LAMPIRAN A

TABEL DATA PERCOBAAN DAN THERMOGRAPH IMAGING

I. TABEL PERCOBAAN

TABEL PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL										Keterangan
NO	JENIS	UKURAN	ARUS PEMBEBANAN (A)		WAKTU PEMBEBANAN	TEMPERATUR (°C)				
		(MMSQ)	x In	In	(Detikt)	KABEL	JOINTIN 0.0	JOINTING 0.1	JOINTING 0.2	
					0	27.20	27.20	28.90	20.80	
1	NYA	1,5	1.0 In	24	1	32.17	32.50	30.70	42.50	
2					2	37.13	33.50	31.90	46.00	
3					3	42.10	34.10	33.40	48.80	
4					4	47.07	34.80	34.20	49.30	
5					5	57.00	36.00	34.20	51.70	
6					6	57.20	36.60	36.60	51.80	
7					7	57.40	37.00	37.80	51.70	
8					8	57.60	37.00	37.40	50.70	
9					9	57.80	37.20	37.40	50.10	
10					10	58.00	37.00	36.60	50.00	

TABEL PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL										Keterangan
NO	JENIS	UKURAN	ARUS PEMBEBANAN (A)		WAKTU PEMBEBANAN	TEMPERATUR (°C)				
		(MMSQ)	x In	In	(Detik)	KABEL	JOINTIN 0.0	JOINTING 0.1	JOINTING 0.2	
1	NYA	1,5	2.0 In	48	1	59.00	46.00	75.10	126.90	
2					2	76.90	70.70	74.40	159.70	
3					3	94.80	75.60	74.50	178.40	
4					4	112.70	76.50	75.70	183.00	
5					5	148.50	77.90	74.80	186.00	
6					6	143.90	69.30	78.20	187.70	
7					7	139.30	68.40	77.30	185.00	
8					8	134.70	66.70	80.70	181.00	
9					9	130.10	66.70	81.30	178.90	
10					10	125.50	67.50	83.00	176.50	

TABEL PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL											Keterangan
NO	JENIS	UKURAN	ARUS PEMBEBANAN (A)		WAKTU PEMBEBANAN	TEMPERATUR (°C)					
		(MMSQ)	x In	In	(Menit)	KABEL	JOINTING 1	JOINTING 2	JOINTING 3	JOINTING 4	
			0	0	0	30.00	28.30	28.20	34.30	33.40	
1	NYA	1,5	1.0 In	24	5	31.21	53.84	49.40	55.60	47.70	
2			1.5 In	30	10	31.89	67.17	57.20	67.60	58.80	
3			1.8 In	43	15	33.86	100.70	72.40	102.40	89.30	Berasap tipis
4			2.0 In	48	20	34.81	119.00	108.60	129.60	108.10	isolasi menggelembung
5			2.5 In	60	25	37.51	169.40	136.20	178.80	165.90	isolasi mulai meleleh
6			3.5 In	75	30	41.73	366.70	199.60	248.30	253.20	isolasi lumer
7			4.0 In	96	35	-	-	235.60	244.60	256.90	kabel membara
8			4.5 In	108	40	-	-	-	-	-	
9			5.0 In	120	45						

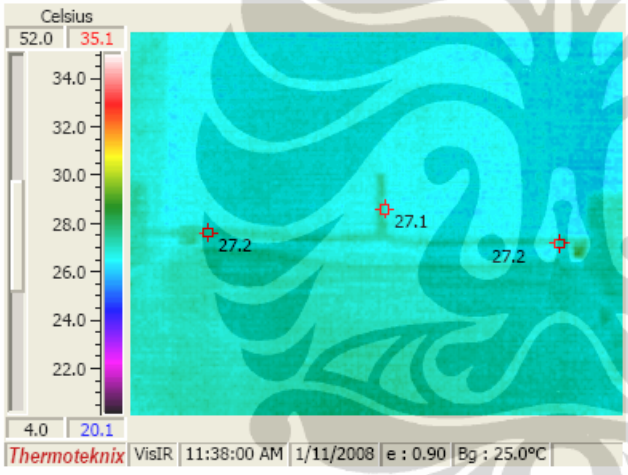
TABEL PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL											Keterangan
NO	JENIS	UKURAN	ARUS PEMBEBANAN (A)		WAKTU PEMBEBANAN	TEMPERATUR (°C)					
		(MMSQ)	x In	In	(Menit)	KABEL	JOINTING 1	JOINTING 2	JOINTING 3	JOINTING 4	
			0	0	0	30.00	31.60	32.30		27.90	
1	NYA	1,5	1.0 In	24	5	31.21	49.20	53.80		56.80	
2	NYAF		1.5 In	30	10	31.89	57.40	69.40		67.80	
3			1.8 In	43	15	33.86	89.90	98.90		124.80	Berasap tipis
4			2.0 In	48	20	34.81	111.60	124.40		147.00	isolasi mulai menggelembung
5			2.5 In	60	25	37.51	255.10	160.00		252.60	isolasi mulai meleleh
6			3.5 In	75	30	41.73	494.60	256.60		269.80	isolasi lumer
7			4.0 In	96	35	-	-	-		-	kabel membara
8			4.5 In	108	40	-	-	-		-	
9			5.0 In	120	45		-	-		-	

PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 00

Visual Image

TYPE	SAMBUNGAN O
DATE	11 JANUARI 2008
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	24 A
TAHAP MENIT	0

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	27.1 ° C
SPOT-1	27.2 ° C
SPOT-2	27.2 ° C
SPOT-3	° C

Probable Causes

Comment / Suggestion

Client Supervisors Notes

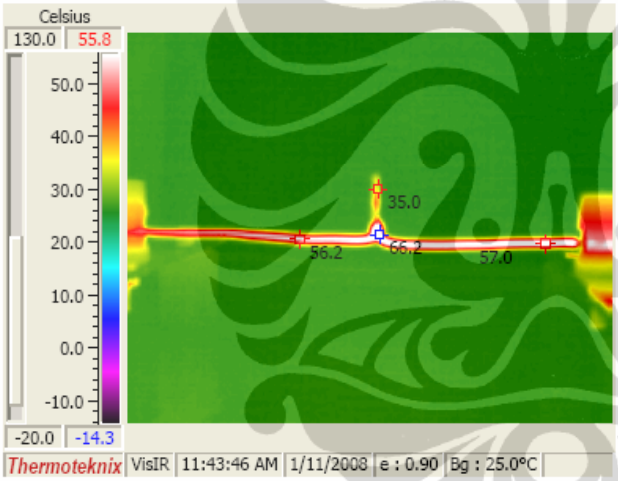
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL

TYPE JOINTING - 00

Visual Image

TYPE	SAMBUNGAN O
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	24 A
TAHAP MENIT	05

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	35.0 ° C
SPOT-1	56.2 ° C
SPOT-2	66.2 ° C
SPOT-3	57.0 ° C

Probable Causes

		Comment / Suggestion

Client Supervisors Notes

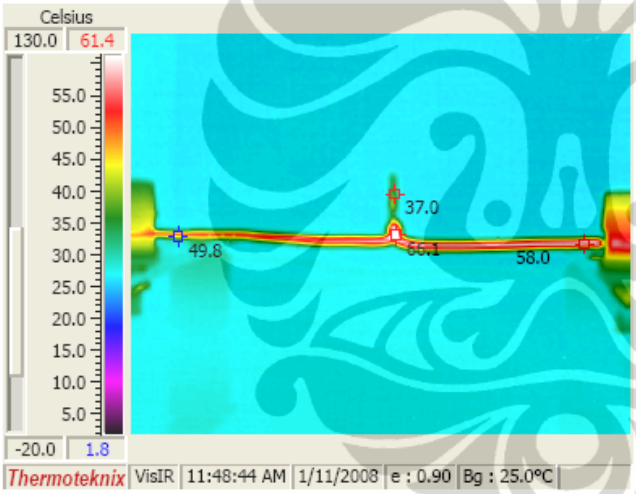
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL

TYPE JOINTING - 00

Visual Image

TYPE	SAMBUNGAN O
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	24 A
TAHAP MENIT	10

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	37.0 ° C
SPOT-1	49.8 ° C
SPOT-2	66.1 ° C
SPOT-3	58.0 ° C

Probable Causes

		Comment / Suggestion

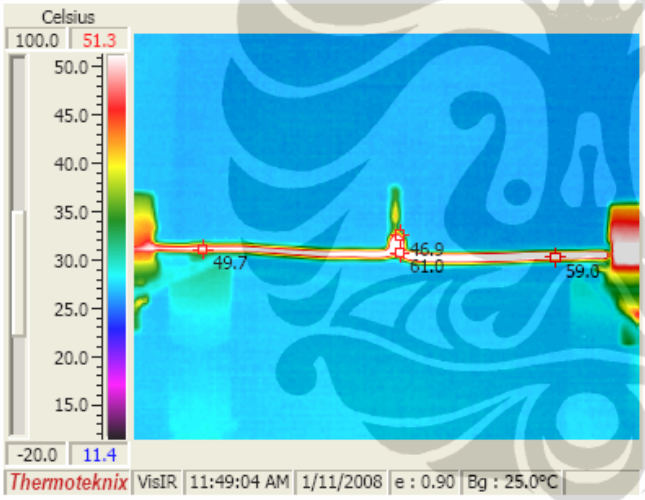
Client Supervisors Notes

PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 00

Visual Image

TYPE	SAMBUNGAN O
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	48 A
TAHAP MENIT	1

Thermal Image



TEMPERATURE DATA (° C)		
JOINTING	46.0	° C
SPOT-1	49.7	° C
SPOT-2	61.0	° C
SPOT-3	59.0	° C

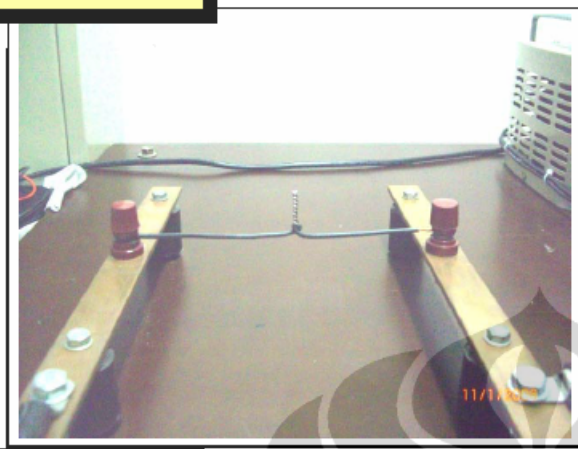
Probable Causes

		Comment / Suggestion

Client Supervisors Notes

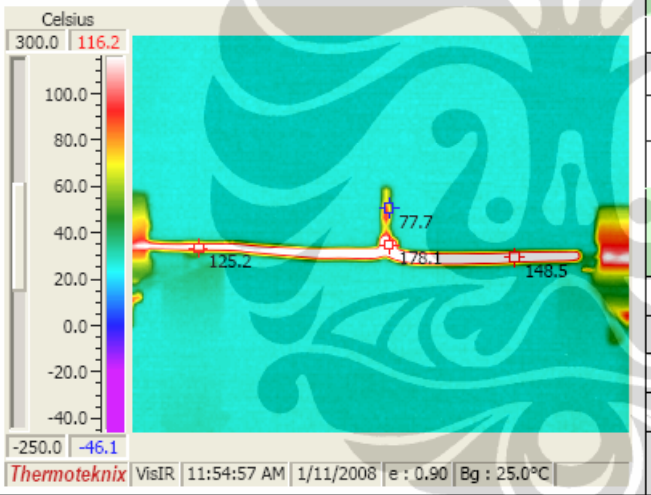
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 00

Visual Image



TYPE	SAMBUNGAN O
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	48 A
TAHAP MENIT	5

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	77.7 ° C
SPOT-1	125.2 ° C
SPOT-2	178.1 ° C
SPOT-3	148.5 ° C

Probable Causes

		Comment / Suggestion
		ASAP AGAK TEBAL

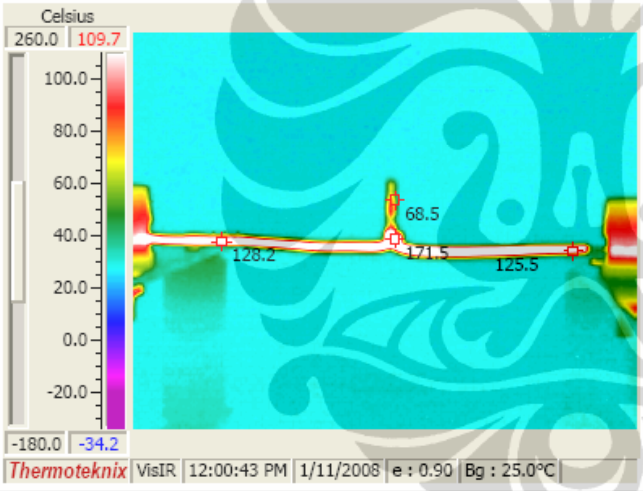
Client Supervisors Notes

PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 00

Visual Image

TYPE	SAMBUNGAN O
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	48 A
TAHAP MENIT	10

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	68.5 ° C
SPOT-1	128.2 ° C
SPOT-2	171.5 ° C
SPOT-3	125.5 ° C

Probable Causes

		Comment / Suggestion

Client Supervisors Notes

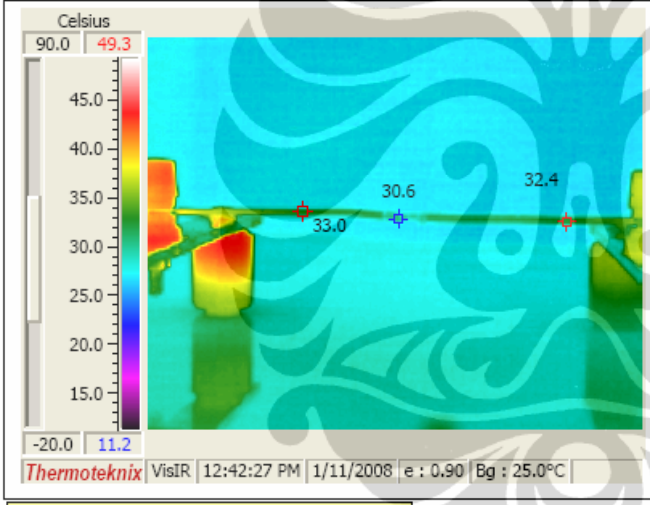
TABEL PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL

TYPE JOINTING - 01

Visual Image

TYPE	SAMBUNGAN 3
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	24 A
TAHAP MENIT	0

