

TC-25 TEMPCHECK

Rapid Response Thermometer



OPERATING INSTRUCTIONS MANUAL



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1. SAFETY WARNINGS

Please read this manual in its entirety before beginning installation.



The TC-25 TEMPCHECK Rapid Response Thermometer must be installed, and periodically tested, according to Hampshire Controls' instructions, by qualified personnel, in compliance with local, national, or regional regulations. The TC-25 TEMPCHECK Rapid Response Thermometer will not operate correctly if it is not properly installed.



Do not modify or change system components. Using this equipment in a manner other than expressly intended may cause injury and/or void the warranty. Hampshire Controls shall not be liable for any incidental or consequential damages. The user assumes all risk and liability associated with the end use of this product.

2. Unpacking Information

The TC-25 TEMPCHECK Rapid Response Thermometer is shipped in a single custom box. Please confirm that the box contains the following:

- **TC-25 TEMPCHECK Rapid Response Thermometer**
- **Power Adapter:**
 - **Input:** 100-240 VAC, 50-60 Hz, <0.35 A (RMS)
 - **Output:** 12 VDC, 1 A, 12 W
 - 6' (2m) cord
- This **TC-25 TEMPCHECK Rapid Response Thermometer Operating Instructions Manual** along with the **TC-25 TEMPCHECK NIST-Traceable Certificate of Calibration** in a 9" x 12" 2 mil re-closable plastic bag.

3. Introduction

Hampshire Controls' TC-25 TEMPCHECK incorporates a thermocouple in a specially designed insulated pad to provide prompt and accurate temperature response. The TC-25 TEMPCHECK has been developed to assist laboratory and clinical personnel in the rapid determination of the temperature of bags of whole blood, red blood cells, platelets, fresh frozen plasma, cryoprecipitate and other bagged biological products. Non-invasive, accurate temperature readings are available in seconds.

The TC-25 TEMPCHECK uses a standard wall plug-in power supply with 12 VDC, 1 A output, and incorporates a built-in rechargeable battery backup for limited portable operation and for continued use during a power outage.

The TC-25 TEMPCHECK Rapid Response Thermometer is simple to operate: place the bag of biological product on the thermocouple sensing pad and the temperature of the product bag will be displayed within seconds.

TC-25 TEMPCHECK Operating Instructions

3.1. TC-25 TEMPCHECK Features

- Rapid temperature response time: 15 – 30 seconds.
- Temperature sensor range: 0.0 to 40.0 °C.
- Temperature accuracy: ± 0.2 °C across the entire temperature range.¹
- User selectable temperature scale: °C (default) or °F.
- Temperature display resolution: 0.1 °.
- Angled, high resolution, easy-to-read graphical backlit liquid crystal temperature display (LCD).
- **Manual** mode displays the temperature of the bagged biological product in ~15 seconds.
- Battery backup: greater than 7.5-hour life in active use on a fully charged LiPo battery.
- NIST-traceable Certificate of Calibration.
- CAP TRM42470 compliant.
- EU Declaration of Conformity.

3.2. TC-25 TEMPCHECK Specifications

Specifications	
Temperature Response Time	15 – 30 seconds
Type K Thermocouple Range	0.0 °C to 40.0 °C (factory calibration guaranteed for 1 year)
Accuracy	± 0.7 °C at power up. ± 0.2 °C after 2 minutes of running time.
Resolution	0.1 °
Power Adapter	
<i>Input (Fluctuation)</i>	100-240 VAC (fluctuation <150 mV peak-to-peak), 50-60 Hz, <0.35 A RMS @ 115 VAC
<i>Output</i>	12 VDC, 1 A, 12 W
LiPo Battery Backup	>7.5 hours active use on a fully charged LiPo battery.
Size, Material, & Weight	15.2 cm (w) by 5.2 cm (h) by 23.1 cm (d), 6.0" (w) by 2.1" (h) by 9.1" (d), ABS plastic, 466 g (1.0 lb.)
Environmental Conditions	
Facilities	Intended for indoor (laboratory) use
Altitude	Up to 2,000 meters (6,600')
Ambient Temperature Range	15 °C to 32 °C (59 °F to 90 °F)
Maximum Relative Humidity	60% (15 °C to 32 °C)
Ventilation	Compliance with ANSI/ASSP Z9.5-2022 recommended.
Pollution Degree	POLLUTION DEGREE 2: only non-conductive pollution occurs.

¹ Temperature accuracy: ± 0.7 °C at power up. Accuracy improves to ± 0.2 °C after 2 minutes of running time.

