

TR-05653

# Underground Connector (800amp testing)



Test Date: 06/07/16

Operator: D.Maclachlan

## TYPE AND DESCRIPTION OF TEST

UNDERGROUND CONNECTOR. DIRECT RESISTANCE WITH 800A CURRENT.

## OBJECTIVE

The object of this test is to assess the current carrying capacity of the Underground 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 Clamp will be fed with 800A from the 3000A load unit via a Powersafe Line Drain 800A connector on 300mm<sup>2</sup> cable and attached to a copper lug adaptor which is connected to the other side of the load unit.

## REQUIREMENTS

The clamp 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 Underground Connector
- 1x Powersafe 300mm<sup>2</sup> Line Drain Connector
- 1x Copper Lug Adaptor

## 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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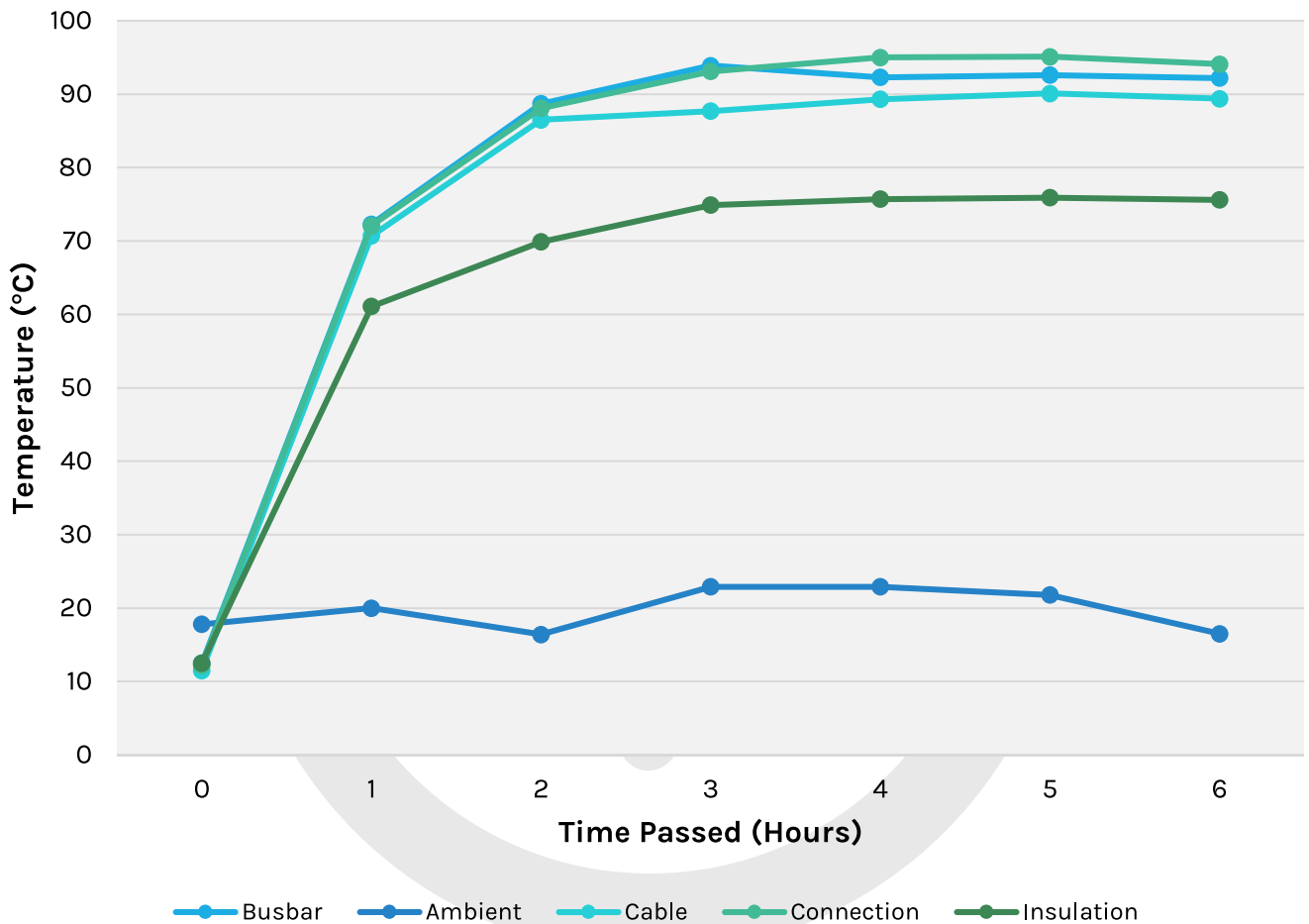
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## PHASE 3

TIME	BUSBAR	AMBIENT	CABLE	CONNECTION	INSULATION	AMPS
0	12.5	17.8	11.5	12.2	12.5	815.0
1	72.3	20.0	70.7	72.1	61.1	807.0
2	88.7	16.4	86.5	88.1	69.9	810.0
3	93.9	18.4	87.7	93.1	74.9	808.0
4	92.3	22.9	89.3	95.0	75.7	801.0
5	92.6	21.8	90.1	95.1	75.9	806.0
6	92.2	16.5	89.4	94.1	75.6	804.0

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## FINAL RESULTS

PROBE POSITION	TEMPERATURE (C)	T (MEASURED-AMBIENT)	AMPS
Ambient	16.5	N/A	N/A
Cable Core (P1)	89.4	72.9	804A
Connection Between Clamp & Lug Adaptor (P2)	94.1	77.6	804A
Lug (P3)	92.2	75.7	804A
Clamp Insulated Body (P4)	75.6	59.1	804A

## CONCLUSION

MEASUREMENT	RESULT
Maximum Allowable Temperature	125°C
Maximum Recorded Temperature Rise @ Insulated Body (above ambient)	59.1°C
Maximum Allowable Temperature Between Clamp & Adaptor	125°C
Maximum Recorded Temperature Rise (above ambient)	77.6°C
TEMPERATURE RISE WITHIN EN, BS AND VDE ALLOWABLE LIMITS.	PASS
ALL INSULATION ON THE CLAMP MEETS WITH IEC 60900 (LIVE WORKING, HAND TOOLS FOR USE UP TO 1000VAC AND 1500VDC)	



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