Flash Sheet

Affects:	TEC3000 Color Series Thermostats
Addresses:	**JIRA IDs: CTEC-521, CTEC-534, CTEC-470, CTEC-640, CTEC-716, CTEC-717, WF-3064**

UPDATED: TEC3000 Color Series Thermostats Software Update

This Flash Sheet provides information on the bug fixes implemented in the TEC3000 software update.

Summary of changes

- Added Problem 5, CTEC-716
- Added Problem 6, CTEC-717
- Added Problem 7, WF-3064
- Updated the software build number to 4.0.0.2313

Problem 1: Precision on some NET override points does not match the precision of the value (CTEC-521)

The precision on some of the NET override points does not match the precision of the value they override. The points should be set to the same precision level.

Affects

This problem affects all TEC3xxx-1x models.

Cause

The display precision property was incorrectly set on NET temperature and humidity parameters.

Symptoms

The display precision is set to an unwanted value for NET temperature and humidity parameters.

Workaround

For points that are already mapped to a supervisor, manually adjust the display precision properties so that NET temperature points have a precision of 0.1 degrees and NET humidity points have a precision of 1% RH.

Solution

After the software update, the updated temperature NET points have a precision of 0.1 degrees and the updated humidity NET points have a precision of 1% RH.

A Flash Sheet notifies the affected audience of corrected or improved product-related instructions or practices, a serious literature error or omission, or other urgent product information.

1

Johnson Controls—CONFIDENTIAL

Problem 2: The new AI points do not have any corresponding BACnet or N2 points (CTEC-534)

When an analog input (AI) is configured for CO2 or Damper Feedback a user cannot see the values unless they are at the unit.

Affects

This problem affects all TEC3xxx-1x models.

Cause

The necessary menu, trend, and BACnet configurations were not in place for the new values.

Symptoms

The user cannot see or remotely monitor the values for CO2 and Damper Feedback.

Solution

The display and remote monitoring functionality for CO2 and Damper Feedback are added in this software update. You can find trends for the CO2 and Damper Feedback points in the Trends menu. The values for CO2 and Damper Feedback will also be visible in the Status > System Status menu. The AI values and associated override points for CO2 and Damper Feedback will also be discoverable over BACnet MS/TP connections. Table 1 shows the AI values and override points.

Table 1: AI points for TEC3000 thermostats

Point description	Point name	BACnet Object type	BACnet Instance ID	N2 Point type	N2 Point address	Unit (IP), Enum set/range
Indoor Air Quality	EFF-IAQ	AV	29728	AO, ADF	64	N/A
Damper Feedback	EFF-DPR	AV	29729	AO, ADF	65	N/A
Network Override Indoor Air Quality	NET-IAQ	AV	29730	AO, ADF	66	0-2000 ppm
Network Override Damper Feedback	NET-DPR	AV	29731	AO, ADF	67	0-100%

Problem 3: Missing Changeover status in BACnet List (CTEC-470)

The Changeover status parameter is not in the BACnet points list.

Affects

This problem affects the following TEC3000 models:

- TEC301x-1x-xxx
- TEC331x-1x-xxx
- TEC361x-1x-xxx
- TEC302x-1x-xxx
- TEC332x-1x-xxx
- TEC362x-1x-xxx

Cause

The Changeover status parameter was not included in the BACnet resources.

Symptoms

The Changeover status parameter does not appear in the discovered points list.

Solution

This problem is fixed in this software update. The supervisory controller can automatically detect the CGOVR-S point over BACnet. Table 2 shows the Changeover status details.

Table 2: Changeover status parameters for TEC3000 thermostats

Point description	Point name	BACnet Object type	BACnet Instance ID	N2 Point type	N2 Point address	Unit (IP), Enum set/range
Changeover State	CGOVR-S	AV	29572	AO, ADF	64	TEC3000 Changeover Status 1 - Changeover Disabled 2 - Cooling Mode 3 - Heating Mode 4 - Supply Temperature Unreliable

Problem 4: Improved control sequence for On/Off valves and Multi-Speed Fans (CTEC-640)

The control sequence for equipment configurations with On/Off valves and multi-speed fans is improved to provide more accurate temperature control.

Affects

This problem affects the following TEC3000 models:

- TEC301x-1x-xxx

- TEC331x-1x-xxx

- TEC361x-1x-xxx

Cause

The control PID response used when the fan configuration is set to multi-speed is slower than would be typically used with On/Off valves. This can cause an unstable system response.

Symptoms

Temperature control is poor, which causes the room temperature to vary and or oscillate more than +2/-2 degrees F from the setpoint.

