

Infrared Thermal Camera Sensor Guide



Simply smart monitoring

JUNE 2021



OVERVIEW

The world's first SNMP & Modbus thermal camera sensor that tells you the temperature of what it actually sees. From 192 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



Thermal Image
Temperature Sensor
(ENV-THIMG-XS/S/M/L)



SensorGateway
(BASE-WIRED)

To start things up, first you would need our SensorGateway (BASE-WIRED), then one of our Infrared Thermal Camera Sensor. It comes with four resolution sizes Extra-Small (16x12), Small (32x24), Medium (80x60), or Large (160x120) .

For pricing and ordering info please visit:

<https://infrasensing.com/sensors/sensor-thermal-image-temperature.asp>



Thermal Image Infrared Sensor

Available in 4 versions

Image resolution

Part number

Price range

X-
Small

ENV-THIMG-XS

\$

Small

ENV-THIMG-S

\$\$

Medium

ENV-THIMG-M

\$\$\$

Large

ENV-THIMG-L

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object temp	-40 C to 300 C	-40 C to 300 C	0 C to 120 C	0 C to 120 C
thermal image size	192 pts (16x12 pixels)	768 pts (32x24 pixels)	4800 pts (80x60 pixels)	9600 pts (160x120 pixels)
temperature reporting	min & max temp	min & max temp	min & max temp	min & max temp
horizontal Field of View	110° (wide)	110° (wide)	51° (narrow)	56° (narrow)
vertical Field of View	75°	75°	63°	71°
max object distance	<2m	<2m	45m	45m
accuracy	±1°C	±1°C	±5°C	±5°C

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.



Do's + Don'ts before & during installs

Do's

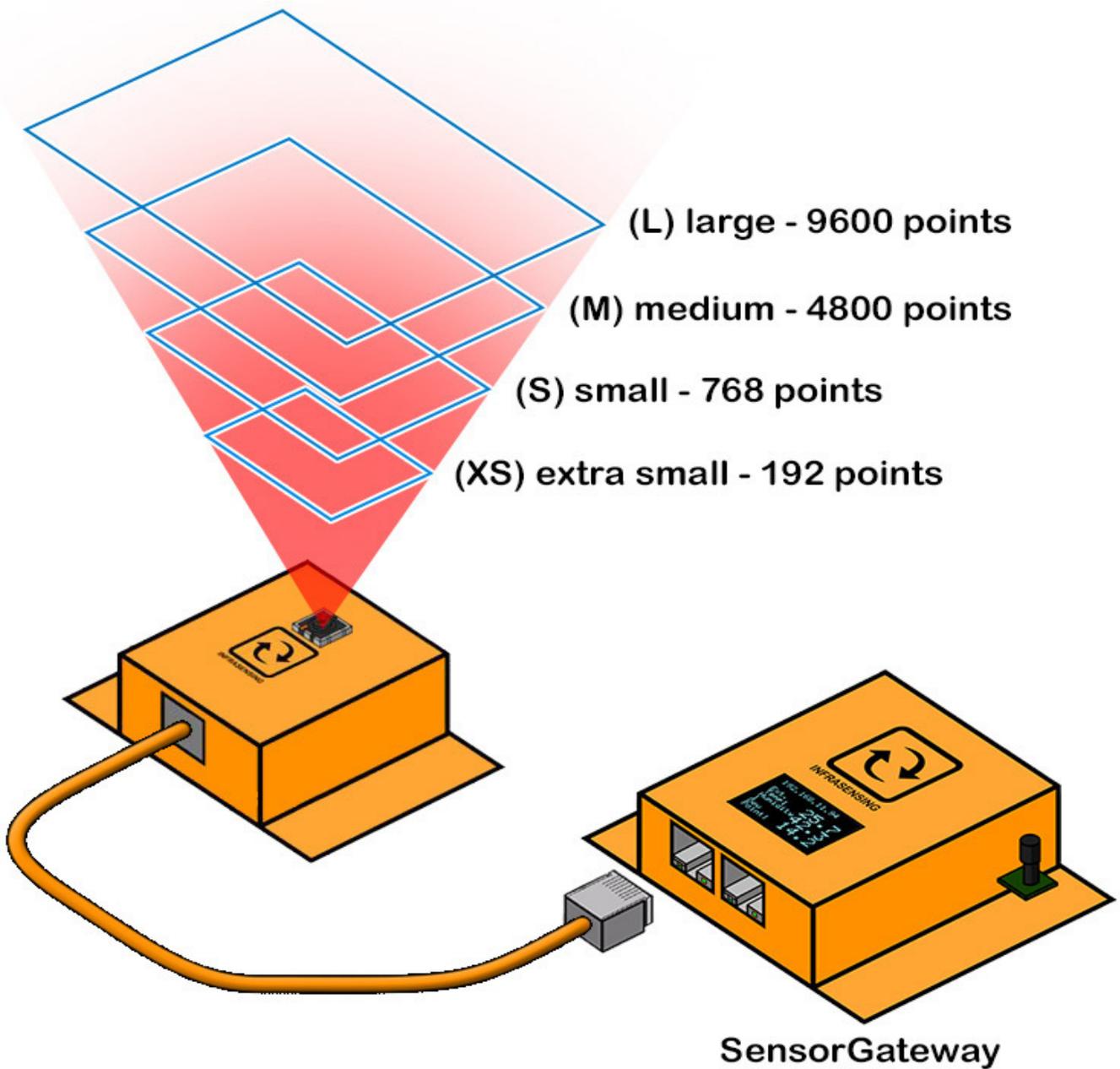
- Store the Sensors in its original container and in a clean dry area prior to installation to avoid contaminants from reaching the lens of the sensor.
- Schedule of installation should be done after any construction or renovation to avoid damage on the Thermal Image Sensor.
- Remove any debris or other 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'ts