Thermal Image



TEMPERATURE DATA (° C)		
JOINTING	30.6	° C
SPOT-1	33.0	° C
SPOT-2	32.4	° C
SPOT-3		° C

Probable Causes

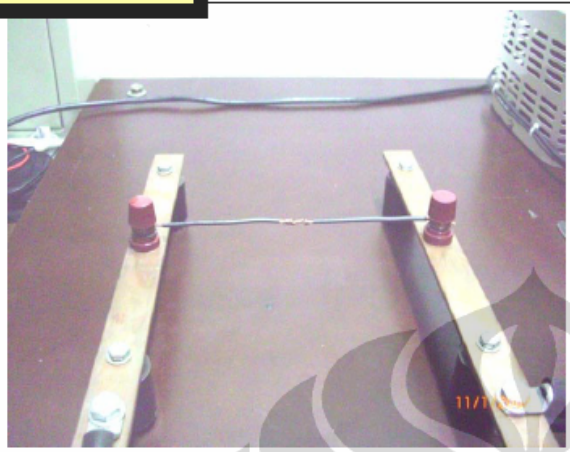
		Comment / Suggestion

Client Supervisors Notes

PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL

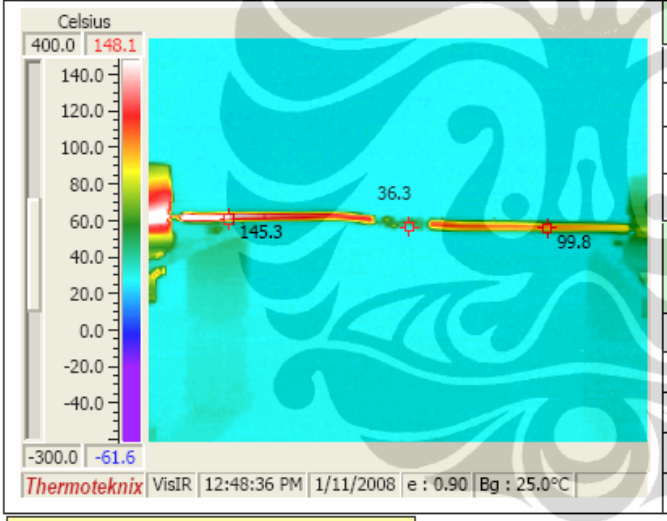
TYPE JOINTING - 01

Visual Image



TYPE	SAMBUNGAN 3
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	24 A
TAHAP MENIT	5

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	36.3 ° C
SPOT-1	145.3 ° C
SPOT-2	99.8 ° C
SPOT-3	° C

Probable Causes

		Comment / Suggestion

Client Supervisors Notes

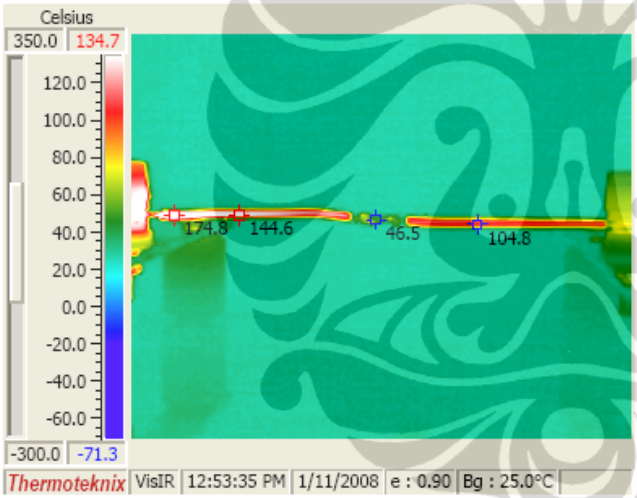
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL

TYPE JOINTING - 01

Visual Image

TYPE	SAMBUNGAN 3
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	24 A
TAHAP MENIT	10

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	46.5 ° C
SPOT-1	174.8 ° C
SPOT-2	144.6 ° C
SPOT-3	104.8 ° C

Probable Causes

		Comment / Suggestion

Client Supervisors Notes

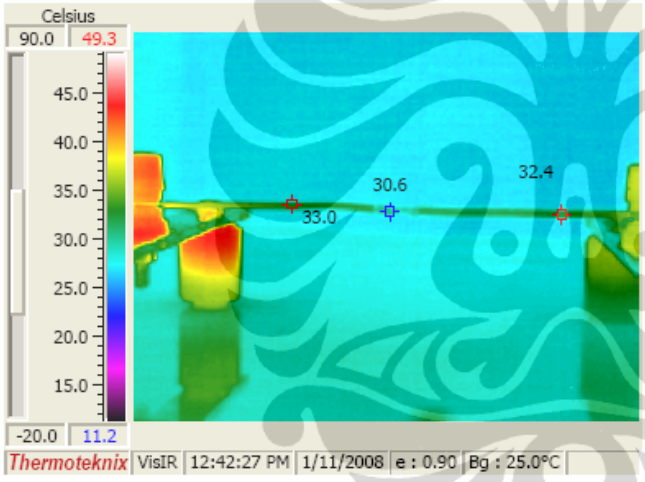
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL

TYPE JOINTING - 01

Visual Image

TYPE	SAMBUNGAN 3
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " **NYA** "
UKURAN	**1.5 MM**
ARUS BEBAN	**48 A**
TAHAP MENIT	**0**

Thermal Image



Temperature Data (° C)	
JOINTING	**30.6** ° C
SPOT-1	33.0 ° C
SPOT-2	32.4 ° C
SPOT-3	° C

Probable Causes

		Comment / Suggestion

Client Supervisors Notes

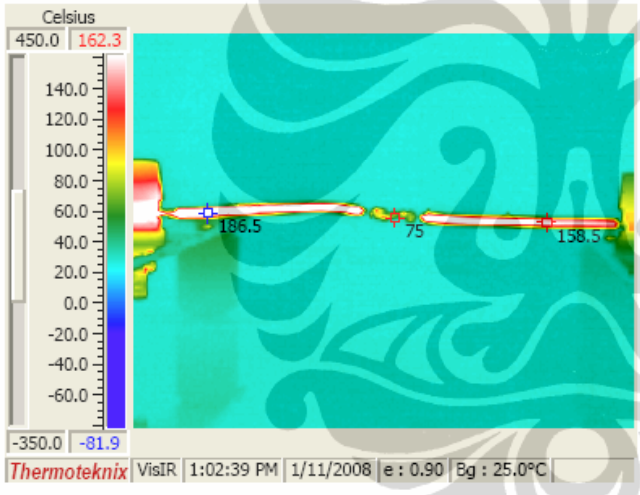
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL

TYPE JOINTING - 01

Visual Image

TYPE	SAMBUNGAN 3
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	48 A
TAHAP MENIT	05

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	75.0 ° C
SPOT-1	186.5 ° C
SPOT-2	158.5 ° C
SPOT-3	° C

Probable Causes

		Comment / Suggestion

Client Supervisors Notes

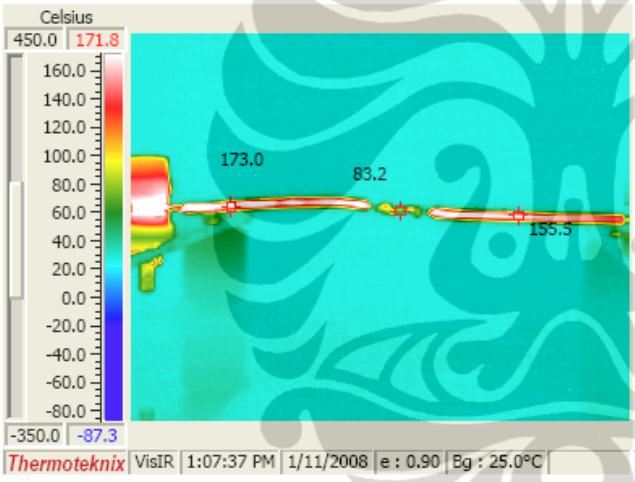
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL

TYPE JOINTING - 01

Visual Image

TYPE	SAMBUNGAN 3
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	48 A
TAHAP MENIT	10

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	83.2 ° C
SPOT-1	173.0 ° C
SPOT-2	156.5 ° C
SPOT-3	° C

Probable Causes

		Comment / Suggestion

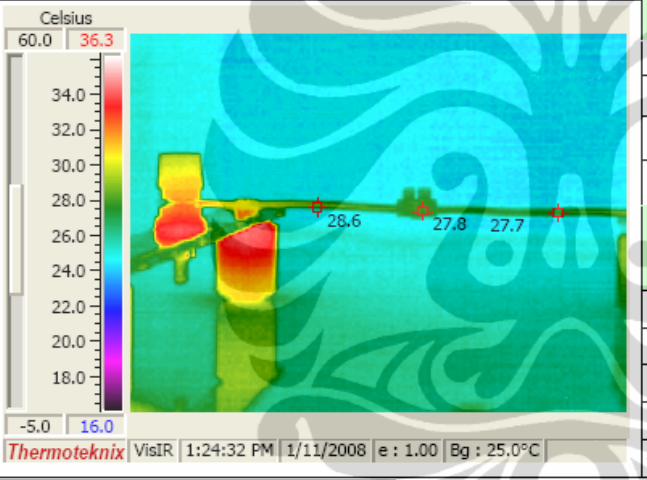
Client Supervisors Notes

PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 02

Visual Image

TYPE	SAMBUNGAN 4 CRUSTIN
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	24 A
TAHAP MENIT	0

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	27.8 ° C
SPOT-1	28.6 ° C
SPOT-2	27.7 ° C
SPOT-3	° C

Probable Causes

Comment / Suggestion

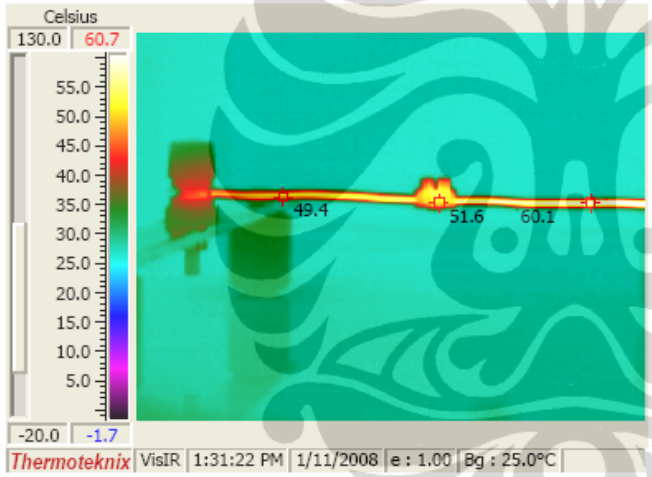
Client Supervisors Notes

PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 02

Visual Image

TYPE	SAMBUNGAN **4 CRUSTIN**
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " **NYA** "
UKURAN	**1.5 MM**
ARUS BEBAN	**24 A**
TAHAP MENIT	**5**

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	**51.6** ° C
SPOT-1	49.4 ° C
SPOT-2	60.1 ° C
SPOT-3	° C

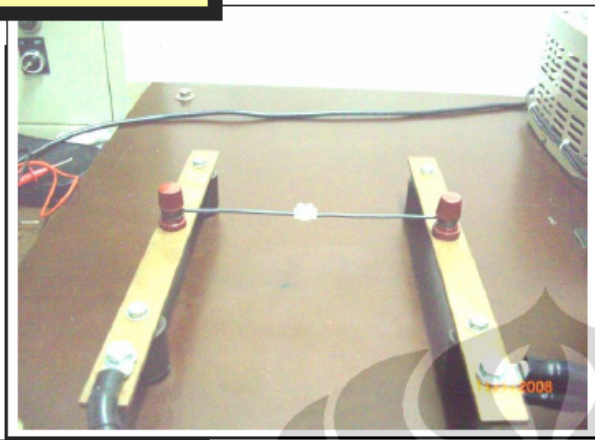
Probable Causes

Comment / Suggestion

Client Supervisors Notes

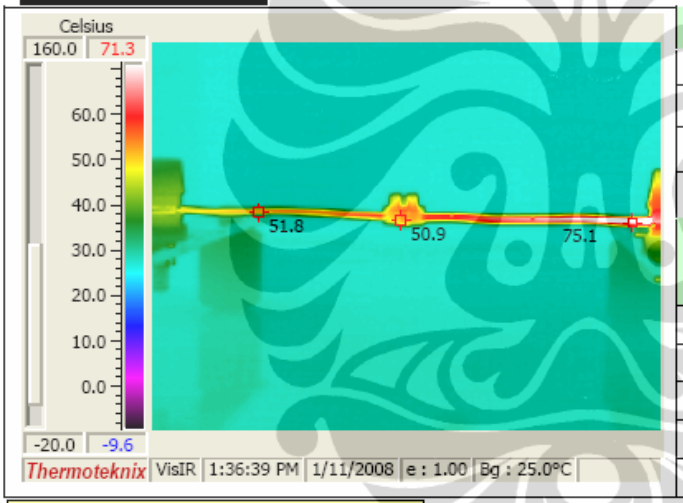
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 02

Visual Image



TYPE	SAMBUNGAN 4 CRUSTIN
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	24 A
TAHAP MENIT	10

Thermal Image



TEMPERATURE DATA (° C)		
JOINTING	50.9	° C
SPOT-1	51.8	° C
SPOT-2	75.1	° C
SPOT-3		° C

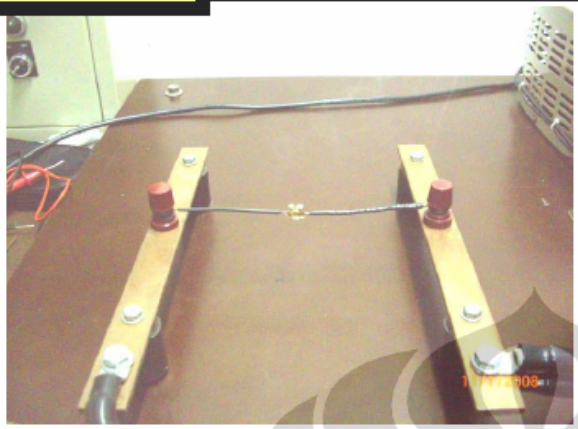
Probable Causes

Comment / Suggestion

Client Supervisors Notes

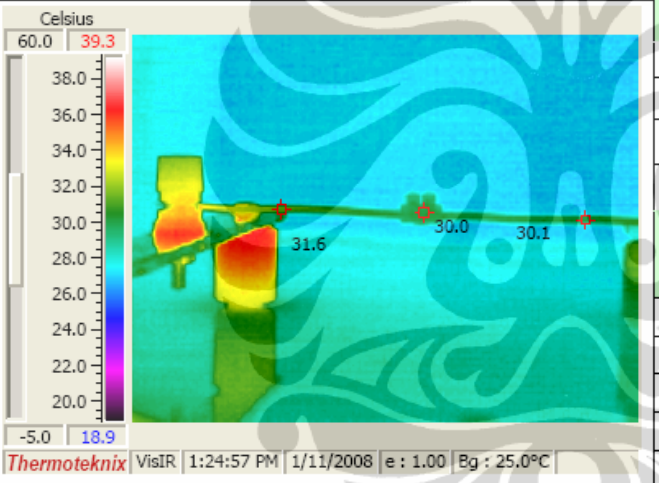
PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 02

