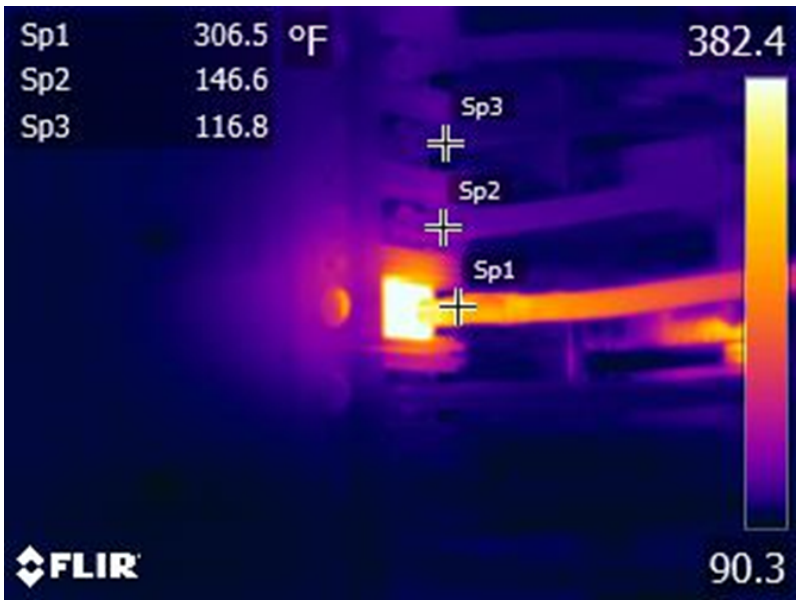


American Yeast Memphis Plant
2023 Annual Infrared Survey Report

All electrical panels were scanned using a FLIR **T865** infrared camera. The following report only contains defects that were found during the survey. Below is our classification system for each defect included in this report. If there are any questions or comments, please feel free to contact us at any time.

HI-SPEED INDUSTRIAL SERVICE employs a three-tier defect rating system:

CLASS I: A defect or defects are present that are likely to cause a problem in the long term (2-6 months). Should be addressed in the normal course of maintenance scheduling.

CLASS II: A defect or defects are present that are likely to cause a failure in the short term (less than 2 months). Should be addressed as soon as practical, on a high maintenance priority. Consideration should be given to increase monitoring frequency.

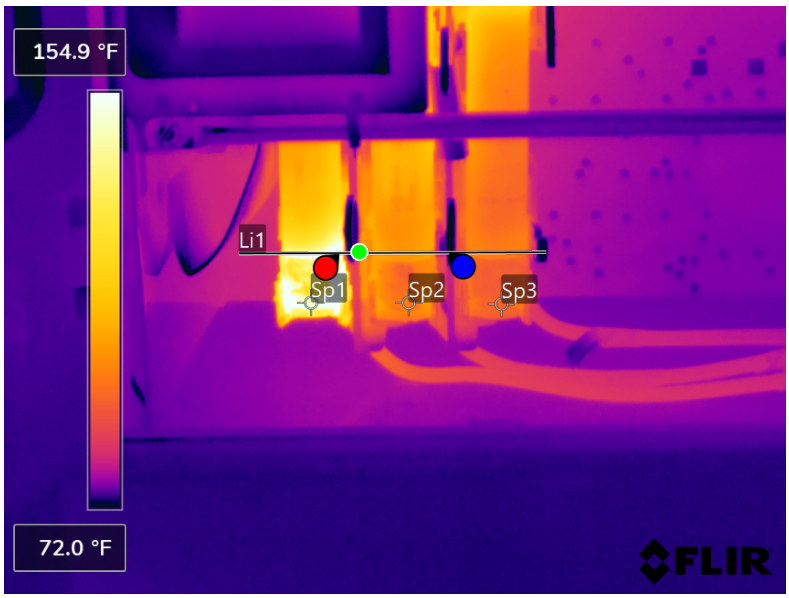
CLASS III: A defect or defects are present that make continued component reliability unpredictable and likelihood of secondary damage is high. Consideration should be given to an unscheduled shutdown to correct.

