



FLUKE®

Reliability

Continuous Thermography as a Condition Detective: The Secret Sauce to Uptime

Craig Haase

Accelix™
Webinar Series

Meet the Speaker



Craig Haase

Thermography & Key Account Sales Manager, Fluke Process Instruments

- Over 10 years experience at FPI
- 9 years of consulting thermal imaging applications
- Responsible for all U.S. & Canadian thermal imager sales
- Support the sales team in application development & support
- 30+ years experience in industrial automation

Together...we are FLUKE

FLUKE®

Digital Multimeters,
Handheld Imagers,
and more



FLUKE®

Calibration



Calibration Equipment

FLUKE®

Biomedical



Biomedical Test Equipment,
Radiation Measurement,
and more

FLUKE
networks



Network Cabling Infrastructure,
Industrial Ethernet Solutions,
Fiber Inspection Equipment,
and more

FLUKE®

**Process
Instruments**



Infrared Pyrometers, Imaging
Solutions, Profiling Solutions,
Automated Temperature
Measurements

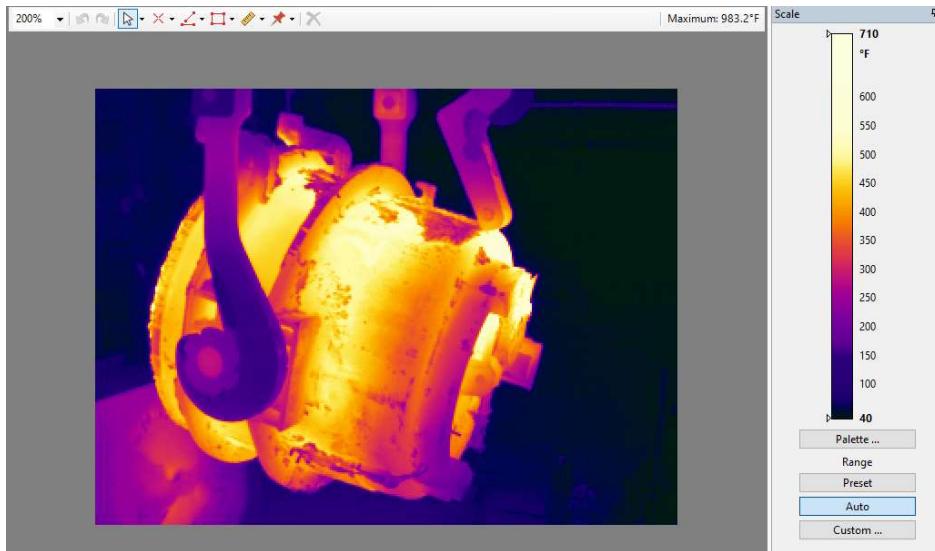
POLL QUESTION No. 1



Do you use any of the following in your current maintenance practices?
(Click only one answer)

- Handheld thermography – route-based or troubleshooting
- Continuous temperature sensors
- Both – handheld thermography and continuous temperature checks
- Neither

Thermography as a Condition Detective



- Images say a thousand words. They can immediately show the bad and the good through **color**
- Non-contact: Temperature of moving or distant parts can be provided without touching them and from a safe distance.
- Why is it important to really understand temperature?
 - Temperature change in an object can be a key indicator that an asset is **beginning to fail**
 - Understanding temperature is understanding the health of your system and making sure components can be serviced or replaced without interrupting production.



Alarms and Signals	
Alarms updating	Yes
Ladle State	ALARM

What Do You Get from Fixed Automated Thermography?

