

Test Report



Moon star Electrical switchgear manufacturing LLC

REPORT NUMBER: 4786583089.14.1

PROJECT NUMBER: 4786583089.14.1

UL - Underwriters
Laboratories Middle
East.

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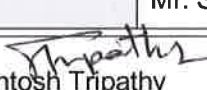
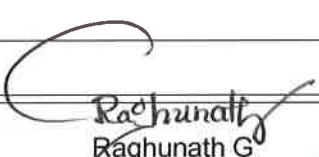
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TEST DISCIPLINE: ELECTRICAL

General details

Customer / Applicant	MOONSTAR ELECTRICAL SWITCHGEAR MANUFACTURING LLC PO Box 48850, Dubai, UAE		
Manufacturer	MOONSTAR ELECTRICAL SWITCHGEAR MANUFACTURING LLC PO Box 48850, Dubai, UAE		
Program	Others		
Test Lab Location	Others*	*Central Power Research Institute Prof.C.V Raman Road, Sadashivnagar P.B.No. 8066, Bangalore	
Item Under Test	2500A Internal Arc test Panel		
Model	-		
Number of Samples	1		
Sample Identification	SC15S1073	Refer Summary of Test results for multiple samples	
Manufacturer Serial Number (if any)	-		
Condition of IUT on receipt	Good		
Date of Receipt	-		
Applicable Standard	As per IEC TR 61641 Ed. 3.0		
Date of Testing (Start date)	26 August 2015	End Date	26 August 2015
general ambient condition	Temperature in °C		10 to 40 °C
	Relative humidity in %		< 70%
Date of Reporting	31 January 2016		
Test In-charge	Mr. Santosh Tripathy		
	 Santosh Tripathy Sr.Project Engineer		 Raghunath G Engineering Leader
	Test witnessed by		Approved by
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General Remarks (If any)

Description of Item under Test (IUT)

Ratings assigned by the Applicant

- 1) Designation : 2500A Internal ARC test Panel
- 2) Panel Sr. No. : -
- 3) Rated operational voltage (U_e) : 415Vac
- 4) Rated frequency : 50 Hz
- 5) Rated insulation voltage (U_i) : 690V
- 6) Rated current of the ASSEMBLY (I_{nA}) : 2500A
- 7) Permissible short circuit current under arcing condition (I_p arc) : 50kA
- 8) Permissible arcing duration : 300ms
- 9) Bus bar details:
 - a. Main Bus bar : 2 x 100 x 10 sq.mm tinned copper per phase
 - b. Neutral Bus bar : 2 x 100 x 10 sq.mm tinned copper per phase
 - c. Earth Busbar : 1 x 100 x 10 sq.mm tinned copper per phase
- 10) Arcing class : B
- 11) Access : Restricted



Summary of Test Results

Test No.	Test Parameter	Standard & Clause Number	Sample Identification	Result
1	Arc fault test	IEC TR 61641 cl No.8	SC15S1073	P

P: Meets the requirements F: Does not meet the requirement NA: Not applicable



Test methodology adopted

As per standard

Test Detail : Arc fault test cl.8.0 of IEC TR 61641 Ed.no.3.0

The test was carried out on a new sample with the doors and covers are closed and correctly secured. The applied voltage to the test circuit is 105% of rated operational voltage. The test current is the average r.m.s values of a.c. component in all phases. The test sample is connected and supplied to the normal service arrangement. The PE & N conductor was connected to the neutral point of the test current source.

The arc was initiated at the joint of main bus bar by using bare copper wire of dia 1.5mm. For observing the thermal effects of gases indicators are used. The indicators were placed vertically in a plane parallel to each other from floor upto the height of 2m and a distance of 300mm from the face. The indicators are uniformly distributed as a checkboard pattern.

PROSPECTIVE CURRENT & VOLTAGE FOR TEST

Supply Frequency: 50 Hz.

