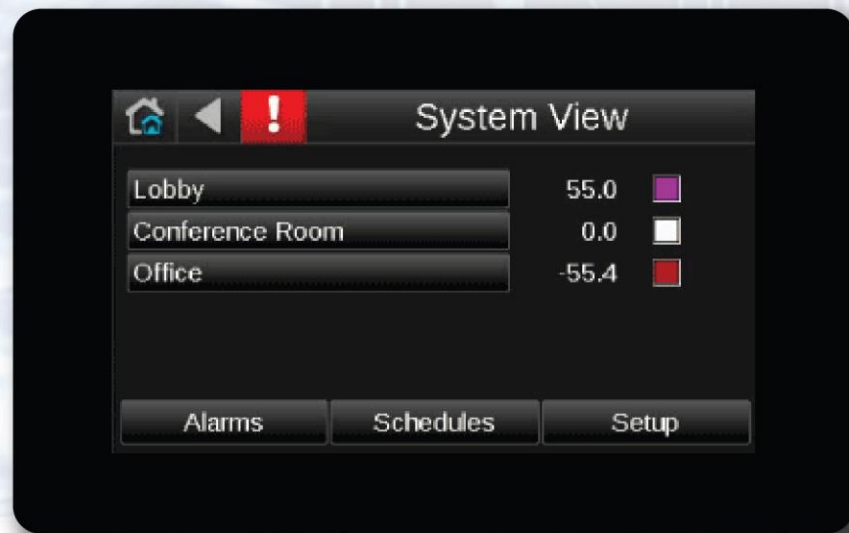


# System Touch (SYST1-5)

## Installation and Setup Guide





Verify that you have the most current version of this document from **[www.hvacpartners.com](http://www.hvacpartners.com)**, the **Carrier Partner Community** website, or your local Carrier office.

Important changes are listed in **Document revision history** at the end of this document.

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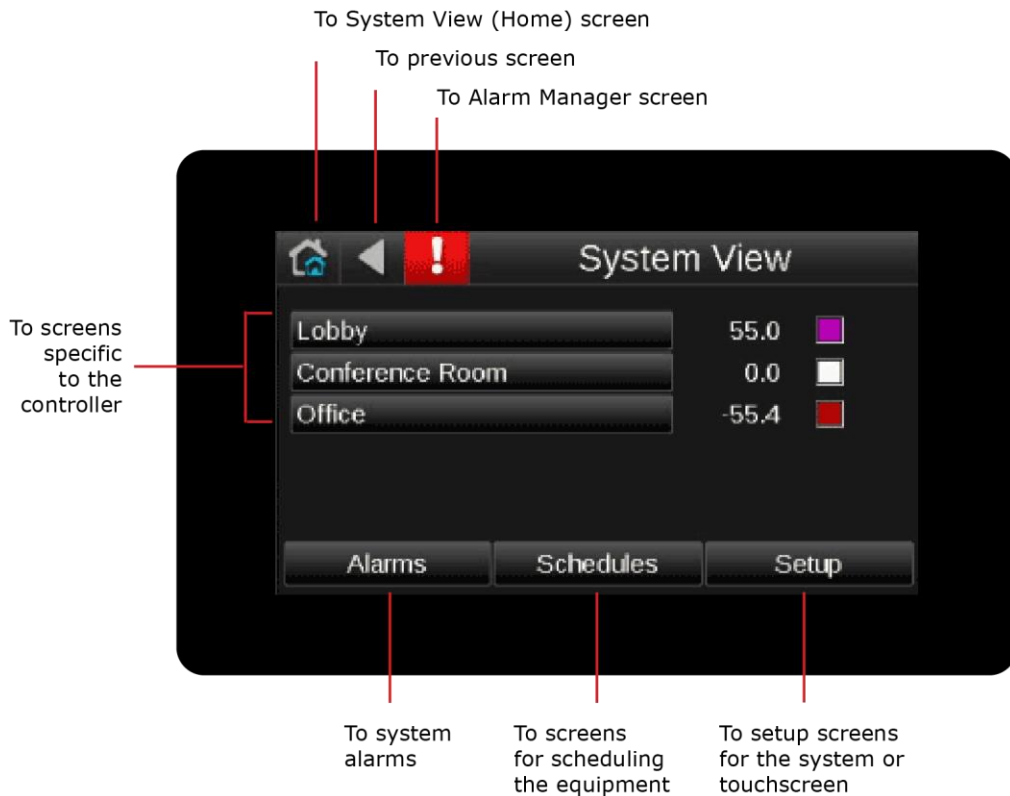
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## What is the System Touch?