4. Installation

NOTE: The TC-25 TEMPCHECK Rapid Response Thermometer must be installed according to Hampshire Controls' instructions, by qualified personnel, in compliance with local, national, or regional regulations.

NOTE: DO NOT USE AN IMPROPERLY RATED POWER ADAPTER. The TC-25 TEMPCHECK power adapter is compatible with 100-240 VAC, 50-60 Hz, <0.35 A RMS input and outputs 12 VDC, 1 A, 12 W.

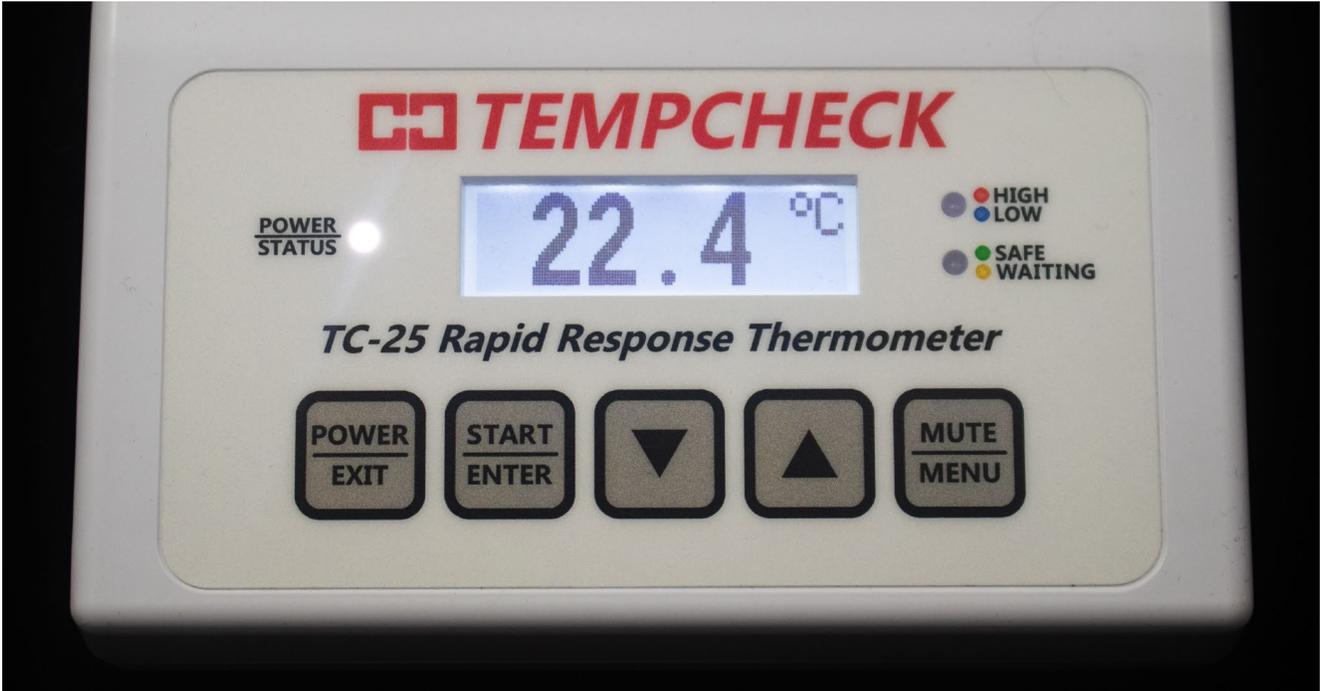


Figure 1. TC-25 TEMPCHECK LCD and POWER/STATUS Indicator LED.