Oscillogram No.	Test voltage Between phases	Short circuit current values (kA)			Power factor (Avg.)	Remarks
		Peak	Rms	Average		
SC15469A.S01	-	115.76	50.98 51.15 50.03	50.84	0.21	Calibration shot for current measurement
	417	-	-	-		Calibration shot for voltage measurement



The arc fault test was performed on the sample connected to the source as per test circuit diagram no. a. The arc was initiated by using a bare copper wire of 1.5 sq.mm connected at joint of the main bus bar,

Condition of the equipment under test: New, without any current limiting device

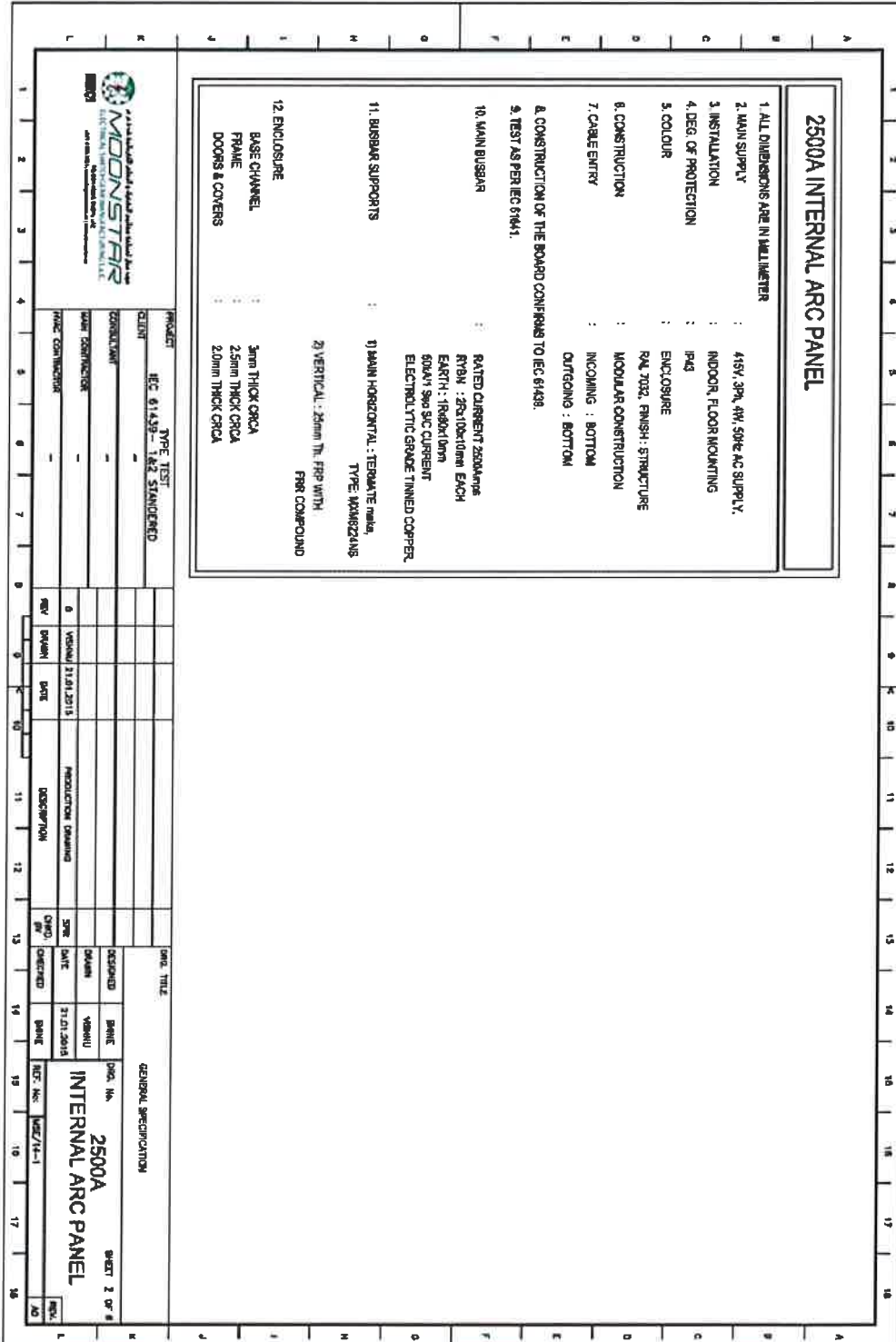
Oscillogram No.	Peak Current kA	RMS current (kA)	Arcing duration (msecs.)	Total I ² t (A ² S X 10 ⁶)	Remarks
SC15469A.S02	65.57	28.11	340	69.42	Arcing continued for 340ms
		26.51		39.63	
		21.31		34.82	

