

2023

B&R
ELECTRIC

Electrical Inspection using Infrared
Thermography

Reporter: B&R Licensed Thermographer
January 3, 2023



123 ANY STREET, TORONTO

B&R Licensed Thermographer



We were contracted to perform a non-destructive electrical infrared thermography inspection on all electrical apparatus and motors at 123 Any Street, Toronto on January 3, 2023.

The purpose of the inspection was to identify any thermal patterns and temperatures that may indicate electrical wear or failure. This was done by utilizing the “FLIR” t640 handheld thermal imaging system.

*Infrared inspections are used to locate areas in need of maintenance. These anomalies can be located with infrared imaging systems because of their increased or decreased temperature. The temperature rise of a detected anomaly is measured and then the I.R. and the digital reference images are taken for documentation. The report will contain references and notes to demonstrate the appropriate working condition of some equipment. Any anomalies are labeled as faults within the report. **There were 0 faults, 8 references and 0 notes to report in this inspection.***

PRIORITY CHART

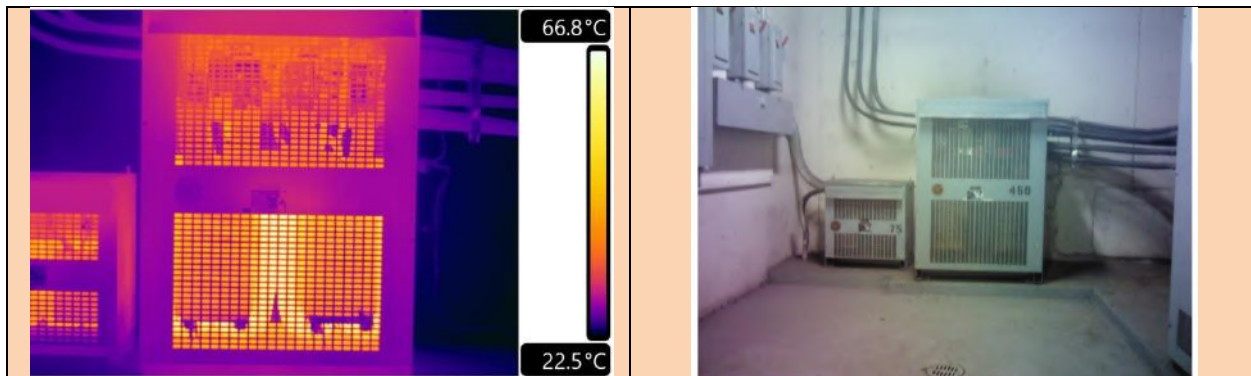
HIGH	Repair Immediately – Acute Overheating
MEDIUM	Repair ASAP – Critical Overheating
LOW	Repair at first opportunity – Developed Stage of Overheating
REFERENCE	For reference only
NOTE	Electrical code violation

The report is limited to the size and extent of inspection conducted and as such is not meant to be a warranty nor guarantee. It does not relieve concerned parties from their obligations.

Factors such as environmental fluctuations make it impossible to accurately predict when an anomaly will result in a system failure. We suggest preventative maintenance to ensure uninterrupted functioning of all electrical apparatus and motors at the above location.

REFERENCE #1

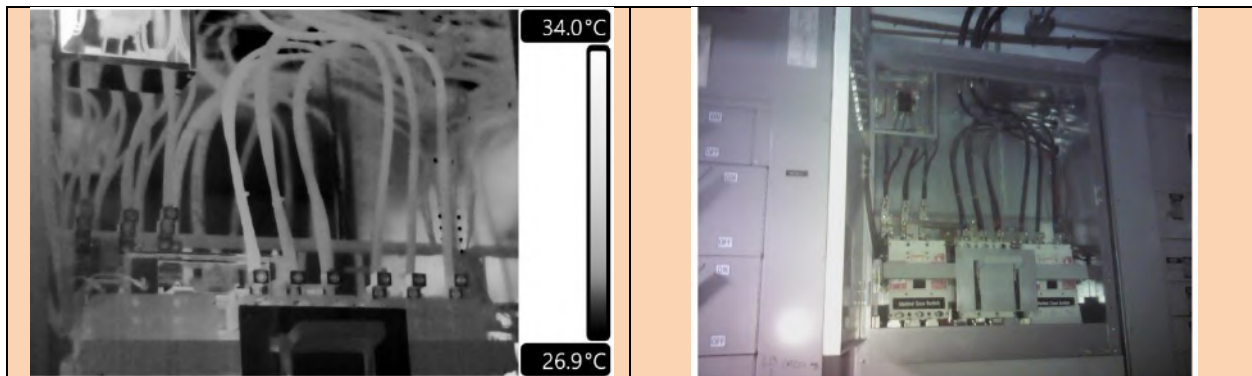
PRIORITY	LOCATION	EQUIPMENT
None	B-1 Sub-Main Electrical Room	450 kVA TRANSFORMER