Solution

This problem is fixed in this software update. Make sure that Menu > Setup > Tuning Setup > Temp Control Setup (TEMPCTRL-SETUP MV:29533) is configured to On Off Control.

The existing configuration items: Menu > Setup > Equipment Setup > Supply Fan > Medium Speed On Cmd and High Speed On Cmd will be removed. Four new configuration items in the same sub-menu will appear, Medium Speed On Diff, Medium Speed Off Diff, High Speed On Diff, High Speed Off Diff. These new points function as a differential staging from the active setpoint to turn on and off the medium and high speed fan outputs. The low speed fan output cycles with the water valve.

If the unit is in dehumidification mode, only the low speed output will activate.

These four points will also be exposed to the supervisor for remote access. See table 3.

Table 3: Changeover status parameters for TEC3000 thermostats

Point description	Point name	BACnet Object type	BACnet Instance ID	N2 Point type	N2 Point address	Unit (IP), Enum set/range
Medium Fan On Diff Sp	MED-FAN-ON-SP	AV	29900	AI, ADF	80	Delta deg F, 1 to 2 Delta deg C, 0.55 to 1.1
Medium Fan Off Diff Sp	MED-FAN-OFF-SP	AV	29901	AI, ADF	81	Delta deg F, 0 to 1 Delta deg C, 0 to 0.55
High Fan On Diff Sp	HIGH-FAN-ON-SP	AV	29902	AI, ADF	82	Delta deg F, 1 to 3 Delta deg C, 0.55 to 1.67
High Fan Off Diff Sp	HIGH-FAN-OFF-SP	AV	29903	AI,ADF	83	Delta deg F, 0.5 to 2 Delta deg C, 0.28 to 1.1

Problem 5: Heating is disabled when the unit is in Heating mode (CTEC-716)

The fan coil unit does not heat when set to heating only mode.

Affects

This problem affects all TEC3x1x and TEC3x2x models that use patch version 4.0.0.2251.

Cause

Reversal of application logic for heating mode.

Symptoms

The unit does not heat when configured as heating only (Control Mode = Heating).

Workaround

Set the Control Mode option to Auto.

Solution

After the software update, the unit will heat properly.

Problem 6: On/Off equipment control does not follow the user configured Deadband limit (CTEC-717)

The stage on (or make) setpoint does not properly scale with the Deadband configuration parameter.

Affects

This problem affects all TEC3000 models that use On/Off Control.

Cause

The application logic does not use the Deadband parameter for the stage on (or make) logic.

Symptoms

The unit always turns on when it is 1 degree F away from the setpoint regardless of Deadband configuration.

Solution

After the software update, the unit will scale the Deadband parameter to the stage on logic. The stage on point will be half the Deadband configuration value.

Problem 7: SCT Controller Template UNIT-S object appears red and cannot be saved (WF-3064)

If a user uses SCT 13.2 or older to create a controller template to install a new TEC3000 thermostat, the object UNIT-S appears in red and prevents from saving the controller template. This is due to an increase in the number of states from 18 to 21 for the UNIT-S object in new TEC3000 software.

Affects

*   SCT controller template

This affects the SCT controller template only when SCT 13.2 or older is used to newly install TEC3000 thermostats with version 4.0.0.2251 and newer. However, the workings of SCT and TEC3000 are not affected.

Updates to previously installed TEC3000 thermostats or new installations of TEC3000 thermostats with an older software version are not affected.

Cause

The TEC3000 enum set **TEC3000 Detailed Control Status2** for UNIT-S now contains 21 states instead of 18 previously to accommodate the newly added dehumidification states. The new number of states is out of range with the number of states that SCT controller template accepts for the enum set TEC3000 Detailed Control Status2.

Symptoms

The States Text field in the UNIT-S state, listed under the Display section in the SCT controller template, is marked red.

Workaround

In the SCT controller template, edit the **UNIT-S** State and change the **Number Of States** field to **18**. After you save the change, download the controller template to the engine. The SCT controller template reads the UNIT-S object from the TEC3000 thermostat and automatically updates to the new number of 21 states that are installed on the TEC3000 thermostat.

Solution

This problem is fixed in the upcoming SCT 14.0 release.