Component

Fuse/Fuse Clip

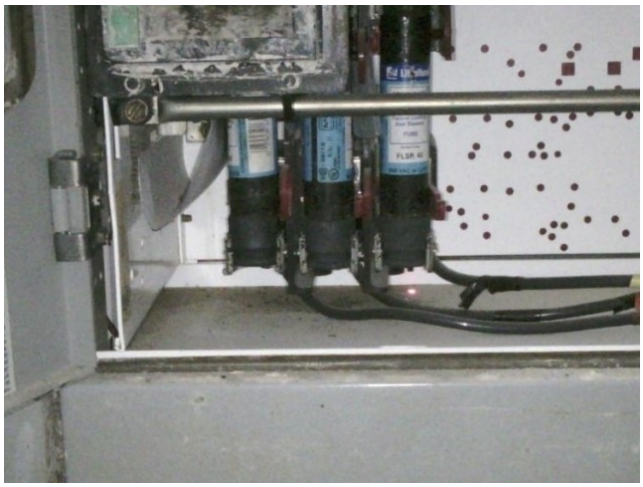
Equipment/Bucket ID

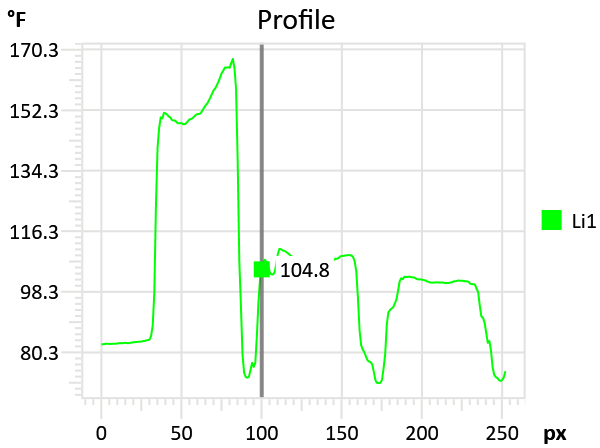
Chiller Room 400 HP Boiler #2



Measurements

Sp2	101.3 °F
Sp3	97.1 °F
Li1	
Max	167.5 °F
Avg	106.9 °F
Min	71.3 °F
Sp1	148.3 °F





Fault

Possible loose fuse connection/Weak Fuse

Defect Rating

CLASS I

Recommendations

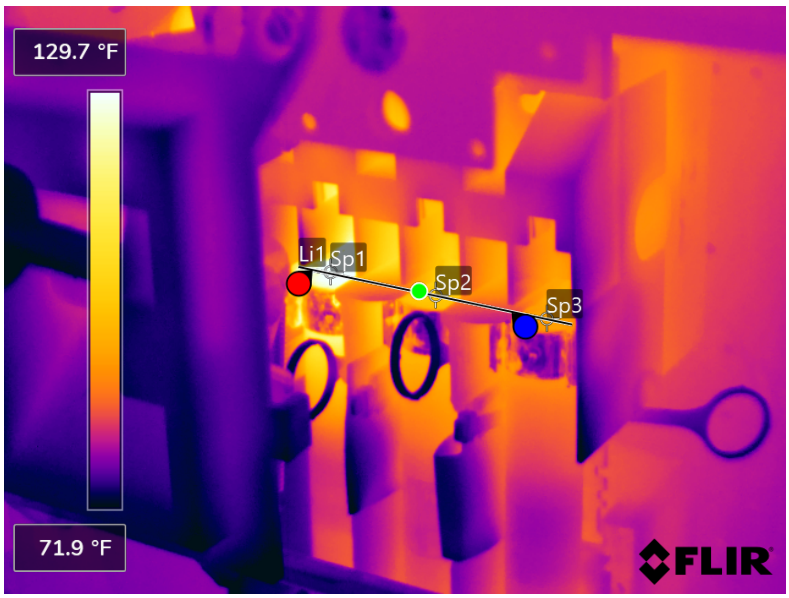
IR image shows A phase load side of fuse having an issue. Check fuse clip and fuse ensuring a clean tight connection. Ensure fuse clip/holder is not damaged or worn. If connection is found to be tight, then the fuse itself may be the issue and should be replaced.