Visual Image



TYPE	SAMBUNGAN 4 CRUSTIN
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	48 A
TAHAP MENIT	0

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	30.0 ° C
SPOT-1	31.6 ° C
SPOT-2	30.1 ° C
SPOT-3	

Probable Causes

		Comment / Suggestion

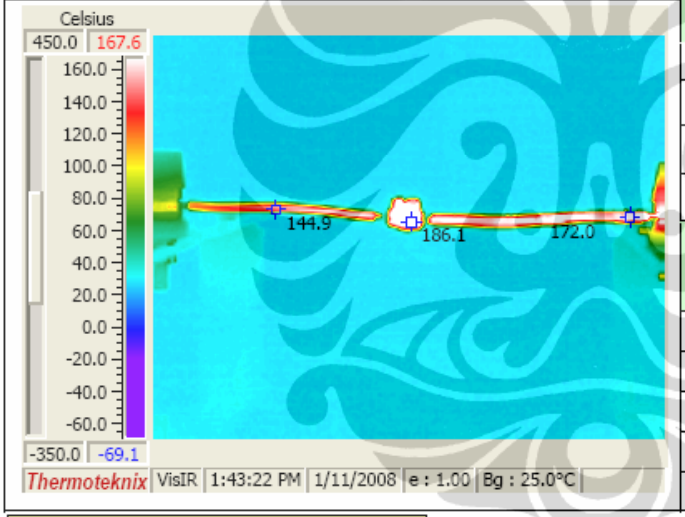
Client Supervisors Notes

PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 02

Visual Image

TYPE	SAMBUNGAN 4 CRUSTIN
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	48 A
TAHAP MENIT	5

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	186.1 ° C
SPOT-1	144.9 ° C
SPOT-2	172.0 ° C
SPOT-3	

Probable Causes

		Comment / Suggestion

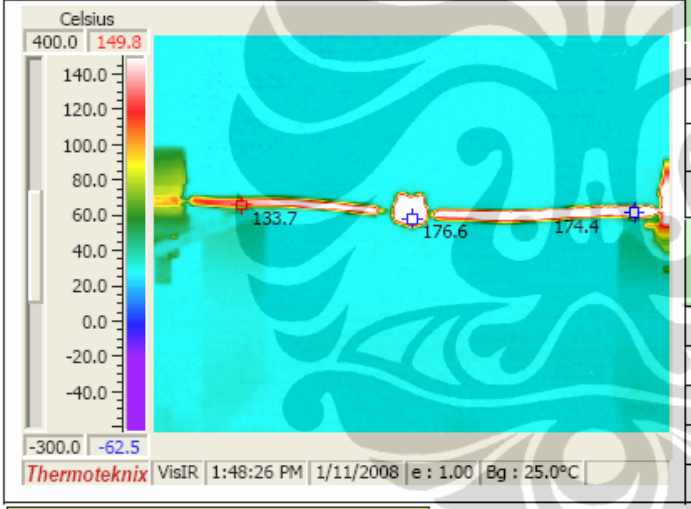
Client Supervisors Notes

PHOTO PERCOBAAN KEMAMPUAN HANTAR ARUS KABEL
TYPE JOINTING - 02

Visual Image

TYPE	SAMBUNGAN 4 CRUSTIN
DATE	11 JANUARI 2008
RISET BY	ADRIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
JENIS KABEL	KABEL " NYA "
UKURAN	1.5 MM
ARUS BEBAN	48 A
TAHAP MENIT	10

Thermal Image



TEMPERATURE DATA (° C)	
JOINTING	176.6 ° C
SPOT-1	133.7 ° C
SPOT-2	174.4 ° C
SPOT-3	

Probable Causes

		Comment / Suggestion

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

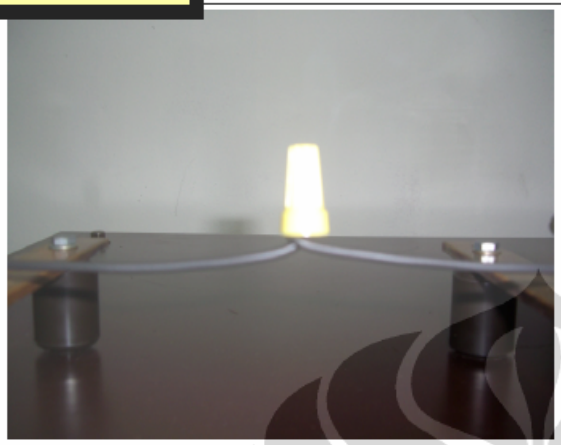
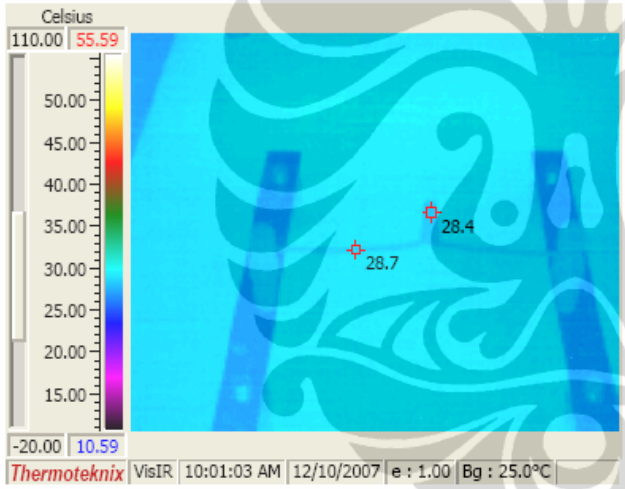


PHOTO NO.	01
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO. 1 LAS DOP

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	0 A
TAHAP 5 MENIT KE	I
TEMPERATURE SAMBUNGAN	28.4 ° C
HOT SPOT KABEL	28.7 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	KABEL MASIH NORMAL
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

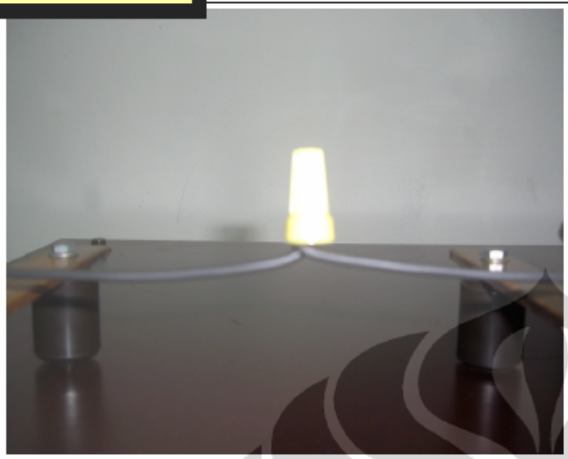
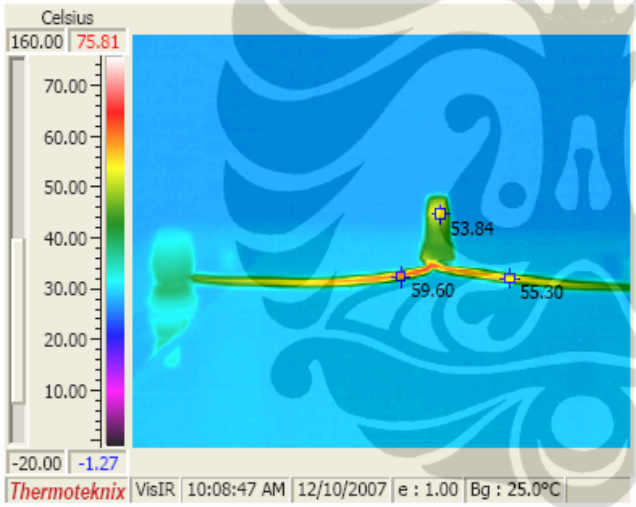


PHOTO NO.	02
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO. 1 LAS DOP

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	24 A
TAHAP 5 MENIT KE	II
TEMPERATURE SAMBUNGAN	53.84 ° C
HOT SPOT KABEL	59.60 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	KABEL MASIH NORMAL
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

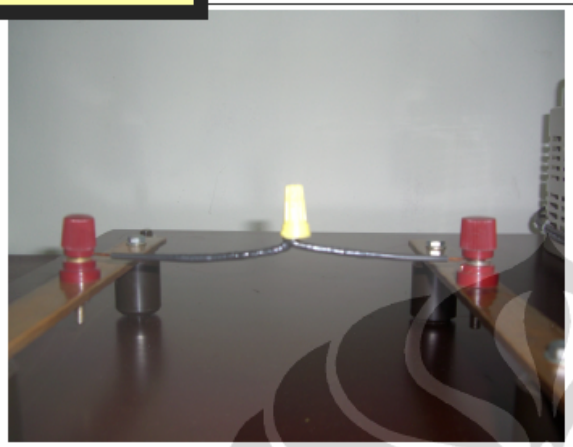
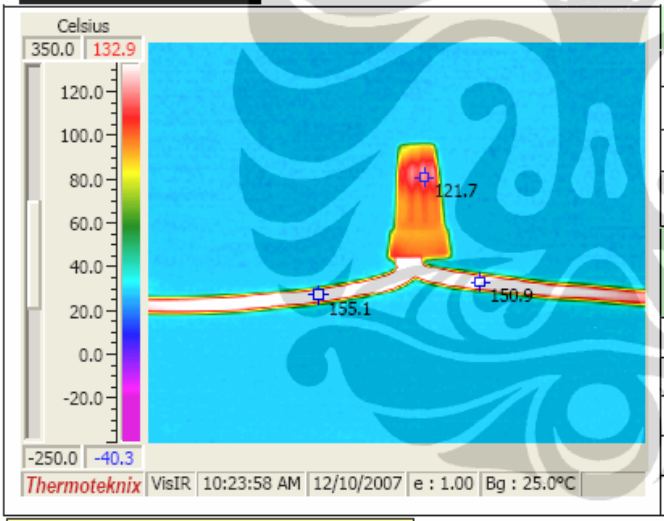


PHOTO NO.	05
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO. 1 LAS DOP

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	48 A
TAHAP 5 MENIT KE	V
TEMPERATURE SAMBUNGAN	121.7 ° C
HOT SPOT KABEL	155.1 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

KABEL SUDAH BER ASAP

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

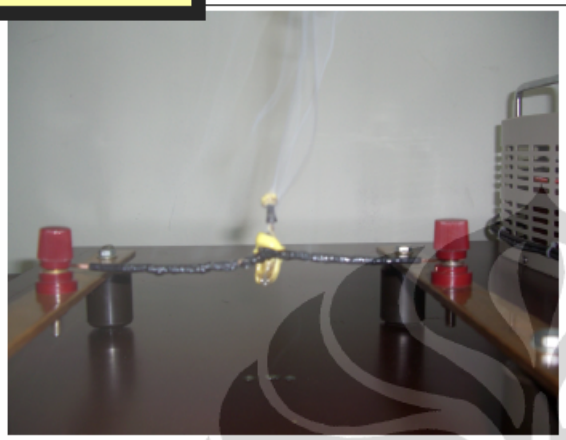
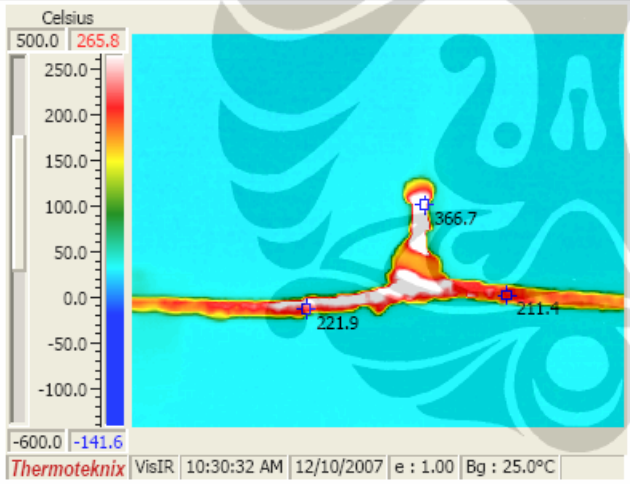


PHOTO NO.	07
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO. 1 LAS DOP

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	75 A
TAHAP 5 MENIT KE	VII
TEMPERATURE SAMBUNGAN	366.7 ° C
HOT SPOT KABEL	221.9 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	KABEL SUDAH BER ASAP
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

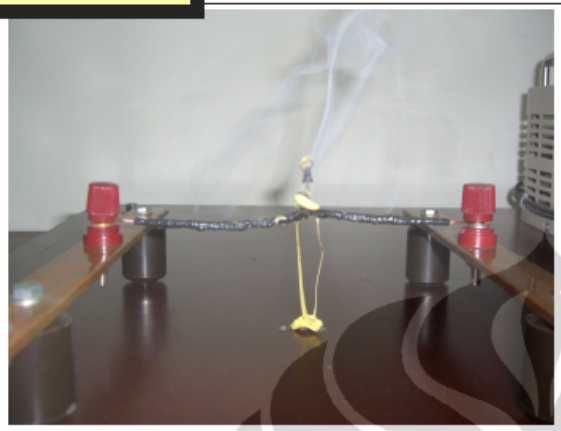
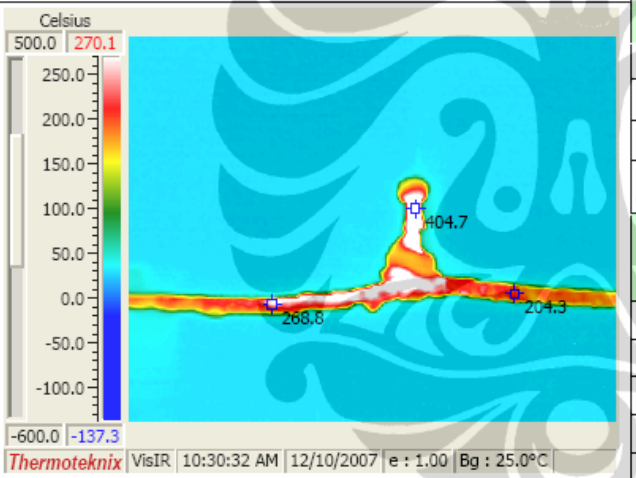