PARAMETERS		ANALYSIS AND RECOMMENDATION	
File Name	IR_0260.jpg	Equipment	MARCUS Transformer VAC 600 /120/208 V, 3 phase, 60 Hz
Max. Temperature	70.3 °C	Designation	Power Panel 2
Min. Temperature	22.3 °C	Analysis	No thermal variances or visible anomaly detected
Atmospheric Temperature	20.0 °C	Recommendation	For reference, only
Object Distance	2.0 m		

REFERENCE #2

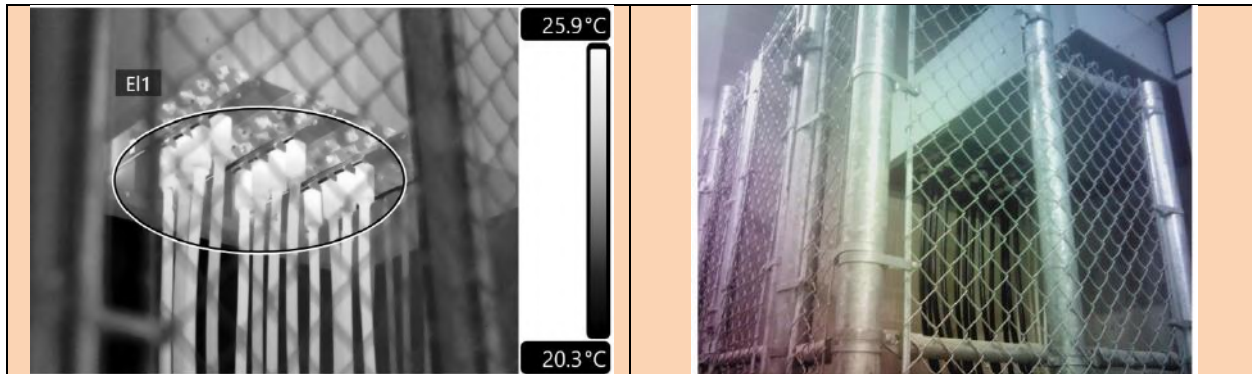
PRIORITY	LOCATION	EQUIPMENT
None	PH Sub-Main Electrical Room	400A AUTOMATIC TRANSFER SWITCH



PARAMETERS		ANALYSIS AND RECOMMENDATION	
File Name	IR_0262.jpg	Equipment	CUTLER-HAMMER 400 A Automatic Transfer Switch VAC 600 V, 3 phase, 60 Hz
Max. Temperature	49.0 °C	Designation	Automatic Transfer Switch-1
Min. Temperature	26.1 °C	Analysis	No thermal variances or visible anomaly detected
Atmospheric Temperature	20.0 °C	Recommendation	For reference, only
Object Distance	2.0 m	Loads	A:18 A B:15 A C:16A

REFERENCE #3

PRIORITY	LOCATION	EQUIPMENT
None	Main Electrical Room	2000 A FEEDERS



PARAMETERS		ANALYSIS AND RECOMMENDATION	
File Name	IR_0264.jpg	Equipment	Incoming Feeders VAC 600 V, 3 phase, 60 Hz
Max. Temperature	26.2 °C	Designation	Main Feeder
Min. Temperature	20.2 °C	Analysis	No thermal variances or visible anomaly detected. E11 was at 26.2° C
Atmospheric Temperature	20.0 °C	Recommendation	For reference, only
Object Distance	2.0 m		