- 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





Installation Steps

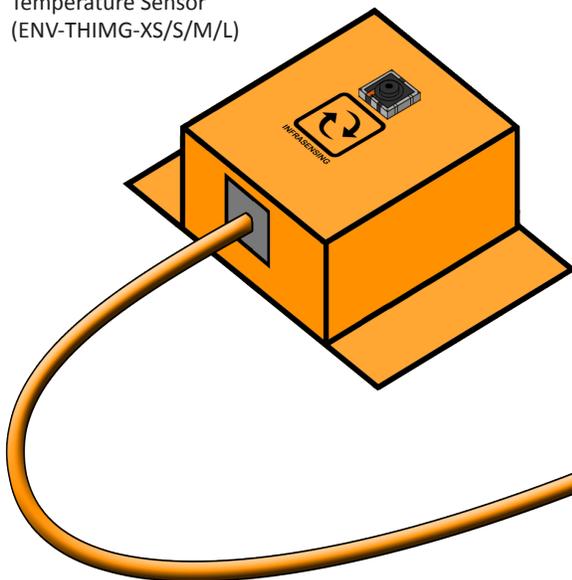
Prepare the Area

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.

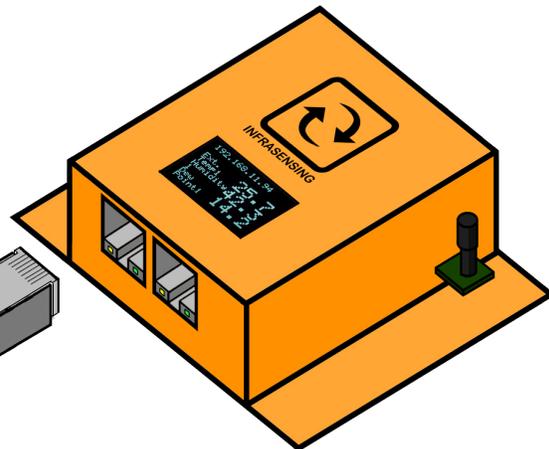
Prepare the Infrared Thermal Camera Sensor

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'ts.
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.

