

TR-05655



# Overhead Line Clamp 120mm<sup>2</sup> (500amp testing)

Test Date: 08/07/16

Operator: D.Maclachlan

## TYPE AND DESCRIPTION OF TEST

OVERHEAD LINE CLAMP 120MM2. DIRECT RESISTANCE WITH 500A CURRENT.

## OBJECTIVE

The object of this test is to assess the current carrying capacity of the Overhead Line 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 120mm<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 Overhead Line Clamp fitted with 120mm<sup>2</sup> cable to a Powersafe Line source 500amp Connector.

1x Powersafe 500amp Line Drain Connector on 120mm<sup>2</sup> cable.

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



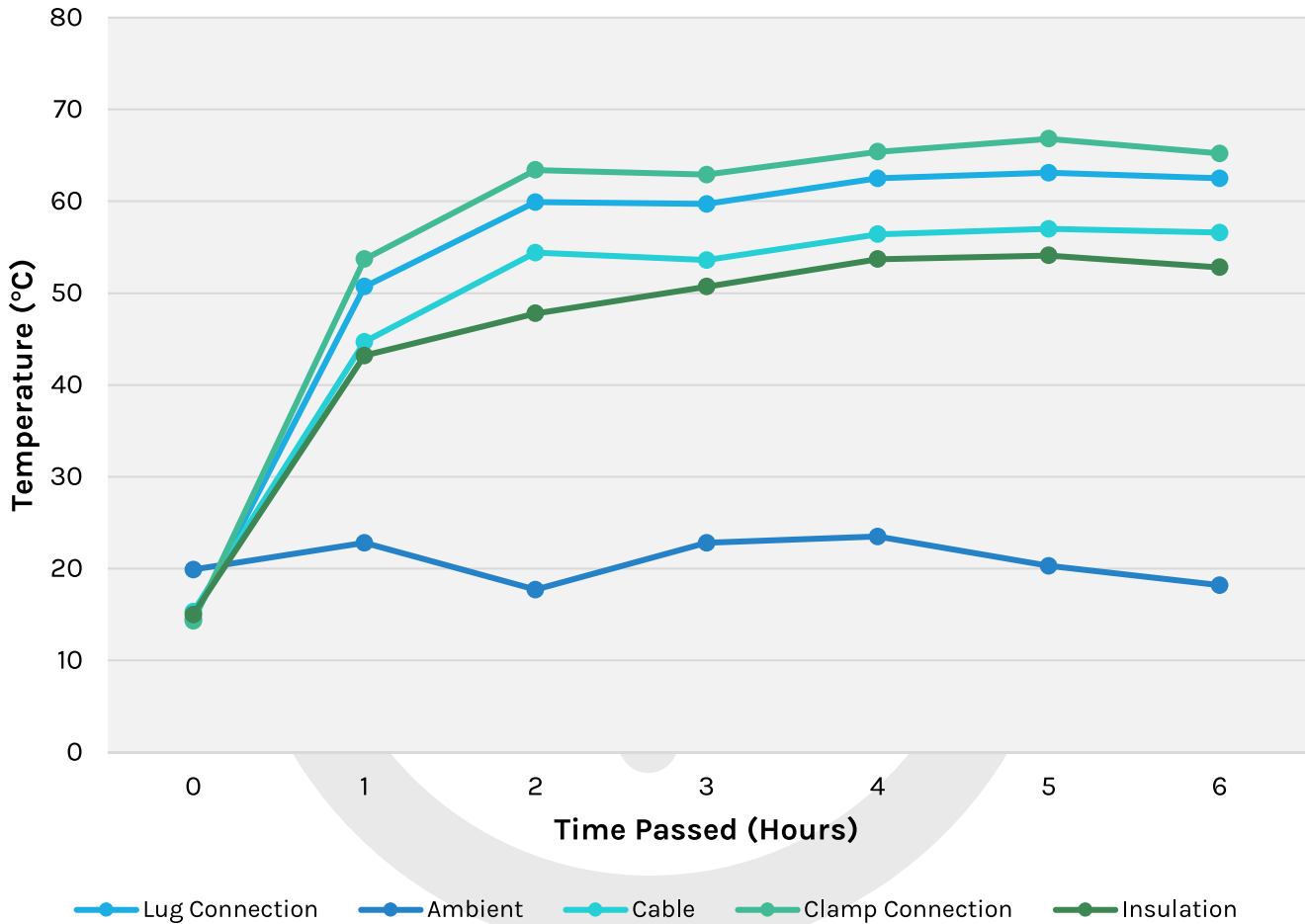
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PHASE 3

TIME	LUG CONNECTION	AMBIENT	CABLE	CLAMP CONNECTION	INSULATION	AMPS
0	14.5	19.9	15.3	14.3	15.0	500
1	50.7	22.8	44.7	53.7	43.2	506
2	59.9	17.7	54.4	63.4	47.8	503
3	59.7	22.8	53.6	62.9	50.7	502
4	62.5	23.5	56.4	65.4	53.7	506
5	63.1	20.3	57.0	66.8	54.1	508
6	62.5	18.2	56.6	65.2	52.8	510

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## FINAL RESULTS

PROBE POSITION	TEMPERATURE (C)	T (MEASURED-AMBIENT)	AMPS
Ambient	18.2	N/A	N/A
Cable Core (P1)	56.6	38.4	510A
Connection Between Clamp & Adaptor (P2)	65.2	47.0	510A
Adaptor (P3)	62.5	44.3	510A
Clamp Insulated Body (P4)	52.8	34.6	510A

## CONCLUSION

MEASUREMENT	RESULT
Maximum Allowable Temperature	125°C
Maximum Recorded Temperature Rise @ Insulated Body (above ambient)	34.6°C
Maximum Allowable Temperature Between Clamp & Busbar	125°C
Maximum Recorded Temperature Rise (above ambient)	47.0°C
TEMPERATURE RISE WITHIN EN, BS AND VDE ALLOWABLE LIMITS.	PASS



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