

ภาคผนวก ญ

รายงานการซ่อมบำรุงระบบไฟฟ้า



บริษัท เกทเวย์ อินเตอร์เทรด จำกัด
GATEWAY INTERTRADE CO., LTD.

FM-SVGI-06 Rev01 (06/01/53)

Quality System ISO 9001
Certified by Bureau Veritas Thailand Ltd.

ใบรายงานการตรวจเช็คเครื่องกำเนิดไฟฟ้า

ชื่อบริษัท บริษัท เกทเวย์ อินเตอร์เทรด จำกัด โครงการ HYATT อาคาร B เบอร์โทร.....ครั้งที่ 3 / 4
Generator Set HIMOJNSA Model : HTW-920TS S/N : X1CH079005 Run Hour : 24 H
Engine MITSUBISHI Model : S12B2-PTA2-S S/N : 28776
Alternature STAMPORD Model : HC1634J1 S/N : X165411219
Control HIMOJNSA Model : CEA 7 S/N :

ระบบที่ได้รับการตรวจเช็ค

1. ระบบเครื่องยนต์ดีเซล

1.1 ระบบแบตเตอรี่ ยี่ห้อ GS

Model : 900AH 12VDC จำนวน 4 ลูก

- สภาพแบตเตอรี่, ขั้วแบตเตอรี่, สายแบตเตอรี่, ระดับน้ำกลั่น

- ชุดชาร์จแบตเตอรี่

- แรงดันแบตเตอรี่

1.2 ระบบเชื้อเพลิง ประเภท ดีเซล

- ระดับน้ำมันเชื้อเพลิงในถัง 1700 ลิตร

- รอยรั่วไหลและการอุดตัน

- ไล์กรอง P/N 92562-6900 จำนวน 2 ลูก

- ไล์กรอง P/N.....จำนวน.....ลูก

1.3 ระบบหล่อลื่น

- ระดับน้ำมันหล่อลื่น

- รอยรั่วไหลและการอุดตัน

- ไล์กรอง P/N 35340-44100 จำนวน 4 ลูก

- ไล์กรอง P/N 35340-09100 จำนวน 1 ลูก

1.4 ระบบอากาศ

- กรองอากาศ P/N P127309 จำนวน 3 ลูก

ผลการตรวจเช็ค

ปกติ ผิดปกติ

1.5 ระบบหล่อเย็น

- หม้อน้ำที่เครื่อง/แยกหม้อน้ำ

- ระดับน้ำในหม้อน้ำ/น้ำยาเติมหม้อน้ำ

- ความสะอาดบริเวณรังผึ้งหม้อน้ำ

- อุณหภูมิขณะติดเครื่องยนต์

- การรั่วซึมของระบบหล่อเย็น

2. ระบบ Generator

- AVR รุ่น MX321 P/N.....

- จุดต่อสายคอนโทรล/สายพาวเวอร์/กราวด์

3. ระบบ Control

- Automatic Mode

- Manual Mode

- Test Mode

- Emergency Stop

4. ระบบ Shutdown & Protection

- Low Oil Pressure

- High Temperature

- Fail To Start, etc.

ผลการตรวจเช็ค

ปกติ ผิดปกติ

NO LOAD OPERATE : Voltage 400 / 232 VAC, Frequency 50.0 Hz, Engine Speed 1501 RPM

Oil Pressure 39 BAR/PSI, Water Temp 42 °C, Battery Voltage 29 Vdc.

ON LOAD OPERATE : Voltage.....VAC, Frequency.....Hz, Engine Speed.....RPM

Oil Pressure.....BAR/PSI, Water Temp.....°C, Battery Voltage.....Vdc.

ค่าที่เช็คได้/ควรแก้ไขอื่นๆ - 50 ทำความสะอาดเครื่องตรวจเช็คไฟ

- 120 ทำความสะอาดเครื่องตรวจเช็คไฟ

ผลการตรวจเช็ค GEN อยู่นิ่ง AUTO

ลูกค้า/ผู้ดูแลรับผิดชอบ นาย อธิษฐ์

ผู้ปฏิบัติงาน นาย จิรศักดิ์

(นาย อธิษฐ์)

(นาย จิรศักดิ์)

* * * * *
Battery Test Report

Voltage: 13.45 V
Set
Current: 925 A(CCA)
Resistance: 874 A(CCA)
Life: 3.09 mΩ
Result: 72 %
Ok

Testing car (VIN):1

Model NO.:MSI-8000+
Testing Date:2023-09-05 13:45
* * * * *

* * * * *
Battery Test Report

Voltage: 13.14 V
Set
Current: 925 A(CCA)
Resistance: 797 A(CCA)
Life: 3.39 mΩ
Result: 60 %
Ok

Testing car (VIN):2

Model NO.:MSI-8000+
Testing Date:2023-09-05 13:46
* * * * *

* * * * *
Battery Test Report

Voltage: 13.22 V
Set
Current: 925 A(CCA)
Resistance: 669 A(CCA)
Life: 4.04 mΩ
Result: 42 %
Replace

Testing car (VIN):3

Model NO.:MSI-8000+
Testing Date:2023-09-05 13:48
* * * * *

* * * * *
Battery Test Report

Voltage: 13.37 V
Set
Current: 925 A(CCA)
Resistance: 781 A(CCA)
Life: 3.46 mΩ
Result: 57 %
Caution



BATTERY TEST REPORT
TYPE:
RATED CCA: 925
TEST RESULT: GOOD BATTERY
BATTERY HEALTH: 77%
BATTERY VOLTAGE: 13.56V
MEASURED: CCA: 900
INTERNAL R: 3.00mΩ
CLIENT CODE: 200000000
DATE: 2023-12-04 10:25

BATTERY TEST REPORT
TYPE:
RATED CCA: 925
TEST RESULT: GOOD BATTERY
BATTERY HEALTH: 80%
BATTERY VOLTAGE: 13.53V
MEASURED: CCA: 920
INTERNAL R: 2.95mΩ
CLIENT CODE: 100000000
DATE: 2022-12-04 10:25

BATTERY TEST REPORT
TYPE:
RATED CCA: 925
TEST RESULT: GOOD BATTERY
BATTERY HEALTH: 89%
BATTERY VOLTAGE: 13.53V
MEASURED: CCA: 970
INTERNAL R: 2.79mΩ
CLIENT CODE: 400000000
DATE: 2023-12-04 10:25

BATTERY TEST REPORT
TYPE:
RATED CCA: 925
TEST RESULT: GOOD BATTERY
BATTERY HEALTH: 91%
BATTERY VOLTAGE: 13.47V
MEASURED: CCA: 980
INTERNAL R: 2.77mΩ
CLIENT CODE: 300000000
DATE: 2023-11-04 10:25



ESSI ENERGY GROUP CO., LTD.

Infrared Thermography Report

Project : Hyatt Regency Bangkok Sukhumvit

After Preventive Maintenance

Inspection Date : 30/08/2023

Forward

This Report of Infrared Inspection provides complete documentation of thermal patterns detected in your equipment, structure or system. It uses a subjective evaluation to help you prioritize repairs to provide the greatest return from this inspection and your maintenance.

How Infrared Thermography Works

Infrared imagers “see” the heat radiated from your equipment in real time, just like a video camera sees visible light. In black/white thermograms (pictures of heat), white is hot and black is cold unless stated otherwise. When thermograms are in color, colors in the scene are matched to the reference. Colors appearing closer to the top or right of the reference bar indicate higher temperatures. Colors appearing closer to the bottom or left of the reference bar indicate lower temperatures.

Repair Priority Ratings

Each thermogram, is given a Subjective Repair Priority Rating which is based upon your qualified assistant’s opinion of how critical the subject item is to the safe and profitable operation of your overall system.

The Inspection Summary section of this report explains how to use this Subjective Repair Priority Rating to help you determine how quickly you need to investigate and correct the potential problem.

Overheating can cause premature deterioration and unplanned failure of your equipment. Overheating connectors, conductors and components will never get better. In fact, the temperature and rate of deterioration will increase with time.

No one can predict when a failure will occur. As a result, we suggest that you use the Subject Repair Priority Ratings as a guide that you investigate and take appropriate corrective measures as soon as possible.

Inspection Summary

For the equipment inspected, we have present a total of **78** thermogram (s) and/or daylight photograph(s) documenting conditions found during our inspection. These thermograms and/or photographs appear on the Image Pages found at the end of this report.

As a reference, each Image Page contains Evaluation Priority Ratings. Subjective Evaluation Ratings are based upon the Qualified Assistant's opinion of the subject item's importance to the safe and continuous operation of the facility. Objective Evaluation Ratings found on Electro/Mechanical Image Pages are based upon temperature rise criteria as specified by ANSI, NETA and the Infraspction Institute Guideline for Infrared Inspection of Electrical and Mechanical Systems.

Depending upon Image Page format, Subjective and/or Objective Priority Ratings may be found. When both are listed, as Average Repair Priority Rating will also be displayed. This Average Repair Priority Rating is the mean value of the Subjective and Objective Priorities. When appropriate, the Average Repair Priority is rounded up to the next highest whole number.

Potential problems documented in this report are grouped and listed according to the following Average Repair Priority or Subjective Evaluation Ratings



For Temp. Difference (delta-T) based on comparisons between similar components under similar loading.

Thermographic Survey Suggested Actions Based on Temperature Rise

Temperature difference (ΔT) based on comparisons between similar components under similar loading.	Temperature difference (ΔT) based upon comparisons between components and ambient air temperatures.	Recommended Action
1 °C - 3 °C	1 °C - 10 °C	Possible deficiency; warrants investigation
4 °C - 15 °C	11 °C - 20 °C	Indicates probable deficiency; repair as time permits
.....	21 °C - 40 °C	Monitor until corrective measures can be accomplished
>15 °C	>40 °C	Major discrepancy; repair immediately

Report Summary

Inspection date:	30/08/2023	
Report date:	3/09/2023	
Project :	Hyatt Regency Bangkok Sukhumvit	
Project Location:	Bangkok	
Type of Inspection:	Qualitative Electrical System	
Purpose of Inspection:	Maintenance IR Scan (After PM)	
Certified Thermographer:	Mr. Thirasak Nampor	
Certification Number:	Certificate Level-I No. 1-000929	
Equipment Used:	Flir E53	S/N : 84503823
No of thermograms :	78	
Comments:	The results of the examination. Measurement of electrical heat of electrical equipment according to plan of work. No defects are found that cause damage and do not cause harm to the use and maintenance of electrical equipment should be maintained in good condition.	

IR Inspector :	Mr. Thirasak Nampor
Signature :	
Certified Thermographer :	Mr. Thirasak Nampor
Certification Number :	Certificate Level-I No. 1-000929
Signature :	

Report Summary

Report	Equipment	Detail	Location	Status	Page
1	TR-1	High Volt Side Connection	MDB Room Fl.3	Normal Operation	1
2	TR-1	Low Volt Side Connection	MDB Room Fl.3	Normal Operation	2
3	TR-2	High Volt Side Connection	MDB Room Fl.3	Normal Operation	3
4	TR-2	Low Volt Side Connection	MDB Room Fl.3	Normal Operation	4
5	MDB.1 Panel	ACB Main	MDB Room Fl.3	Normal Operation	5
6	MDB.1 Panel	ACB FOR 1A 6,300 A.	MDB Room Fl.3	Normal Operation	6
7	MDB.1 Panel	ACB DB.B 2,500 A.	MDB Room Fl.3	Normal Operation	7
8	MDB.1 Panel	MCCB FOR ODD FLOO 1,250 A.	MDB Room Fl.3	Normal Operation	8
9	MDB.1 Panel	MCCB FDP	MDB Room Fl.3	Normal Operation	9
10	MDB.1 Panel	MCCB CWHF	MDB Room Fl.3	Normal Operation	10
11	MDB.2 Panel	ACB Main 6,300 A.	MDB Room Fl.3	Normal Operation	11
12	MDB.2 Panel	ACB MCC.AC1 1,250 A.	MDB Room Fl.3	Normal Operation	12
13	MDB.2 Panel	ACB MCC.AC3 1,250 A.	MDB Room Fl.3	Normal Operation	13
14	MDB.2 Panel	MCCB FOR EVEN FLOOR	MDB Room Fl.3	Normal Operation	14
15	EMDB Panel	ACB MCC.EAC2 1,250 A.	MDB Room Fl.3	Normal Operation	15
16	EMDB-GCP 1 Panel	ACB Main	MDB Room Fl.3	Normal Operation	16
17	EMDB-GCP 1 Panel	MCCB FDP 1	MDB Room Fl.3	Normal Operation	17
18	FDP.1 Panel	MCCB Normal	MDB Room Fl.3	Normal Operation	18
19	FDP.1 Panel	MCCB MCC-EFP	MDB Room Fl.3	Normal Operation	19
20	DB.G Panel	MCCB Main	Shaft Room Fl.M	Normal Operation	20
21	DB.G Panel	MCCB LCG3	Shaft Room Fl.M	Normal Operation	21
22	DB.EG Panel	MCCB Main	Shaft Room Fl.M	Normal Operation	22
23	Busduct	Joint Busduct	Shaft Room Fl.M	Normal Operation	23
24	DB.5 Panel	MCCB Main	Shaft Room Fl.5	Normal Operation	24
25	DB.E5 Panel	MCCB Main	Shaft Room Fl.5	Normal Operation	25
26	Busduct	Joint Busduct	Shaft Room Fl.5	Normal Operation	26
27	MCC.A3 Panel	MCCB Main	Chiller Room Fl.4	Normal Operation	27
28	MCC.A3 Panel	MCCB CH-3	Chiller Room Fl.4	Normal Operation	28
29	MCC.AC2 Panel	MCCB Main	Chiller Room Fl.4	Normal Operation	29
30	MCC.AC2 Panel	MCCB CH-2	Chiller Room Fl.4	Normal Operation	30

Infrared Thermography Inspection Report : Hyatt Regency Bangkok Sukhumvit

Report	Equipment	Detail	Location	Status	Page
31	MCC.AC1 Panel	MCCB Main	Chiller Room Fl.4	Normal Operation	31
32	MCC.AC1 Panel	MCCB CH-1	Chiller Room Fl.4	Normal Operation	32
33	DB.4 Panel	MCCB Main	Shaft Room Fl.4	Normal Operation	33
34	DB.4 Panel	MCCB LC4A	Shaft Room Fl.4	Normal Operation	34
35	DB.E4 Panel	MCCB Main	Shaft Room Fl.4	Normal Operation	35
36	Busduct	Joint Busduct	Shaft Room Fl.4	Normal Operation	36
37	DB.28A Panel	MCCB Main	Shaft Room Fl.29	Normal Operation	37
38	SDPK 28 Panel	MCCB Main	Shaft Room Fl.29	Normal Operation	38
39	DB.28 Panel	MCCB Main	Shaft Room Fl.29	Normal Operation	39
40	Plugin Unit RUN1	Connection	Shaft Room Fl.29	Normal Operation	40
41	Plugin Unit	Connection	Shaft Room Fl.29	Normal Operation	41
42	DBEL V4.1 Panel	MCCB Main	Lift Room Fl.29	Normal Operation	42
43	DBEL V4 Panel	MCCB Main	Lift Room Fl.30	Normal Operation	43
44	DBEL V5 Panel	MCCB Main	Lift Room Fl.30	Normal Operation	44
45	Plugin Unit	Connection	Shaft Room Fl.28	Normal Operation	45
46	Plugin Unit	Connection	Shaft Room Fl.27	Normal Operation	46
47	Plugin Unit	Connection	Shaft Room Fl.26	Normal Operation	47
48	Busduct	Joint Busduct	Shaft Room Fl.26	Normal Operation	48
49	Plugin Unit	Connection	Shaft Room Fl.25	Normal Operation	49
50	Plugin Unit	Connection	Shaft Room Fl.24	Normal Operation	50
51	Busduct	Joint Busduct	Shaft Room Fl.23	Normal Operation	51
52	Busduct	Joint Busduct	Shaft Room Fl.23	Normal Operation	52
53	Busduct	Joint Busduct	Shaft Room Fl.22	Normal Operation	53
54	Plugin Unit	Connection	Shaft Room Fl.21	Normal Operation	54
55	Plugin Unit	Connection	Shaft Room Fl.20	Normal Operation	55
56	Busduct	Joint Busduct	Shaft Room Fl.19	Normal Operation	56
57	Plugin Unit	Connection	Shaft Room Fl.18	Normal Operation	57
58	Plugin Unit	Connection	Shaft Room Fl.17	Normal Operation	58
59	Plugin Unit	Connection	Shaft Room Fl.16	Normal Operation	59
60	Plugin Unit	Connection	Shaft Room Fl.15	Normal Operation	60

Infrared Thermography Inspection Report : Hyatt Regency Bangkok Sukhumvit

Report	Equipment	Detail	Location	Status	Page
61	Busduct	Joint Busduct	Shaft Room Fl.14	Normal Operation	61
62	Busduct	Joint Busduct	Shaft Room Fl.12	Normal Operation	62
63	Plugin Unit	Connection	Shaft Room Fl.11	Normal Operation	63
64	Plugin Unit	Connection	Shaft Room Fl.10	Normal Operation	64
65	Plugin Unit	Connection	Shaft Room Fl.9	Normal Operation	65
66	Plugin Unit	Connection	Shaft Room Fl.8	Normal Operation	66
67	Plugin Unit	Connection	Shaft Room Fl.7	Normal Operation	67
68	DB.E7 Panel	MCCB Main	Shaft Room Fl.7	Normal Operation	68
69	DB.6 Panel	MCCB LC-62	Shaft Room Fl.6	Normal Operation	69
70	DB.E6 Panel	MCCB Main	Shaft Room Fl.6	Normal Operation	70
71	Plugin Unit	Connection	Shaft Room Fl.6	Normal Operation	71
72	DB.3 Panel	MCCB LC-33	Shaft Room Fl.3	Normal Operation	72
73	DB.E3 Panel	MCCB Main	Shaft Room Fl.3	Normal Operation	73
74	Busduct	Joint Busduct	Shaft Room Fl.3	Normal Operation	74
75	DB.2 Panel	MCCB Main	Shaft Room Fl.2	Normal Operation	75
76	DB.E2 Panel	MCCB Main	Shaft Room Fl.2	Normal Operation	76
77	DB.B Panel	MCCB Main	Shaft Room Fl.B	Normal Operation	77
78	DB.EB Panel	MCCB Main	Shaft Room Fl.B	Normal Operation	78

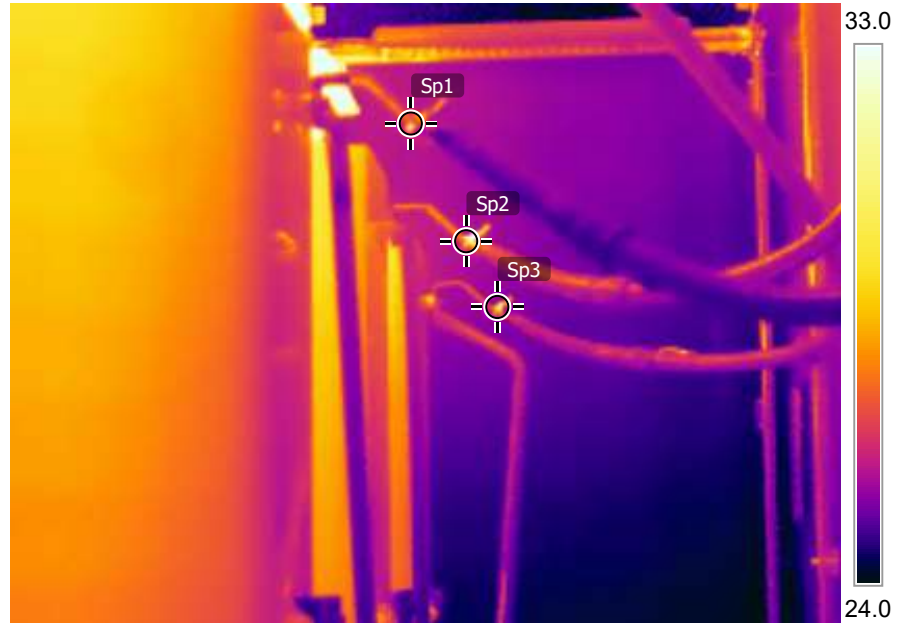
Measurements °C

Sp1	27.9
Sp2	27.9
Sp3	28.0
Difference	0.1
Sp3 - Sp2	
Difference	0.1
Sp3 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:51:50



FLIR4953.jpg

FLIR E53

84503823

30/8/2023 09:51:50



FLIR4953.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	TR-1
Detail :	High Volt Side Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	28.3
Sp2	28.8
Sp3	29.2
Difference	0.9
Sp3 - Sp1	
Difference	0.4
Sp3 - Sp2	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:52:03



30/8/2023 09:52:03



Text annotations

Location :	MDB Room FI.3
Equipment :	TR-1
Detail :	Low Volt Side Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	28.7
Sp2	28.3
Sp3	28.5
Difference	0.4
Sp1 - Sp2	
Difference	0.2
Sp1 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:53:38



FLIR4955.jpg

FLIR E53

84503823

30/8/2023 09:53:38



FLIR4955.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	TR-2
Detail :	High Volt Side Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	33.3
Sp2	34.0
Sp3	33.2
Difference	0.8
Sp2 - Sp3	
Difference	0.7
Sp2 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:54:07



FLIR4956.jpg

FLIR E53

84503823

30/8/2023 09:54:07



FLIR4956.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	TR-2
Detail :	Low Volt Side Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

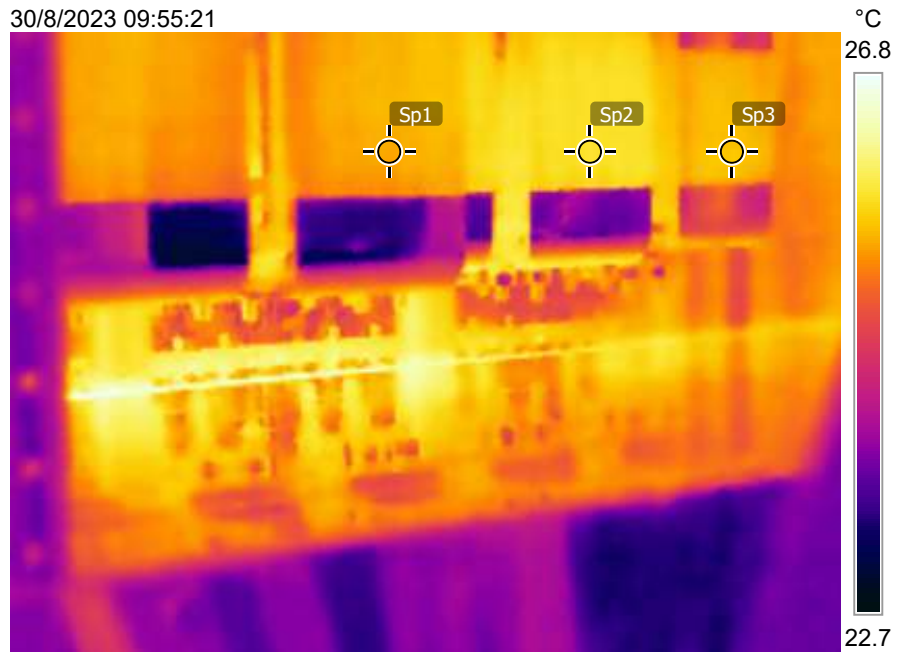
Measurements °C

Sp1	25.5
Sp2	25.8
Sp3	25.6
Difference	0.2
Sp2 - Sp3	
Difference	0.3
Sp2 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:55:21



30/8/2023 09:55:21



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	ACB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	26.5
Sp2	26.7
Sp3	26.6
Difference	0.1
Sp2 - Sp3	
Difference	0.2
Sp2 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:56:52



FLIR4958.jpg

FLIR E53

84503823

30/8/2023 09:56:52



FLIR4958.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	ACB FOR 1A 6,300 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

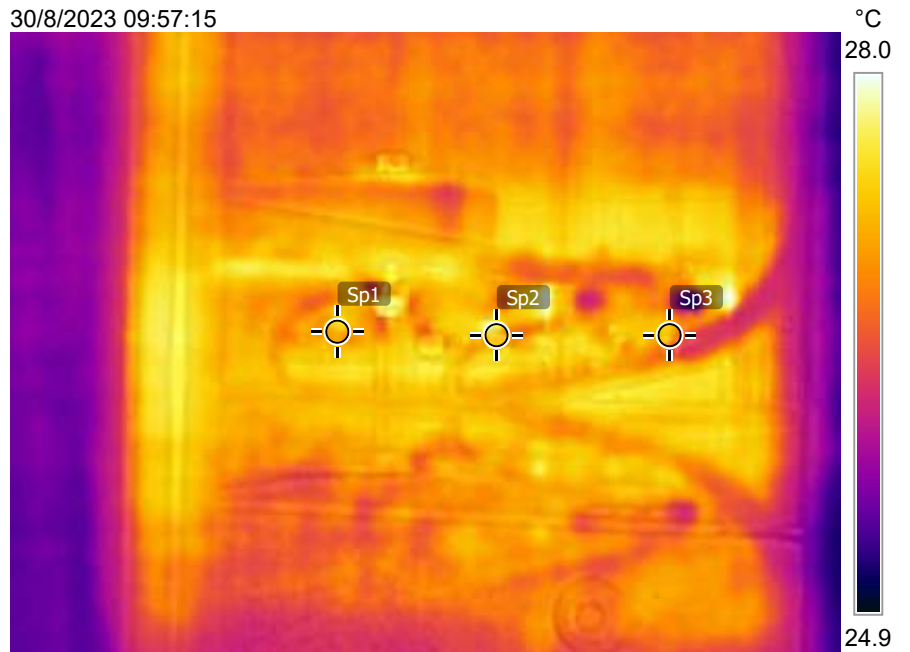
Measurements °C

Sp1	26.4
Sp2	26.4
Sp3	26.4
Difference	0.0
Sp3 - Sp2	
Difference	0.0
Sp3 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:57:15



FLIR4959.jpg

FLIR E53

84503823

30/8/2023 09:57:15



FLIR4959.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	ACB DB.B 2,500 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

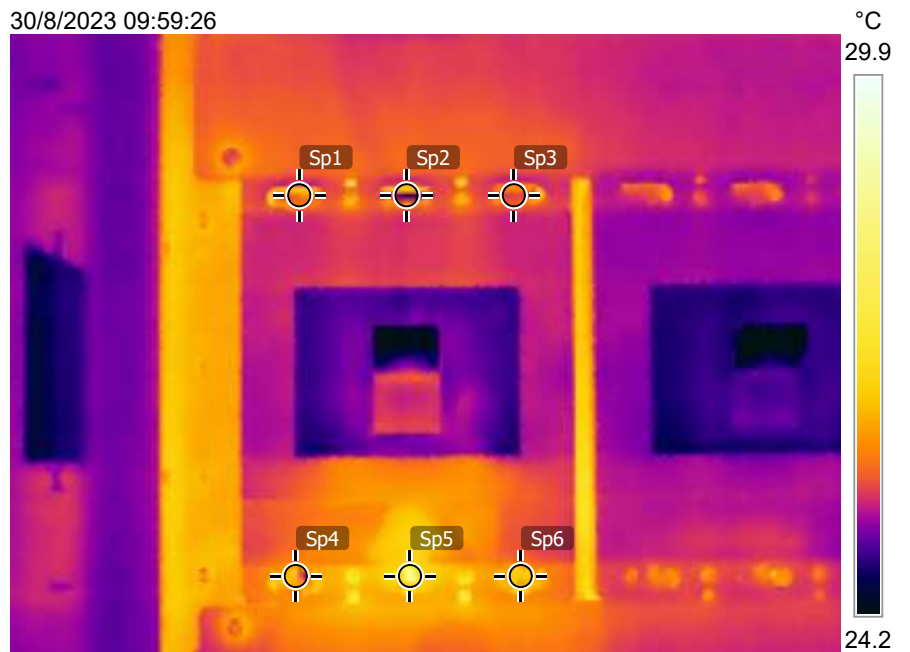
Measurements °C

Sp1	26.8
Sp2	27.7
Sp3	26.6
Sp4	27.8
Sp5	28.9
Sp6	27.9
Difference	1.0
Sp4 - Sp1	
Difference	1.2
Sp5 - Sp2	
Difference	1.3
Sp6 - Sp3	

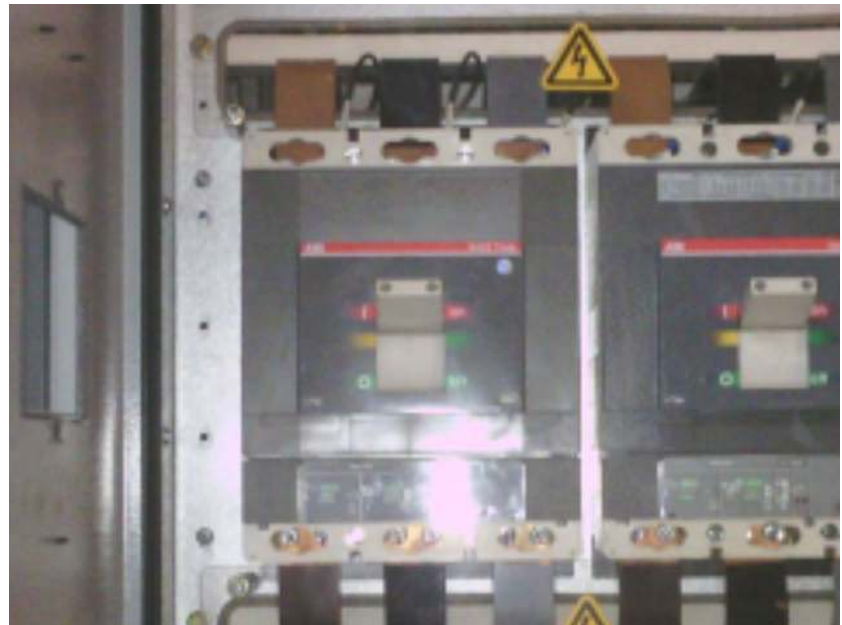
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:59:26



30/8/2023 09:59:26



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	MCCB FOR ODD FLOOR 1,250 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	25.5
Sp2	27.7
Sp3	25.2
Sp4	26.8
Sp5	28.7
Sp6	25.4
Difference	1.3
Sp4 - Sp1	
Difference	1.0
Sp5 - Sp2	
Difference	0.2
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 09:59:52



FLIR4961.jpg

FLIR E53

84503823

30/8/2023 09:59:52



FLIR4961.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	MCCB FDP
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	27.6
Sp2	26.3
Sp3	29.9
Sp4	28.8
Sp5	27.0
Sp6	30.1
Difference	1.2
Sp4 - Sp1	
Difference	0.7
Sp5 - Sp2	
Difference	0.2
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:00:18



FLIR4962.jpg

FLIR E53

84503823

30/8/2023 10:00:18



FLIR4962.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room Fl.3
Equipment :	MDB.1 Panel
Detail :	MCCB CWHF
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

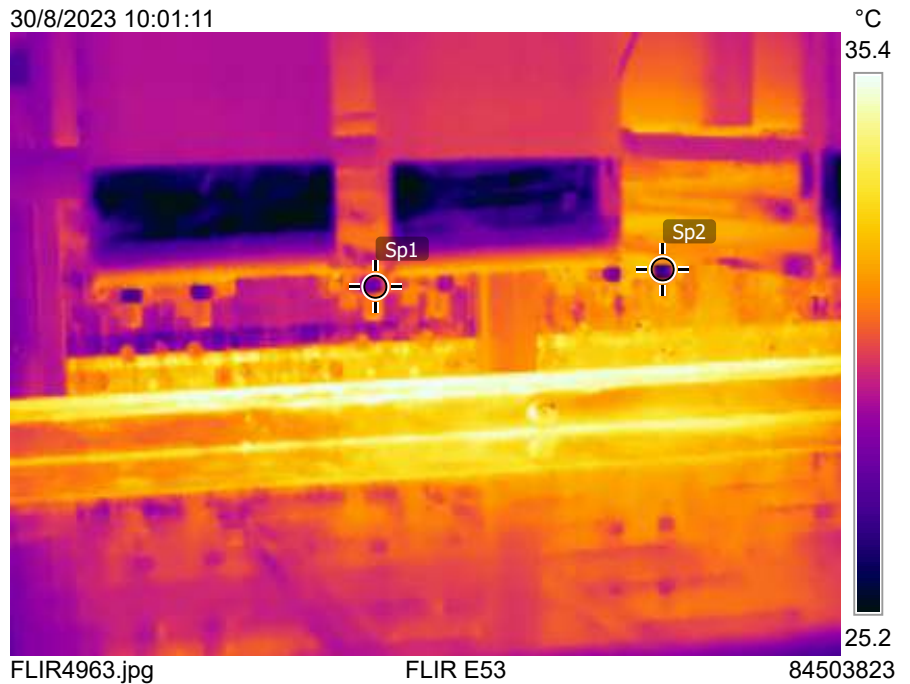
Measurements °C

Sp1	28.1
Sp2	28.0
Difference	0.1
Sp1 - Sp2	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:01:11



30/8/2023 10:01:11



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.2 Panel
Detail :	ACB Main 6,300 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

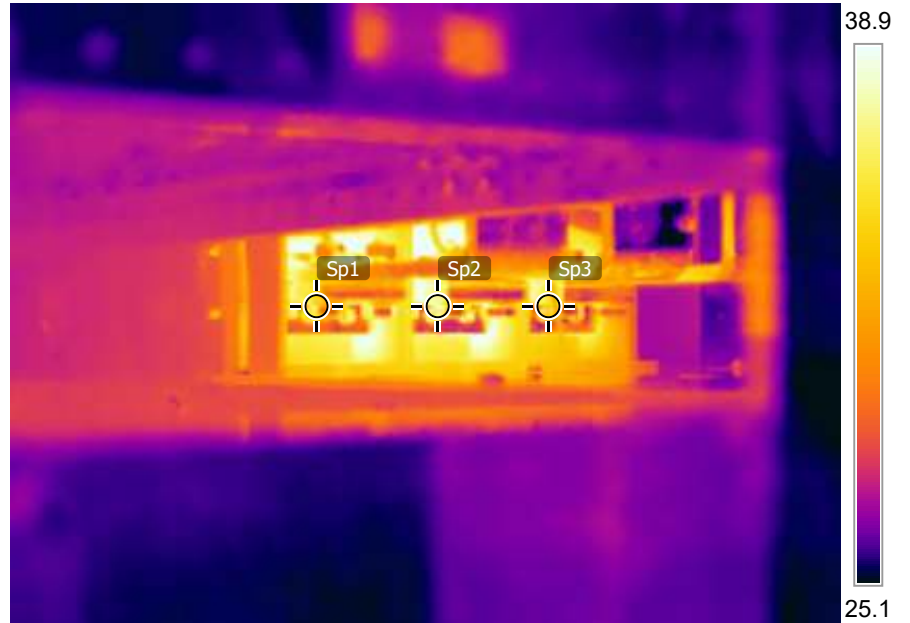
Measurements °C

Sp1	36.5
Sp2	36.9
Sp3	36.6
Difference	0.3
Sp2 - Sp3	
Difference	0.4
Sp2 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:01:58



FLIR4964.jpg

FLIR E53

84503823

30/8/2023 10:01:58



FLIR4964.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.2 Panel
Detail :	ACB MCC.AC1 1,250 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	26.2
Sp2	25.8
Sp3	26.7
Difference	0.9
Sp3 - Sp2	
Difference	0.5
Sp3 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:03:04



30/8/2023 10:03:04



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.2 Panel
Detail :	ACB MCC.AC3 1,250 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	24.6
Sp2	24.6
Sp3	24.5
Sp4	24.8
Sp5	25.1
Sp6	25.1
Difference	0.2
Sp4 - Sp1	
Difference	0.5
Sp5 - Sp2	
Difference	0.6
Sp6 - Sp3	

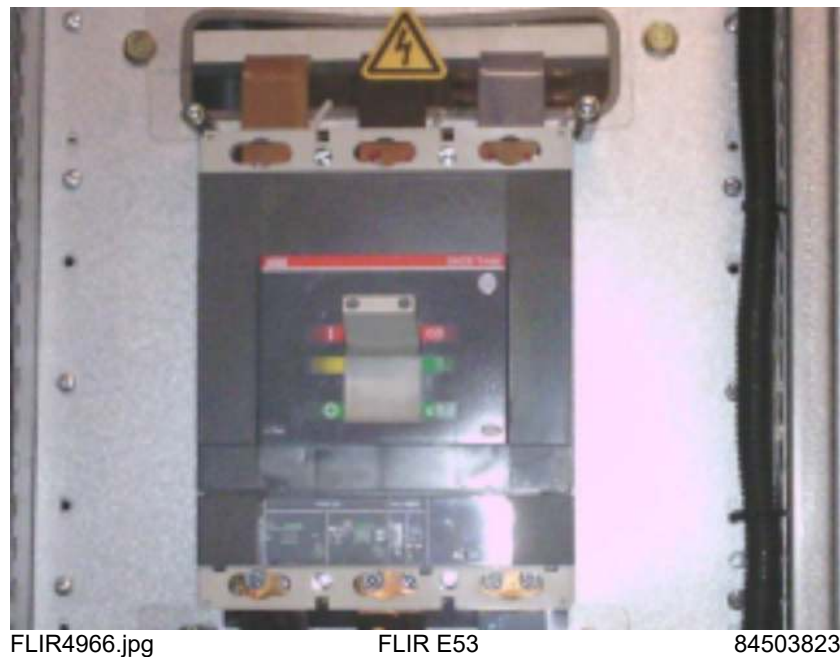
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:03:58



30/8/2023 10:03:58



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.2 Panel
Detail :	MCCB FOR EVEN FLOOR
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

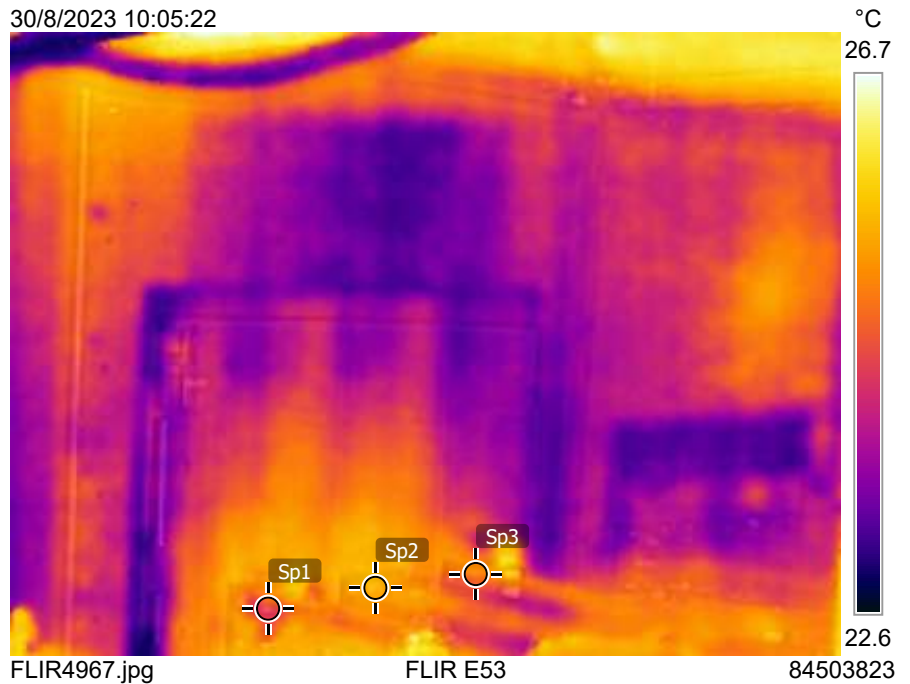
Measurements °C

Sp1	24.4
Sp2	24.7
Sp3	24.5
Difference	0.2
Sp2 - Sp3	
Difference	0.3
Sp2 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:05:22



30/8/2023 10:05:22



Text annotations

Location :	MDB Room FI.3
Equipment :	EMDB Panel
Detail :	ACB MCC.EAC2 1,250 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

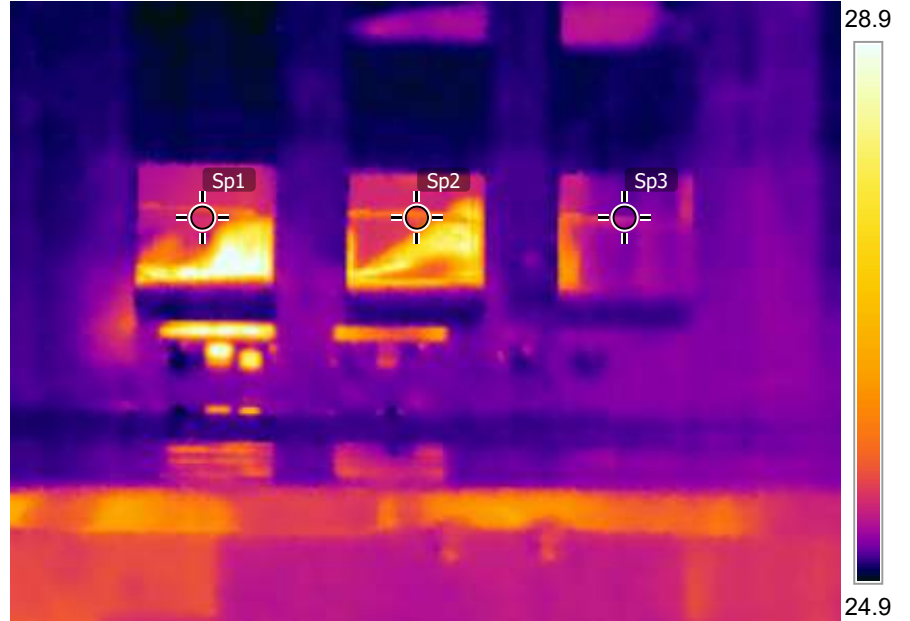
Measurements °C

Sp1	26.2
Sp2	27.2
Sp3	26.2
Difference	1.0
Sp2 - Sp3	
Difference	1.0
Sp2 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:12:12



FLIR4971.jpg

FLIR E53

84503823

30/8/2023 10:12:12



FLIR4971.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	EMDB-GCP 1 Panel
Detail :	ACB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

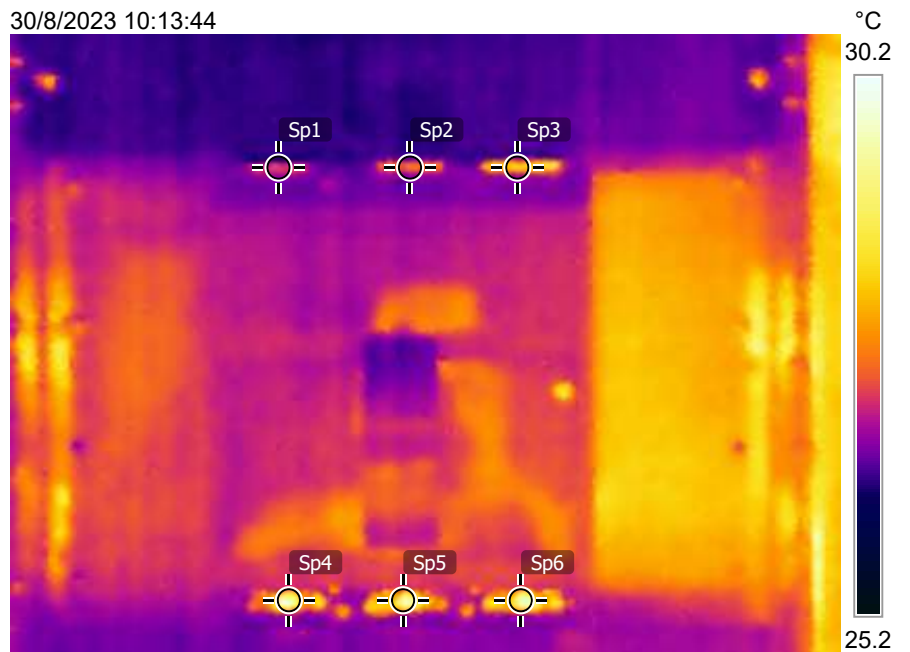
Measurements °C

Sp1	27.8
Sp2	27.2
Sp3	27.8
Sp4	28.0
Sp5	28.1
Sp6	27.9
Difference	0.2
Sp4 - Sp1	
Difference	0.9
Sp5 - Sp2	
Difference	0.1
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:13:44



FLIR4972.jpg

FLIR E53

84503823

30/8/2023 10:13:44



FLIR4972.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	EMDB-GCP 1 Panel
Detail :	MCCB FDP1
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	26.2
Sp2	25.3
Sp3	25.3
Difference	0.9
Sp1 - Sp2	
Difference	0.9
Sp1 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:10:02



FLIR4969.jpg

FLIR E53

84503823

30/8/2023 10:10:02



FLIR4969.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	FDP.1 Panel
Detail :	MCCB Normal
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

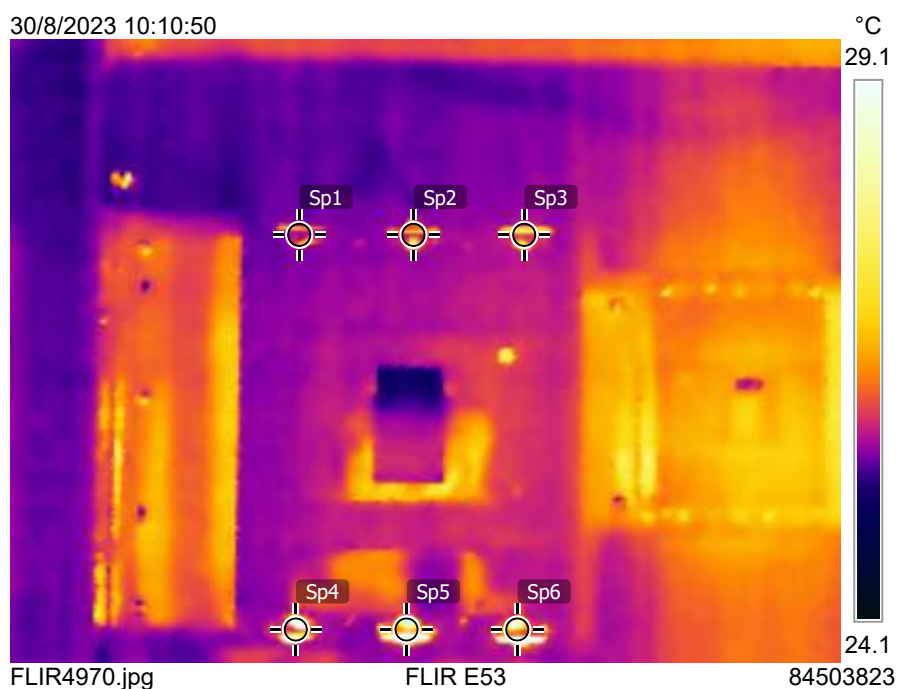
Measurements °C

Sp1	25.3
Sp2	25.5
Sp3	25.7
Sp4	25.6
Sp5	26.5
Sp6	26.0
Difference	0.3
Sp4 - Sp1	
Difference	1.0
Sp5 - Sp2	
Difference	0.3
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:10:50



30/8/2023 10:10:50



FLIR4970.jpg

FLIR E53

84503823

Text annotations

Location :	MDB Room FI.3
Equipment :	FDP.1 Panel
Detail :	MCCB MCC-EFP
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

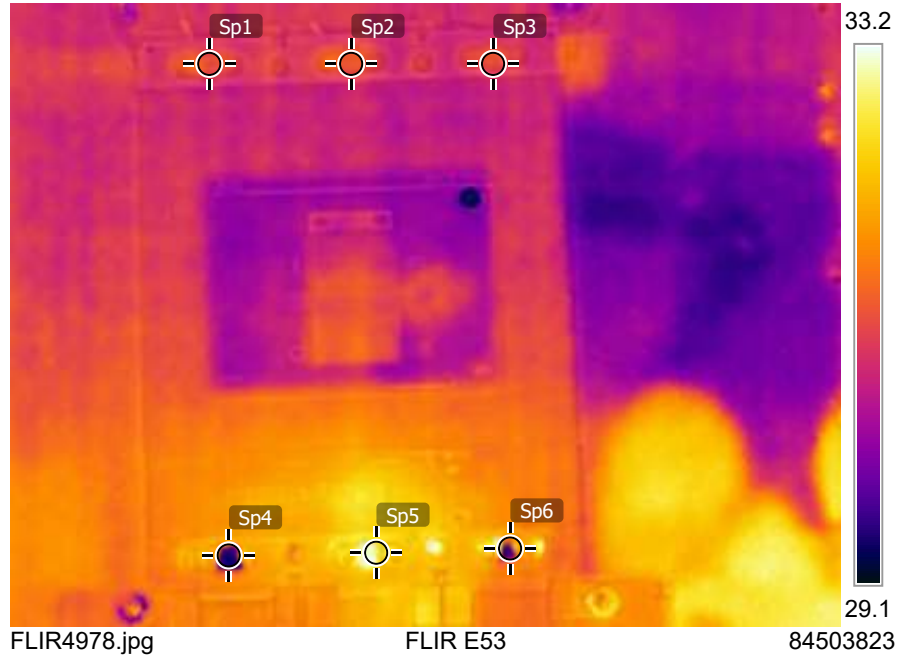
Measurements °C

Sp1	30.9
Sp2	31.0
Sp3	31.0
Sp4	31.3
Sp5	31.6
Sp6	31.2
Difference	0.4
Sp4 - Sp1	
Difference	0.6
Sp5 - Sp2	
Difference	0.2
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:22:18



30/8/2023 10:22:18



Text annotations

Location :	Shaft Room FI.M
Equipment :	DB.G Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

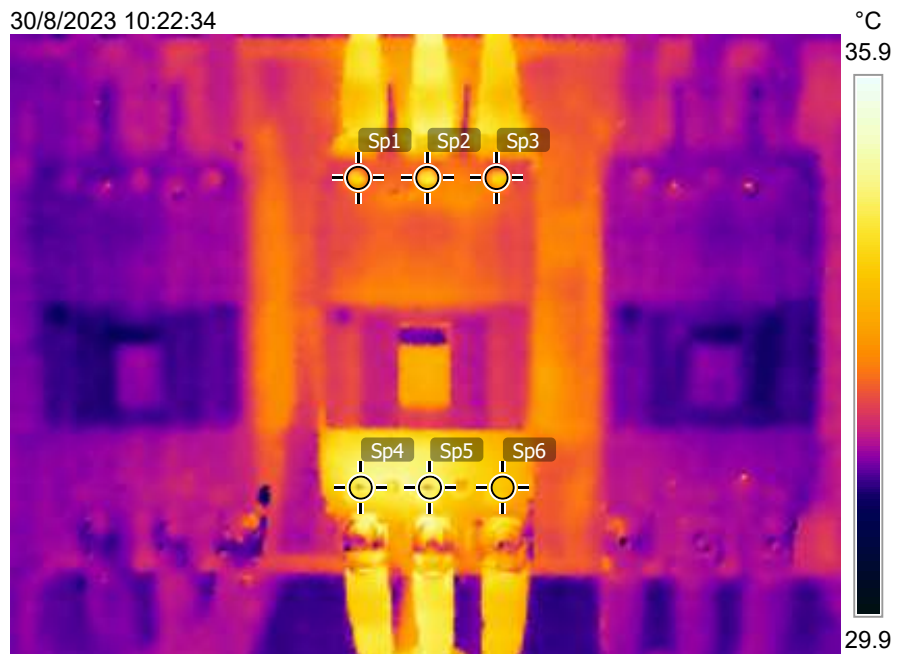
Measurements °C

Sp1	32.6
Sp2	33.0
Sp3	32.6
Sp4	32.9
Sp5	33.1
Sp6	32.9
Difference	0.3
Sp4 - Sp1	
Difference	0.1
Sp5 - Sp2	
Difference	0.3
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:22:34



30/8/2023 10:22:34



Text annotations

Location :	Shaft Room FI.M
Equipment :	DB.G Panel
Detail :	MCCB LCG3
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	32.4
Sp2	32.7
Sp3	32.1
Sp4	32.0
Sp5	32.3
Sp6	31.2
Difference	0.4
Sp1 - Sp4	
Difference	0.4
Sp2 - Sp5	
Difference	0.9
Sp3 - Sp6	

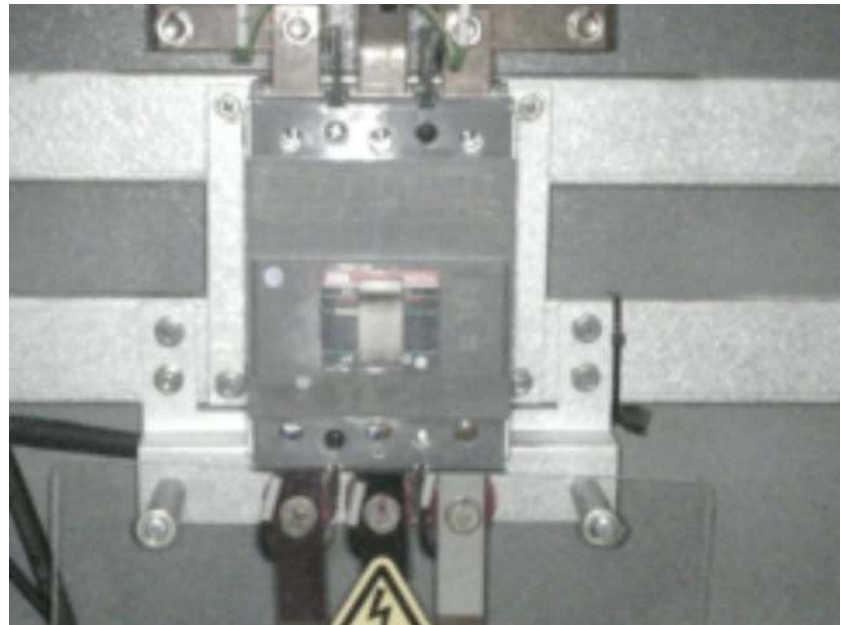
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:22:43