Thermal Image
Temperature Sensor
(ENV-THIMG-XS/S/M/L)



SensorGateway
(BASE-WIRED)

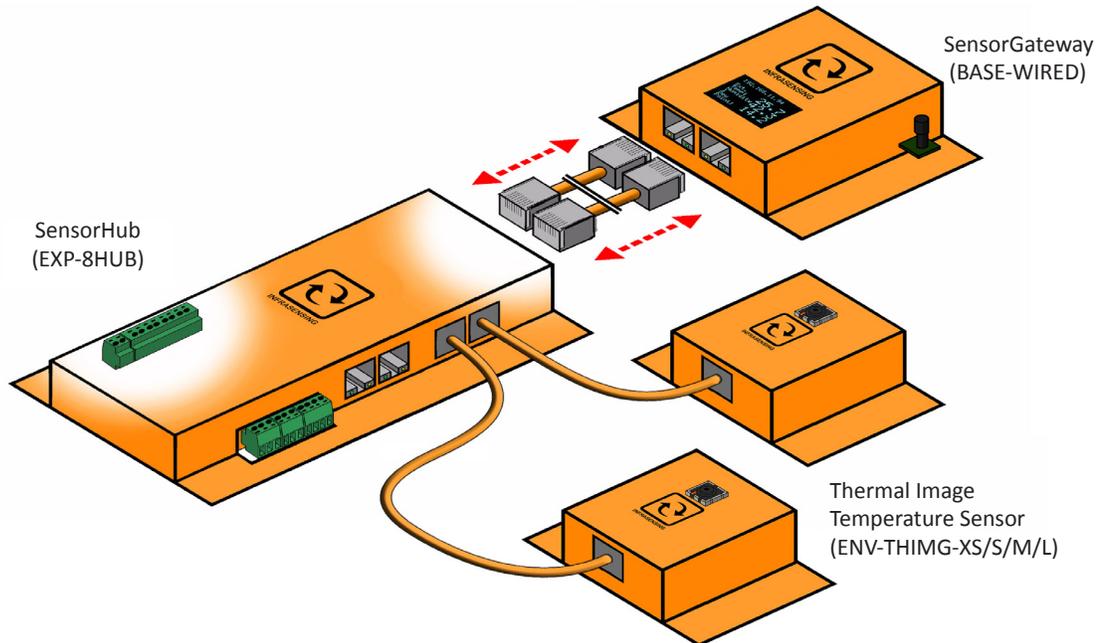


Ethernet Cable



Thermal Image Infrared Sensor

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.