REFERENCE #4

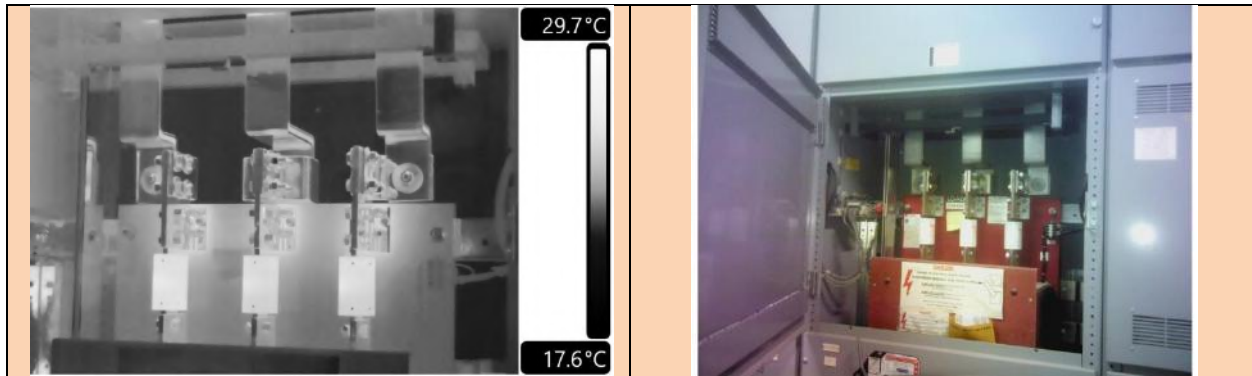
PRIORITY	LOCATION	EQUIPMENT
None	Main Electrical Room	2000A PRESSURE CONTACT SWITCH



PARAMETERS		ANALYSIS AND RECOMMENDATION	
File Name	IR_0266.jpg	Equipment	PRINGLE Pressure contact switch VAC: 600 - 3 phase, 60Hz
Max. Temperature	31.4 °C	Designation	Main disconnect switch
Min. Temperature	21.9 °C	Analysis	No thermal variances or visible anomaly detected E11 was at 31.4° C
Atmospheric Temperature	20.0 °C	Recommendation	For reference, only
Object Distance	2.0 m		

REFERENCE #5

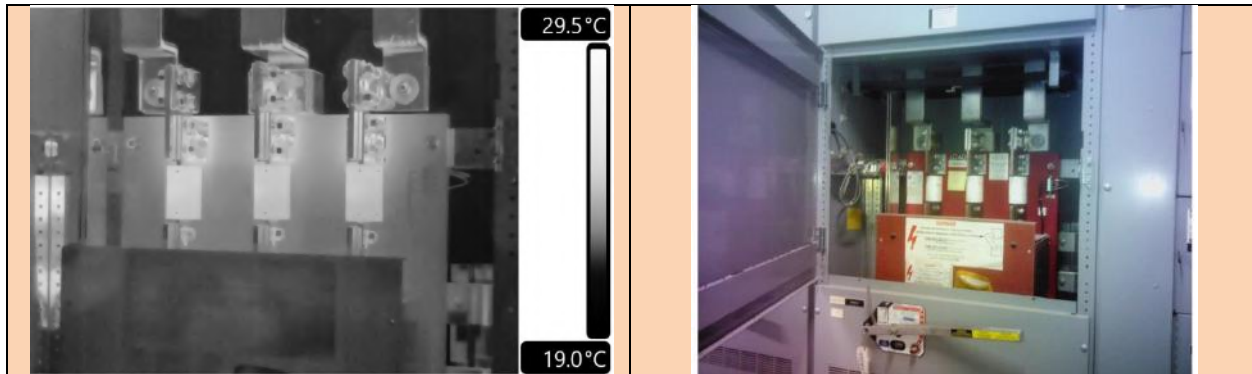
PRIORITY	LOCATION	EQUIPMENT
None	Main Electrical Room	1200A PRESSURE CONTACT SWITCH



PARAMETERS		ANALYSIS AND RECOMMENDATION	
File Name	IR_0268.jpg	Equipment	PRINGLE Pressure contact switch VAC: 600 - 3 phase, 60Hz
Max. Temperature	27.1 °C	Designation	FUTURE – 925 Bay St
Min. Temperature	21.7 °C	Analysis	No thermal variances or visible anomaly detected
Atmospheric Temperature	20.0 °C	Recommendation	For reference, only
Object Distance	2.0 m		

REFERENCE #6

PRIORITY	LOCATION	EQUIPMENT
None	Main Electrical Room	1200A PRESSURE CONTACT SWITCH