30/8/2023 10:22:43



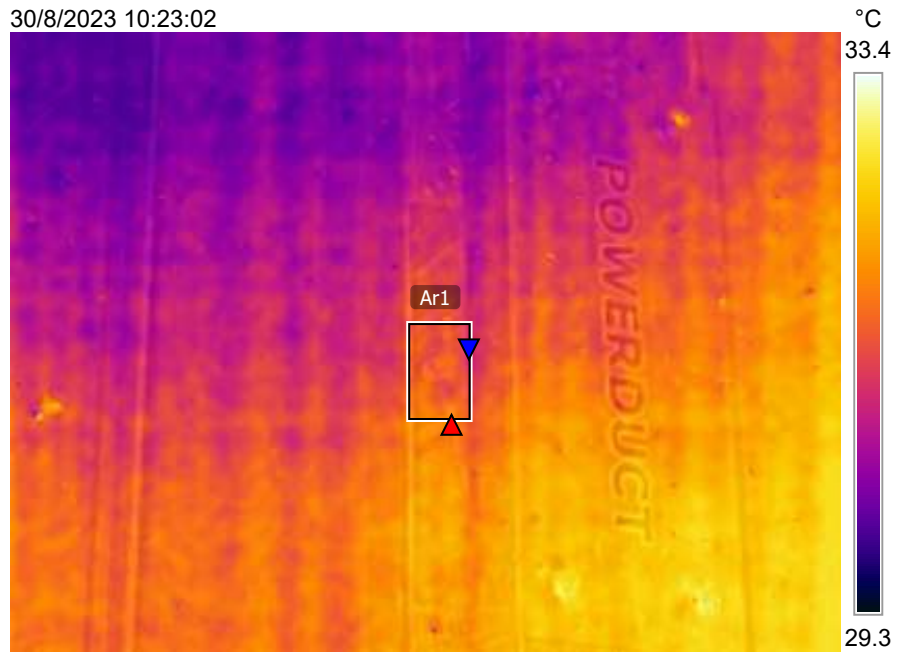
Text annotations

Location :	Shaft Room FI.M
Equipment :	DB.EG Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	31.5
	Min	31.3
	Average	31.4

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:23:02



FLIR4981.jpg

FLIR E53

84503823

30/8/2023 10:23:02



FLIR4981.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.M
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

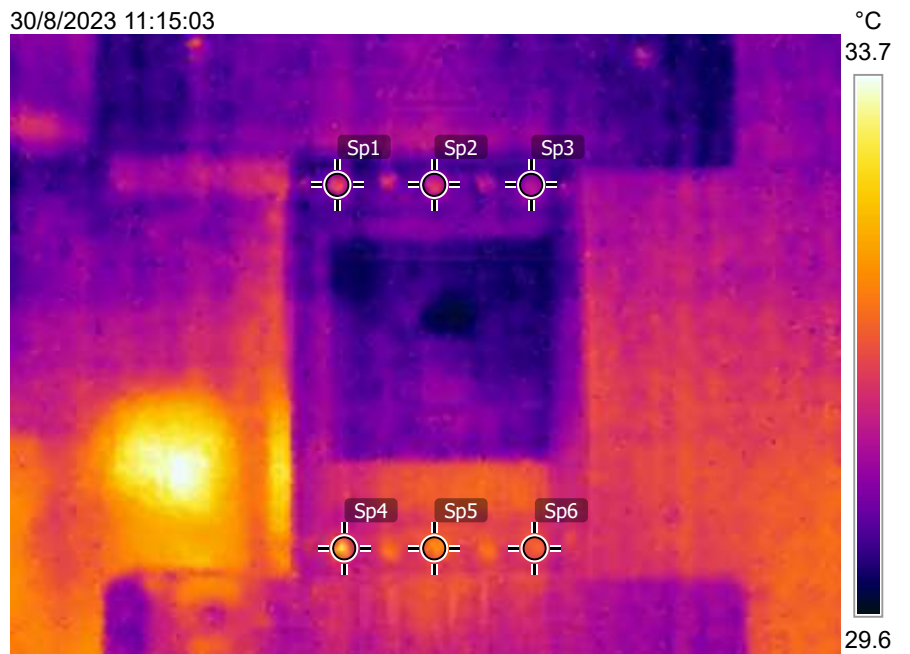
Measurements °C

Sp1	30.6
Sp2	30.6
Sp3	30.5
Sp4	31.0
Sp5	31.1
Sp6	30.7
Difference	0.4
Sp4 - Sp1	
Difference	0.5
Sp5 - Sp2	
Difference	0.2
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:15:03



FLIR5019.jpg

FLIR E53

84503823

30/8/2023 11:15:03



FLIR5019.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.5
Equipment :	DB.5 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

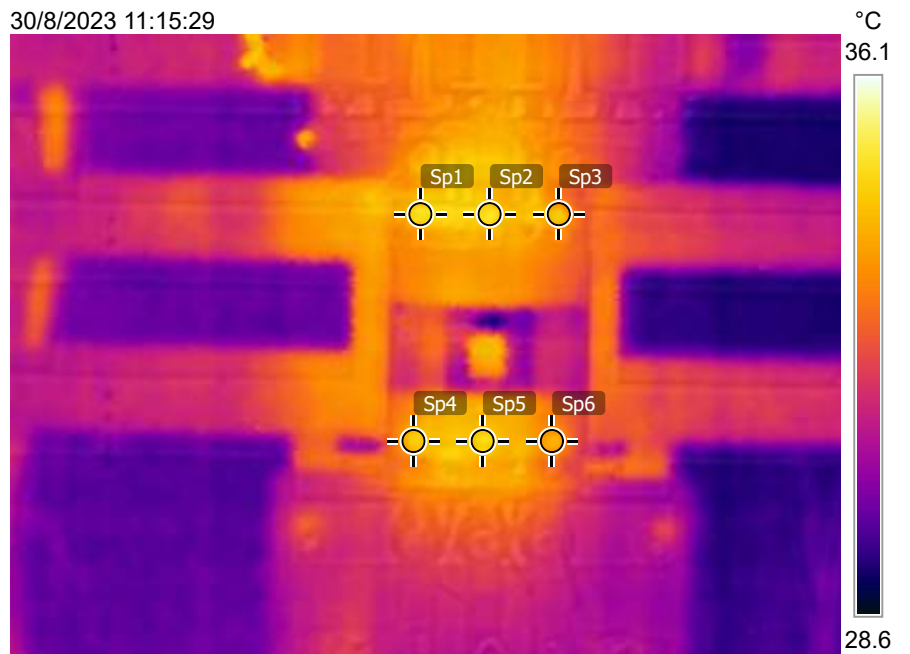
Measurements °C

Sp1	32.2
Sp2	32.1
Sp3	31.4
Sp4	31.6
Sp5	31.9
Sp6	31.2
Difference	0.6
Sp1 - Sp4	
Difference	0.2
Sp2 - Sp5	
Difference	0.2
Sp3 - Sp6	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:15:29

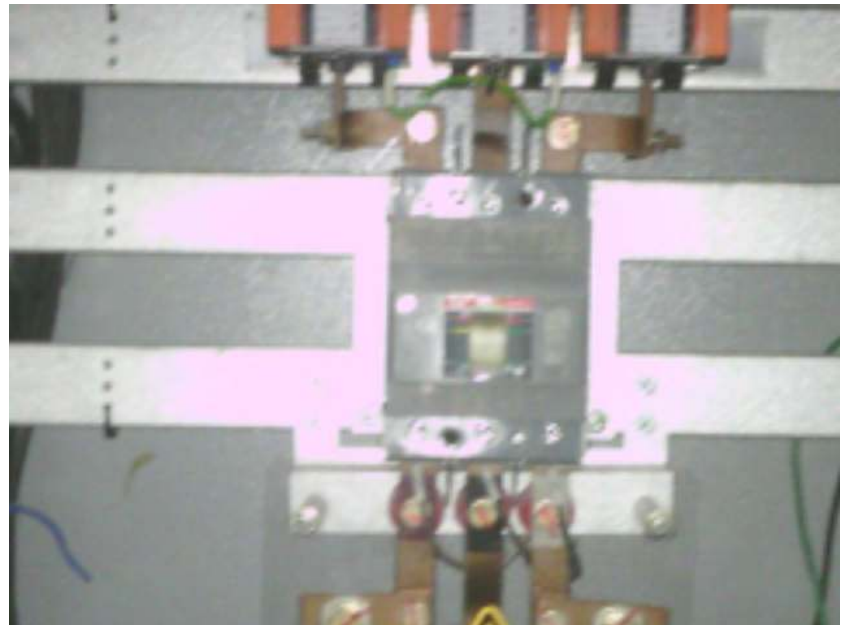


FLIR5020.jpg

FLIR E53

84503823

30/8/2023 11:15:29



FLIR5020.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.5
Equipment :	DB.E5 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	31.3
	Min	30.9
	Average	31.1

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:16:18



30/8/2023 11:16:18



Text annotations

Location :	Shaft Room FI.5
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

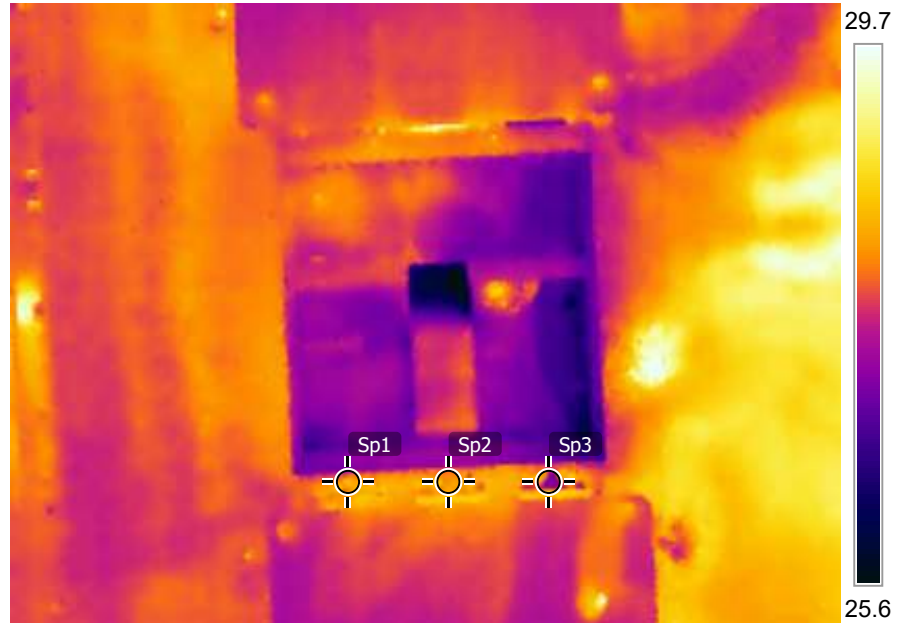
Measurements °C

Sp1	27.9
Sp2	28.4
Sp3	28.4
Difference	0.0
Sp2 - Sp3	
Difference	0.5
Sp2 - Sp1	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:18:04



FLIR5023.jpg

FLIR E53

84503823

30/8/2023 11:18:04



FLIR5023.jpg

FLIR E53

84503823

Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.A3 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

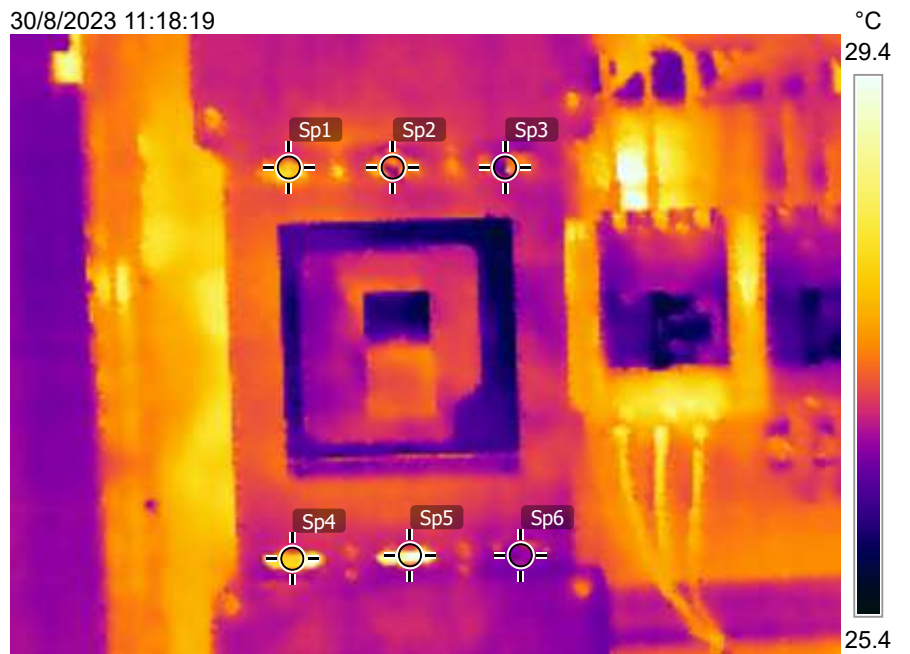
Measurements °C

Sp1	27.9
Sp2	27.9
Sp3	27.7
Sp4	28.0
Sp5	28.6
Sp6	28.6
Difference	0.1
Sp4 - Sp1	
Difference	0.7
Sp5 - Sp2	
Difference	0.9
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:18:19



FLIR5024.jpg

FLIR E53

84503823

30/8/2023 11:18:19



FLIR5024.jpg

FLIR E53

84503823

Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.A3 Panel
Detail :	MCCB CH-3
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	28.4
Sp2	27.2
Sp3	26.4
Sp4	29.7
Sp5	28.3
Sp6	26.9
Difference	1.3
Sp4 - Sp1	
Difference	1.1
Sp5 - Sp2	
Difference	0.5
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:19:31

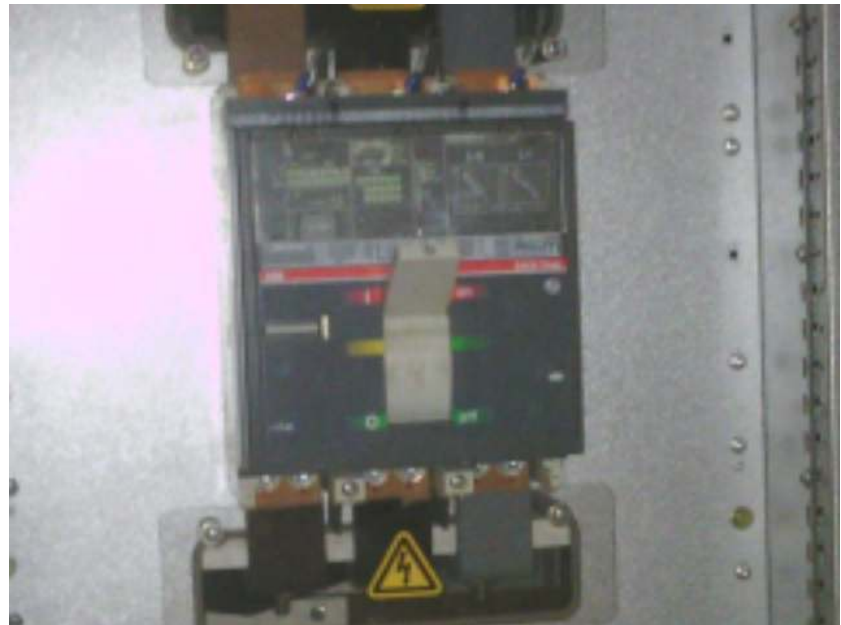


FLIR5027.jpg

FLIR E53

84503823

30/8/2023 11:19:31



FLIR5027.jpg

FLIR E53

84503823

Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.AC2 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

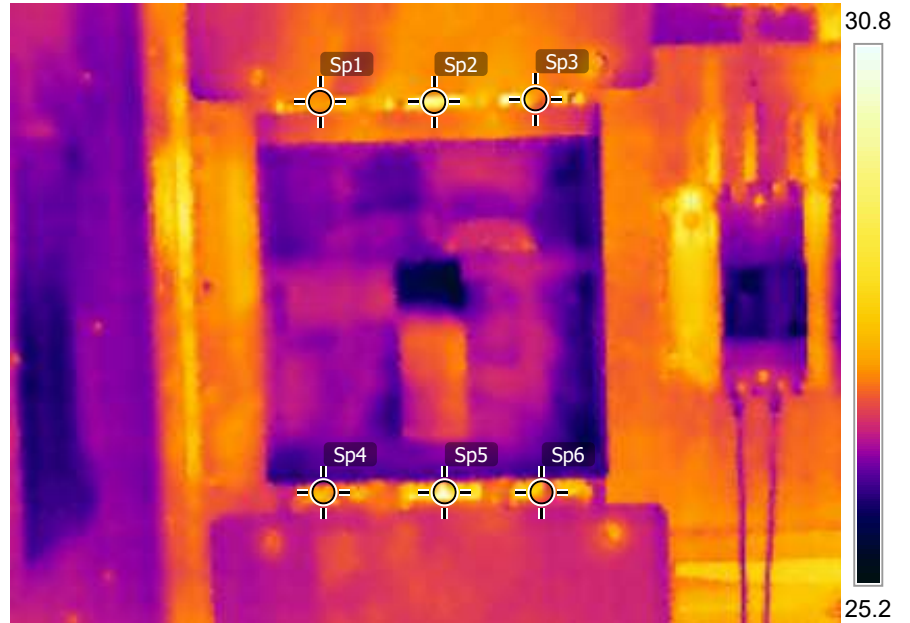
Measurements °C

Sp1	27.5
Sp2	29.8
Sp3	27.2
Sp4	27.6
Sp5	30.7
Sp6	27.4
Difference	0.1
Sp4 - Sp1	
Difference	0.9
Sp5 - Sp2	
Difference	0.2
Sp6 - Sp3	

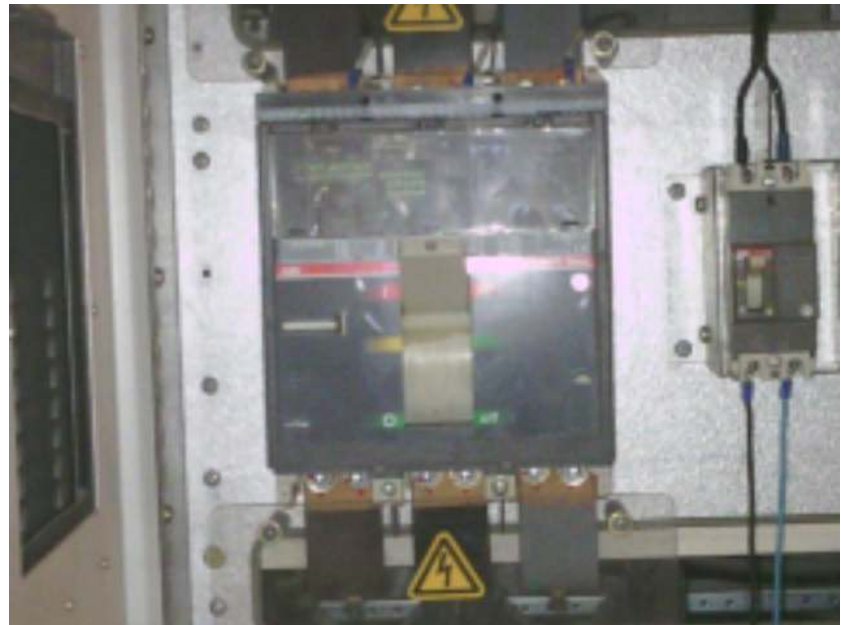
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:19:45



30/8/2023 11:19:45



Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.AC2 Panel
Detail :	MCCB CH-2
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	28.7
Sp2	31.4
Sp3	31.3
Sp4	29.2
Sp5	31.4
Sp6	32.5
Difference	0.5
Sp4 - Sp1	
Difference	0.0
Sp5 - Sp2	
Difference	1.2
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:18:34



FLIR5025.jpg

FLIR E53

84503823

30/8/2023 11:18:34



FLIR5025.jpg

FLIR E53

84503823

Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.AC1 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

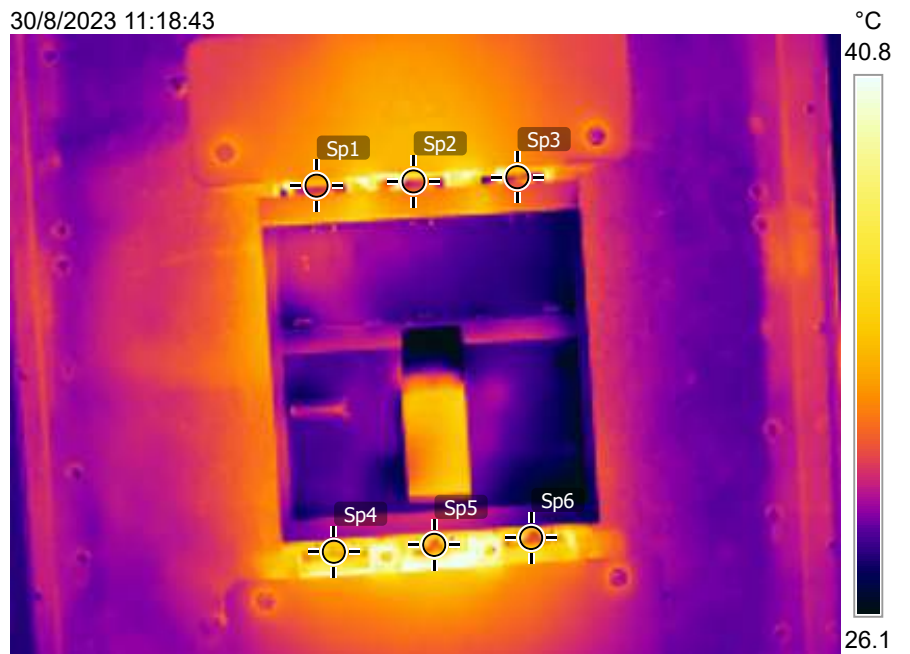
Measurements °C

Sp1	30.8
Sp2	31.4
Sp3	32.0
Sp4	31.7
Sp5	32.6
Sp6	32.9
Difference	0.9
Sp4 - Sp1	
Difference	1.2
Sp5 - Sp2	
Difference	0.9
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:18:43

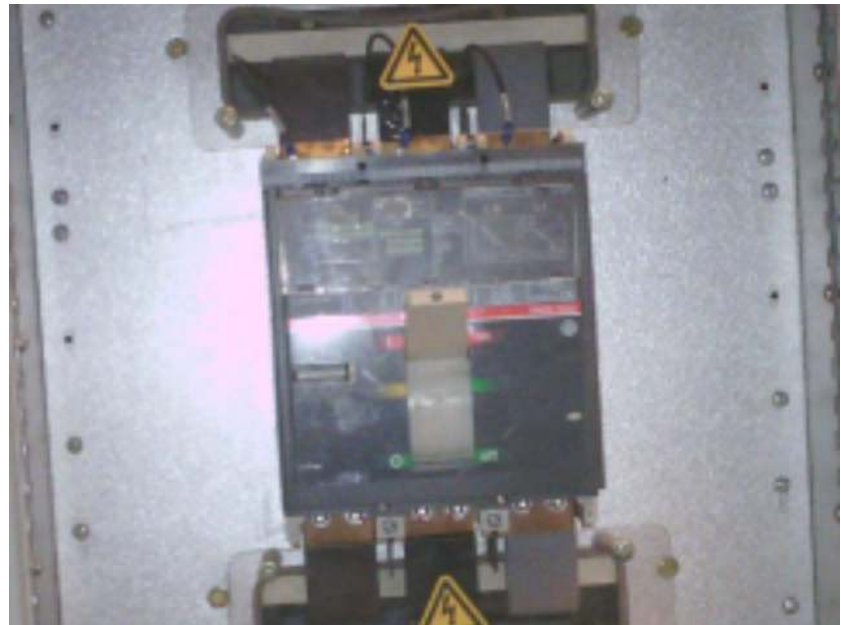


FLIR5026.jpg

FLIR E53

84503823

30/8/2023 11:18:43



FLIR5026.jpg

FLIR E53

84503823

Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.AC1 Panel
Detail :	MCCB CH-1
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

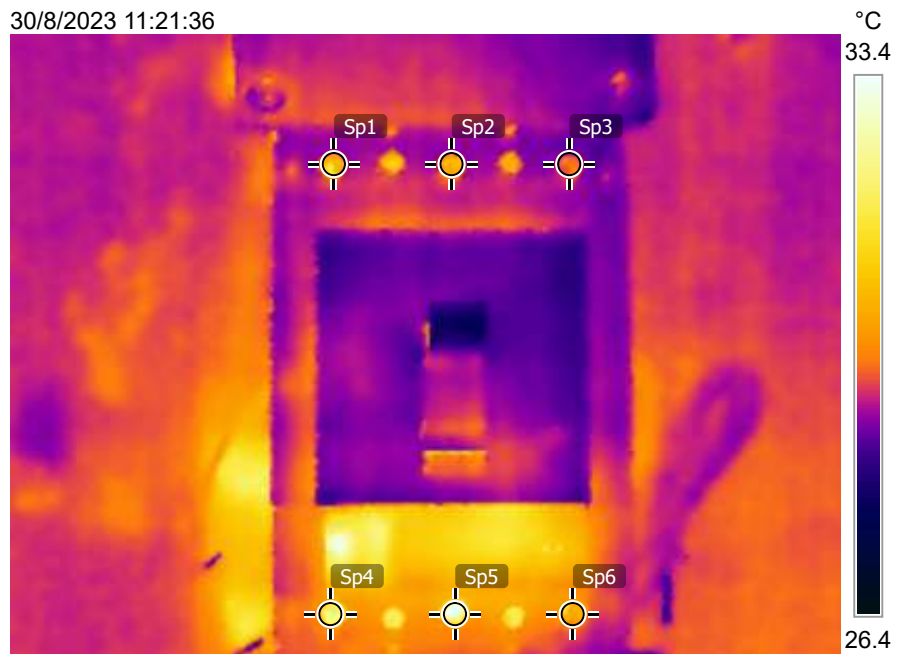
Measurements °C

Sp1	28.9
Sp2	28.7
Sp3	28.4
Sp4	30.0
Sp5	30.2
Sp6	28.6
Difference	1.1
Sp4 - Sp1	
Difference	1.5
Sp5 - Sp2	
Difference	0.2
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:21:36



30/8/2023 11:21:36



Text annotations

Location :	Shaft Room FI.4
Equipment :	DB.4 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

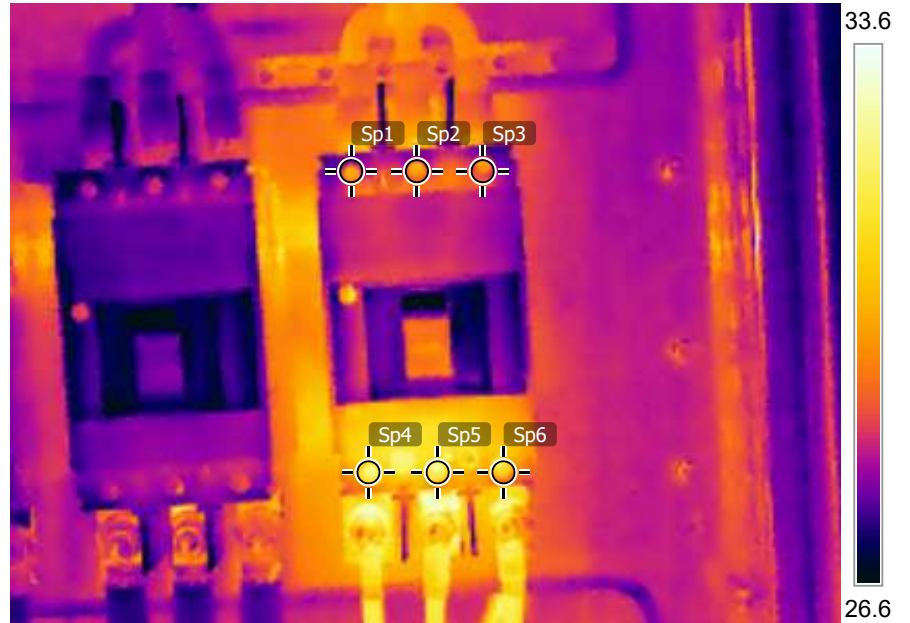
Measurements °C

Sp1	29.5
Sp2	28.9
Sp3	28.8
Sp4	31.0
Sp5	30.1
Sp6	29.7
Difference	1.5
Sp4 - Sp1	
Difference	1.2
Sp5 - Sp2	
Difference	0.9
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:21:59



30/8/2023 11:21:59



FLIR5030.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.4
Equipment :	DB.4 Panel
Detail :	MCCB LC4A
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

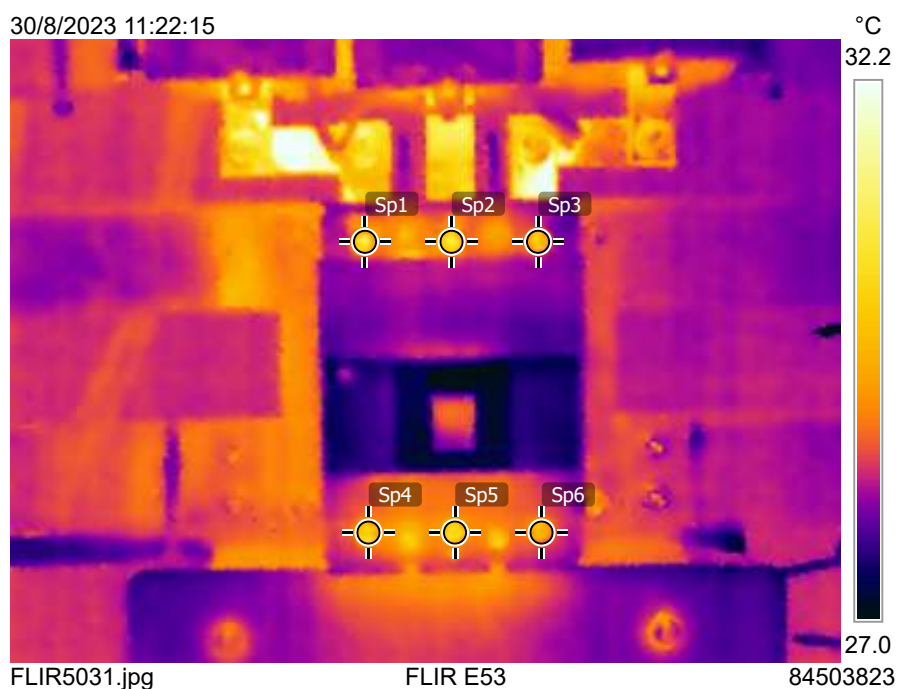
Measurements °C

Sp1	30.6
Sp2	30.2
Sp3	29.3
Sp4	29.4
Sp5	29.6
Sp6	29.0
Difference	1.2
Sp1 - Sp4	
Difference	0.6
Sp2 - Sp5	
Difference	0.3
Sp3 - Sp6	

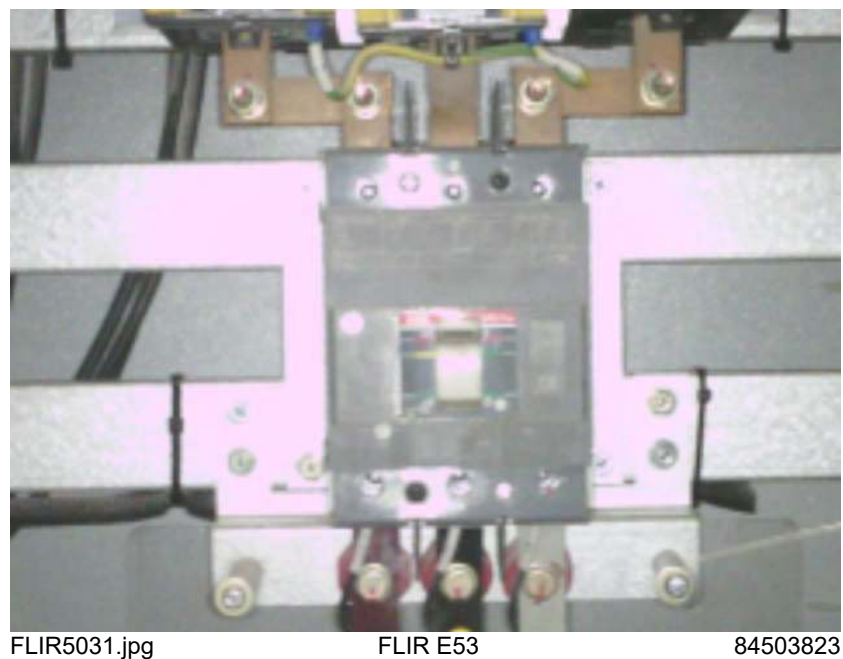
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:22:15



30/8/2023 11:22:15



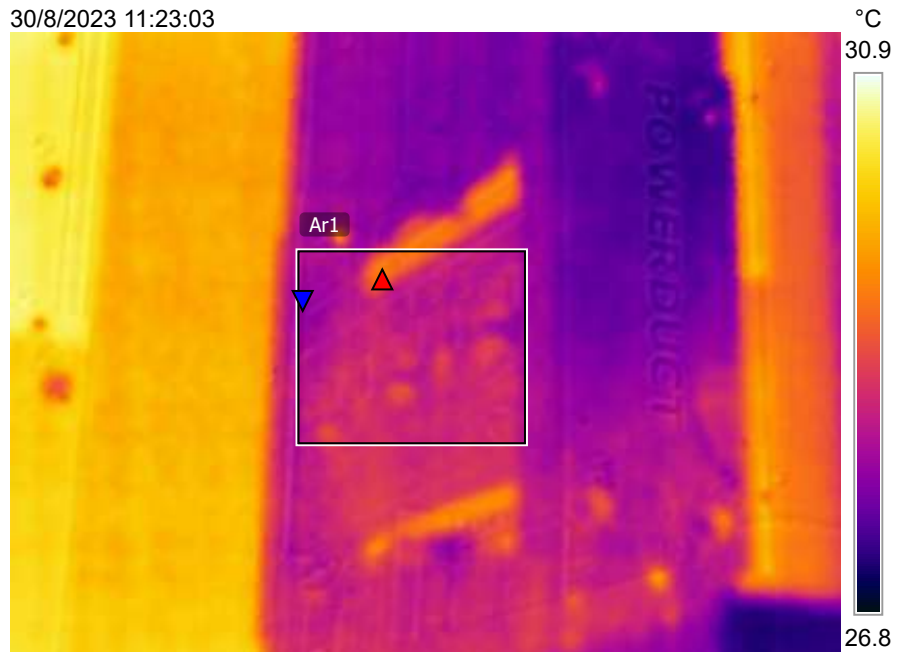
Text annotations

Location :	Shaft Room FI.4
Equipment :	DB.E4 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements		°C
Ar1	Max	29.0
	Min	28.4
	Average	28.5

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:23:03



FLIR5033.jpg

FLIR E53

84503823

30/8/2023 11:23:03



FLIR5033.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room Fl.4
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	27.7
Sp2	28.2
Sp3	27.9
Sp4	27.7
Sp5	27.8
Sp6	27.9
Difference	0.0
Sp1 - Sp4	
Difference	0.4
Sp2 - Sp5	
Difference	0.0
Sp3 - Sp6	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:32:35

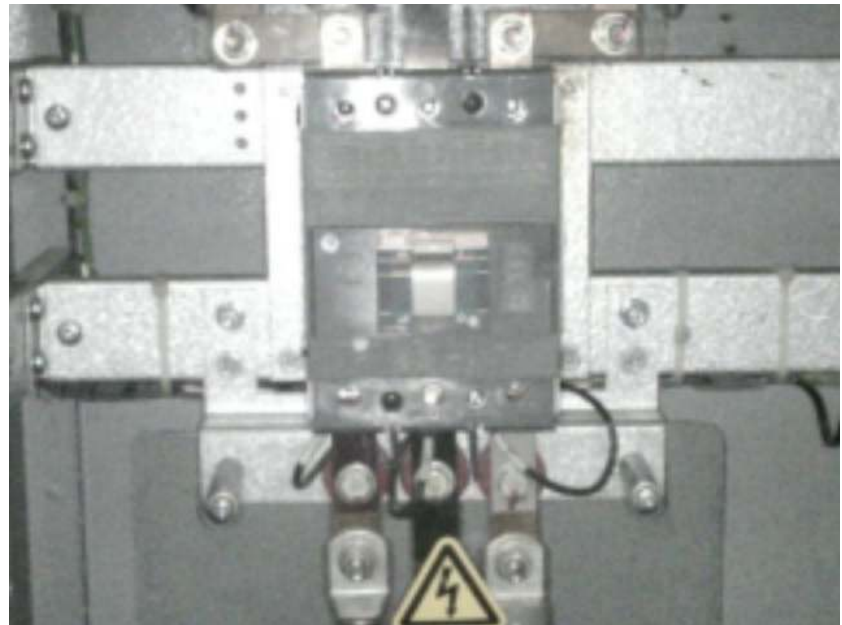


FLIR4984.jpg

FLIR E53

84503823

30/8/2023 10:32:35



FLIR4984.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.29
Equipment :	DB.28A Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

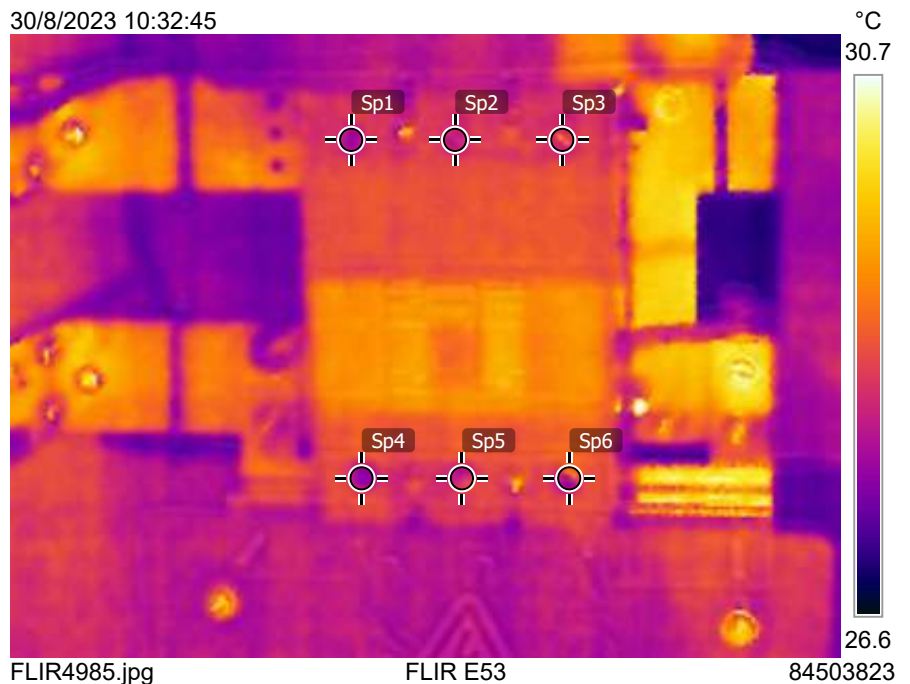
Measurements °C

Sp1	28.2
Sp2	28.3
Sp3	28.5
Sp4	28.1
Sp5	28.3
Sp6	28.3
Difference	0.1
Sp1 - Sp4	
Difference	0.0
Sp2 - Sp5	
Difference	0.2
Sp3 - Sp6	

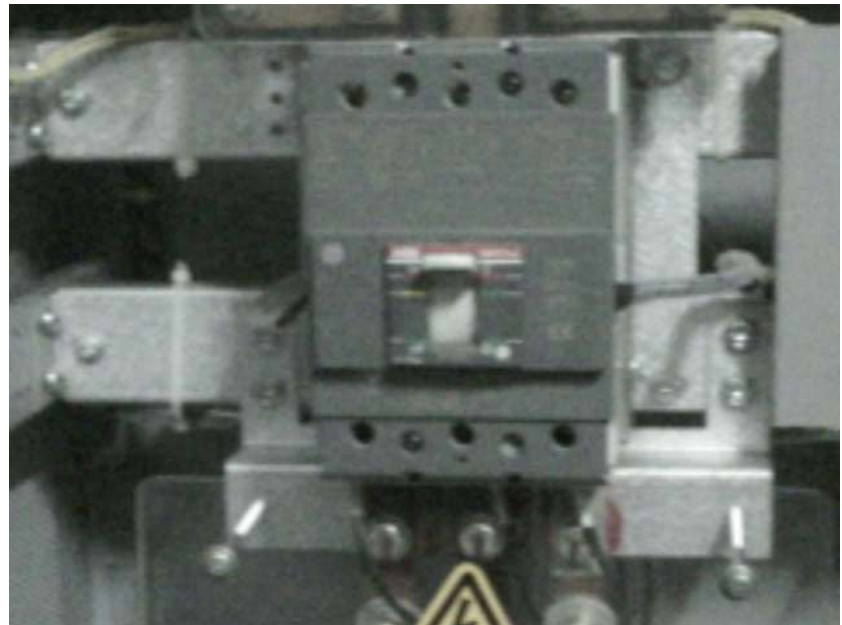
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:32:45



30/8/2023 10:32:45



Text annotations

Location :	Shaft Room FI.29
Equipment :	SDPK 28 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	32.3
Sp2	32.3
Sp3	32.3
Sp4	32.2
Sp5	32.3
Sp6	32.3
Difference	0.1
Sp1 - Sp4	
Difference	0.0
Sp2 - Sp5	
Difference	0.0
Sp3 - Sp6	

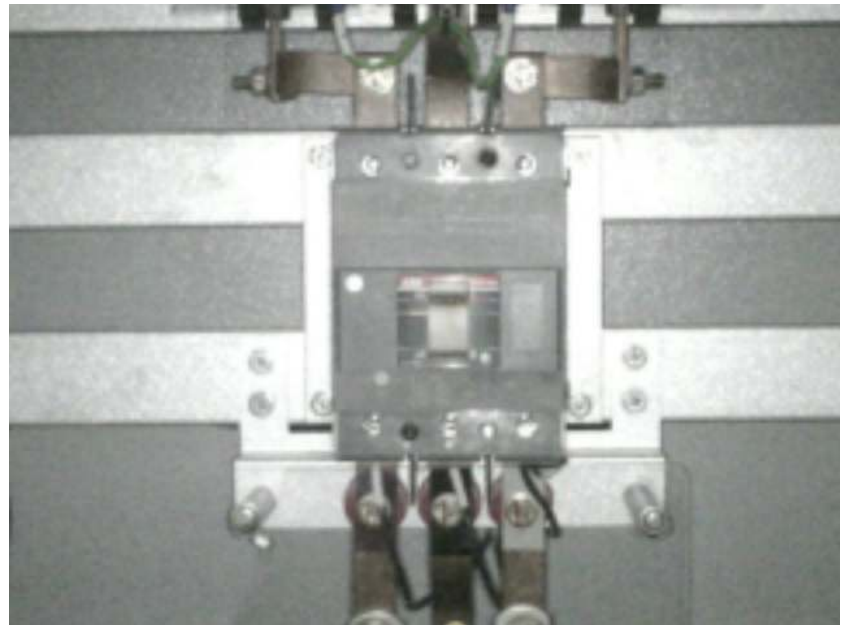
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:32:59



30/8/2023 10:32:59



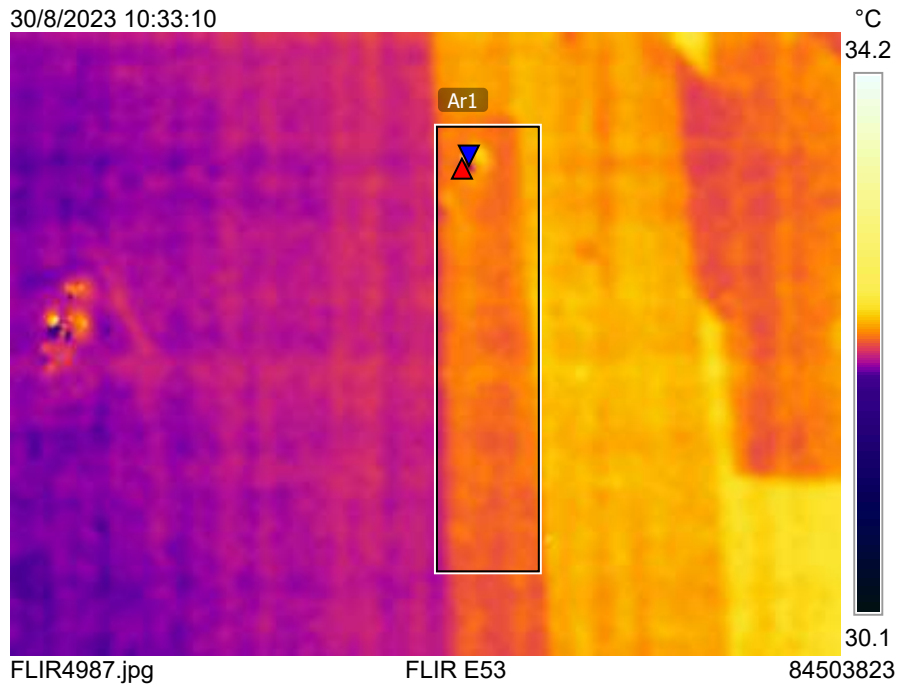
Text annotations

Location :	Shaft Room FI.29
Equipment :	DB.28 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	32.9
	Min	31.8
	Average	32.2

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:33:10



30/8/2023 10:33:10



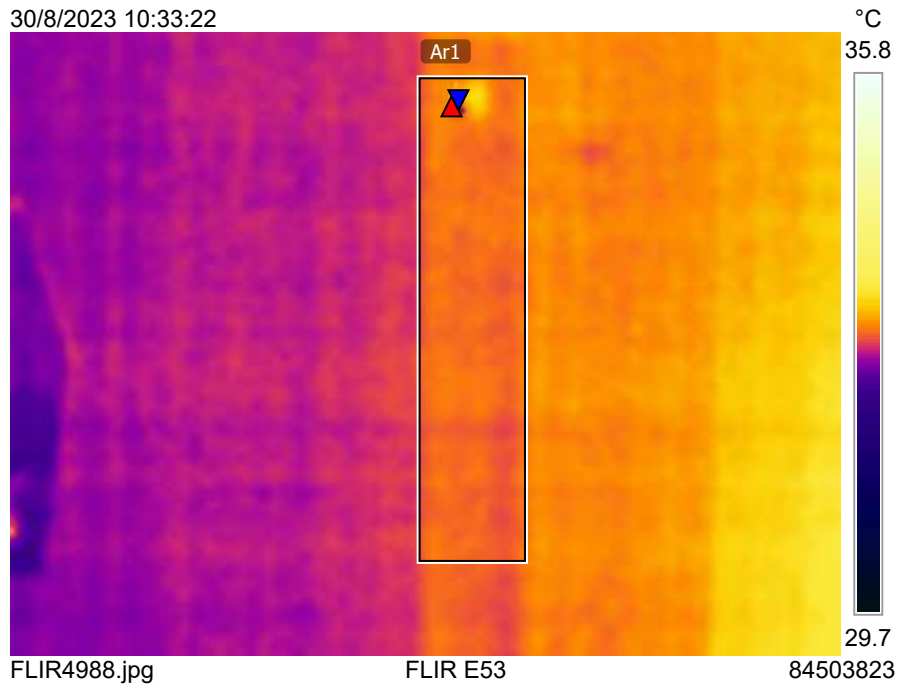
Text annotations

Location :	Shaft Room FI.29
Equipment :	Plugin Unit RUN1
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.0
	Min	31.4
	Average	31.9

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:33:22



30/8/2023 10:33:22



Text annotations

Location :	Shaft Room FI.29
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	26.6
Sp2	26.5
Sp3	26.6
Sp4	26.5
Sp5	26.4
Sp6	26.4
Difference	0.1
Sp1 - Sp4	
Difference	0.1
Sp2 - Sp5	
Difference	0.2
Sp3 - Sp6	

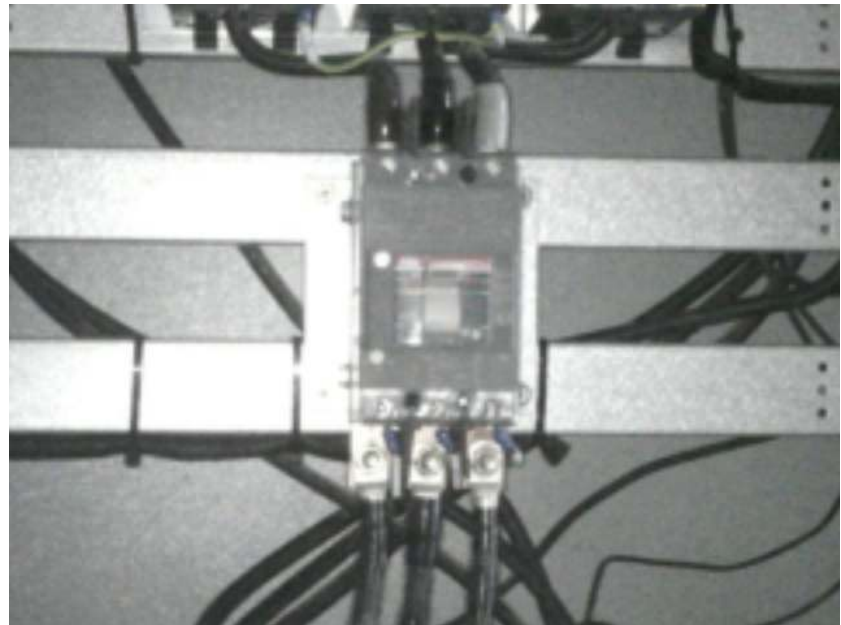
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:36:01



30/8/2023 10:36:01



FLIR4989.jpg

FLIR E53

84503823

Text annotations

Location :	Lift Room FI.29
Equipment :	DBEL V4.1 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

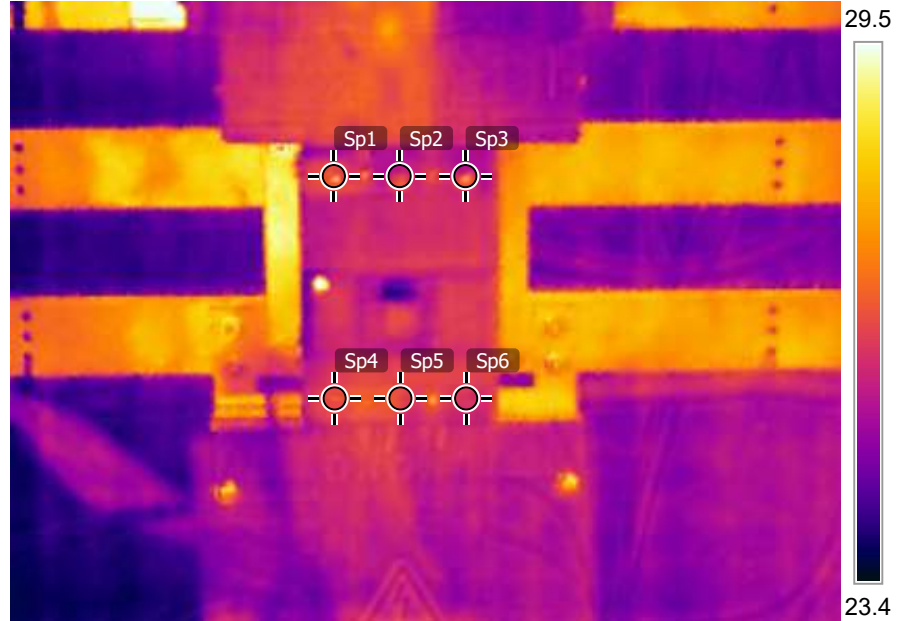
Measurements °C

Sp1	26.7
Sp2	26.7
Sp3	27.0
Sp4	25.8
Sp5	25.9
Sp6	26.6
Difference	0.9
Sp1 - Sp4	
Difference	0.8
Sp2 - Sp5	
Difference	0.4
Sp3 - Sp6	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:39:36

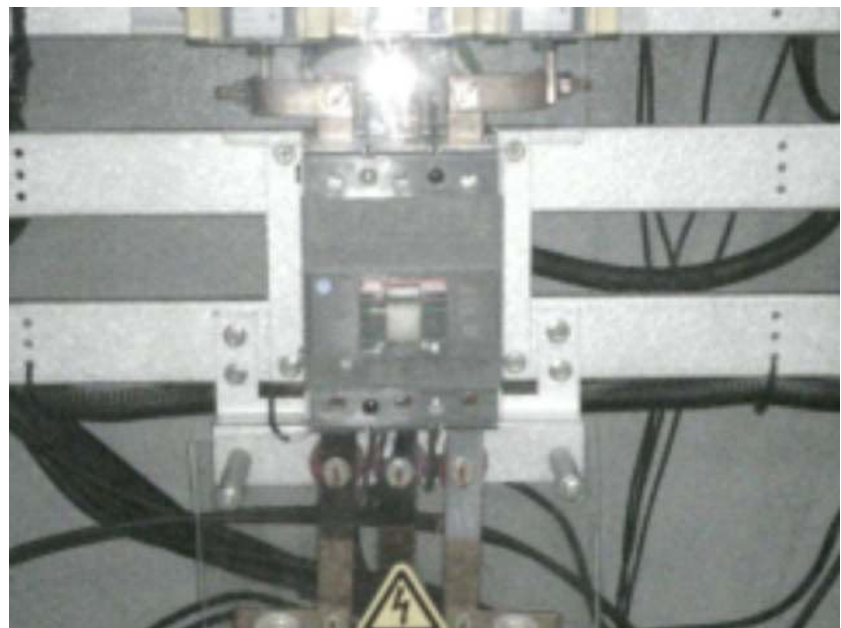


FLIR4991.jpg

FLIR E53

84503823

30/8/2023 10:39:36



FLIR4991.jpg

FLIR E53

84503823

Text annotations

Location :	Lift Room FI.30
Equipment :	DBEL V4 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	27.2
Sp2	27.2
Sp3	26.9
Sp4	27.3
Sp5	27.5
Sp6	27.2
Difference	0.1
Sp4 - Sp1	
Difference	0.3
Sp5 - Sp2	
Difference	0.3
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:39:22



