

# 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 re-calibrated 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. (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 **Calibrate** menu option button.
6. Click on the Clear button to set the correction factors to 0 if want to start from the beginning. Do not click Clear 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 **Apply** 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 **Apply** 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

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

	Column 1	Column 2	Column 3	Column 4
<b>Channel</b>	<b>NIST Traceable Humidity Measuring Standard</b>	<b>Humidity Reading</b>	<b>Correction</b>	<b>Corrected</b>
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 5. Setup. Select your unit's name. Edit Sensors. Calibrate.

### Before calibration of Server Room Temp

Type / Port	Lower Limit	Upper Limit	Time (min)	Current Reading	Actual Reading	Correction Factor
RH3-R Input 1						
Server Room Temp	65.0	85.0	10	74		0.0
Server Room Humidity	10	85	10	28		0.0
RH3-R Input 2						
Temperature Sensor	-200.0	200.0	0	Not used		0.0
Humidity Sensor	0	100	0	Not used		0.0
RH3-R Input 3						
Temperature Sensor	-200.0	200.0	0	Not used		0.0
Humidity Sensor	0	100	0	Not used		0.0
Local Temp/RH						
Internal Temperature	65.0	85.0	10	75.7		0.0
Internal Humidity	10	85	10	24		0.0

This area is used to calibrate the temperature and humidity readings of a Computer Room Guard. For details on performing calibration go to [www.temperatureguard.com/support](http://www.temperatureguard.com/support)

**Informational**

- Read current status
- Read the names of sensor 1 and 2
- Read the names of sensor 3 and 4
- Read the names of sensor 5 and 6
- Read the names of sensor 7 and 8
- Read the names of the inputs

Enter the actual temperature or actual humidity into the Actual Reading column, and click the Apply button.

## After calibration of Server Room Temp.

Program Sensor Limits for VM608ER5

Save Refresh Calibrate Email/Notes Help

Type / Port	Lower Limit	Upper Limit	Time (min)	Current Reading	Actual Reading	Correction Factor
RH3-R Input 1	Server Room Temp	65.0	85.0	10	72.5	72.5
	Server Room Humidity	10	85	10	28	-1.5
RH3-R Input 2	Temperature Sensor	-200.0	200.0	0	Not used	0.0
	Humidity Sensor	0	100	0	Not used	0.0
RH3-R Input 3	Temperature Sensor	-200.0	200.0	0	Not used	0.0
	Humidity Sensor	0	100	0	Not used	0.0
Local Temp/RH	Internal Temperature	65.0	85.0	10	75.7	0.0
	Internal Humidity	10	85	10	24	0.0

This area is used to calibrate the temperature and humidity readings of a Computer Room Guard. For details on performing calibration go to [www.temperatureguard.com/support](http://www.temperatureguard.com/support)

**Informational**

- Read current status
- Read the names of sensor 1 and 2
- Read the names of sensor 3 and 4
- Read the names of sensor 5 and 6
- Read the names of sensor 7 and 8
- Read the names of the inputs

**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.

[https://docs.wixstatic.com/ugd/390fef\\_93f7148f9ee54ae08df5f5b3ba12aec8.pdf](https://docs.wixstatic.com/ugd/390fef_93f7148f9ee54ae08df5f5b3ba12aec8.pdf)

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.