PHOTO NO.	08
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO. 1 LAS DOP

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	90 A
TAHAP 5 MENIT KE	VIII
TEMPERATURE SAMBUNGAN	404.7 ° C
HOT SPOT KABEL	268.8 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE	

Probable Causes

	Bad Connection	Comment / Suggestion
	Overload	KABEL SUDAH MEMBARA
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

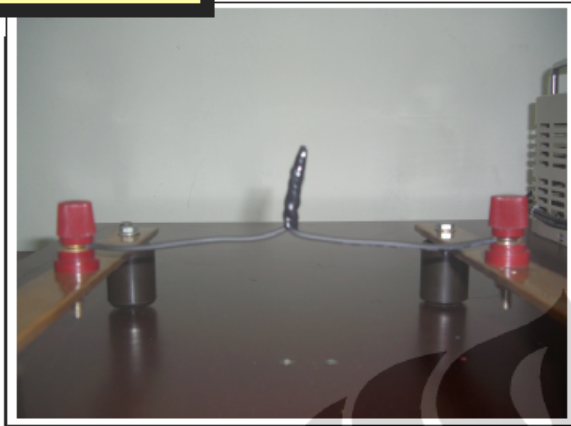
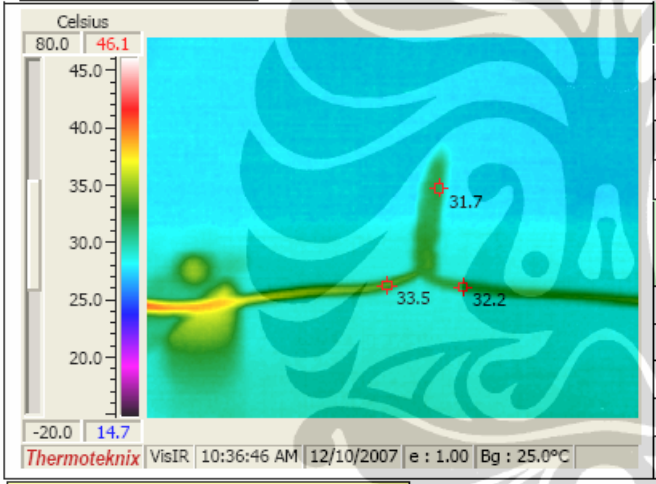


PHOTO NO.	09
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.2 PUNTIR 1

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	0 A
TAHAP 5 MENIT KE	I
TEMPERATURE SAMBUNGAN	31.7 ° C
HOT SPOT KABEL	33.5 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	KABEL NORMAL
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

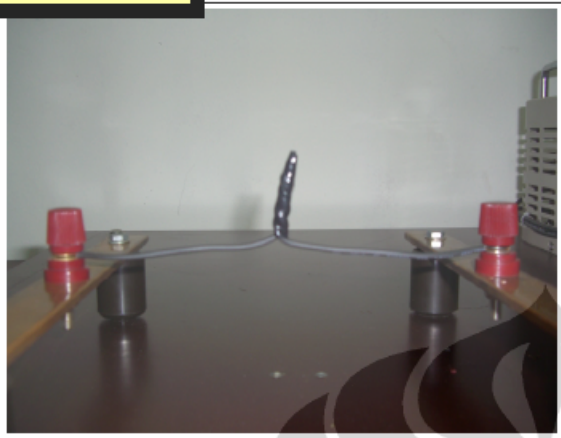
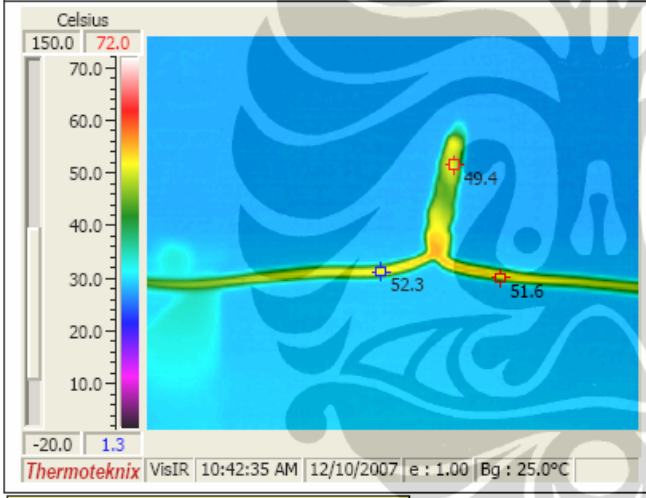


PHOTO NO.	10
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.2 PUNTIR 1

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	24 A
TAHAP 5 MENIT KE	II
TEMPERATURE SAMBUNGAN	49.4 ° C
HOT SPOT KABEL	52.3 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	KABEL NORMAL
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

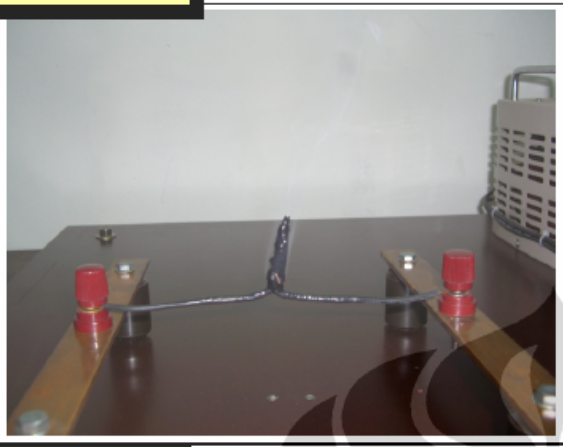
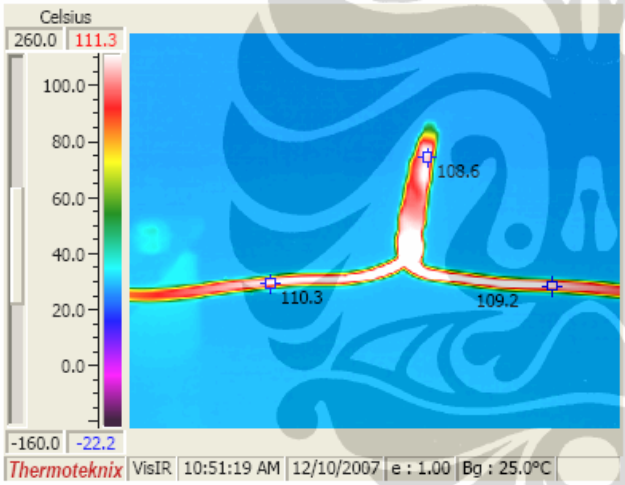


PHOTO NO.	13
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.2 PUNTIR 1

Thermal Image



TEMPERATURE DATA (° C)		
ARUS NOMINAL	48	A
TAHAP 5 MENIT KE	V	
TEMPERATURE SAMBUNGAN	108.6	° C
HOT SPOT KABEL	110.3	° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	MULAI BERASAP
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

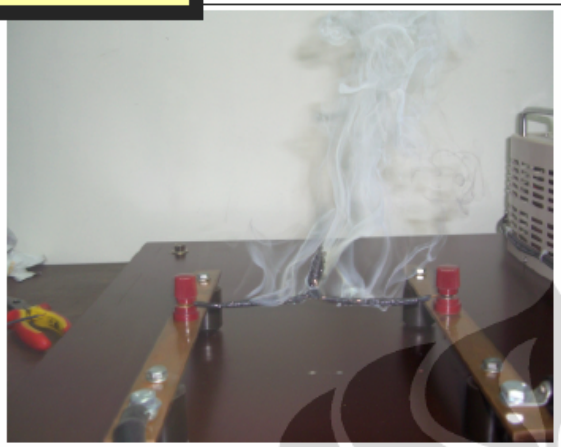
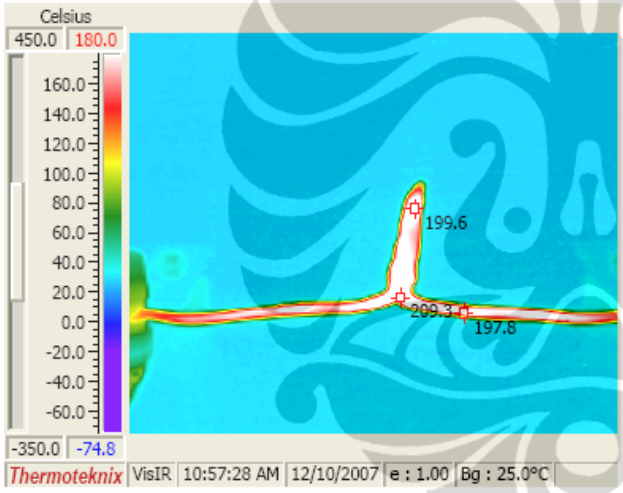


PHOTO NO.	15
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.2 PUNTIR 1

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	75 A
TAHAP 5 MENIT KE	VII
TEMPERATURE SAMBUNGAN	199.6 ° C
HOT SPOT KABEL	209.3 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	
	Overload	
	Unbalance Loaded	**SUDAH TERBAKAR**
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

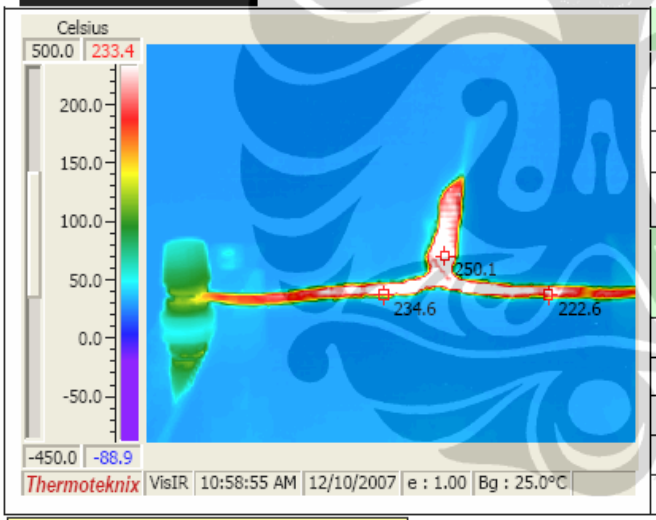
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	17
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.2 PUNTIR 1

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	90 A
TAHAP 5 MENIT KE	VIII-up
TEMPERATURE SAMBUNGAN	250.1 ° C
HOT SPOT KABEL	234.6 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	SUDAH MEMBARA MEMBARA
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

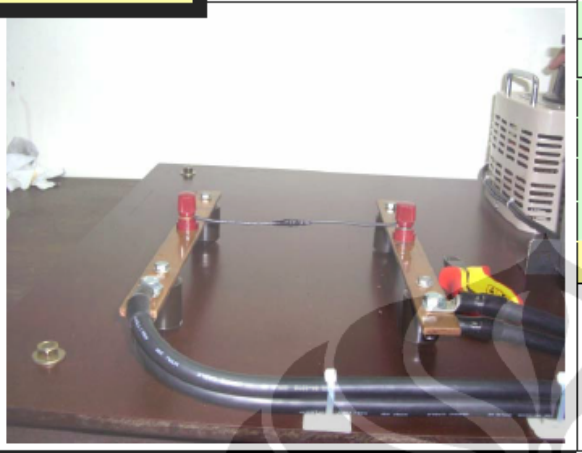
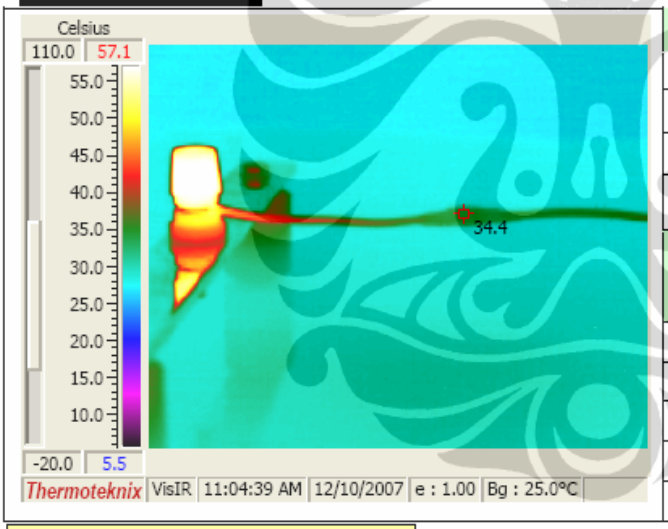


PHOTO NO.	18
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.3 PUNTIR 2

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	0 A
TAHAP 5 MENIT KE	I
TEMPERATURE SAMBUNGAN	34.4 ° C
HOT SPOT KABEL	34.4 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	**SAMBUNGAN MASIH NORMAL**
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

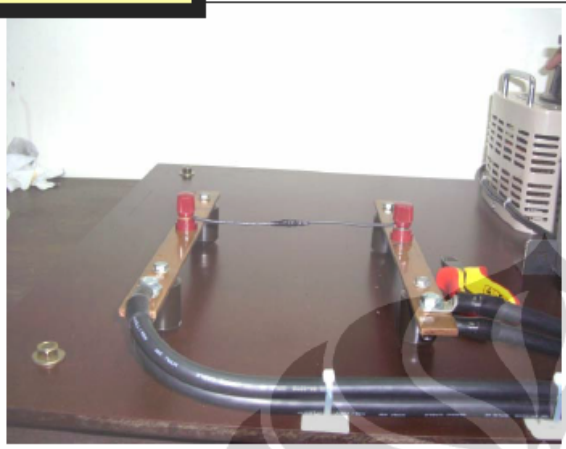
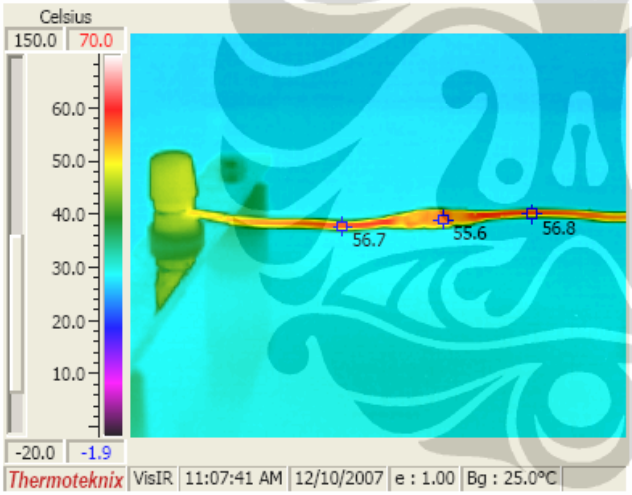