Patch 4.0.0.2313 contents

*   4.0.0.2313.EN.BR.IT.tecusb.pkg
*   4.0.0.2313.EN.FR.ES.tecusb.pkg
*   4.0.0.2313.EN.NL.DE.tecusb.pkg
*   4.0.0.2313.EN.NL.PL.tecusb.pkg
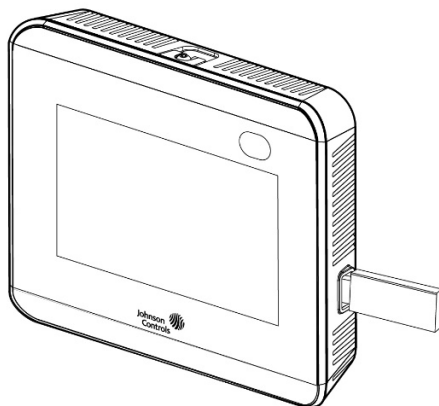*   TEC3x1x-1x.PRN
*   TEC3x2x-1x.PRN

- TEC3x3x-1x.PRN
- **Literature** folder, includes the following files:
    - o Flash Sheet 2020F16.pdf
    - o Product Information letter 12001125.pdf

Note: This Patch includes new features to the TEC3000. Refer to Product Information letter 12001125 for further details.

Accessing the latest firmware

The TEC3000 Thermostat design incorporates a USB port to load enhancements, update, back up, and restore firmware settings without the need to replace the thermostat.

Figure 1: TEC3000 Thermostat with attached USB drive

Preparing the USB drive for the TEC3000 upgrade

The TEC3000 identifies up to eight configuration files or firmware package files. The USB drive format must be FAT or FAT32. The drive cannot have an NTFS format. If the passcode is enabled, you must have access to the TEC3000 passcode to upgrade firmware or copy configuration files. The TEC3000 does not support USB 3.0 drives. Do not remove the USB drive until the upgrade is complete. After you upgrade the firmware, the TEC3000 restarts and may go offline to the Network Automation Engine (NAE). The upgrade takes approximately 3 minutes.

Johnson Controls Technicians

If you are a Johnson Controls Technician, the firmware update is available on the License Portal at: https://software.jci.com/licenseportal/#/home

Go to **Software** > **Patches** > **TEC3000 Color Series Thermostats > 4.0 Firmware > 4.0.0.2313** to download the latest firmware.

Download and copy **4.0.0.2313.EN.FR.ES.tecusb.pkg** to the USB drive.

You must save the file to the root directory of the USB drive for the TEC3000 to locate the file.

ABCS contractor download

If you are an ABCS contractor, the firmware update is available on the Pro FX User connected community. Go to the **Resources + Tools** > **Software Downloads** > **TEC3000 Updates** section of https://www.hvacnavigator.com to download the latest firmware.

Download and copy **4.0.0.2313.EN.FR.ES.tecusb.pkg** to the USB drive.

You must save the file to the root directory of the USB drive for the TEC3000 to locate the file.

UPG contractor download

If you are a UPG contractor, the firmware update is available on UPG Net under the *Verasys®* supported files.

Download and copy **4.0.0.2313.EN.FR.ES.tecusb.pkg** to the USB drive.

You must save the file to the root directory of the USB drive for the TEC3000 to locate the file.

ARW contractor download

If you are an ARW contractor that is selling *Verasys*, the firmware update is available at verasyscontrols.com under the partner's login.

Download and copy **4.0.0.2313.EN.FR.ES.tecusb.pkg** to the USB drive.

You must save the file to the root directory of the USB drive for the TEC3000 to locate the file.

Loading the firmware to the TEC3000 Thermostat Controller

Note: Optionally, you can back up the TEC3000 Thermostat before upgrading the firmware. For the steps, refer to *TEC3000 Series On/Off or Floating Fan Coil Thermostats Installation Guide (LIT-12013161), TEC3000 Series Proportional Fan Coil Thermostats Installation Guide (LIT-12013162),* and *TEC3000 Series Networked and Wireless Single- or Two-stage Economizer Thermostat Controllers Installation Guide (LIT-12013163).*

1. Ensure that the TEC3000 screen is on.

2. Insert the USB drive into the right side of the TEC3000 controller.

   See Figure 1 for the USB port location.

3. Press the **Menu** icon.

4. Press **Update**.

5. Press **Load Firmware**.

6. Select firmware version **4.0.0.2313.EN.FR.ES.tecusb.pkg**. The correct file name has the .pkg extension.

   a. If the filename is scrolling on the screen, select the file again on the TEC display.

7. Press **Confirm**.

   The firmware is loaded from the USB drive into the TEC3000 operating system. The TEC3000 locates the new firmware only if the new firmware is on the root drive of the USB.

8. When the update is complete, remove the USB drive from the TEC3000 controller. The TEC3000 firmware update is complete when the TEC3000 restarts and returns to the home screen.

9. Check your firmware version.

Johnson Controls