



TS
1000
T°SHOOTER®

www.synergys-technologies.com

T°SHOOTER® TS1000

Contour detection camera for the location of abnormally hot or cold temperature zones.

NEW CONCEPT. Easier than an infrared thermal imaging camera. No more interpretation. Defective zones appear immediately on a visible scene.

One of the best indicator for maintenance, quality and security is the temperature T°.

By preventatively measuring and detecting your abnormally machine, process, electrical installation temperatures, you will improve your equipment reliability and your maintenance performance.

Easily capture, analyze and photograph your precise thermal problem locations using the T°SHOOTER® TS1000 (patent pending).

Adjust your temperature reference parameter ($> T^{\circ}\text{max}$ or $< T^{\circ}\text{min}$) and scan your equipment. The new thermal contour camera T°SHOOTER® TS1000 will show you immediately up to 6 abnormal temperature zones on a visible scene (on a large colored VGA 5.7" LCD screen!).

Easy to use, no special analysis in the thermal infrared image to do, no manual cursor to move or to place. It is not a standard thermal imaging camera, it is more easy to use and comfortable. The T°SHOOTER® TS1000 is a new concept (patent pending) which shows the abnormal thermal contours in the visible scene to the user.

Switching from visible to thermal imaging (3x color palettes) is still possible with MENU switch icon.

Made for all users. Made for faster checks. Made for more pleasant and efficiency use.

FOR EACH CONTOURED ZONE, YOU CAN SEE T°MAX VALUE AND POSITION AND T°AVERAGE VALUE.

3X THERMAL WORKING MODES :



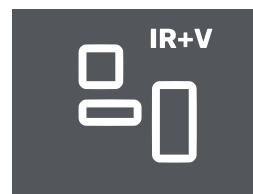
**ADJUSTABLE
EMISSIVITY
FROM 0.01 TO 1**



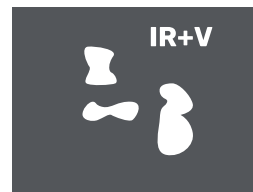
**3X THERMAL
COLOR PALETTES :**
• IRON
• RAINBOW
• B&W



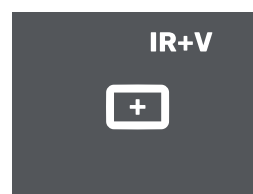
**SWITCH ICON
VISIBLE \Leftrightarrow THERMAL**



**VISIBLE
WITH CONTOUR**



**ISOTHERM
WITH CONTOUR**

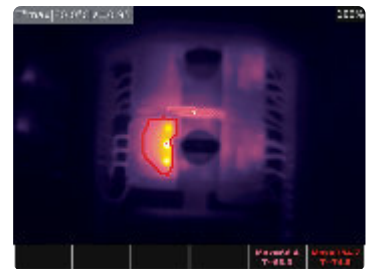


**STANDARD
THERMAL**

Visible view with contour



**2 SENSORS
TECHNOLOGY:
Visible + Thermal**



**Thermal view
with contour**



**1 to 6 contoured
zones for 1 scene**



**2 threshold
modes**



**Built-in
vibrator**



ELECTRICAL

MECHANICAL

PROCESS

BUILDING





TECHNOTE 1 - CASE 1

Detection of a dangerous temperature problem in an electrical cabinet:

The T°SHOOTER® is an unique large screen (5.7") special portable device which is able to detect up to 6 abnormal temperature zones in a scene.

Just set a temperature value (-10°C to +400°C) on its keyboard like an alarm threshold and let the T°SHOOTER® detect and show you the abnormal contour on the visible scene.

Nothing to analyze, nothing to pinpoint, no color to identify...it is not a single thermal camera, it is more efficient, faster and easier to use!

Just scan your scene and look detected contour on the visible image or wait about a vibration signal in your hand (embedded vibrator)!

For each abnormal detected zone, you will have the max temperature and the average temperature information.

You can save the photo of visible and thermal images and download them to PC for reporting.

You can work with 3 detection modes: Visible with contour-Isotherm with contour-Standard thermal imager.