PHOTO NO.	19
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.3 PUNTIR 2

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	24 A
TAHAP 5 MENIT KE	II
TEMPERATURE SAMBUNGAN	55.6 ° C
HOT SPOT KABEL	56.8 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection	Comment / Suggestion
	Overload	SAMBUNGAN MASIH NORMAL
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

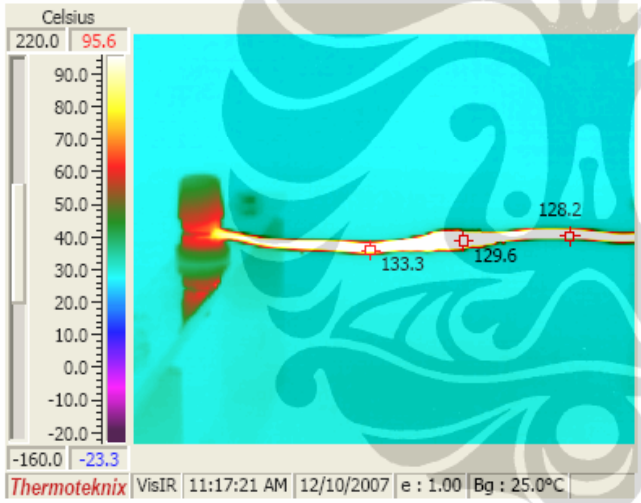
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	22
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.3 PUNTIR 2

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	48 A
TAHAP 5 MENIT KE	V
TEMPERATURE SAMBUNGAN	129.6 ° C
HOT SPOT KABEL	133.3 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection	Comment / Suggestion
	Overload	SAMBUNGAN SUDAH MULAI BERASAP
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

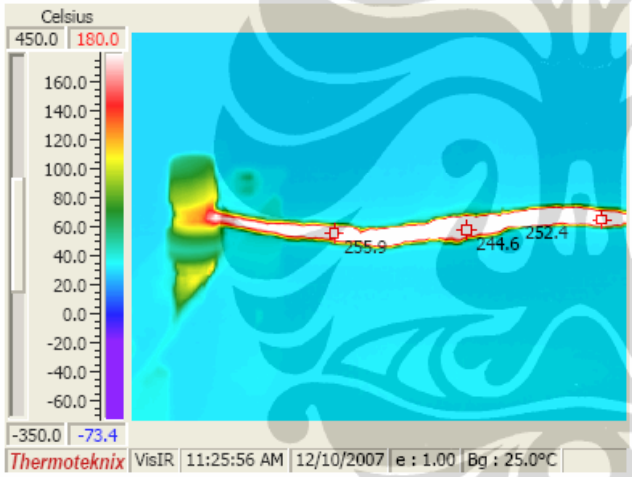
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	25
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.3 PUNTIR 2

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	75 A
TAHAP 5 MENIT KE	VIII
TEMPERATURE SAMBUNGAN	244.6 ° C
HOT SPOT KABEL	255.9 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	**SUDAH MULAI MEMBARA**
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

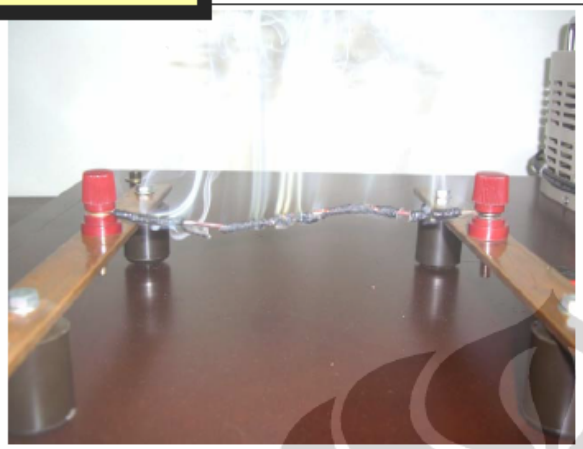
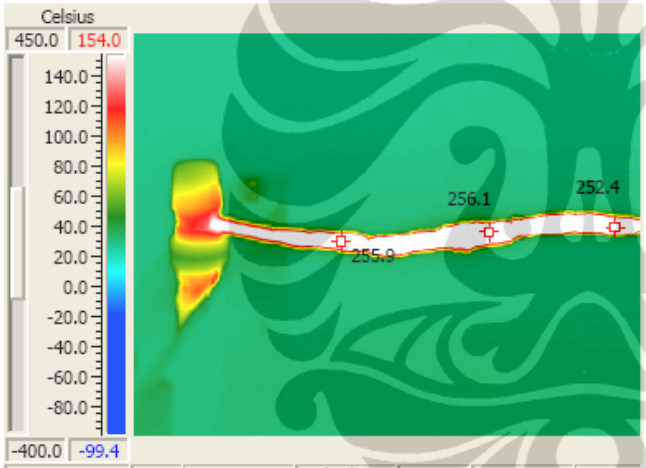


PHOTO NO.	26
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.3 **PUNTIR 2**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	96 A
TAHAP 5 MENIT KE	IX
TEMPERATURE SAMBUNGAN	256.1 ° C
HOT SPOT KABEL	255.9 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection	Comment / Suggestion
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	**SUDAH MEMBARA**
	Electromagnetic Induction	
	Normal Operating Temperature	

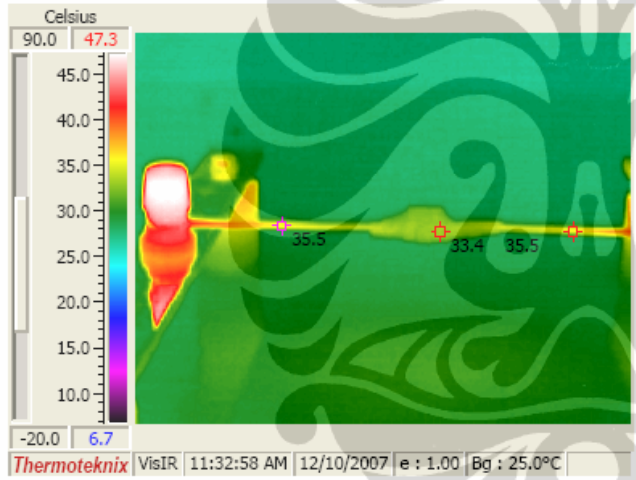
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	27
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.4 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	0 A
TAHAP 5 MENIT KE	I
TEMPERATURE SAMBUNGAN	33.4 ° C
HOT SPOT KABEL	35.5 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	**SAMBUNGAN MASIH NORMAL**
	Electromagnetic Induction	
	Normal Operating Temperature	

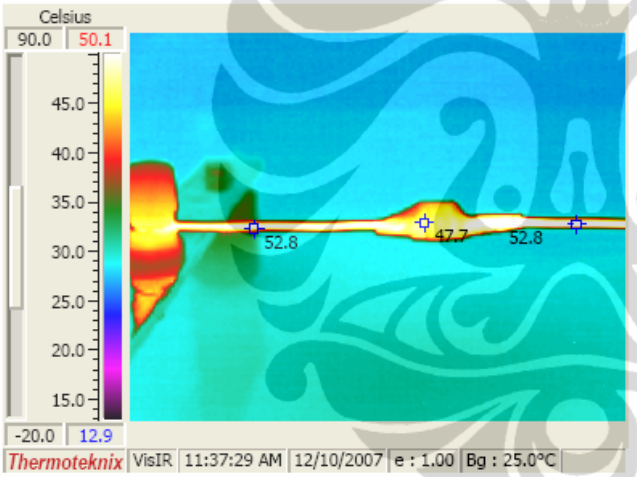
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	28
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.4 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	24 A
TAHAP 5 MENIT KE	II
TEMPERATURE SAMBUNGAN	47.7 ° C
HOT SPOT KABEL	52.8 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	**SAMBUNGAN MASIH NORMAL**
	Electromagnetic Induction	
	Normal Operating Temperature	

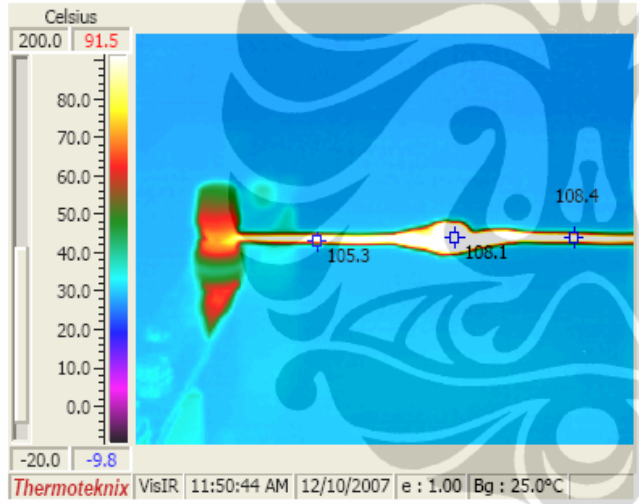
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	31
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.4 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	48 A
TAHAP 5 MENIT KE	V
TEMPERATURE SAMBUNGAN	108.1 ° C
HOT SPOT KABEL	108.4 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

SAMBUNGAN MULAI BERASAP

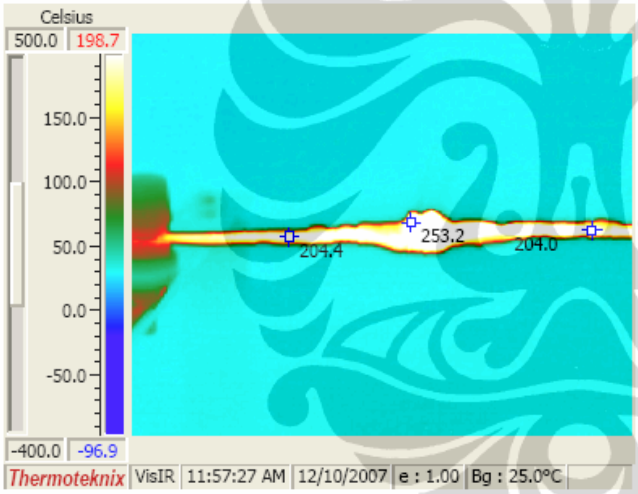
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	33
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.4 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	75 A
TAHAP 5 MENIT KE	VII
TEMPERATURE SAMBUNGAN	253.2 ° C
HOT SPOT KABEL	204.4 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection	Comment / Suggestion
	Overload	**SAMBUNGAN BERASAP TEBAL**
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

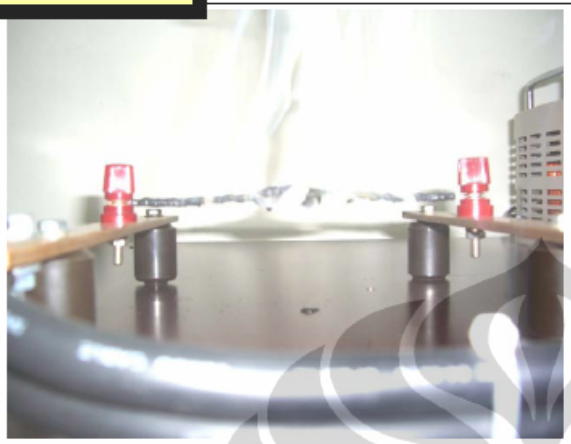
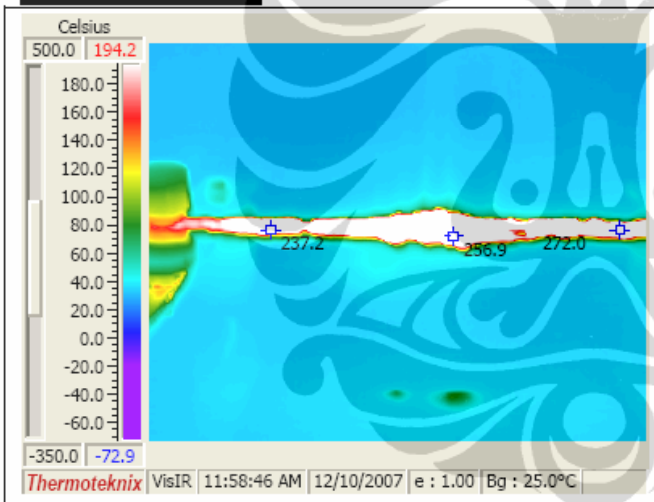


PHOTO NO.	34
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.3 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	96 A
TAHAP 5 MENIT KE	VIII
TEMPERATURE SAMBUNGAN	256.9 ° C
HOT SPOT KABEL	272.0 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection	Comment / Suggestion
	Overload	SAMBUNGAN MULAI MEMBARA
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

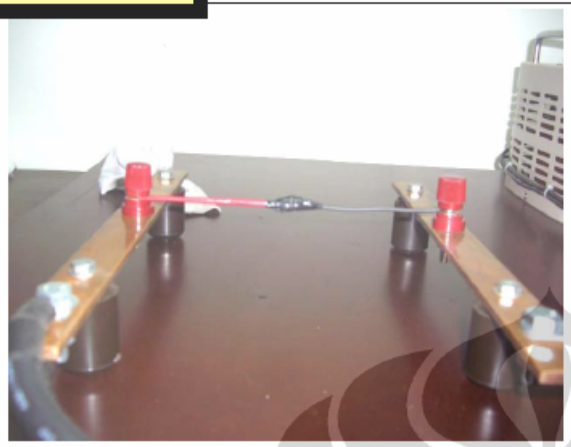
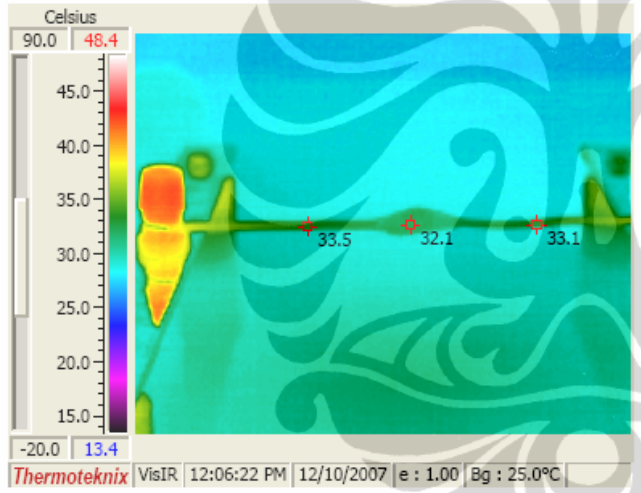


PHOTO NO.	35
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.5 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	0 A
TAHAP 5 MENIT KE	I
TEMPERATURE SAMBUNGAN	32.1 ° C
HOT SPOT KABEL	33.5 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

