

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 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 120mm 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 |



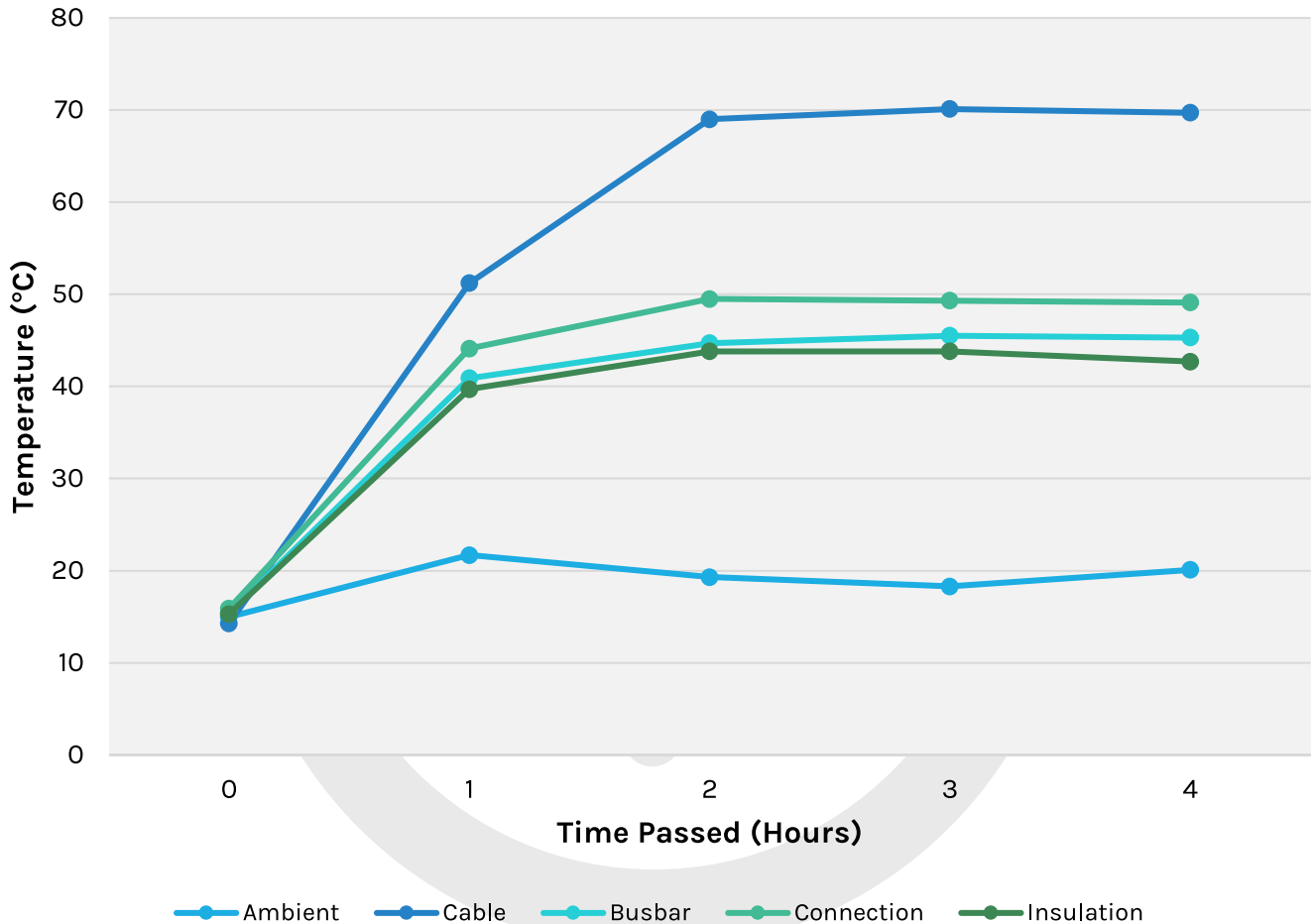
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| TIME | AMBIENT | CABLE | BUSBAR | CONNECTION | INSULATION | AMPS |
|------|---------|-------|--------|------------|------------|------|
| 0 | 15 | 14.3 | 15.4 | 15.9 | 15.3 | 510 |
| 1 | 21.7 | 51.2 | 40.9 | 44.1 | 39.7 | 511 |
| 2 | 19.3 | 69 | 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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