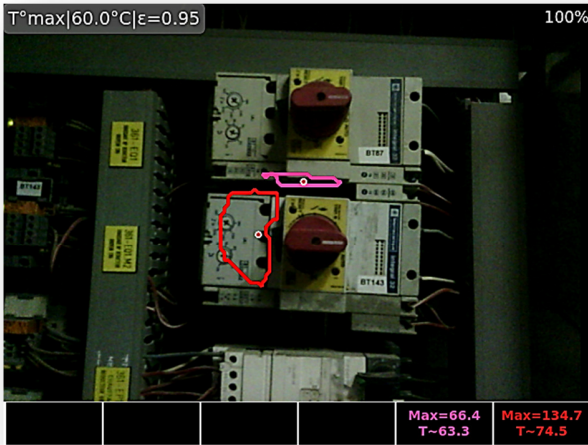


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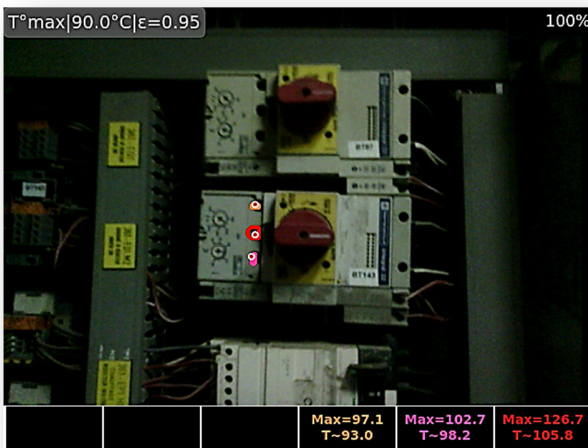
**ABNORMAL
TEMPERATURE
DETECTION-CASE 1**

**USEFUL
FOR ELECTRICAL
CABINET PREVENTIVE
MAINTENANCE**

**FOR T°SHOOTER
TS1000**



With a 60°C threshold – Thermal color in Ironbow



With a 90°C threshold – Thermal color in Rainbow

- **Detected default with max temperature around 130°C!** After electrical checking, it was a severe loosening of the 3 phases screws... **they were black and burned...** the customer decided to replace all the electrical component to avoid problems. We probably have saved a lot of money and probably have avoided a fire departure...



T°SHOOTER®
 CONTOUR DETECTION CAMERA



Is something abnormally heating?

TECHNOTE 2 - CASE 2

Detection of a dangerous temperature problem in an electrical cabinet:

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*Just set a temperature value (-10°C to +400°C) on its keyboard like an alarm threshold and let the T°SHOOTER® detect and show you the abnormal **contour** on the visible scene.*

Nothing to analyze, nothing to pinpoint, no color to identify...it is not a single thermal camera, it is more efficient, faster and easier to use!

*Just scan your scene and look detected **contour** on the visible image or wait about a **vibration** signal in your hand (embedded vibrator)!*

For each abnormal detected zone, you will have the max temperature and the average temperature information.

You can save the photo of visible and thermal images and download them to PC for reporting.

You can work with 3 detection modes: Visible with contour-Isotherm with contour-Standard thermal imager.

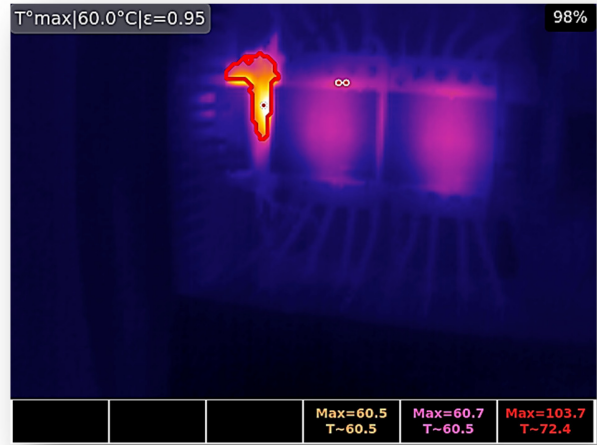
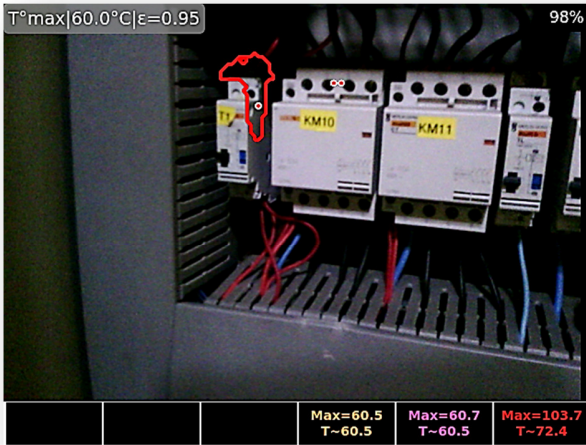