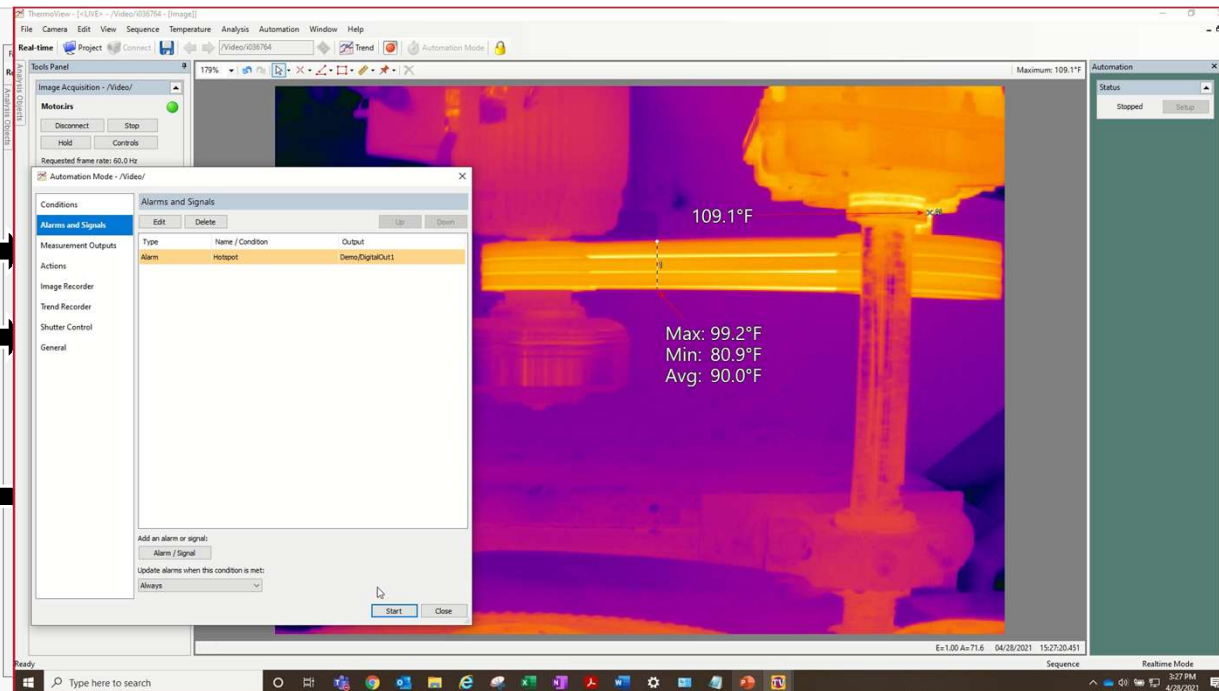
An extra set of eyes all day, every day!

Play Back Saved Images

Programmable AOIs

Continuous Visual Image

Image Remote Access
When Networked



Automatic Data Collection & Archiving

Automatic Alarms



- Trigger Video
- Trigger Snapshot
- Trigger Relay
- Trigger Digital Output
- Trigger Analog Output
- Send email of alarm with image to technician

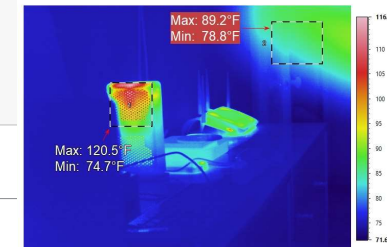
From: fluke7405@gmail.com
Date: May 14, 2020 at 2:15:50 PM PDT
To: fluke7405@gmail.com
Subject: Alarm