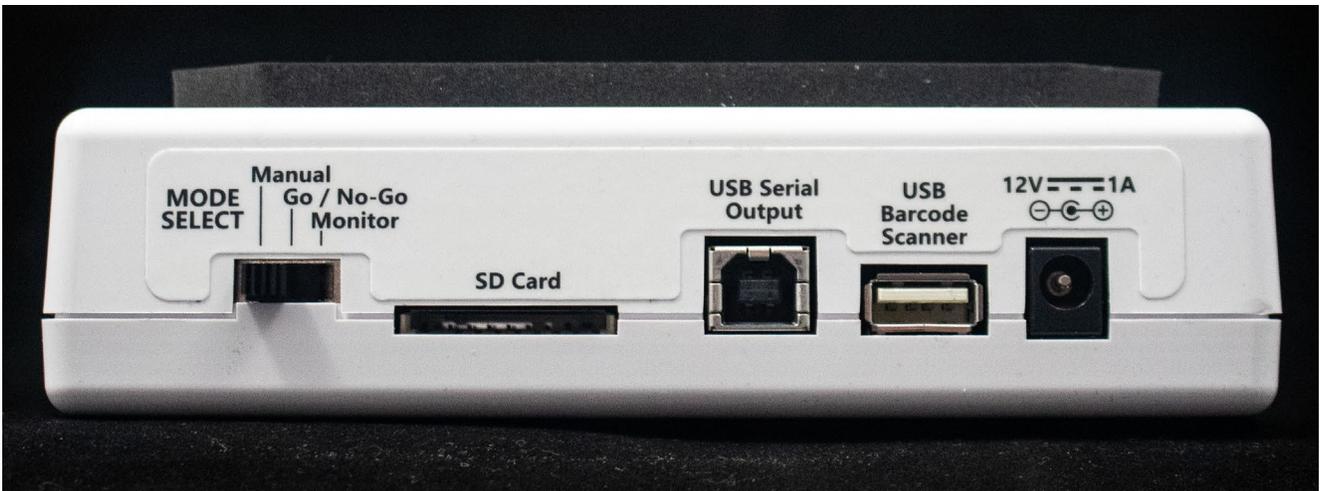
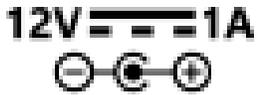


Figure 2. TC-25 TEMPCHECK Back Panel, Mode Switch, SD Card and Interconnections.

TC-25 TEMPCHECK Operating Instructions

4.1. Interconnections

Table 1. TC-25 TEMPCHECK Manual Mode & Power Connection.

TC-25 LABEL	DESCRIPTION
MODE SELECT	Not used. TC-25+ TEMPCHECK only. Set to Manual .
SD Card	SD card slot for firmware updates.
USB Serial Output	Not used. TC-25+ TEMPCHECK only.
USB Barcode Scanner	Not used. TC-25+ TEMPCHECK only.
	Power input jack, 5.5 mm x 2.1 mm, 12VDC 1A (12 W), center positive. Power supply with 6' (2m) cord (P/N 29051).

4.2. Apply Power

Place the TC-25 TEMPCHECK Rapid Response Thermometer at a flat, secure, stable location. Plug the included power supply into an appropriate electrical receptacle,² then insert the power supply connector into the TC-25 TEMPCHECK Rapid Response power jack. Press and hold the **POWER/EXIT** button until the LEDs blink, then release the **POWER/EXIT** button. At this point, the temperature will be displayed on the LCD.

4.3. Operational Check

Upon power up, the following are the visual indications that the TC-25 TEMPCHECK is properly powered and functioning as expected:

- **POWER/STATUS** LED: steady white.
- LCD screen: reading approximately room temperature.

If the **POWER/STATUS** LED is off, blinking, or pulsing, confirm that the power supply is properly plugged into the power outlet and the TC-25 TEMPCHECK power jack.

4.4. Bagged Biological Product Temperature Check

Place the product bag on the TC-25 TEMPCHECK insulated pad with the bag approximately centered on the circular black sensor located in the middle of the insulated pad. The TC-25 TEMPCHECK temperature display should stabilize at the temperature of the product bag in 15 to 30 seconds.

Please note the following potential temperature accuracy issues:

1. The product bag labels should be facing upward. If there are labels on the backside of the product bag, then peel enough of the label away from the center so that the product bag plastic sits directly on the circular black sensor. Only the plastic product bag should contact the TC-25 TEMPCHECK circular black sensor, and no part of the label should sit on the sensor. Product bag labels act as thermal insulators and if they contact the sensor, then the TC-25 TEMPCHECK will either be slow in displaying, or will be completely unable to display, an accurate temperature reading.

² Outside of North America, connect the appropriate adapter (included) to the power supply before plugging it in to the receptacle.

TC-25 TEMP CHECK Operating Instructions

2. The TC-25 TEMP CHECK is not intended for frozen product bags (<0 °C, <32 °F). Hard, frozen product bags can damage the TC-25 TEMP CHECK sensor. In addition, melting frost and condensation on the product bag will often result in erroneously high temperature readings.
3. If the product is fresh frozen plasma thawed (**FFP-T**) in a water bath, then the product bag must be thoroughly dried. **FFP-T** thawed in a microwave plasma defroster can be placed directly on the TC-25 TEMP CHECK sensor.

4.5. Temperature Calibration Confirmation

To perform a simple temperature calibration confirmation at 0.0 °C (32.0 °F), use a well agitated plastic bag filled with distilled water and ice cubes or chips made with distilled water. Place the bag on the TC-25 TEMP CHECK insulated pad with the bag approximately centered on the circular black sensor located in the middle of the insulated pad. Continually agitate the bag by rolling it around so that the ice and distilled water remain well mixed, keeping the temperature near 0.0 °C. The TC-25 TEMP CHECK temperature display should fall to between -0.2 °C (31.6 °F) and +0.2 °C (32.4 °F) in less than 30 seconds.