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ABNORMAL
TEMPERATURE
DETECTION-CASE 2

USEFUL
FOR ELECTRICAL
CABINET PREVENTIVE
MAINTENANCE

FOR T°SHOOTER
TS1000



With a 60°C threshold – Thermal color in Ironbow



- **Detected default with max temperature around 105°C!** After electrical checking, it was a component default (defective electrical coil)...the customer decided to replace all the electrical component "T₁" to avoid problems. We probably have saved a lot of money and probably have avoided a fire departure...



T°SHOOTER®
CONTOUR DETECTION CAMERA



Is this STEAM TRAP leaking?

TECHNOTE 3

*STEAM TRAP analysis: Is it **OPEN** (leaking)?*

The T°SHOOTER® is a unique large screen (5.7") special portable device which is able to detect up to 6 abnormal temperature zones in a scene.

*Just set a temperature value (-10°C to +400°C) on its keyboard like an alarm threshold and let the T°SHOOTER® detect and show you the abnormal **contour** on the visible scene.*

Nothing to analyze, nothing to pinpoint, no color to identify...it is not a single thermal camera, it is more efficient, faster and easier to use!

*Just scan your scene and look detected **contour** on the visible image or wait about a **vibration** signal in your hand (embedded vibrator)!*

For each abnormal detected zone, you will have the max temperature and the average temperature information.

You can save the photo of visible and thermal images and download them to PC for reporting.

*You can work with **3 detection modes**: Visible with contour-Isotherm with contour-Standard thermal imager.*



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STEAM TRAP
INSPECTION

PREVENTIVE
MAINTENANCE

ENERGY SAVINGS
ISO50001

SYNERGYS TECHNOLOGIES

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a) – Visible contour view



b) – Thermal contour view with Ironbow color

We have a STEAM TRAP installation under 5 BAR pressure, so with about 140°C normal steam temperature. So we decide to set the T°SHOOTER® max threshold to 120°C.

We just want to know if the trap is leaking. So, if on the trap output, there is something about 130-140°C temperature zone (steam leak)?

So, if there are temperature zones >120°C, you will see them with contoured zones. If temperatures are <120°C, you will see nothing, no contoured zones.

*You can look on a) and b) the detected hot zones (>120°C), where the steam is present. Only on the input of trap. On the output, you see nothing, no contour. **So, there is no steam leak! Trap***



T°SHOOTER®
CONTOUR DETECTION CAMERA

SPECIFICATIONS TS1000 (PATENT PENDING)

Thermal camera	FLIR LEPTON 3.5 160x120 pixels, range of -10°C to 400°C (± 5°C)
Color palettes	Iron-Rainbow-B&W
Working modes	Visible with contour. Isotherm with contour. Standard thermal (Auto hot, Auto cold, Center).
Emissivity setting	From 0.01 to 1
Visible camera	5 MP
Display	LCD VGA color 5.7 640 x 480 pixels
Pictures	VGA JPEG, number, name, date and time
Measurements	T°C or T°F
Memory	Up to 500 pictures, can be uploaded to PC
Communication	USB cable supplied
Autonomy	4 hours
Power supply	Rechargeable Nickel-metal hybrid batteries (NIMH)
Power charger	Universal DC 12V-1.5A
Temperature use range	-10°C to +50°C
Dimensions	H : 310 mm - W : 165 mm - D : 65 mm
Weight	700 gr for the TS1000 3,2 kg including ABS case
CE Standards	CEM 2004/108/CE : EN61000-6-4 & EN61000-6-2



SYNERGYS
TECHNOLOGIES

T^{SHOOTER} a SYNERGYS
TECHNOLOGIES innovation

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