FW: Alarms and Signals #6

Alarms updating: Yes

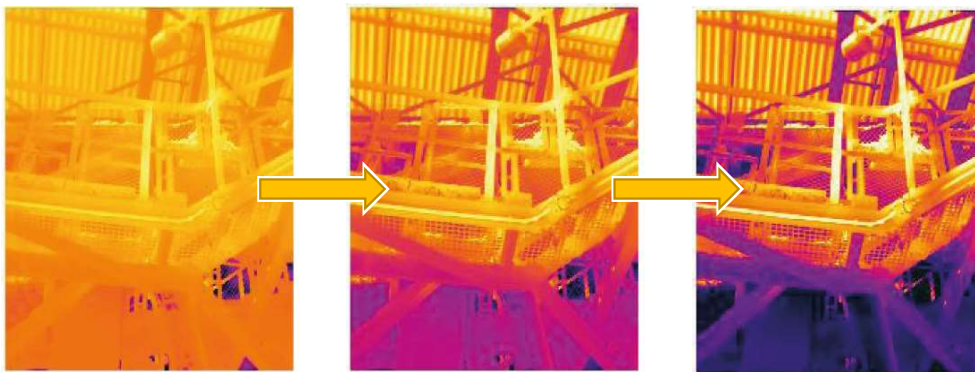
Door: ALARM

Door: ALARM

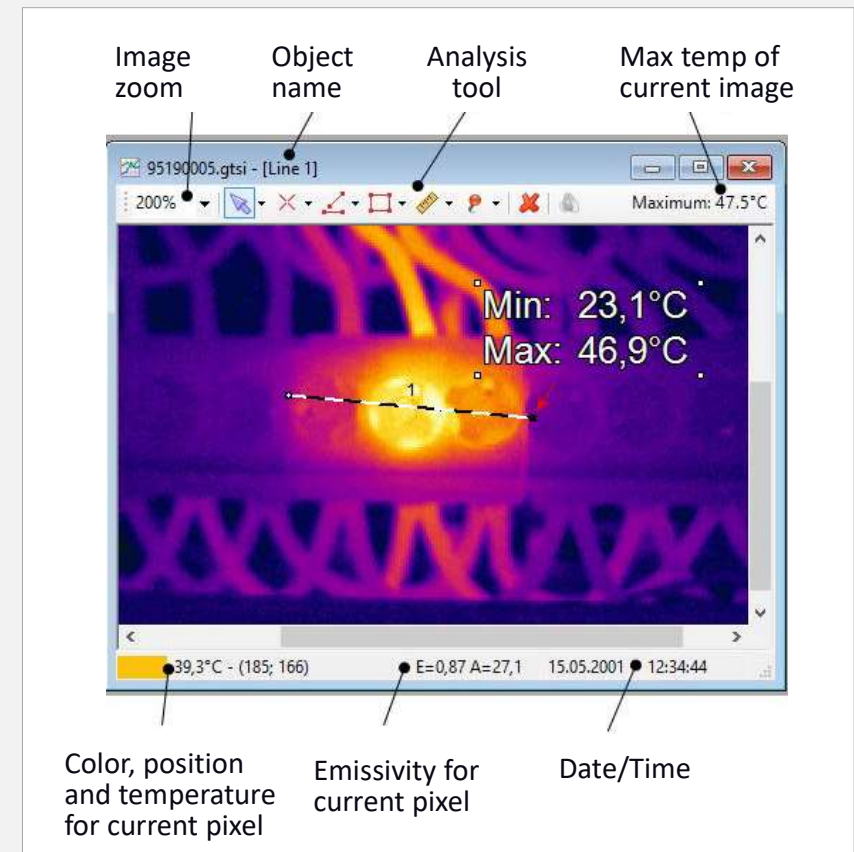


What Do You Get from Fixed Automated Thermography? - Continued

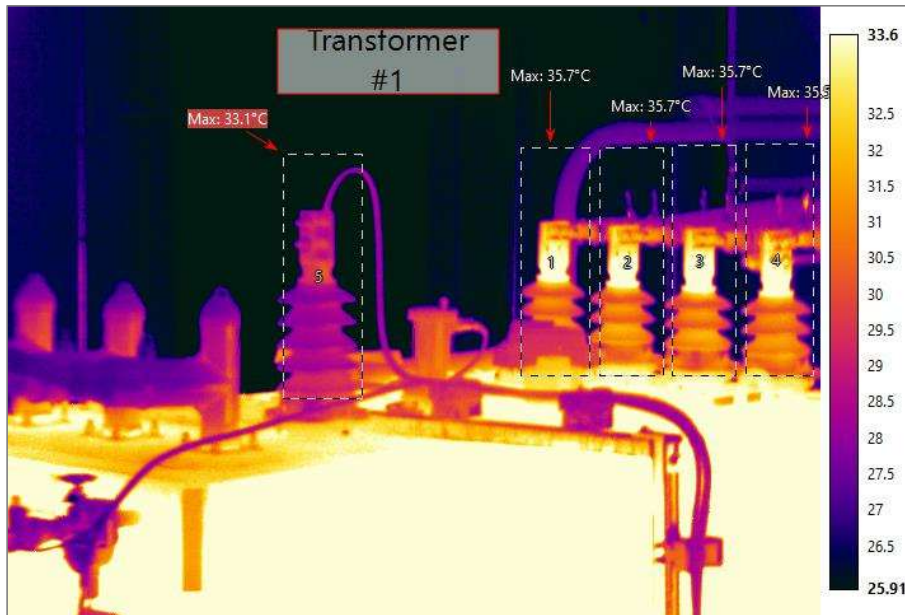
- Comprehensive software analytics like image subtraction, isotherms, histograms
- Unlimited number of areas of interest
- Intuitive user interface