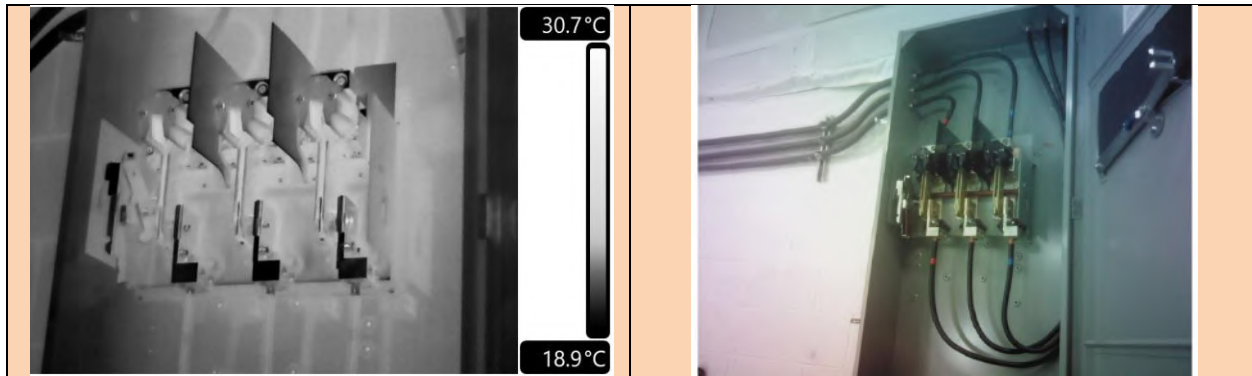


PARAMETERS		ANALYSIS AND RECOMMENDATION	
File Name	IR_0270.jpg	Equipment	PRINGLE Pressure contact switch VAC: 600 - 3 phase, 60Hz
Max. Temperature	26.7 °C	Designation	909 Bay St
Min. Temperature	21.1 °C	Analysis	No thermal variances or visible anomaly detected
Atmospheric Temperature	20.0 °C	Recommendation	For reference, only
Object Distance	2.0 m		

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REFERENCE #7

PRIORITY	LOCATION	EQUIPMENT
None	Penthouse Chiller Room	400A DISCONNECT SWITCH



PARAMETERS		ANALYSIS AND RECOMMENDATION	
File Name	IR_0272.jpg	Equipment	FEDERAL PIONEER ELECTRIC Disconnect Switch VAC 600 V, 3 phase, 60 Hz
Max. Temperature	25.1 °C	Designation	Chiller
Min. Temperature	18.4 °C	Analysis	No thermal variances or visible anomaly detected
Atmospheric Temperature	20.0 °C	Recommendation	For Reference Only
Object Distance	2.0 m		

REFERENCE #8

PRIORITY	LOCATION	EQUIPMENT
None	Elevator Machine Room	100A FUSED DISCONNECT SWITCH



PARAMETERS		ANALYSIS AND RECOMMENDATION	
File Name	IR_0274.jpg	Equipment	CUTLER-HAMMER Fused disconnect switch VAC: 120/240 - 2 phase, 60Hz
Max. Temperature	35.8 °C	Designation	Elevator 2
Min. Temperature	21.3 °C	Analysis	No thermal variances or visible anomaly detected
Atmospheric Temperature	20.0 °C	Recommendation	For reference, only
Object Distance	2.0 m	Loads	Varied with elevator operation

EQUIPMENT LIST

Location		Units	Equipment	Inspected	Condition	Priority Level	Image #
1 Floor Main Electrical Room	1	2000 A	Incoming Feeder	Yes	Ref 3	None	263
	1	2000 A	Pressure Contact Switch	Yes	Ref 4	None	266
	1	1200 A	Pressure Contact Switch	Yes	Ref 5	None	268
	1	1200A	Pressure Contact Switch	Yes	Ref 6	None	270
	1	2000 A	Switchboard Consisting Of:	Yes			
	2	400 A	Fused Disconnect Switch	Yes			
	1	600 A	Molded Case Breaker	Yes			
	1	1200 A	Switchboard Consisting Of:	Yes			
	3	600 A	Fused Disconnect Switch	Yes			
	1	400 A	Fused Disconnect Switch	Yes			
	2	200 A	Fused Disconnect Switch	Yes			
	1	600 A	Switchboard Consisting Of:	Yes			
1	600 A	Molded Case Breaker	Yes				
1	400 A	Molded Case Breaker	Yes				