The System Touch is a touchscreen device with a 5.0 in. color LCD display that acts as a front-end interface to controllers on a BACnet network.



The System Touch has built-in temperature and humidity sensors. You can use their values to control equipment.

To set up a System Touch:

- 1 Connect the System Touch to an MS/TP network.
- 2 Discover BACnet devices on the same network or on a different BACnet ARCNET or BACnet MS/TP network (page 11).
- 3 Create the system database (page 11).
- 4
- 5
- 6

After you set up your system, you can:

- Schedule when equipment should run

## What is the System Touch?

- View alarms
- Link to screens for individual controllers on the network. The information on the controller screens depends on whether the controller is a Carrier controller or a third-party controller, and if it is Carrier controller, whether it has an Equipment Touch file.

**NOTE** To see Equipment Touch screens on the System Touch, the controller must have the Equipment Touch file downloaded before you create the database on the System Touch.

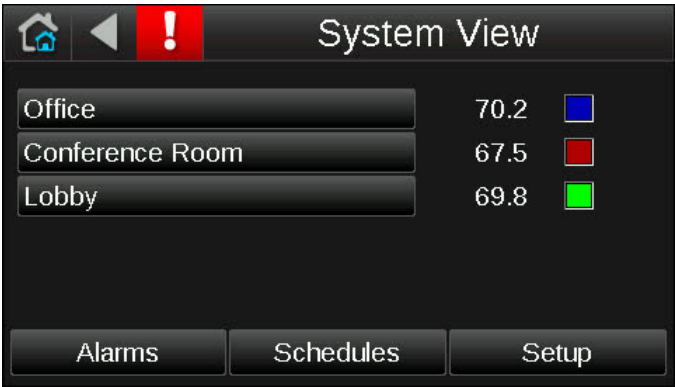
## Specifications

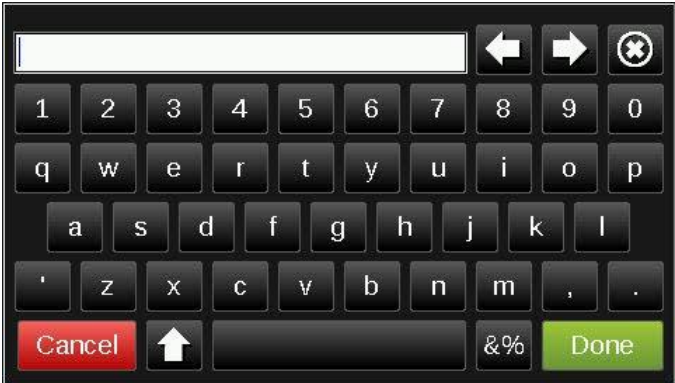

Power	24 Vac ( $\pm 15\%$ ), 5 VA, 50–60 Hz, Class 2. 12–24 Vdc	
	<b>NOTE</b> The System Touch cannot be powered by the controller's Rnet port.	
Display	5.0 in. capacitive touchscreen (Wide VGA, 800 x 480 pixels)	
Enclosure	PC+ABS plastic with glass screen	
Ports	<ul style="list-style-type: none"><li>• EIA-485 based serial port for BACnet MS/TP communication</li><li>• USB-C host port</li></ul>	
Microcontroller	32-bit	