If the TC-25 TEMP CHECK is out of calibration, then it can be returned to Hampshire Controls for recalibration and recertification. At a minimum, Hampshire Controls recommends semiannual TC-25 TEMP CHECK temperature calibration checks. The NIST-Traceable Certificate of Calibration included with the TC-25 TEMP CHECK expires one year after the date of shipment from Hampshire Controls' factory, and Hampshire Controls suggests annual recertification for critical temperature verification applications.

5. Manual Operating Mode

The standard TC-25 TEMP CHECK employs **Manual** mode only, which simply displays the temperature of the product bag with no temperature range checking or audio/visual alarms.³ The **Manual** procedure for rapid, accurate determination of the temperature of bagged biological products by visual observation is as follows:

1. If the TC-25 TEMP CHECK is powered down, activate the TC-25 TEMP CHECK by pressing and holding the **POWER/EXIT** button until the LEDs blink, and then releasing the button.
2. Place the product bag on the TC-25 TEMP CHECK insulated pad with the bag approximately centered on the circular black sensor located in the middle of the pad. Observe the rapid response thermometer display until the temperature stabilizes to within ± 0.1 °C (± 0.2 °F) for at least 3 seconds. The TC-25 TEMP CHECK temperature display should stabilize at the temperature of the product bag within 15 to 30 seconds.

6. Operating on Battery Power

If line power is either disconnected (portable operation) or down (power outage), then the TC-25 TEMP CHECK Rapid Response Thermometer operates on battery power. When the thermometer is operating on battery power, the battery charge % is shown in the lower right corner of the LCD and the **POWER/STATUS** LED slowly pulses. When the battery charge falls to 10%, the charge % will be highlighted on the LCD and the **POWER/STATUS** LED will rapidly flash.

³ The TC-25+ TEMP CHECK includes a 3-way **MODE SELECT** switch on the back panel with settings of **Manual**, **Go/No-Go** and **Monitor**. This switch is not functional on the TC-25 TEMP CHECK. The **MODE SELECT** switch should simply be set to **Manual** on the TC-25 TEMP CHECK to avoid confusion.

TC-25 TEMP CHECK Operating Instructions

Active run time starting with a fully charged battery is approximately 7.5 hours. The shelf-life of a powered down (not connected to line power) TC-25 TEMP CHECK is approximately 3 months *i.e.*, the battery must be recharged after 3 months of unpowered storage.

The battery will recharge whenever the TC-25 TEMP CHECK is plugged into line power. Total recharge time from battery-fully-drained to battery-fully-charged is approximately 9.5 hours

After 4 minutes of inactivity (*i.e.*, no button presses), the TC-25 TEMP CHECK will shut down to conserve battery power. The TC-25 TEMP CHECK can be powered up again by pressing and holding the **POWER/EXIT** button until the LEDs blink and then releasing the button.

7. Button Controls Function Guide

Table 2. TC-25 TEMP CHECK Button Controls Function Guide.

PRESS BUTTON	FOR THIS ACTION
POWER/EXIT	<ul style="list-style-type: none"> • In PROGRAMMING mode, returns to the next higher menu level. • In PROGRAMMING mode at the root menu, returns the TC-25 to standard OPERATING mode.
POWER/EXIT (LONG PRESS)	<ul style="list-style-type: none"> • Powers up the TC-25 TEMP CHECK when it is powered down. Hold the POWER/EXIT button until the LEDs blink, then release the button. • Manual power down of the TC-25 TEMP CHECK. Hold the POWER/EXIT until the TC-25 TEMP CHECK beeps 3 times, then release the button.
START/ENTER	<ul style="list-style-type: none"> • In PROGRAMMING mode, descends into the displayed menu.
▼	<ul style="list-style-type: none"> • In PROGRAMMING mode, adjusts the parameter down by one increment.
▼ (LONG PRESS)	<ul style="list-style-type: none"> • In PROGRAMMING mode, either repeats the downward increment or adjusts the displayed parameter downward by larger increments.
▲	<ul style="list-style-type: none"> • In PROGRAMMING mode, adjusts the parameter up by one increment.
▲ (LONG PRESS)	<ul style="list-style-type: none"> • In PROGRAMMING mode, either repeats the upward increment or adjusts the displayed parameter upward by larger increments. • If the button is pressed for >3 seconds, displays the TC-25 TEMP CHECK firmware revision and unique ID (UID) used for upgrading the TC-25 TEMP CHECK to a TC-25+ TEMP CHECK.
MUTE/MENU	<ul style="list-style-type: none"> • In PROGRAMMING mode, cycles through the options of the currently displayed menu. For example, at the “Settings” menu, pressing MUTE/MENU repeatedly will cycle through the Settings options (“Tmpr Scale”, “Bklt Bright”, “Bklt Dim”, and “*Hardware Key”).
MUTE/MENU (LONG PRESS)	<ul style="list-style-type: none"> • Places the TC-25 TEMP CHECK into PROGRAMMING mode, displaying the first root menu item (“Settings”).