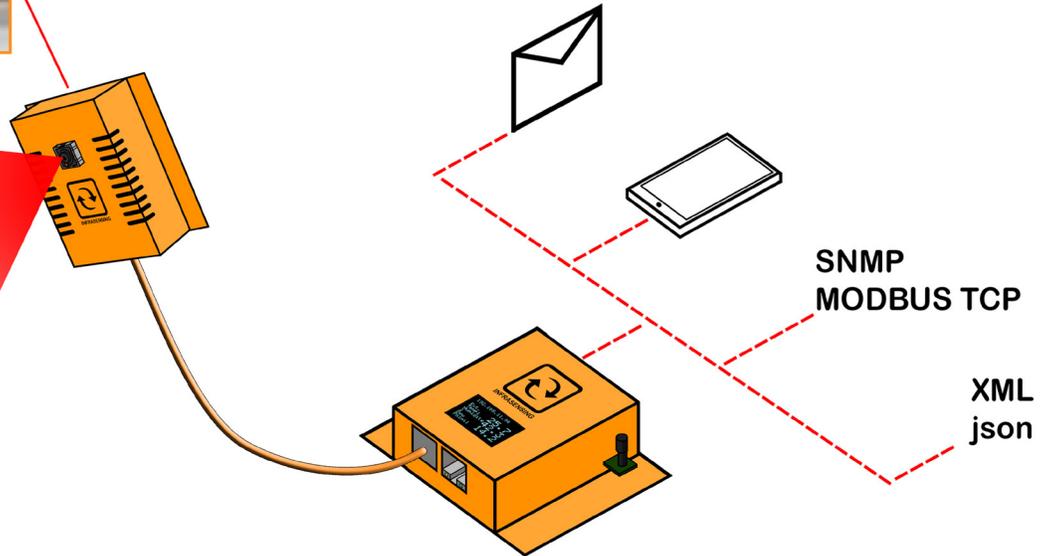
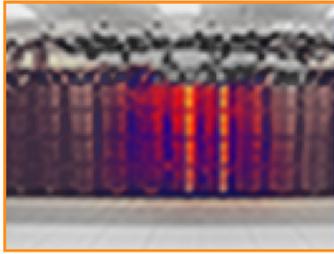
6. The thermal camera sensor comes with a small and compact magnetic 360° ball mount with an adhesive base. Made of a powerful neodymium magnet and silicon center, it ensures a safe and secure grip of the sensor. 360° ball mount allows you to adjust the camera to any angles you want. Its compact form 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 192 temperature measurement points (Extra Small version), 768 (Small), 4800 (Medium) or 9600 points for the Large version.

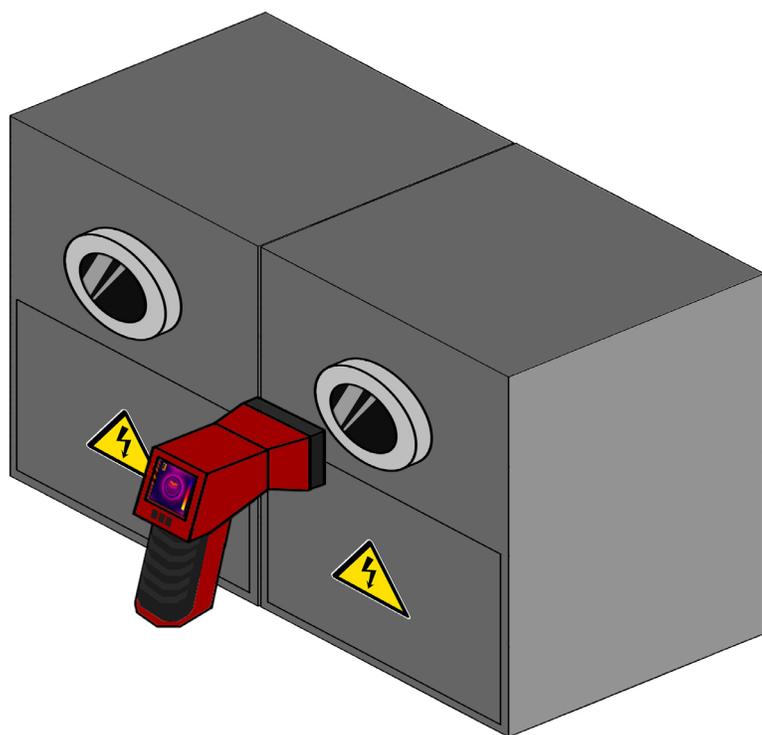
The Thermal Image IR sensor checks every 2 seconds the 192, 768, 4800 or 9600 sensor points to see if all measurements are within the low and high range. If not, the SensorGateway will then trigger an alert either through email, SMS, voice or through SNMP alerts.

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.