Contrast Enhancements



Case Study – Remote Transformer Vault



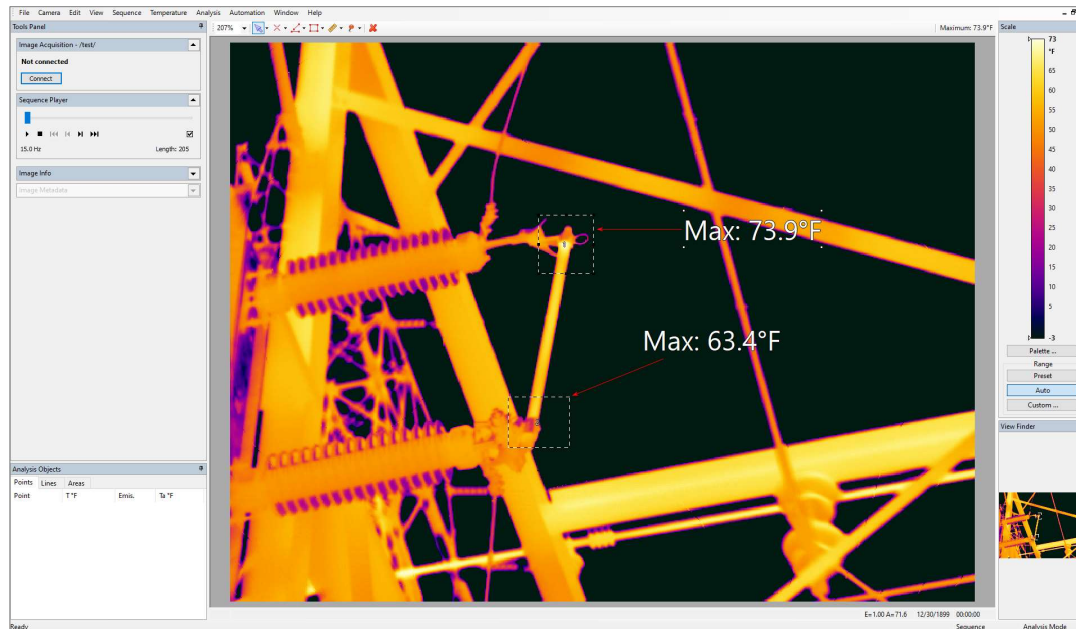
Thermal still from monitoring bushings on top of a transformer.



Solution:

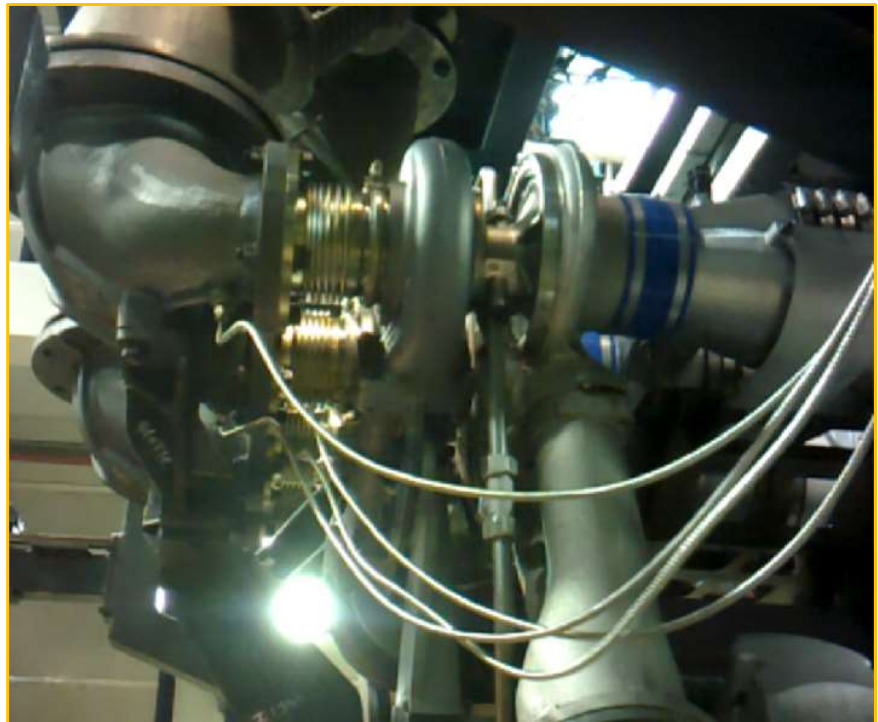
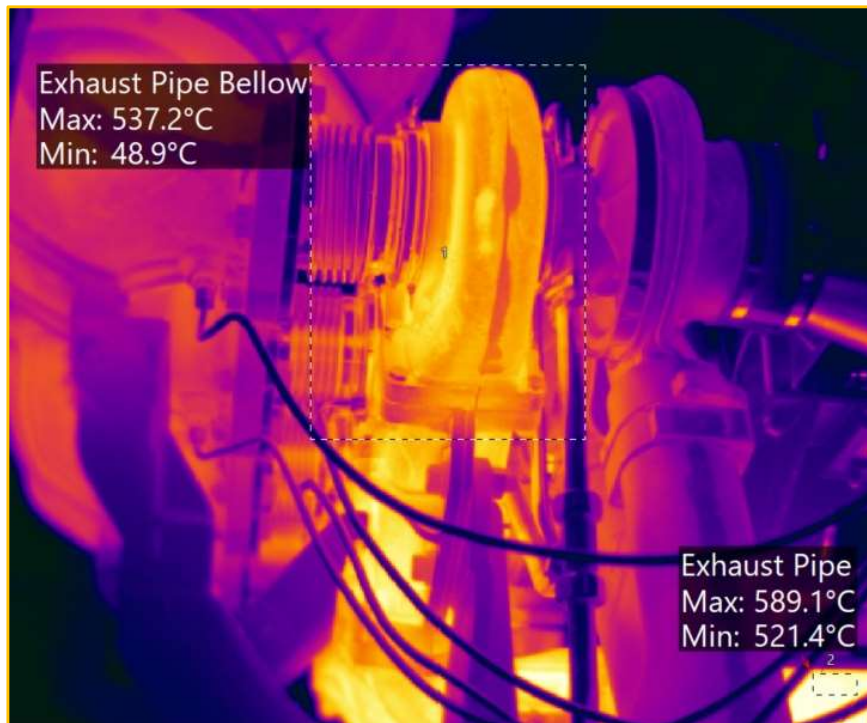
- Thermal Imager mounted in Pan & Tilt to expand field of view
- System connected to company network
- Alarm based on 5°C differential
- Automatic alarm is ready to trigger email message to technicians 24hrs a day
- Email has site name, image and time of alarm