8. Programming Mode

Place the TC-25 TEMP CHECK into PROGRAMMING mode to access the programmable features listed in Table 3:

1. Press and hold the **MUTE/MENU** button until **“Settings”** is displayed on the LCD.
2. Press the **START/ENTER** button to descend into the **“Settings”** menu, and the first parameter under settings **“Tmpr Scale”** will be displayed on the LCD.
3. Press the **MUTE/MENU** button repeatedly to get to the parameter of interest. The LCD will cycle through the parameter options for the **“Settings”** menu: **“Tmpr Scale”**, **“Bklgt Bright”**, **“Bklgt Dim”**, and **“Hardware Key.”**
4. When the LCD displays the parameter of interest, change the displayed parameter value by pressing the **▲** or **▼** buttons. For example, for the **“Tmpr Scale”** parameter, repeatedly tapping the **▲** or **▼** buttons will alternate between the temperature scale options **“°C”** and **“°F”**.
5. Pressing the **POWER/EXIT** button will return the LCD display to the root menu. In the example detailed above, the LCD screen will then indicate **“Settings”**.
6. Once in the root menu, pressing the **POWER/EXIT** button one more time will return the system to **Manual OPERATING** mode.

Table 3. TC-25 TEMP CHECK Programmable Values

MENU/ PARAMETER	DESCRIPTION, SETTING OPTIONS, RANGE	FACTORY SETTING
Settings		
Tmpr Scale	°C or °F	°C
Bklgt Bright	LCD backlighting, brightness	10 – 100% 100%
Bklgt Dim	LCD backlighting, dimming	10 – 100% 50%
Hardware Key	8 editable hex characters for upgrading from a TC-25 to a TC-25+ TEMP CHECK Rapid Response Thermometer	00000000

8.1. Settings Menu

8.1.1. Temperature Scale (“Tmpr Scale”)

Options: °C, °F

Factory Setting: °C

The TC-25 TEMP CHECK can display temperature in Celsius (°C) or Fahrenheit (°F). The factory setting for the **Tmpr Scale** is °C:

1. Press and hold the **MUTE/MENU** button until **“Settings”** is displayed in the LCD.
2. Select the **START/ENTER** button, and the LCD will indicate **“Tmpr Scale”** along with its current setting (**“°C”** or **“°F”**).
3. Press either **▲** or **▼** to change to the preferred **Tmpr Scale**.
4. Press the **POWER/EXIT** button to save the revised **Tmpr Scale**. At this point, the LCD will show **“Settings”**.

TC-25 TEMPCHECK Operating Instructions

5. Press the **POWER/EXIT** button again to return the system to the **Manual OPERATING** mode.

8.1.2. LCD Backlight Brightness (“Bklgt Bright”)

Range: 10 – 100%

Factory Setting: 100%

The TC-25 TEMPCHECK temperature is displayed on a backlit LCD screen. While the TC-25 TEMPCHECK is operating on line power, the degree of backlighting (“**Bklgt Bright**”) can be adjusted between 10% and 100% of full backlighting power. The **Bklgt Bright** factory setting is 100%.

1. Press and hold the **MUTE/MENU** button until “**Settings**” is displayed in the LCD.
2. Select the **START/ENTER** button, and the LCD will indicate “**Tmpr Scale**”.
3. Press the **MUTE/MENU** button and the LCD will show “**Bklgt Bright**” along with its current setting (e.g., “**50%**”).
4. Press **▲** or **▼** to change to the preferred **Bklgt Bright** setting. A single quick press of the **▲** or **▼** button changes the **Bklgt Bright** by 1%. A long press (>1 second) changes the **Bklgt Bright** by 10%.
5. Press the **POWER/EXIT** button to save the revised **Bklgt Bright** setting. At this point, the LCD will show “**Settings**”.
6. Press the **POWER/EXIT** button again to return the system to the **Manual OPERATING** mode.