FLIR4990.jpg

FLIR E53

84503823

30/8/2023 10:39:22



FLIR4990.jpg

FLIR E53

84503823

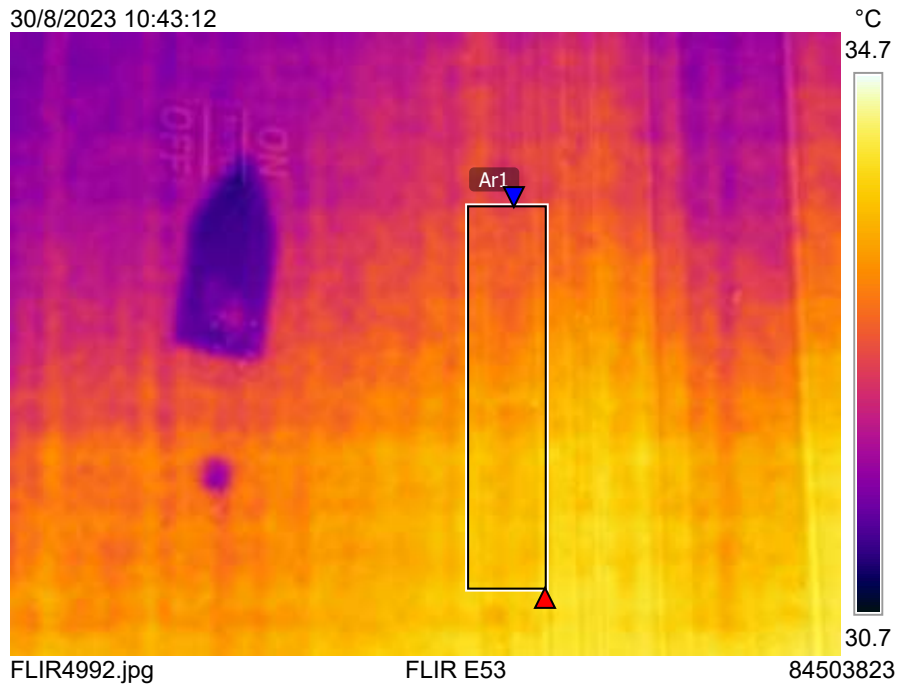
Text annotations

Location :	Lift Room FI.30
Equipment :	DBEL V5 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.1
	Min	32.8
	Average	33.0

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:43:12



30/8/2023 10:43:12



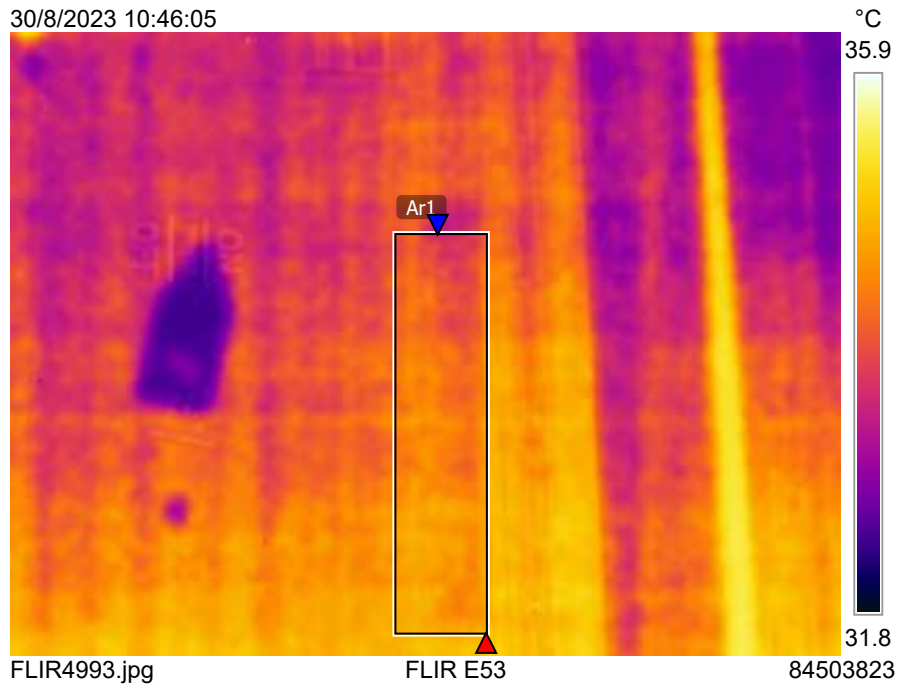
Text annotations

Location :	Shaft Room FI.28
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.1
	Min	33.8
	Average	33.9

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:46:05



30/8/2023 10:46:05



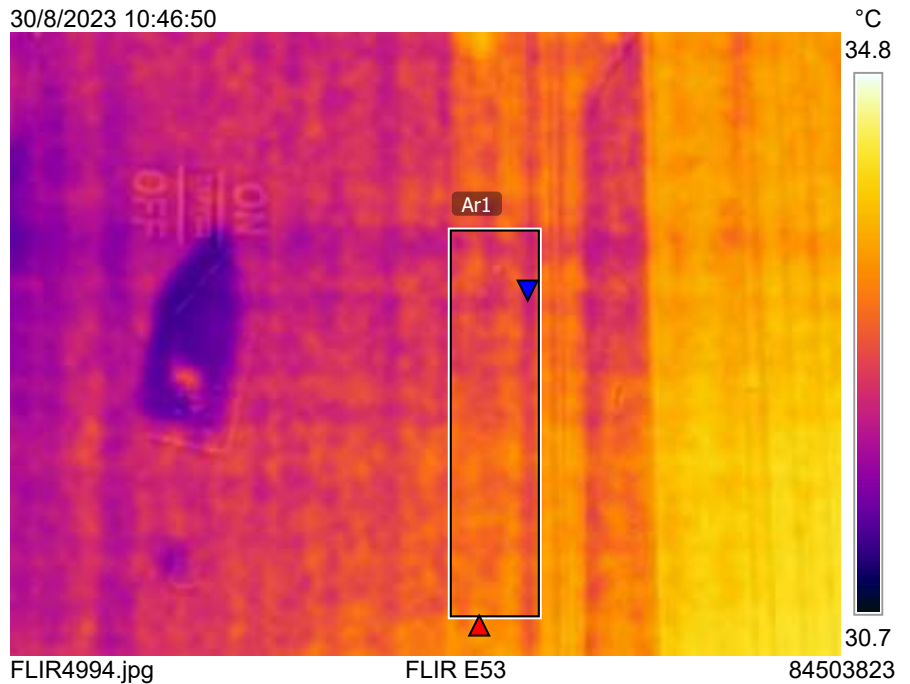
Text annotations

Location :	Shaft Room FI.27
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	32.9
	Min	32.8
	Average	32.9

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:46:50



30/8/2023 10:46:50



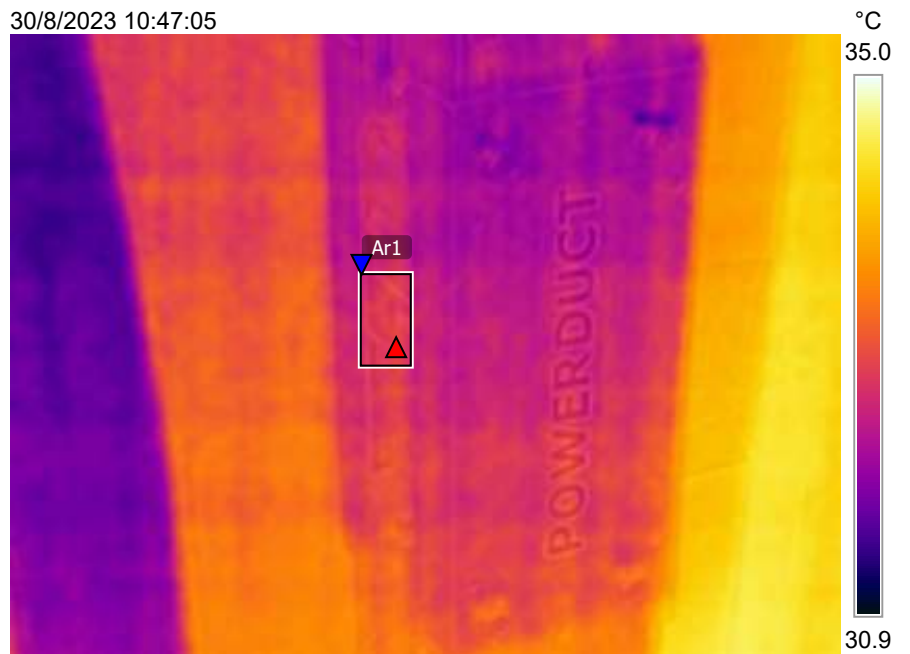
Text annotations

Location :	Shaft Room FI.26
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	32.9
	Min	32.8
	Average	32.8

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:47:05



FLIR4995.jpg

FLIR E53

84503823

30/8/2023 10:47:05



FLIR4995.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.26
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

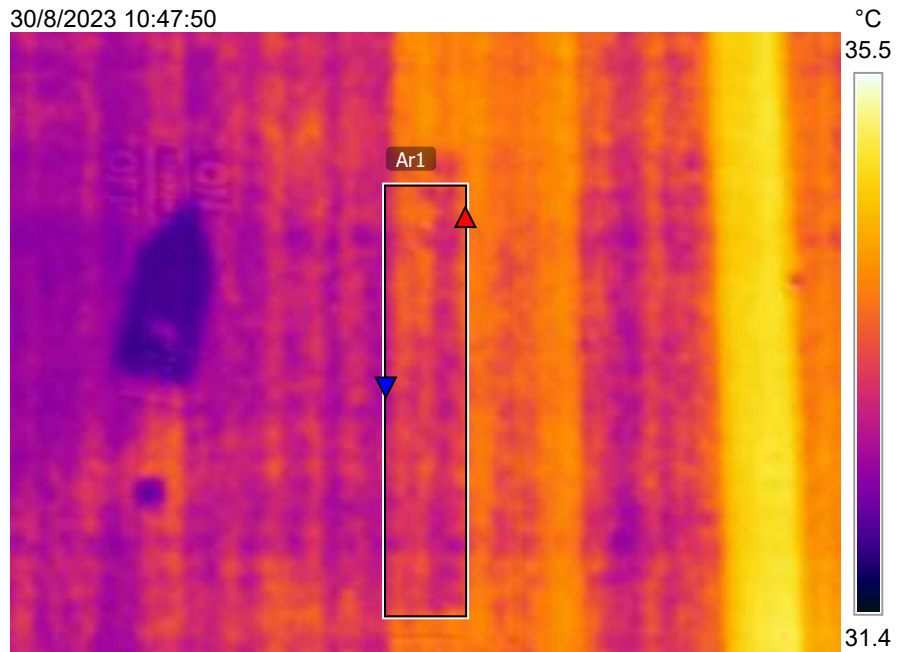
Measurements °C

Ar1	Max	33.5
	Min	33.3
	Average	33.4

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:47:50

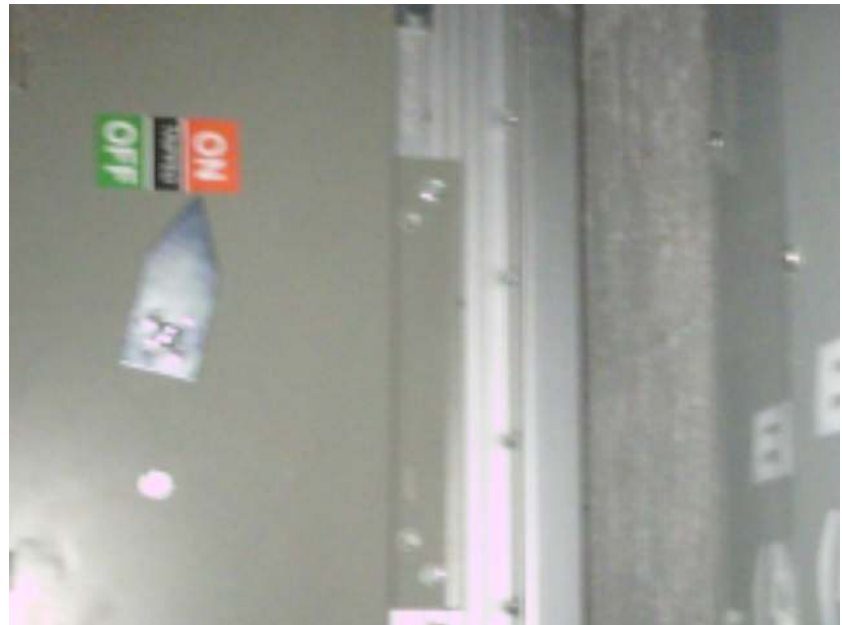


FLIR4996.jpg

FLIR E53

84503823

30/8/2023 10:47:50



FLIR4996.jpg

FLIR E53

84503823

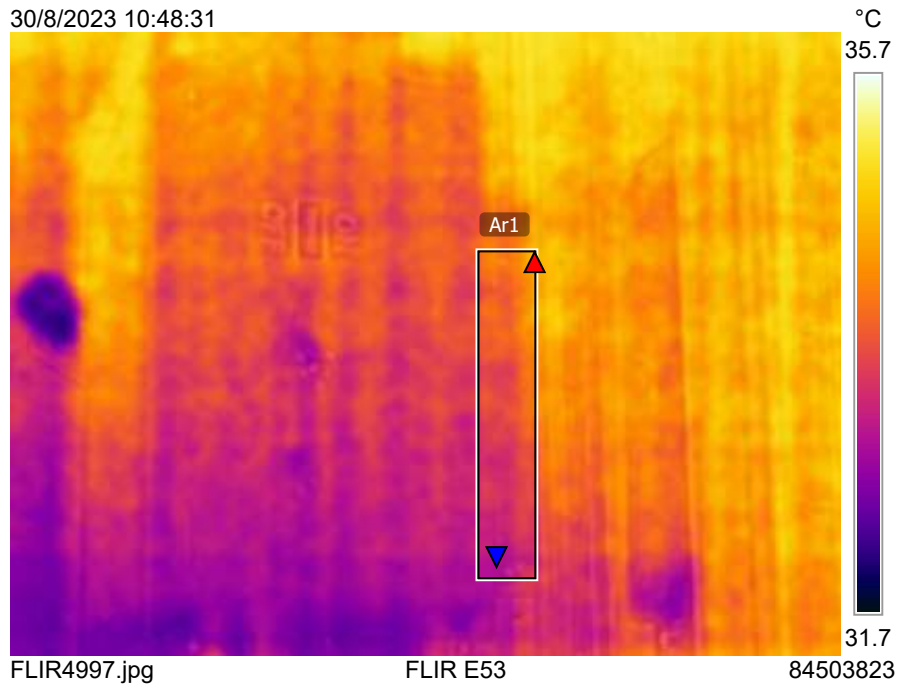
Text annotations

Location :	Shaft Room FI.25
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.0
	Min	33.7
	Average	33.8

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:48:31



30/8/2023 10:48:31



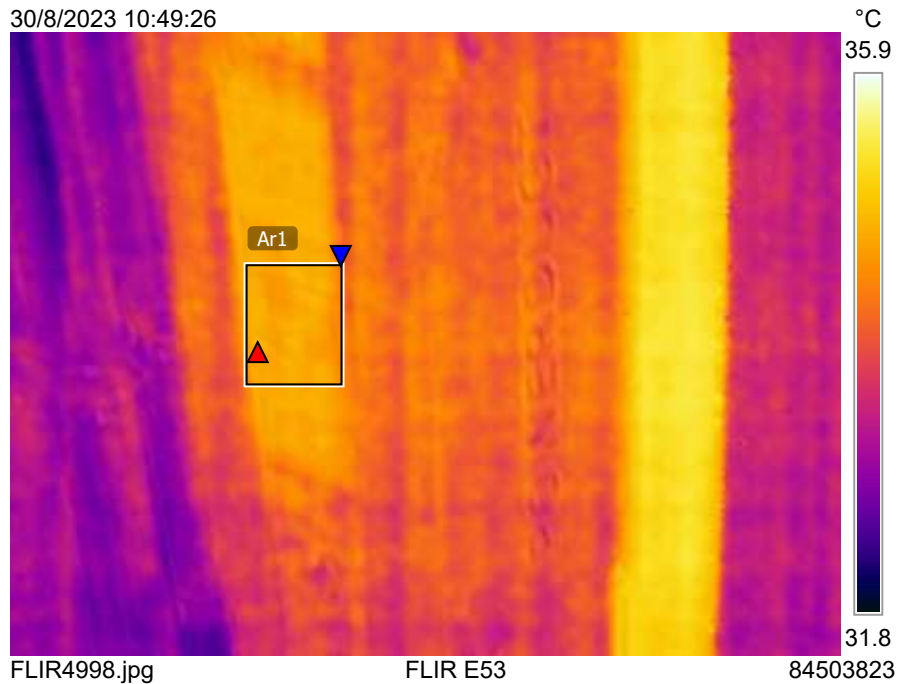
Text annotations

Location :	Shaft Room FI.24
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.2
	Min	33.9
	Average	34.1

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:49:26



30/8/2023 10:49:26



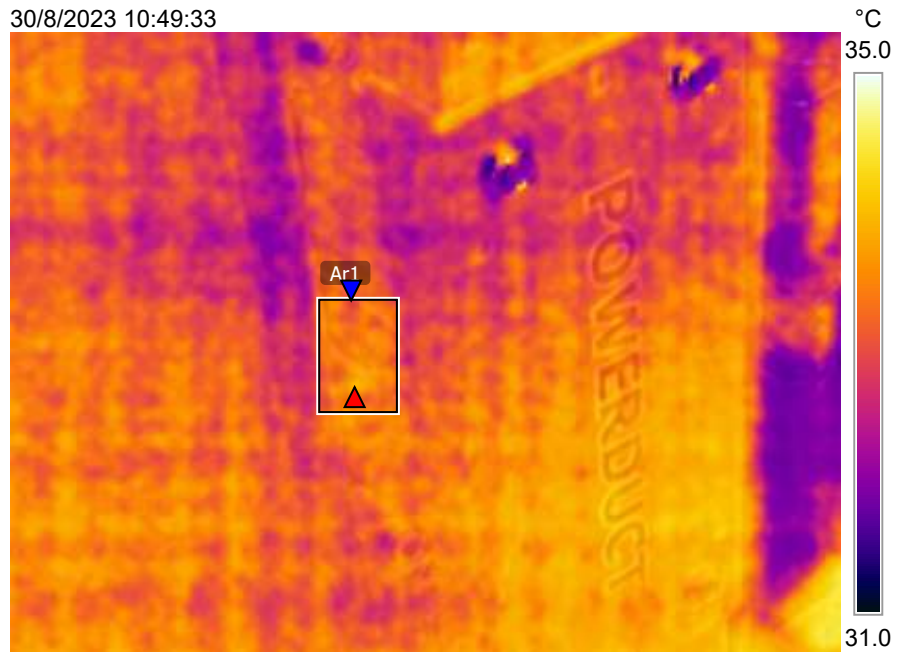
Text annotations

Location :	Shaft Room FI.23
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.2
	Min	33.1
	Average	33.1

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:49:33



FLIR4999.jpg

FLIR E53

84503823

30/8/2023 10:49:33



FLIR4999.jpg

FLIR E53

84503823

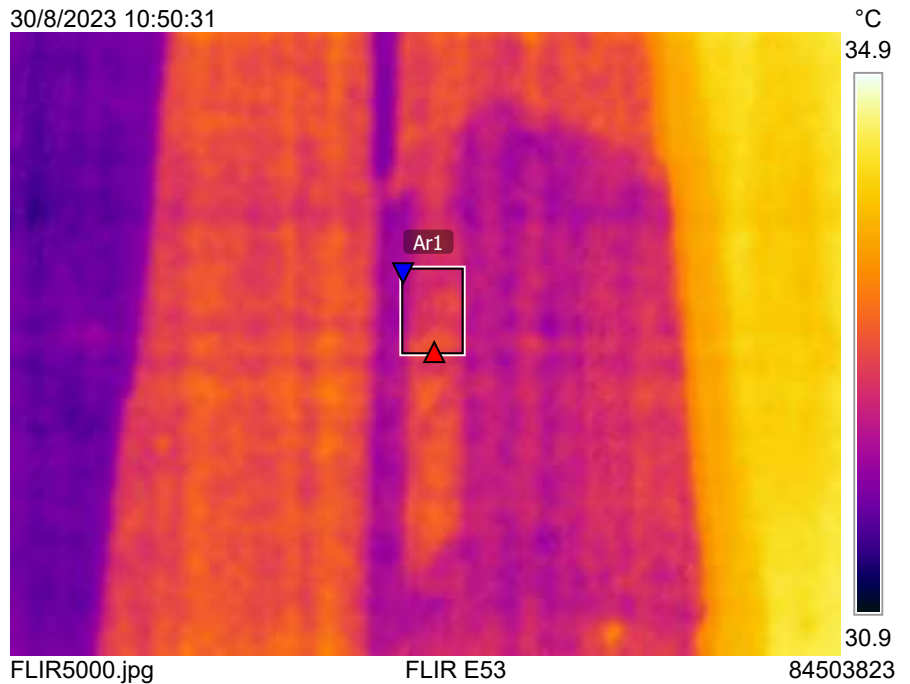
Text annotations

Location :	Shaft Room FI.23
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	32.8
	Min	32.7
	Average	32.8

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:50:31



30/8/2023 10:50:31



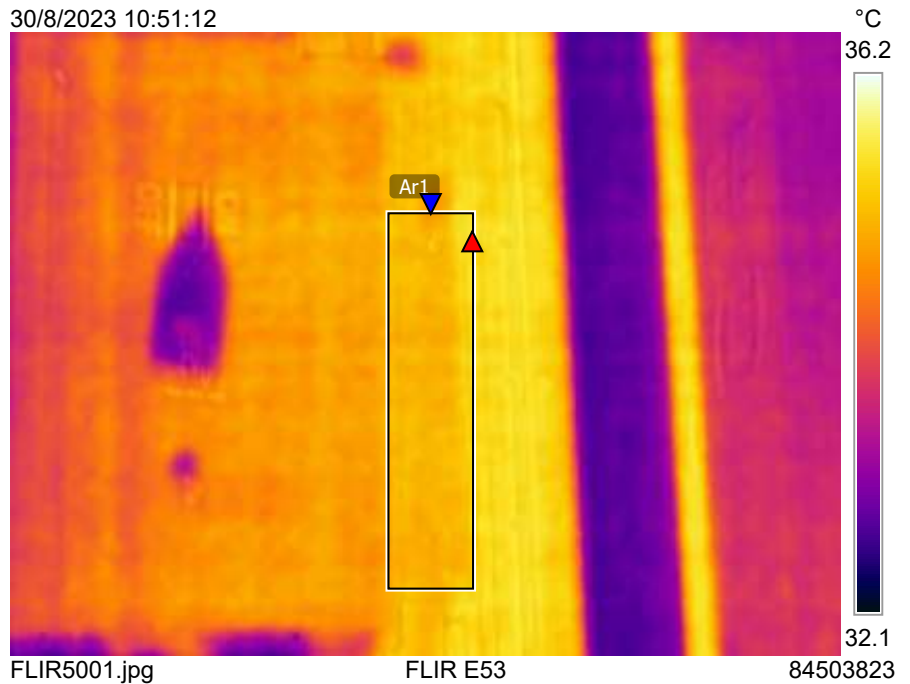
Text annotations

Location :	Shaft Room FI.22
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.6
	Min	34.4
	Average	34.5

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:51:12



30/8/2023 10:51:12



Text annotations

Location :	Shaft Room FI.21
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	32.9
	Min	32.8
	Average	32.8

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:51:56



30/8/2023 10:51:56



Text annotations

Location :	Shaft Room FI.20
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	32.9
	Min	32.6
	Average	32.8

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:52:43



FLIR5003.jpg

FLIR E53

84503823

30/8/2023 10:52:43



FLIR5003.jpg

FLIR E53

84503823

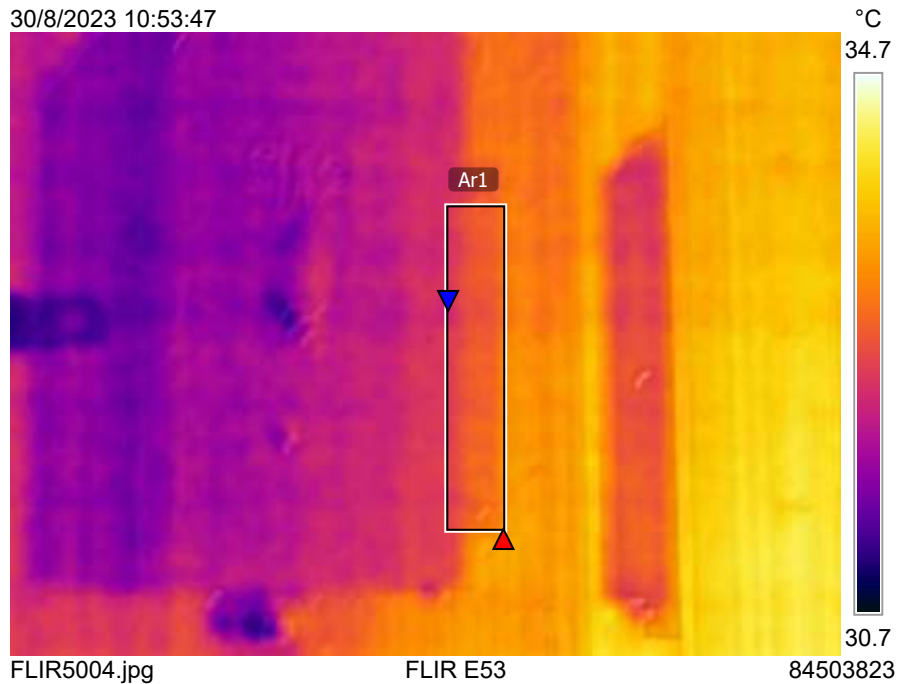
Text annotations

Location :	Shaft Room Fl.19
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	32.9
	Min	32.6
	Average	32.8

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:53:47



30/8/2023 10:53:47



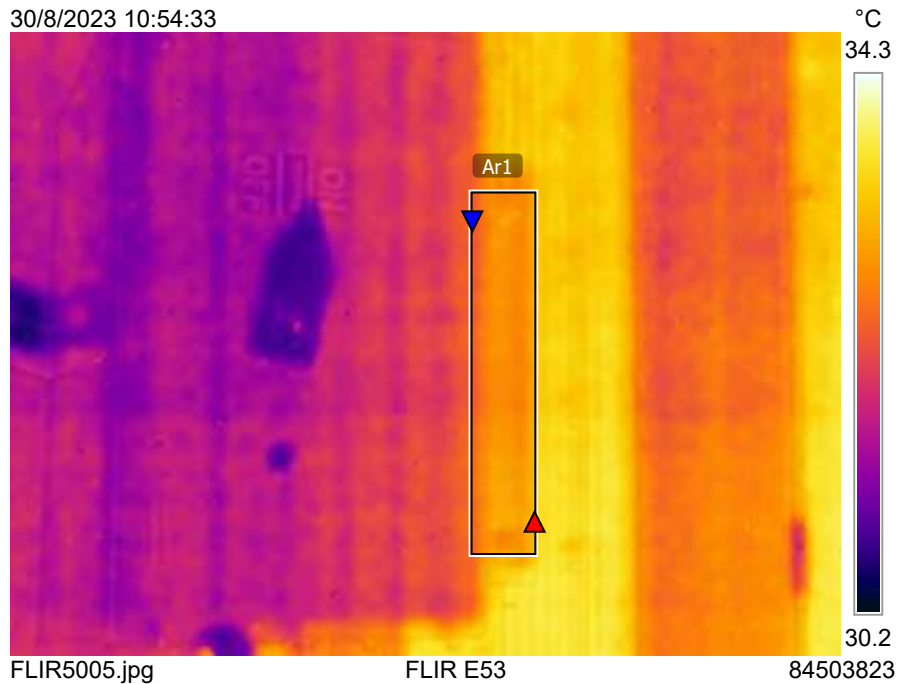
Text annotations

Location :	Shaft Room Fl.18
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements		°C
Ar1	Max	32.7
	Min	32.3
	Average	32.5

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:54:33



30/8/2023 10:54:33



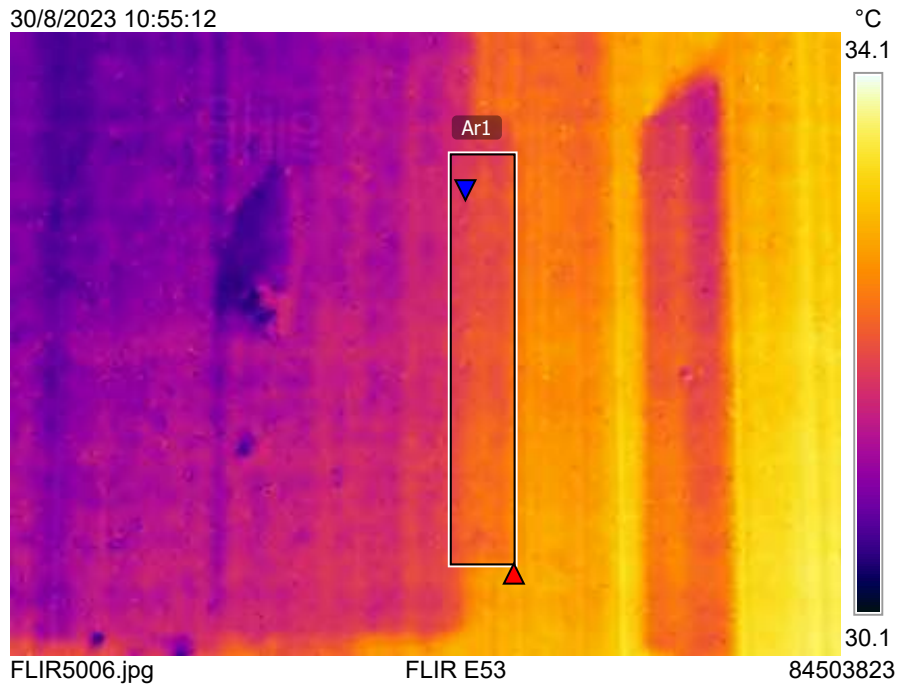
Text annotations

Location :	Shaft Room Fl.17
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

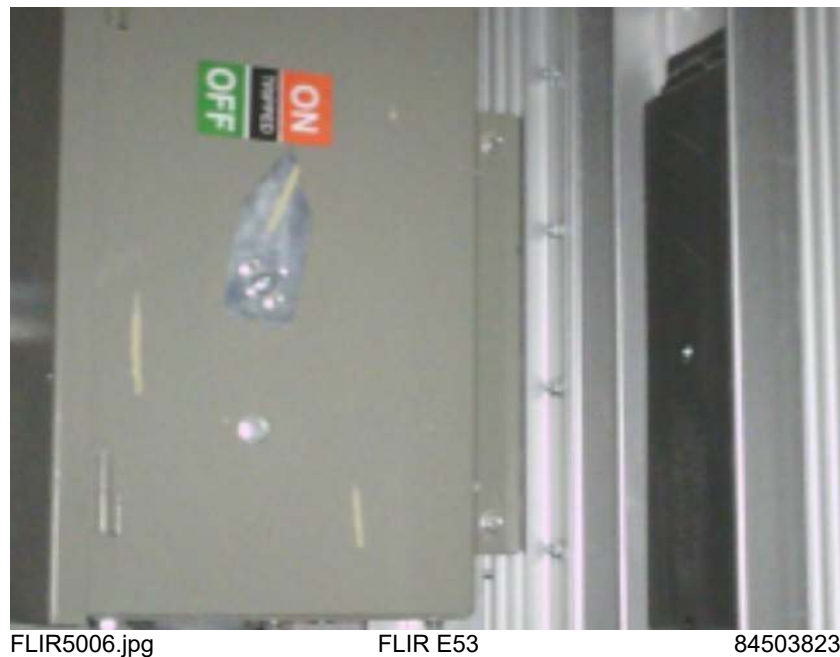
Measurements		°C
Ar1	Max	32.3
	Min	31.9
	Average	32.1

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:55:12



30/8/2023 10:55:12



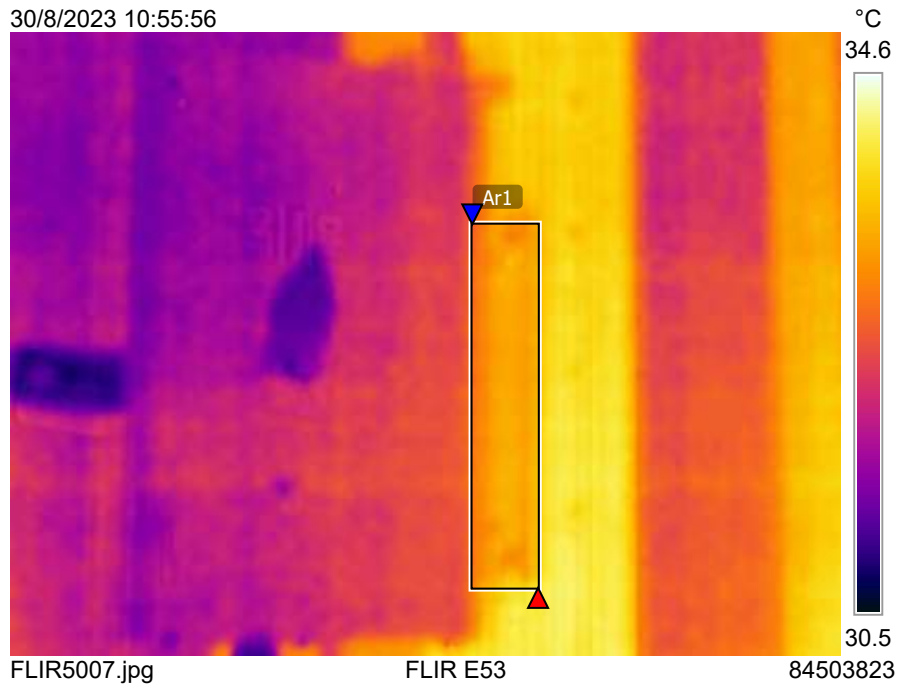
Text annotations

Location :	Shaft Room Fl.16
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.2
	Min	32.6
	Average	32.9

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:55:56



30/8/2023 10:55:56



Text annotations

Location :	Shaft Room Fl.15
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.4
	Min	32.7
	Average	33.1

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:56:44



FLIR5008.jpg

FLIR E53

84503823

30/8/2023 10:56:44



FLIR5008.jpg

FLIR E53

84503823

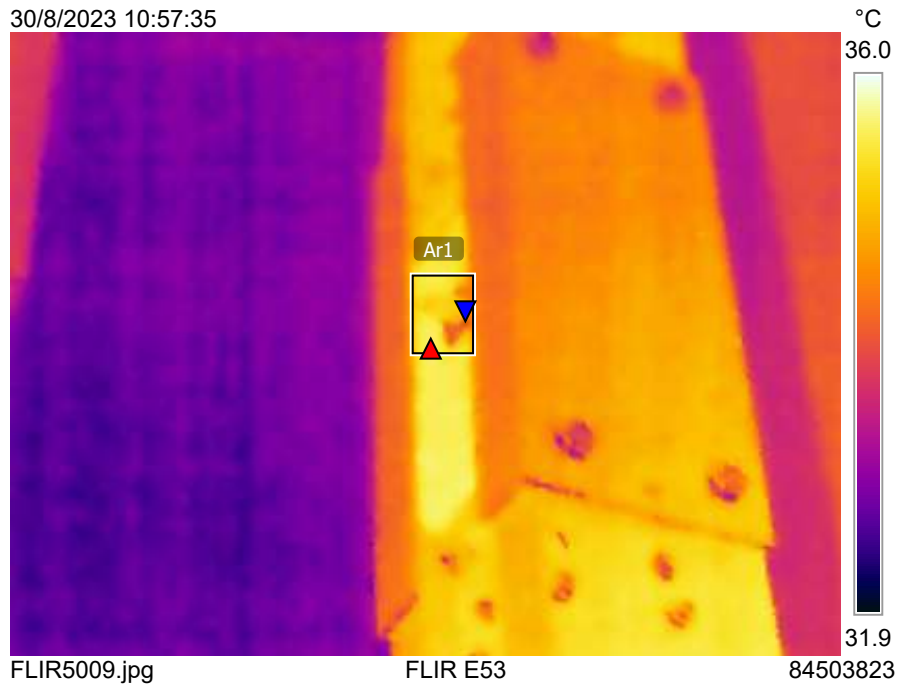
Text annotations

Location :	Shaft Room Fl.14
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.7
	Min	33.9
	Average	34.5

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:57:35



30/8/2023 10:57:35



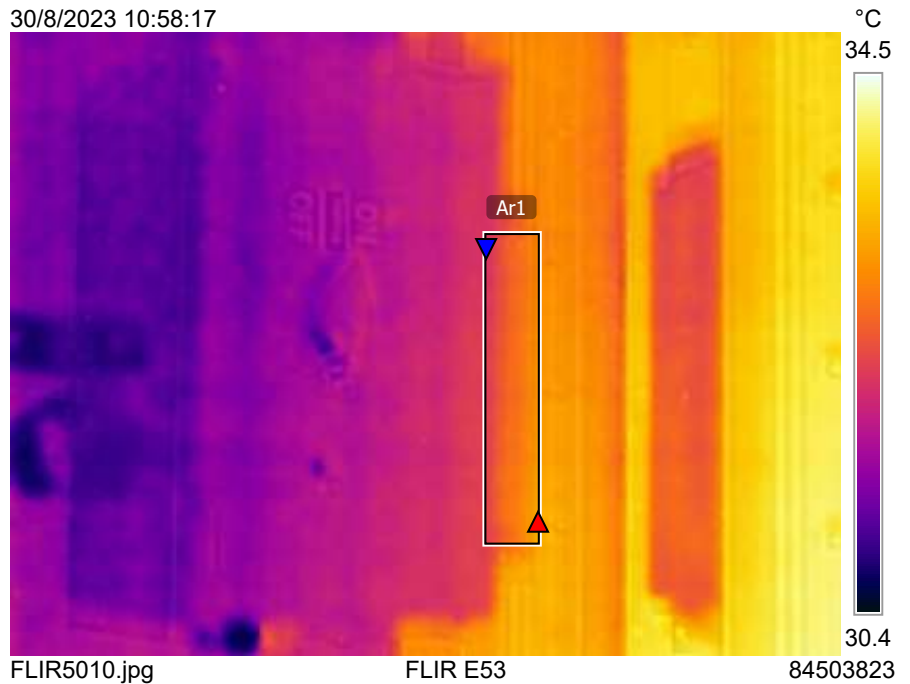
Text annotations

Location :	Shaft Room Fl.12
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

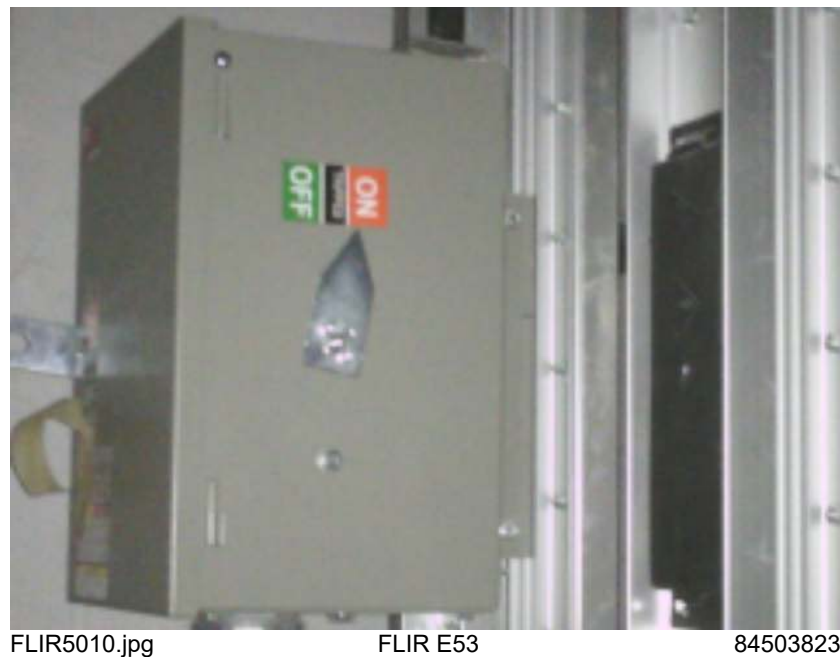
Measurements °C		
Ar1	Max	32.9
	Min	32.1
	Average	32.5

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:58:17



30/8/2023 10:58:17



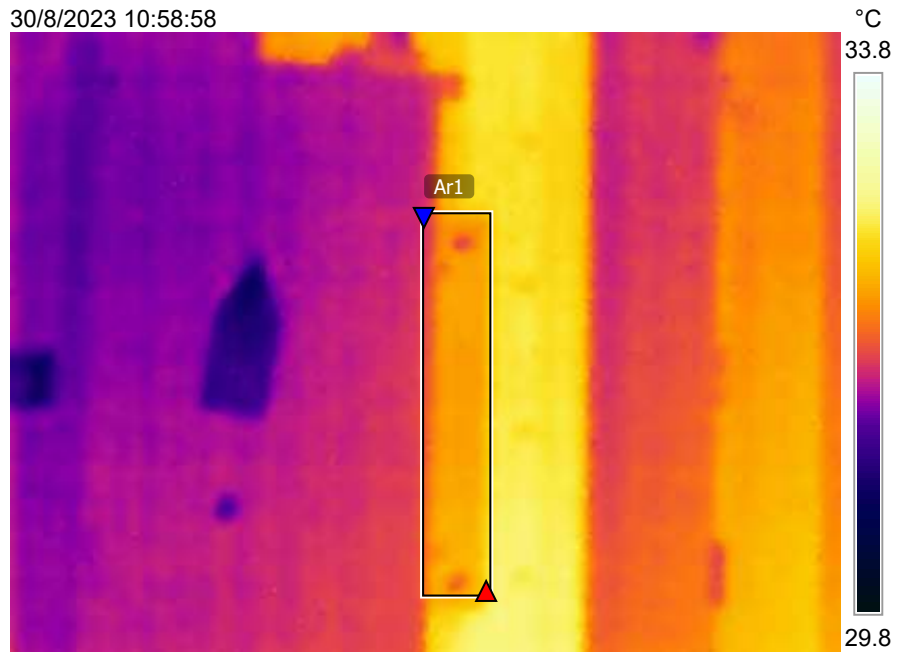
Text annotations

Location :	Shaft Room Fl.11
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements		°C
Ar1	Max	32.8
	Min	31.6
	Average	32.2

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:58:58



30/8/2023 10:58:58

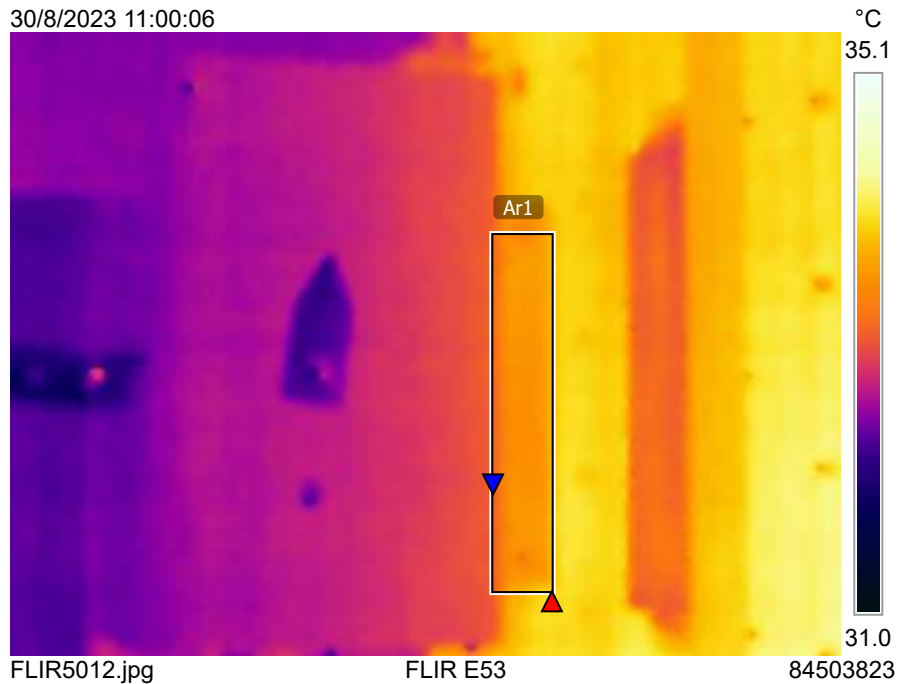


Text annotations

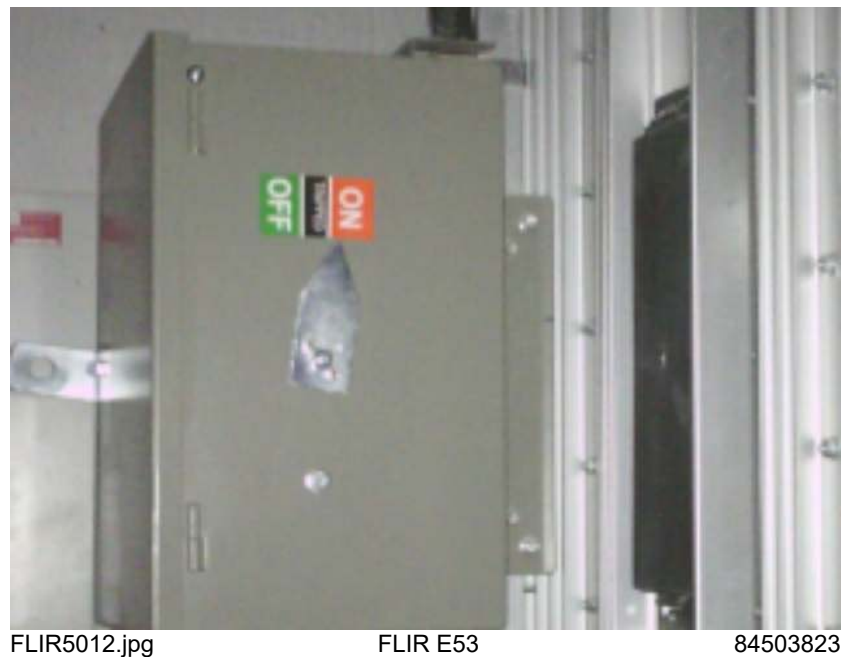
Location :	Shaft Room FI.10
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.0
	Min	33.1
	Average	33.5

Parameters	
Emissivity	0.95
Refl. temp.	28 °C



30/8/2023 11:00:06



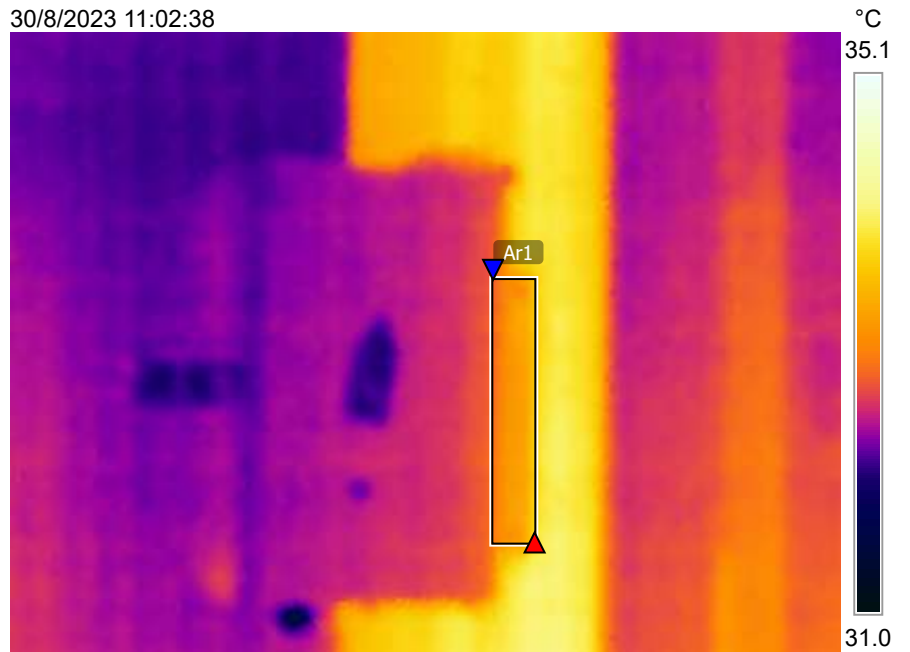
Text annotations

Location :	Shaft Room FI.9
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.9
	Min	32.8
	Average	33.2

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:02:38



FLIR5013.jpg

FLIR E53

84503823

30/8/2023 11:02:38



FLIR5013.jpg

FLIR E53

84503823

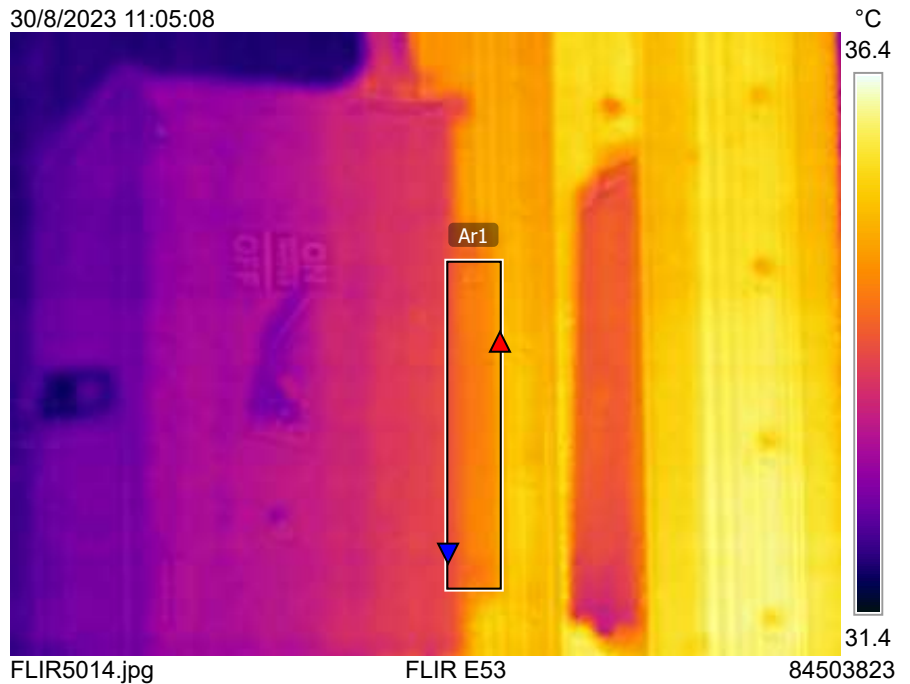
Text annotations

Location :	Shaft Room FI.8
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

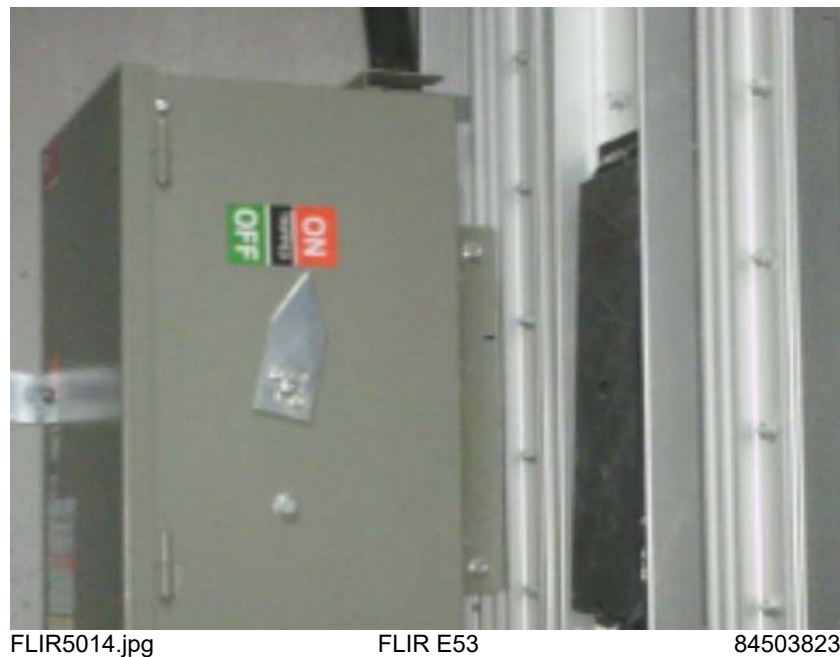
Measurements °C		
Ar1	Max	34.1
	Min	33.3
	Average	33.7

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:05:08



30/8/2023 11:05:08



Text annotations

Location :	Shaft Room FI.7
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

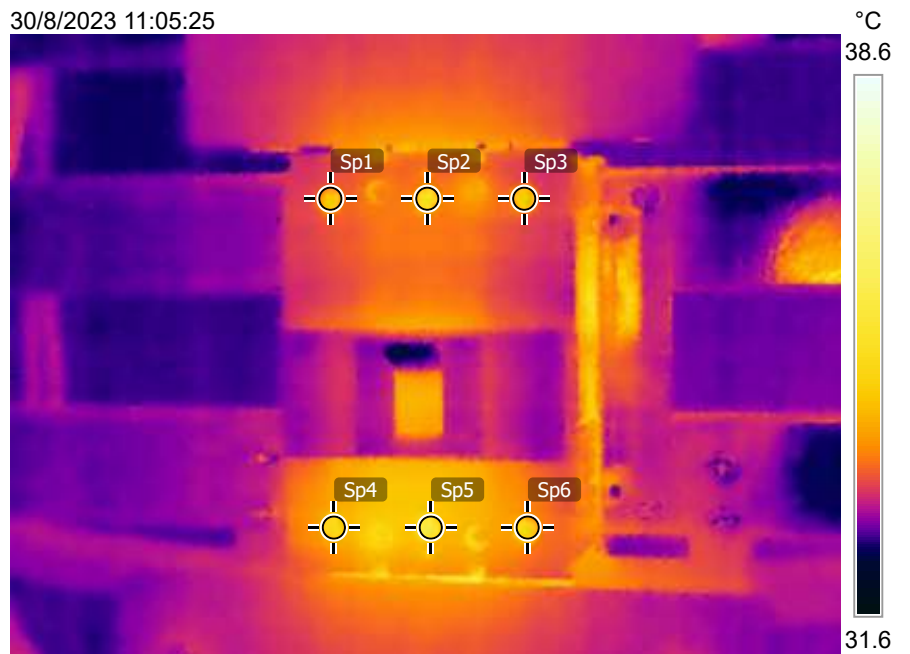
Measurements °C

Sp1	34.6
Sp2	35.1
Sp3	34.4
Sp4	34.9
Sp5	35.6
Sp6	34.8
Difference	0.3
Sp4 - Sp1	
Difference	0.5
Sp5 - Sp2	
Difference	0.4
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:05:25