Demo – Power Station Steel Factory

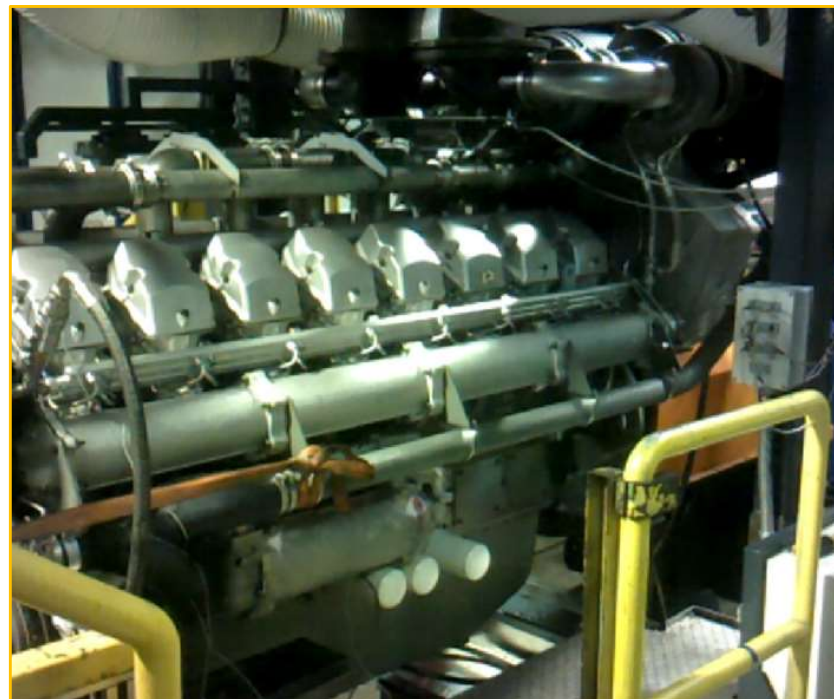
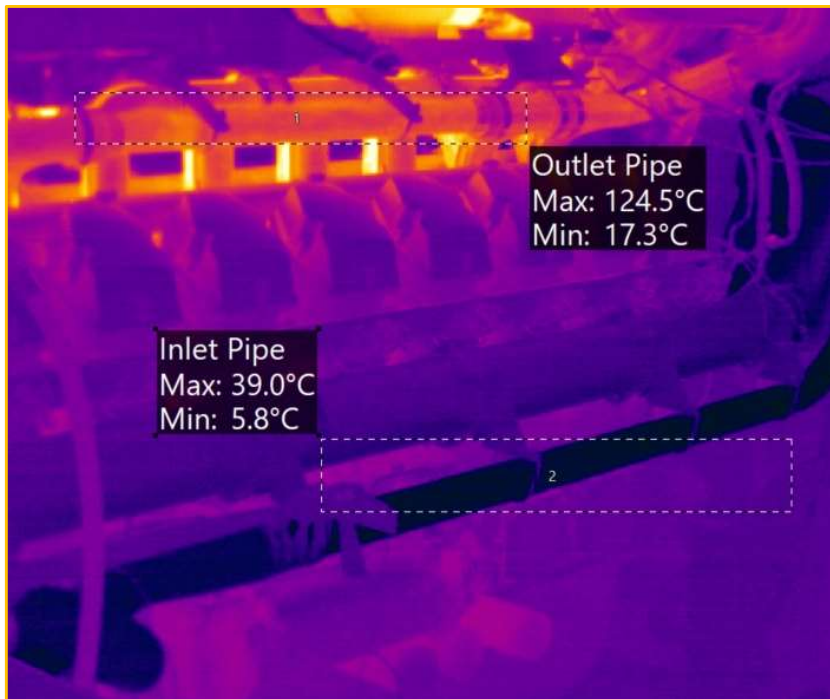