8.1.3. LCD Backlight Dimming (“Bklgt Dim”)

Range: 10 – 100%

Factory Setting: 50%

The TC-25 TEMPCHECK temperature is displayed on a backlit LCD screen. While the TC-25 TEMPCHECK is operating on battery power, the backlighting can be dimmed. The degree of backlight dimming (“**Bklgt Dim**”) can be adjusted between 10% and 100%. The **Bklgt Dim** factory setting is 50%.

1. Press and hold the **MUTE/MENU** button until “**Settings**” is displayed in the LCD.
2. Select the **START/ENTER** button, and the LCD will indicate “**Tmpr Scale**”.
3. Press the **MUTE/MENU** button 2 times, and the LCD will show “**Bklgt Dim**” along with its current setting (e.g., “**50%**”).
4. Press **▲** or **▼** to change to the preferred **Bklgt Dim** setting. A single quick press of the **▲** or **▼** button changes the **Bklgt Dim** by 1%. A long press (>1 second) changes the **Bklgt Dim** by 10%.
5. Press the **POWER/EXIT** button to save the revised **Bklgt Dim** setting. At this point, the LCD will show “**Settings**”.
6. Press the **POWER/EXIT** button again to return the system to the **Manual OPERATING** mode.

9. Updating TC-25 TEMPCHECK Firmware

To update the TC-25 TEMPCHECK firmware, follow this procedure:

TC-25 TEMPCHECK Operating Instructions

1. Press and hold the **POWER/EXIT** until the TC-25 TEMPCHECK powers down.
2. If in use, unplug the barcode scanner from the USB Type-A connector (**USB Barcode Scanner**) and any device connected to the USB Type-B connector (**USB Serial Output**). If there is an **SD Card** inserted, then remove it from the slot. Leave the power cord connected to line power.⁴
3. Insert the SD card with the new firmware into the **SD Card** slot on the back panel of the TC-25 TEMPCHECK.
4. Press and hold the ▲ button. Continue holding the ▲ button while pressing the **POWER/EXIT** button until the LCD and LEDs turn on, then release both the ▲ and **POWER/EXIT** buttons. The firmware update will then be completed automatically and the TC-25 TEMPCHECK will power down.
5. Remove the new firmware SD card from the **SD Card** slot.
6. Press the **POWER/EXIT** button to power up the TC-25 TEMPCHECK. Once the TC-25 TEMPCHECK is on, it will be running with the new firmware.

10. Upgrading from TC-25 to TC-25+ TEMPCHECK

If you have determined that you require the **Manual+**, **Go/No-Go**, **Monitor**, barcode reading, SD card barcode/temperature recording, or USB-B serial barcode/temperature output features of the **TC-25+ TEMPCHECK Rapid Response Thermometer**, then it is possible to upgrade the system in the field using the following procedure:

1. Press and hold the ▲ button until the LCD displays the firmware revision and the thermometer's 8 alpha-numeric character unique ID (UID). (Hampshire Controls' records link this value to the serial number of the TC-25 TEMPCHECK.)
2. Record the 8 alpha-numeric characters of the UID and then release the ▲ button.
3. Call Hampshire Controls at +1 (603) 749-9424 and inform them of the 8 alpha-numeric characters in the UID. Upon payment for the upgrade, Hampshire Controls will provide you with an 8-character Hardware Key.
4. Press and hold the **MUTE/MENU** button until "**Settings**" is displayed in the LCD.
5. Press the **START/ENTER** button, and the LCD will indicate "**Tmpr Scale**".
6. Press the **MUTE/MENU** button 3 times, and the LCD will show "**Hardware Key**" along with 8 zeros. The most significant of the 8 digits will be edited first.
7. Press ▲ or ▼ to change the digit to the assigned character in the **Hardware Key**.
8. Press the **START/ENTER** button to select the next most significant digit in the **Hardware Key**.
9. Repeat steps 7 and 8 for the remaining 7 characters in the **Hardware Key**. When complete, all 8 digits should match the assigned **Hardware Key**.
10. Press the **POWER/EXIT** button to save the revised **Hardware Key**. If the **Hardware Key** has been properly entered according to proprietary TC-25 TEMPCHECK algorithm, then it will be saved.

⁴ The USB Type-A connector (USB Barcode Scanner) and USB Type-B connector (USB Serial Output) are inactive on the TC-25 TEMPCHECK, so there should be nothing connected to these USB connectors.

TC-25 TEMP CHECK Operating Instructions

11. Press the **POWER/EXIT** button to return the upgraded TC-25 TEMP CHECK to the operating mode determined by the 3-way manual switch on the back panel (**Manual, Go/No-Go, Monitor**).

