Infrared Thermal Camera Sensor Guide

Simply smart monitoring

JANUARY 2019
OVERVIEW

The world’s first SNMP & Modbus thermal camera sensor that tells you the temperature of what it actually sees. From 768 up to 9600 temperature measurement points in one image, analysed every 2 seconds. A regular temperature sensor provides you with the temperature of the air surrounding the sensor. The thermal camera sensors provide you with the temperature of the objects & equipment it sees.

Used with our base unit, the SensorGateway, it will alert you via SMS, email, voice call or SNMP traps.

Through Modbus TCP it integrates with any major Building Management System and through SNMP it integrates with any major Network Monitoring System.

With JSON and XML it integrates with your software or web based applications.

WHAT YOU NEED

To start things up, first you would need our SensorGateway (BASE-WIRED), then one of our Infra-red Thermal Camera Sensor. It comes with three resolution sizes Small (32x24), Medium (80x60) or Large (160x120).

For pricing and ordering info please visit: https://infrasensing.com/sensors/sensor-thermal-image-temperature.asp
Available in 3 versions

<table>
<thead>
<tr>
<th>Image resolution</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
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<tbody>
<tr>
<td>Part number</td>
<td>ENV-THIMG-S</td>
<td>ENV-THIMG-M</td>
<td>ENV-THIMG-L</td>
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<tr>
<td>Price range</td>
<td>$</td>
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- **Object temp**: -40°C to 300°C
- **Thermal image size**: 768 pts (32x24 pixels)
- **Temperature reporting**: min & max temp
- **Horizontal Field of View**: 110° (wide)
- **Vertical Field of View**: 75°

- **Object temp**: 0°C to 120°C
- **Thermal image size**: 4800 pts (80x60 pixels)
- **Temperature reporting**: min & max temp
- **Horizontal Field of View**: 51° (narrow)
- **Vertical Field of View**: 63°

- **Object temp**: 0°C to 120°C
- **Thermal image size**: 9600 pts (160x120 pixels)
- **Temperature reporting**: min & max temp
- **Horizontal Field of View**: 56° (narrow)
- **Vertical Field of View**: 71°

FLIR inside

Made in the USA, FLIR is the leader in thermal imaging. With FLIR inside, we chose for the best technology at the best price for our Medium and Large thermal camera models.

The Medium and Large models are export restricted and not available in all markets.

September 2019
Do’s + Don’t’s before & during installs

Do’s

- Store the Sensors in its original container and in a clean dry area prior to installation to avoid contaminants from reaching the lens of the sensor.
- Schedule of installation should be done after any construction or renovation to avoid damage on the Thermal Image Sensor.
- Remove any debris or other source of clutter that might go in and damage the Thermal Image sensor.
- Always observe Electro Static Discharge (ESD) control procedure and handle the sensor with care.

Don’t’s

- Don’t leave sensor through contaminated areas (Dirt, Oil, cement, solvents, etc).
- Don’t drop sharp or any object on the lens of the Thermal Image Sensor.
- Don’t touch the Thermal Imaging sensor lens.
- Don’t handle the Thermal Imaging sensors without ESD precautions.
- Don’t Install the Thermal Imaging sensor in locations beyond its temperature limitations (upper limit of 125°C (257°F) / lower limit of -40°C (-40°F)).
General layout of the Infrared Thermal Camera Sensor

- (L) large - 9600 points
- (M) medium - 4800 points
- (S) small - 768 points

SensorGateway
Installation Steps

Prepare the Area

1. Verify that there are no contaminants present that might stick on the camera.
2. Clean the area where the Thermal Image IR sensors will be installed.
3. Make sure the mounting area of the devices are properly grounded to prevent electrical faults.

Prepare the Infrared Thermal Camera Sensor

1. Make sure that each Thermal Image Infrared Sensor is intact and free of contamination.
2. Do not use damaged sensors.
3. Observe the Do’s and Don’t’s.
4. Using an ethernet cable, connect the Thermal Image IR sensor in to the SensorGateway. As most of our sensors are, the Thermal Image IR sensor is plug and play.
5. We can connect up to 2 thermal image IR sensor in to our SensorGateway with or without a SensorHub and if you would be using our SensorHub we can only connect the Thermal Image IR sensors on ports 1, 2, 3, 4 and 7.