Component

Fuse Clip

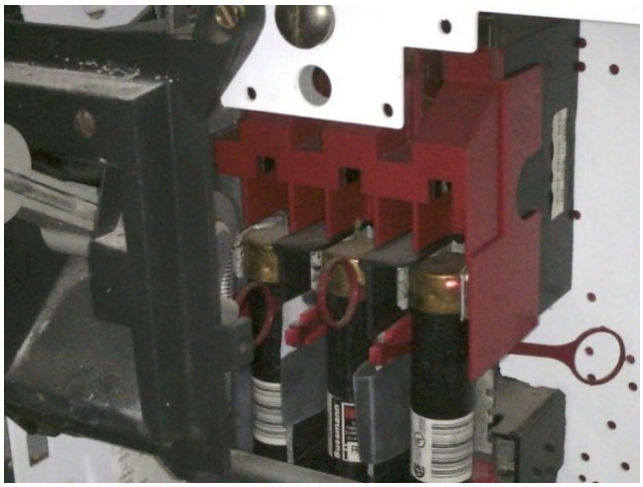
Equipment/Bucket ID

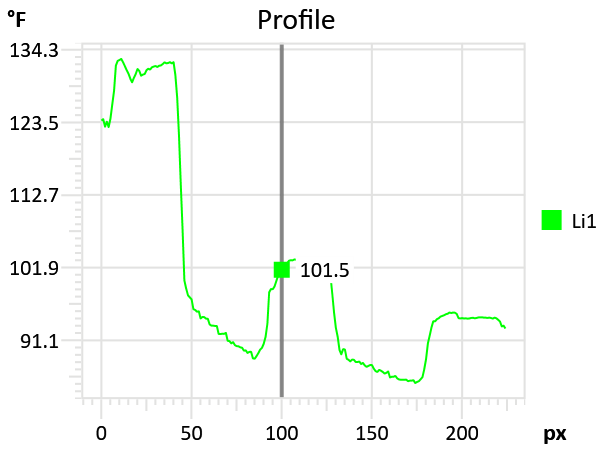
Chiller Room Boiler Feed Water Pump 1 and 2



Measurements

Sp2	103.2 °F
Sp3	94.6 °F
Li1	
Max	132.9 °F
Avg	100.6 °F
Min	84.8 °F
Sp1	132.0 °F





Fault

Loose/faulty fuse clip connection

Defect Rating

CLASS II

Recommendations

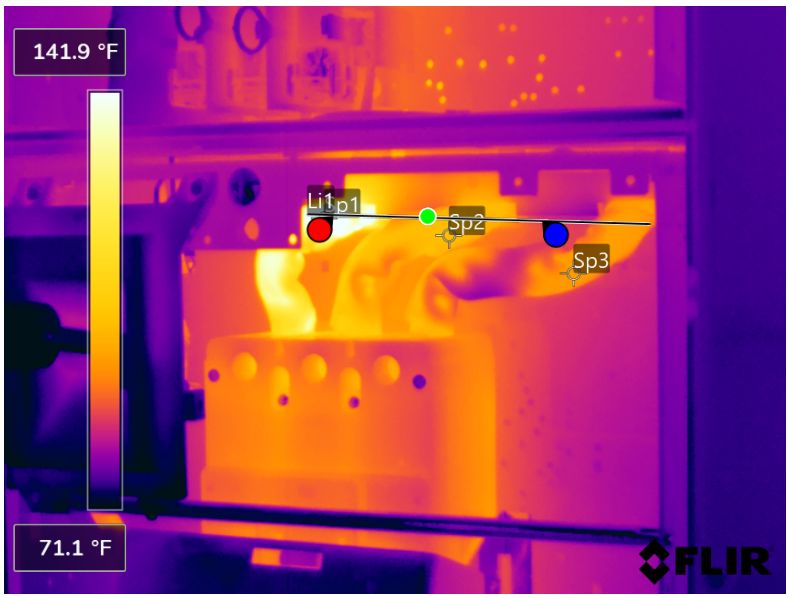
Fuse clip looks to be the issue here but may also be a fuse issue. Inspect fuse clip on A phase ensuring a clean/tight connection to the holder assembly and fuse itself.