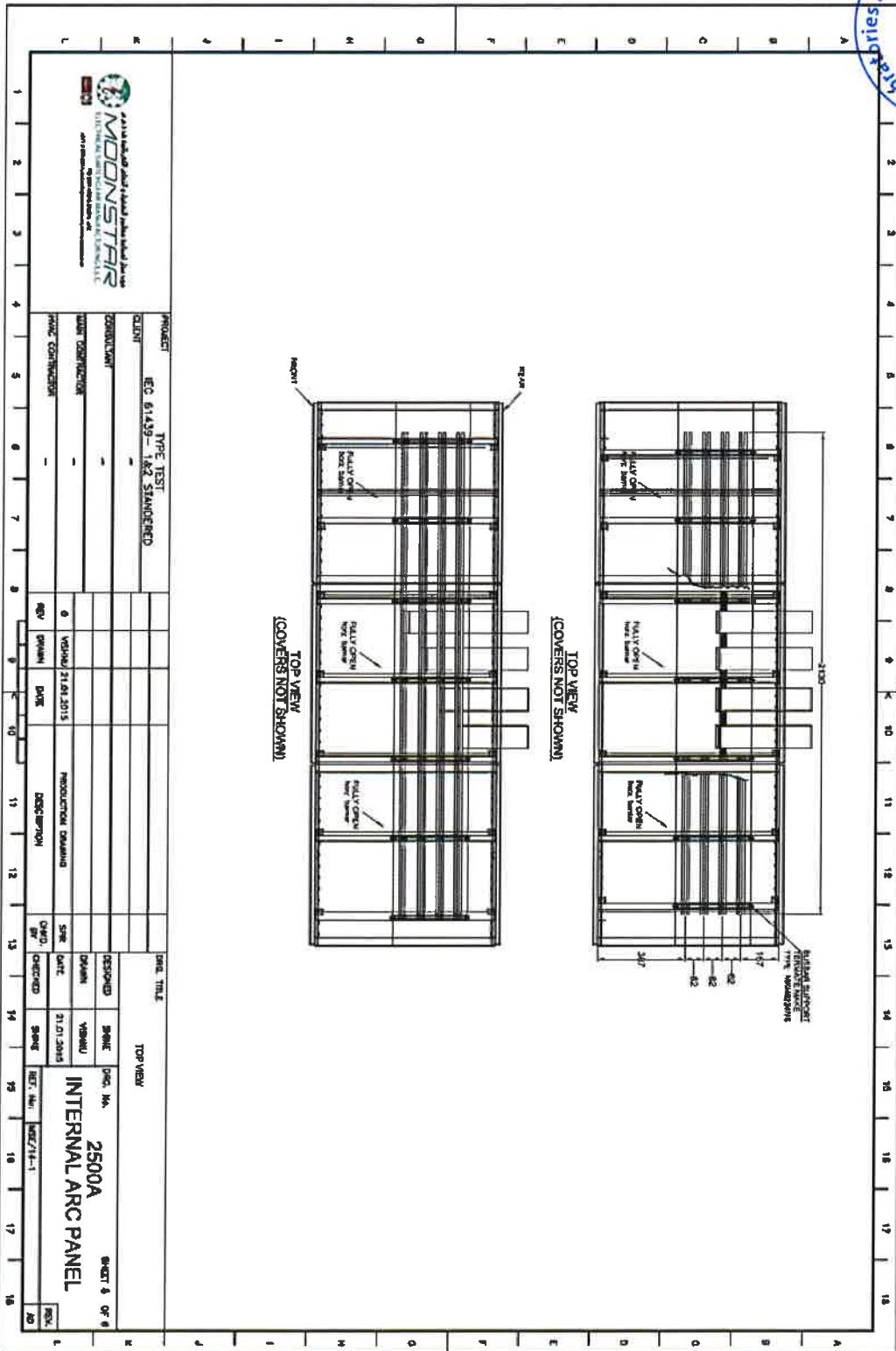
- Observation after test :
- a) Doors were not opened.
 - b) Busbar connections were not loosened.
 - c) No deformation in busbars observed
 - d) Indicators were not ignited.
 - e) Busbar supports were intact.
 - f) No holes were observed in the other parts
 - g) The equipotential bonding arrangement for accessible parts of the enclosure was still effective.
 - h) After clearance of the fault the unit withstood dielectric verification test for at 1.5Ue for 60 sec.