- Main power station at a steel mill
- Found 10°F difference on switch
 - Drove further investigation

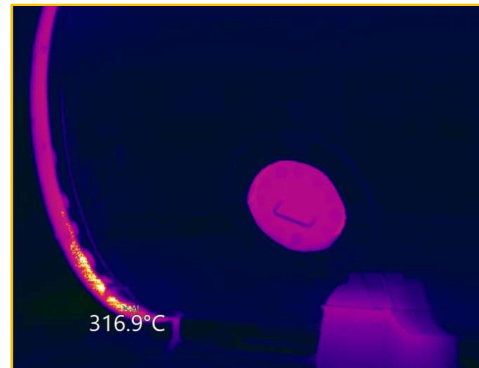
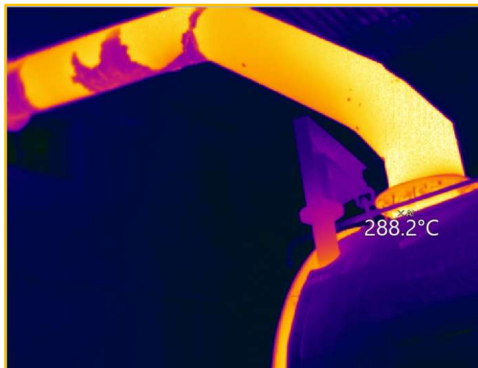
Demo



Demo



Demo



Thermography Can Be Used on a Variety of Assets



- Drive motors
- Pumps
- Valves
- Electrical Equipment
- Conveyors
- Manufactured products
- Refractory lined vessels
- Tanks + silos
- Gasifier
- Catalytic cracking
- Furnace walls
- And much, much more...

How Does Automated Thermography Work?

1 Continuous Monitoring

- Visualizes temperature on everything in its field of view
- Capture both infrared and visible feeds simultaneously
- Provides data to the software package 24/7/365



2 Connectivity

- Ethernet, Ethernet IP, Modbus
- DCS – Images, Videos
- Input/Output Modules – Trigger a response