Component

A phase power lead

Equipment/Bucket ID

Chiller Room York Chiller #1



Measurements

Sp2	105.4 °F
Sp3	99.1 °F
Li1	
Max	145.9 °F
Avg	106.6 °F
Min	86.2 °F
Sp1	145.4 °F

Fault

Load imbalance and/or issue with power lead

Defect Rating

CLASS I

Recommendations

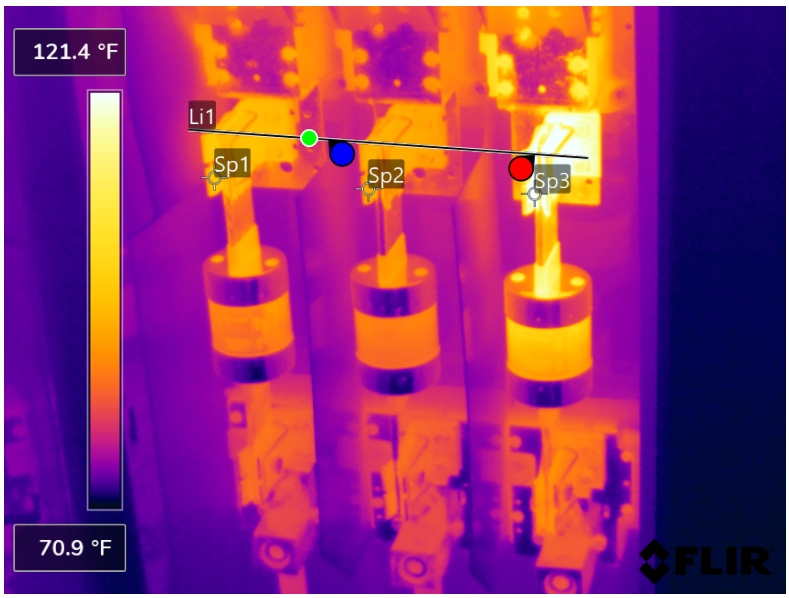
IR image shows the highest temp to be at the back of the power lead. It is hard to tell what is going on here, but the delta-T on A phase is concerning. Measure load on each phase ensuring load is balanced. Also, inspect the A phase lead ensuring lead is not damaged. Trace lead back and inspect connection if possible.

