

MERIDIAN

TEMPERATURE SCREENING KIOSKS

THERMAL IMAGING OVERVIEW

HARDWARE - THERMAL SENSOR

Heimann Sensor

- A. 32x32 infrared array sensor with a resolution of 32x32 pixels
- B. Ambient Temperature Range (2 to 40°C) (35.6 to 104°F)
- C. Maximum sensing area of 90° x 90°

KIOSK START UP AND POSITIONING

- A. When the kiosk first starts up it does a scan of the ambient temperature of the room. During this process, it is best not to have anyone in the sensor's field of view. This will take around 10-20 seconds.
- B. Wait for more than 10 minutes to get temperature readings from the device. This allows the device to properly acclimate to the ambient temperature of the location.
- C. Do not let the sensor face glass or any other high temperature objects.
- D. Do not move the floor position of the kiosk after it is powered on.

MEASUREMENT

Temperature Reading Calibration

Your Personnel Management Kiosk (PMK) arrives in a calibrated state from the factory, using a blackbody device as a reference temperature source. Once set-up is completed, verify the readings of the PMK based on an FDA cleared thermal forehead thermometer. If needed, adjust the temperature compensation value of the PMK. Temperature compensation on the device must be entered in Celsius. Please refer to our website for details. We suggest calibrating your device once a month or more frequently if you have fluctuations in your ambient temperature of more than 2.0°C (5.6°F).

MEASUREMENT CONT.

Body Temperature

- A. Body temperature varies from person to person and fluctuates during the course of the day. For this reason, it is suggested to know one's normal, healthy forehead temperature to accurately determine the temperature.
- B. Reading times may differ according to skin tone, measurement distance, and lighting conditions.
- C. Different measurement methods may give different readings. Therefore, you should compare your readings from the PMK to an IR forehead thermometer.
- D. Instances that can affect the temperature reading of an individual: wearing glasses, hair covering the forehead, hats and other head coverings, direct sunlight on the kiosk or user, and medical conditions that raise the surface temperature of the face.
- E. If an abnormal temperature is detected on an individual that has just come inside, please wait at least 3 minutes before taking another measurement.

CALIBRATION

Meridian

- A. Your kiosk arrives in a calibrated state from the factory using a blackbody device as a reference temperature source.

Customer

WARNING: Calibration will affect all subsequent measurements taken by the device.

- A. We suggest that once you receive your kiosk and set it up in the location you will be using, to verify the readings of the kiosk based on an FDA approved thermal forehead thermometer.
- B. Once you have that reading, go into the application under the heading of Temperature Detection Settings > Compensation Temperature and adjust the readings based on the measurement from your thermal forehead thermometer $\pm 1^{\circ}\text{C}$ (convert $^{\circ}\text{F}$ to $^{\circ}\text{C}$). Temperature compensation on the device must be entered in Celsius.
- C. We suggest calibrating your device once per month or more frequently if you have fluctuations in your ambient temperature of more than 2.0°C (5.6°F).
- D. The Thermal Imager is set to the skin emissivity of 0.98 vs. other material surfaces i.e. paper, for example, is 0.95 and various wavelengths. Utilization of other surfaces other than human skin is not recommended as this will result in inconsistent measurements when verifying the device.

ACCURACY

Measurement

- A. Face Measurement
 - a. The Personnel Management Kiosk uses the thermal image of a person's face to accurately determine their surface body temperature.
 - i. The thermal image results are taken from the data in the thermal array, and the average temperature is displayed based on the temperature readings.
 - ii. These readings also consider the compensation setting in the application.
 - b. The Personnel Management Kiosk measures skin surface temperature and does not measure internal core body temperatures.
- B. Location
 - a. The ideal distance for measuring the temperature of the individual and most accurate results are at 20 inches. The device will measure individual's temperature up to 3 feet from the device.
 - b. Ambient Temperature
 - i. The kiosk needs to be in an ambient temperature range of 15–26°C (59–79°F)
- C. Obstructions
 - a. Items that will affect temperature readings compared to internal body temperature
 - i. Glasses
 - ii. Hair covering forehead
 - iii. Hats or other head coverings
 - iv. Direct sunlight
 - v. Outdoor use
- D. Environmental Effects
 - a. Building Environmental Controls – HVAC air flow changes relative to heating a cooling ducting
 - b. Seasonal Effects – Large variation in air temperature relative to the environment, locating the device in Perimeter door locations versus main entryways during cold temperatures to reduce effect of variation to air temperatures.

Temperature

- A. The kiosk out of the box is accurate to $\pm 0.5^{\circ}\text{C}$ ($\pm 0.9^{\circ}\text{F}$).
- B. Normal temperature range for the forehead is 35.8 to 37.8°C (96.44 to 100.04°F).



CORPORATE HEADQUARTERS
312 S Pine Street, Aberdeen, NC
sales@mzero.com
+ 1 866 454 6757

Component specifications subject to change without notice. Revision Date: January 14, 2021

This device is not FDA-cleared or approved. This temperature device should not be solely or primarily relied upon to diagnose or exclude a diagnosis of COVID-19, or any other disease or health condition. Elevated body temperature in the context of use should be confirmed with secondary evaluation methods, such as a non-contact infrared thermometer or clinical grade contact thermometer.

SOFTWARE DEVELOPMENT LAB
30 Eglinton Ave, Ste 808, Mississauga, Ontario, Canada



E212745