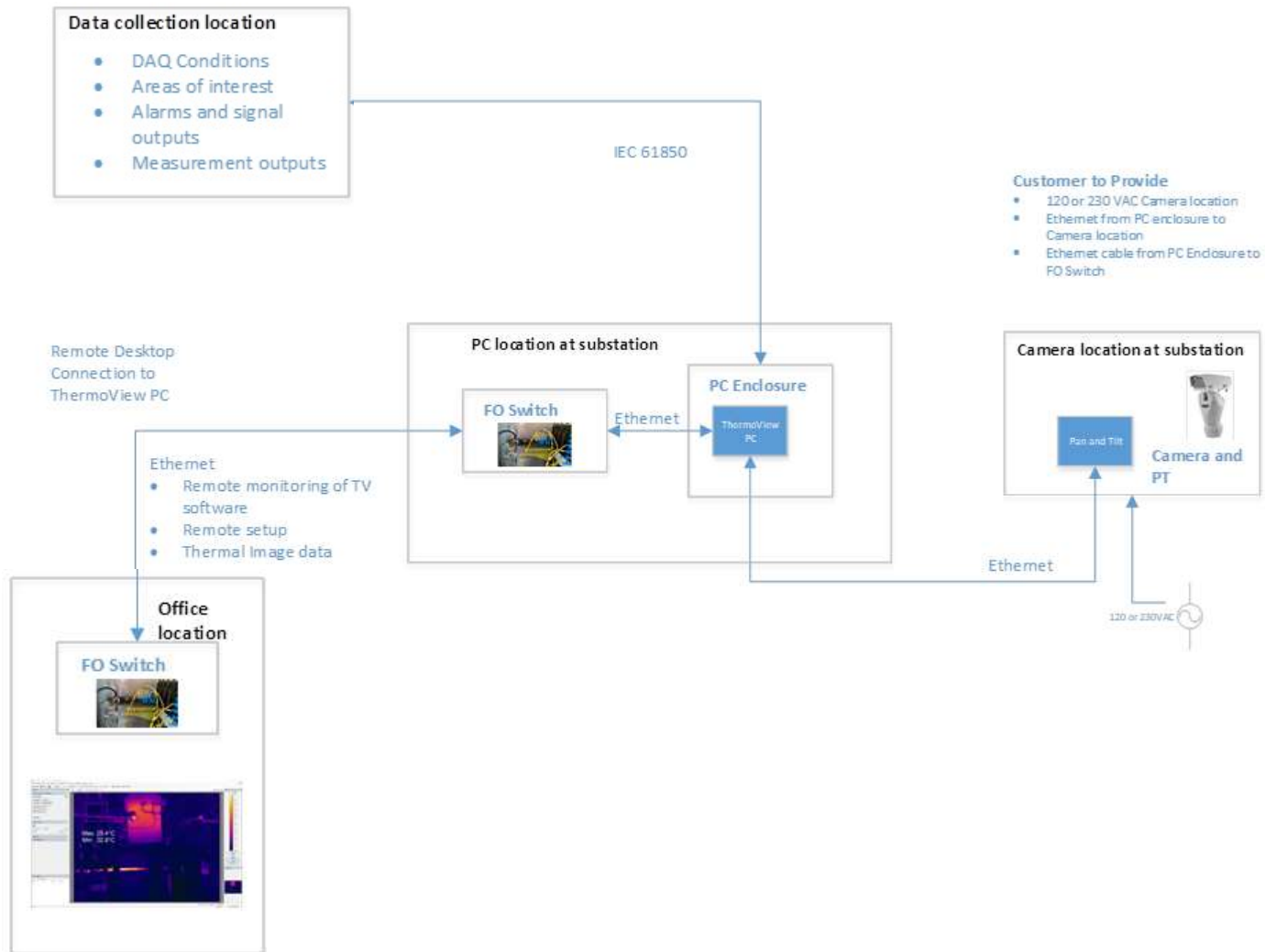
3 Archiving

- Automated recording and archiving of data, images and videos
- Program an unlimited number of AOIs
- Min, Max, Average temperatures from AOIs
- Alarms (AOI) trigger a response – I/O

