

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 300mm² (600MCM) 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 (600MCM) 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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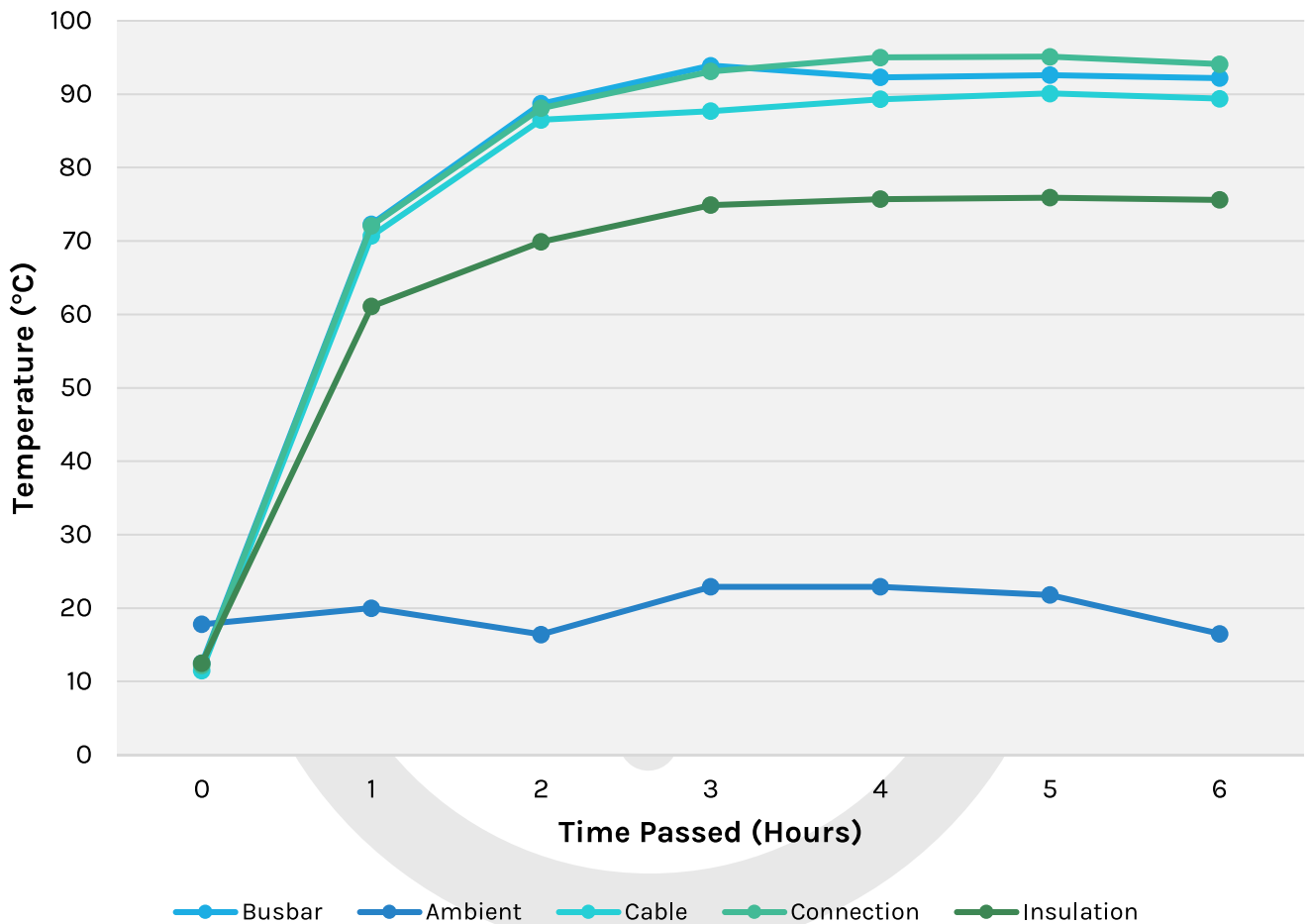
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TIME	BUSBAR	AMBIENT	CABLE	CONNECTION	INSULATION	AMPS
0	12.5	17.8	11.5	12.2	12.5	815.0
1	72.3	20.0	70.7	72.1	61.1	807.0
2	88.7	16.4	86.5	88.1	69.9	810.0
3	93.9	18.4	87.7	93.1	74.9	808.0
4	92.3	22.9	89.3	95.0	75.7	801.0
5	92.6	21.8	90.1	95.1	75.9	806.0
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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