Once this procedure has been completed, the TC-25 TEMP CHECK will become a TC-25+ TEMP CHECK Rapid Response Thermometer and you will have access to **Manual+** mode, **Go/No-Go** mode, **Monitor** mode, barcode reading, SD card barcode/temperature recording, and the USB-B serial barcode/temperature output features.

11. Performance Checks & Maintenance

To perform a simple temperature calibration check at 0.0 °C (32.0 °F), use a well agitated plastic bag filled with distilled water and ice cubes or chips made with distilled water. Place the bag on the TC-25 TEMP CHECK insulated pad with the bag approximately centered on the circular black sensor located in the middle of the insulated pad. Continually agitate the bag by rolling it around so that the ice and distilled water remain well mixed, keeping the temperature near 0.0 °C. The TC-25 TEMP CHECK temperature display should fall to between -0.2 °C (31.6 °F) and +0.2 °C (32.4 °F) in less than 30 seconds.

The NIST-Traceable Certificate of Calibration included with the TC-25 TEMP CHECK expires one year after the date of shipment, and Hampshire Controls recommends annual temperature calibration recertifications. Contact Hampshire Controls for a return material authorization (RMA) number and a quotation for annual recertification. Hampshire Controls will return the recalibrated TC-25 TEMP CHECK with a new 1-year NIST-Traceable Certificate of Calibration.

Cleaning Instructions: Moisten a microfiber cloth with a mixture of 70% isopropyl alcohol and 30% water. Gently wipe the surfaces of the TC-25 TEMP CHECK. Clean the LCD screen, carefully wiping in one direction.

12. Replacement Parts

Table 4. TC-25 and TC-25+ TEMP CHECK Rapid Response Thermometer Replacement Parts

All replacement parts, except for the USB Type-B male to USB Type-A male cable (P/N 33078) and the 16 GByte SD card (P/N 37317), are exclusively sold by, and must be ordered from, Hampshire Controls. Part replacement, and any repairs, must be performed only by a qualified service technician.

HAMPSHIRE CONTROLS PART # (P/N)	DESCRIPTION
F83023-01	TC-25 TEMP CHECK Rapid Response Thermometer
F83023-02	TC-25+ TEMP CHECK Rapid Response Thermometer
CF83023-01, CF82023-02	TC-25 or TC-25+ TEMP CHECK Rapid Response Thermometer Calibration and Recertification
29051	Universal Power Adaptor, 2m (6') Cord Input: 100-240 VAC, 50-60 Hz, <0.35 A RMS Output: 12 VDC, 1 A, 12 W
33078	6' USB Type-B Male to USB Type-A Male Cable
37317	16 GByte SD Memory Card
70906	Hardware Key, TC-25 to TC-25+ TEMP CHECK Upgrade

13. Troubleshooting Guide

TC-25 TEMP CHECK Type K Thermocouple Damaged

- If the Type K thermocouple probe wire has poked through the circular black membrane located in the middle of the insulated pad, then the TC-25 TEMP CHECK might not provide accurate temperature readings. Please return the TC-25 TEMP CHECK for repair before the temperature sensor is damaged further. Contact Hampshire Controls for a return material authorization (RMA) number and a quotation for repair. Hampshire Controls will return the repaired TC-25 TEMP CHECK with a new 1-year NIST-Traceable Certificate of Calibration.

TC-25 TEMP CHECK Display Does Not Agree with 0.0 °C (32 °F) Reference

- To perform a simple temperature calibration check at 0.0 °C (32.0 °F), use a well agitated plastic bag filled with distilled water and ice cubes or chips made with distilled water. Place the bag on the TC-25 TEMP CHECK insulated pad with the bag approximately centered on the circular black sensor located in the middle of the insulated pad. Continually agitate the bag by rolling it around so that the ice and distilled water remain well mixed, keeping the temperature near 0.0 °C. The TC-25 TEMP CHECK temperature display should fall to between -0.2 °C (31.6 °F) and +0.2 °C (32.4 °F) in less than 30 seconds. If not, then contact Hampshire Controls for a return material authorization (RMA) number and a quotation for temperature calibration and recertification. Hampshire Controls will return the recalibrated TC-25 TEMP CHECK with a new 1-year NIST-Traceable Certificate of Calibration.

TC-25 TEMP CHECK Temperature Reading at a Fixed Value >40.0 °C (104.0 °F)

- If the display shows a fixed temperature reading >40.0 °C (104.0 °F), then the Type K thermocouple temperature probe circuit is broken (open circuit). Contact Hampshire Controls for a return material authorization (RMA) number and a quotation for repair. Hampshire Controls will return the repaired TC-25 TEMP CHECK with a new 1-year NIST-Traceable Certificate of Calibration.