Memory	<ul style="list-style-type: none"><li>• 32 MB Flash memory to store program code and screen file.</li><li>• 16 MB RAM to store variable data and LCD data.</li><li>• 8 KB Serial EEPROM to store non-volatile configuration data.</li><li>• 1.6 MB maximum file size</li></ul>	
Real-time clock	A 365-day real time clock/calendar chip. The time and date will be maintained for a minimum of 72 hours after loss of power (at room temperature).	
Temperature sensor	Range: Accuracy over 30.0°F to 100°F: Accuracy over full range: Resolution:	-4.0°F to 140°F (-20°C to 60°C) $\pm 1.0^\circ\text{F}$ ( $\pm 0.55^\circ\text{C}$ ) $\pm 2.0^\circ\text{F}$ ( $\pm 1.1^\circ\text{C}$ ) 0.2°F (0.1°C)
Humidity sensor	Range: Accuracy over 20 to 80% RH: Accuracy over full range: Resolution:	0 to 100% RH $\pm 3.0\%$ RH $\pm 5.0\%$ RH 0.05% RH
Environmental operating range	32°F to 104°F (0°C to 40°C), 10–90% RH, non-condensing	
Mounting	Wall or panel mounting within the building interior.	
Overall dimensions	Width: Height: Depth:	5.30 in. (13.47 cm) 3.70 in. (9.41 cm) 0.79 in. (1.99 cm)
Backplate dimensions	Width: Height:	4.20 in. (10.67 cm) 3.59 in. (9.11 cm)
Weight	8 oz. (0.23 kg)	

Listed by	UL-60730 (PAZX); CE; 47 CFR FCC Part 15, Subpart B; ANSI C63.4: 2014; ICES-003, Issue 7; ICES-GEN, Issue 2
Device identification	The System Touch's box contains a label with the product name and the serial number that begins with <b>STC</b> . Remove the front of the System Touch and turn it over to see the serial number on a label attached to the control board.


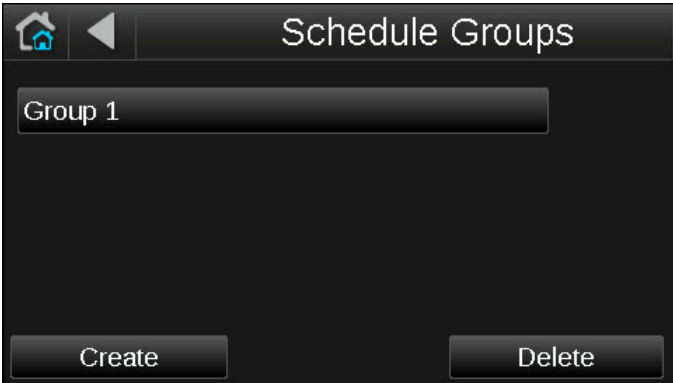
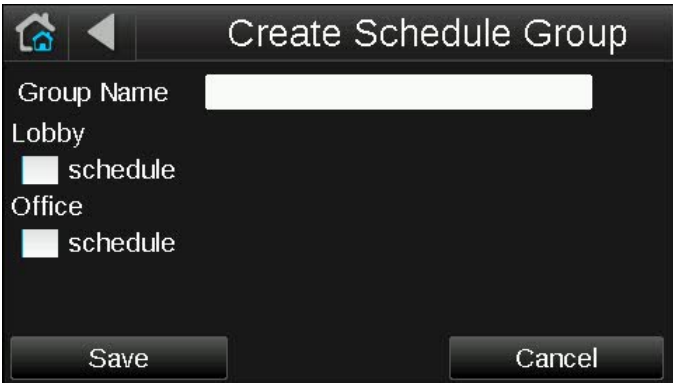
## System Touch screens

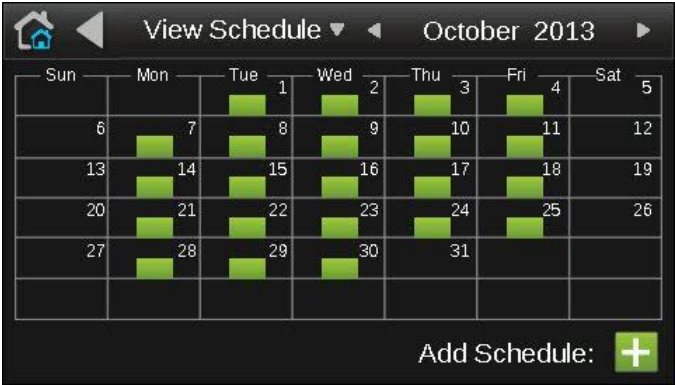
The System Touch displays the following screens.