SAMBUNGAN MASIH NORMAL

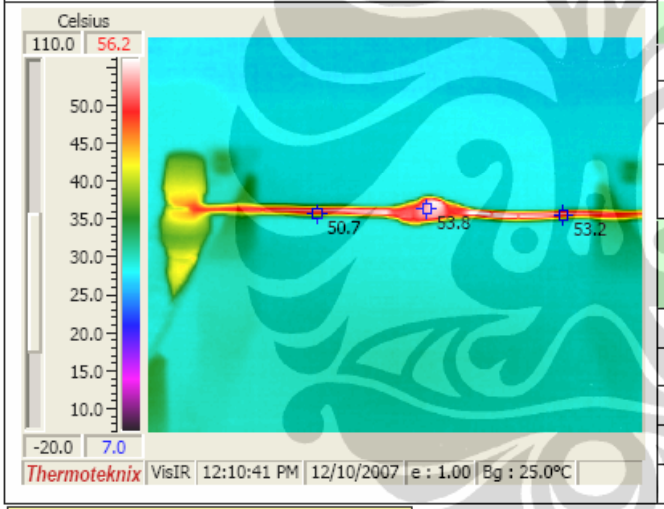
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	36
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.5 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	24 A
TAHAP 5 MENIT KE	II
TEMPERATURE SAMBUNGAN	53.8 ° C
HOT SPOT KABEL	53.2 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	**SAMBUNGAN MASIH NORMAL**
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

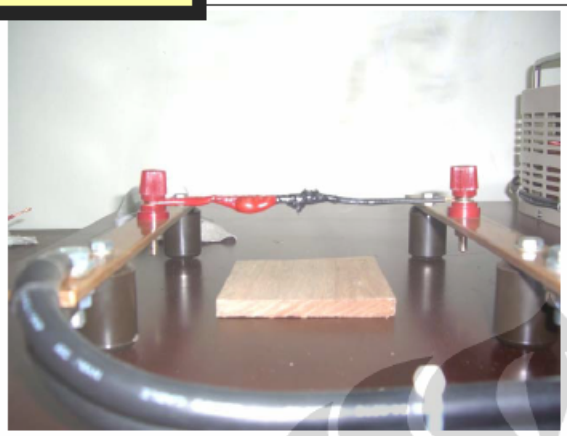
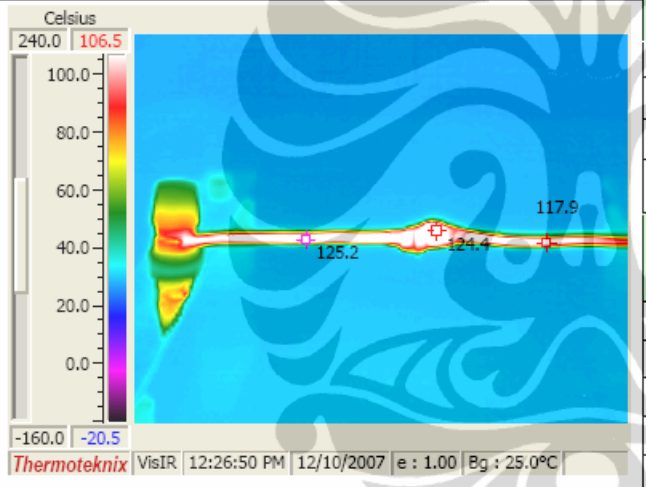


PHOTO NO.	39
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.5 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	48 A
TAHAP 5 MENIT KE	V
TEMPERATURE SAMBUNGAN	124.4 ° C
HOT SPOT KABEL	125.2 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	**SAMBUNGAN SUDAH MULAI BERASAP PADA KABEL SERBUK**
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

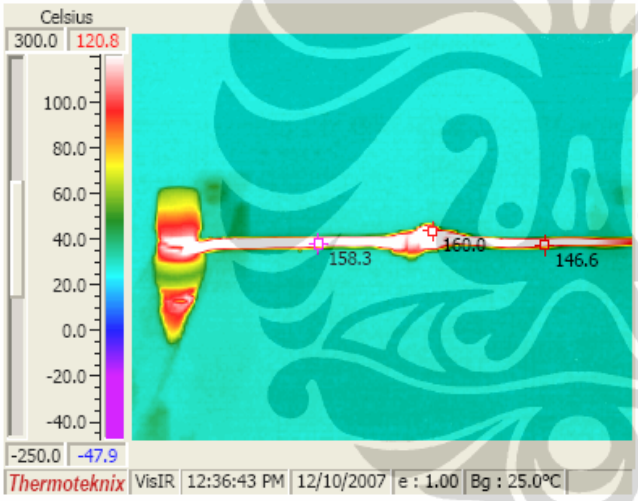
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	41
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " NYAF + NYA 1,5 MM"
OBJECT	TYPE SAMBUNGAN NO.5 CRUSTIN

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	75 A
TAHAP 5 MENIT KE	VII
TEMPERATURE SAMBUNGAN	160.0 ° C
HOT SPOT KABEL	158.3 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	SAMBUNGAN SUDAH MEMBARA
	Electromagnetic Induction	
	Normal Operating Temperature	

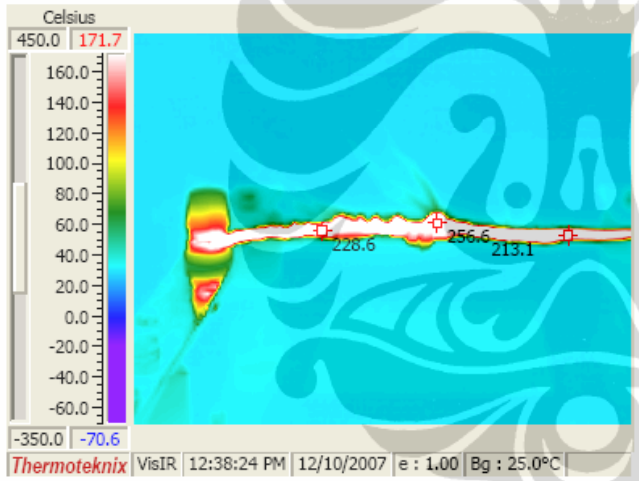
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	42
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.5 **CRUSTIN**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	96 A
TAHAP 5 MENIT KE	VIII
TEMPERATURE SAMBUNGAN	256.6 ° C
HOT SPOT KABEL	228.6 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	**KABEL SUDAH MEMBARA**
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

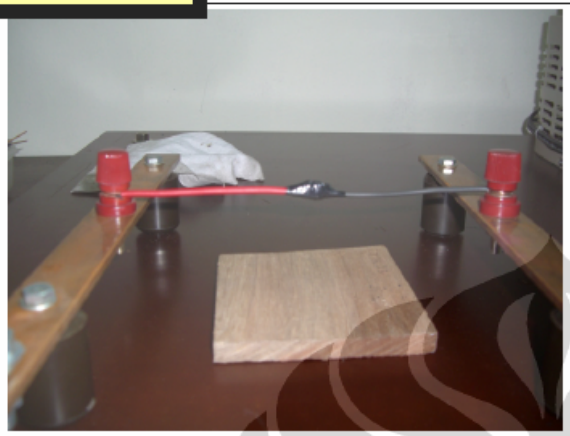
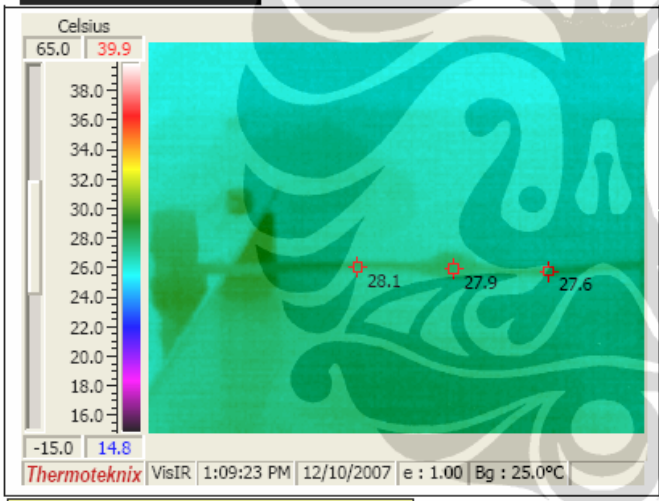


PHOTO NO.	43
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.6 **PUNTIR**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	0 A
TAHAP 5 MENIT KE	I
TEMPERATURE SAMBUNGAN	27.9 ° C
HOT SPOT KABEL	28.1 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	**SAMBUNGAN MASIH NORMAL**
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

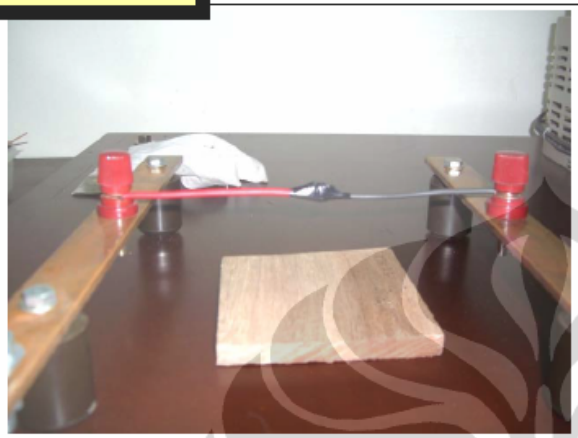
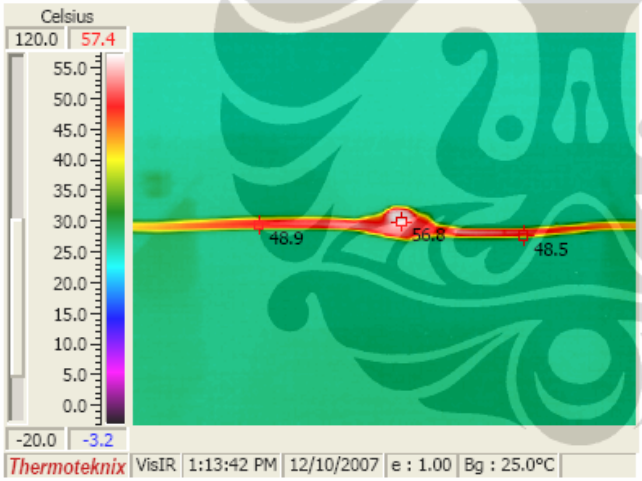


PHOTO NO.	44
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.6 **PUNTIR**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	24 A
TAHAP 5 MENIT KE	II
TEMPERATURE SAMBUNGAN	56.8 ° C
HOT SPOT KABEL	48.9 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

		Comment / Suggestion
	Bad Connection	**SAMBUNGAN MASIH NORMAL**
	Overload	
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

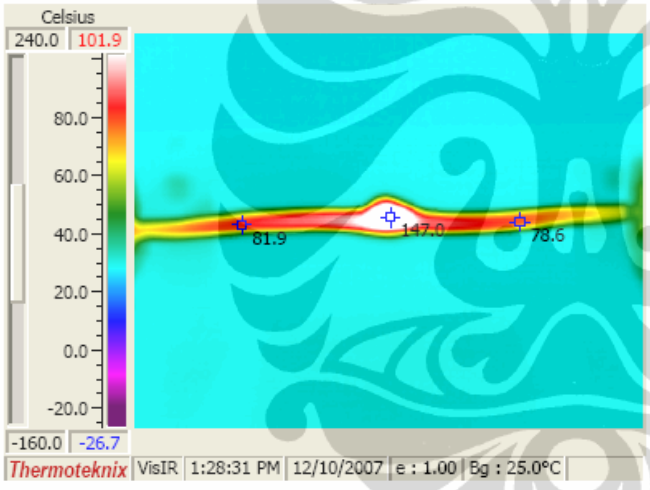
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	47
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.6 **PUNTIR**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	48 A
TAHAP 5 MENIT KE	V
TEMPERATURE SAMBUNGAN	147.0 ° C
HOT SPOT KABEL	81.9 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

SUDAH BERASAP BANYAK

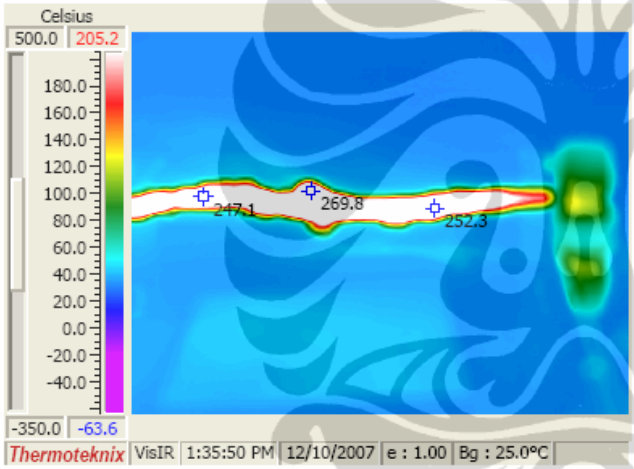
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	49
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.6 **PUNTIR**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	75 A
TAHAP 5 MENIT KE	VII
TEMPERATURE SAMBUNGAN	269.8 ° C
HOT SPOT KABEL	252.3 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

MULAI MEMBARA

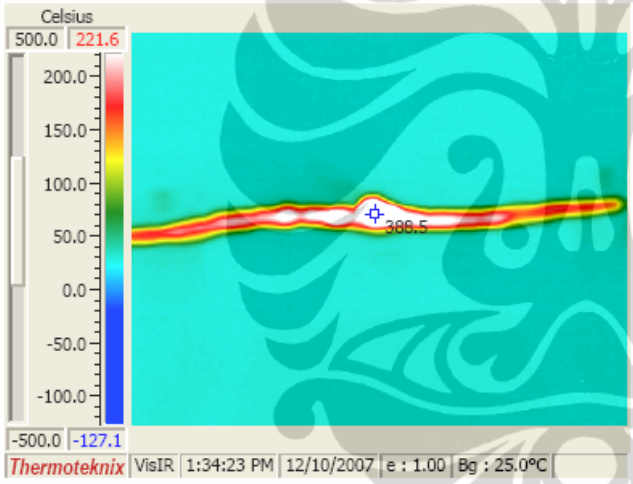
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	50
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.6 **PUNTIR**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	90 A
TAHAP 5 MENIT KE	VIII
TEMPERATURE SAMBUNGAN	269.8 ° C
HOT SPOT KABEL	252.3 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

