

TR-05650

Mini G Clamp (500amp testing)



Test Date: 04/07/16

Operator: D.Maclachlan

TYPE AND DESCRIPTION OF TEST

MINIATURE G CLAMP. DIRECT RESISTANCE WITH 500A CURRENT.

OBJECTIVE

The object of this test is to assess the current carrying capacity of the Miniature G 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 500A from the 3000A load unit via a Powersafe Line Drain 500A connector on 150mm² (300MCM) 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 Miniature G Clamp
- 1x Powersafe 150mm² (300MCM) 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



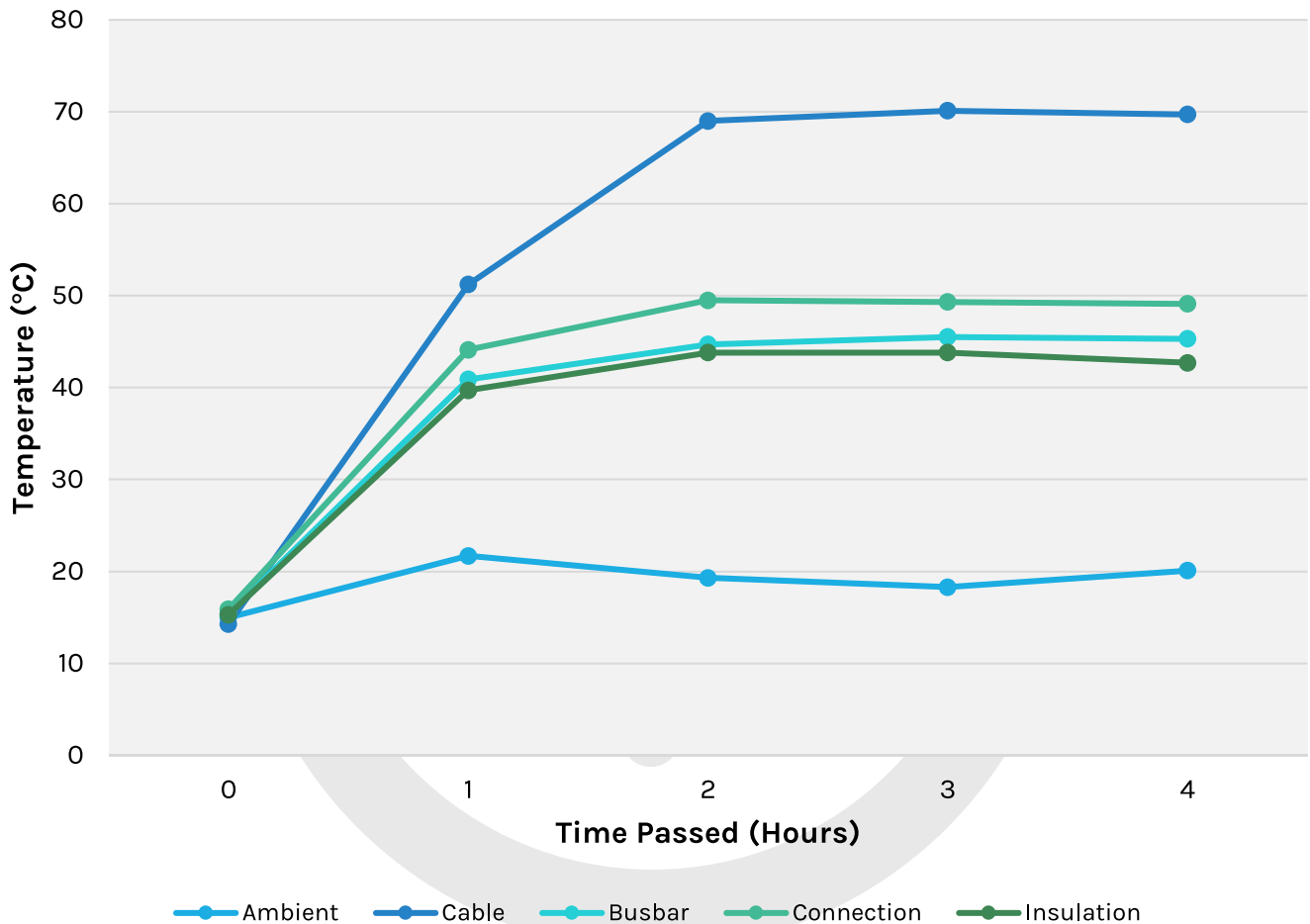
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TIME	AMBIENT	CABLE	BUSBAR	CONNECTION	INSULATION	AMPS
0	15	14.3	15.4	15.9	15.3	510
1	21.7	51.2	40.9	44.1	39.7	511
2	19.3	69	44.7	49.5	43.8	514
3	18.3	70.1	45.5	49.3	43.8	514
4	20.1	69.7	45.3	49.1	42.7	507

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FINAL RESULTS

PROBE POSITION	TEMPERATURE (C)	T (MEASURED-AMBIENT)	AMPS
Ambient	20.1	N/A	N/A
Cable Core (P1)	69.7	49.6	507A
Connection Between Clamp & Busbar (P2)	49.1	29.0	507A
Busbar (P3)	45.3	25.2	507A
Clamp Insulated Body (P4)	42.7	22.6	507A

CONCLUSION

MEASUREMENT	RESULT
Maximum Allowable Temperature	125°C
Maximum Recorded Temperature Rise @ Insulator Body (above ambient)	22.6°C
Maximum Allowable Temperature Between Clamp & Busbar	125°C
Maximum Recorded Temperature Rise (above ambient)	29°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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