

TR-05655

Overhead Line Clamp 120mm² (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 120mm² (4/0 AWG) 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 120mm² (4/0 AWG) cable to a Powersafe Line source 500amp Connector.

1x Powersafe 500amp Line Drain Connector on 120mm² (4/0 AWG) 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



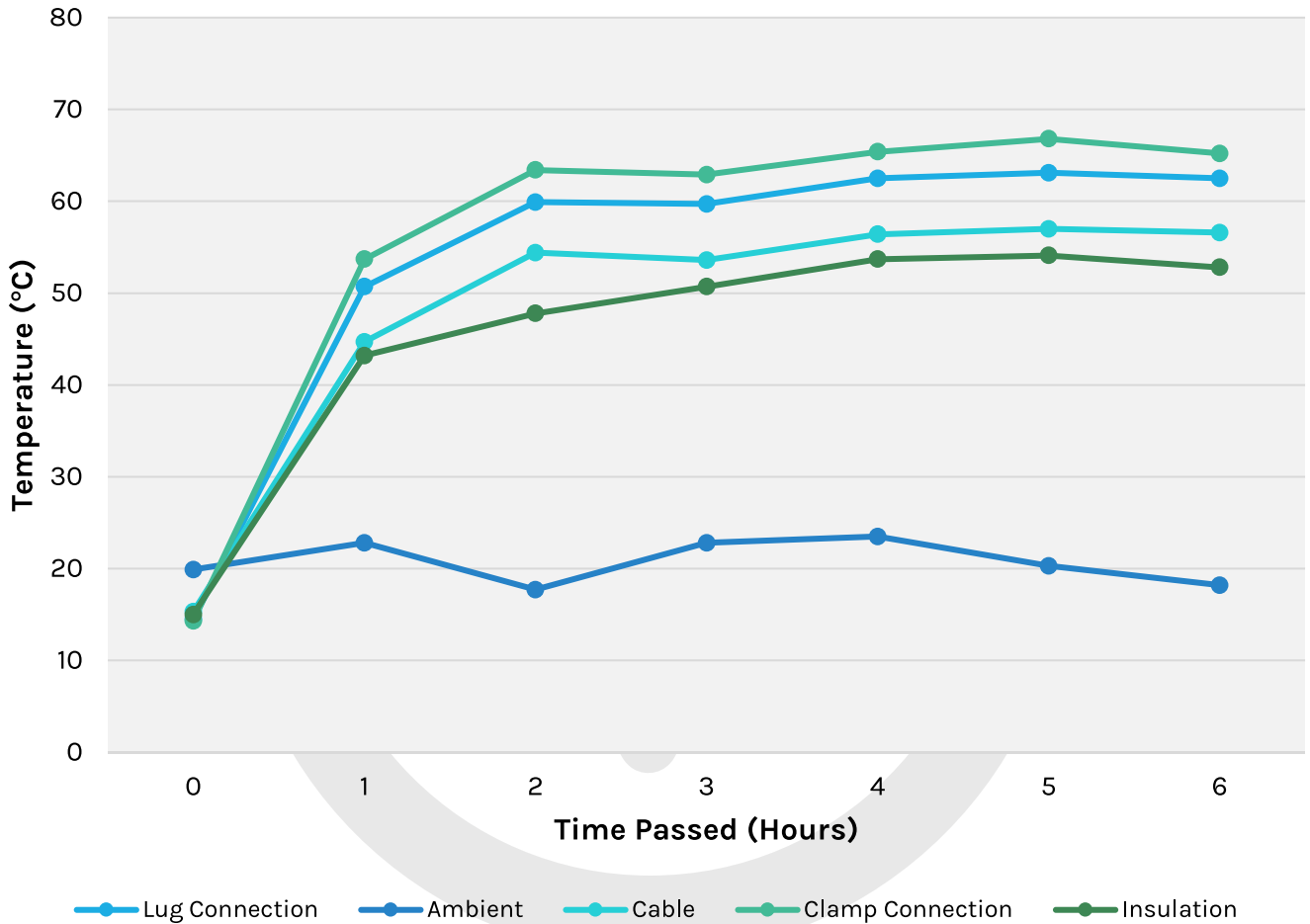
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TIME	LUG CONNECTION	AMBIENT	CABLE	CLAMP CONNECTION	INSULATION	AMPS
0	14.5	19.9	15.3	14.3	15.0	500
1	50.7	22.8	44.7	53.7	43.2	506
2	59.9	17.7	54.4	63.4	47.8	503
3	59.7	22.8	53.6	62.9	50.7	502
4	62.5	23.5	56.4	65.4	53.7	506
5	63.1	20.3	57.0	66.8	54.1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