FLIR5015.jpg

FLIR E53

84503823

30/8/2023 11:05:25



FLIR5015.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.7
Equipment :	DB.E7 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

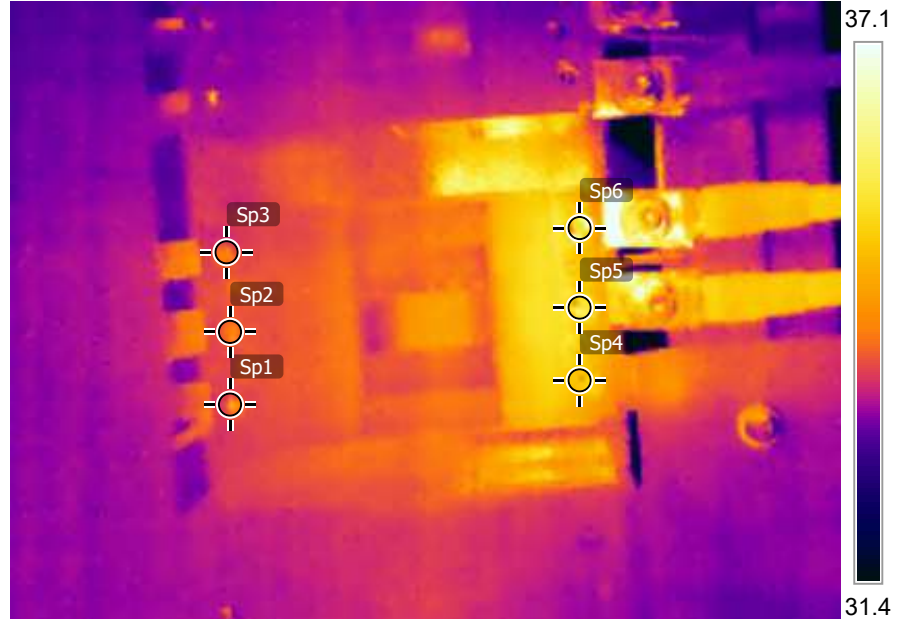
Measurements °C

Sp1	35.2
Sp2	34.1
Sp3	34.3
Sp4	35.7
Sp5	35.4
Sp6	35.5
Difference	0.5
Sp4 - Sp1	
Difference	1.3
Sp5 - Sp2	
Difference	1.2
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:11:31



30/8/2023 11:11:31



Text annotations

Location :	Shaft Room FI.6
Equipment :	DB.6 Panel
Detail :	MCCB LC-62
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	36.4
Sp2	37.6
Sp3	36.3
Sp4	37.8
Sp5	37.8
Sp6	37.4
Difference	1.4
Sp4 - Sp1	
Difference	0.2
Sp5 - Sp2	
Difference	1.1
Sp6 - Sp3	

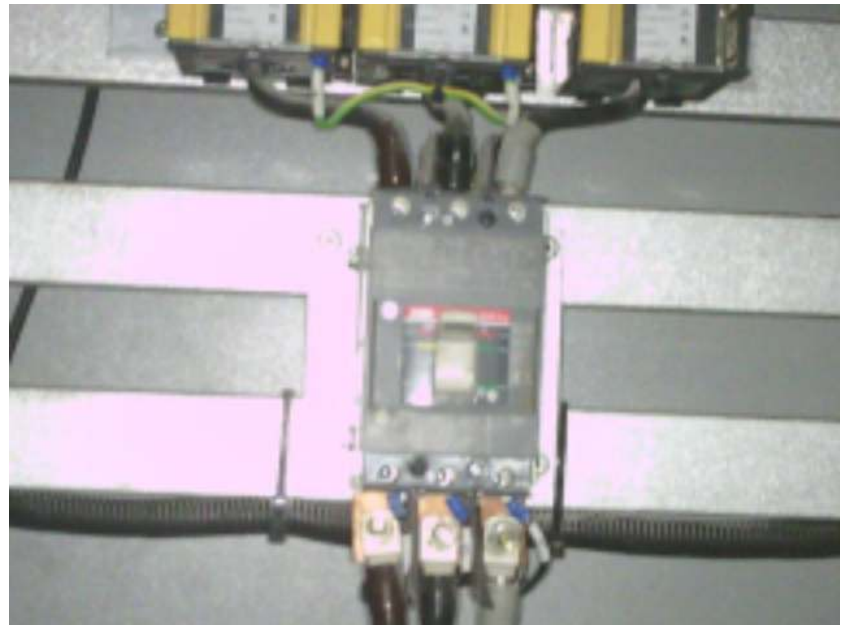
Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:11:59



30/8/2023 11:11:59



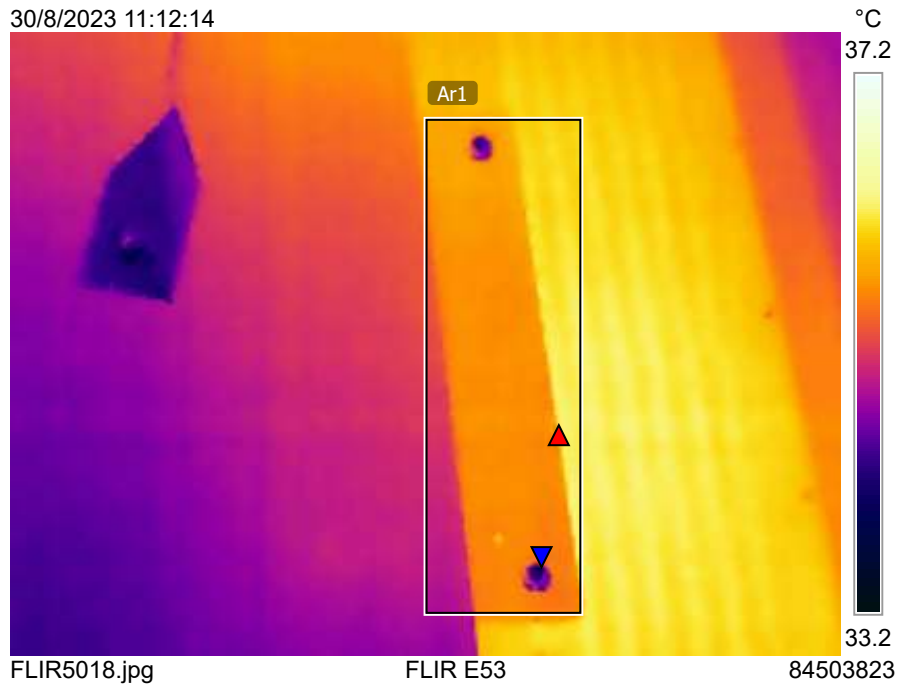
Text annotations

Location :	Shaft Room FI.6
Equipment :	DB.E6 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	36.4
	Min	33.9
	Average	35.6

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 11:12:14



30/8/2023 11:12:14



Text annotations

Location :	Shaft Room FI.6
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

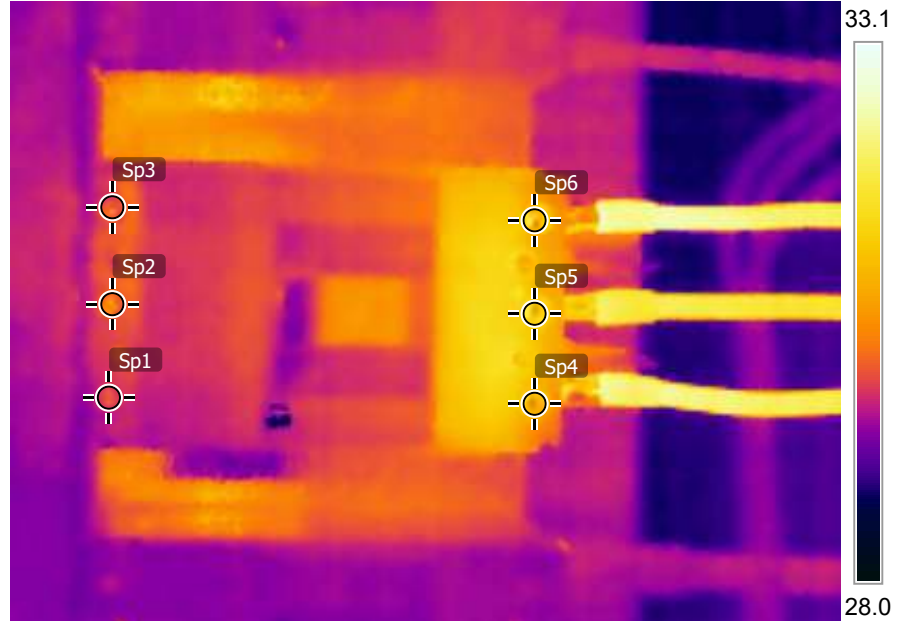
Measurements °C

Sp1	30.6
Sp2	31.1
Sp3	30.6
Sp4	31.1
Sp5	31.1
Sp6	31.8
Difference	0.5
Sp4 - Sp1	
Difference	0.0
Sp5 - Sp2	
Difference	1.2
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:16:55



30/8/2023 10:16:55



Text annotations

Location :	Shaft Room FI.3
Equipment :	DB.3 Panel
Detail :	MCCB LC-33
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	30.3
Sp2	29.7
Sp3	29.7
Sp4	29.7
Sp5	29.7
Sp6	29.7
Difference	0.6
Sp1 - Sp4	
Difference	0.0
Sp2 - Sp5	
Difference	0.0
Sp3 - Sp6	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:17:28



FLIR4974.jpg

FLIR E53

84503823

30/8/2023 10:17:28



FLIR4974.jpg

FLIR E53

84503823

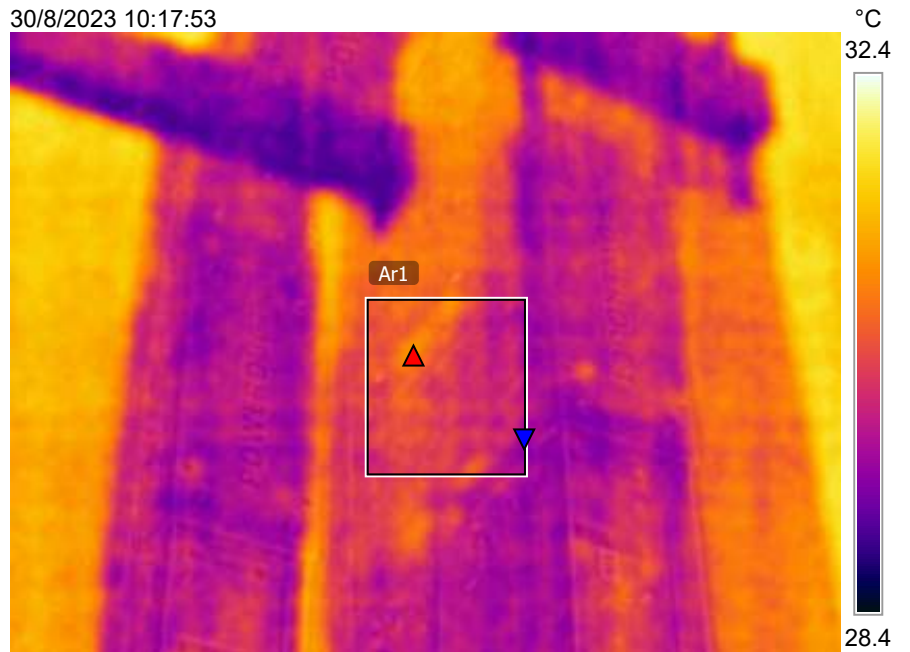
Text annotations

Location :	Shaft Room FI.3
Equipment :	DB.E3 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements		°C
Ar1	Max	30.5
	Min	30.2
	Average	30.3

Parameters	
Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:17:53

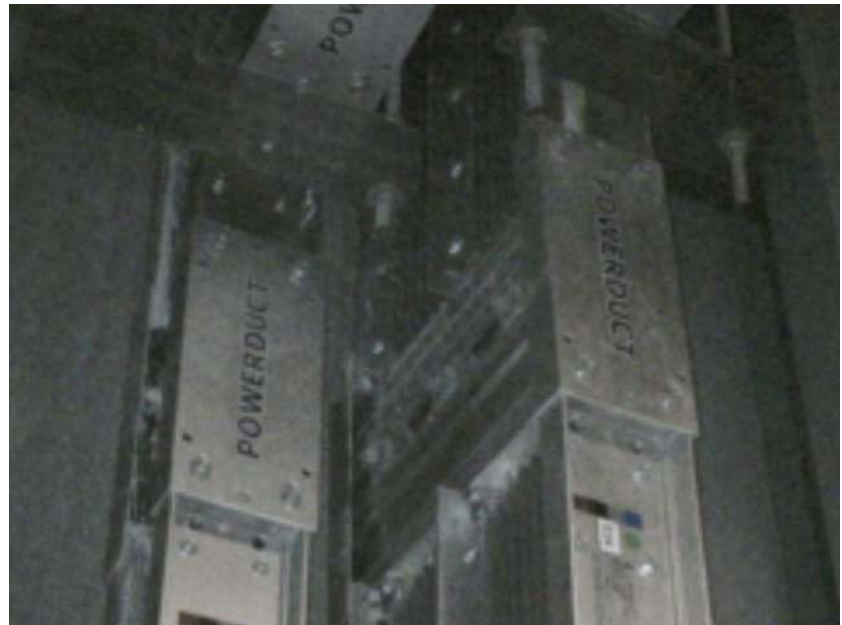


FLIR4975.jpg

FLIR E53

84503823

30/8/2023 10:17:53



FLIR4975.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.3
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

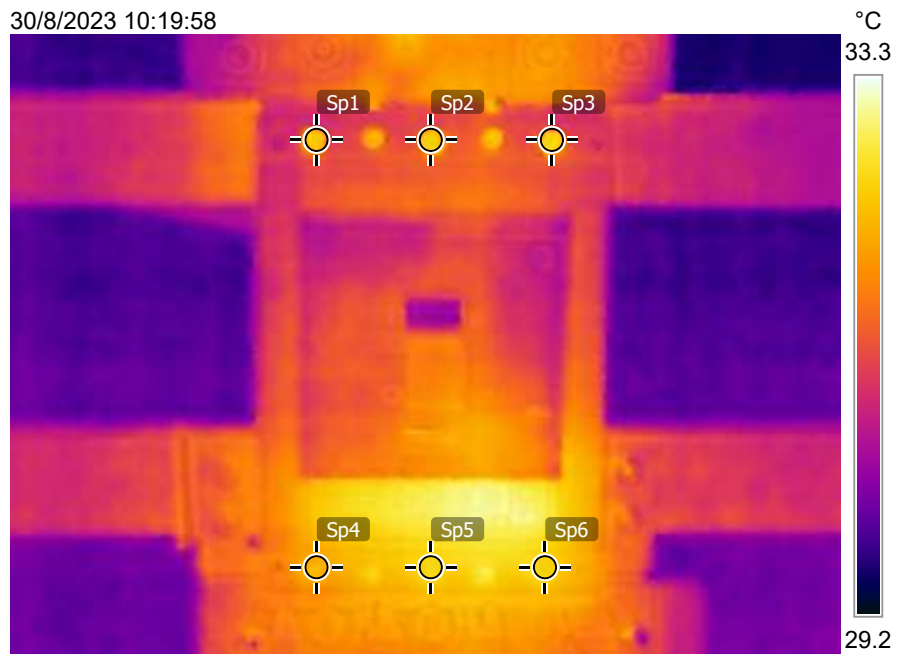
Measurements °C

Sp1	31.7
Sp2	31.7
Sp3	31.8
Sp4	31.5
Sp5	31.7
Sp6	31.7
Difference	0.2
Sp1 - Sp4	
Difference	0.0
Sp2 - Sp5	
Difference	0.1
Sp3 - Sp6	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:19:58



FLIR4976.jpg

FLIR E53

84503823

30/8/2023 10:19:58



FLIR4976.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room Fl.2
Equipment :	DB.2 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

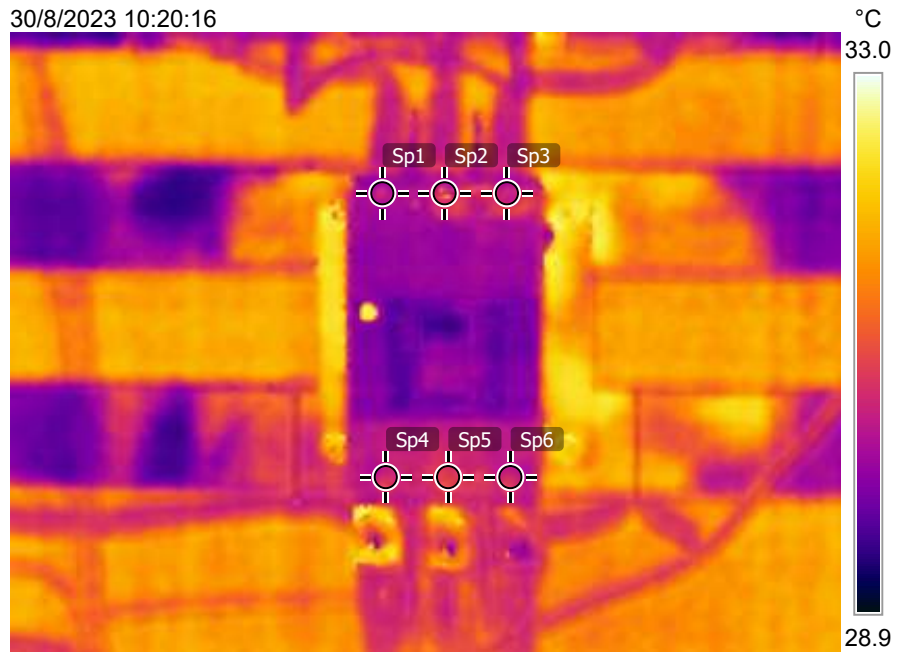
Measurements °C

Sp1	30.9
Sp2	30.8
Sp3	30.9
Sp4	30.9
Sp5	30.9
Sp6	30.9
Difference	0.0
Sp4 - Sp1	
Difference	0.1
Sp5 - Sp2	
Difference	0.0
Sp6 - Sp3	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:20:16

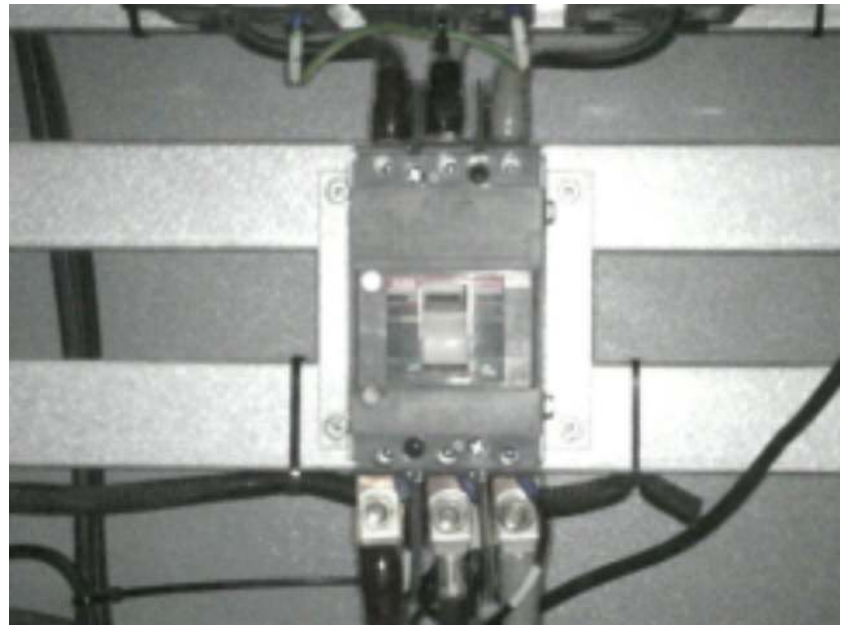


FLIR4977.jpg

FLIR E53

84503823

30/8/2023 10:20:16



FLIR4977.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.2
Equipment :	DB.E2 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

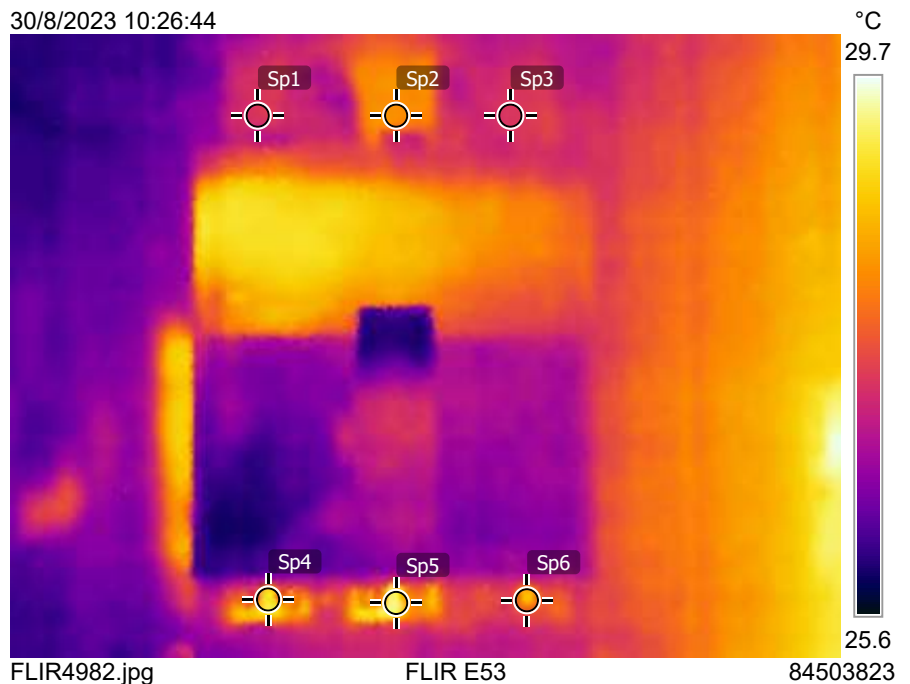
Measurements °C

Sp1	27.5
Sp2	27.5
Sp3	27.4
Sp4	27.3
Sp5	27.3
Sp6	27.2
Difference	0.2
Sp1 - Sp4	
Difference	0.2
Sp2 - Sp5	
Difference	0.2
Sp3 - Sp6	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:26:44



30/8/2023 10:26:44



Text annotations

Location :	Shaft Room FI.B
Equipment :	DB.B Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

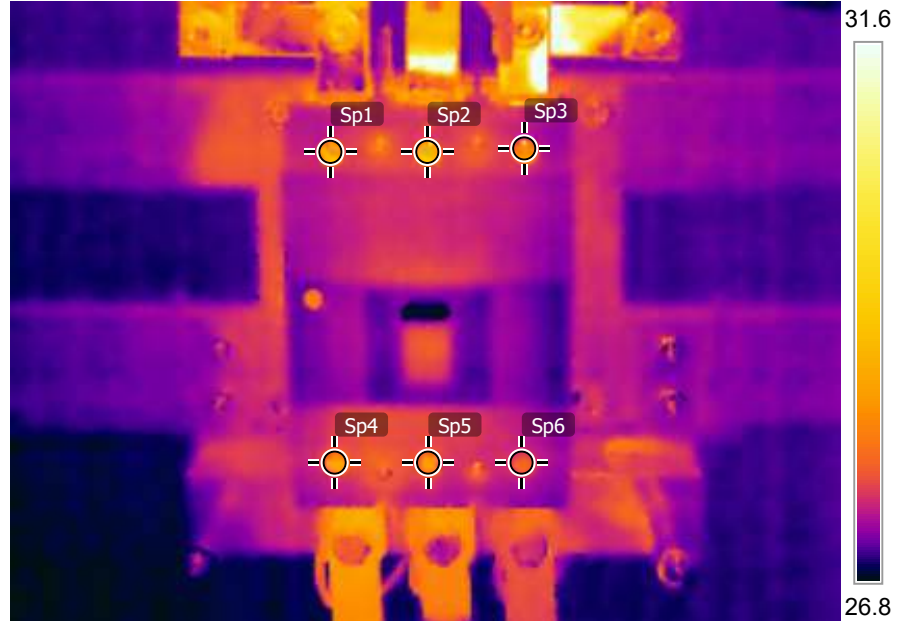
Measurements °C

Sp1	28.4
Sp2	28.7
Sp3	28.3
Sp4	28.0
Sp5	28.5
Sp6	27.8
Difference	0.4
Sp1 - Sp4	
Difference	0.2
Sp2 - Sp5	
Difference	0.5
Sp3 - Sp6	

Parameters

Emissivity	0.95
Refl. temp.	28 °C

30/8/2023 10:27:02

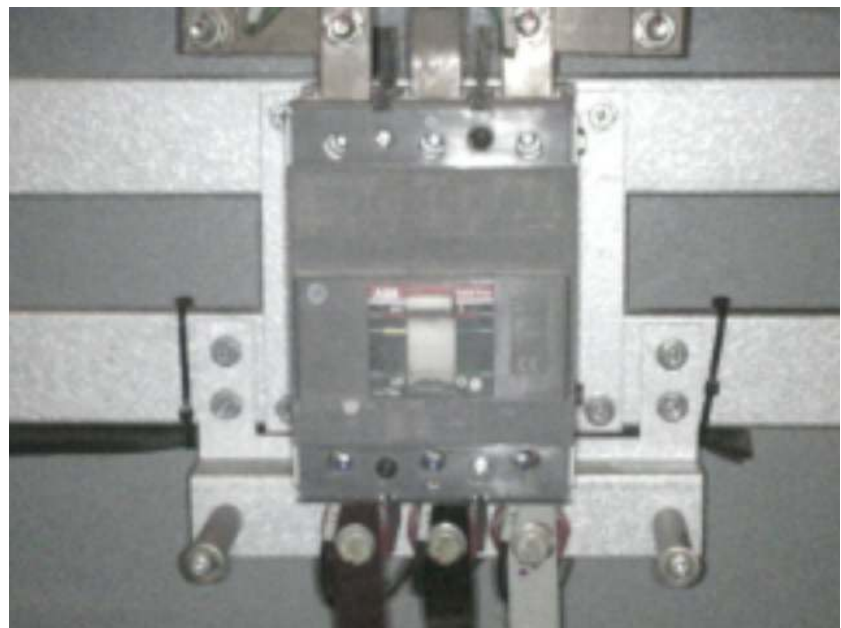


FLIR4983.jpg

FLIR E53

84503823

30/8/2023 10:27:02



FLIR4983.jpg

FLIR E53

84503823

Text annotations

Location :	Shaft Room FI.B
Equipment :	DB.EB Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference



ESSI ENERGY GROUP CO., LTD.

Infrared Thermography Report

Project : Hyatt Regency Bangkok Sukhumvit

Before Preventive Maintenance

Inspection Date : 21/07/2023

Forward

This Report of Infrared Inspection provides complete documentation of thermal patterns detected in your equipment, structure or system. It uses a subjective evaluation to help you prioritize repairs to provide the greatest return from this inspection and your maintenance.

How Infrared Thermography Works

Infrared imagers “see” the heat radiated from your equipment in real time, just like a video camera sees visible light. In black/white thermograms (pictures of heat), white is hot and black is cold unless stated otherwise. When thermograms are in color, colors in the scene are matched to the reference. Colors appearing closer to the top or right of the reference bar indicate higher temperatures. Colors appearing closer to the bottom or left of the reference bar indicate lower temperatures.

Repair Priority Ratings

Each thermogram, is given a Subjective Repair Priority Rating which is based upon your qualified assistant’s opinion of how critical the subject item is to the safe and profitable operation of your overall system.

The Inspection Summary section of this report explains how to use this Subjective Repair Priority Rating to help you determine how quickly you need to investigate and correct the potential problem.

Overheating can cause premature deterioration and unplanned failure of your equipment. Overheating connectors, conductors and components will never get better. In fact, the temperature and rate of deterioration will increase with time.

No one can predict when a failure will occur. As a result, we suggest that you use the Subject Repair Priority Ratings as a guide that you investigate and take appropriate corrective measures as soon as possible.

Inspection Summary

For the equipment inspected, we have present a total of **78** thermogram (s) and/or daylight photograph(s) documenting conditions found during our inspection. These thermograms and/or photographs appear on the Image Pages found at the end of this report.

As a reference, each Image Page contains Evaluation Priority Ratings. Subjective Evaluation Ratings are based upon the Qualified Assistant's opinion of the subject item's importance to the safe and continuous operation of the facility. Objective Evaluation Ratings found on Electro/Mechanical Image Pages are based upon temperature rise criteria as specified by ANSI, NETA and the Infraspection Institute Guideline for Infrared Inspection of Electrical and Mechanical Systems.

Depending upon Image Page format, Subjective and/or Objective Priority Ratings may be found. When both are listed, as Average Repair Priority Rating will also be displayed. This Average Repair Priority Rating is the mean value of the Subjective and Objective Priorities. When appropriate, the Average Repair Priority is rounded up to the next highest whole number.

Potential problems documented in this report are grouped and listed according to the following Average Repair Priority or Subjective Evaluation Ratings



For Temp. Difference (delta-T) based on comparisons between similar components under similar loading.

Thermographic Survey Suggested Actions Based on Temperature Rise

Temperature difference (ΔT) based on comparisons between similar components under similar loading.	Temperature difference (ΔT) based upon comparisons between components and ambient air temperatures.	Recommended Action
1 °C - 3 °C	1 °C - 10 °C	Possible deficiency; warrants investigation
4 °C - 15 °C	11 °C - 20 °C	Indicates probable deficiency; repair as time permits
.....	21 °C - 40 °C	Monitor until corrective measures can be accomplished
>15 °C	>40 °C	Major discrepancy; repair immediately

Report Summary

Inspection date:	21/07/2023	
Report date:	25/07/2023	
Project :	Hyatt Regency Bangkok Sukhumvit	
Project Location:	Bangkok	
Type of Inspection:	Qualitative Electrical System	
Purpose of Inspection:	Maintenance IR Scan (Before PM)	
Certified Thermographer:	Mr. Thirasak Nampor	
Certification Number:	Certificate Level-I No. 1-000929	
Equipment Used:	Flir E53	S/N : 84503230
No of thermograms :	78	
Comments:	The results of the examination. Measurement of electrical heat of electrical equipment according to plan of work. No defects are found that cause damage and do not cause harm to the use and maintenance of electrical equipment should be maintained in good condition.	

IR Inspector :	Mr. Thirasak Nampor
Signature :	
Certified Thermographer :	Mr. Thirasak Nampor
Certification Number :	Certificate Level-I No. 1-000929
Signature :	

Report Summary

Report	Equipment	Detail	Location	Status	Page
1	TR-1	High Volt Side Connection	MDB Room Fl.3	Normal Operation	1
2	TR-1	Low Volt Side Connection	MDB Room Fl.3	Normal Operation	2
3	TR-2	High Volt Side Connection	MDB Room Fl.3	Normal Operation	3
4	TR-2	Low Volt Side Connection	MDB Room Fl.3	Normal Operation	4
5	MDB.1 Panel	ACB Main	MDB Room Fl.3	Normal Operation	5
6	MDB.1 Panel	ACB FOR 1A 6,300 A.	MDB Room Fl.3	Normal Operation	6
7	MDB.1 Panel	ACB DB.B 2,500 A.	MDB Room Fl.3	Normal Operation	7
8	MDB.1 Panel	MCCB FOR ODD FLOO 1,250 A.	MDB Room Fl.3	Normal Operation	8
9	MDB.1 Panel	MCCB FDP	MDB Room Fl.3	Normal Operation	9
10	MDB.1 Panel	MCCB CWHF	MDB Room Fl.3	Normal Operation	10
11	MDB.2 Panel	ACB Main 6,300 A.	MDB Room Fl.3	Normal Operation	11
12	MDB.2 Panel	ACB MCC.AC1 1,250 A.	MDB Room Fl.3	Normal Operation	12
13	MDB.2 Panel	ACB MCC.AC3 1,250 A.	MDB Room Fl.3	Normal Operation	13
14	MDB.2 Panel	MCCB FOR EVEN FLOOR	MDB Room Fl.3	Normal Operation	14
15	EMDB Panel	ACB MCC.EAC2 1,250 A.	MDB Room Fl.3	Normal Operation	15
16	EMDB Panel	MCCB MCC.ESN1	MDB Room Fl.3	Normal Operation	16
17	EMDB Panel	MCCB DB.E5	MDB Room Fl.3	Normal Operation	17
18	FDP.1 Panel	MCCB Normal	MDB Room Fl.3	Normal Operation	18
19	FDP.1 Panel	MCCB DBELV.5	MDB Room Fl.3	Normal Operation	19
20	DB.G Panel	MCCB Main	Shaft Room Fl.M	Normal Operation	20
21	DB.G Panel	MCCB LCG3	Shaft Room Fl.M	Normal Operation	21
22	DB.EG Panel	MCCB Main	Shaft Room Fl.M	Normal Operation	22
23	Busduct	Joint Busduct	Shaft Room Fl.M	Normal Operation	23
24	DB.5 Panel	MCCB Main	Shaft Room Fl.5	Normal Operation	24
25	DB.E5 Panel	MCCB Main	Shaft Room Fl.5	Normal Operation	25
26	Busduct	Joint Busduct	Shaft Room Fl.5	Normal Operation	26
27	MCC.A3 Panel	MCCB Main	Chiller Room Fl.4	Normal Operation	27
28	MCC.A3 Panel	MCCB CH-3	Chiller Room Fl.4	Normal Operation	28
29	MCC.AC2 Panel	MCCB Main	Chiller Room Fl.4	Normal Operation	29
30	MCC.AC2 Panel	MCCB CH-2	Chiller Room Fl.4	Normal Operation	30

Infrared Thermography Inspection Report : Hyatt Regency Bangkok Sukhumvit

Report	Equipment	Detail	Location	Status	Page
31	MCC.AC1 Panel	MCCB Main	Chiller Room Fl.4	Normal Operation	31
32	MCC.AC1 Panel	MCCB CH-1	Chiller Room Fl.4	Normal Operation	32
33	DB.4 Panel	MCCB Main	Shaft Room Fl.4	Normal Operation	33
34	DB.4 Panel	MCCB LC4A	Shaft Room Fl.4	Normal Operation	34
35	DB.E4 Panel	MCCB Main	Shaft Room Fl.4	Normal Operation	35
36	Busduct	Joint Busduct	Shaft Room Fl.4	Normal Operation	36
37	DB.28A Panel	MCCB Main	Shaft Room Fl.29	Normal Operation	37
38	SDPK 28 Panel	MCCB Main	Shaft Room Fl.29	Normal Operation	38
39	DB.28 Panel	MCCB Main	Shaft Room Fl.29	Normal Operation	39
40	Plugin Unit RUN1	Connection	Shaft Room Fl.29	Normal Operation	40
41	Plugin Unit	Connection	Shaft Room Fl.29	Normal Operation	41
42	DBEL V4.1 Panel	MCCB Main	Lift Room Fl.29	Normal Operation	42
43	DBEL V4 Panel	MCCB Main	Lift Room Fl.30	Normal Operation	43
44	DBEL V5 Panel	MCCB Main	Lift Room Fl.30	Normal Operation	44
45	Plugin Unit	Connection	Shaft Room Fl.28	Normal Operation	45
46	Plugin Unit	Connection	Shaft Room Fl.27	Normal Operation	46
47	Plugin Unit	Connection	Shaft Room Fl.26	Normal Operation	47
48	Busduct	Joint Busduct	Shaft Room Fl.26	Normal Operation	48
49	Busduct	Joint Busduct	Shaft Room Fl.25	Normal Operation	49
50	Plugin Unit	Connection	Shaft Room Fl.24	Normal Operation	50
51	Busduct	Joint Busduct	Shaft Room Fl.23	Normal Operation	51
52	Busduct	Joint Busduct	Shaft Room Fl.23	Normal Operation	52
53	Busduct	Joint Busduct	Shaft Room Fl.22	Normal Operation	53
54	Plugin Unit	Connection	Shaft Room Fl.21	Normal Operation	54
55	Plugin Unit	Connection	Shaft Room Fl.20	Normal Operation	55
56	Busduct	Joint Busduct	Shaft Room Fl.19	Normal Operation	56
57	Plugin Unit	Connection	Shaft Room Fl.18	Normal Operation	57
58	Plugin Unit	Connection	Shaft Room Fl.17	Normal Operation	58
59	Plugin Unit	Connection	Shaft Room Fl.16	Normal Operation	59
60	Plugin Unit	Connection	Shaft Room Fl.15	Normal Operation	60

Infrared Thermography Inspection Report : Hyatt Regency Bangkok Sukhumvit

Report	Equipment	Detail	Location	Status	Page
61	Busduct	Joint Busduct	Shaft Room Fl.14	Normal Operation	61
62	Busduct	Joint Busduct	Shaft Room Fl.12	Normal Operation	62
63	Plugin Unit	Connection	Shaft Room Fl.11	Normal Operation	63
64	Plugin Unit	Connection	Shaft Room Fl.10	Normal Operation	64
65	Busduct	Joint Busduct	Shaft Room Fl.9	Normal Operation	65
66	Plugin Unit	Connection	Shaft Room Fl.8	Normal Operation	66
67	Plugin Unit	Connection	Shaft Room Fl.7	Normal Operation	67
68	DB.E7 Panel	MCCB Main	Shaft Room Fl.7	Normal Operation	68
69	DB.6 Panel	MCCB LC-5A	Shaft Room Fl.6	Normal Operation	69
70	DB.E6 Panel	MCCB Main	Shaft Room Fl.6	Normal Operation	70
71	Plugin Unit	Connection	Shaft Room Fl.6	Normal Operation	71
72	DB.3 Panel	MCCB S31	Shaft Room Fl.3	Normal Operation	72
73	DB.E3 Panel	MCCB Main	Shaft Room Fl.3	Normal Operation	73
74	Busduct	Joint Busduct	Shaft Room Fl.3	Normal Operation	74
75	DB.2 Panel	MCCB Main	Shaft Room Fl.2	Normal Operation	75
76	DB.E2 Panel	MCCB Main	Shaft Room Fl.2	Normal Operation	76
77	DB.B Panel	MCCB Main	Shaft Room Fl.B	Normal Operation	77
78	DB.EB Panel	MCCB Main	Shaft Room Fl.B	Normal Operation	78

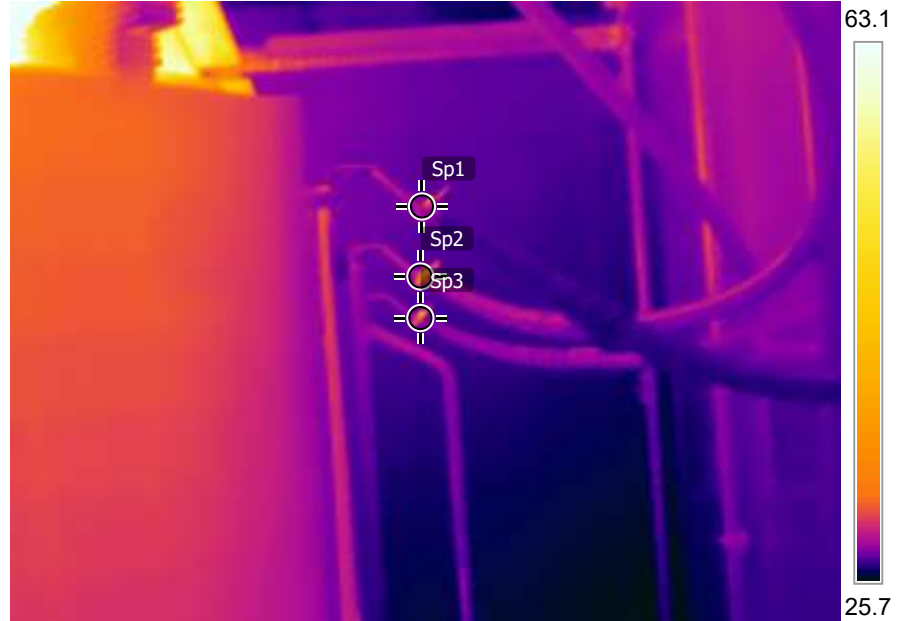
Measurements °C

Sp1	30.6
Sp2	30.7
Sp3	29.8
Difference	0.9
Sp2 - Sp3	
Difference	0.1
Sp2 - Sp1	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:20:50

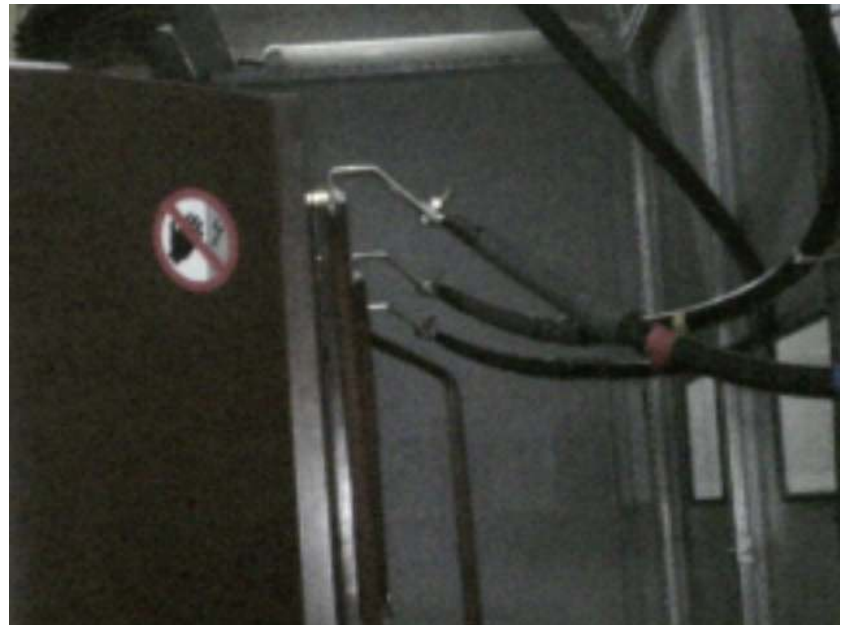


FLIR0750.jpg

FLIR E53

84503230

21/7/2023 13:20:50



FLIR0750.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	TR-1
Detail :	High Volt Side Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	28.9
Sp2	29.4
Sp3	28.7
Difference	0.7
Sp2 - Sp3	
Difference	0.5
Sp2 - Sp1	

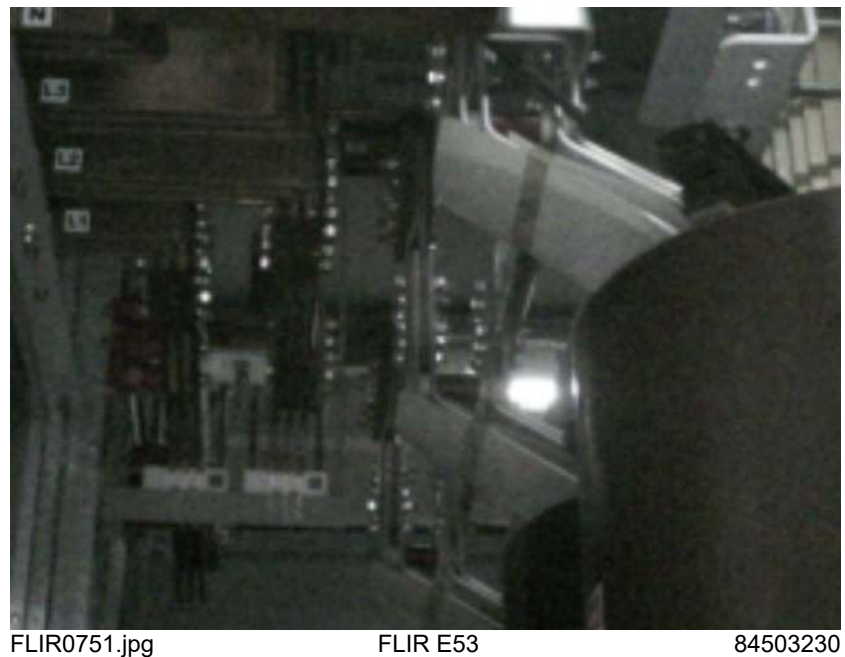
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:21:34



21/7/2023 13:21:34



Text annotations

Location :	MDB Room FI.3
Equipment :	TR-1
Detail :	Low Volt Side Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

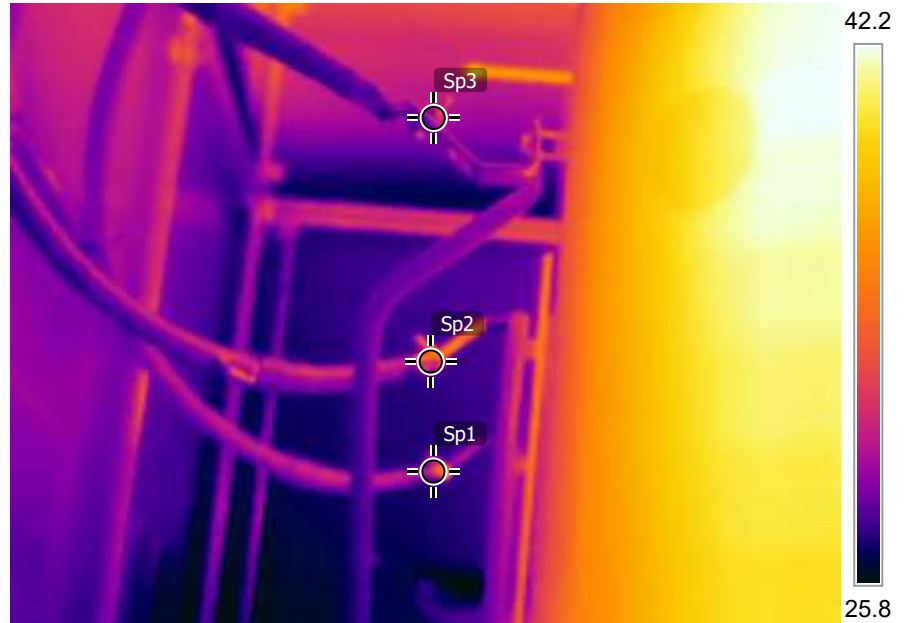
Measurements °C

Sp1	30.2
Sp2	30.0
Sp3	30.2
Difference	0.2
Sp1 - Sp2	
Difference	0.0
Sp1 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:22:09



FLIR0752.jpg

FLIR E53

84503230

21/7/2023 13:22:09



FLIR0752.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room Fl.3
Equipment :	TR-2
Detail :	High Volt Side Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	35.3
Sp2	36.2
Sp3	35.4
Difference	0.8
Sp2 - Sp3	
Difference	0.9
Sp2 - Sp1	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:22:34



FLIR0753.jpg

FLIR E53

84503230

21/7/2023 13:22:34



FLIR0753.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	TR-2
Detail :	Low Volt Side Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

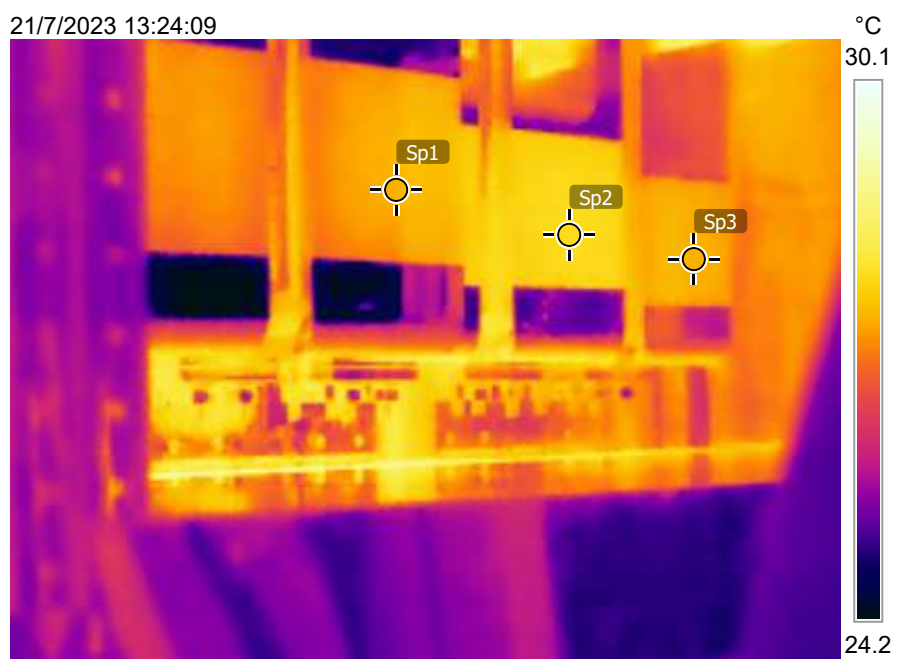
Measurements °C

Sp1	27.5
Sp2	28.0
Sp3	27.5
Difference	0.5
Sp2 - Sp3	
Difference	0.5
Sp2 - Sp1	

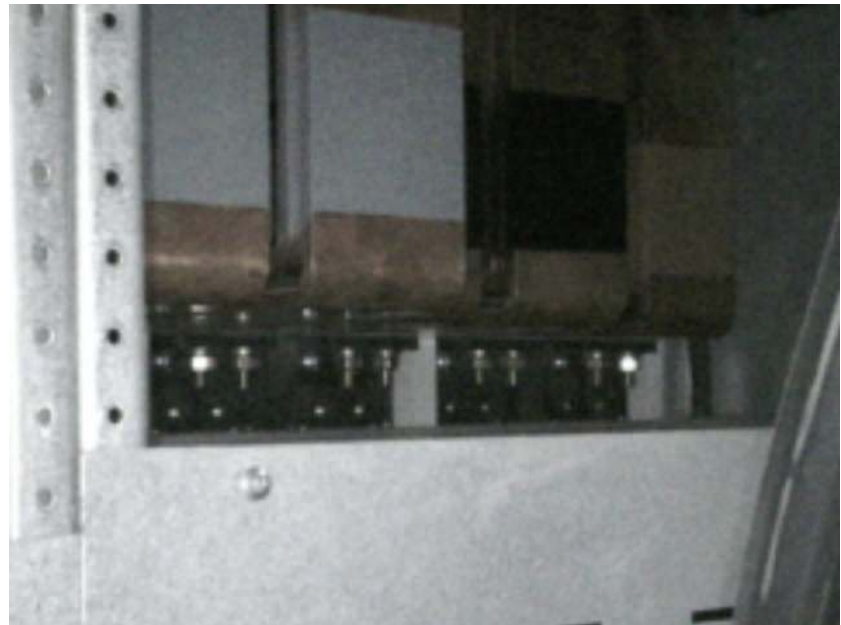
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:24:09



21/7/2023 13:24:09



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	ACB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	26.9
Sp2	27.4
Sp3	27.1
Difference	0.3
Sp2 - Sp3	
Difference	0.5
Sp2 - Sp1	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:25:23



FLIR0756.jpg

FLIR E53

84503230

21/7/2023 13:25:23



FLIR0756.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	ACB FOR 1A 6,300 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

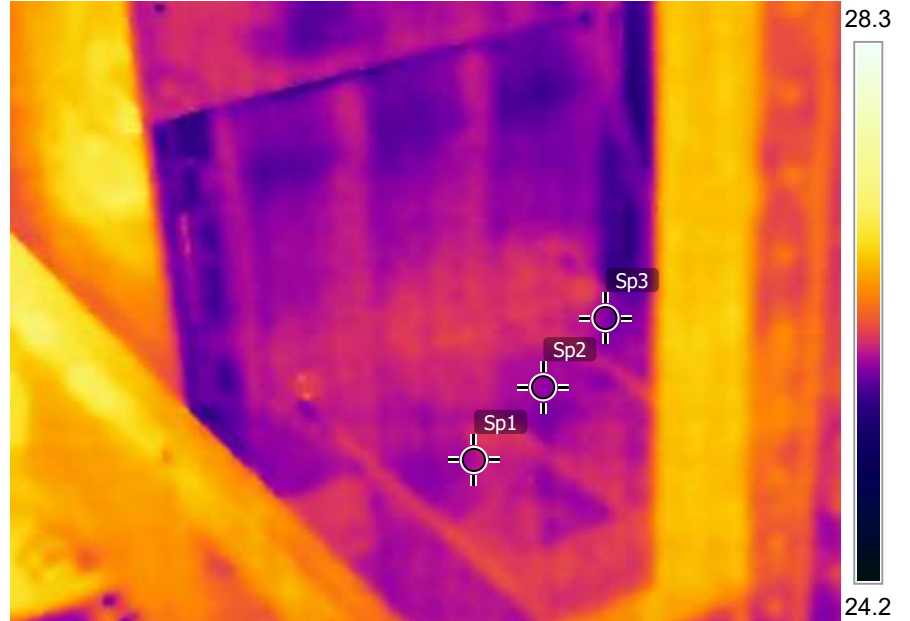
Measurements °C

Sp1	25.9
Sp2	25.8
Sp3	25.7
Difference	0.1
Sp1 - Sp2	
Difference	0.2
Sp1 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:26:48



21/7/2023 13:26:48



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	ACB DB.B 2,500 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