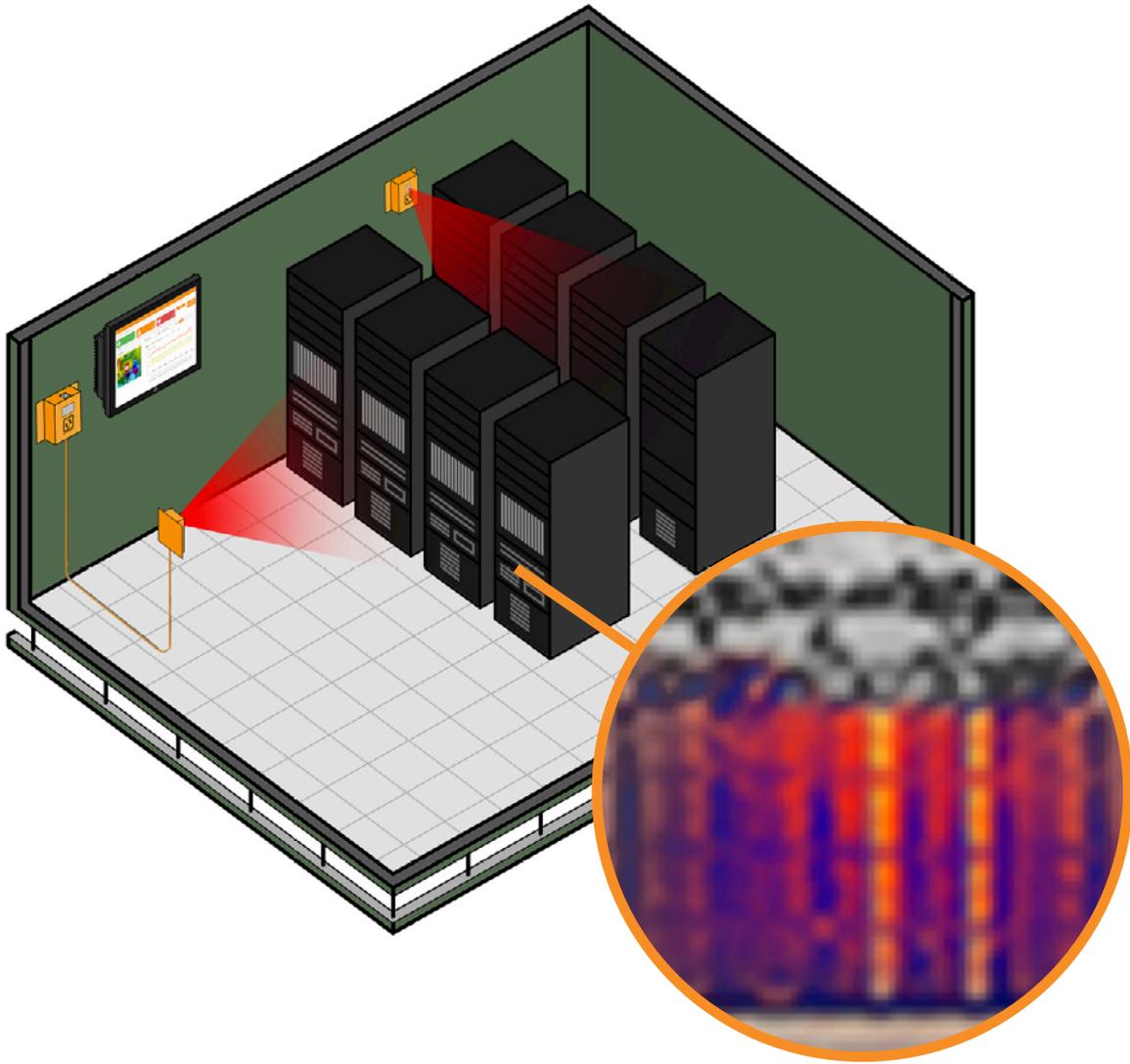


Currently IR windows are monitored through manual and periodic inspections using thermal guns.



