

Frequently Asked Questions

FeverWarn

by MachineSense®



Q. What is FeverWarn?

A. FeverWarn is an IoT-based, skin temperature scanning system from MachineSense. The current models scan skin temperatures at entrances to act as your virtual screening tool without the need for personnel to hold IR scanning devices and compromise social distancing rules. The data is then captured and can be integrated into any third-party IT system.

Q. What does the FeverWarn system include?

- A.** The system includes a bracket for the easy mounting of one infrared, touchless temperature sensor to be installed in either a fixture or entryways so that infrared radiations from a human body can be measured for elevated temperatures. The sensor measures the surface temperature by detecting infrared radiation energy and wavelength distribution. The IR temperature probe consists of an optical system, photoelectric detector, amplifier, signal processing, and output module. The optical system collects the infrared radiation in its field of view, and the infrared radiation energy is converted into corresponding electrical signals when converging on the photoelectric detector. It operates from 3.3 to 5 VDC. Data is sent to a data hub via BLE/I2C at a rate of up to 1000 samples/sec.
- Data hub/Intelligence IoT Edge Module. This device reads all the signals from the sensor, calibrates the reading, and signals whether a high-temperature reading is detected. An LED light indicates that result. The alarm can be integrated with an automated-door system via a relay. The module can also be connected to a cloud application where the user can see all the statistics recorded over the past three months.
 - LED lights signal go/no-go from the temperature reading or an upgraded model utilizes speaker announcements that provide instructions (user-customizable) to individuals passing through the system.
 - CrystalBall Software Platform. Each company can register their company name and product serial numbers in the MachineSense CrystalBall software platform. Each scanned entrant is recorded with a time stamp. This access is included free of charge on all software included models for one year. After one year, it can be renewed at \$10/month or \$100/year. (Software access is not available on all models.)

Frequently Asked Questions (continued)

- Q. What are the power requirements?**
- A.** 110/220V, 60Hz AC power supply will power FeverWarn.
- Q. Can I integrate FeverWarn to automated doors and gate systems?**
- A.** Yes. Feverwarn's Edge module offers a relay signal to integrate with automatic openings. Feverwarn sends an ON/OFF relay based on a go/no go temperature via USB. A customer can purchase an appropriate USB relay converter for their relay system to automate door operation.
- Q. How does FeverWarn differ from other thermal scanners?**
- A.** FeverWarn is a patent-pending system developed by an IoT company MachineSense, LLC. and its partner Novatec, Inc., a US manufacturer with more than 50 years of experience in industrial equipment. The following are the unique features of FeverWarn when compared to other products.
1. It is easy to install at doorways, entrances, and employee check-in systems, etc.
 2. It can be integrated with automated doors via relay and is offered with Modbus and UART.
 3. Alarm and statistics can be sent to the cloud. Deployers can receive alerts with a timestamp via SMS text messages or emails.
 4. Alarms and other statistics are available over REST API to integrate with any existing ERP systems.
 5. For large scale deployments, it offers an auto-calibration system for easy maintenance.
 6. It is calibrated using the human body to maintain calibration easily.
- Q. What are the typical applications?**
- A.** FeverWarn's initial products are designed especially for doorways at building entrances. FeverWarn assures employees and customers of an efficient screening process without violating social distancing standards. Custom configurations for other applications can be discussed with our engineering group.
- Q. How do you calibrate FeverWarn?**
- A.** Each sensor is factory calibrated. If field calibration is required, customers can conduct their calibration by manual or automatic calibration process using the "MachineSense IoT Support" mobile app. In manual calibration mode, the human body temperature must be taken as a reference. In auto-calibration mode, the reference temperature will be taken from the calibrator by the device automatically. The calibration certificate will be readable from the web/mobile app. For bulk installation and operation, customers can purchase an auto-calibrator for automatic calibration of the system.

Frequently Asked Questions (continued)

Q. What are the disadvantages of handheld forehead scanning?

A. Handheld forehead scans can be compromised by forehead perspiration, hair, makeup, and head coverings. These known issues are not associated with fist/wrist scanning.

Also, human intervention is required for forehead scanning eliminating the opportunity to maintain proper social distancing.

No automatic data outputs are available for provable compliance and defense, if needed. No data outputs are available to connect with auxiliary devices for automatic opening of doors, gates, or integration with employee card systems.

Q. What are the disadvantages of thermal imaging?

A. Non-contact thermal imaging has several restrictions. Although skin temperature is a good indicator of a core body temperature, scanning skin temperature automatically can be difficult. The reliability of scanning the skin temperature depends on factors such as the use of makeup, skin color, sweating, exposure to ambient temperature, etc. Depending on those factors, error margins can be increased. That's why the FDA recommends that if an elevated temperature is detected, a proper contact thermometer should be used to confirm a fever.

Q. Why is the fist used for temperature?

A. Fever is a rise in core body temperature. Blood vessels carry the temperature to the skin. That's why the skin on top of the arteries is the best location for scanning a non-contact temperature. The fist has several arteries under the skin surface.

Q. How does the fist correlate to the forehead scanning?

A. Fist and forehead temperatures go up and down with respect to body temperature exactly in the same way. If the fist temperature is known, the core body temperature can be predicted in the same way as the forehead.

Q. What are the advantages of FeverWarn cloud storage vs. local storage?

A. Cloud storage offers significant advantages over local storage systems, including:

1. If you have multiple scanning systems in numerous locations, all the data will be stored and viewed in a single app. This provides easy access to a centralized system.
2. Email/SMS texts will be sent to designated persons as soon as an elevated temperature is detected.
3. Software features will be automatically updated.
4. Data can be seen anywhere, anytime, as opposed to a mobile app where data can only be seen when close to the device.

Q. Where is FeverWarn manufactured?

A. Baltimore, Maryland – USA

Q. Which cloud service is used with FeverWarn?

A. FeverWarn is built on the Microsoft® Azure Cloud platform. The servers are in Virginia, USA.