6. The thermal camera sensor comes with a small and compact magnetic 360° ball mount with an adhesive base. Made of a powerful neodymium magnet and silicon center, it ensures a safe and secure grip of the sensor. 360-Degree ball mount allows you to adjust the camera to any angles you want. It’s compact form factor allows you to mount your camera in tight spaces.

You may view the actual mounting through our instructional video Link
HOW IT WORKS

The Thermal Image IR Sensor measures the temperature that it sees at a distance of approximately 30m/90ft. One image can contain 768 temperature measurement points (Small version), 4800 (Medium) or 9600 points for the Large version.

The Thermal Image IR sensor checks every 2 seconds the 768, 4800 or 9600 sensor points to see if all measurements are within the low and high range. If not, the SensorGateway will then trigger an alert either through email, SMS, voice or through SNMP alerts.

Note that the SensorGateway can be integrated through any software compatible with SNMP, ModBus, JSON and XML and that the high and low temperature readings are being accessed as separate, discrete values.
Current trend in thermal monitoring

With the use of IR windows, Thermal Monitoring was made easier and serves as the ultimate protection for electricians, engineers and inspectors from arc-flash, electrocution and other causes of harm.

Currently IR windows are monitored through manual and periodic inspections using thermal guns.
IR window mount thermal sensors

Our goal is to automate a manual process, so we took it a step further.

With the Introduction of our IR window mount for infrared sensors (ENV-IRW-X) We leverage the existing investment made into IR windows while automating the monitoring process.

It saves significant costs compared to manual inspections.

Once installed there is no periodic cost attached. Your inspections are now automated and they’re done non-stop 24x7

The mount is designed to support the IR windows made by leading brands Fluke, Schneider and Flir.

It supports the 2,3 and 4 inch versions of their infrared windows.
Installing the Thermal Image IR sensor into the IR window mount

The ENV-IRW-X mounting kit is designed to support any of our thermal camera and infrared sensors. The sensor easily snaps into the mount kit.

The mount kit is then placed over the IR window to perform the continuous infrared monitoring of your critical power components.
INSTALLATION TIPS

A typical Installation inside data centers, server & IDF/MDF rooms would in front of your racks so instead of the conventional monitoring where you place temperature sensors on each point of interest with the Thermal Image IR Sensor you can monitor the whole rack or multiple racks with just one device.
APPLICATIONS

- Computer rooms
- Server/communication rooms
- Mechanical equipment HVAC units, pipes and fittings
- Main and Intermediate distribution frames (MDF and IDF)
- Heat pipes and valves

- Generator Rooms
- Battery Rooms
- UPS (Uninterruptible Power Supply) units
- Engine Rooms (within operating range)
- Thermal Windows
- Security Applications
More Applications

Generator Set (GenSet)

Monitoring heat Pipes or valves
Integrating with ServersCheck

Having to view a thermal Image is great! But seeing a visual representation of all your thermal image sensors along with other sensors, Centralized into a single software is what makes the difference. And that's what ServersCheck does.

With the latest edition of our Monitoring Software or Monitoring Appliance you can now view what your Thermal Image IR sensor sees.

We invite you to check our software, It is free for personal or non-profit use.
https://infrasensing.com/monitoring-software/
Integrating with your software

The SensorGateway (base unit) supports 4 protocols: SNMP, Modbus TCP, JSON and XML.

Following is a list of online resources showing you how to integrate our sensors with 3rd party software and other systems using the standard communication protocols available in the base unit.

**SNMP Monitoring Systems**
The base units support 2 methods of SNMP:
- **SNMP Get**: requests can be made to the SensorGateway using SNMP v2 or v3
- **SNMP Traps**: you can use SNMP v1 and v3

We have created guides on how to integrate our solution via SNMP in some of the leading softwares. [https://infrasensing.com/sensors/api.asp#nms](https://infrasensing.com/sensors/api.asp#nms)

**Building Management & Automation Systems**
ServersCheck’s base units support next to SNMP the Modbus TCP protocol which enables to integrate the sensors with Building Management Systems (BMS)

We have created a user manual on how to integrate our solution via ModBus TCP through this link. [https://infrasensing.com/sensors/api.asp#bms](https://infrasensing.com/sensors/api.asp#bms)

**Middleware, scripts and other software**
Our solution can also be integrated into your own scripts, web page, middleware or other software. More information can be found on the link below.

- [JSON](#)
- [XML](#)
- [Command Line](#)

Should you know of another online resource about integrating our sensors with other platforms, [Contact us](#) and we’ll add it to the list.
Contact us

INFRASENSING

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https://infrasensing.com