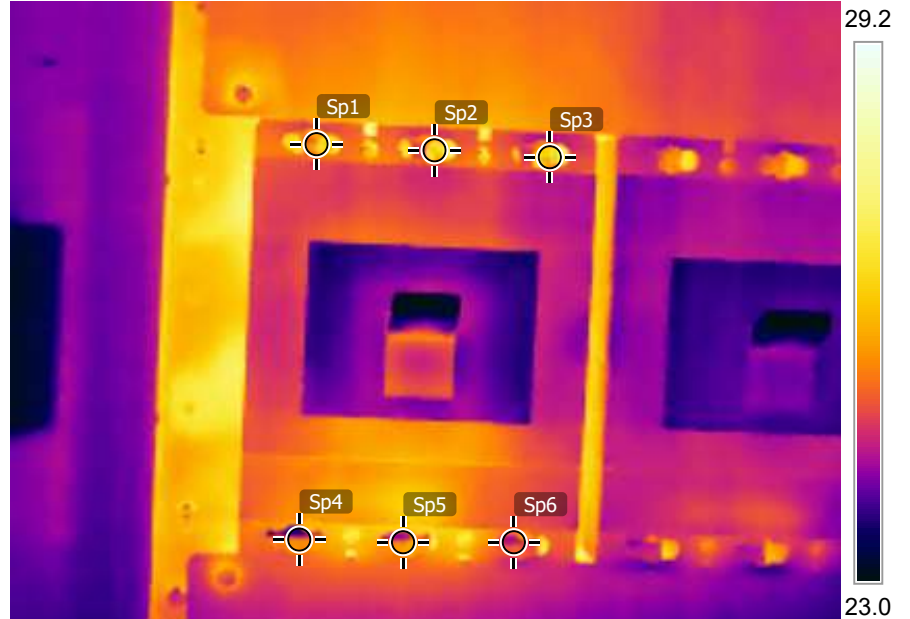
Measurements °C

Sp1	25.8
Sp2	25.1
Sp3	24.8
Sp4	25.6
Sp5	24.9
Sp6	24.4
Difference	0.2
Sp1 - Sp4	
Difference	0.2
Sp2 - Sp5	
Difference	0.4
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:28:50



21/7/2023 13:28:50



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	MCCB FOR ODD FLOOR 1,250 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

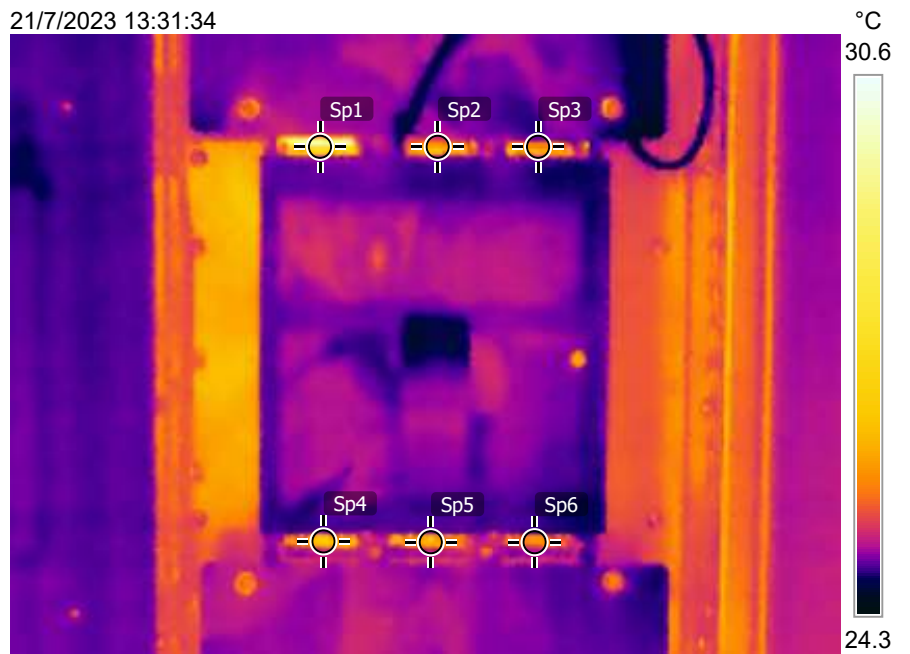
Measurements °C

Sp1	26.2
Sp2	26.1
Sp3	26.4
Sp4	25.5
Sp5	25.7
Sp6	25.9
Difference	0.7
Sp1 - Sp4	
Difference	0.4
Sp2 - Sp5	
Difference	0.5
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:31:34



21/7/2023 13:31:34



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	MCCB FDP
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	27.3
Sp2	28.6
Sp3	30.3
Sp4	28.2
Sp5	29.2
Sp6	30.9
Difference	0.9
Sp4 - Sp1	
Difference	0.6
Sp5 - Sp2	
Difference	0.6
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:32:11



21/7/2023 13:32:11



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.1 Panel
Detail :	MCCB CWHF
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	31.0
Sp2	31.4
Difference	0.4
Sp2 - Sp1	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:35:30



FLIR0762.jpg

FLIR E53

84503230

21/7/2023 13:35:30



FLIR0762.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.2 Panel
Detail :	ACB Main 6,300 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

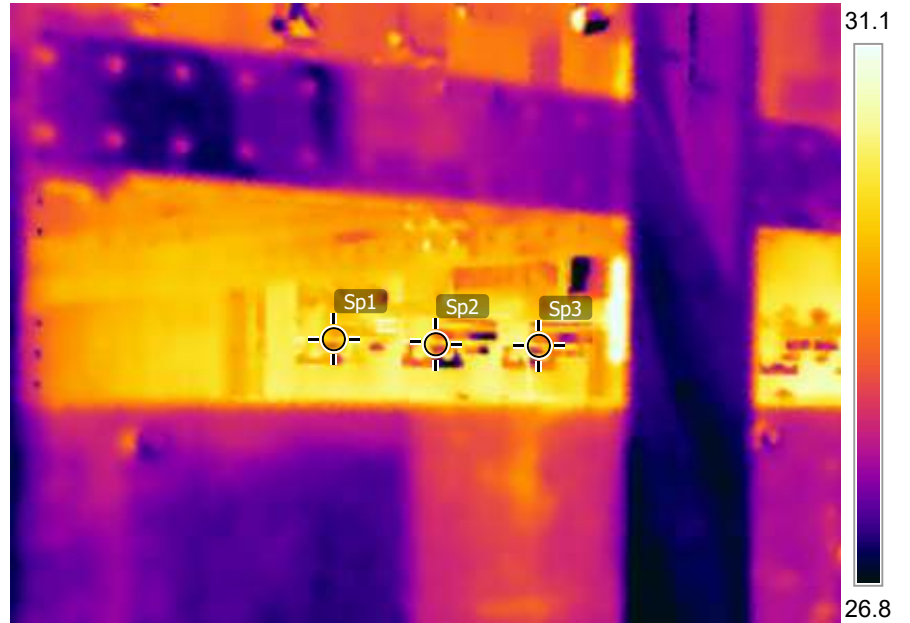
Measurements °C

Sp1	29.2
Sp2	29.2
Sp3	28.5
Difference	0.0
Sp1 - Sp2	
Difference	0.7
Sp1 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:37:16



FLIR0765.jpg

FLIR E53

84503230

21/7/2023 13:37:16



FLIR0765.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.2 Panel
Detail :	ACB MCC.AC1 1,250 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

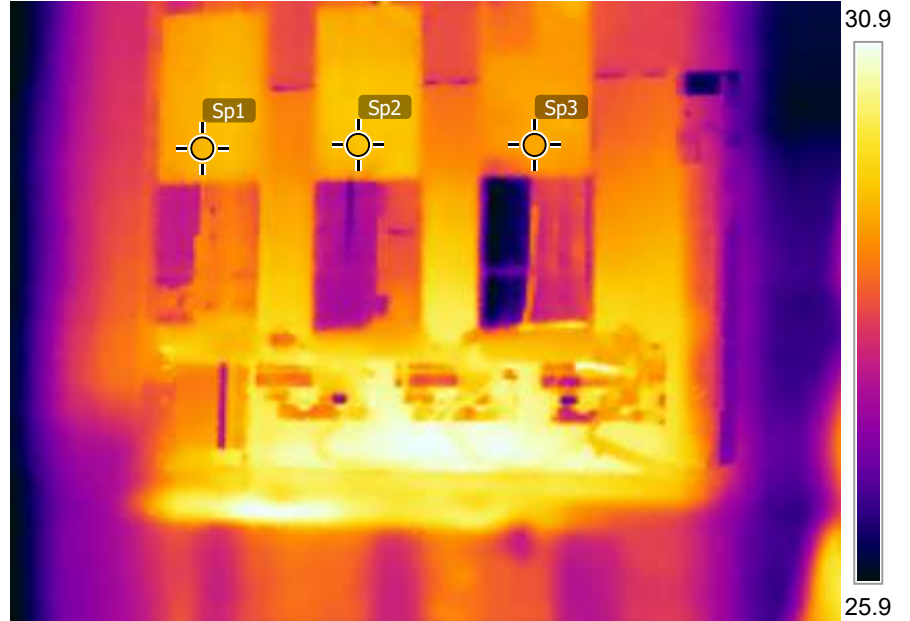
Measurements °C

Sp1	29.4
Sp2	29.6
Sp3	29.3
Difference	0.3
Sp2 - Sp3	
Difference	0.2
Sp2 - Sp1	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:37:45



FLIR0766.jpg

FLIR E53

84503230

21/7/2023 13:37:45



FLIR0766.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.2 Panel
Detail :	ACB MCC.AC3 1,250 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	28.3
Sp2	29.6
Sp3	28.4
Sp4	28.9
Sp5	30.0
Sp6	28.9
Difference	0.6
Sp4 - Sp1	
Difference	0.4
Sp5 - Sp2	
Difference	0.5
Sp6 - Sp3	

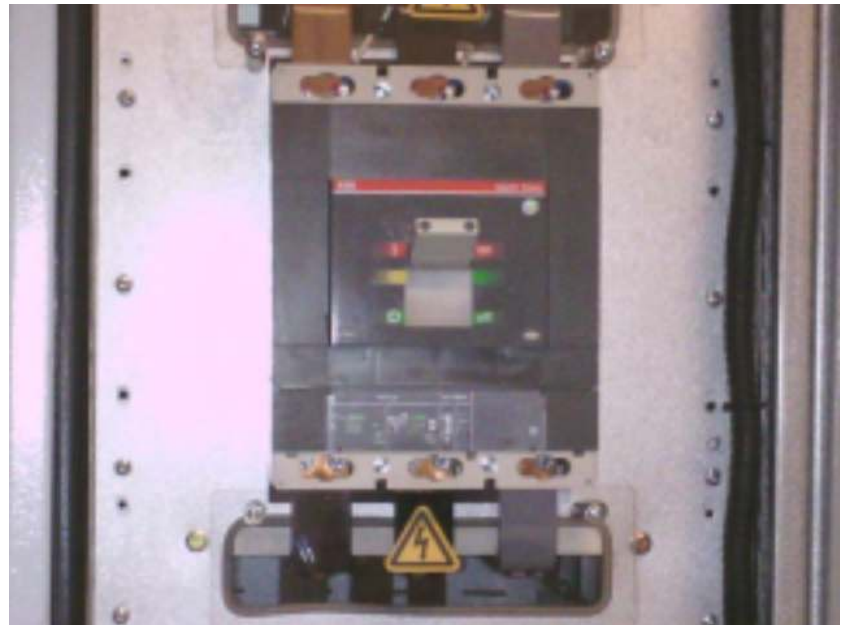
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:39:03



21/7/2023 13:39:03



Text annotations

Location :	MDB Room FI.3
Equipment :	MDB.2 Panel
Detail :	MCCB FOR EVEN FLOOR
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	37.4
Sp2	37.5
Sp3	36.9
Difference	0.6
Sp2 - Sp3	
Difference	0.1
Sp2 - Sp1	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:40:59



FLIR0768.jpg

FLIR E53

84503230

21/7/2023 13:40:59



FLIR0768.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	EMDB Panel
Detail :	ACB MCC.EAC2 1,250 A.
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

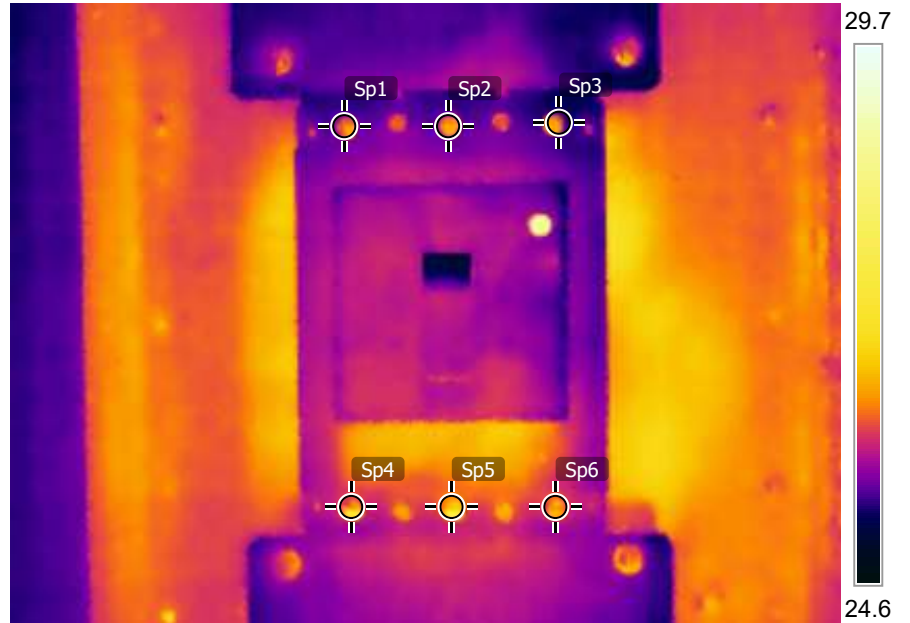
Measurements °C

Sp1	25.0
Sp2	25.3
Sp3	25.1
Sp4	25.0
Sp5	25.6
Sp6	25.1
Difference	0.0
Sp4 - Sp1	
Difference	0.3
Sp5 - Sp2	
Difference	0.0
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:42:48



FLIR0769.jpg

FLIR E53

84503230

21/7/2023 13:42:48



FLIR0769.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	EMDB Panel
Detail :	MCCB MCC.ESN1
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	25.9
Sp2	26.2
Sp3	25.9
Sp4	25.5
Sp5	25.5
Sp6	25.2
Difference	0.4
Sp1 - Sp4	
Difference	0.7
Sp2 - Sp5	
Difference	0.7
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:43:54



21/7/2023 13:43:54



FLIR0770.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	EMDB Panel
Detail :	MCCB DB.E5
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

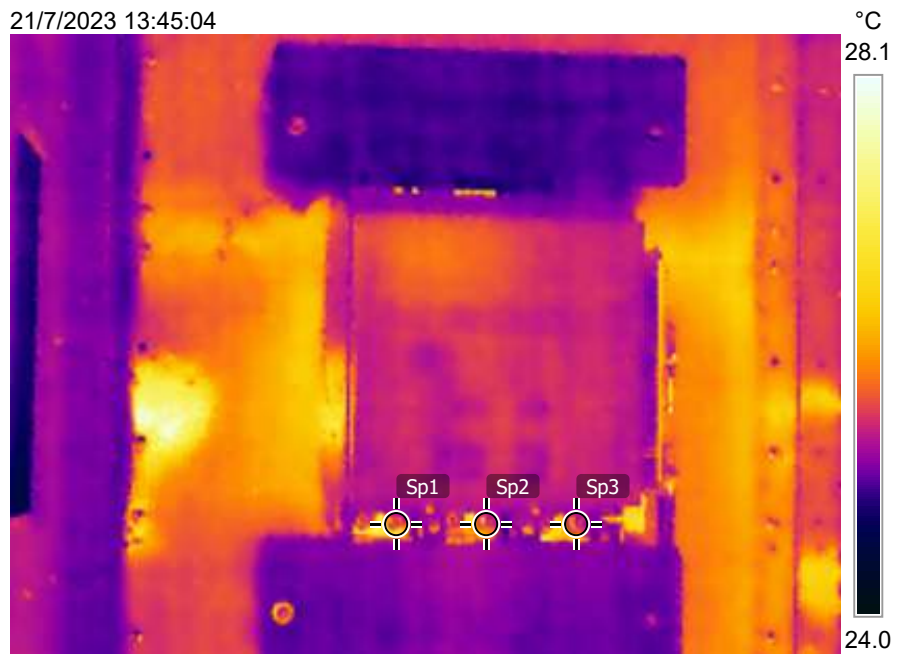
Measurements °C

Sp1	25.5
Sp2	25.6
Sp3	25.3
Difference	0.3
Sp2 - Sp3	
Difference	0.1
Sp2 - Sp1	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:45:04



FLIR0771.jpg

FLIR E53

84503230

21/7/2023 13:45:04



FLIR0771.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	FDP.1 Panel
Detail :	MCCB Normal
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	25.0
Sp2	25.2
Sp3	25.1
Sp4	25.2
Sp5	25.5
Sp6	25.4
Difference	0.2
Sp4 - Sp1	
Difference	0.3
Sp5 - Sp2	
Difference	0.3
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 13:45:58



FLIR0772.jpg

FLIR E53

84503230

21/7/2023 13:45:58



FLIR0772.jpg

FLIR E53

84503230

Text annotations

Location :	MDB Room FI.3
Equipment :	FDP.1 Panel
Detail :	MCCB DBELV.5
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

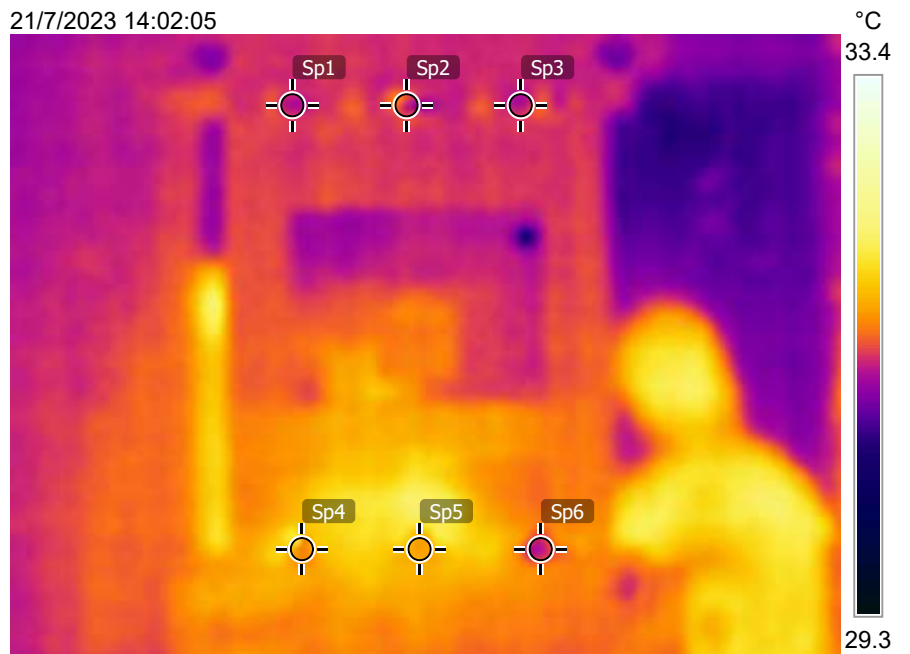
Measurements °C

Sp1	31.1
Sp2	31.2
Sp3	31.1
Sp4	31.5
Sp5	31.6
Sp6	31.1
Difference	0.4
Sp4 - Sp1	
Difference	0.4
Sp5 - Sp2	
Difference	0.0
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:02:05



FLIR0773.jpg

FLIR E53

84503230

21/7/2023 14:02:05



FLIR0773.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room FI.M
Equipment :	DB.G Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	32.4
Sp2	32.7
Sp3	32.3
Sp4	32.8
Sp5	33.0
Sp6	32.3
Difference	0.4
Sp4 - Sp1	
Difference	0.3
Sp5 - Sp2	
Difference	0.0
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:03:06



21/7/2023 14:03:06



Text annotations

Location :	Shaft Room FI.M
Equipment :	DB.G Panel
Detail :	MCCB LCG3
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

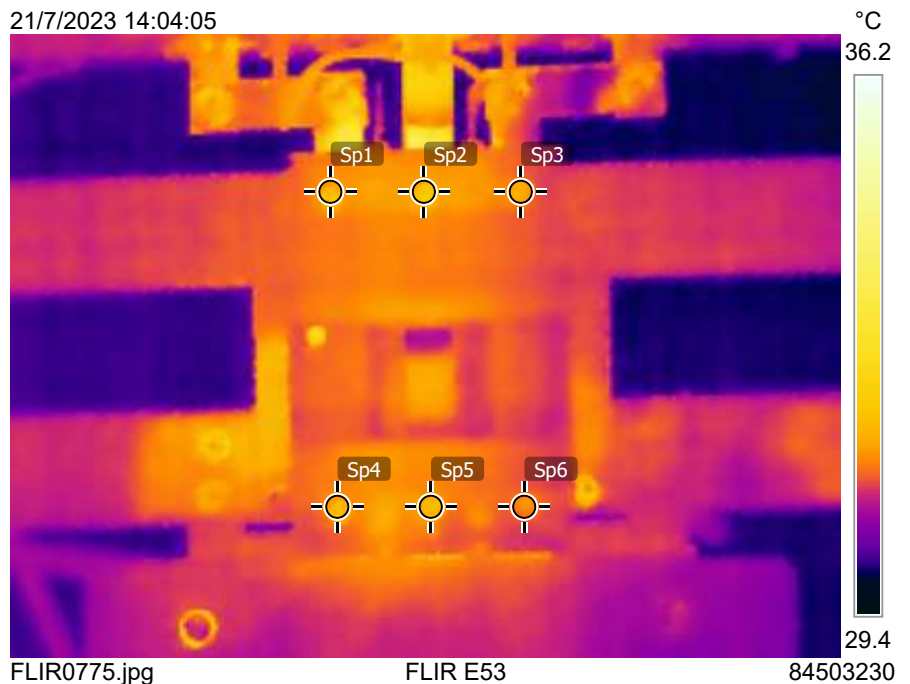
Measurements °C

Sp1	31.8
Sp2	32.1
Sp3	31.7
Sp4	31.8
Sp5	31.9
Sp6	31.4
Difference	0.0
Sp1 - Sp4	
Difference	0.2
Sp2 - Sp5	
Difference	0.3
Sp3 - Sp6	

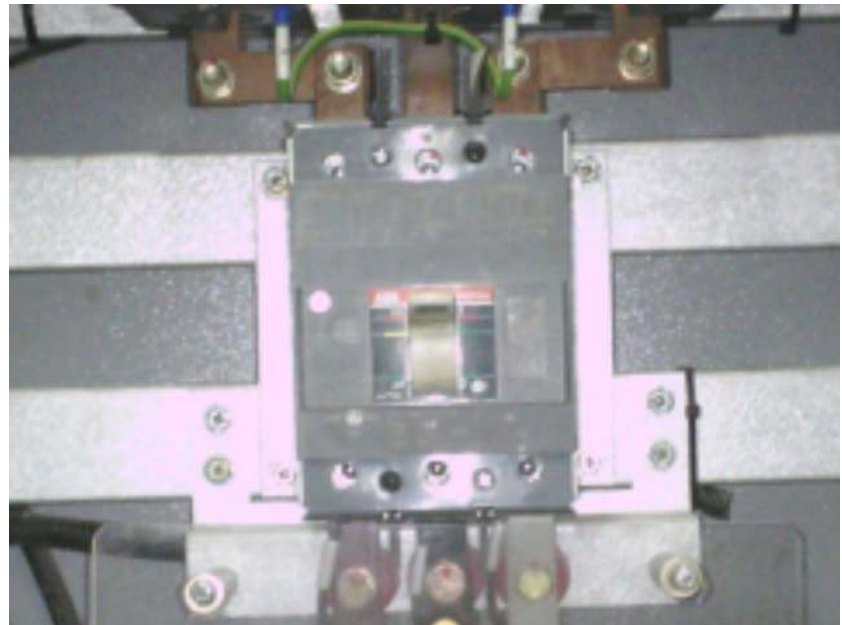
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:04:05



21/7/2023 14:04:05



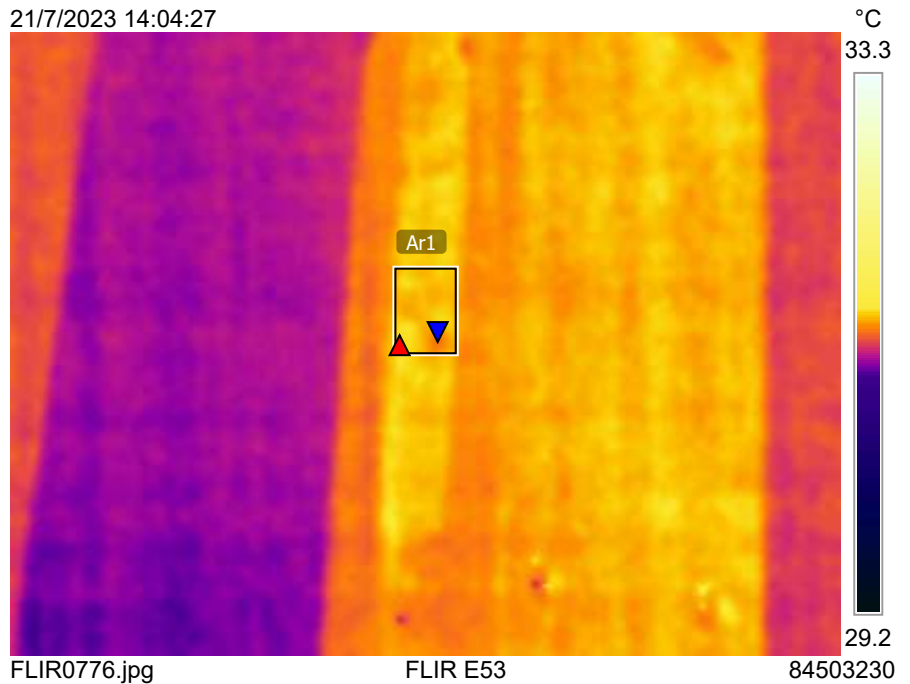
Text annotations

Location :	Shaft Room FI.M
Equipment :	DB.EG Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	31.5
	Min	31.4
	Average	31.5

Parameters	
Emissivity	0.98
Ref. temp.	20 °C

21/7/2023 14:04:27



21/7/2023 14:04:27



Text annotations

Location :	Shaft Room FI.M
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

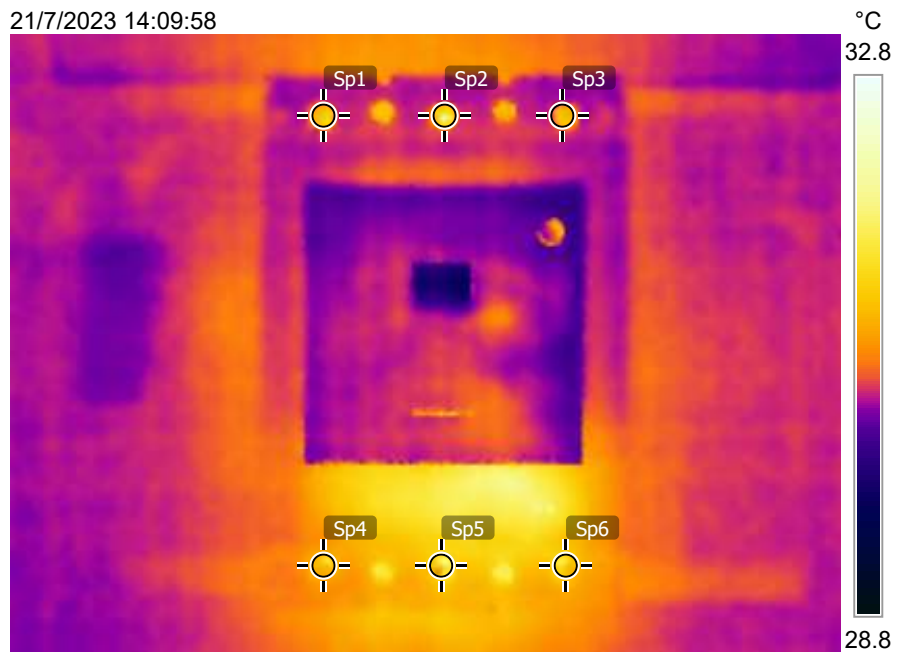
Measurements °C

Sp1	31.2
Sp2	31.9
Sp3	31.1
Sp4	31.1
Sp5	31.2
Sp6	31.1
Difference	0.1
Sp1 - Sp4	
Difference	0.7
Sp2 - Sp5	
Difference	0.0
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:09:58



FLIR0777.jpg

FLIR E53

84503230

21/7/2023 14:09:58



FLIR0777.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room FI.5
Equipment :	DB.5 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	32.4
Sp2	33.2
Sp3	31.7
Sp4	32.2
Sp5	32.5
Sp6	31.5
Difference	0.2
Sp1 - Sp4	
Difference	0.7
Sp2 - Sp5	
Difference	0.2
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:10:35

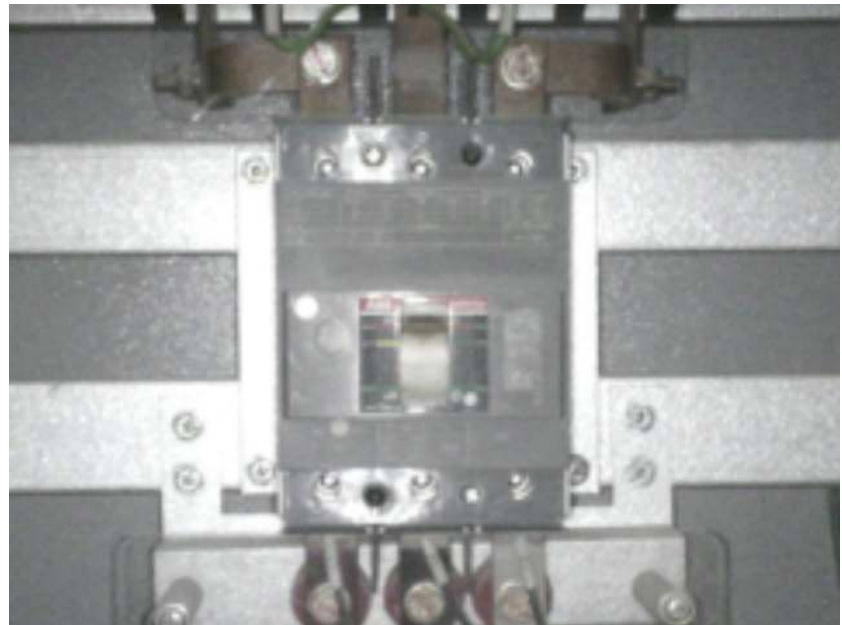


FLIR0778.jpg

FLIR E53

84503230

21/7/2023 14:10:35



FLIR0778.jpg

FLIR E53

84503230

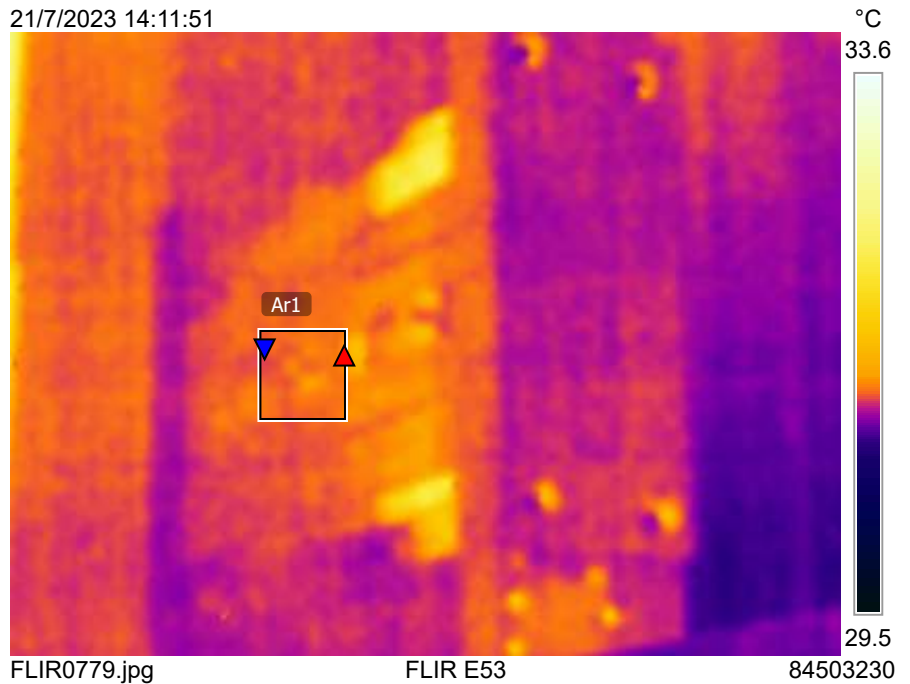
Text annotations

Location :	Shaft Room FI.5
Equipment :	DB.E5 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

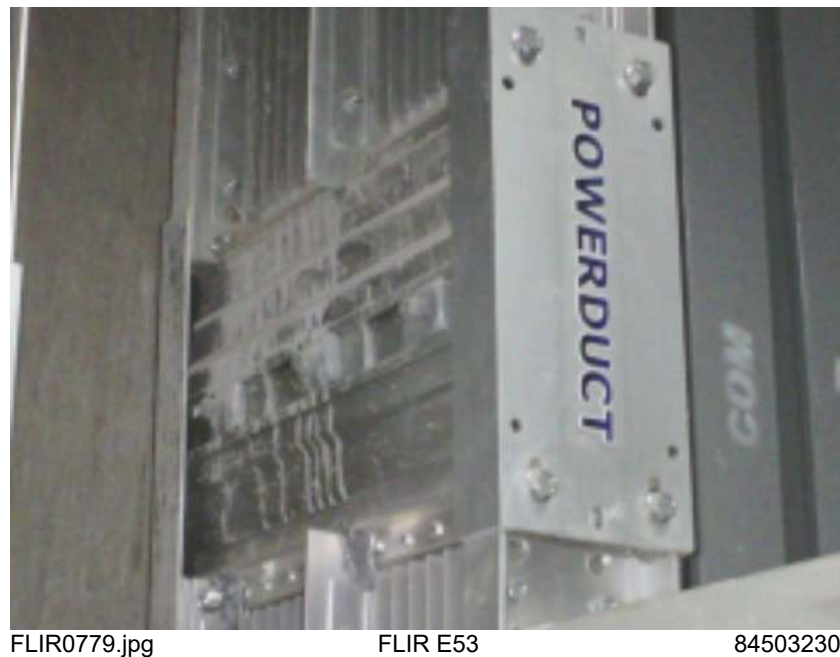
Measurements °C		
Ar1	Max	31.4
	Min	31.1
	Average	31.2

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:11:51



21/7/2023 14:11:51



Text annotations

Location :	Shaft Room FI.5
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	30.2
Sp2	32.4
Sp3	31.7
Sp4	30.1
Sp5	31.9
Sp6	31.1
Difference	0.1
Sp1 - Sp4	
Difference	0.5
Sp2 - Sp5	
Difference	0.6
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:15:05



FLIR0780.jpg

FLIR E53

84503230

21/7/2023 14:15:05



FLIR0780.jpg

FLIR E53

84503230

Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.A3 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

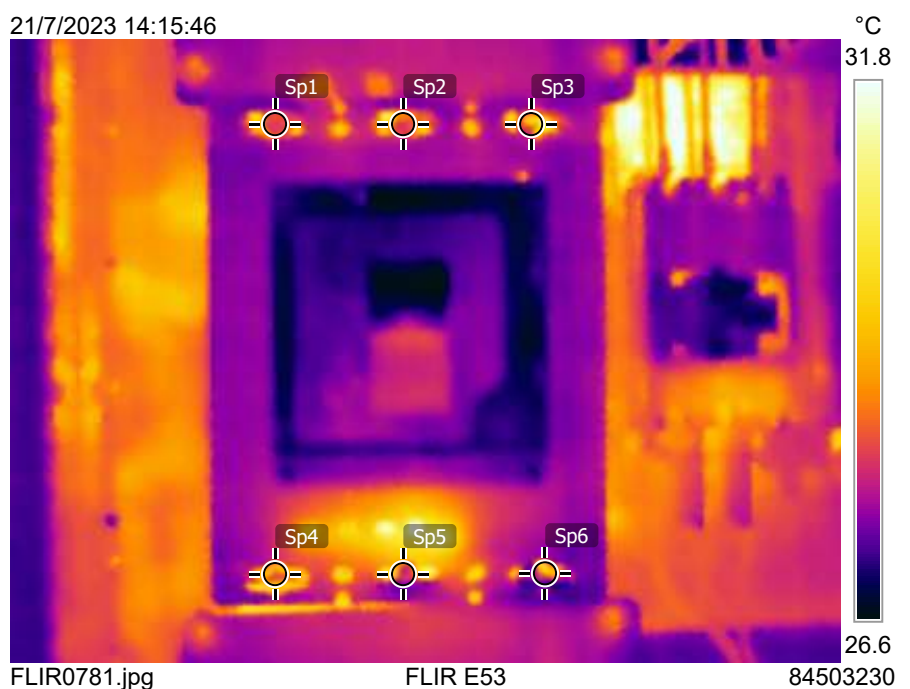
Measurements °C

Sp1	28.2
Sp2	28.1
Sp3	29.2
Sp4	28.4
Sp5	28.1
Sp6	29.6
Difference	0.2
Sp4 - Sp1	
Difference	0.0
Sp5 - Sp2	
Difference	0.4
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:15:46



21/7/2023 14:15:46



Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.A3 Panel
Detail :	MCCB CH-3
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

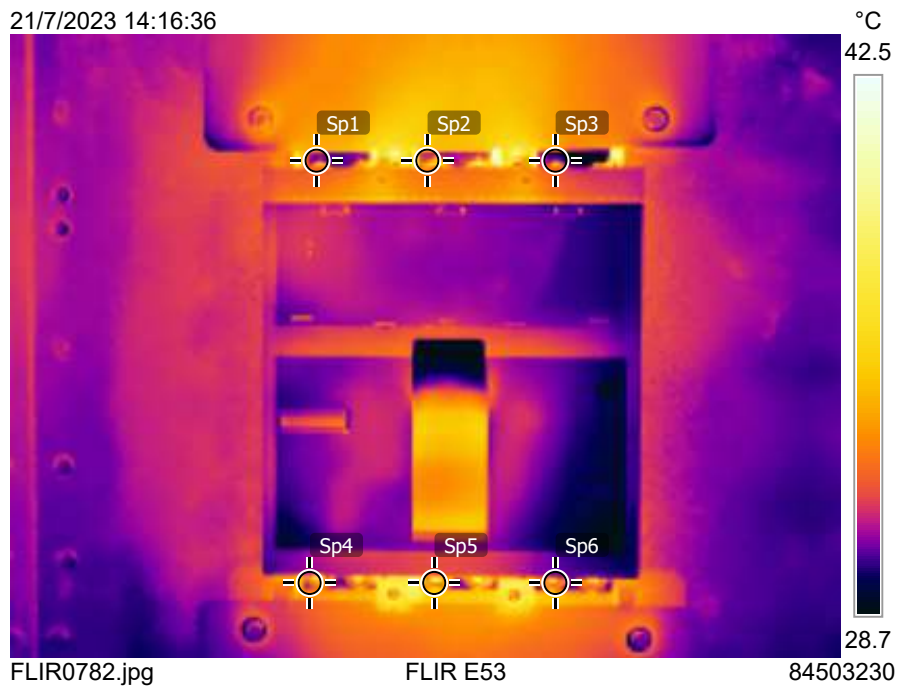
Measurements °C

Sp1	33.2
Sp2	36.4
Sp3	35.4
Sp4	34.0
Sp5	37.0
Sp6	36.5
Difference	0.8
Sp4 - Sp1	
Difference	0.6
Sp5 - Sp2	
Difference	1.1
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:16:36



21/7/2023 14:16:36



Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.AC2 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

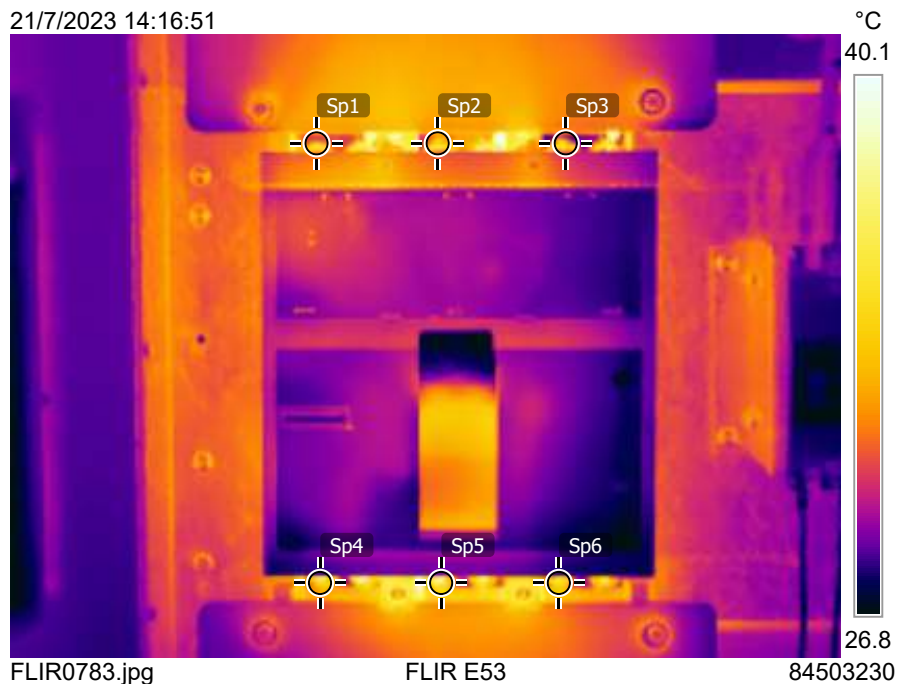
Measurements °C

Sp1	37.7
Sp2	37.7
Sp3	37.7
Sp4	38.0
Sp5	38.6
Sp6	38.6
Difference	0.3
Sp4 - Sp1	
Difference	0.9
Sp5 - Sp2	
Difference	0.9
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:16:51



21/7/2023 14:16:51



Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.AC2 Panel
Detail :	MCCB CH-2
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

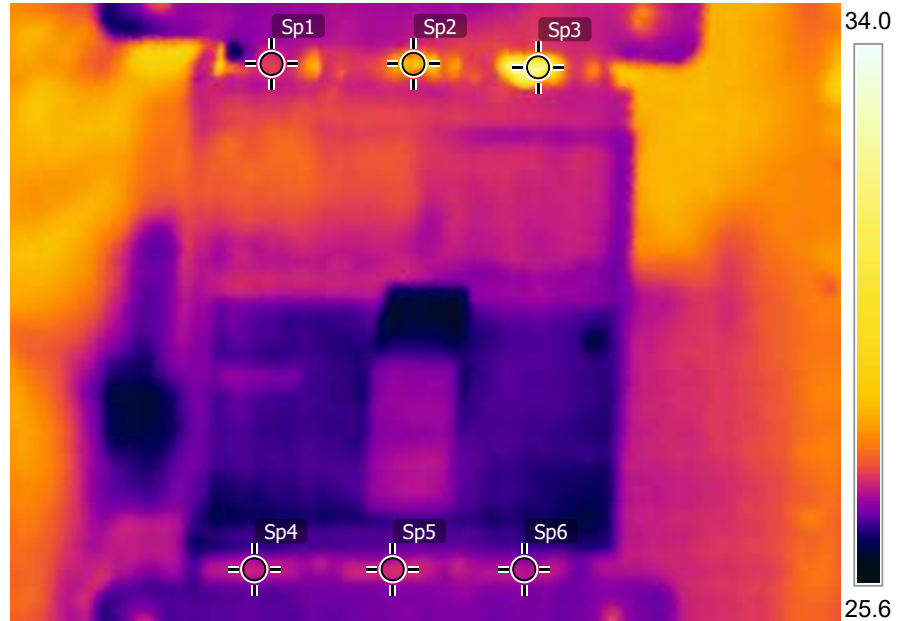
Measurements °C

Sp1	27.4
Sp2	28.7
Sp3	28.4
Sp4	27.1
Sp5	27.9
Sp6	27.6
Difference	0.3
Sp1 - Sp4	
Difference	0.8
Sp2 - Sp5	
Difference	0.8
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:18:18



FLIR0784.jpg

FLIR E53

84503230

21/7/2023 14:18:18



FLIR0784.jpg

FLIR E53

84503230

Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.AC1 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

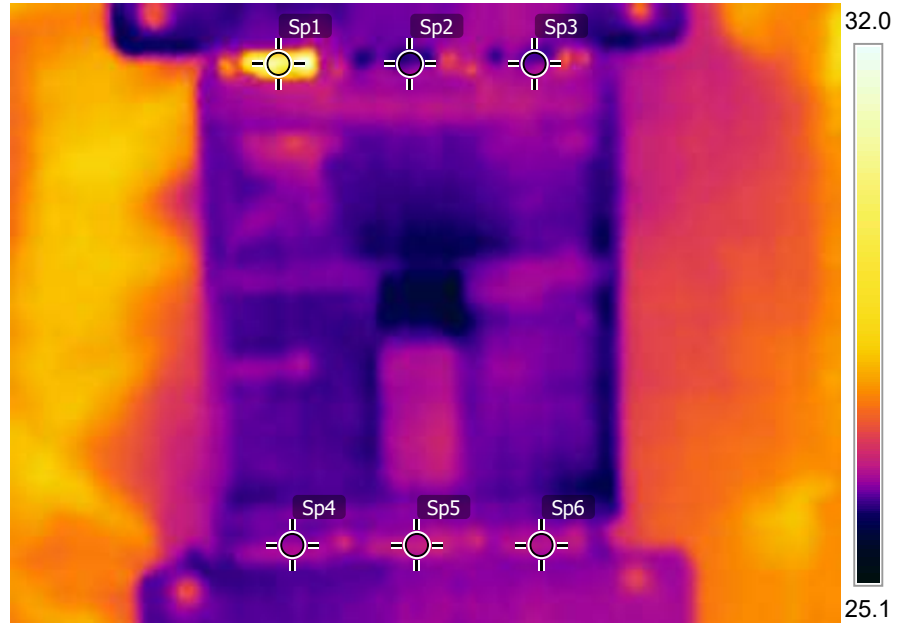
Measurements °C

Sp1	30.6
Sp2	30.2
Sp3	30.9
Sp4	30.5
Sp5	29.7
Sp6	30.6
Difference	0.1
Sp1 - Sp4	
Difference	0.5
Sp2 - Sp5	
Difference	0.3
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:19:02



FLIR0785.jpg

FLIR E53

84503230

21/7/2023 14:19:02



FLIR0785.jpg

FLIR E53

84503230

Text annotations

Location :	Chiller Room FI.4
Equipment :	MCC.AC1 Panel
Detail :	MCCB CH-1
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

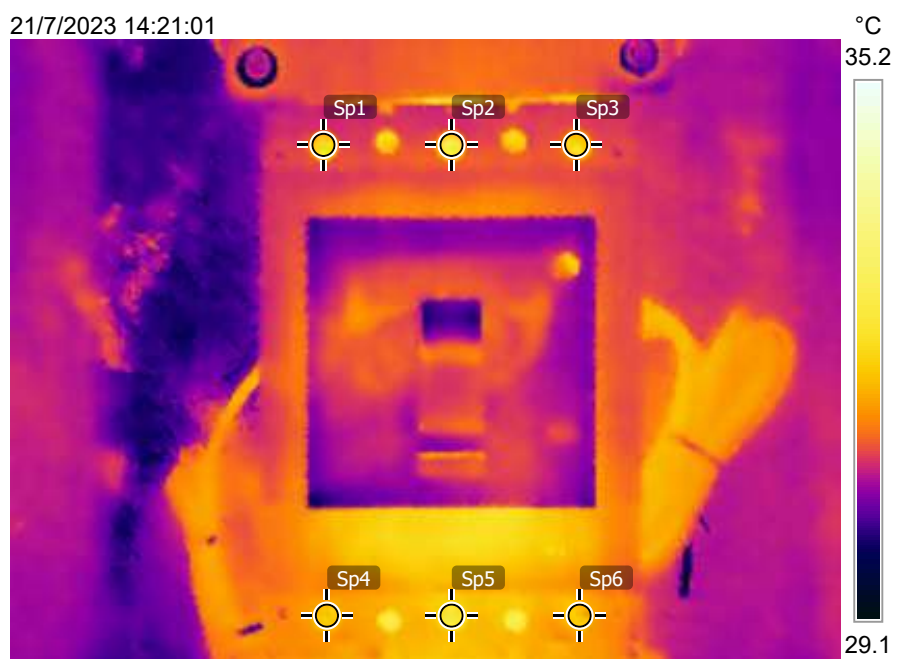
Measurements °C

Sp1	32.1
Sp2	32.8
Sp3	32.1
Sp4	31.9
Sp5	32.5
Sp6	31.8
Difference	0.2
Sp1 - Sp4	
Difference	0.3
Sp2 - Sp5	
Difference	0.3
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:21:01



FLIR0786.jpg

FLIR E53

84503230

21/7/2023 14:21:01



FLIR0786.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room Fl.4
Equipment :	DB.4 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

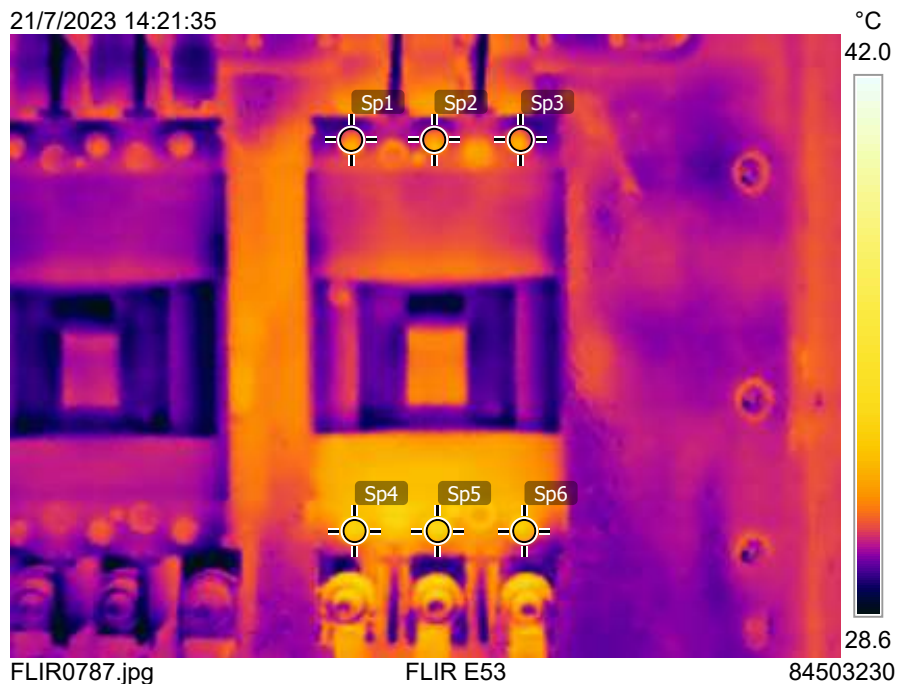
Measurements °C

Sp1	32.8
Sp2	32.9
Sp3	32.1
Sp4	33.4
Sp5	33.4
Sp6	32.6
Difference	0.6
Sp4 - Sp1	
Difference	0.5
Sp5 - Sp2	
Difference	0.5
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:21:35



21/7/2023 14:21:35



FLIR0787.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room FI.4
Equipment :	DB.4 Panel
Detail :	MCCB LC4A
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

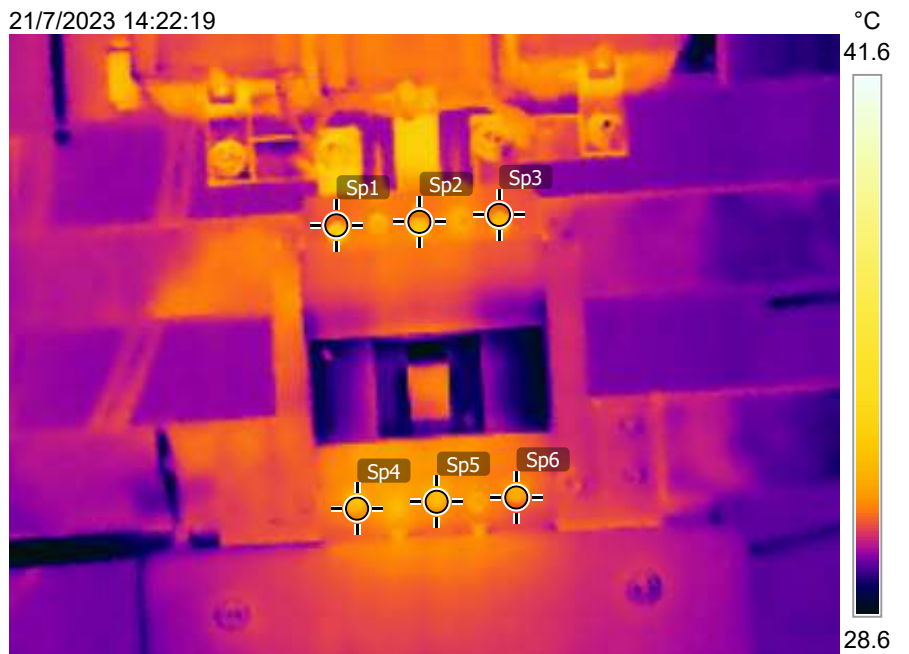
Measurements °C

Sp1	32.9
Sp2	32.9
Sp3	32.6
Sp4	32.8
Sp5	32.5
Sp6	32.0
Difference	0.1
Sp1 - Sp4	
Difference	0.4
Sp2 - Sp5	
Difference	0.6
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:22:19