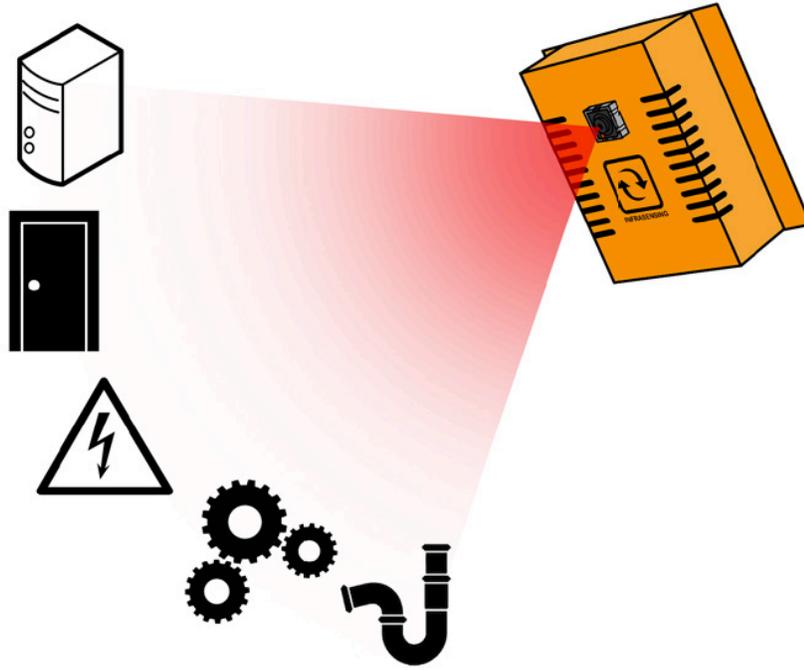
INSTALLATION TIPS

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.





