Temperature Guard

Field Calibration Procedure and Certificate
VM608E

Calibration Recommendations:
In the absence of other calibration standards, methods, and recommendations for your application we recommend that the Temperature Guard unit be calibrated annually.

It is highly recommended that the unit be recalibrated if, during installation, any lead wire to the temperature sensor is added or eliminated.

Required Equipment:

1. An NIST traceable temperature measurement standard such as a thermometer or other measuring device (referred as Temperature Standard)
2. An NIST traceable humidity measurement standard (referred as Humidity Standard)
3. Data Capture software running on a computer
4. Fully installed and functioning Temperature Guard system with sensors

Note: Calibration is a one point calibration and shall be performed with the sensor in place.

Preparation
1. Open Data Capture, click on Setup -> Temperature Guard Servers and Sensors (Note 2)
2. Select the Temperature Guard to be calibrated by left clicking on the name in the list.
3. Right click on the selected Temperature Guard and select Edit Sensors.
4. Data Capture will download and display all sensor parameters.
5. Click on the **Cal** button.
6. Click on the Reset button to set the correction factors to 0 if want to start from the beginning. Do not click Reset if you are only calibrating one sensor and the others have calibration factors in them.

Temperature Sensor Calibration
1. Locate the Standard as close to the temperature sensor being calibrated as possible. If the sensor is in a vial, unscrew the top and insert the Standard.
2. Allow the Standard and the temperature displayed by the Temperature Guard unit to normalize. (approx. 10-15 minutes)
3. Enter the temperature obtained from the Standard. (see page 4 of procedure)
4. Click on the **Store Correction Factors** button. Data Capture will upload the correction factors and then refresh the sensor data. The current temperature reading will now match the Standard.
5. Record the calibration results in the table on page 3 of this procedure.
6. Repeat steps 1 to 6 for all temperature sensors in the system.

Humidity Sensor Calibration

Note: This is only a single point calibration. All transmitters are factory calibrated to meet/exceed published specifications. Field adjustment should not be necessary.

1. Locate the Standard as close to the humidity sensor being calibrated as possible.
2. Allow the Standard and the humidity displayed by the Temperature Guard unit to normalize. (approx. 60-120 minutes)
3. Enter the humidity obtained from the Standard. (see page 4 of procedure)
4. Click on the Store Correction Factors button. Data Capture will upload the correction factors and then refresh the sensor data. The current humidity reading will now match the Standard.
5. Record the calibration results in the table on page 3 of this procedure.
6. Repeat steps 1 to 6 for all humidity sensors in the system.
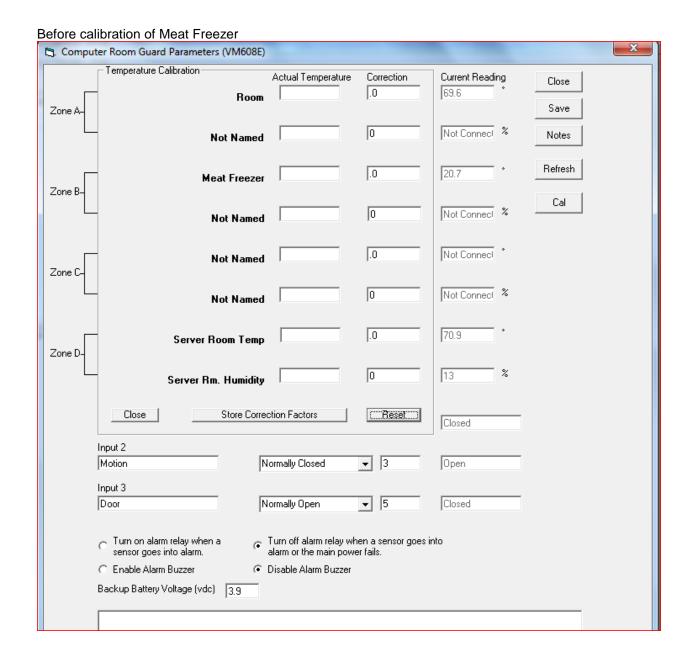
Field Calibration Certificate