21/7/2023 14:22:19



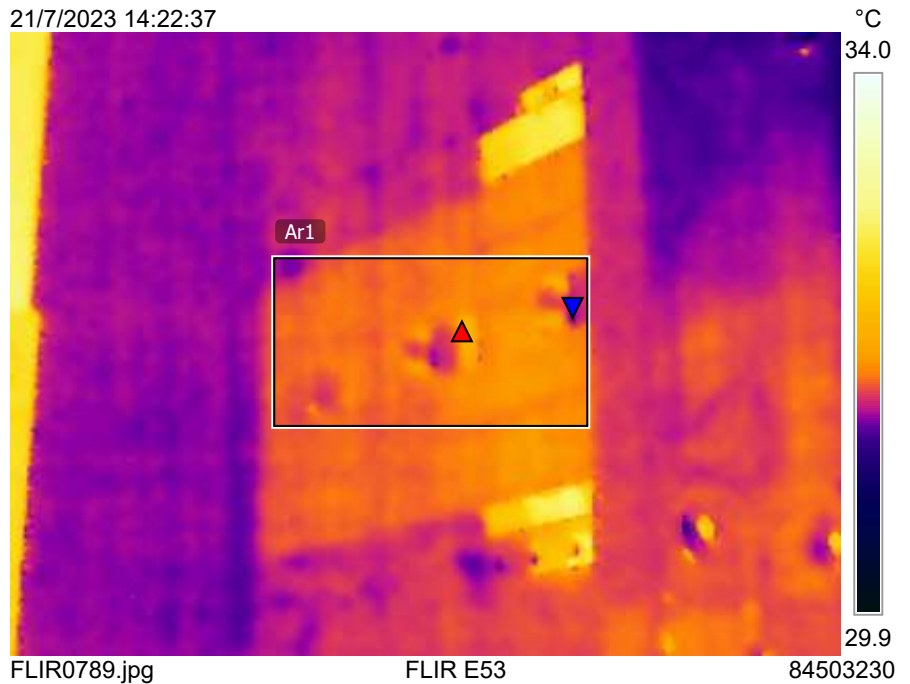
Text annotations

Location :	Shaft Room FI.4
Equipment :	DB.E4 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

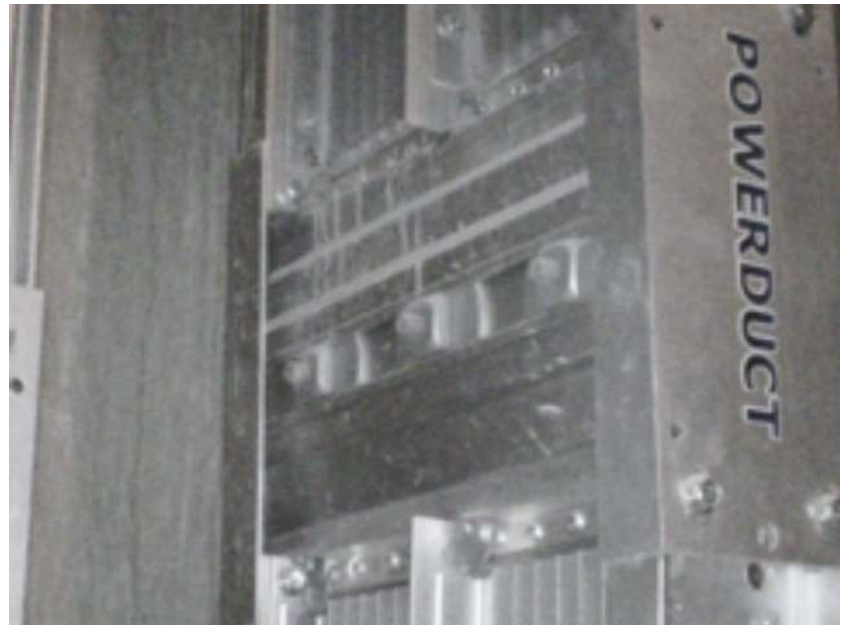
Measurements °C		
Ar1	Max	32.2
	Min	31.2
	Average	31.7

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:22:37



21/7/2023 14:22:37



FLIR0789.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room Fl.4
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	28.0
Sp2	28.1
Sp3	28.1
Sp4	27.8
Sp5	28.0
Sp6	28.1
Difference	0.2
Sp1 - Sp4	
Difference	0.1
Sp2 - Sp5	
Difference	0.0
Sp3 - Sp6	

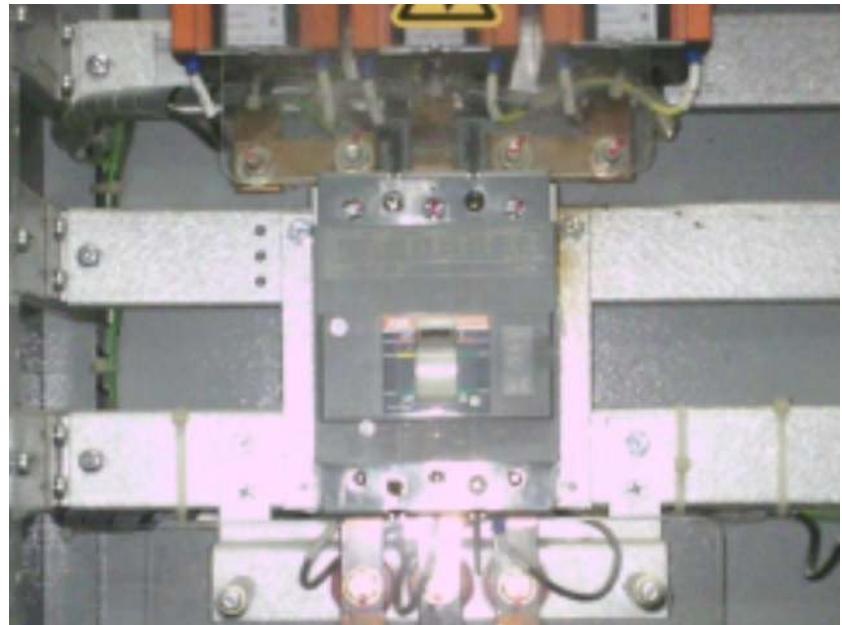
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:26:42



21/7/2023 14:26:42



Text annotations

Location :	Shaft Room FI.29
Equipment :	DB.28A Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

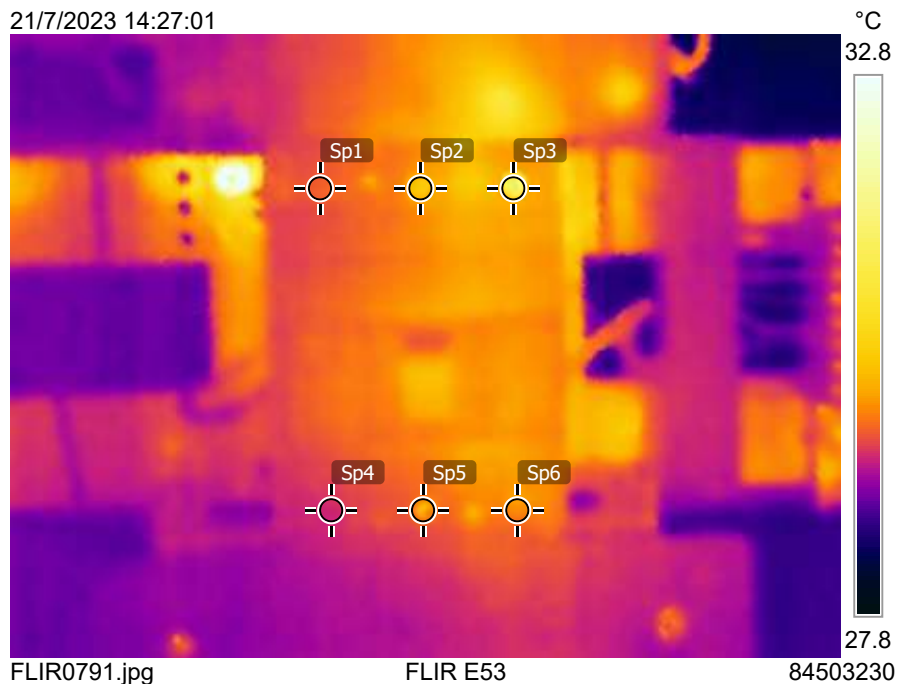
Measurements °C

Sp1	29.5
Sp2	30.2
Sp3	30.0
Sp4	29.2
Sp5	30.1
Sp6	29.7
Difference	0.3
Sp1 - Sp4	
Difference	0.1
Sp2 - Sp5	
Difference	0.3
Sp3 - Sp6	

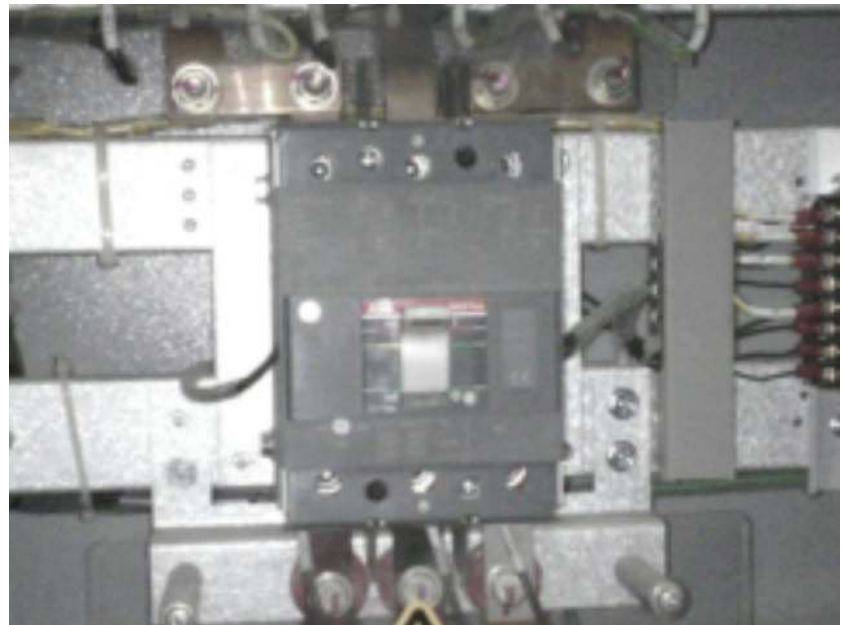
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:27:01



21/7/2023 14:27:01



Text annotations

Location :	Shaft Room FI.29
Equipment :	SDPK 28 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

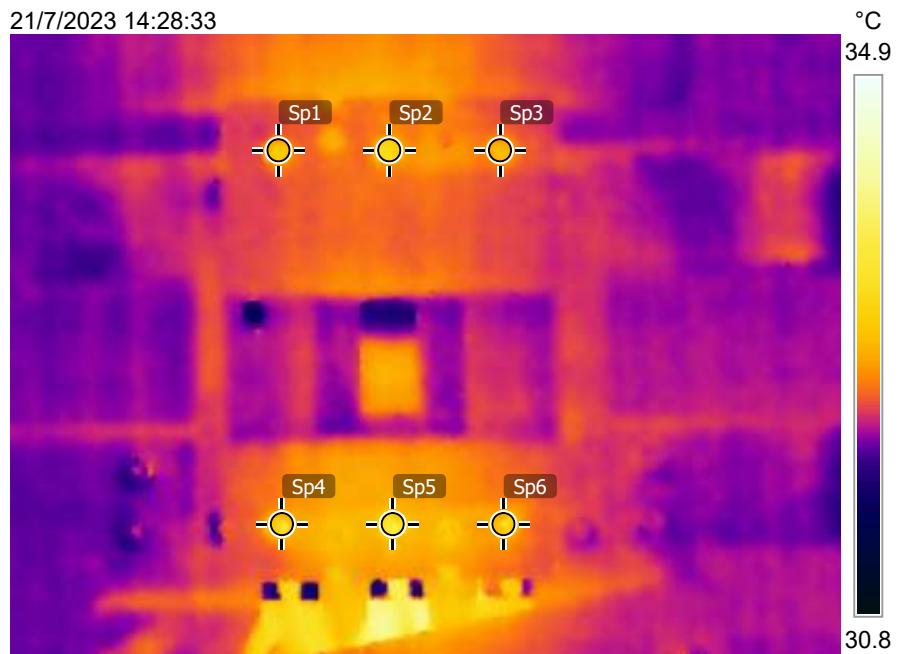
Measurements °C

Sp1	33.0
Sp2	33.2
Sp3	32.9
Sp4	33.3
Sp5	33.7
Sp6	33.9
Difference	0.3
Sp4 - Sp1	
Difference	0.5
Sp5 - Sp2	
Difference	1.0
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:28:33

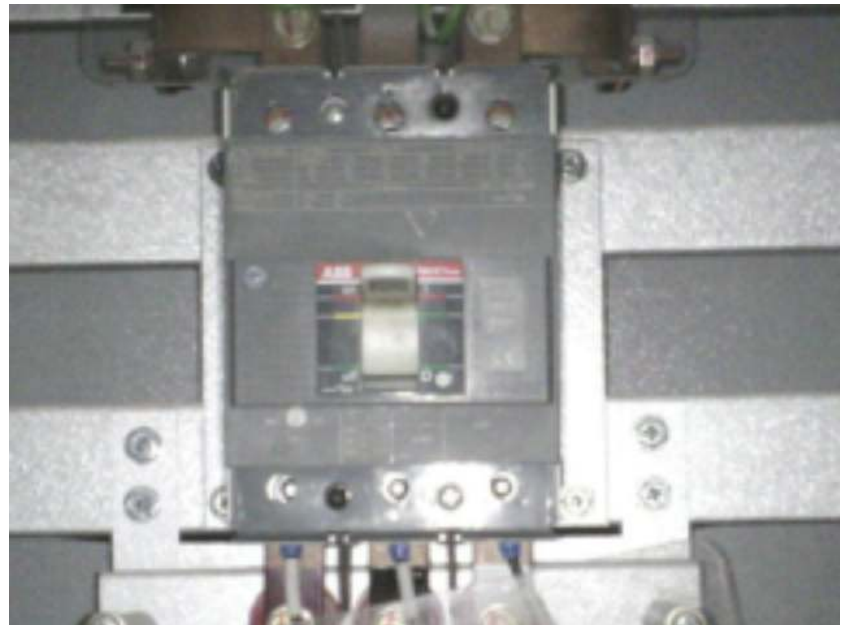


FLIR0792.jpg

FLIR E53

84503230

21/7/2023 14:28:33



FLIR0792.jpg

FLIR E53

84503230

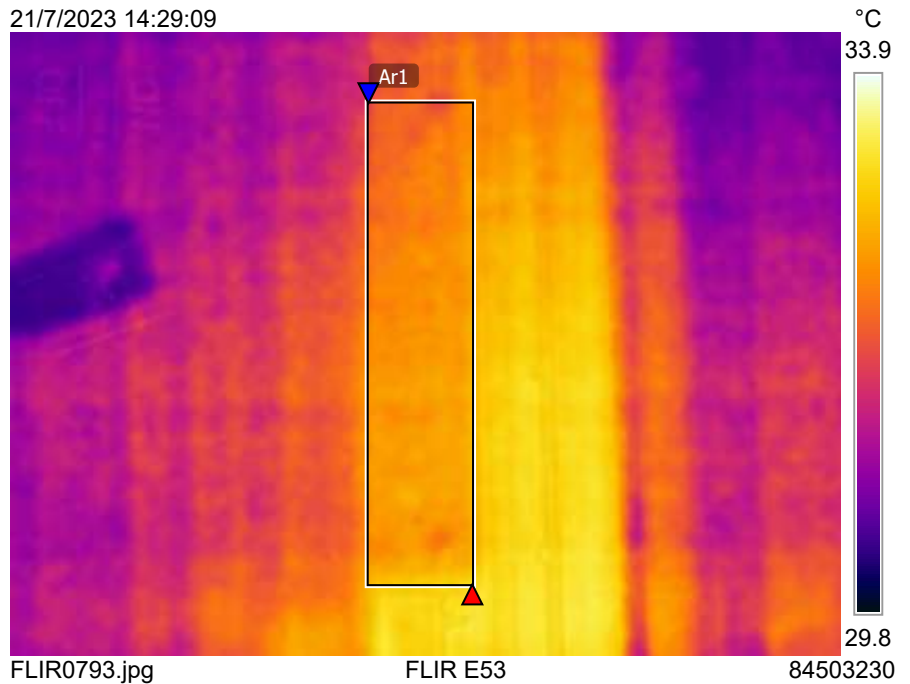
Text annotations

Location :	Shaft Room FI.29
Equipment :	DB.28 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	32.3
	Min	31.9
	Average	32.1

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:29:09



21/7/2023 14:29:09



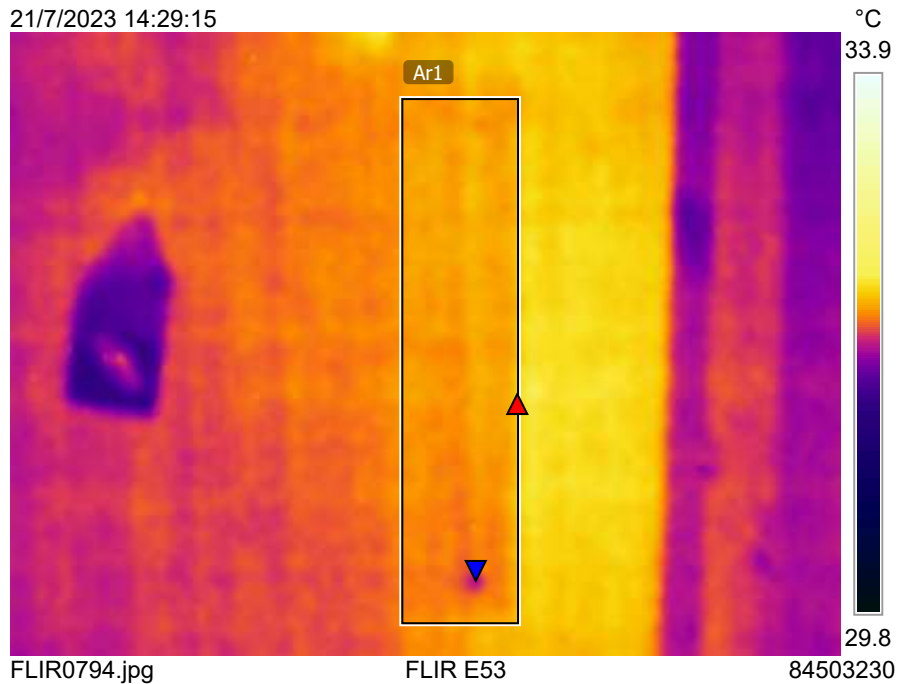
Text annotations

Location :	Shaft Room FI.29
Equipment :	Plugin Unit RUN1
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

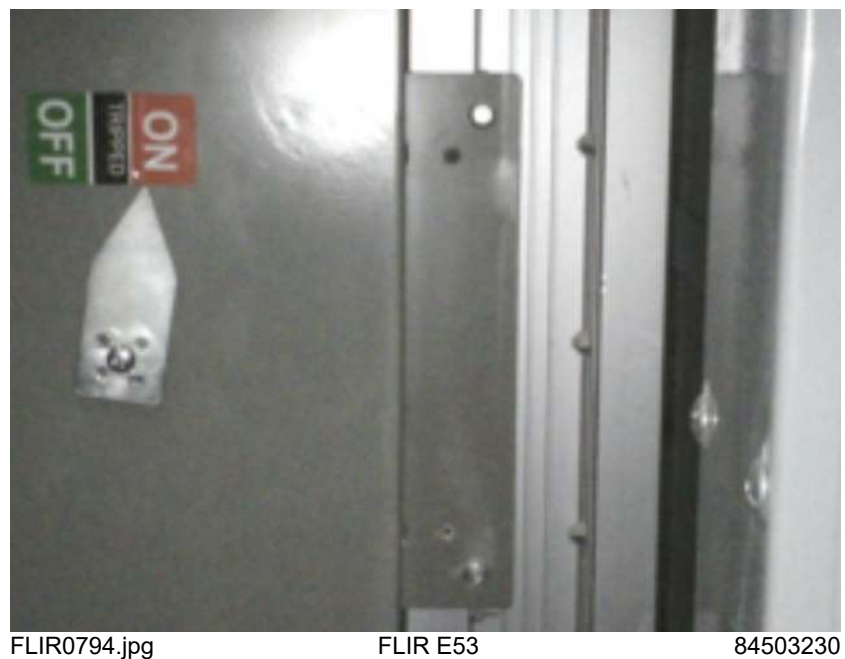
Measurements °C		
Ar1	Max	32.3
	Min	31.8
	Average	32.1

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:29:15



21/7/2023 14:29:15



Text annotations

Location :	Shaft Room FI.29
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

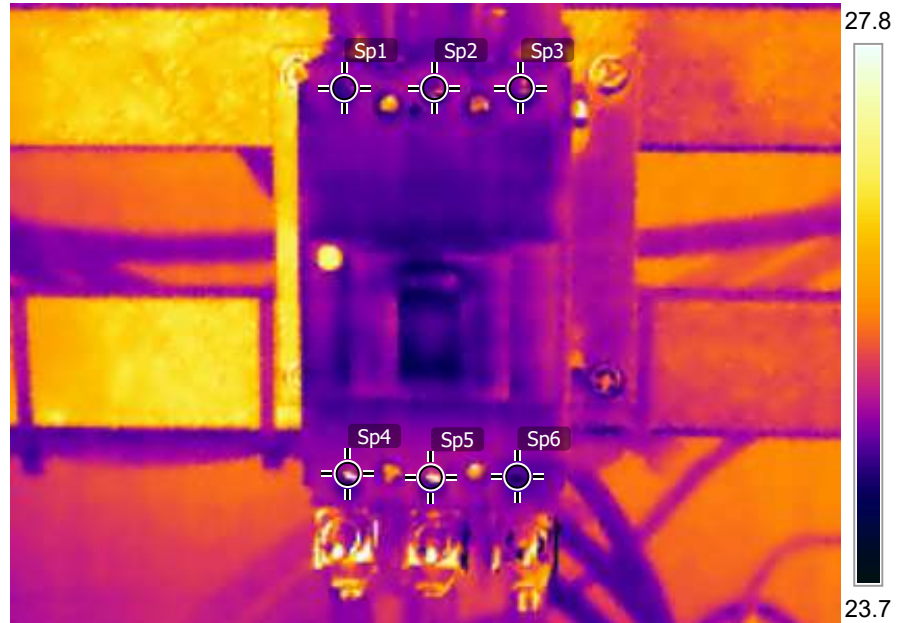
Measurements °C

Sp1	24.7
Sp2	24.8
Sp3	25.0
Sp4	24.5
Sp5	24.7
Sp6	24.5
Difference	0.2
Sp1 - Sp4	
Difference	0.1
Sp2 - Sp5	
Difference	0.5
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:32:19



21/7/2023 14:32:19



Text annotations

Location :	Lift Room FI.29
Equipment :	DBEL V4.1 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	24.8
Sp2	25.7
Sp3	24.8
Sp4	24.8
Sp5	24.9
Sp6	24.7
Difference	0.0
Sp1 - Sp4	
Difference	0.8
Sp2 - Sp5	
Difference	0.1
Sp3 - Sp6	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:35:33

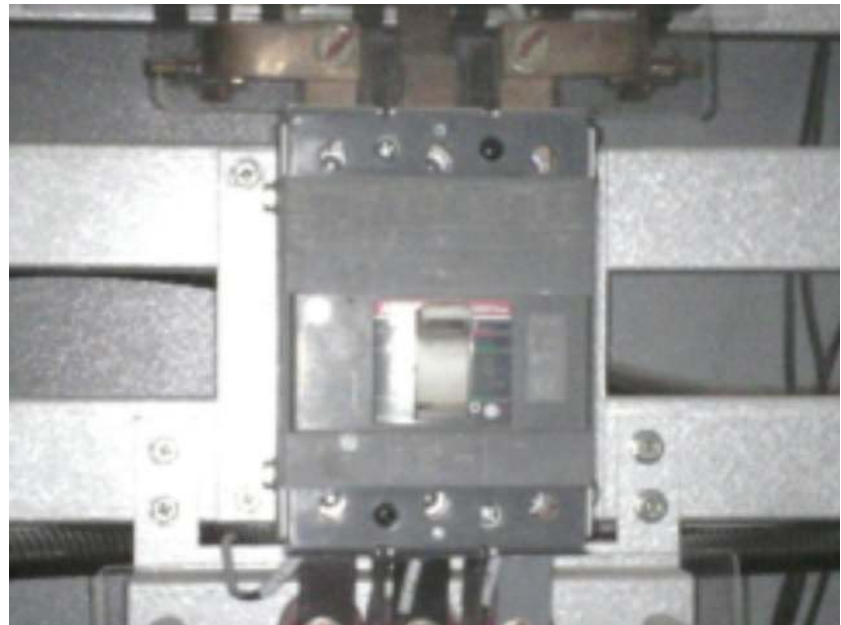


FLIR0796.jpg

FLIR E53

84503230

21/7/2023 14:35:33



FLIR0796.jpg

FLIR E53

84503230

Text annotations

Location :	Lift Room FI.30
Equipment :	DBEL V4 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

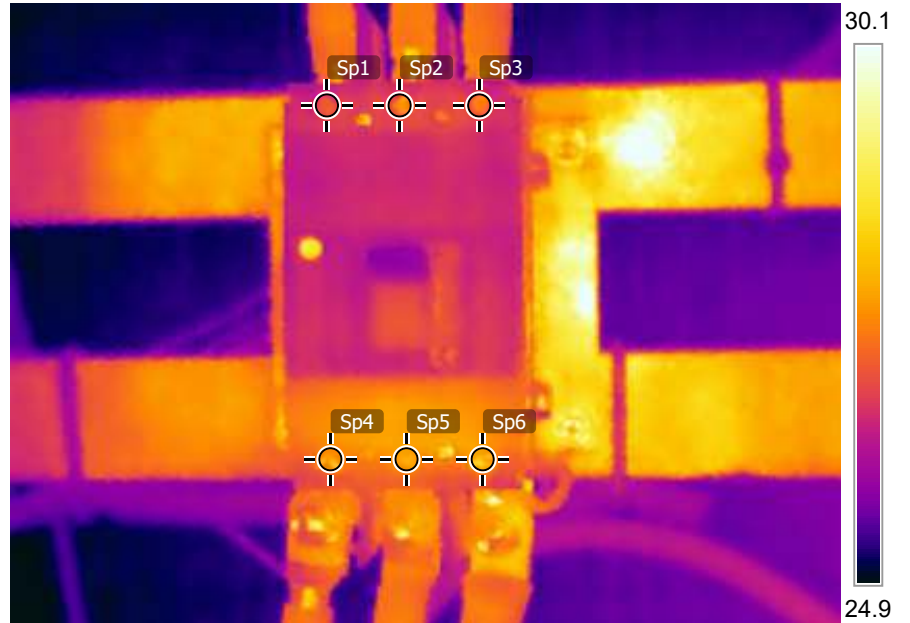
Measurements °C

Sp1	27.0
Sp2	27.5
Sp3	27.4
Sp4	28.1
Sp5	28.0
Sp6	28.2
Difference	1.1
Sp4 - Sp1	
Difference	0.5
Sp5 - Sp2	
Difference	0.8
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:36:11



21/7/2023 14:36:11



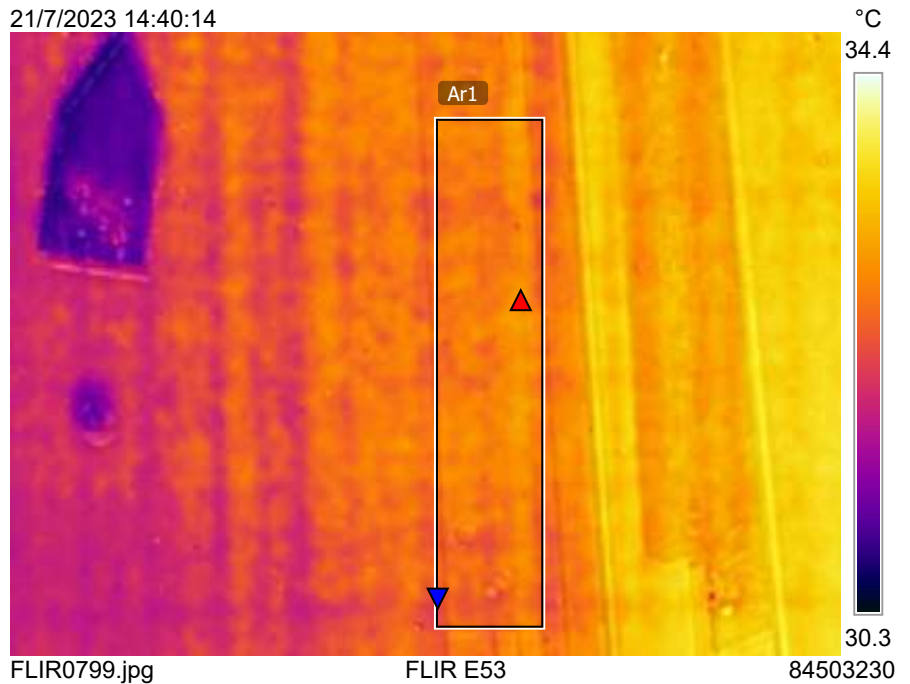
Text annotations

Location :	Lift Room FI.30
Equipment :	DBEL V5 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

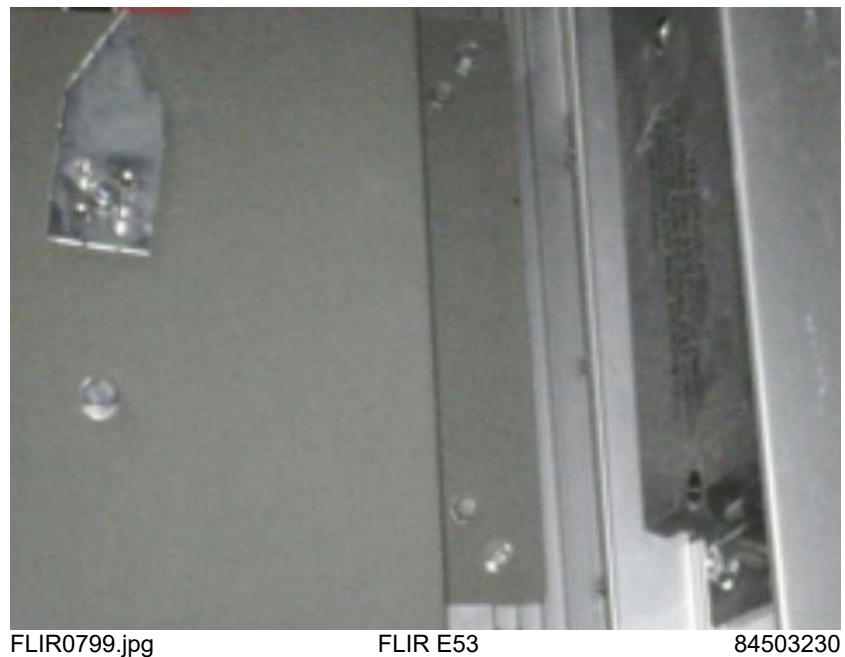
Measurements °C		
Ar1	Max	32.7
	Min	32.5
	Average	32.6

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:40:14



21/7/2023 14:40:14



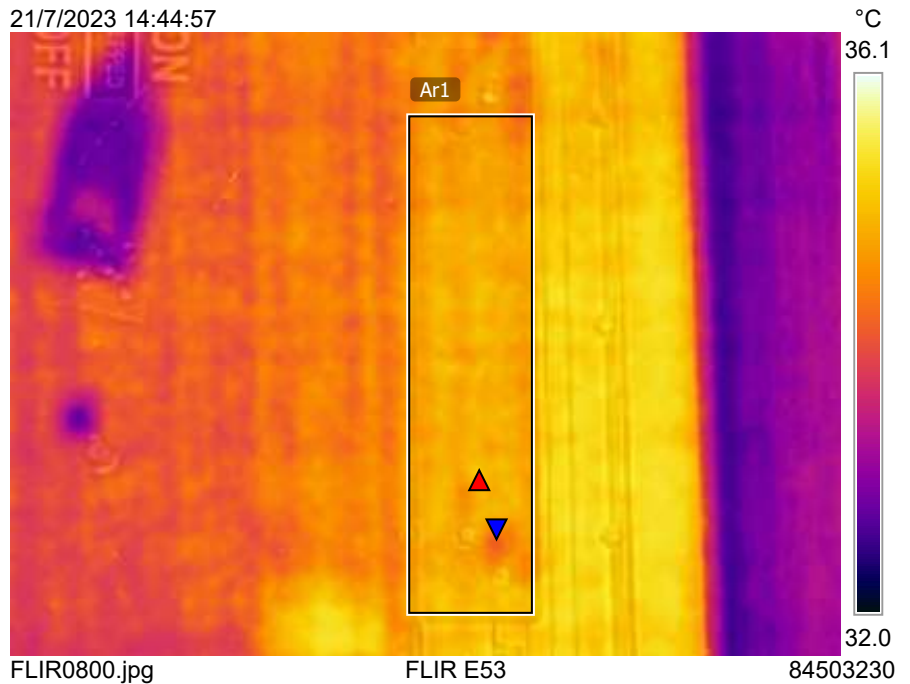
Text annotations

Location :	Shaft Room FI.28
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.4
	Min	34.2
	Average	34.3

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:44:57



21/7/2023 14:44:57



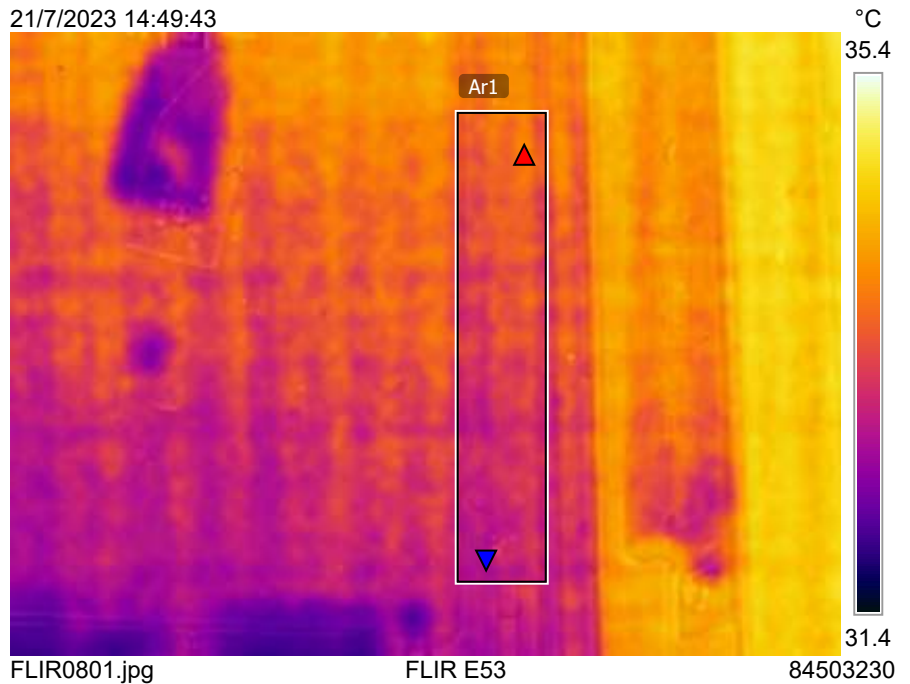
Text annotations

Location :	Shaft Room FI.27
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.6
	Min	33.4
	Average	33.5

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:49:43



21/7/2023 14:49:43



FLIR0801.jpg

FLIR E53

84503230

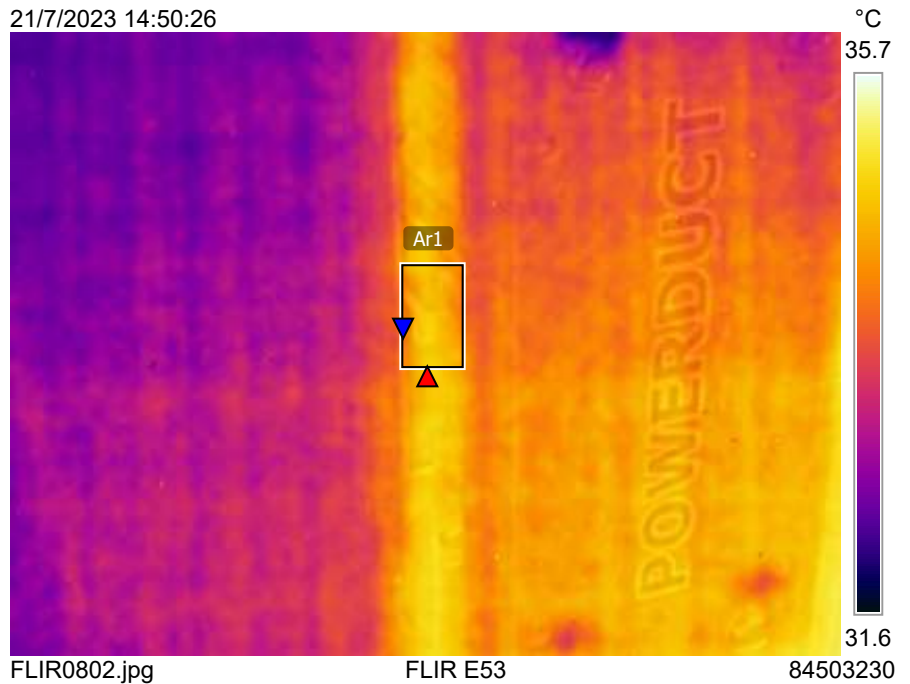
Text annotations

Location :	Shaft Room FI.26
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.9
	Min	33.6
	Average	33.8

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:50:26



21/7/2023 14:50:26



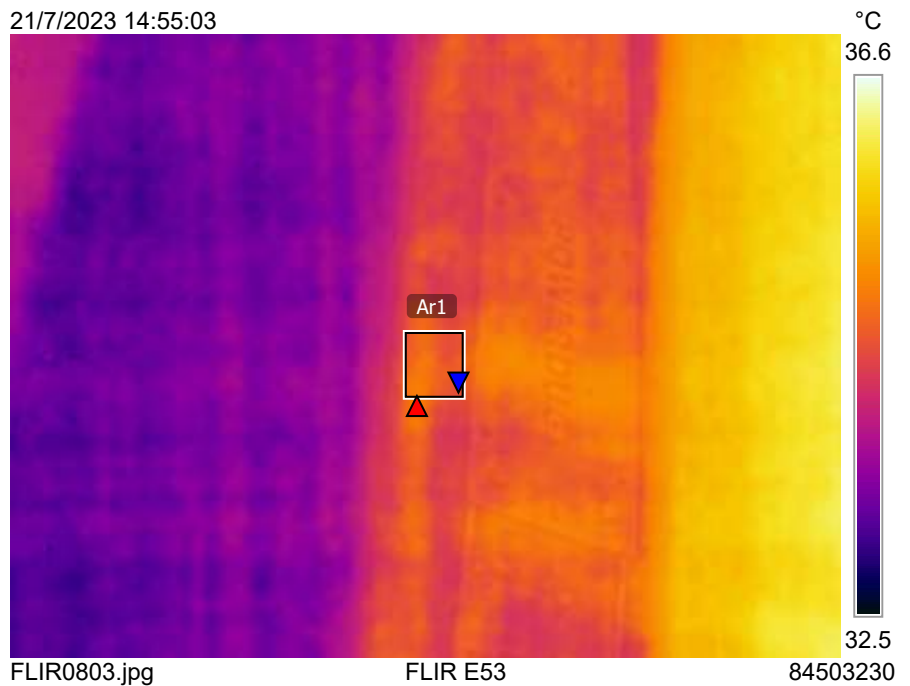
Text annotations

Location :	Shaft Room FI.26
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements		°C
Ar1	Max	34.6
	Min	34.5
	Average	34.5

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 14:55:03



21/7/2023 14:55:03



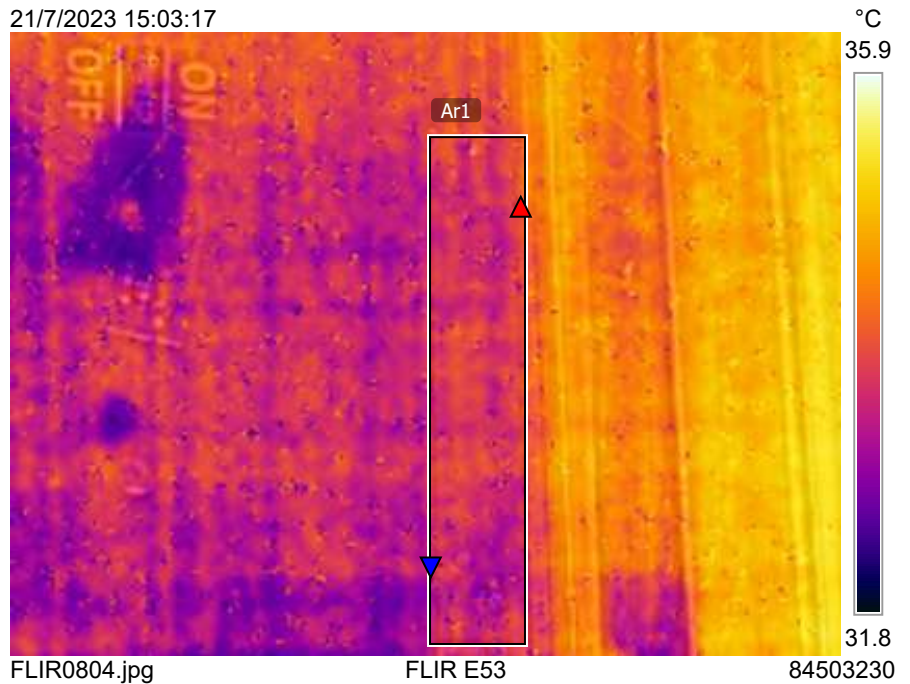
Text annotations

Location :	Shaft Room Fl.25
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.0
	Min	33.7
	Average	33.9

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:03:17



21/7/2023 15:03:17



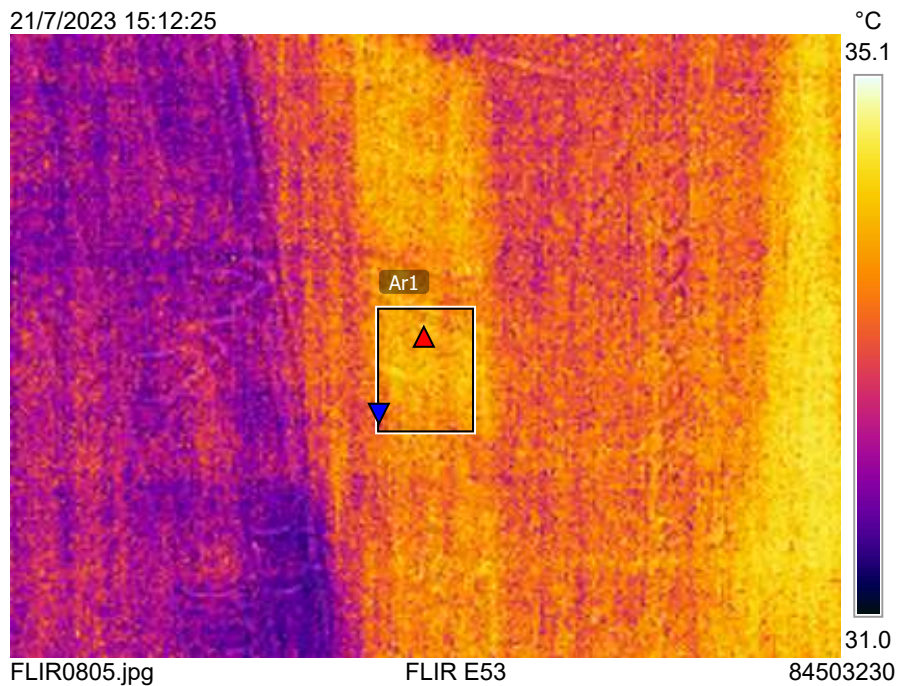
Text annotations

Location :	Shaft Room FI.24
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.7
	Min	32.7
	Average	33.3

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:12:25



21/7/2023 15:12:25



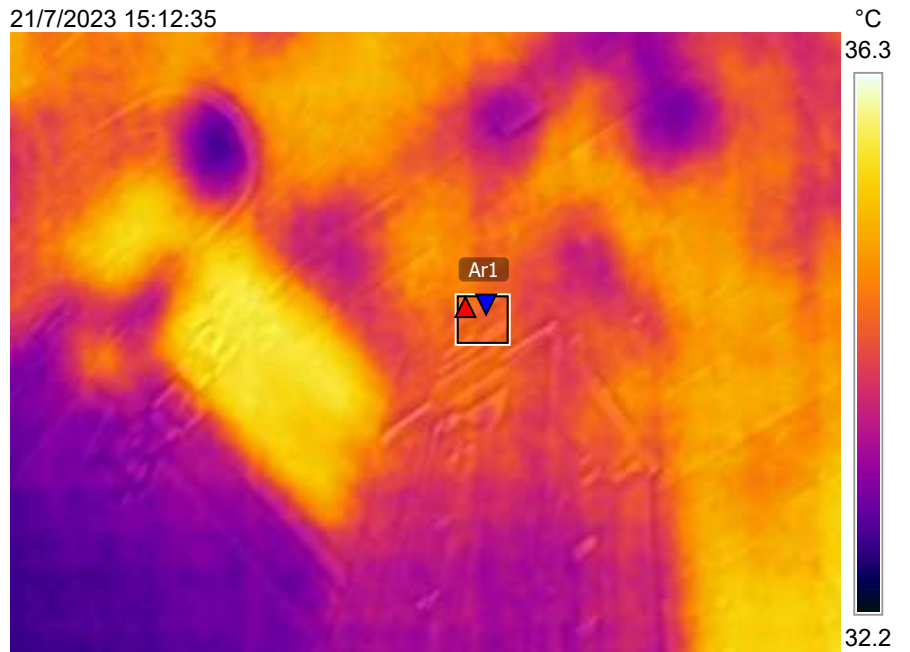
Text annotations

Location :	Shaft Room FI.23
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.4
	Min	34.3
	Average	34.3

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:12:35



FLIR0806.jpg

FLIR E53

84503230

21/7/2023 15:12:35



FLIR0806.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room FI.23
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

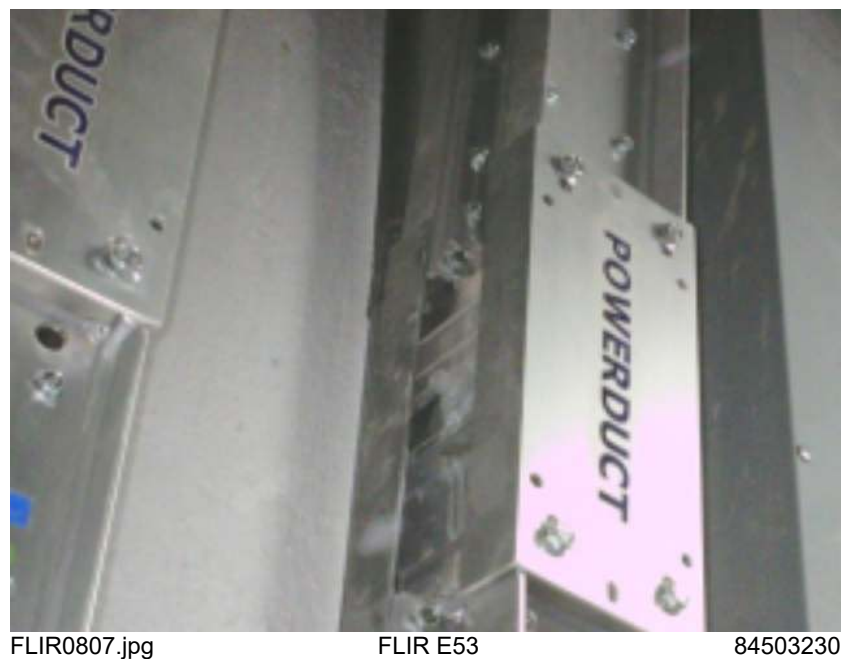
Measurements °C		
Ar1	Max	33.4
	Min	33.2
	Average	33.3

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:16:11



21/7/2023 15:16:11



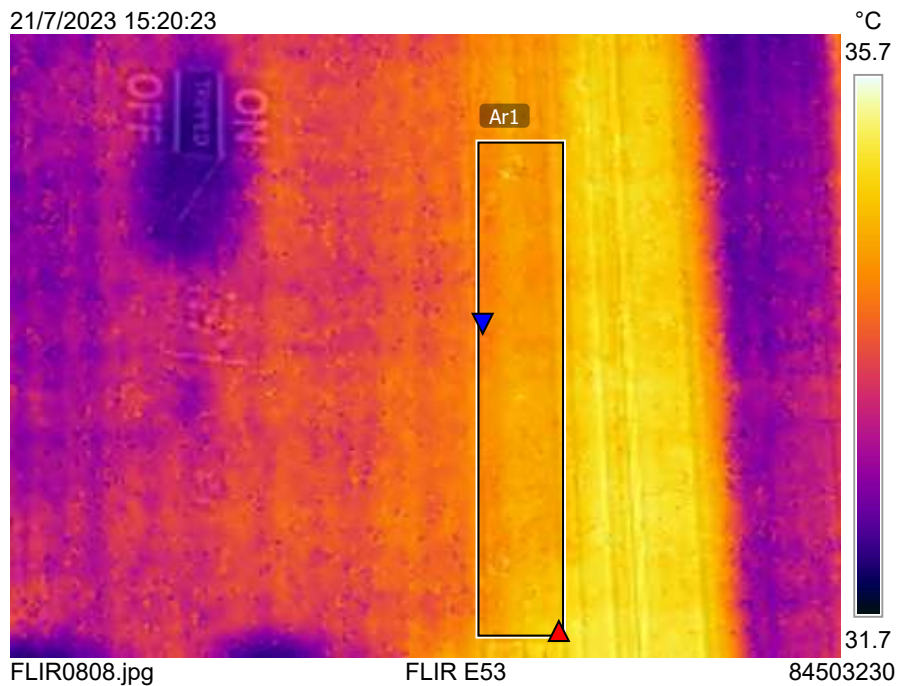
Text annotations

Location :	Shaft Room FI.22
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.3
	Min	33.8
	Average	34.0

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:20:23



21/7/2023 15:20:23



FLIR0808.jpg

FLIR E53

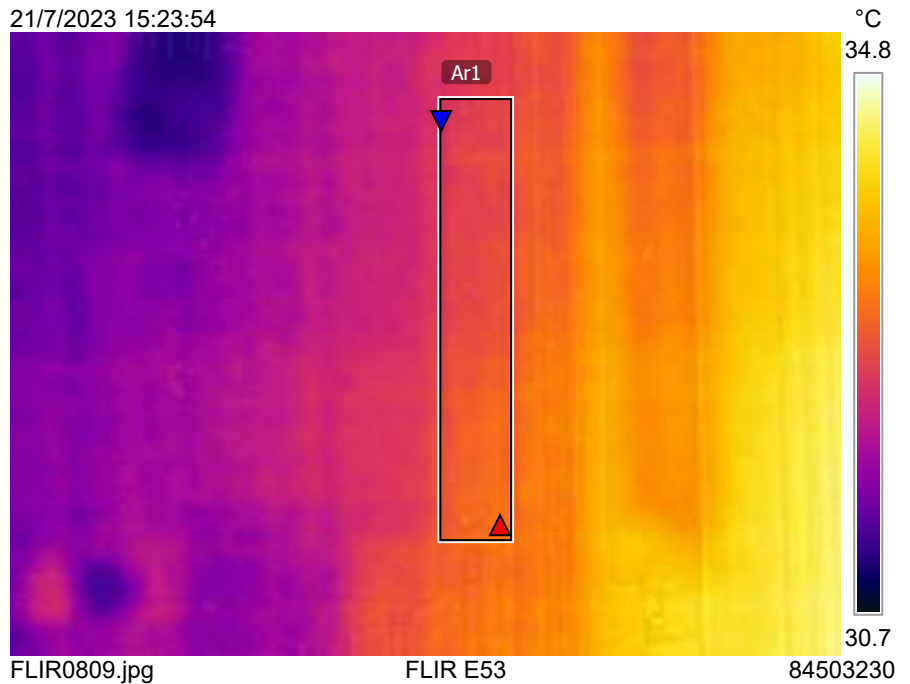
84503230

Text annotations

Location :	Shaft Room FI.21
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.0
	Min	32.7
	Average	32.8

Parameters	
Emissivity	0.98
Refl. temp.	20 °C



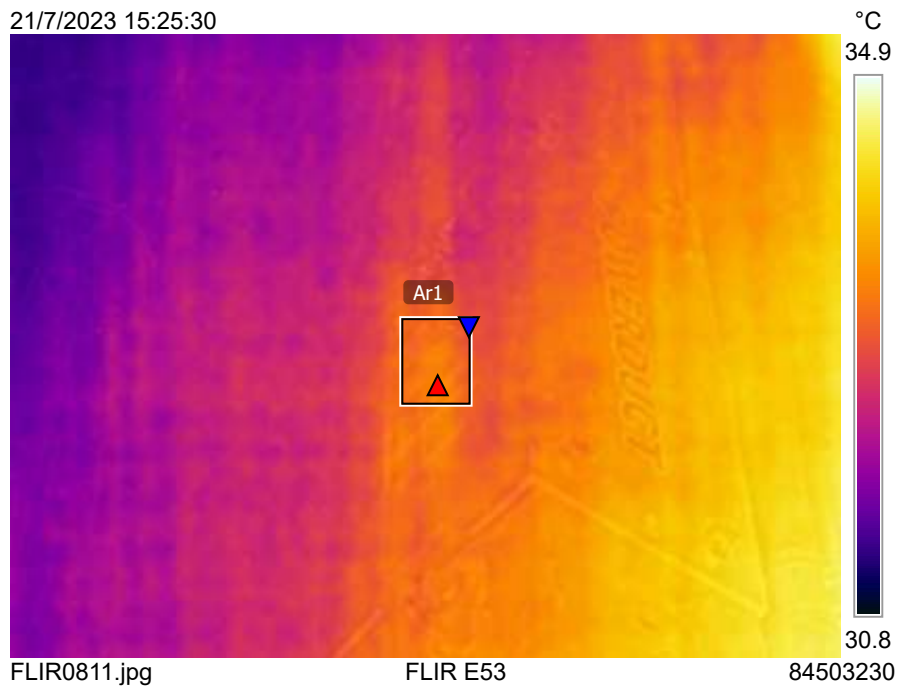
Text annotations

Location :	Shaft Room FI.20
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.1
	Min	32.9
	Average	33.0