Component

C phase fuse holder

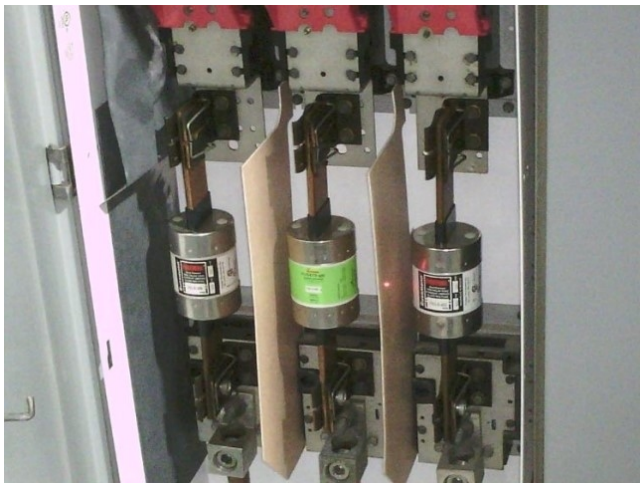
Equipment/Bucket ID

Well Pump #1 VFD



Measurements

Sp2	94.9 °F
Sp3	124.8 °F
Li1	
Max	123.7 °F
Avg	93.9 °F
Min	79.8 °F
Sp1	98.2 °F



Fault

Faulty fuse holder C PHASE

Defect Rating

CLASS II

Recommendations

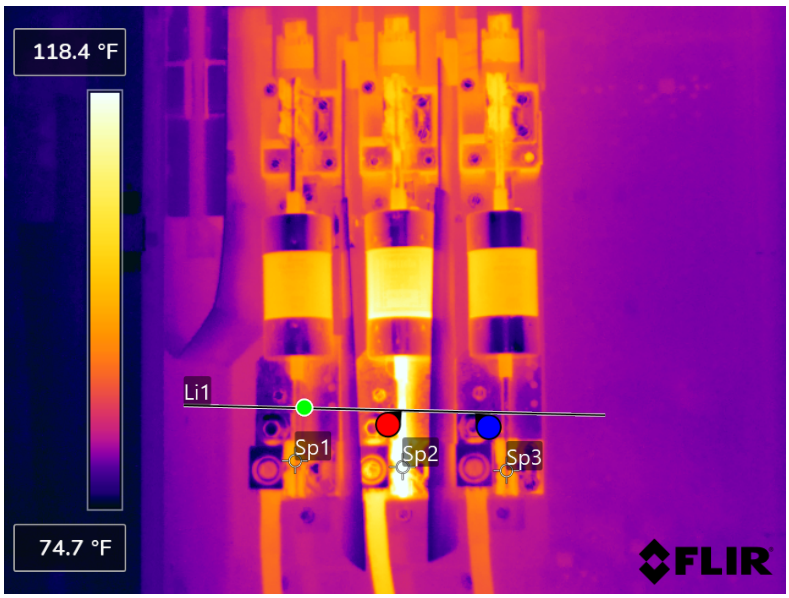
C phase fuse clip/holder has an issue. Ensure connection is tight and clean. Inpsect fuse clip/holder for damage and wear.

Component

B phase fuse connection (Load Side)

