
 PHASE 3 <small>CONNECTORS</small>	 Test Report	Date	11/07/16
		TR	05659
		Powersafe Connectors 530A Test	
Operator: D.Maclachlan		This report is the property of Phase 3 Connectors Ltd and must not, without their written consent be passed on, copied or used for any other purpose	

Type and description of test
Powersafe 500A Connectors . Direct Resistance With 530A Current.

Object:

The object of this test is to assess the current carrying capacity of the Powersafe 500amp Connectors.

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 test will consist of a mated pair of Powersafe Connectors (Line Source to Line Drain) terminated onto 150mm² cables that are attached to the 3000amp load unit. A current of 530amps will be used for this test.

Requirements:

The mated connectors must be capable of carrying the specified test current for a minimum period of 3 hours without exceeding the specified temperature rise.

Test Items

- 1 x Powersafe SLS-X-XX-S120-M40A terminated onto 150mm² cable.
- 1 x Powersafe SLD-X-XX-S120-M40A terminated onto 150mm² cable.

Instrument	Description s/n	Expiry calibration
Current generation	T & R PCU1 Mk3 P.C.I.T.S. (21TE0216)	20/01//2017
External Load Unit	3000A Loading Unit	20/01/2017
YF-160A Thermocoupler +5 probes	060300489	04/02/2017

Recorded Results at the end of testing – (detailed hourly results and graph on pg3)

Probe position	Temperature ° C	T (measured – ambient)	Amps
Ambient	17.1		
Cable Core (P1)	51.8	34.7	532A
Drain Contact (P2)	90.2	73.1	532A
Source Contact (P3)	75.5	58.4	532A
Insulator (P4)	48.0	30.9	532A



Maximum Allowable Temperature 125°C

Maximum Recorded Temperature Rise @ Insulator Body was 30.9°C above ambient.

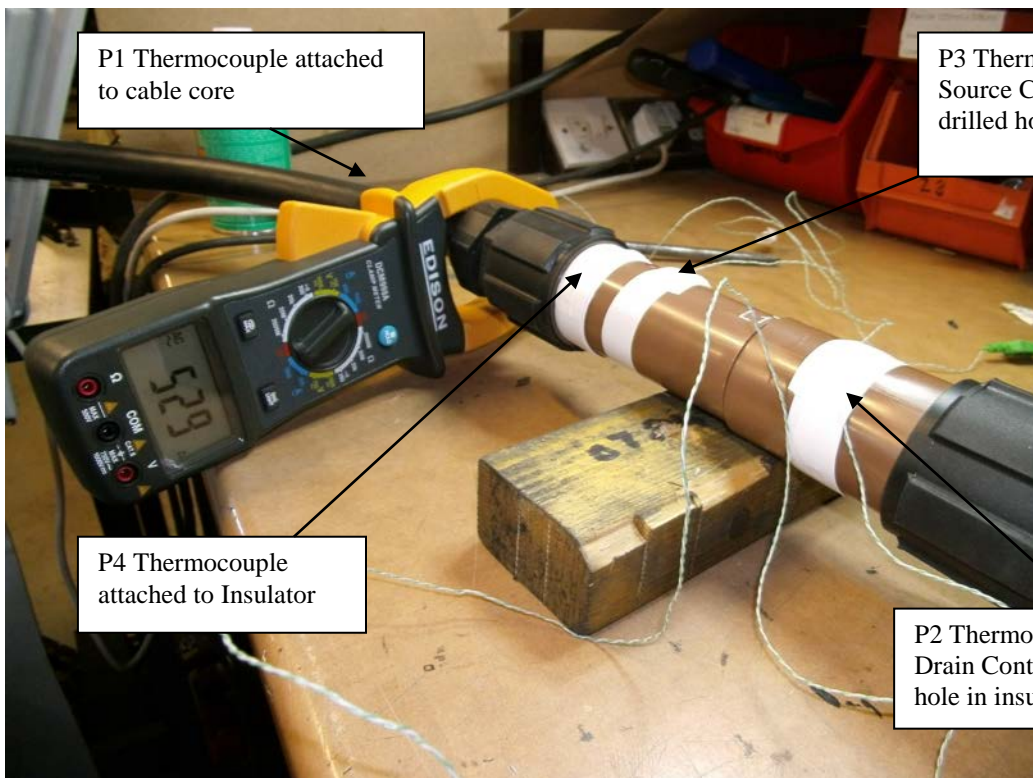
Maximum Allowable Temperature of Contacts 125°C

Maximum Recorded Temperature Rise was 73.1°C above ambient.

Conclusion: Temperature Rise within EN, BS and VDE allowable limits. PASS

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T&R PCU1 Mk 3 P.C.I.T.S 3000A



P1 Thermocouple attached to cable core

P3 Thermocouple attached to Source Contact through drilled hole in insulator

P4 Thermocouple attached to Insulator

P2 Thermocouple attached to Drain Contact through drilled hole in insulator



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Time	Drain Contact	Ambient	Cable	Source Contact	Insulator	Amps
0	16.6	17.7	15.8	16.6	17.1	530.0
1	78.8	22.3	43.7	67.8	42.3	530.0
2	90.1	17.5	45.8	75.6	48.8	530.0
3	90.3	16.8	51.4	75.7	48.6	532.0
4	90.0	17.5	51.6	75.6	48.5	530.0
5	90.2	17.0	51.7	75.5	47.9	530.0
6	90.2	17.1	51.8	75.5	48.0	532.0