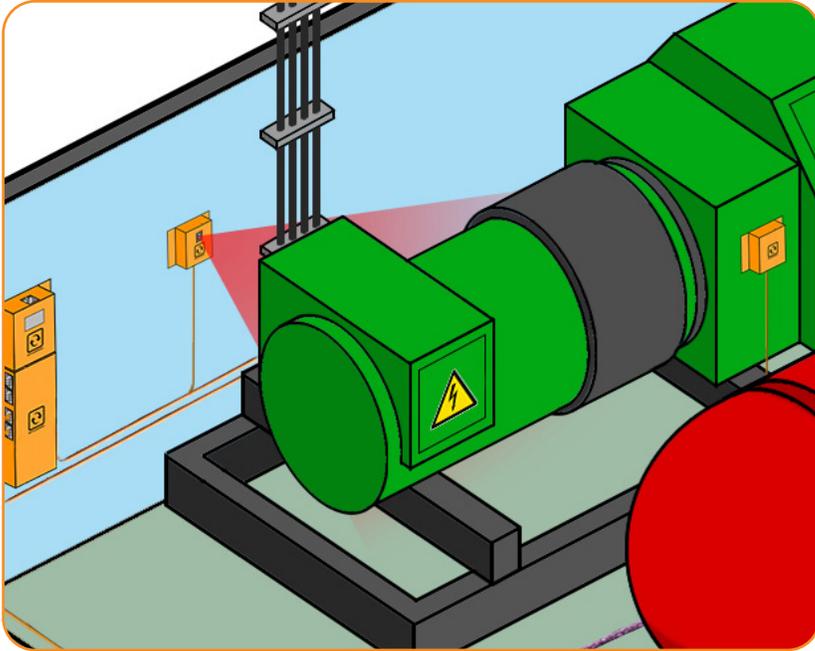
APPLICATIONS



- 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

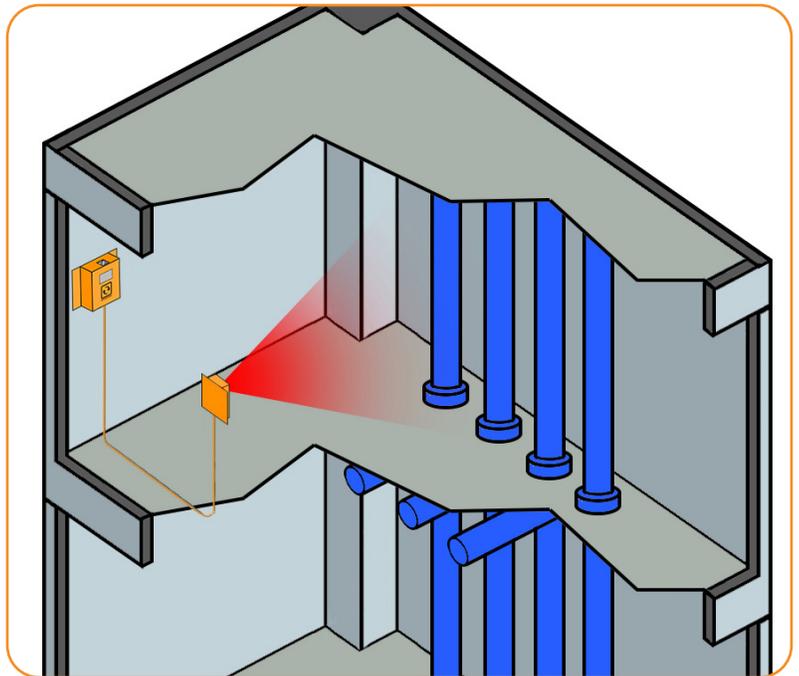


More Applications



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.

The screenshot displays a monitoring dashboard for 'sc MNL Office2'. At the top, there are three status cards: 'OK' with 19 thumbs up, 'WARNING' with 0 warning icons, and 'DOWN' with 1 thumbs down. To the right, a vertical menu includes 'Alerts' (with a red notification badge for 10), 'IO Controls', 'Floor Plan', and 'Edit Location'. Below these is a map of Makati and a thermal image of the office. The main area contains several sensor status cards:

- DEW (1):** 16.7 (range 16.7-16.7)
- DRY CONTACT (8):** OK (range TRIG-OK)
- HUMIDITY (1):** 50.2 (range 50.2-50.2)
- LUMINOSITY (2):** 28.3 (range 30.0-26.6)
- MOTION (1):** OK (range MOTION-OK)
- PING (1):** 0 (range 0-0)
- POWER-FAIL (1):** FAIL (range FAIL-OK)
- SHOCK (1):** 1.1 (range 1.1-1.1)
- SOUND (1):** 38.8 (range 38.8-38.8)
- TEMPERATURE (3):** 28.4 (range 31.3-23.2)

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:

- SMP 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 software.

<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>

Middleware, scripts and other software

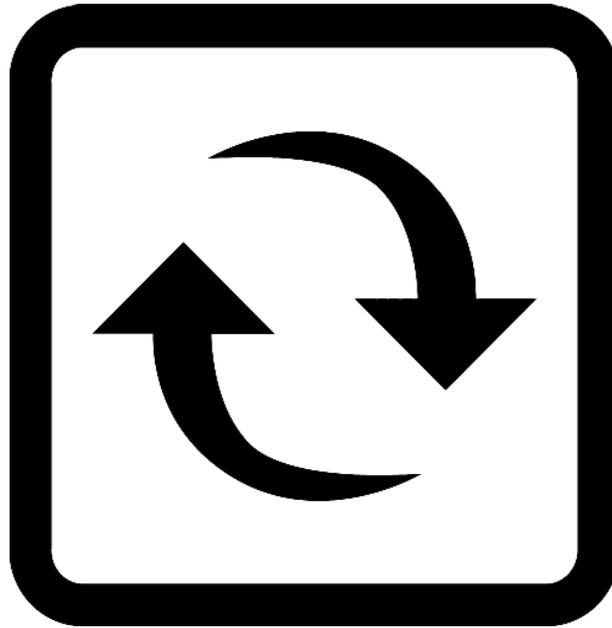
Our solution can also be integrated into your own scripts , web page, middleware or other software. More information can be found on the link below.

[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.



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