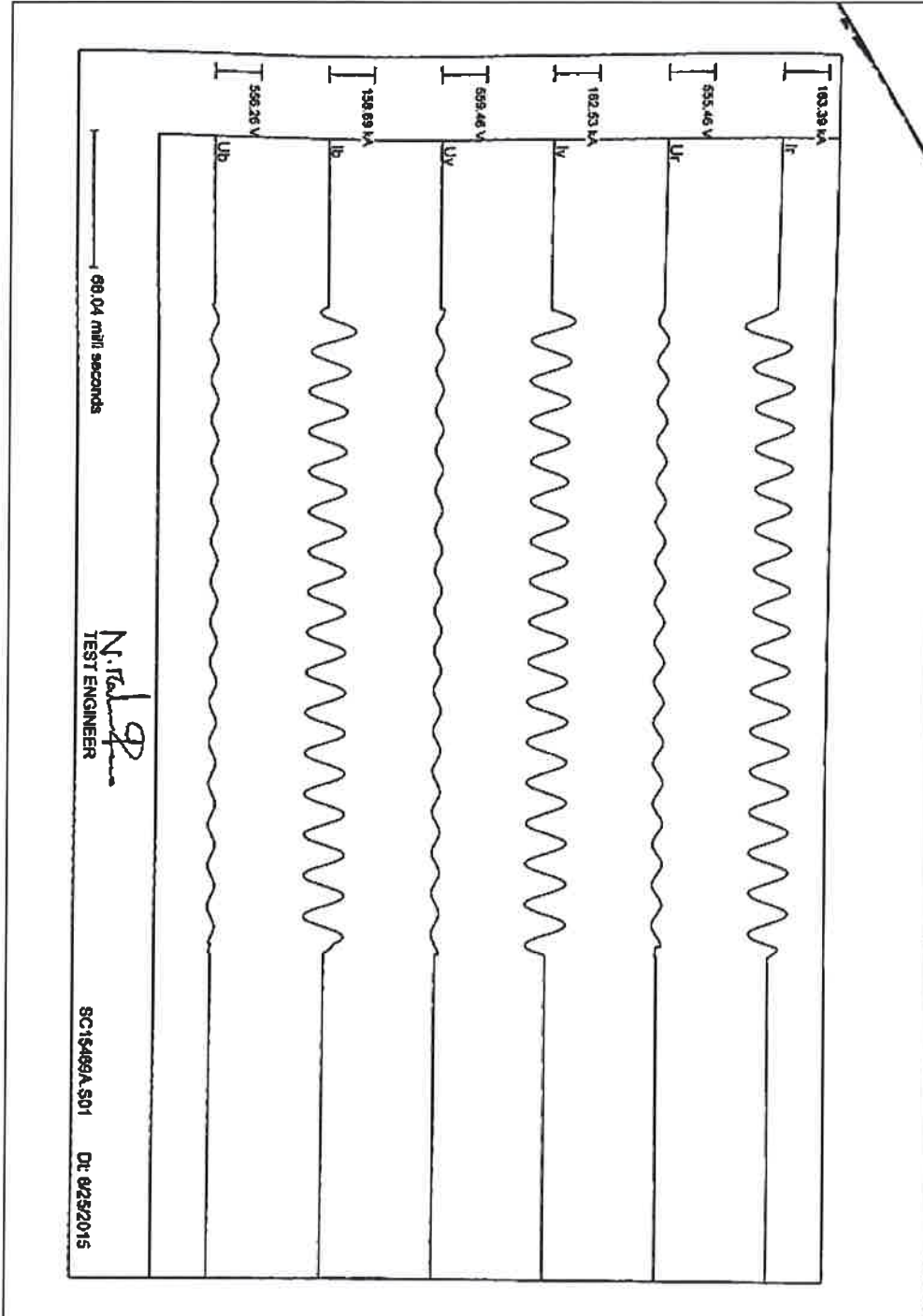
Drawings:

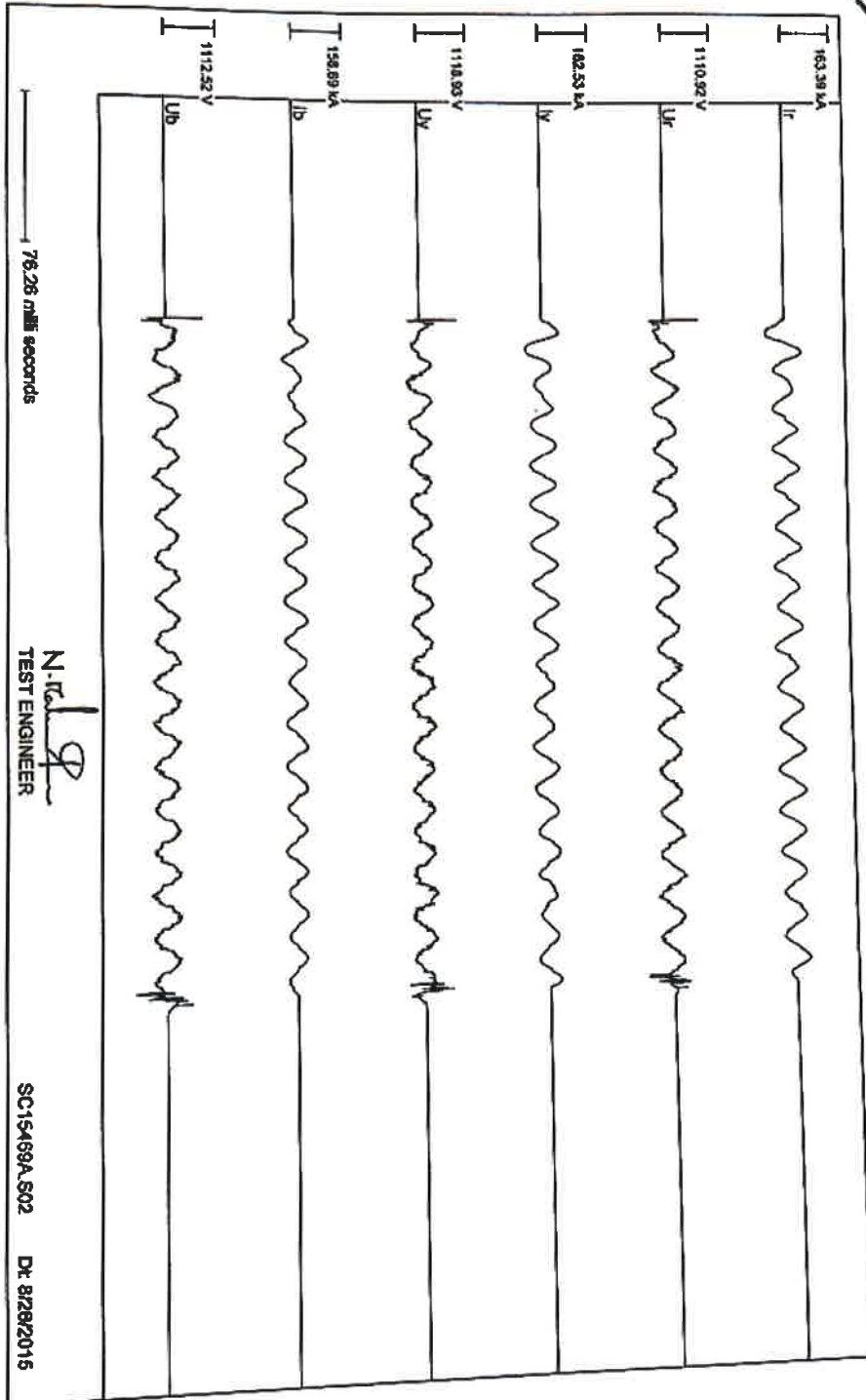




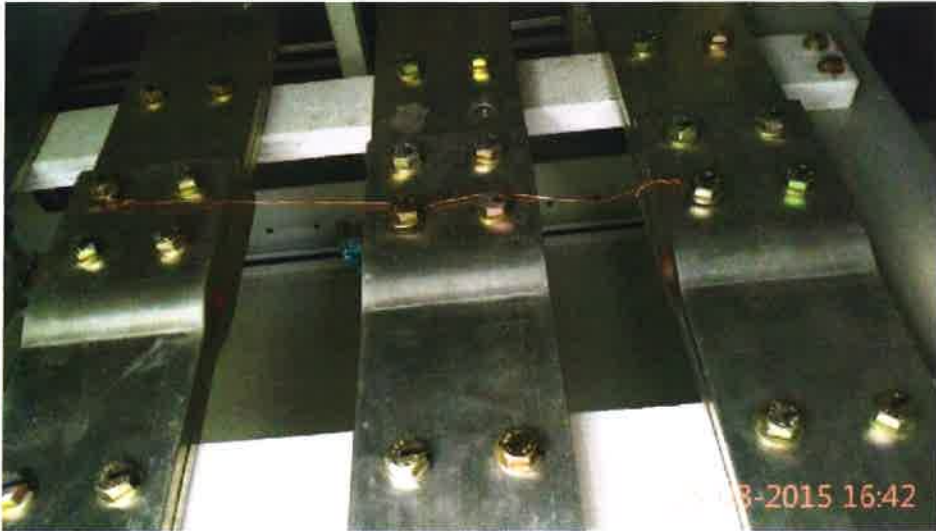
	
PRODUCT	TYPE TEST
CLIENT	EG GLASS - I&S STANDARD
CONTRACT	
UNIT IDENTIFICATION	
PROJECT IDENTIFICATION	
REV	DATE
0	ISSUED 21.01.2015
PRODUCTION DRAWING	
DATE	
DESCRIPTION	
DESIGNED	SHANE
DRAWN	VIHARU