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:25:30



21/7/2023 15:25:30



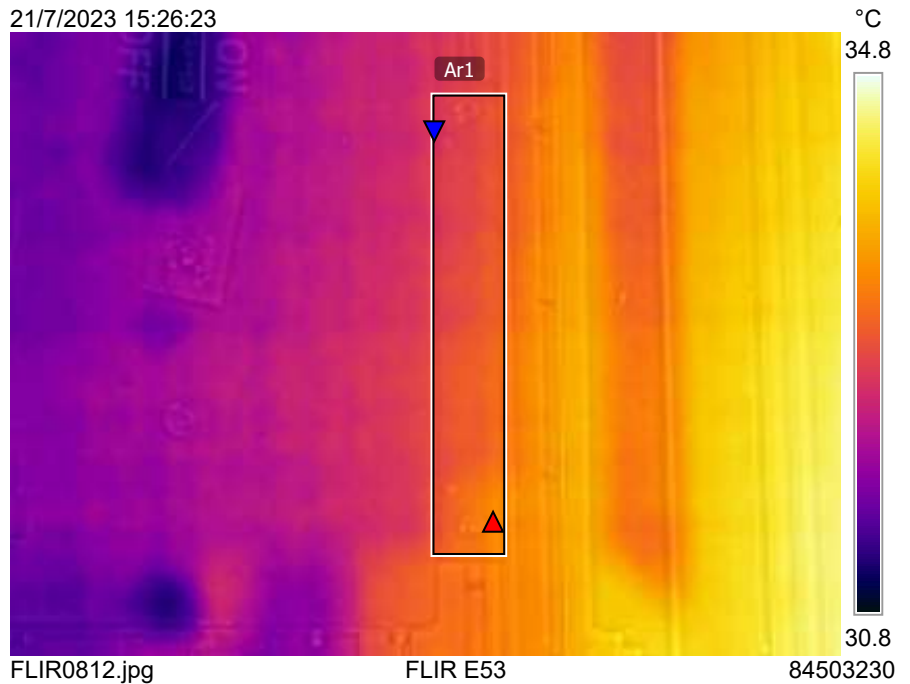
Text annotations

Location :	Shaft Room Fl.19
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.1
	Min	32.7
	Average	32.9

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:26:23



21/7/2023 15:26:23



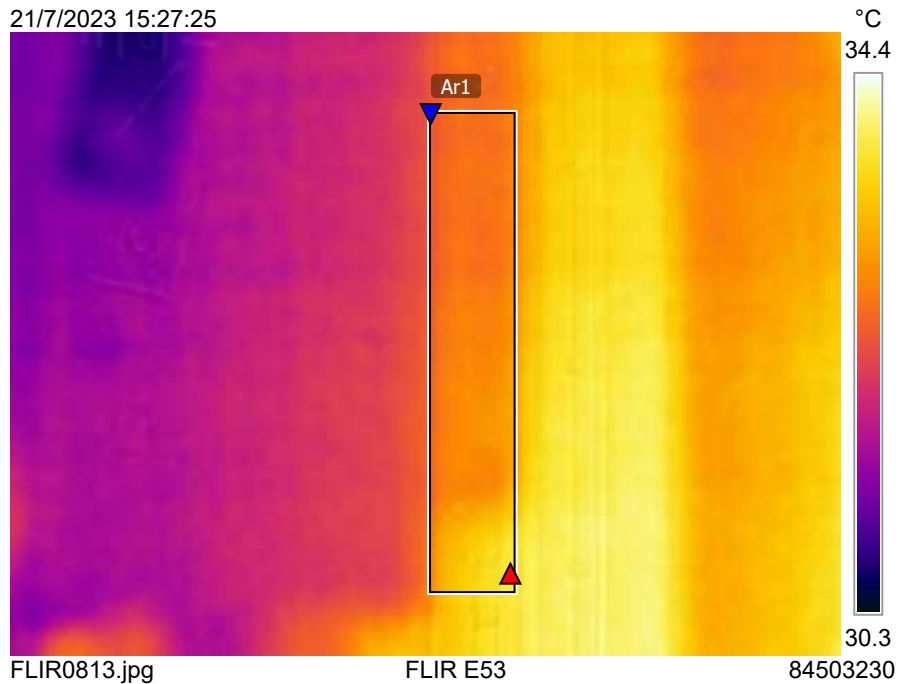
Text annotations

Location :	Shaft Room Fl.18
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.4
	Min	32.6
	Average	32.9

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:27:25



21/7/2023 15:27:25



Text annotations

Location :	Shaft Room Fl.17
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Ar1	Max	33.2
	Min	32.4
	Average	32.8

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:28:37



21/7/2023 15:28:37



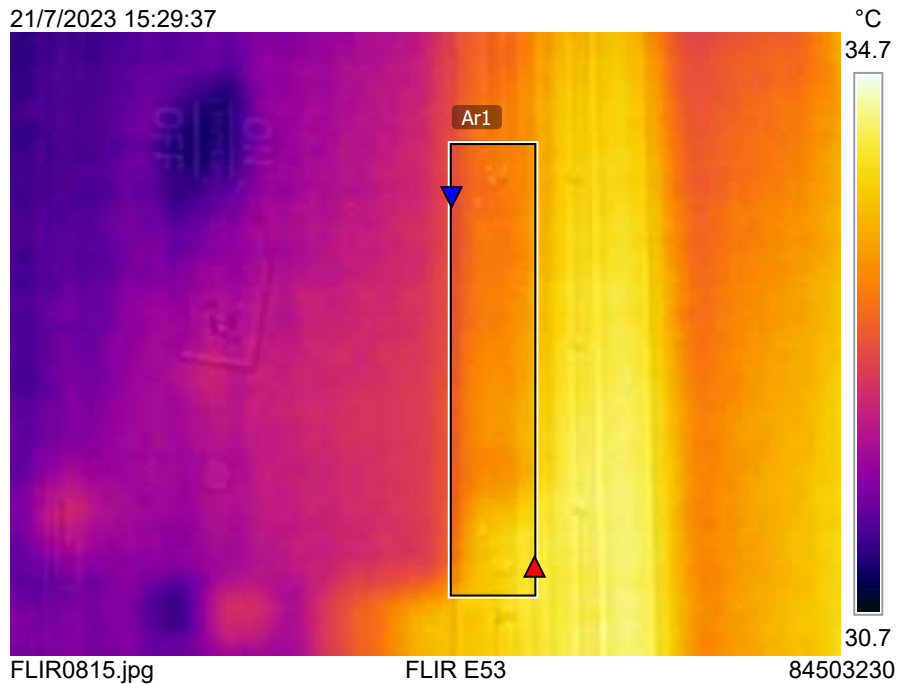
Text annotations

Location :	Shaft Room Fl.16
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

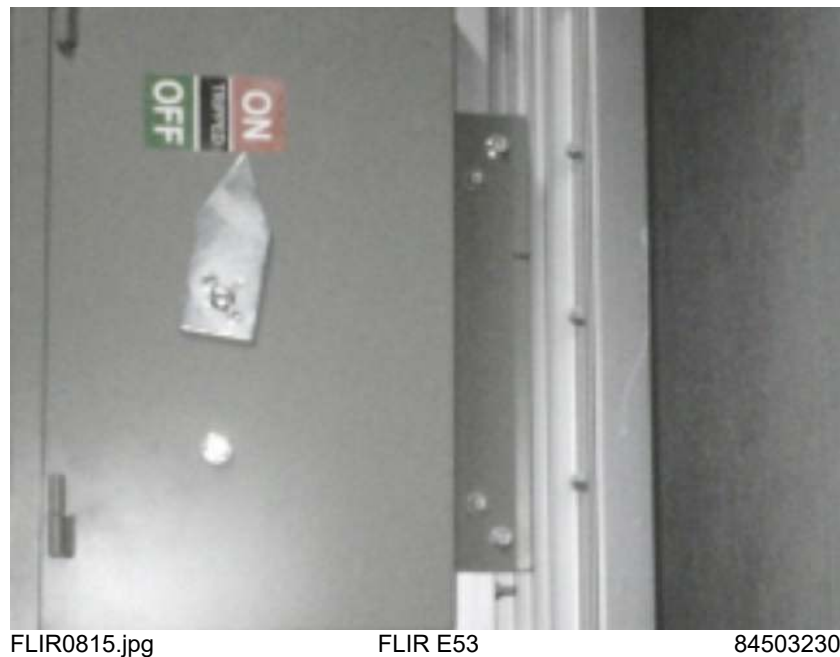
Measurements °C		
Ar1	Max	33.6
	Min	32.7
	Average	33.1

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:29:37



21/7/2023 15:29:37



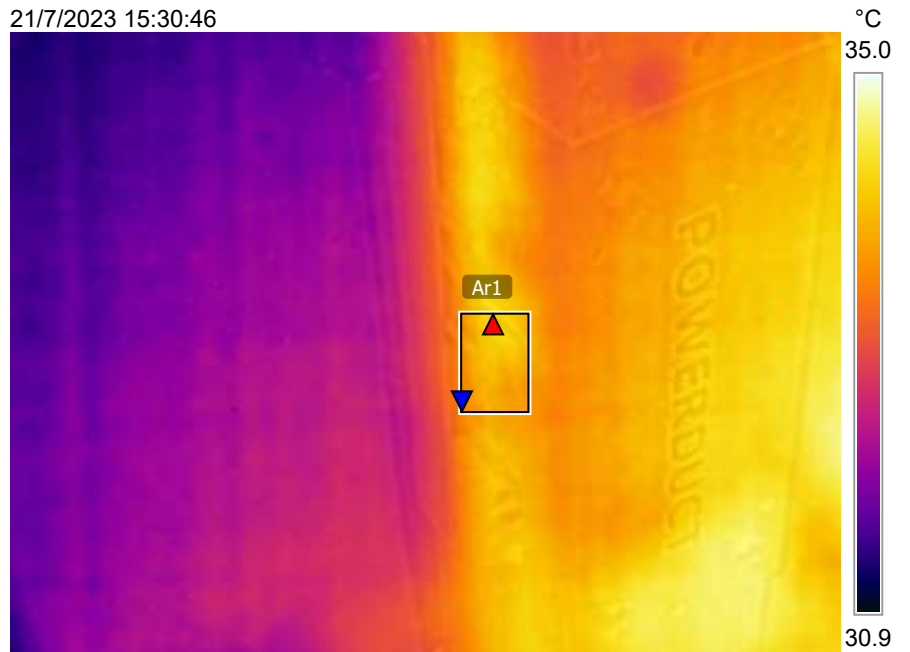
Text annotations

Location :	Shaft Room Fl.15
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.7
	Min	33.4
	Average	33.5

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:30:46



FLIR0816.jpg

FLIR E53

84503230

21/7/2023 15:30:46



FLIR0816.jpg

FLIR E53

84503230

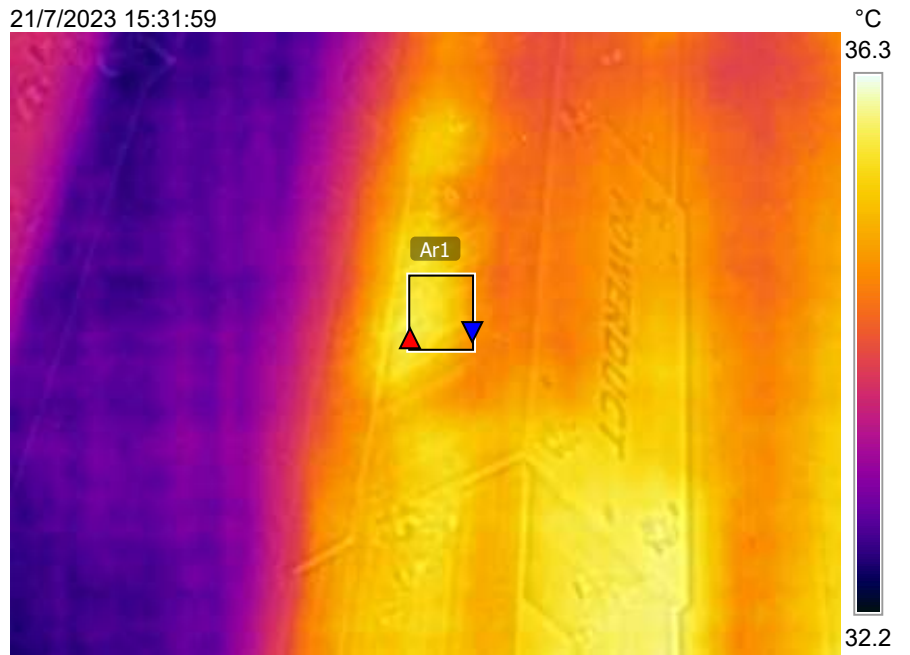
Text annotations

Location :	Shaft Room Fl.14
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	35.2
	Min	34.8
	Average	35.0

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:31:59

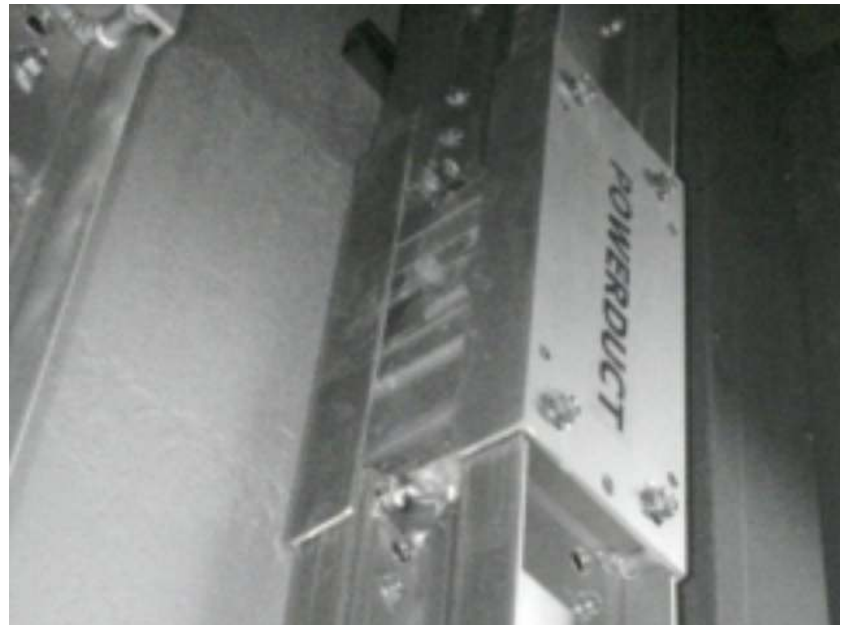


FLIR0817.jpg

FLIR E53

84503230

21/7/2023 15:31:59



FLIR0817.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room Fl.12
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

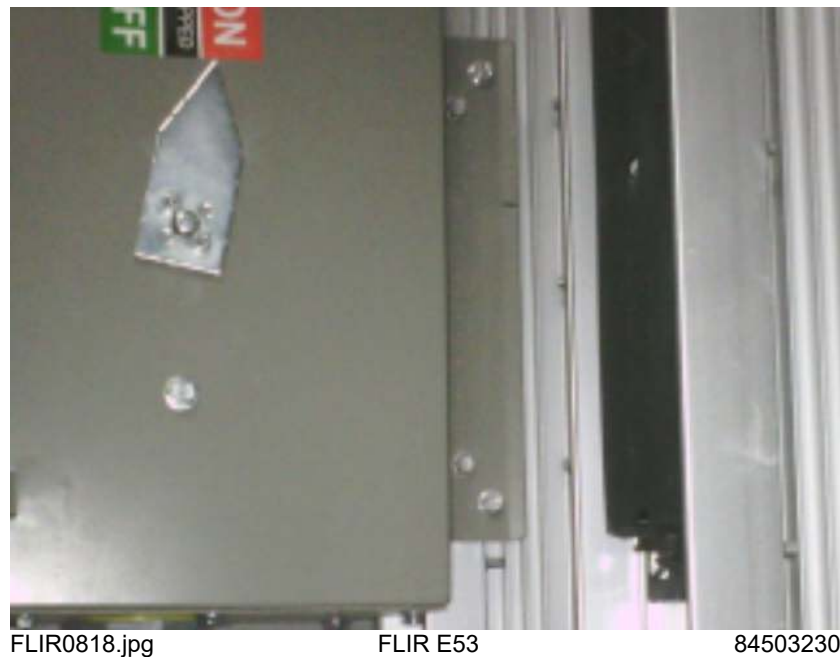
Measurements °C		
Ar1	Max	33.7
	Min	32.9
	Average	33.2

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:35:02



21/7/2023 15:35:02



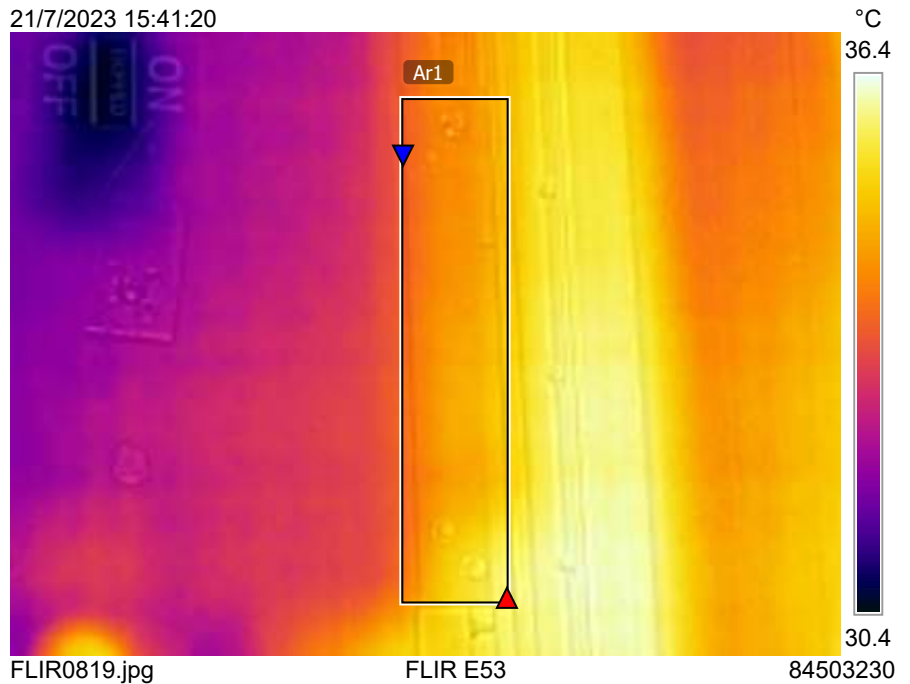
Text annotations

Location :	Shaft Room Fl.11
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.0
	Min	32.7
	Average	33.2

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:41:20



21/7/2023 15:41:20



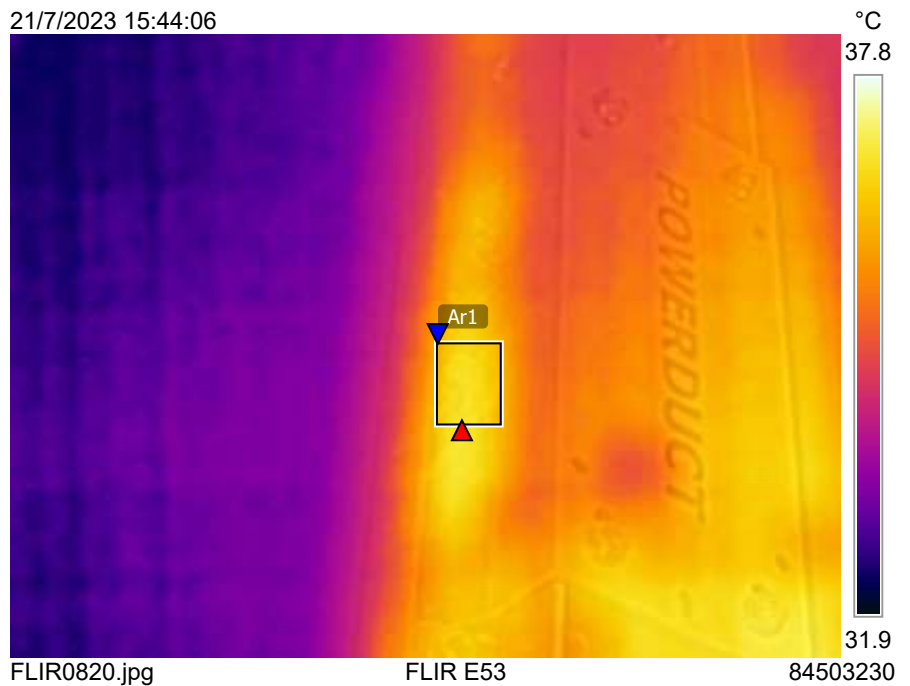
Text annotations

Location :	Shaft Room FI.10
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	35.2
	Min	34.8
	Average	35.1

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:44:06



21/7/2023 15:44:06

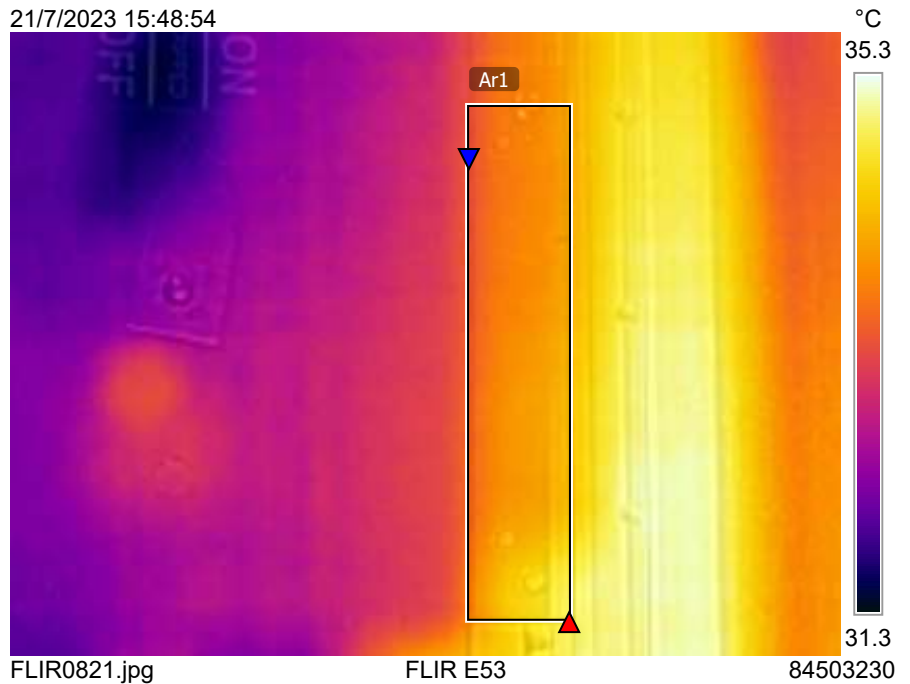


Text annotations

Location :	Shaft Room FI.9
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.8
	Min	33.3
	Average	33.9

Parameters	
Emissivity	0.98
Refl. temp.	20 °C



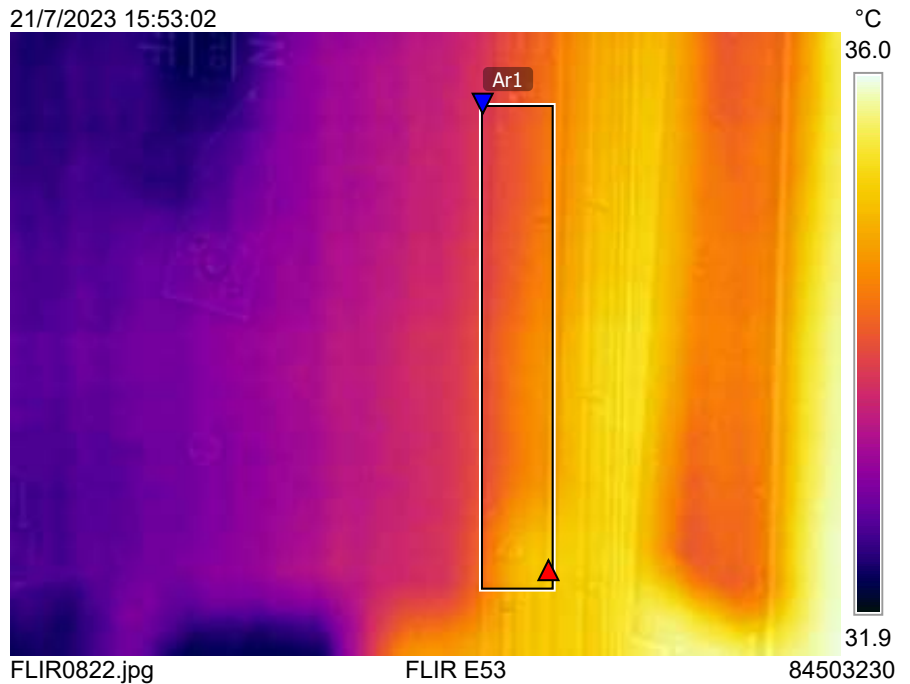
Text annotations

Location :	Shaft Room Fl.8
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	34.8
	Min	33.7
	Average	34.2

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:53:02



21/7/2023 15:53:02



Text annotations

Location :	Shaft Room FI.7
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

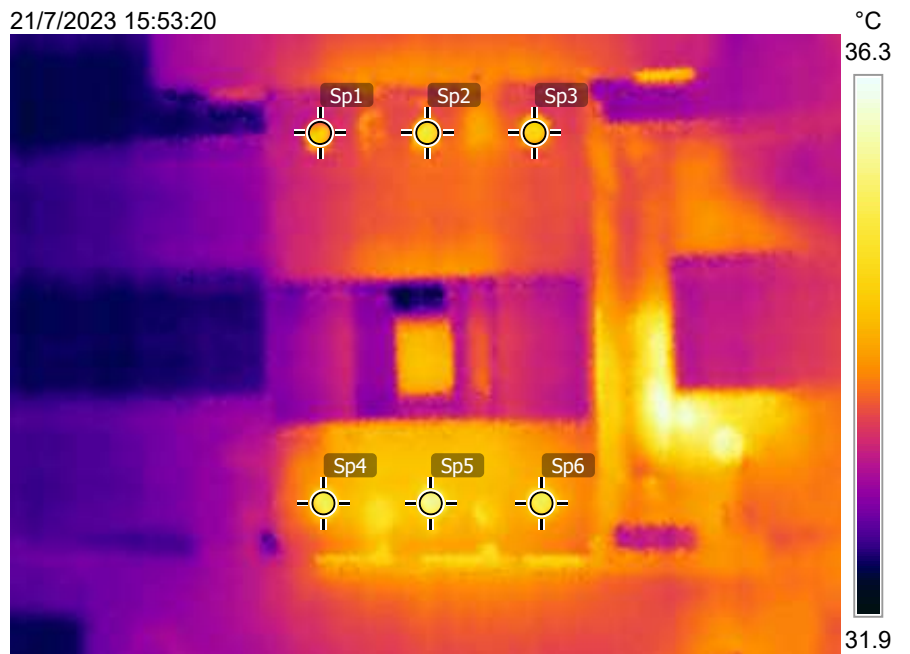
Measurements °C

Sp1	34.6
Sp2	35.0
Sp3	34.5
Sp4	35.3
Sp5	35.6
Sp6	35.1
Difference	0.7
Sp4 - Sp1	
Difference	0.6
Sp5 - Sp2	
Difference	0.6
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:53:20



FLIR0823.jpg

FLIR E53

84503230

21/7/2023 15:53:20



FLIR0823.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room FI.7
Equipment :	DB.E7 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

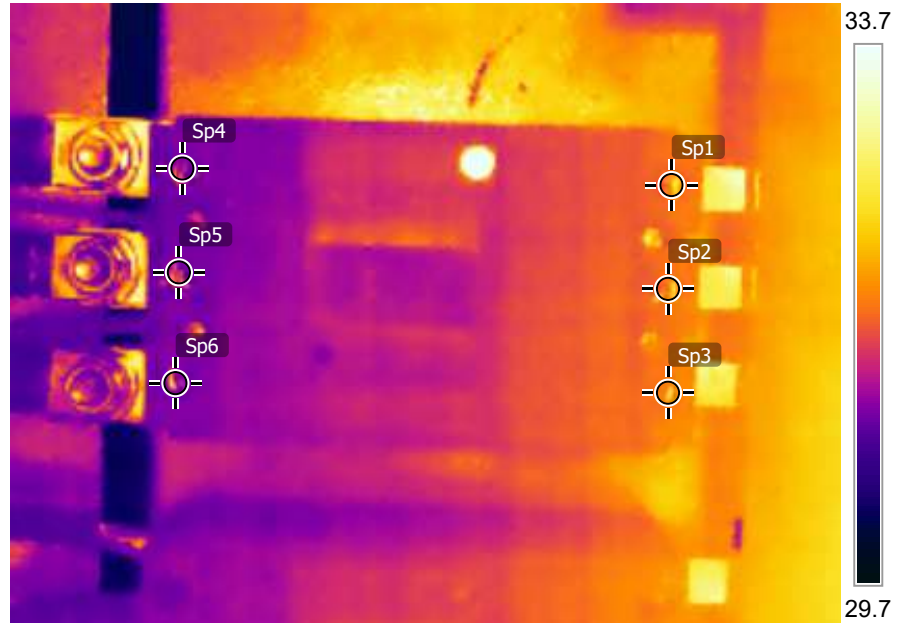
Measurements °C

Sp1	31.6
Sp2	31.9
Sp3	31.8
Sp4	31.1
Sp5	31.3
Sp6	31.0
Difference	0.5
Sp1 - Sp4	
Difference	0.6
Sp2 - Sp5	
Difference	0.8
Sp3 - Sp6	

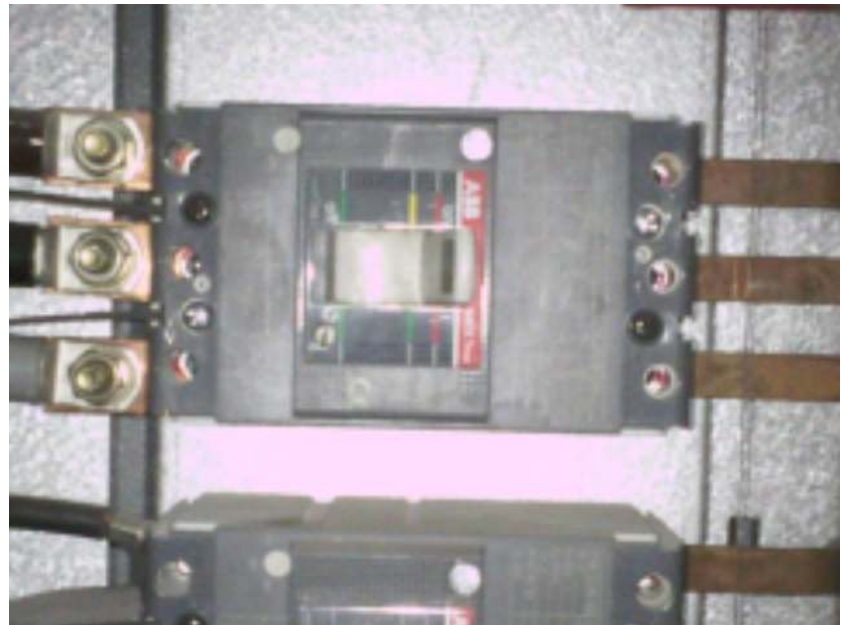
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:55:15



21/7/2023 15:55:15



Text annotations

Location :	Shaft Room FI.6
Equipment :	DB.6 Panel
Detail :	MCCB LC-5A
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	35.6
Sp2	34.9
Sp3	34.3
Sp4	36.4
Sp5	35.2
Sp6	34.9
Difference	0.8
Sp4 - Sp1	
Difference	0.3
Sp5 - Sp2	
Difference	0.6
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:55:47



21/7/2023 15:55:47



FLIR0825.jpg

FLIR E53

84503230

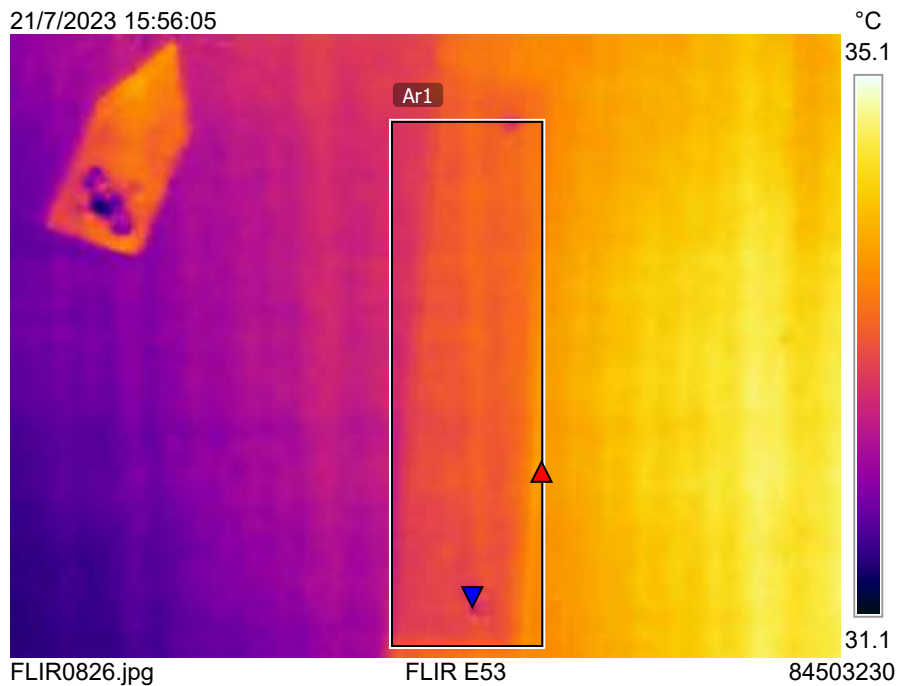
Text annotations

Location :	Shaft Room FI.6
Equipment :	DB.E6 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C		
Ar1	Max	33.6
	Min	32.8
	Average	33.2

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 15:56:05



21/7/2023 15:56:05



Text annotations

Location :	Shaft Room FI.6
Equipment :	Plugin Unit
Detail :	Connection
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	30.8
Sp2	31.4
Sp3	31.0
Sp4	32.4
Sp5	32.7
Sp6	32.2
Difference	1.6
Sp4 - Sp1	
Difference	1.3
Sp5 - Sp2	
Difference	1.2
Sp6 - Sp3	

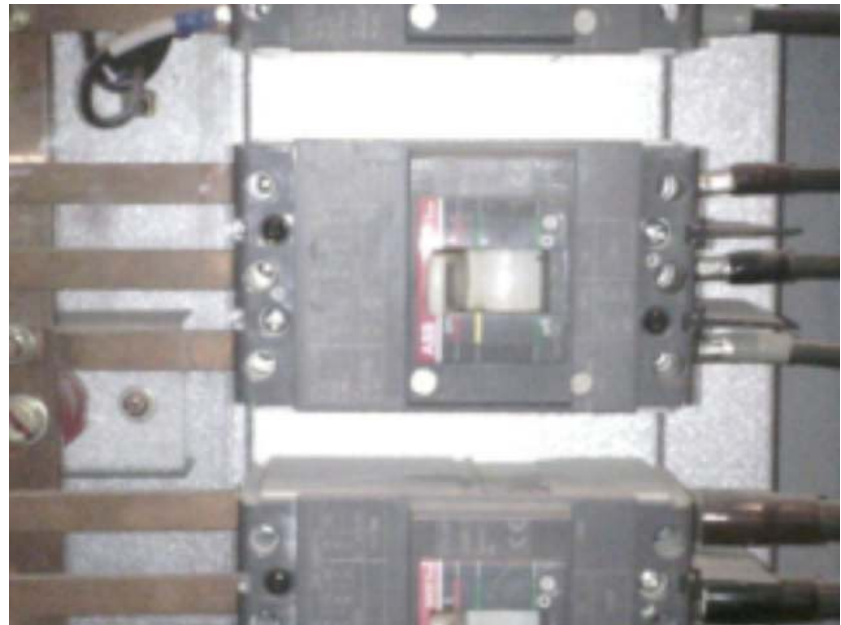
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 16:00:51



21/7/2023 16:00:51



Text annotations

Location :	Shaft Room FI.3
Equipment :	DB.3 Panel
Detail :	MCCB S31
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

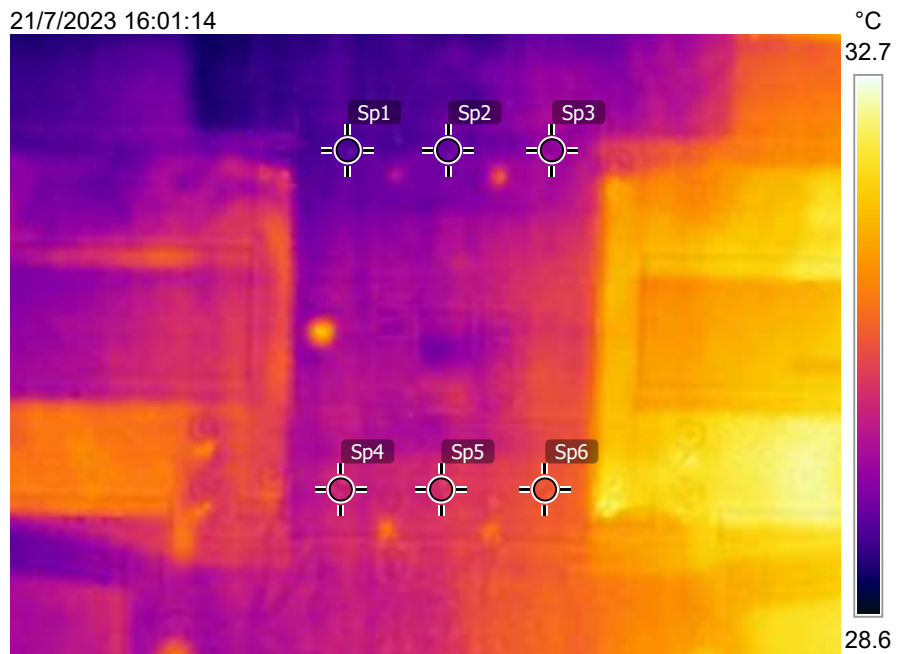
Measurements °C

Sp1	29.9
Sp2	29.9
Sp3	30.1
Sp4	30.2
Sp5	30.3
Sp6	30.5
Difference	0.3
Sp4 - Sp1	
Difference	0.4
Sp5 - Sp2	
Difference	0.4
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 16:01:14

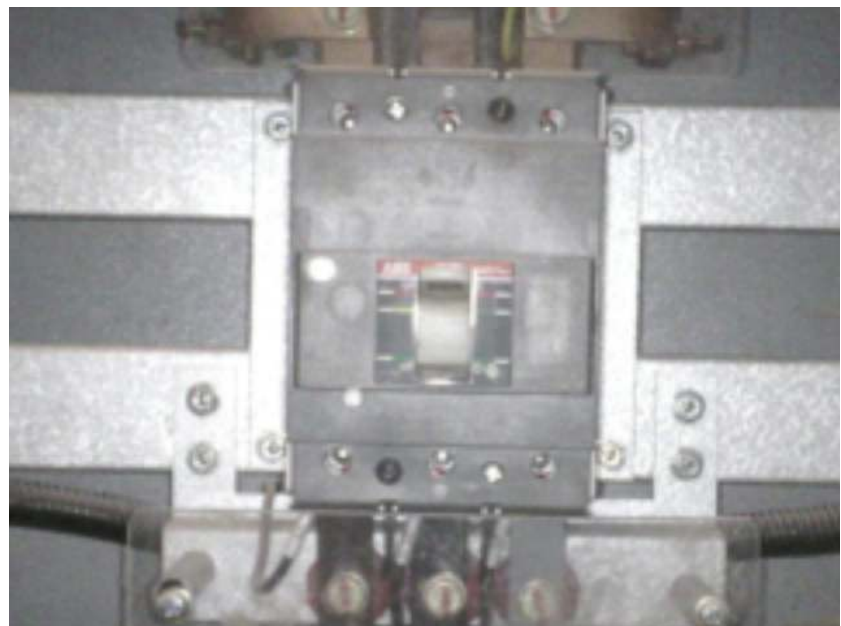


FLIR0828.jpg

FLIR E53

84503230

21/7/2023 16:01:14



FLIR0828.jpg

FLIR E53

84503230

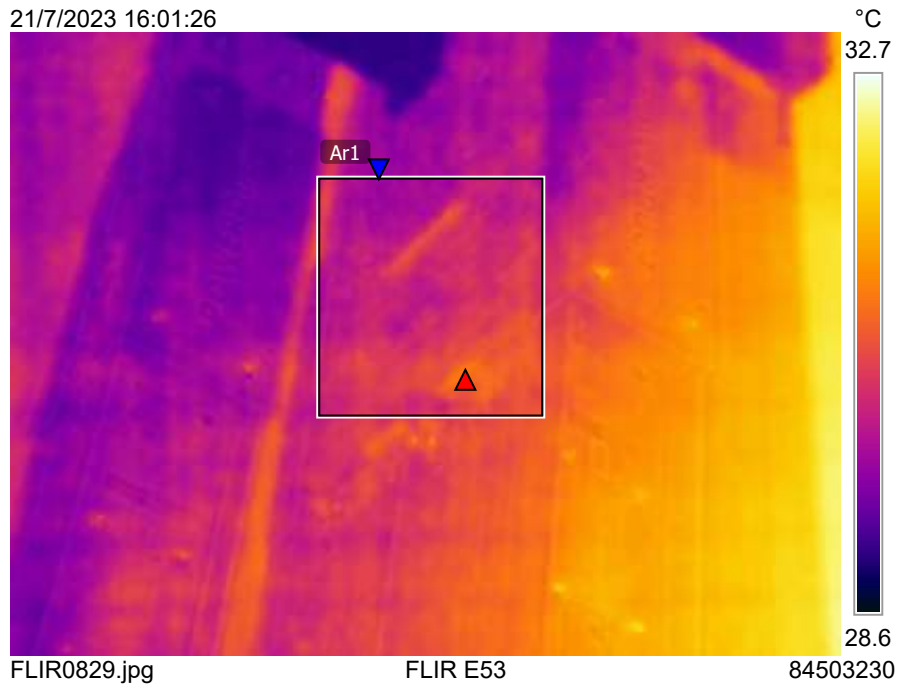
Text annotations

Location :	Shaft Room FI.3
Equipment :	DB.E3 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

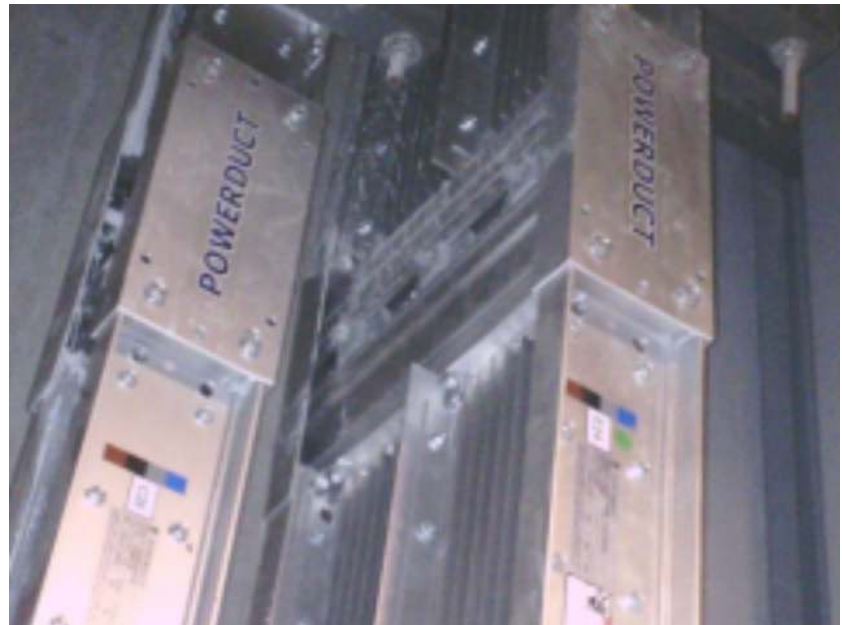
Measurements		°C
Ar1	Max	30.7
	Min	30.3
	Average	30.5

Parameters	
Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 16:01:26



21/7/2023 16:01:26



Text annotations

Location :	Shaft Room FI.3
Equipment :	Busduct
Detail :	Joint Busduct
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	32.4
Sp2	33.1
Sp3	32.7
Sp4	32.6
Sp5	33.1
Sp6	32.7
Difference	0.2
Sp4 - Sp1	
Difference	0.0
Sp5 - Sp2	
Difference	0.0
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 16:04:55



21/7/2023 16:04:55



Text annotations

Location :	Shaft Room FI.2
Equipment :	DB.2 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

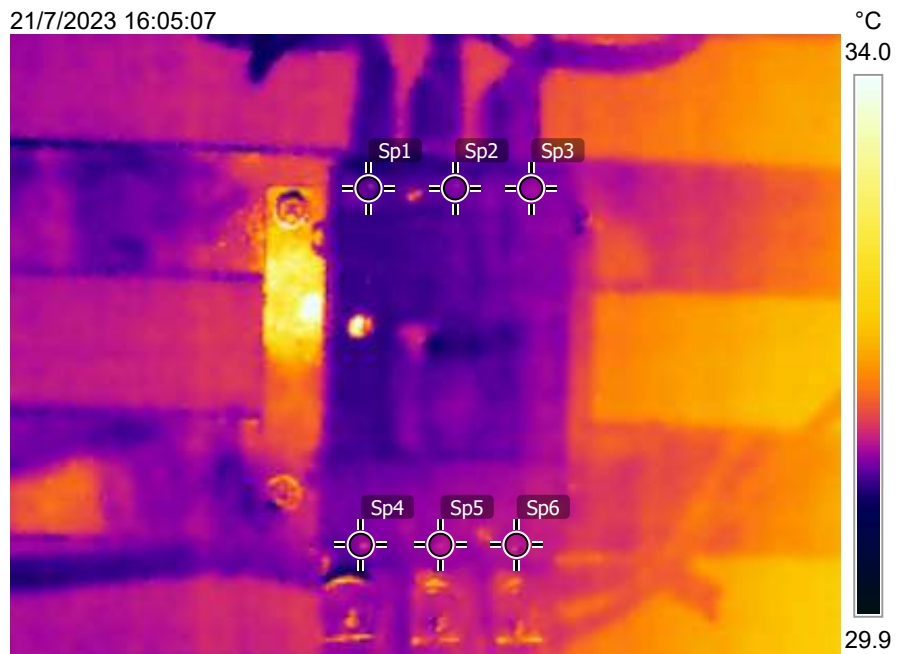
Measurements °C

Sp1	31.0
Sp2	31.1
Sp3	31.2
Sp4	31.1
Sp5	31.3
Sp6	31.3
Difference	0.1
Sp4 - Sp1	
Difference	0.2
Sp5 - Sp2	
Difference	0.1
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 16:05:07



FLIR0832.jpg

FLIR E53

84503230

21/7/2023 16:05:07



FLIR0832.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room FI.2
Equipment :	DB.E2 Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

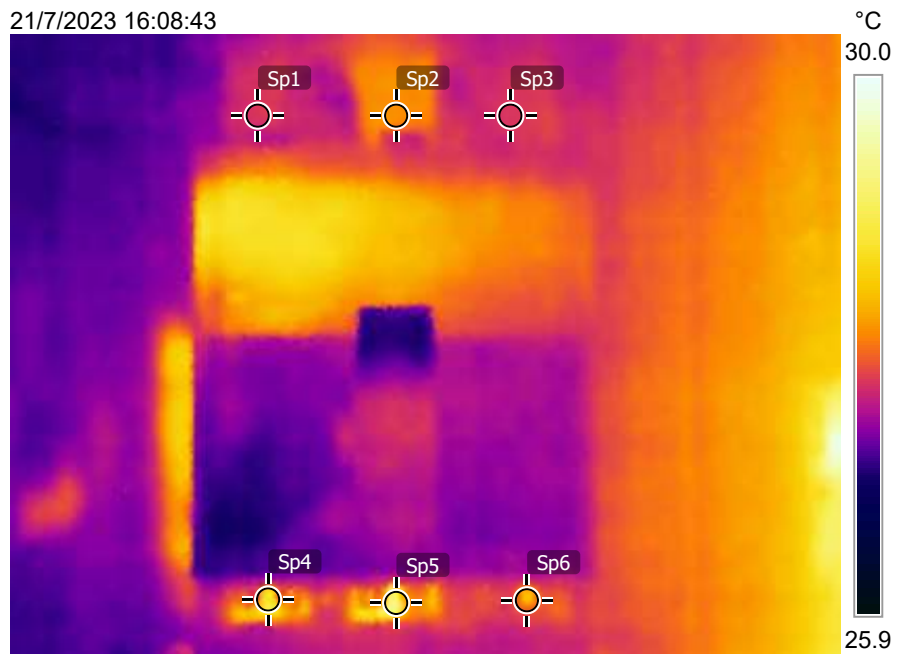
Measurements °C

Sp1	27.7
Sp2	28.1
Sp3	27.7
Sp4	28.9
Sp5	29.2
Sp6	28.2
Difference	1.2
Sp4 - Sp1	
Difference	1.1
Sp5 - Sp2	
Difference	0.5
Sp6 - Sp3	

Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 16:08:43



FLIR0833.jpg

FLIR E53

84503230

21/7/2023 16:08:43



FLIR0833.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room FI.B
Equipment :	DB.B Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference

Measurements °C

Sp1	29.0
Sp2	29.3
Sp3	28.9
Sp4	29.0
Sp5	28.6
Sp6	28.5
Difference	0.0
Sp1 - Sp4	
Difference	0.7
Sp2 - Sp5	
Difference	0.4
Sp3 - Sp6	

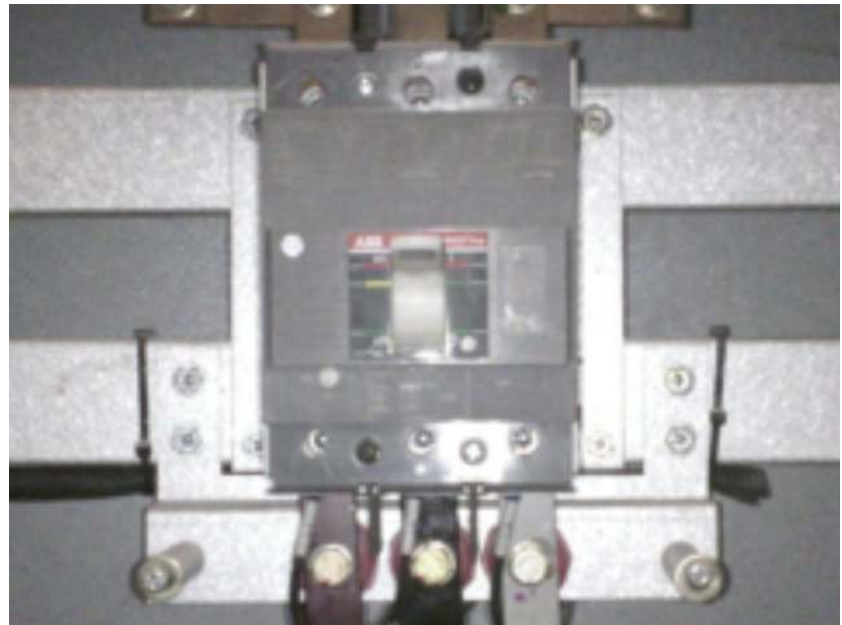
Parameters

Emissivity	0.98
Refl. temp.	20 °C

21/7/2023 16:09:41



21/7/2023 16:09:41



FLIR0834.jpg

FLIR E53

84503230

Text annotations

Location :	Shaft Room FI.B
Equipment :	DB.EB Panel
Detail :	MCCB Main
Comment :	Normal operation , Not found hotspot
	Should also keep for your future reference



PREVENTIVE MAINTENANCE ELECTRICAL SYSTEM 2023

ERECTION SITE:

HYATT REGENCY BANGKOK SUKHUMVIT

CUSTOMER:

HYATT REGENCY BANGKOK SUKHUMVIT

Preventive Maintenance Report 28 July 2023

ESSI ENERGY GROUP CO., LTD.

1 Soi Ramkhamhaeng 164 Sub 16,
Minburi Sub-District
Minburi District
Bangkok 10510
Hotline 0881696156

Report prepared by: Apichat M.

Date: **28 July 2023**

Introduction

This test and inspection is preventive maintenance at **Hyatt Regency Bangkok Sukhumvit.**

The objective of this preventive maintenance is to ensure that all tested electrical equipment still are in good condition and to find out any damaged and / or unsafe condition.

This test and inspection were performed during **28 July 2023** all test & inspection result and any comment have been recorded in this test report.

Table of content

Introduction	2
Table of content.....	3
Scope of Work	4
Content	6
Conclusion	8
Suggestion / Recommendations	9
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Scope of Work

1. Ring Main Unit

1. Inspection and cleaning the cubicle.
2. Retightening power cable termination / ground cable.
3. Operation the switch-disconnector / circuit breaker several time (3-5 time) to make mechanism movement.
4. Test interlocking mechanism.
5. Trip test protection relay (if any)

2. Transformer (dry type)

1. General inspection and cleaning.
2. Bushing condition check.
3. Grounding connection check.
4. Retighten with torque wrench (busing connection).
5. Insulation resistance.
6. Motor fan function test.
7. Temperature controller function test.

4. Air Circuit Breaker

1. Cleaning the air circuit breaker and relubricating the operating mechanism.
2. Cleaning and check Arc-chuter.
3. Insulation check.
4. Rack-in / rack-out circuit breaker.
5. Trip unit function test. (Protection unit).
6. Parameter checking and recording of protective relay
7. Contact resistance test.

5. LV Switchboard

1. Cleaning all panel.
2. Retorque the busbar at main incoming and between panel.
3. Insulation test.
4. Metering check.
5. General condition check.
6. Grounding connection check.
7. Busbar check.
8. Fuse and fuse bases check.

6. Capacitor Bank

1. Inspect for physical damage, broker insulation.
2. Tightness of connection wiring.
3. Cleaning.
4. Operating function.
5. Capacitive or current measurement.

7. Automatic Transfer Switch & EMDB Panel

1. Cleaning all panel.
2. General and physical check MCCB or ACB.
3. Cleaning and relubricating the operating mechanism.
4. Retorque at connection of MCCB and busbar or cable.
5. Insulation test.
6. Trip unit function test.
7. Function test step by step.
8. General wiring control check.