SUDAH MEMBARA

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

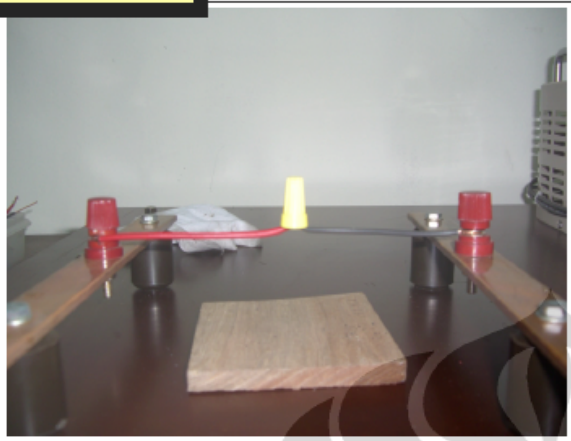
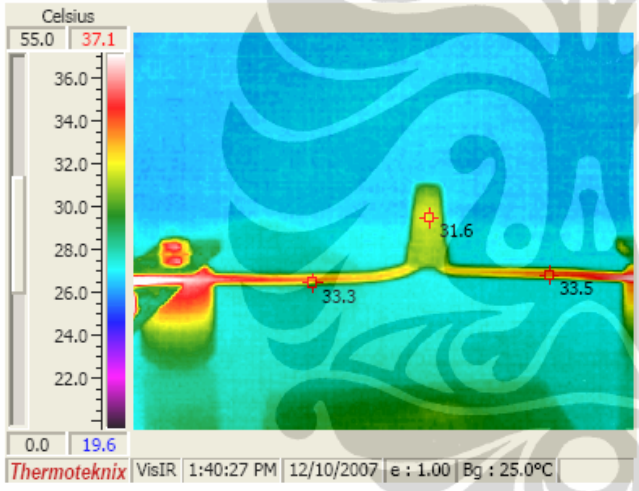


PHOTO NO.	51
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.7 **LASDOP**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	0 A
TAHAP 5 MENIT KE	I
TEMPERATURE SAMBUNGAN	31.6 ° C
HOT SPOT KABEL	33.3 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

SAMBUNGAN KABEL MASIH NORMAL

Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

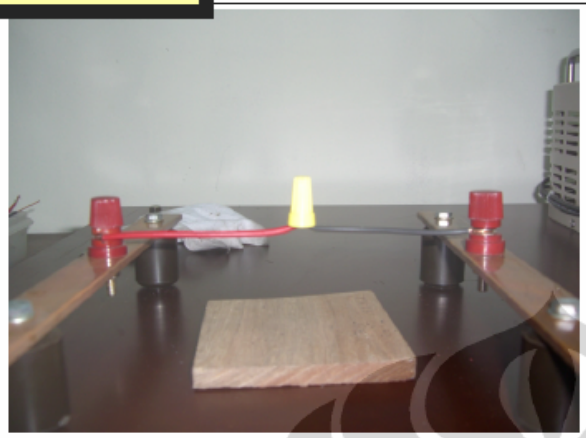
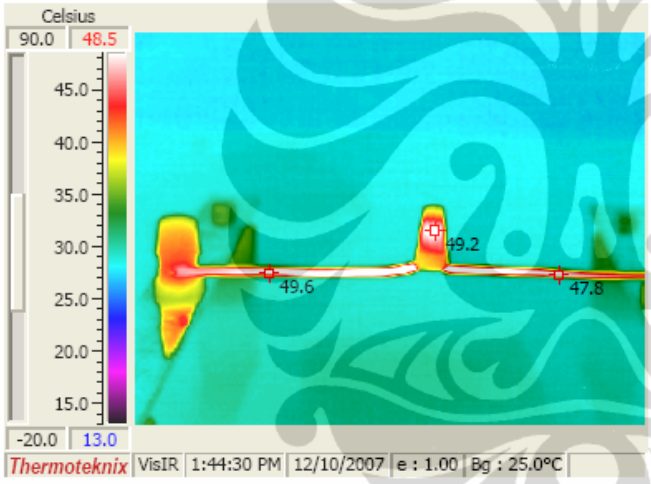


PHOTO NO.	52
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.7 **LASDOP**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	24 A
TAHAP 5 MENIT KE	II
TEMPERATURE SAMBUNGAN	49.2 ° C
HOT SPOT KABEL	47.8 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

SAMBUNGAN KABEL MASIH NORMAL

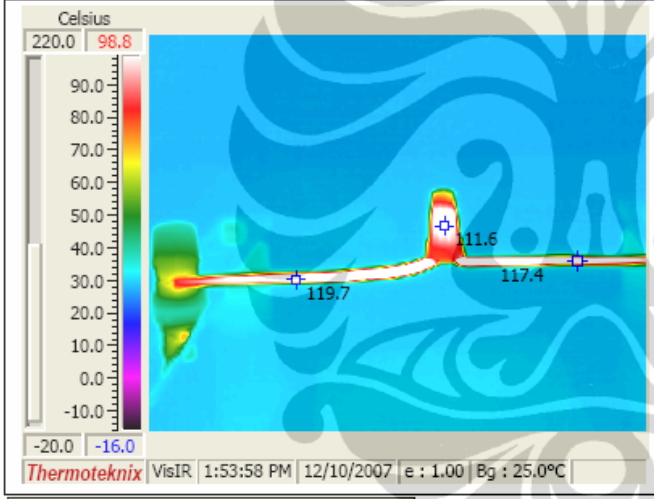
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	55
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM"**
OBJECT	TYPE SAMBUNGAN NO.7 **LASDOP**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	48 A
TAHAP 5 MENIT KE	V
TEMPERATURE SAMBUNGAN	111.6 ° C
HOT SPOT KABEL	119.7 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection	Comment / Suggestion
	Overload	**SUDAH MULAI BERASAP AGAK BANYAK**
	Unbalance Loaded	
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

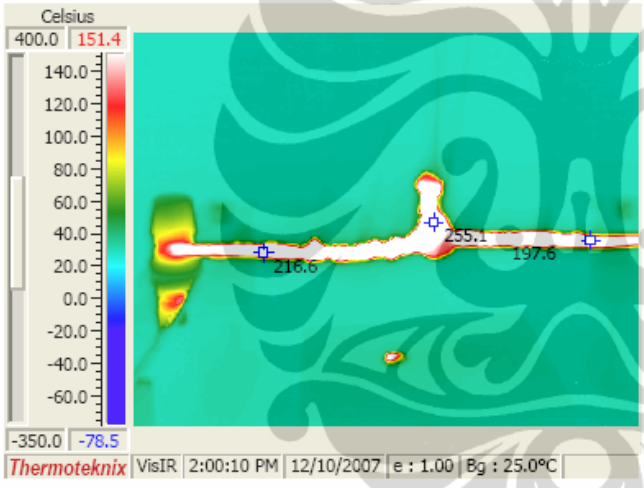
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	57
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.7 **LASDOP**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	75 A
TAHAP 5 MENIT KE	VII
TEMPERATURE SAMBUNGAN	255.1 ° C
HOT SPOT KABEL	216.6 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection
	Overload
	Unbalance Loaded
	Internal Component / Parts failure
	Electromagnetic Induction
	Normal Operating Temperature

Comment / Suggestion

SUDAH MULAI MELELEH

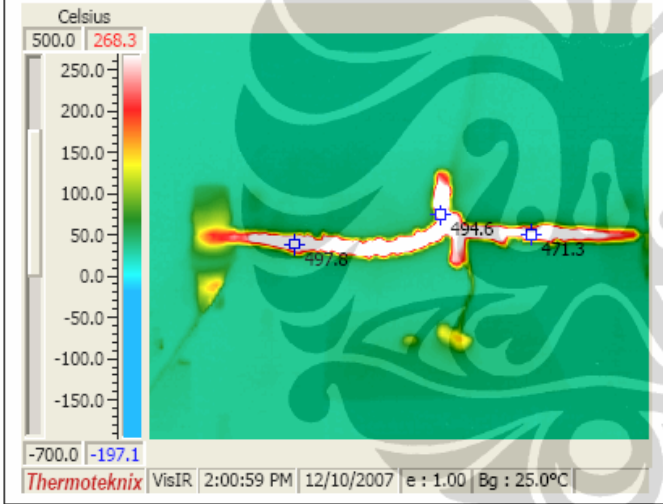
Client Supervisors Notes

INFRARED THERMOGRAPHY REPORT

Visual Image

PHOTO NO.	58
DATE	10 DESEMBER 2007
RISET BY	ADRIIANUS PANGARIBUAN
LOCATION	FAKULTAS TEKNIK UI
EQUIPMENT	KABEL " **NYAF + NYA 1,5 MM**"
OBJECT	TYPE SAMBUNGAN NO.7 **LASDOP**

Thermal Image



TEMPERATURE DATA (° C)	
ARUS NOMINAL	96 A
TAHAP 5 MENIT KE	VIII
TEMPERATURE SAMBUNGAN	494.6 ° C
HOT SPOT KABEL	497.8 ° C

CLASSIFICATION OF RISE IN TEMPERATURE FROM PERMITTED MAXIMUM TEMPERATURE

Probable Causes

	Bad Connection	Comment / Suggestion
	Overload	
	Unbalance Loaded	**SUDAH MEMBARA**
	Internal Component / Parts failure	
	Electromagnetic Induction	
	Normal Operating Temperature	

Client Supervisors Notes

LAMPIRAN B

TABEL DAN DATA TEKNIS

Tabel 7.6-1 Penghantar dengan bahan isolasi, pembebanan dan pemasangannya harus memperhatikan suhu batas yang diperbolehkan

No.	Jenis Isolasi	Nomenklatur	Untuk kabel pasangan tetap			Untuk kabel fleksibel		
			Suhu Penghantar maksimum	Suhu keliling		Suhu penghantar maksimum	Suhu keliling	
				maksimum	minimum		maksimum	minimum
			°C	°C	°C	°C	°C	°C
1.	Polyvinyl chloride biasa	Y biasa	70	60	+ 5	70	60	+ 5
2.	Polyvinyl chloride special	Y special	90	80	+ 5	-	-	-
3.	Karet biasa	G	60	50	- 25	60	50	- 25
4.	Karet Butil	2 G	85	75	- 25	85	75	- 25
5.	Karet Silikon	Si	-	-	-	180	170	25
6.	Polyethylene	2Y	70	60	- 25	-	-	-
7.	Cross linked Polyethylene (XLPE)	2 X	90	75	- 25	85	75	-25
8.	Ethylene Propylene Rubber	EPR	90	75	- 25	85	75	- 25
9.	Mineral	- biasa - special	85 250	60 -	- 25 -	- -	- -	- -
10.	Kertas	-	85	45	-	-	-	-

Tabel 7.3 - 40 Resistans penghantar (kabel) instalasi tetap pada suhu 20 °C (R_{20})

Luas penampang nominal mm²	Jumlah minimum kawat	Berlapis logam		Polos		Aluminium	
		Inti tunggal	Inti banyak	Inti tunggal	Inti banyak	Inti tunggal	Inti banyak
		ohm/km	ohm/km	ohm/km	ohm/km	ohm/km	ohm/km
1	2	3	4	5	6	7	8
0,5	1	36,0	36,7	35,3	36,0	-	-
0,75	1	24,3	24,8	24,0	24,5	-	-
1	1	17,9	18,2	17,7	18,1	29,3	29,9
1,5	1	12,0	12,2	11,9	12,1	19,7	20,0
2,5	1	7,21	7,35	7,14	7,28	11,8	12,0
4	1	4,51	4,60	4,47	4,56	7,39	7,54
6	1	3,0	3,06	2,97	3,03	4,91	5,01
10	1	1,79	1,83	1,77	1,81	2,94	3,0
16	1	1,13	1,15	1,12	1,14	1,85	1,89
0,5	7	42,4	43,10	41,7	42,40	-	-
0,75	7	27,0	27,50	26,8	27,0	-	-
1	7	21,2	21,60	20,8	21,20	34,8	35,4
1,5	7	13,6	13,80	13,3	13,60	22,2	22,7
2,5	7	7,41	7,56	7,27	7,41	12,1	12,4
4	7	4,6	4,70	4,52	4,61	7,55	7,70
6	7	3,05	3,11	3,02	3,08	4,99	5,09
10	7	1,81	1,84	1,79	1,83	2,96	3,02
16	7	1,41	1,16	1,13	1,15	1,87	1,91
25	7 (19)	0,719	0,734	0,712	0,727	1,18	1,20
35	19	0,519	0,529	0,514	0,524	0,851	0,868
50	19	0,383	0,391	0,379	0,387	0,628	0,641
70	7	0,265	0,270	0,262	0,268	0,435	0,443
95	7	0,191	0,195	0,189	0,193	0,313	0,320
120	7	0,151	0,154	0,150	0,153	0,248	0,253
150	7	0,123	0,126	0,122	0,124	0,202	0,206
185	7	0,0982	0,100	0,0972	0,0991	0,161	0,164
240	7	0,0747	0,0762	0,0740	0,0754	0,122	0,125
300	7 (19)	0,0595	0,0607	0,059	0,0601	0,976	0,100
400	19	0,0465	0,0475	0,0461	0,0470	0,0763	0,0778
500	19	0,0369	0,0377	0,0366	0,0373	0,0605	0,0617

Rumus menghitung resistans pada suhu t :

$$R_t = R_{20} \times \frac{234{,}5 + t}{254{,}5} \times \frac{L}{1000} \quad untuk\ tembaga$$

$$R_t = R_{20} \times \frac{228 + t}{248} \times \frac{L}{1000} \quad untuk\ aluminium$$

dimana R_t = resistans L meter kabel pada suhu t derajad C, dalam ohm
R_{20} = resistans pada 20 derajad C, dalam ohm/km
t = suhu penghantar, dalam derajad C
L = panjang penghantar, dalam m

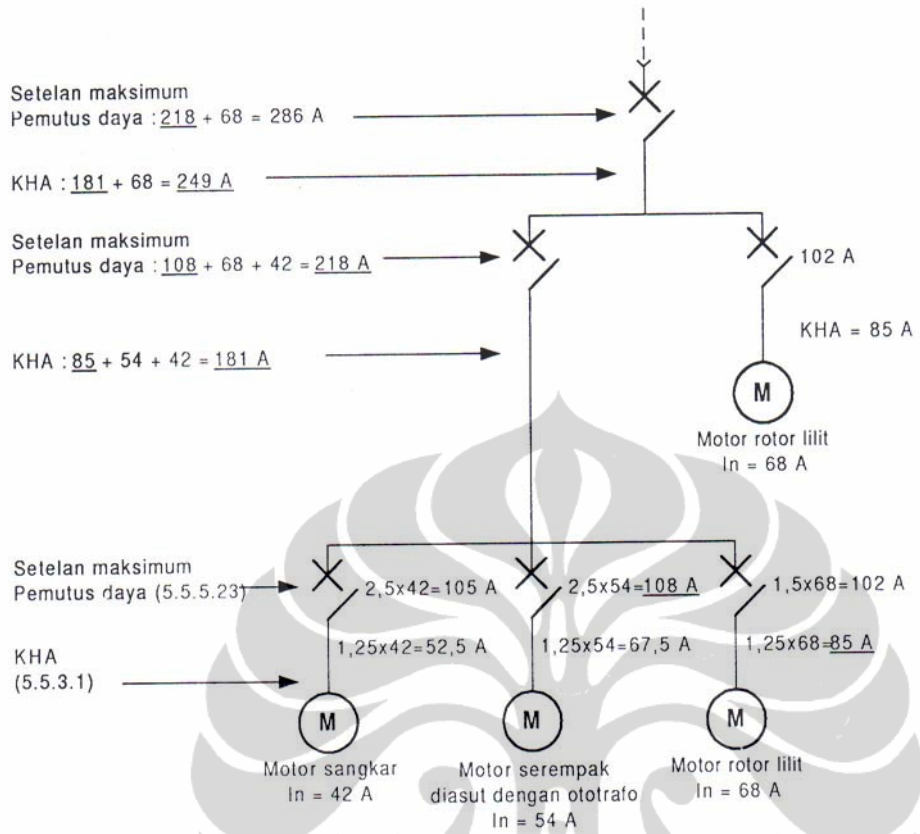
Faktor koreksi untuk menghitung resistans penghantar pada suhu berbeda dengan 20 °C.

