Source 800A connectors on 300mm² (600MCM) cables attached to either side of the unit.

REQUIREMENTS

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

TEST ITEMS

1 x 800A Powersafe Drain Coupler
2 x Powersafe 800A Line Source Connectors terminated onto 300mm² (600MCM) cables.

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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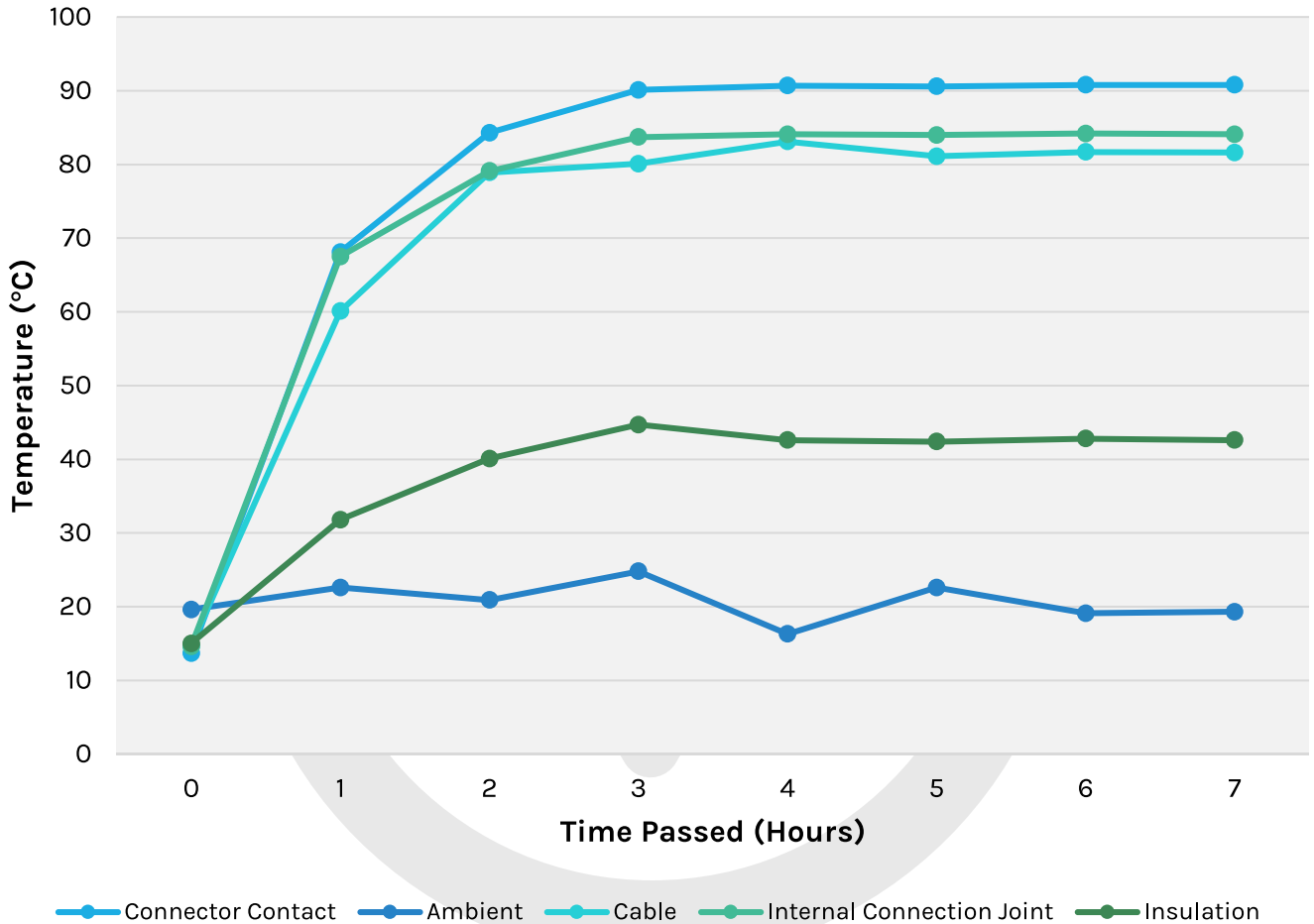
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TIME	CONNECTOR CONTACT	AMBIENT	CABLE	INTERNAL CONNECTION JOINT	INSULATION	AMPS
0	13.7	19.6	14.7	14.6	15.0	800.0
1	68.1	22.6	60.1	67.5	31.8	808.0
2	84.3	20.9	78.9	79.1	40.1	814.0
3	90.1	24.8	80.1	83.7	44.7	807.0
4	90.7	16.3	83.1	84.1	42.6	809.0
5	90.6	22.6	81.1	84.0	42.4	808.0
6	90.8	19.1	81.7	84.2	42.8	805.0
7	90.8	19.3	81.6	84.1	42.6	807.0

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FINAL RESULTS

PROBE POSITION	TEMPERATURE (C)	T (MEASURED-AMBIENT)	AMPS
Ambient	19.3	N/A	N/A
Cable Core (P1)	81.6	62.3	807A
Connection Between Connector & Coupler (P2)	90.8	71.5	807A
Coupler Internal Joint (P3)	84.1	64.8	807A
Coupler Insulator (P4)	42.6	23.3	807A

CONCLUSION

MEASUREMENT	RESULT
Maximum Allowable Temperature	125°C
Maximum Recorded Temperature Rise @ Coupler Insulator (above ambient)	23.3°C
Maximum Allowable Temperature Between Coupler & Connector	125°C
Maximum Recorded Temperature Rise (above ambient)	71.5°C
TEMPERATURE RISE WITHIN EN, BS AND VDE ALLOWABLE LIMITS.	PASS



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