8. DB Panel














































1. Cleaning all panel.
2. Retorque busbar and cable connection at main incoming and between panel.
3. Retorque at connection of MCCB and busbar or cable.
4. Metering check.
5. General condition check.
6. Grounding connection check.
7. Busbar check and retorque.
8. Fuse and fuse bases check.

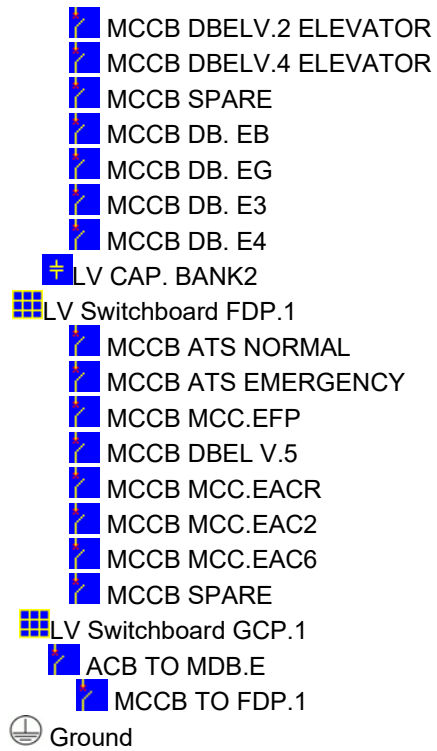
9. Plug-In Unit

1. Inspect for physical damage, broken insulation.
2. Tightness of connection beaker and busbar.
3. Check ground connection.
4. Cleaning.
5. Operating function test.

Content



Hyatt Regency Bangkok Sukhumvit

-  RMU Room (Floor 1)
 -  RMU. (PRI)
-  Electrical Room (Floor 3)
 -  RMU. (SEC)
-  Transformer
 -  TR.1
 -  TR.2
-  LV Switchboard MDB.1
 -  ACB MAIN FROM TR.1
 -  ACB DB. B
 -  ACB FOR.1A
 -  ACB CAP.1
 -  ACB TIE
 -  MCCB FOR ODD FLOOR
 -  MCCB DB. G
 -  MCCB DB.2
 -  MCCB SPARE
 -  MCCB SPARE
 -  MCCB SPARE
 -  MCCB MCC.WHP
 -  MCCB MCC.PP
 -  MCCB FDP.1
-  LV CAP. BANK1
-  LV Switchboard MDB.2
 -  ACB MAIN FROM TR.2
 -  ACB MCC.AC1
 -  ACB MCC.AC3
 -  MCCB FOR EVEN FLOOR
 -  MCCB SPARE
 -  MCCB SPARE
-  LV Switchboard MDB.E
 -  ACB ATS NORMAL
 -  ACB ATS EMERGENCY
 -  ACB MCCEAC2
 -  ACB CAP.2
 -  MCCB DBELV.1 ELEVATOR
 -  MCCB DBELV.3 ELEVATOR
 -  MCCB DB. E2
 -  MCCB DBELV.6 ELEVATOR
 -  MCCB DB. E6
 -  MCCB SPARE
 -  MCCB DB. E5
 -  MCCB DB. E7
 -  MCCB DB. E11
 -  MCCB MCC.ESN1



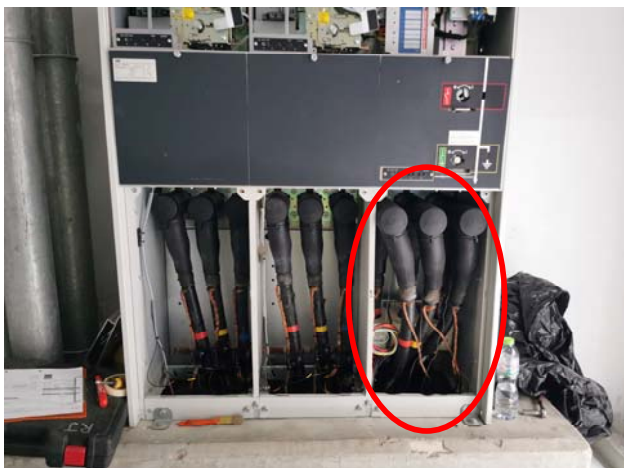
Conclusion


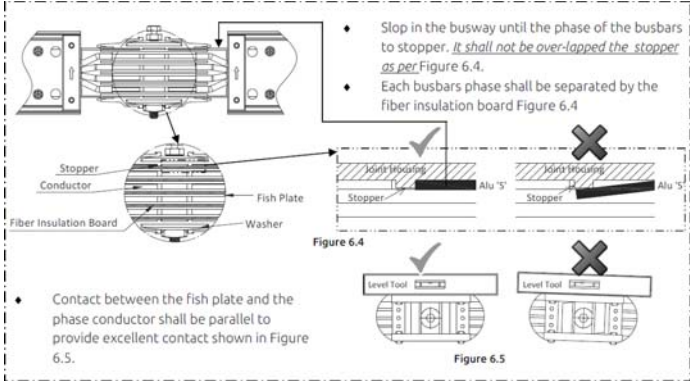
From results of test & inspection, all of defected equipments are shown in table below.

Item	Equipments	Status	Faulty list	Corrective Action	Remark
1	<ul style="list-style-type: none"> ● CAP. BANK2 / Capacitor / Brand : ABB Type : CLMD63 Qn: 60 kVar Un : 415 V 	Abnormal	- Capacitor step no.2 เสื่อมสภาพ 	ควรทำการเปลี่ยน Capacitor ใหม่ <input type="checkbox"/> แก้ไขโดยเร่งด่วน <input type="checkbox"/> แก้ไขภายใน.....เดือน <input checked="" type="checkbox"/> ควรวางแผนเปลี่ยนอุปกรณ์ <input type="checkbox"/> ตรวจสอบอุปกรณ์เป็นระยะ	รุ่นที่ใช้งาน : 

Suggestion / Recommendations

From results of test & inspection, all of suggestion/recommendations are shown in table below.

Item	Description	Detail	Suggestion/Recommendation
1	<ul style="list-style-type: none"> Ring Main Unit (PRI) / Floor 1: Brand: ABB Model: SAFEPLUS Type: CCV	<p>Ring Main Unit ชั้น 1 พบว่าหัวสายของ Feeder Outgoing "V" ซึ่งเป็นหัวสายแบบ Double connect นั้น การติดตั้งหัวสายชุด Double นี้ไม่มีตัวล็อกสายเคเบิล ซึ่งทำให้สายตึงและรั้ง ซึ่งแรงตึงสายที่ตึงนี้อาจจะส่งผลให้หัวสายหรือบุชซึ่ง Crack เสียหายหรือเกิดการ Short circuit ได้</p> 	<p>แนะนำให้ทำการแก้ไข โดยให้มีตัวล็อกสายและยึดสายให้แน่นเป็นแนวตรง เพื่อป้องกันการดึงรั้งของสาย ซึ่งอาจจะส่งผลให้หัวสายมีปัญหาและเกิดการ Short circuit ในอนาคตได้</p> 

Item	Description	Detail	Suggestion/Recommendation
2	<ul style="list-style-type: none"> BUSDUCT: Brand: POWERDUCT 	<p>ลักษณะของการติดตั้ง Jointing Busduct ตามชั้นต่างๆ Alignment ไม่ตรง (ตัวอย่างเช่นชั้น12,18,19,20,21,22,23,25) ซึ่งคู่มือการติดตั้งใช้งานของบัสดักได้แสดงให้เห็นว่าควรจะติดตั้งให้ Alignment ตรง</p> 	<p>แนะนำให้ทำการแก้ไข Alignment ของบัสดักให้ตรง ซึ่งการติดตั้งที่เอียงแบบนี้จะส่งผลให้บัสดักมีปัญหาความร้อนที่จุดต่อได้และอาจส่งผลให้เกิดการ Short circuit ของบัสดักในอนาคตได้</p> 

Photograph

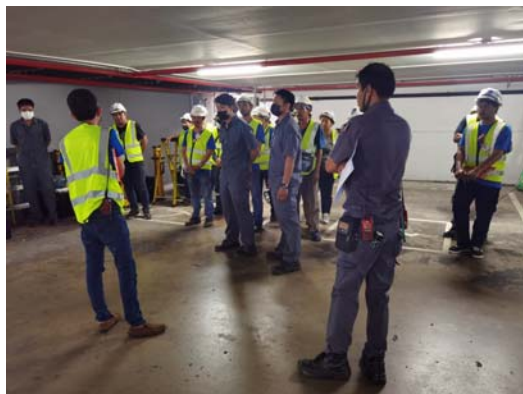


Photo 1-2 : ภาพของการประชุมชี้แจงก่อนเริ่มงาน



Photo 3-4-5-6-7 : ภาพของการตัดระบบไฟฟ้าและตรวจสอบ RMU ขณะทำ Preventive Maintenance



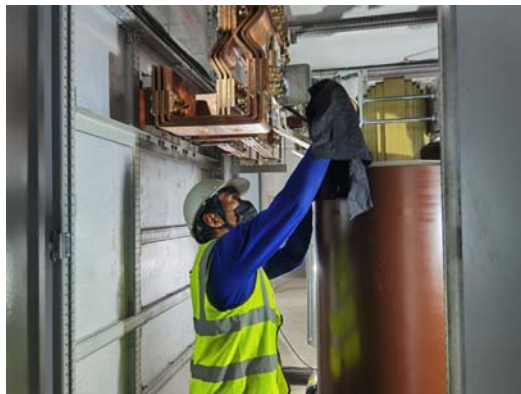


Photo 8-9-10-11 : ภาพแสดงการทำความสะอาดและทดสอบ
หม้อแปลงขณะทำ Preventive Maintenance



Photo 12-13-14-15-16-17-18-19 : ภาพแสดงการทดสอบ Air
Circuit Break ขณะทำ Preventive Maintenance







Photo 20-21-22-23-24-25-26-27 : ภาพแสดงการทำ

Preventive Maintenance ตู้ LV MDB, EMDB, Cap. Bank,
MCCB โดยการ Inspection, Cleaning, Tightening torque,
Insulation resistance test





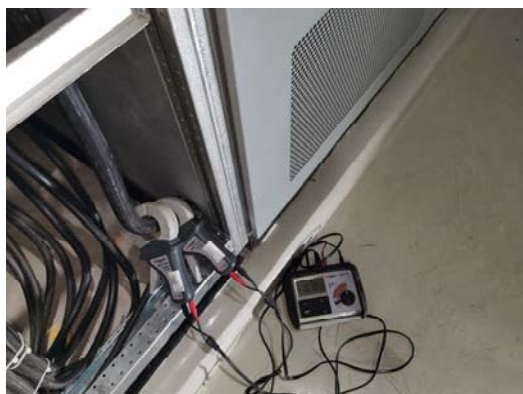


Photo 28-29-30-31 : การวัดค่า Ground ของจุดต่างๆ

Test Sheet

Here below are the reports of maintenance jobs which have been performed.



ESSI ENERGY GROUP CO., LTD.

1.RMU

ESSI ENERGY GROUP CO., LTD.



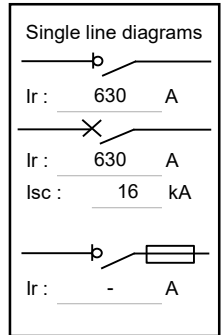
FIELD INSPECTION AND TEST RECORD

RING MAIN UNIT

PROJECT : Preventive Maintenance	LOCATION : RMU Room (Floor 1)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME : RMU. (PRI)
CUSTOMER : Hyatt Regency Bangkok Sukhumvit	FUNCTION MODULE : 3

TECHNICAL DATA

Manufacture	ABB	Rated current (Ir)	630	A
Model	SAFEPLUS	Serial Number.	501436980/3001-001	
Multifunction config.	CCV	Short-circuit current (Isc)	16	kA
Year	2016-03	Short-time withstand current		
Rated voltage (Ur)	24	• Short-time current (Ik)	21/16	kA
Insulation voltage		• Duration of short-circuit (tk)	3	s
• Power frequency w/s (Ud)	50	SF6 gas absolute pressure	0.14	MPa
• Lightning impulse w/s(Up)	125	Brand of fuses	-	
Frequency (fr)	50	Model of fuse	-	
Standards	IEC 62271-200	Rate:	-	Ir: - I1: - I3: -



Bushing of function Unit :		1 st	2 nd	3 rd	4 th	5 th
Connection Type	Plug in :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Bolted :	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VISUAL INSPECTION AND FUNCTION TEST

<input checked="" type="checkbox"/>	1 st Function	Feeder Name: INC.1	In of function: 630	A
		Function Unit: C	Type of Protection: -	

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
• Option in function	<input type="checkbox"/>	<input type="checkbox"/>	Shunt trip coil
	<input type="checkbox"/>	<input type="checkbox"/>	Motor mechanism
	<input type="checkbox"/>	<input type="checkbox"/>	Undervoltage coil

Remark : _____

<input checked="" type="checkbox"/>	2nd Function	Feeder Name: INC.2	In of function: 630	A
		Function Unit: C	Type of Protection: -	

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
• Option in function	<input type="checkbox"/>	<input type="checkbox"/>	Shunt trip coil
	<input type="checkbox"/>	<input type="checkbox"/>	Motor mechanism
	<input type="checkbox"/>	<input type="checkbox"/>	Undervoltage coil

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

RING MAIN UNIT

PROJECT	: Preventive Maintenance	LOCATION	: RMU Room (Floor 1)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: RMU. (PRI)
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FUNCTION MODULE	: 3

☒ 3rd Function Feeder Name: OUT. In of function: 630 A

Function Unit: V Type of Protection: WIC12PE

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Option in function <input checked="" type="checkbox"/> Shunt trip coil <input type="checkbox"/> Motor mechanism <input type="checkbox"/> Undervoltage coil			

Remark : _____

☐ 4th Function Feeder Name: _____ In of function: _____ A

Function Unit: _____ Type of Protection: _____

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input type="checkbox"/>	
• Option in function <input type="checkbox"/> Shunt trip coil <input type="checkbox"/> Motor mechanism <input type="checkbox"/> Undervoltage coil			

Remark : _____

☐ 5th Function Feeder Name: _____ In of function: _____ A

Function Unit: _____ Type of Protection: _____

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input type="checkbox"/>	
• Option in function <input type="checkbox"/> Shunt trip coil <input type="checkbox"/> Motor mechanism <input type="checkbox"/> Undervoltage coil			

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



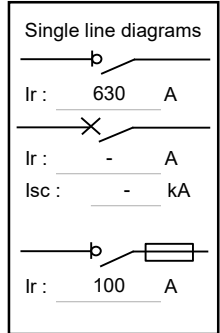
FIELD INSPECTION AND TEST RECORD

RING MAIN UNIT

PROJECT : Preventive Maintenance **LOCATION :** Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME :** RMU. (SEC)
CUSTOMER : Hyatt Regency Bangkok Sukhumvit **FUNCTION MODULE :** 3

TECHNICAL DATA

Manufacture	ABB	Rated current (Ir)	630	A
Model	SafePlus	Serial Number.	501556596/1001-001	
Multifunction config.	CFF	Short-circuit current (Isc)	-	kA
Year	2016-09	Short-time withstand current		
Rated voltage (Ur)	24	kV	• Short-time current (Ik)	16 kA
Insulation voltage			• Duration of short-circuit (tk)	3 s
• Power frequency w/s (Ud)	50	kV	SF6 gas absolute pressure	0.14 MPa
• Lightning impulse w/s(Up)	125	kV	Brand of fuses	SIBA
Frequency (fr)	50	Hz	Model of fuse	30 022 13.100
Standards	IEC 62271-200		Rate: Ir: 100 A I1: 63 kA I3: 320 A	



Bushing of function Unit :	1 st	2 nd	3 rd	4 th	5 th
Connection	Plug in :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	Bolted :	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

VISUAL INSPECTION AND FUNCTION TEST

☒ 1 st Function Feeder Name: INC.1 In of function: 630 A
 Function Unit: C Type of Protection: -

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
• Option in function	<input type="checkbox"/> Shunt trip coil	<input type="checkbox"/> Motor mechanism	<input type="checkbox"/> Undervoltage coil

 Remark :

☒ 2nd Function Feeder Name: OUT. TR.1 In of function: 630 A
 Function Unit: F Type of Protection: FUSE

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
• Option in function	<input type="checkbox"/> Shunt trip coil	<input type="checkbox"/> Motor mechanism	<input type="checkbox"/> Undervoltage coil

 Remark :

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

RING MAIN UNIT

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: RMU. (SEC)
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FUNCTION MODULE	: 3

☒ 3rd Function Feeder Name: OUT. TR.2 In of function: 630 A

Function Unit: F Type of Protection: FUSE

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
• Option in function <input type="checkbox"/> Shunt trip coil <input type="checkbox"/> Motor mechanism <input type="checkbox"/> Undervoltage coil			

Remark : _____

☐ 4th Function Feeder Name: _____ In of function: _____ A

Function Unit: _____ Type of Protection: _____

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input type="checkbox"/>	
• Option in function <input type="checkbox"/> Shunt trip coil <input type="checkbox"/> Motor mechanism <input type="checkbox"/> Undervoltage coil			

Remark : _____

☐ 5th Function Feeder Name: _____ In of function: _____ A

Function Unit: _____ Type of Protection: _____

	Checked	N/A	Notes
Cleaning Termination and Ring Main Unit	<input type="checkbox"/>	<input type="checkbox"/>	
Grease and Lubricant Mechanism Operation	<input type="checkbox"/>	<input type="checkbox"/>	
Check SF6 Indicator	<input type="checkbox"/>	<input type="checkbox"/>	
Check Voltage Indicator	<input type="checkbox"/>	<input type="checkbox"/>	
Check Connection Ground Point	<input type="checkbox"/>	<input type="checkbox"/>	
Function Operation test Manual On/Off	<input type="checkbox"/>	<input type="checkbox"/>	
Function test trip Mitop (By Protection Relay)	<input type="checkbox"/>	<input type="checkbox"/>	
• Option in function <input type="checkbox"/> Shunt trip coil <input type="checkbox"/> Motor mechanism <input type="checkbox"/> Undervoltage coil			

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	



ESSI ENERGY GROUP CO., LTD.

2.TRANSFORMER

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

TRANSFORMER

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	TR. NAME	: TR.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit		

TECHNICAL DATA

Manufacture	ABB	Serial No.	1LKR1245421
Type	CAST RESIN	Type of cooling	AN/AF
Standard	IEC 60076-11	Weight	5300 kg.
Year of manufacture	2016.10	Tap position	1
Rated frequency	50 Hz	LI withstand (HV/LV)	125 / - kV
Vector-group symbol	Dyn11	AC withstand (HV/LV)	50 / 3 kV
Rated power (AN/AF)	2500/3500 KVA	Impedance (AN/AF)	6.04 / 8.46 %
Rated voltage HV	24000 V	Insulation Class (HV/LV)	F / F
Rated voltage LV	416 V	IP Code of Enclosure	IP00
Rated current HV (AN/AF)	60.1/84.2 A	C / E / F Class	C1 / E2 / F1
Rated current LV (AN/AF)	3469.7/4857.5 A	Temp. Rise (HV/LV)	100 / 100 K

TAP	HV	LV
1	24000	416/240
2	23400	416/240
3	22800	416/240
4	22200	416/240
5	21600	416/240

VISUAL INSPECTION AND FUNCTION TEST

	Pass	Not pass
1. Transformer installed according to design and manufacturer's instructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Transformer undamaged and clean .	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Check that all valves are set at right position	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Check that the distance between phases and phase to earth are sufficient.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Bushing undamaged and clean.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Check that all air release plugs vented.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Wiring and cabling check, cable and terminal fastened properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSULATION RESISTANCE MEASUREMENT

Instrument : Megger Model MIT515 Serial no. : 13117

Test connection	Test voltage (Vdc)	Insulation resistance (MΩ)	Criteria (MΩ)
HV to GND	2500	57,000	≥ 1000
HV to LV	2500	65,800	≥ 1000

Standard Reference : IEC 60076

Humidity : 55 % Amb. Temp. : 29 °C

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

TRANSFORMER

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **TR. NAME** : TR.1
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

TEMPERATURE MONITORING

Manufacture : NEURON TECH
Type : KN804

Setting :
Alarm = 110 °C Trip = 130 °C Fan (On) = 90 °C Fan (Off) = 80 °C

TRIP TEST

Function	Result		
	Pass	Not pass	N/A
Temperature trip to <input type="checkbox"/> RMU <input checked="" type="checkbox"/> ACB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

TRANSFORMER

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	TR. NAME	: TR.2
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit		

TECHNICAL DATA

Manufacture	ABB	Serial No.	1LKR1245422
Type	CAST RESIN	Type of cooling	AN/AF
Standard	IEC 60076-11	Weight	5300 kg.
Year of manufacture	2016.10	Tap position	1
Rated frequency	50 Hz	LI withstand (HV/LV)	125 / - kV
Vector-group symbol	Dyn11	AC withstand (HV/LV)	50 / 3 kV
Rated power (AN/AF)	2500/3500 KVA	Impedance (AN/AF)	6.01 / 8.41 %
Rated voltage HV	24000 V	Insulation Class (HV/LV)	F / F
Rated voltage LV	416 V	IP Code of Enclosure	IP00
Rated current HV (AN/AF)	60.1/84.2 A	C / E / F Class	C1 / E2 / F1
Rated current LV (AN/AF)	3469.7/4857.5 A	Temp. Rise (HV/LV)	100 / 100 K

TAP	HV	LV
1	24000	416/240
2	23400	416/240
3	22800	416/240
4	22200	416/240
5	21600	416/240

VISUAL INSPECTION AND FUNCTION TEST

	Pass	Not pass
1. Transformer installed according to design and manufacturer's instructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Transformer undamaged and clean .	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Check that all valves are set at right position	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Check that the distance between phases and phase to earth are sufficient.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Bushing undamaged and clean.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Check that all air release plugs vented.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Wiring and cabling check, cable and terminal fastened properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSULATION RESISTANCE MEASUREMENT

Instrument : Megger Model MIT515 Serial no. : 13117

Test connection	Test voltage (Vdc)	Insulation resistance (MΩ)	Criteria (MΩ)
HV to GND	2500	50,800	≥ 1000
HV to LV	2500	46,800	≥ 1000

Standard Reference : IEC 60076

Humidity : 55 % Amb. Temp. : 29 °C

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

TRANSFORMER

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **TR. NAME** : TR.2
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

TEMPERATURE MONITORING

Manufacture : NEURON TECH
Type : KN804

Setting :

	Alarm		Trip		Fan (On)		Fan (Off)
=	110 °C	=	130 °C	=	90 °C	=	80 °C

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	



ESSI ENERGY GROUP CO., LTD.

3.MDB.1

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

LV SWITCHBOARD

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : MDB.1
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION

	Normal	Abnormal	
1. Cleaning all panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Re-torque the busbar at main incoming and between panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Re-torque at connection of MCCB and busbar or cable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Insulation test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Metering check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. General condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Grounding condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. Busbar check and re-torque	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Fuse and fuse bases check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

INSULATION RESISTANCE MEASUREMENT

Instrument : Megger Model MIT515 Serial no. : 13117

Test connection	Test voltage (Vdc)	Insulation resistance (MΩ)	Minimum Insulation Resistance
A-B	1,000	911	1.0 MΩ
B-C		884	
C-A		1,278	
A-Gnd.		1,248	
B-Gnd.		1,243	
C-Gnd.		1,254	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: FROM TR.1

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E6.2H		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	6300	A	<input type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BGC1008745	Icu	<input type="checkbox"/> 85 kA	<input checked="" type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	24	
Short time (I2)	4	
Short time delay (T2)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	6	
Ground fault (I4)	0.3	
Ground fault time delay (T4)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: FROM TR.1

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	24.000	24.03	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	5xI2	1.600	1.607	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.019	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.504	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	13	516	1550
B		13	516	
C		12	476	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A :	Interrupter B :	Interrupter C :	
500	> 200,000	> 200,000	> 200,000	1.0 M Ω
	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ PASS ☐ NOT PASS

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: DB.B

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	1250	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BG9B001531	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	0.8	
Long time delay (T1)	12	
Short time (I2)	4	
Short time delay (T2)	0.3	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	6	
Ground fault (I4)	0.3	
Ground fault time delay (T4)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: DB.B

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.023	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	5xI2	1.200	1.205	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.504	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	21	33	176
B		20	31	
C		20	31	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : > 200,000	Interrupter B : > 200,000	Interrupter C : > 200,000	
500	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	1.0 M Ω
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ PASS ☐ NOT PASS

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: FOR 1A

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	2500	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BFCB001520	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	12	
Short time (I2)	4	
Short time delay (T2)	0.3	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	6	
Ground fault (I4)	0.3	
Ground fault time delay (T4)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: FOR 1A

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.033	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	5xI2	1.200	1.206	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	18	113	550
B		18	113	
C		20	125	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : > 200,000	Interrupter B : > 200,000	Interrupter C : > 200,000	
500	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	1.0 M Ω
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ PASS ☐ NOT PASS

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: CAP.1

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	1600	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BG9B001622	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	12	
Short time (I2)	4	
Short time delay (T2)	0.3	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	6	
Ground fault (I4)	0.3	
Ground fault time delay (T4)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: CAP.1

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.027	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	5xI2	1.200	1.207	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.019	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.503	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	16	41	288
B		17	44	
C		19	49	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : > 200,000	Interrupter B : > 200,000	Interrupter C : > 200,000	
500	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	1.0 M Ω
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ **PASS** ☐ **NOT PASS**

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: TIE ACB

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E6.2H		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	6300	A	<input type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BGC1008744	Icu	<input type="checkbox"/> 85 kA	<input checked="" type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other _____
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other _____
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other _____
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other _____

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	24	
Short time (I2)	4	
Short time delay (T2)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	6	
Ground fault (I4)	0.3	
Ground fault time delay (T4)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: TIE ACB

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	24.000	24.03	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	5xI2	1.600	1.608	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	12	476	1550
B		13	516	
C		12	476	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : > 200,000	Interrupter B : > 200,000	Interrupter C : > 200,000	1.0 M Ω
500	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ PASS ☐ NOT PASS

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

MOLD CASE CIRCUIT BREAKER

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : MDB.1
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION AND FUNCTION TEST

Checked

1. Mold case Circuit breaker undamaged and clean
2. All Fastenings checked

☒
☒

Feeder Name	Manufacture	Type	Rating (A)	Test trip	
				Pass	Not Pass
FOR ODD FLOOR	ABB	SACE T6H800	800	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.G	ABB	SACE T6H800	800	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.2	ABB	Tmax T5H400	400	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPARE	ABB	Tmax T5H400	400	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPARE	ABB	Tmax T5H400	400	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPARE	ABB	Tmax T5H400	400	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MCC.WHP	ABB	Tmax XT4H160	160	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MCC.PP	ABB	Tmax XT1H160	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FDP.1	ABB	Tmax T7H1000	1000	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remark :

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

MOLD CASE CIRCUIT BREAKER

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: FDP.1

1. TECHNICAL DATA

Manufacture	ABB	Ampere Trip (In)	1000 A
Type	Tmax T7H1000	Electronic Trip Device	SACE PR331/P-LSIG

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value
Long time (I1)	1
Long time delay (T1)	12
Short time (I2)	4.2
Short time delay (T2)	0.3
Instantaneous (I3)	6
Ground fault (I4)	0.3
Ground fault time delay (T4)	0.4

☒ $t=k/I^2$ ☐ $t=k$

☒ $t=k/I^2$ ☐ $t=k$

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator	
				Passed	Failed
Long time	3xI1	12.000	12.011	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Short time	5xI2	1.200	1.196	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Instantaneous	10xI3	<0.03	0.013	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ground fault	2xI4	0.500	0.499	<input checked="" type="checkbox"/>	<input type="checkbox"/>

$$t = (9t_1) / (I_f/I_1)^2$$

$$t = (100t_2) / (I_f)^2$$

$$t < 30 \text{ ms}$$

$$t = 2 / (I_f/I_4)^2$$

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

CAPACITOR BANK

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : CAP.1
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

TECHNICAL DATA

Capacitor Manufacture	ABB	Power Factor Controller Mfg.	ABB
Type	CLMD63	Power Factor Controller Model.	RVC12
Rated Power	60 kVar	Serial No.	336288
Rated voltage	415 V	PF.Setting	0.95
Rated frequency	50 Hz	Power Fuse Rate	160 A
Magnetic Type	ABB / AF140-30		

VISUAL INSPECTION AND FUNCTION TEST

- Equipment and steel frame undamaged and cleaned
- Name plate data is compliance with drawing and specification
- All Fastenings checked
- Safety clearance checked

Checked

☒
☒
☒
☒

VOLTAGE MEASUREMENT

L1-L2 400 V. L2-L3 400 V. L3-L1 400 V.

MEASUREMENT

Instrument : Digital multimeter Fluke model 179

Step No.	Rate Power (kVar)	Rate Fuse (A)	Measurement Capacitance (μF)			Result
			Phase A-B	Phase B-C	Phase C-A	
1	60	160	592	591	591	PASSED
2	60	160	592	591	591	PASSED
3	60	160	592	592	592	PASSED
4	60	160	591	590	591	PASSED
5	60	160	594	593	594	PASSED
6	60	160	591	591	591	PASSED
7	60	160	591	590	591	PASSED
8	60	160	593	593	594	PASSED
9	60	160	592	592	592	PASSED
10	60	160	592	599	592	PASSED
11	60	160	590	590	590	PASSED
12	60	160	588	589	580	PASSED

Reference : IEC 60831-1 Standards (-5%, +15% for unit and banks up to 100 kVA / -0%, +10% for unit and banks above 100 kVA)

Reference from Formula

Normal Current = $\frac{\text{kVar}}{V_{L-L} \times \sqrt{3}}$
Rated normal current = 83.47 A (ควรมีค่าอยู่ระหว่าง 75.1 - 91.8 A)
Normal Capacitance = 554.47 μF (ควรมีค่าอยู่ระหว่าง 499.0 - 609.9 μF)

Remark :

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	



ESSI ENERGY GROUP CO., LTD.

4.MDB.2

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

LV SWITCHBOARD

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : MDB.2
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION

	Normal	Abnormal
1. Cleaning all panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Re-torque the busbar at main incoming and between panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Re-torque at connection of MCCB and busbar or cable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Insulation test	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Metering check	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. General condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Grounding condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Busbar check and re-torque	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Fuse and fuse bases check	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSULATION RESISTANCE MEASUREMENT

Instrument : Megger Model MIT515 Serial no. : 13117

Test connection	Test voltage (Vdc)	Insulation resistance (MΩ)	Minimum Insulation Resistance
A-B	1,000	5,410	1.0 MΩ
B-C		2,220	
C-A		6,250	
A-Gnd.		2,530	
B-Gnd.		2,250	
C-Gnd.		2,330	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.2
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: FROM TR.2

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E6.2H		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	6300	A	<input type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BGC1008743	Icu	<input type="checkbox"/> 85 kA	<input checked="" type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	24	
Short time (I2)	4	
Short time delay (T2)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	6	
Ground fault (I4)	0.3	
Ground fault time delay (T4)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.2
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: FROM TR.2

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	24.000	24.024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	5xI2	1.600	1.604	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.016	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.504	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	11	437	1550
B		13	516	
C		11	437	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : > 200,000	Interrupter B : > 200,000	Interrupter C : > 200,000	
500	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	1.0 M Ω
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ PASS ☐ NOT PASS

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.2
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: MCC.AC1

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	1250	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BGA3000275	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	12	
Short time (I2)	5	
Short time delay (T2)	0.3	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	7	
Ground fault (I4)	0.2	
Ground fault time delay (T4)	0.2	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.2
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: MCC.AC1

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.027	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	6xI2	0.833	0.835	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	8xI3	<0.03	0.018	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.502	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	19	30	176
B		19	30	
C		18	28	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : > 200,000	Interrupter B : > 200,000	Interrupter C : > 200,000	
500	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	1.0 M Ω
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ PASS ☐ NOT PASS

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.2
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: MCC.AC3

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	1250	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BGAB001775	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	12	
Short time (I2)	5	
Short time delay (T2)	0.3	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	7	
Ground fault (I4)	0.2	
Ground fault time delay (T4)	0.2	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.2
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: MCC.AC3

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.032	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	6xI2	0.833	0.839	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	8xI3	<0.03	0.017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.503	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	17	27	176
B		17	27	
C		18	28	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A :	Interrupter B :	Interrupter C :	
500	> 200,000	> 200,000	> 200,000	1.0 M Ω
	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ **PASS** ☐ **NOT PASS**

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

MOLD CASE CIRCUIT BREAKER

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : MDB.2
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION AND FUNCTION TEST

Checked

1. Mold case Circuit breaker undamaged and clean
2. All Fastenings checked

☒
☒

Feeder Name	Manufacture	Type	Rating (A)	Test trip	
				Pass	Not Pass
FOR EVEN FLOOR	ABB	SACE T6H800	800	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPARE	ABB	Tmax XT4H250	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPARE	ABB	Tmax XT4H250	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

CAPACITOR BANK

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: CAP.2
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit		

TECHNICAL DATA

Capacitor Manufacture	ABB	Power Factor Controller Mfg.	ABB
Type	CLMD63	Power Factor Controller Model.	RVC12
Rated Power	60 kVar	Serial No.	336459
Rated voltage	415 V	PF.Setting	0.95
Rated frequency	50 Hz	Power Fuse Rate	160 A
Magnetic Type	ABB / AF140-30		

VISUAL INSPECTION AND FUNCTION TEST

1. Equipment and steel frame undamaged and cleaned	Checked <input checked="" type="checkbox"/>
2. Name plate data is compliance with drawing and specification	Checked <input checked="" type="checkbox"/>
3. All Fastenings checked	Checked <input checked="" type="checkbox"/>
4. Safety clearance checked	Checked <input checked="" type="checkbox"/>

VOLTAGE MEASUREMENT

L1-L2 400 V. L2-L3 400 V. L3-L1 400 V.

MEASUREMENT

Instrument : Digital multimeter Fluke model 179

Step No.	Rate Power (kVar)	Rate Fuse (A)	Measurement Capacitance (μF)			Result
			Phase A-B	Phase B-C	Phase C-A	
1	60	160	577	580	578	PASSED
2	60	160	493	550	552	FAILED FROM DETERIORATE
3	60	160	576	576	576	PASSED
4	60	160	576	578	575	PASSED
5	60	160	578	578	577	PASSED
6	60	160	578	575	577	PASSED
7	60	160	578	578	578	PASSED
8	60	160	573	572	571	PASSED
9	60	160	577	576	576	PASSED
10	60	160	578	578	578	PASSED
11	60	160	576	573	575	PASSED
12	60	160	578	574	575	PASSED

Reference : IEC 60831-1 Standards (-5%, +15% for unit and banks up to 100 kVA / -0%, +10% for unit and banks above 100 kVA)

Reference from Formula

Normal Current	=	$\frac{kVar}{V_{L-L} \times \sqrt{3}}$	
Rated normal current	=	83.47	A (ควรมีค่าอยู่ระหว่าง 75.1 - 91.8 A)
Normal Capacitance	=	554.47	μF (ควรมีค่าอยู่ระหว่าง 499.0 - 609.9 μF)

Remark : - Capacitor step no.2 เสื่อมสภาพ

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	



ESSI ENERGY GROUP CO., LTD.

5.MDB.E

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

LV SWITCHBOARD

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : MDB.E
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION

	Normal	Abnormal	
1. Cleaning all panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Re-torque the busbar at main incoming and between panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Re-torque at connection of MCCB and busbar or cable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Insulation test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Metering check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. General condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Grounding condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. Busbar check and re-torque	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Fuse and fuse bases check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

INSULATION RESISTANCE MEASUREMENT

Instrument : Megger Model MIT515 Serial no. : 13117

Test connection	Test voltage (Vdc)	Insulation resistance (MΩ)	Minimum Insulation Resistance
A-B	1,000	314	1.0 MΩ
B-C		448	
C-A		171	
A-Gnd.		1,830	
B-Gnd.		1,700	
C-Gnd.		1,633	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.E
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: NORMAL ACB

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	2500	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BG7B001321	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input checked="" type="checkbox"/> Fixed	<input type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value
Long time (I1)	0.8
Long time delay (T1)	12
Short time (I2)	-
Short time delay (T2)	-
Instantaneous (I3)	6
Ground fault (I4)	-
Ground fault time delay (T4)	-

☐ $t=k/I^2$ ☐ $t=k$

☐ $t=k/I^2$ ☐ $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.E
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: NORMAL ACB

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.028	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	-	-	-	<input type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.016	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	-	-	-	<input type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	15	94	267
B		13	81	
C		13	81	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : -	Interrupter B : -	Interrupter C : -	
500	A to B : -	B to C : -	C to A : -	1.0 M Ω
	A to G : -	B to G : -	C to G : -	

Reference : IEC 60364-6 Standards

Humidity : - % Amb. Temp. : - °C

OVERALL TEST RESULT

☒ **PASS**

☐ **NOT PASS**

Remark :

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.E
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: EMERGENCY ACB (FROM GCP.1)

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	2500	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BG8B001218	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input checked="" type="checkbox"/> Fixed	<input type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value
Long time (I1)	0.8
Long time delay (T1)	12
Short time (I2)	-
Short time delay (T2)	-
Instantaneous (I3)	6
Ground fault (I4)	-
Ground fault time delay (T4)	-

☐ $t=k/I^2$ ☐ $t=k$

☐ $t=k/I^2$ ☐ $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.E
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: EMERGENCY ACB (FROM GCP.1)

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.033	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/11)^2$
Short time	-	-	-	<input type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	-	-	-	<input type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/14)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	20	125	267
B		19	119	
C		17	106	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : -	Interrupter B : -	Interrupter C : -	
500	A to B : -	B to C : -	C to A : -	1.0 M Ω
	A to G : -	B to G : -	C to G : -	

Reference : IEC 60364-6 Standards

Humidity : - % Amb. Temp. : - °C

OVERALL TEST RESULT ☒ PASS ☐ NOT PASS

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.E
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: MCCEAC2

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	1250	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BGAB001776	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	12	
Short time (I2)	5	
Short time delay (T2)	0.3	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	7	
Ground fault (I4)	0.2	
Ground fault time delay (T4)	0.2	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.E
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: MCCEAC2

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.029	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	6xI2	0.833	0.835	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	8xI3	<0.03	0.018	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	13	19	176
B		13	17	
C		12	18	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A :	Interrupter B :	Interrupter C :	
500	> 200,000	> 200,000	> 200,000	1.0 M Ω
	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ **PASS** ☐ **NOT PASS**

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.E
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: CAP.2

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	1600	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BG9B001624	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input type="checkbox"/> Fixed	<input checked="" type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	1	
Long time delay (T1)	12	
Short time (I2)	4	
Short time delay (T2)	0.3	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$
Instantaneous (I3)	6	
Ground fault (I4)	0.3	
Ground fault time delay (T4)	0.4	<input checked="" type="checkbox"/> $t=k/I^2$ <input type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: MDB.E
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: CAP.2

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.031	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	5xI2	1.200	1.205	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.018	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.500	0.501	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	18	46	288
B		18	46	
C		20	51	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : > 200,000	Interrupter B : > 200,000	Interrupter C : > 200,000	
500	A to B : > 200,000	B to C : > 200,000	C to A : > 200,000	1.0 M Ω
	A to G : > 200,000	B to G : > 200,000	C to G : > 200,000	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

OVERALL TEST RESULT ☒ PASS ☐ NOT PASS

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

MOLD CASE CIRCUIT BREAKER

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : MDB.E
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION AND FUNCTION TEST

Checked

1. Mold case Circuit breaker undamaged and clean
2. All Fastenings checked

☒
☒

Feeder Name	Manufacture	Type	Rating (A)	Test trip	
				Pass	Not Pass
DBELV.1 ELEVATOR	ABB	Tmax XT1H160	80	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DBELV.3 ELEVATOR	ABB	Tmax XT1H160	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.E2	ABB	Tmax XT1H160	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DBELV.6 ELEVATOR	ABB	Tmax XT1H160	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.E6	ABB	Tmax XT1H160	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPARE	ABB	Tmax XT1H160	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.E5	ABB	Tmax XT4H250	200	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.E7	ABB	Tmax XT4H250	200	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.E11	ABB	Tmax XT4H250	200	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MCC.ESN1	ABB	SACE T5H630	630	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DBELV.2 ELEVATOR	ABB	Tmax XT4H160	80	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DBELV.4 ELEVATOR	ABB	Tmax XT4H250	200	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPARE	ABB	Tmax XT4H160	125	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.EB	ABB	Tmax XT4H250	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.EG	ABB	Tmax XT4H250	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.E3	ABB	Tmax XT4H160	160	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DB.E4	ABB	Tmax XT4H250	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remark :

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	



ESSI ENERGY GROUP CO., LTD.

6.FDP.1

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

LV SWITCHBOARD

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : FDP.1
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION

	Normal	Abnormal	
1. Cleaning all panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Re-torque the busbar at main incoming and between panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Re-torque at connection of MCCB and busbar or cable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Insulation test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Metering check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. General condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Grounding condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. Busbar check and re-torque	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Fuse and fuse bases check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

INSULATION RESISTANCE MEASUREMENT

Instrument : Megger Model MIT515 Serial no. : 13117

Test connection	Test voltage (Vdc)	Insulation resistance (MΩ)	Minimum Insulation Resistance
A-B	1,000	72,200	1.0 MΩ
B-C		40,120	
C-A		46,300	
A-Gnd.		3,440	
B-Gnd.		3,500	
C-Gnd.		4,320	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

MOLD CASE CIRCUIT BREAKER

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : FDP.1
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION AND FUNCTION TEST

Checked

1. Mold case Circuit breaker undamaged and clean
2. All Fastenings checked

☒
☒

Feeder Name	Manufacture	Type	Rating (A)	Test trip	
				Pass	Not Pass
FROM MDB.1 (ATS Normal)	ABB	Tmax T7H1000	1000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FROM GCP.1 (ATS Emergency)	ABB	Tmax T7H1000	1000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MCC.EFP	ABB	SACE T6H800	800	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DBEL V.5	ABB	Tmax XT4H160	125	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MCC.EACR	ABB	Tmax XT4H160	125	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MCC.EAC2	ABB	Tmax XT2H160	50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MCC.EAC6	ABB	Tmax XT2H160	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPARE	ABB	Tmax XT2H160	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	



ESSI ENERGY GROUP CO., LTD.

7.GCP.1

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

LV SWITCHBOARD

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : GCP.1
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION

	Normal	Abnormal	
1. Cleaning all panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Re-torque the busbar at main incoming and between panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Re-torque at connection of MCCB and busbar or cable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Insulation test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Metering check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. General condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Grounding condition check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. Busbar check and re-torque	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Fuse and fuse bases check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

INSULATION RESISTANCE MEASUREMENT

Instrument : Megger Model MIT515 Serial no. : 13117

Test connection	Test voltage (Vdc)	Insulation resistance (MΩ)	Minimum Insulation Resistance
A-B	1,000	6,710	1.0 MΩ
B-C		545	
C-A		1,330	
A-Gnd.		410	
B-Gnd.		451	
C-Gnd.		402	

Reference : IEC 60364-6 Standards

Humidity : 55 % Amb. Temp. : 29 °C

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: GCP.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: TO MDB.E

TECHNICAL DATA

Manufacture	ABB	Trip Device	<input checked="" type="checkbox"/> EKIP Dip	<input type="checkbox"/> EKIP Touch
Type	SACE E2.2N		<input type="checkbox"/> PR121/P	<input type="checkbox"/> PR122/P
Ampere Trip (In)	2500	A	<input checked="" type="checkbox"/> 66 kA	<input type="checkbox"/> 75 kA
Serial no.	BGC3000404	Icu	<input type="checkbox"/> 85 kA	<input type="checkbox"/> 100 kA
Ue	690	V	<input checked="" type="checkbox"/> 3P	<input type="checkbox"/> 4P
Frequency	50/60	Hz	<input checked="" type="checkbox"/> Fixed	<input type="checkbox"/> Draw-out
Standard	IEC 60947-2	Frame		

1. Accessories

1.1 Under voltage trip device (MN)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.2 Shunt trip device (MX)	<input type="checkbox"/> 100/130 VAC/VDC	<input checked="" type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.3 Closing coil (XF)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other
1.4 Motor charger device (MCH)	<input type="checkbox"/> 100/130 VAC/VDC	<input type="checkbox"/> 200-250 VAC/VDC	<input type="checkbox"/> Other

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value	
Long time (I1)	0.8	
Long time delay (T1)	12	
Short time (I2)	6	
Short time delay (T2)	0.1	<input type="checkbox"/> $t=k/I^2$ <input checked="" type="checkbox"/> $t=k$
Instantaneous (I3)	6	
Ground fault (I4)	0.8	
Ground fault time delay (T4)	0.4	<input type="checkbox"/> $t=k/I^2$ <input checked="" type="checkbox"/> $t=k$

3. Operating and Inspect

Operating and Inspect	Result		
	Pass	Not pass	N/A
Manual charge spring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual closing operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual opening operation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check moving part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check LV auxiliaries plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning arc chute chamber	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of electronic trip device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

AIR CIRCUIT BREAKER (ABB)

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room (Floor 3)
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: GCP.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: TO MDB.E

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator		
				Passed	Failed	
Long time	3xI1	12.000	12.028	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = (9t1) / (If/I1)^2$
Short time	7xI2	-	-	<input type="checkbox"/>	<input type="checkbox"/>	$t = (100t2) / (If)^2$
Instantaneous	7xI3	<0.03	0.019	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t < 30 \text{ ms}$
Ground fault	2xI4	0.400	0.402	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$t = 2 / (If/I4)^2$

5. Testing Result of Contact Resistance

Instrument : Chauvin Model C.A 6240 Serial no. : 162470

Phase	Test current (Adc)	Contact resistance ($\mu\Omega$)	Calculate Watt loss (Watts)	Accept. Watt loss (Watts)
A	10	15	94	267
B		13	81	
C		14	88	
N				

6. Testing Result of Insulation Resistance

Instrument : Megger Model MIT515 Serial no. : 13117

Test Voltage (Vdc)	Insulation Resistance (M Ω)			Minimum Insulation Resistance
	Interrupter A : -	Interrupter B : -	Interrupter C : -	
500	A to B : -	B to C : -	C to A : -	1.0 M Ω
	A to G : -	B to G : -	C to G : -	

Reference : IEC 60364-6 Standards

Humidity : - % Amb. Temp. : - °C

OVERALL TEST RESULT ☒ **PASS** ☐ **NOT PASS**

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

MOLD CASE CIRCUIT BREAKER

PROJECT : Preventive Maintenance **LOCATION** : Electrical Room (Floor 3)
ERECTION SITE : Hyatt Regency Bangkok Sukhumvit **CUBICLE NAME** : GCP.1
CUSTOMER : Hyatt Regency Bangkok Sukhumvit

VISUAL INSPECTION AND FUNCTION TEST

Checked

1. Mold case Circuit breaker undamaged and clean
2. All Fastenings checked

☒
☒

Feeder Name	Manufacture	Type	Rating (A)	Test trip	
				Pass	Not Pass
FDP.1	ABB	Tmax T7H1000	1000	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	

ESSI ENERGY GROUP CO., LTD.



FIELD INSPECTION AND TEST RECORD

MOLD CASE CIRCUIT BREAKER

PROJECT	: Preventive Maintenance	LOCATION	: Electrical Room
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: GCP.1
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit	FEEDER	: TO FDP.1

1. TECHNICAL DATA

Manufacture	ABB	Ampere Trip (In)	1000 A
Type	Tmax T7H1000	Electronic Trip Device	SACE PR331/P-LSIG

2. Electronic Trip Device Setting

Electronic trip device setting	Setting value
Long time (I1)	1
Long time delay (T1)	144
Short time (I2)	OFF
Short time delay (T2)	0.1
Instantaneous (I3)	4
Ground fault (I4)	OFF
Ground fault time delay (T4)	0.1

☐ $t=k/I^2$ ☒ $t=k$

☐ $t=k/I^2$ ☒ $t=k$

4. Testing Result of Electronic Trip Device

Instrument : Test kit ACB ABB Serial no. : -

Function	Inject Current	Should be Time (Sec)	Operating Time (Sec)	Trip Indicator	
				Passed	Failed
Long time	3xI1	144.0	144.102	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Short time	-	-	-	<input type="checkbox"/>	<input type="checkbox"/>
Instantaneous	5xI3	<0.03	0.015	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ground fault	-	-	-	<input type="checkbox"/>	<input type="checkbox"/>

$$t = (9t1) / (If/I1)^2$$

$$t = (100t2) / (If)^2$$

$$t < 30 \text{ ms}$$

$$t = 2 / (If/I4)^2$$

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	



ESSI ENERGY GROUP CO., LTD.

8.GROUND

ESSI ENERGY GROUP CO., LTD.



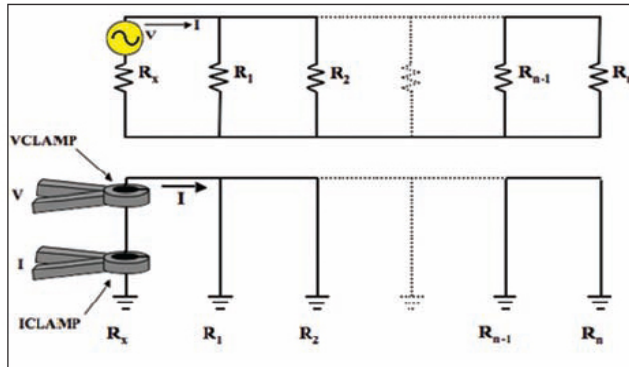
FIELD INSPECTION AND TEST RECORD

GROUND RESISTANCE

PROJECT : Preventive Maintenance ERECTION SITE : Hyatt Regency Bangkok Sukhumvit CUSTOMER : Hyatt Regency Bangkok Sukhumvit	LOCATION : Electrical Room (Floor 3) CUBICLE NAME : Ground Point
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GROUNDING RESISTANCE MEASUREMENT

Instrument : Megger DET4TCR2



Item	Location	Grounding Resistance (Ω)	Recommends
1	TR.1	2.17	$< 5 \Omega$
2	TR.2	0.10	
3	MDB.1	0.10	
4	MDB.2	0.10	

Reference : NFPA & IEEE Standards Recommends a ground resistance value of 5.0 Ohm or less

Remark : _____

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	28 July 2023	



PREVENTIVE MAINTENANCE LIGHTNING ARRESTER

SITE:

HYATT REGENCY BANGKOK SUKHUMVIT

CUSTOMER:

HYATT REGENCY BANGKOK SUKHUMVIT

Preventive Maintenance Report 1 December 2023

ESSI ENERGY GROUP CO., LTD.

1 Soi Ramkhamhaeng 164 Sub 16,
Minburi Sub-District
Minburi District
Bangkok 10510
Hotline 0881696156

Report prepared by: Apichat M.

Date: **1 December 2023**

Introduction

This test and inspection is preventive maintenance lightning arrester (Early Streamer Emission) at **Hyatt Regency Bangkok Sukhumvit**.

The objective of this preventive maintenance is to ensure that an equipment still is in good condition and to find out any damaged and / or unsafe condition.

This test and inspection were performed during **December 1, 2023** all test & inspection result and any comment have been recorded in this test report.

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Scope of Work


Lightning Arrester (Early Streamer Emission)

- 1) Inspect for physical damage, broken insulation.
- 2) Tightness of connection of cable and grounding
- 3) Check ground connection.
- 4) Cleaning.
- 5) Ground impedance testing at ground test box

Content

Hyatt Regency Bangkok Sukhumvit

 Roof Floor

 Ground

Conclusion

From results of test & inspection, all of defected equipments are shown in table below.

Item	Equipments	Status	Faulty list	Corrective Action	Remark

Suggestion / Recommendations

From results of test & inspection, all of suggestion/recommandations are shown in table below.

Item	Description	Detail	Suggestion/Recommendation

Photograph



Photo 1-2- : ภาพแสดงตรวจสอบและขันแน่นสายต่อลงดิน
ของระบบล่อฟ้า





Photo 3-4 : ภาพแสดงการวัดค่า Ground ของระบบหล่อฟ้า



Test Sheet

Here below are the reports of maintenance jobs which have been performed.

Grounding Resistance

ESSI ENERGY GROUP CO., LTD.



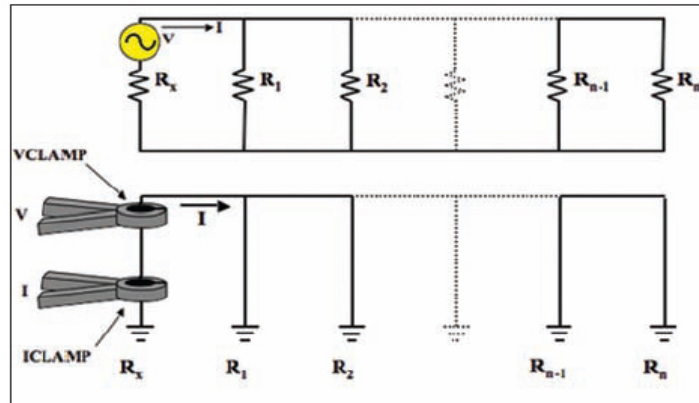
FIELD INSPECTION AND TEST RECORD

GROUND RESISTANCE

PROJECT	: Preventive Maintenance Lightning Arrester	LOCATION	: Roof Top
ERECTION SITE	: Hyatt Regency Bangkok Sukhumvit	CUBICLE NAME	: Ground Point
CUSTOMER	: Hyatt Regency Bangkok Sukhumvit		

GROUNDING RESISTANCE MEASUREMENT

Instrument : Metrel MI3123



Item	Location	Grounding Resistance (Ω)	Recommends
1	Lightning Arrester	0.05	< 5 Ω

Reference : NFPA & IEEE Standards Recommends a ground resistance value of 5.0 Ohm or less

Remark :

Responsibility	Tested by	Witnessed by
Company	ESSI ENERGY GROUP CO., LTD.	
Name	Apichat Moonee	
Signature	<i>Apichat Moonee</i>	
Date	1 December 2023	