Channel	Column 1 NIST Traceable Temperature Measuring Standard	Column 2 Temperature Reading	Column 3 Correction	Column 4 Corrected
1				
3				
5				
7				

Channel	Column 1 NIST Traceable Humidity Measuring Standard	Column 2 Humidity Reading	Column 3 Correction	Column 4 Corrected
2				
4				
6				
8				

Temperature Guard serial number	
NIST traceable thermometer serial number (Note 3)	
NIST traceable humidity measuring device serial number	
Certified by (Signature)	
Certified by (Printed Name)	
Today's Date	
Due Date (one yr. from today's date)	

Calibration Screen for VM608E
     This screen is found in Data Capture 4.2.7. Setup/Temperature Guard Servers and Sensors/Edit
     Sensors Click the Cal button.

Before calibration of Meat Freezer

Computer Room Guard Parameters (VM608E)

Temperature Calibration

	Actual Temperature	Correction	Current Reading	
Room		.0	69.6 °	
Not Named		0	Not Connecl %	
Meat Freezer		.0	20.7 °	
Not Named		0	Not Connecl %	
Not Named		.0	Not Connecl °	
Not Named		0	Not Connecl %	
Server Room Temp		.0	70.9 °	
Server Rm. Humidity		0	13 %	

Close   Save   Notes   Refresh   Cal

Zone A   Zone B   Zone C   Zone D

Close   Store Correction Factors   Reset   Closed

Input 2
Motion   Normally Closed ▼ 3   Open

Input 3
Door   Normally Open ▼ 5   Closed

○ Turn on alarm relay when a sensor goes into alarm.   ⦿ Turn off alarm relay when a sensor goes into alarm or the main power fails.
○ Enable Alarm Buzzer   ⦿ Disable Alarm Buzzer
Backup Battery Voltage (vdc) 3.9

Enter the actual temperature or actual humidity into the Actual Temperature column, and click Store
Correction Factors.

After calibration of Meat Freezer to 20.0F

Computer Room Guard Parameters (VM608E)

Temperature Calibration

	Actual Temperature	Correction	Current Reading	
Room		.0	69.8	°
Not Named		0	Not Connect	%
Meat Freezer	20.0	-.7	20.0	°
Not Named		0	Not Connect	%
Not Named		.0	Not Connect	°
Not Named		0	Not Connect	%
Server Room Temp		.0	71.1	°
Server Rm. Humidity		0	13	%

Zone A

Zone B

Zone C

Zone D

Close   Save   Notes   Refresh   Cal

Close   Store Correction Factors   Reset

Closed

Input 2
Motion   Normally Closed   3   Open

Input 3
Door   Normally Open   5   Closed

○ Turn on alarm relay when a sensor goes into alarm.
● Turn off alarm relay when a sensor goes into alarm or the main power fails.
○ Enable Alarm Buzzer
● Disable Alarm Buzzer

Backup Battery Voltage (vdc)   3.9

Notes

Note 1: An Ice bath procedure (see below) can be used instead of a calibrated NIST thermometer. 32.0°F or 0.0°C would be entered in Column 1.

Note 2: For all units corrections can be made over the phone. See page 8 of the manual for details.

Note 3: Please note the NIST certificate of the thermometer used to calibrate must not be expired. Please keep the thermometer's NIST certificate with this completed document.

Optional: Calibrating using an ice bath procedure

1) Create an ice bath by filling 600-mL beaker three-quarters full of crushed ice.
2) Add enough pre-cooled de-ionized water to cover the ice, but not so much water such that the ice floats.
3) Thoroughly stir the ice/water mixture.
4) Suspend the bare temperature probe in the ice bath.
5) Allow the temperature shown on the unit's display to stabilize for at least 10 minutes.