Tabel 7.3-2 Faktor koreksi untuk KHA terus menerus untuk kabel instalasi berinti tunggal berisolasi karet/PVC pada suhu keliling 30 °C dengan suhu penghantar maksimum 70 °C

Suhu keliling °C	% dari nilai KHA menurut Tabel 7.3-1 kolom 4	
	Bahan isolasi karet	Bahan isolasi PVC
1	2	3
t ≤ 30 °C	98	100
30 °C < t ≤ 35 °C	90	94
35 °C < t ≤ 40 °C	80	87
40 °C < t ≤ 45 °C	69	80
45 °C < t ≤ 50 °C	56	71
50 °C < t ≤ 55 °C	40	62

Tabel 7.3-3 Faktor koreksi untuk KHA terus menerus untuk kabel instalasi tunggal berisolasi terbuat dari bahan khusus tahan panas pada suhu keliling di atas 55 °C

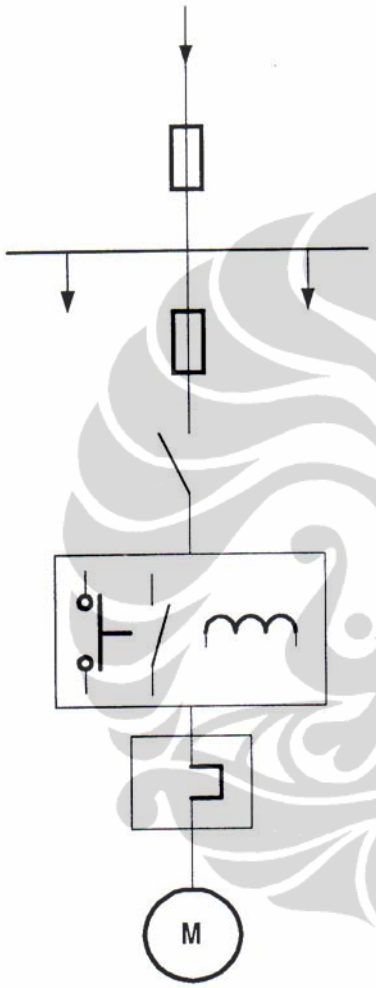
Suhu keliling °C		% dari nilai menurut Tabel 7.3-1 kolom 4
Penghantar dengan batas suhu kerja 100 °C	Penghantar dengan batas suhu kerja 180 °C	
1	2	3
55 °C < t ≤ 65 °C	55 °C < t ≤ 145 °C	100
65 °C < t ≤ 70 °C	145 °C < t ≤ 150 °C	92
70 °C < t ≤ 75 °C	150 °C < t ≤ 155 °C	85
75 °C < t ≤ 80 °C	155 °C < t ≤ 160 °C	75
80 °C < t ≤ 85 °C	160 °C < t ≤ 165 °C	65
85 °C < t ≤ 90 °C	165 °C < t ≤ 170 °C	53
90 °C < t ≤ 95 °C	170 °C < t ≤ 175 °C	38



Proteksi motor jalan atau beban lebih harus disetel dekat pada arus pengenalnya. Pemilihan penghantar ditentukan oleh KHA yang dihitung seperti di atas.

Gambar 5.5-2 Contoh pada 5.5.6.1

Umum	5.5.1
Keadaan lingkungan	5.5.2
Ketentuan untuk tegangan di atas 1000 V	5.5.10
Pencegahan terhadap sentuhan	5.5.11
Pembumian	5.5.12



Pengaman hubung pendek 5.5.6

Sirkit cabang 5.5.3.2

Pengaman hubung-pendek 5.5.5

Tabel 5.5-2

Sirkit motor 5.5.3

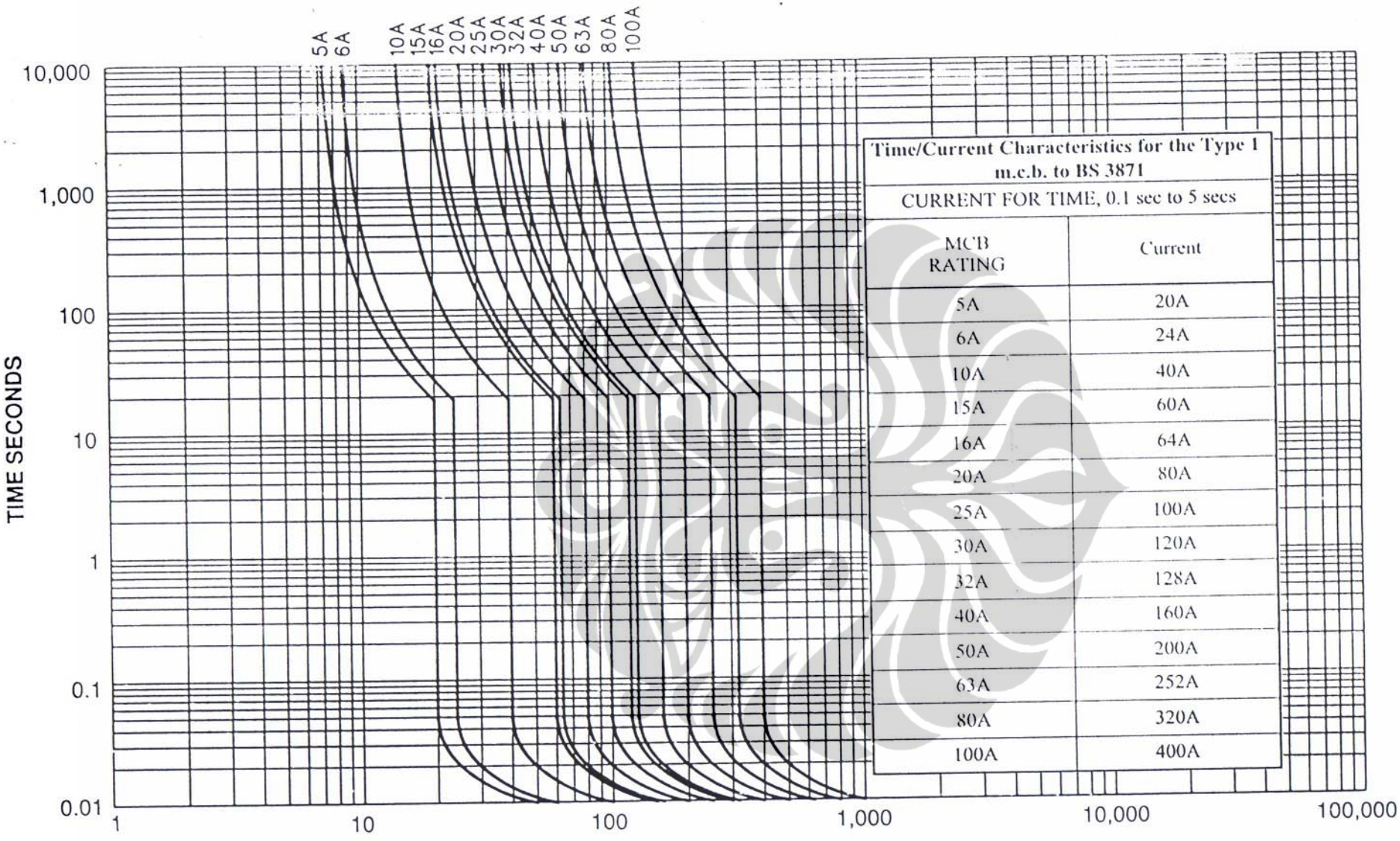
Sarana pemutus 5.5.8

Kendali 5.5.7

Pengaman beban lebih (Motor berputar) 5.5.4

Tabel 5.5-1

Motor 5.5.1 5.5.2



Time/Current Characteristics for the Type 1 m.c.b. to BS 3871

CURRENT FOR TIME, 0.1 sec to 5 secs

MCB RATING	Current
5A	20A
6A	24A
10A	40A
15A	60A
16A	64A
20A	80A
25A	100A
30A	120A
32A	128A
40A	160A
50A	200A
63A	252A
80A	320A
100A	400A

fig. 4

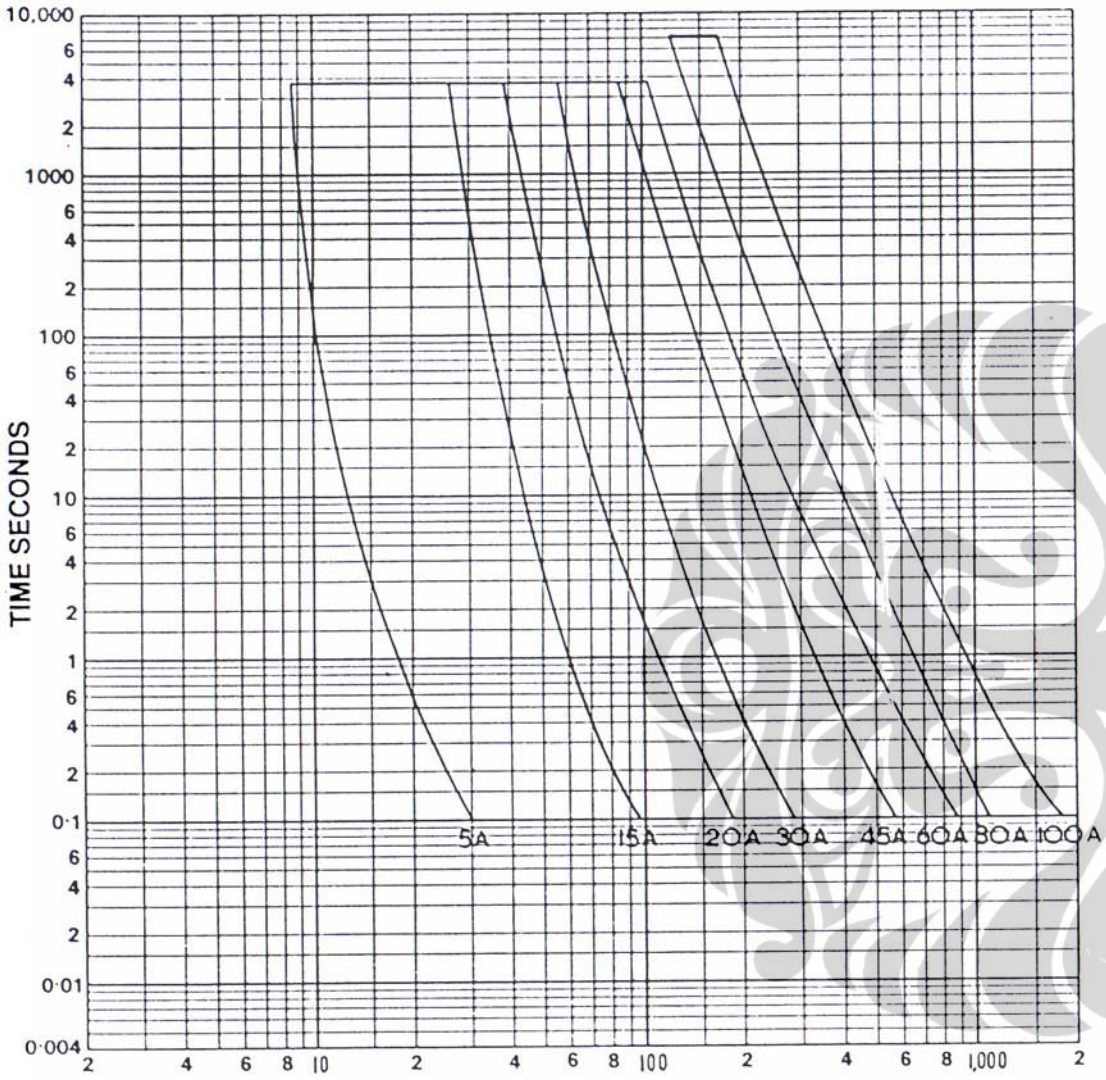


fig. 1

Time/Current characteristics for fuses to BS 1361				
FUSE RATING	CURRENT FOR TIME			
	0.1 sec	0.2 sec	0.4 sec	5 sec
5A	30A	25A	22A	14A
15A	97A	80A	70A	46A
20A	180A	155A	135A	82A
30A	280A	240A	200A	125A
45A	550A	470A	400A	240A
60A	880A	720A	600A	330A
80A	1100A	950A	800A	460A
100A	1800A	1400A	1200A	630A

TABLE 52B (Regulation 523-01)

Maximum conductor operating temperatures

Conductor material	Insulation material	Conductor operating temperature °C limit	Limiting final fault temperature °C	Appendix 4 Table
Copper	70° C p.v.c. (General purpose)	70	160/140*	4D 1-2-3&4
	60° C rubber	60	200	4H1
	85° C rubber	85	220	4F 1 &2
	85° C p.v.c.	85	160	.
	90° C thermosetting	90	250	4E 1-2-3 & 4
	Impregnated paper	80	160	
Mineral - plastic covered or exposed to touch - bare and neither exposed to touch nor in contact with combustible materials		70 105	160 250	4J1 4J2
Aluminium	70° C p.v.c. (General purpose)	70	160/140*	4K 1-2-3 & 4
	60° C rubber	60	200	.
	85° C rubber	85	220	.
	90° C thermosetting	90	250	4L1-2-3 & 4
	Impregnated paper	80	160	

* above 300 mm^2