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B-1 Retail Electrical Room	2	30 kVA	Dry Type Transformer	Yes			
	1	225 A	Distribution Panel	Yes			
	1	400 A	Switchboard Consisting Of:	Yes			
	8	30 A	Fused Disconnect Switch	Yes			
B-1 Sub-Main Electrical Room	1	450 kVA	Dry Type Transformer	Yes	Ref 1	None	259
	1	150 kVA	Dry Type Transformer	Yes			
	1	75 kVA	Dry Type Transformer	Yes			
	1	1600 A	Switchboard Consisting Of:	Yes			
	4	600 A	Fused Disconnect Switch	Yes			
	1	600 A	Switchboard Consisting Of:	Yes			
	3	200 A	Fused Disconnect Switch	Yes			
	4	100 A	Fused Disconnect Switch	Yes			
	2	30 A	Fused Disconnect Switch	Yes			
P-1 Mechanical Room by A1	1		Splitter	Yes			

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	6	30 A	Fused Disconnect Switch	Yes			
	1		Variable Frequency Drive Control	Yes			
	1	75 kVA	Dry Type Transformer	Yes			
	2	1.5 HP	Motor	Yes			
	2		Starter	Yes			
P-3 Mechanical Room by C75	3		Control Panel	Yes			
	3	7.5 HP	Motor	Yes			
	1	5 HP	Motor	Yes			
	1	3 HP	Motor	Yes			
	2	30 A	Fused Disconnect Switch	Yes			
	1		Contactor	Yes			
	1		Starter	Yes			
P-1 Generator Room	1	500 kW	Generator	Yes			
	1	600 A	Molded Case Breaker	Yes			
	1	400 A	Automatic Transfer Switch	Yes	Ref 2	None	261
	1	400 A	Switchboard Consisting Of:	Yes			
	1	200 A	Fused Disconnect Switch	Yes			
	2	100 A	Fused Disconnect Switch	Yes			

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	6	30 A	Fused Disconnect Switch	Yes			
	1	600 A	Switchboard Consisting Of:	Yes			
	1	600 A	Fused Disconnect Switch	Yes			
	2	400 A	Fused Disconnect Switch	Yes			
	1	200 A	Fused Disconnect Switch	Yes			
	3		Starter	Yes			
P-2 Sub-Main Electrical Room by B95	1	200 A	Automatic Transfer Switch	Yes			
	1	200 A	Fused Disconnect Switch	Yes			
	1	100 A	Fused Disconnect Switch	Yes			
	3	60 A	Fused Disconnect Switch	Yes			
	3	30 A	Fused Disconnect Switch	Yes			
	1	400 A	Splitter	Yes			
	1	225 A	Distribution Panel	Yes			
	6		Starter	Yes			
PH Sub_main Electrical Room	1	1600 A	Switchboard Consisting Of:	Yes			

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	3	600 A	Fused Disconnect Switch	Yes			
	1	200 A	Fused Disconnect Switch	Yes			
	1	600 A	Switchboard Consisting Of:	Yes			
	1	400 A	Fused Disconnect Switch	Yes			
	2	100 A	Fused Disconnect Switch	Yes			
	8	100 A	Fused Disconnect Switch	Yes			
	1	400 A	Switchboard Consisting Of:	Yes			
	1	200 A	Fused Disconnect Switch	Yes			
	4	60 A	Fused Disconnect Switch	Yes			
	2	30 A	Fused Disconnect Switch	Yes			
	2	225 A	Distribution Panel	Yes			
	1	30 kVA	Dry Type Transformer	Yes			
	3		Starter	Yes			
	1		Control Panel	Yes			
PH Mechanical Room	2	0.33 HP	Motor	Yes			
(right stair)	2	5 HP	Motor	Yes			

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	2	30 A	Fused Disconnect Switch	Yes			
	2		Starter	Yes			
PH Chiller Room	1		Chiller (Not Running)	Yes			
	1	400 A	Disconnect Switch	Yes	Ref 7	None	271
	2	30 A	Fused Disconnect Switch	Yes			
	2		Starter	Yes			
	2		Variable Frequency Drive Control	Yes			
	2	15 HP	Motor	Yes			
	2		Control Panel	Yes			
PH Elevator Room	3	60 HP	Motor	Yes			
	3		Control Panel	Yes			
	3	100 A	Fused Disconnect Switch	Yes	Ref 8	None	273
	4	30 A	Fused Disconnect Switch	Yes			
	1	225 A	Splitter	Yes			
	3	45 kVA	Dry Type Transformer	Yes			
PH MUA Room	3	60 A	Fused Disconnect Switch	Yes			
	3		Starter	Yes			
	1		Variable Frequency Drive Control	Yes			
	2	3 HP	Motor	Yes			
28 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			

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25 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			
23 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			
20 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			
18 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			
15 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			
11 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			
8 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			
5 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			
3 Floor Electrical Closet	1	600 A	Distribution Panel	Yes			