

TR-05654

Horizontal Clamp (800amp testing)



Test Date: 08/07/16

Operator: D.Maclachlan

TYPE AND DESCRIPTION OF TEST

HORIZONTAL CLAMP. DIRECT RESISTANCE WITH 800A CURRENT.

OBJECTIVE

The object of this test is to assess the current carrying capacity of the Horizontal Clamp.

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 busbar 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 Horizontal Clamp
- 1x Powersafe 300mm (600MCM) Line Drain Connector
- 1x Busbar

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



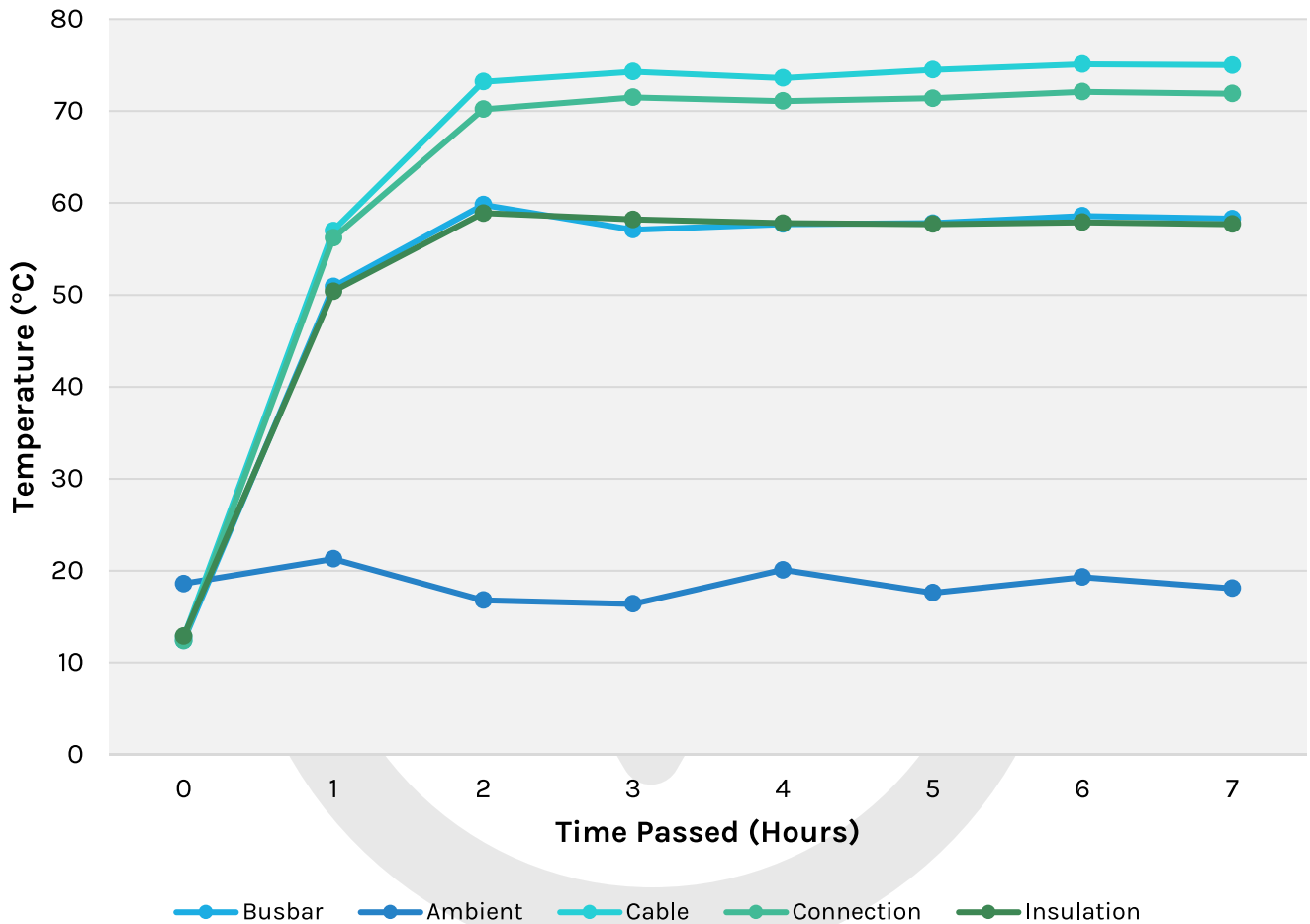
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TIME	BUSBAR	AMBIENT	CABLE	CONNECTION	INSULATION	AMPS
0	12.4	18.6	12.8	12.4	12.9	800.0
1	50.9	21.3	57.0	56.2	50.4	807.0
2	59.8	16.8	73.2	70.2	58.9	810.0
3	57.1	16.4	74.3	71.5	58.2	811.0
4	57.7	20.1	73.6	71.1	57.8	816.0
5	57.8	17.6	74.5	71.4	57.7	810.0
6	58.6	19.3	75.1	72.1	57.9	818.0
7	58.3	18.1	75.0	71.9	57.7	817.0

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FINAL RESULTS

PROBE POSITION	TEMPERATURE (C)	T (MEASURED-AMBIENT)	AMPS
Ambient	18.1	N/A	N/A
Cable Core (P1)	75.0	56.9	817A
Connection Between Clamp & Busbar (P2)	71.9	53.8	817A
Busbar (P3)	58.3	40.2	817A
Clamp Insulated Body (P4)	57.7	39.6	817A

CONCLUSION

MEASUREMENT	RESULT
Maximum Allowable Temperature	125°C
Maximum Recorded Temperature Rise @ Insulated Body (above ambient)	39.6°C
Maximum Allowable Temperature Between Clamp & Busbar	125°C
Maximum Recorded Temperature Rise (above ambient)	53.8°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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