DATE	21.07.2015
CHKD.	SHANE
CHECKED	
REV. No.	REV/11-1
DRG. No.	
INTERNAL ARC PANEL	
2500A	
SHEET 6 OF 6	

Oscillograms

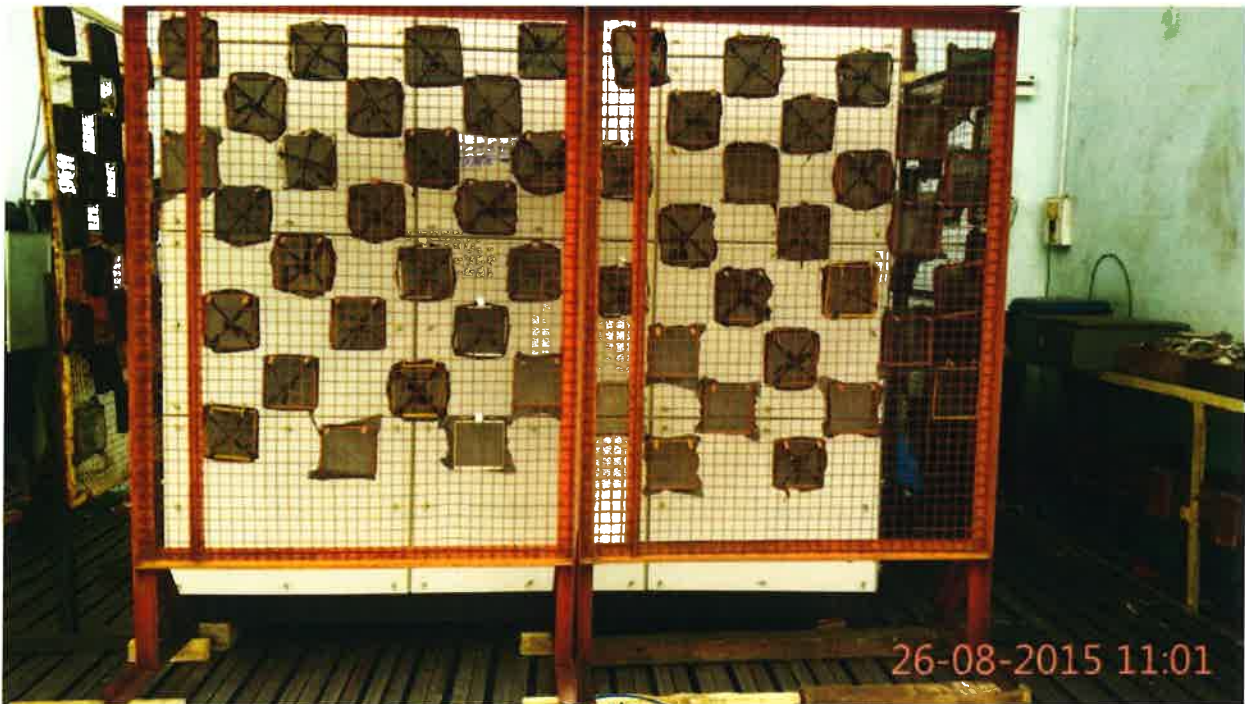




Photographs
Shorting position



Indicators arrangement



Indicators arrangement





Flap opened during test



*****End of Report*****