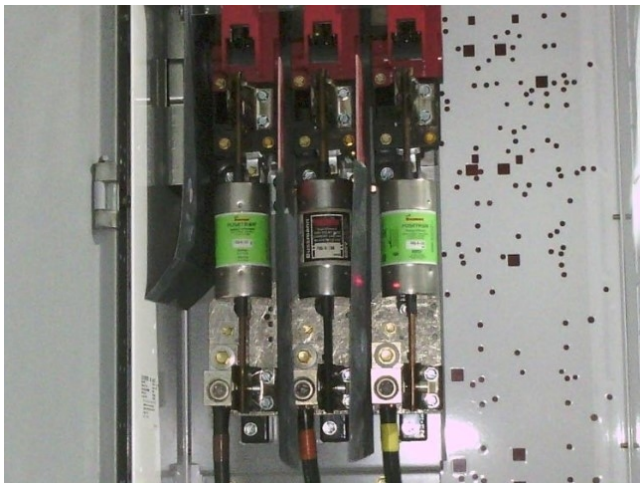
Equipment/Bucket ID

Cooling Tower #2 VFD



Measurements

Sp2	120.8 °F
Sp3	87.7 °F
Li1	
Max	124.4 °F
Avg	83.4 °F
Min	75.5 °F
Sp1	92.7 °F



Fault

Faulty Fuse Connection

Defect Rating

CLASS II

Recommendations

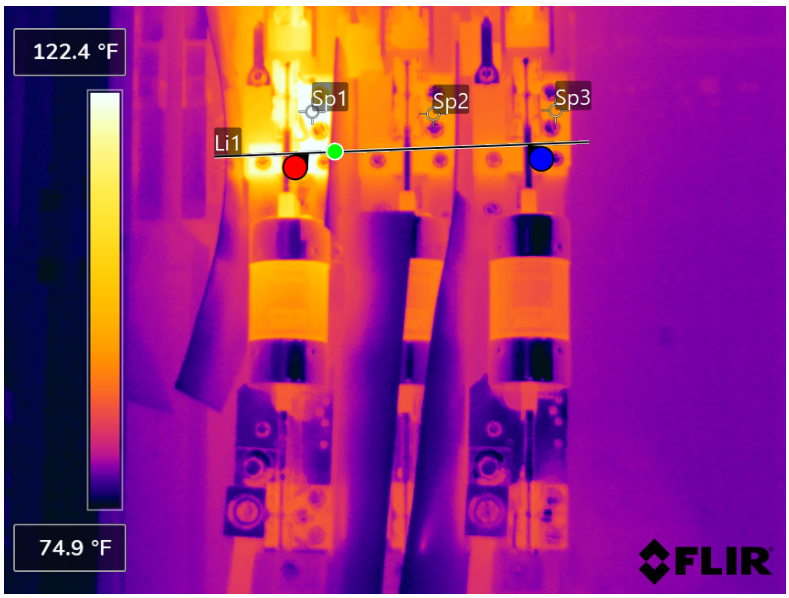
B phase fuse and fuse clip are both showing visible signs of heat damage/corrosion. It is recommended to replace fuse, clean fuse holder/clips, and ensure new fuse has tight clean connection. Also measure current on each phase on load side ensuring motor has a balanced load.