TC-25 TEMP CHECK Temperature Not Responsive to Bagged Biological Product

- If the temperature displayed is not responsive to the placement of bagged biological product on the sensor pad and is around room temperature (between 16 °C (60 °F) and 27 °C (80 °F)), then the Type K thermocouple temperature probe may be short circuited. Contact Hampshire Controls for a return material authorization (RMA) number and a quotation for repair. Hampshire Controls will return the repaired TC-25 TEMP CHECK with a new 1-year NIST-Traceable Certificate of Calibration.

TC-25 TEMP CHECK Temperature Out of Range or Drastically Different than Expected

- If the display shows fixed or variable temperature readings of <0.0 °C (<32.0 °F) or >40.0 °C (104.0 °F) or readings drastically different than expected, then the Type K thermocouple temperature probe, associated wiring, or connections have failed or there is an issue with the temperature calibration. Contact Hampshire Controls for a return material authorization (RMA) number and a quotation for repair. Hampshire Controls will return the repaired TC-25 TEMP CHECK with a new 1-year NIST-Traceable Certificate of Calibration.

TC-25 TEMP CHECK Temperature Display Is Blank and POWER/STATUS LED is Off

The TC-25 TEMP CHECK might be on battery and has powered down to conserve battery life. Press and hold the **POWER/EXIT** button until the LEDs blink and then release the button to activate the TC-25 TEMP CHECK. If the TC-25 TEMP CHECK does not activate, then:

TC-25 TEMPCHECK Operating Instructions

- ❑ Verify that the power adapter is connected to line power and to the power connector on the TC-25 TEMPCHECK.
- ❑ Disconnect, wait 10 seconds, and then reconnect the power adapter to the power connector on the TC-25 TEMPCHECK.
- ❑ If the power adapter is properly connected, the TC-25 TEMPCHECK temperature display is still blank, and the **POWER/STATUS** LED is still off, then the TC-25 TEMPCHECK power circuit must be damaged so that even the internal battery backup does not cause the TC-25 TEMPCHECK to function. Contact Hampshire Controls for a return material authorization (RMA) number and a quotation for repair. Hampshire Controls will return the repaired TC-25 TEMPCHECK with a new 1-year NIST-Traceable Certificate of Calibration.

Constant Alarm Condition (HIGH/LOW LED Solid Red or Blue, Audio Alarm Sounding)

- ❑ The HIGH/LOW LED and audio alarm are not enabled on the TC-25 TEMPCHECK, so if these LEDs are lit or the audio alarm is sounding, then the TC-25 TEMPCHECK is damaged. Contact Hampshire Controls for a return material authorization (RMA) number and a quotation for repair. Hampshire Controls will return the repaired TC-25 TEMPCHECK with a new 1-year NIST-Traceable Certificate of Calibration.

14. Disposal



This symbol affixed to the underside of the TC-25 TEMPCHECK means that used electrical and electronic products should not be mixed with general waste. For proper treatment, recovery, and recycling, please take the TC-25 TEMPCHECK to designated collection points where it will be accepted free of charge.

Disposing of the TC-25 TEMPCHECK correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details on your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with local, national, or regional legislation.

For business users in the European Union:

If you wish to discard the TC-25 TEMPCHECK, please contact your dealer or supplier for further information.

Information on disposal in other countries outside the European Union:

The symbol above is only valid in the European Union. If you wish to discard the TC-25 TEMPCHECK, please contact your local authorities or dealer and ask for the correct method of disposal.

15. Limited Warranty

Hampshire Controls Corporation warrants the TC-25 TEMPHECK Rapid Response Thermometer against defects in material and workmanship, when used as recommended, for a period of one year from original purchase. TC-25 TEMPHECK Rapid Response Thermometers believed to have such defects must be returned to the factory by prepaid transportation.

Hampshire Controls' obligation under this warranty is limited to the repair or replacement, at its option, of those items which upon examination prove to be defective. Such repair or replacement will be made without charge.

This warranty will be void if repairs or alterations are made or attempted without factory authorization; or if the item has been subject to misuse, negligence or accident.

This warranty will be void if the user attempts to charge any device, including iPhones, iPads, or any other mobile device, using the TC-25 TEMPHECK Rapid Response Thermometer's USB Type-A port.

Hampshire Controls Corporation assumes no liability for consequential damages of any kind. The purchaser, by acceptance of the product, assumes all liability of the consequence of its use or misuse.

Hampshire Controls Corporation makes no other warranty, whether expressed or implied, in connection with the sale or use of this product.



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Specifications subject to change without notice.
Refer to www.hampshirecontrols.com for latest specifications.