4 Take Action

- Turn on light, sound beacon
- Send email
- Turn On/Off

Structure

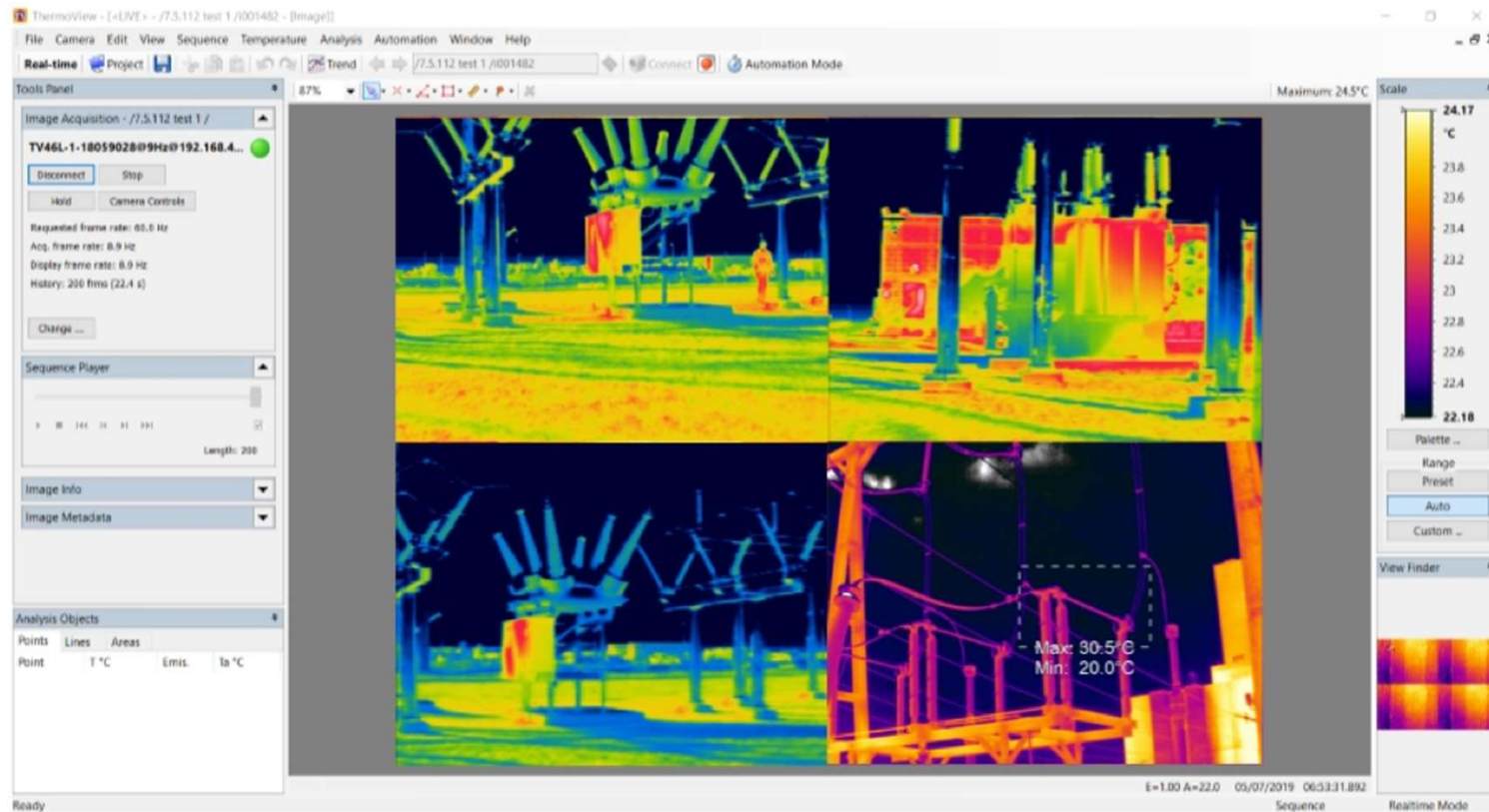




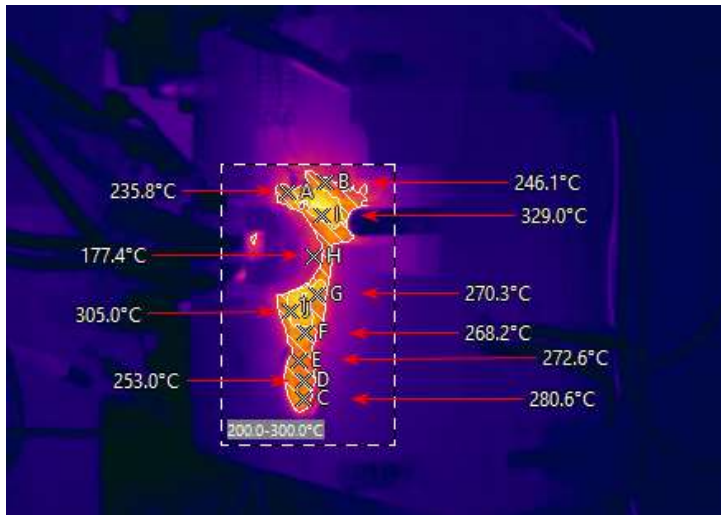
Asset Monitoring at Remote Sites

Has this ever been an issue for you?

Remote Sites



Value of Automated Thermography



- Understanding the temperatures of your equipment as it changes over time
- Collect record/data automatically
- Instantly notify operators when temperatures go beyond expected or safe levels
- Turn on or off a system automatically before it becomes a bigger issue
- Proactive rather than reactive - Plan to make required repairs



POLL QUESTION No. 2



What is the most important feature to you in an automated thermography system? (Click only one answer)

- Continuous infrared video feed
- Data collection
- Alarming
- Ease of integration
- Ease of installation



Do you really know the Temperature of your Critical Assets?

If not, maybe Thermography can help!

QUESTIONS?



Thank you!

Craig Haase

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Thermography & Strategic Accounts Sales Manager, Fluke Process
Instruments

Next webinar May 26, 11 a.m. ET

Vibration monitoring for peak asset performance

Vibration monitoring alerts teams to changes in machine condition before the situation degrades enough to cause harm. By using a combination of monitoring and route-based inspections, reliability and maintenance teams can move closer to condition-based maintenance, where they make decisions and schedule work based on what their assets are saying.

Join this webinar with Fluke Reliability experts Samantha LeSesne and John Bernet to learn more about vibration monitoring best practices, including what faults vibration detects as well as guidance on asset selection, installation, configuration setup, data evaluation and diagnosis.



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DEMO

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