Component

A phase fuse connection

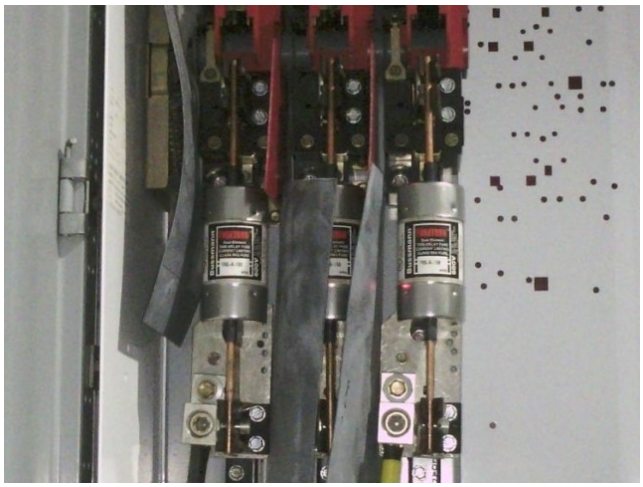
Equipment/Bucket ID

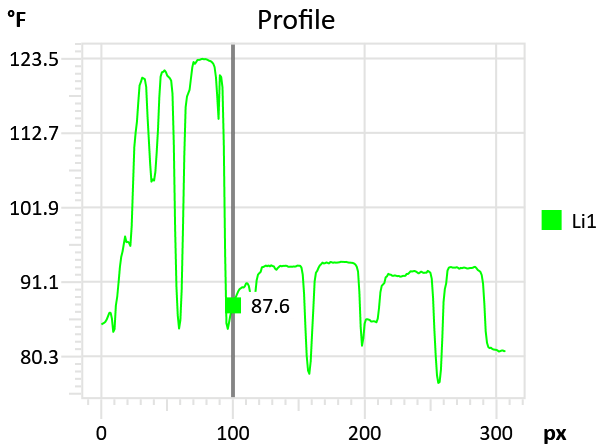
Cooling Tower Water Pump #2 VFD



Measurements

Sp2	94.0 °F
Sp3	92.8 °F
Li1	
Max	123.5 °F
Avg	95.9 °F
Min	76.4 °F
Sp1	124.5 °F





Fault

Faulty fuse connection

Defect Rating

CLASS II

Recommendations

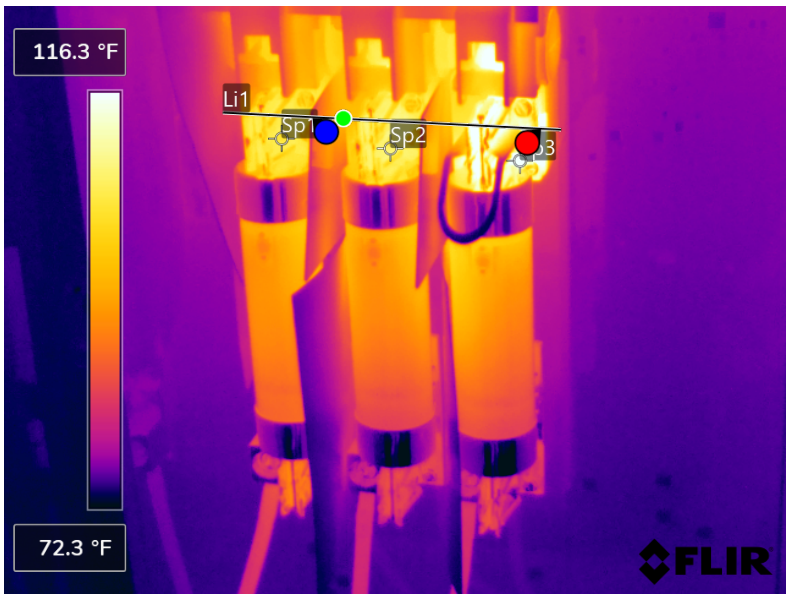
A phase fuse clip/holder has an issue on line side of fuse. Ensure connection is tight and clean. Inpsect fuse clip/holder for damage and wear.

Component

C phase fuse connection (Line Side)

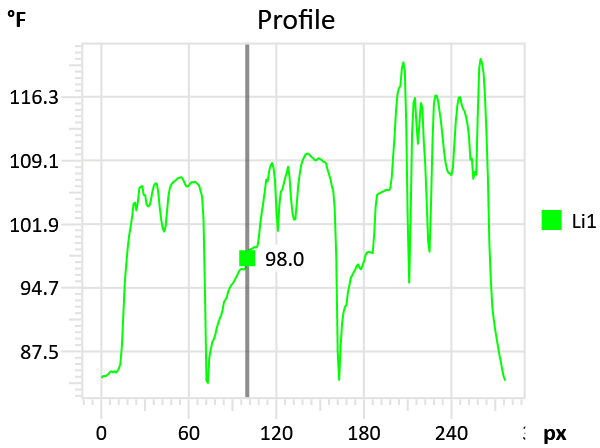
Equipment/Bucket ID

Chiller Evaporator Water Pump P2 VFD



Measurements

Sp2	108.3 °F
Sp3	121.1 °F
Li1	
Max	120.6 °F
Avg	102.9 °F
Min	84.0 °F
Sp1	104.5 °F



Fault

Fuse connection

Defect Rating

CLASS I

Recommendations

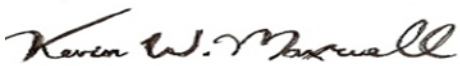
C phase fuse clip/holder has an issue on line side of fuse. Ensure connection is tight and clean. Inpsect fuse clip/holder for damage and wear.

Summary

File name	Created	Maximum temp.	Page number
FLIR0423.jpg	3/3/2023 2:42:36 AM	177.7 °F	3
FLIR0425.jpg	3/3/2023 2:45:36 AM	148.4 °F	4
FLIR0429.jpg	3/3/2023 2:49:07 AM	147.3 °F	5
FLIR0431.jpg	3/3/2023 3:09:38 AM	125.3 °F	6
FLIR0433.jpg	3/3/2023 3:13:53 AM	127.3 °F	7
FLIR0435.jpg	3/3/2023 3:17:02 AM	124.8 °F	8
FLIR0437.jpg	3/3/2023 3:18:51 AM	122.8 °F	9

This concludes our survey report. Please feel free to contact us at any time for question or comments.

Thank you for your business,



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Thermographer

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