Screen name	Description
System View	 <p>The Home screen that shows each controller in the system, and, for Carrier controllers, the zone temperature and zone color. From this screen, you can view alarms or set up schedules. A user with an administrator-level password can edit the system or edit touchscreen settings. This screen displays when the System Touch has had no user activity for a period of time specified on the <i>Touchscreen Setup &gt; Inactivity Timeout</i> screen (page 16).</p>


Screen name	Description
Login	 <p>Displays if you select a screen that requires an administrator-level password. If you have an administrator-level password, enter it, then touch <b>Done</b>.</p> <p><b>NOTES</b></p> <ul style="list-style-type: none"> <li>• If you try to go to a screen for a particular controller and you are prompted to log in, the Equipment Touch screen for that controller requires a different password.</li> <li>• You log out on the <b>Setup</b> screen.</li> <li>• You can change the password on the <i>Touchscreen Setup</i> &gt; <b>Passwords</b> screen (page 16).</li> </ul>
Alarm Manager	 <p>Lets you view all alarms in the system. See "Viewing alarms" in the <i>System Touch User Guide</i>.</p>






Screen name	Description
Alarm Detail	<div>The Alarm Detail screen features a dark background with a header bar containing a home icon, a back arrow, and a red square with a white exclamation mark. The title "Alarm Detail" is in white. The main content area shows the timestamp "10/29/13 04:38:35PM", the equipment name "my_bin_2_1", and the state transition "From State: Normal" and "To State: OffNormal". Below this, a "Detail:" section states "my_bin_2_1 is in alarm state of 2.". At the bottom are two buttons: "Acknowledge" and "Delete".</div> <p>Shows details of a single alarm. See "Viewing alarms" in the <i>System Touch User Guide</i>.</p>
Schedule Groups	<div>The Schedule Groups screen has a dark background with a header bar containing a home icon, a back arrow, and the title "Schedule Groups" in white. Below the header is a list item "Group 1" with a right-pointing arrow. At the bottom are two buttons: "Create" and "Delete".</div> <p>Lets you create groups of equipment so that you can set up a common operating schedule for each group. From this screen, you can also edit or delete existing schedule groups. See "Setting up schedules" in the <i>System Touch User Guide</i>.</p>
Create Schedule Group	<div>The Create Schedule Group screen has a dark background with a header bar containing a home icon, a back arrow, and the title "Create Schedule Group" in white. The main content area has a "Group Name" label followed by a white text input field. Below this are two sections: "Lobby" with a white square checkbox and the word "schedule", and "Office" with a white square checkbox and the word "schedule". At the bottom are two buttons: "Save" and "Cancel".</div> <p>Lets you create a group and assign equipment to it. See "Setting up schedules" in the <i>System Touch User Guide</i>.</p>

Screen name	Description
Schedules	 <p>Lets you view, add, edit, or delete BACnet schedules in the controller. See "Setting up schedules" in the <i>System Touch User Guide</i>.</p>

Setup	 <p>Touch a button to go to the <b>Communications</b>, <b>Discovery</b>, <b>Viewfile</b>, or <b>Touchscreen Setup</b> screen, or to log out.</p>
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Communications	 <p>Lets you define network communications for the System Touch. You also define the network that you want the System Touch to scan during discovery. See <i>Setting up the system</i> (page 11).</p>
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Screen name	Description
Discovery	<div></div> <p>Lets you discover controllers on the network so that you can create the system database. See <i>Setting up the system</i> (page 11).</p>
Set Range	<div></div> <p>Lets you set a range (0–127) of MAC addresses to be discovered. See <i>Setting up the system</i> (page 11).</p>
Discovery after discovering controllers	<div></div> <p>Lets you rename discovered controller, select the controllers that you want to include in the system, and then create the system database. See <i>Setting up the system</i> (page 11).</p>
Touchscreen Setup	Lets you <i>edit the touchscreen settings</i> (page 16).

## Wiring and mounting the System Touch



**CAUTION** If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

### Mounting

You can mount the System Touch:

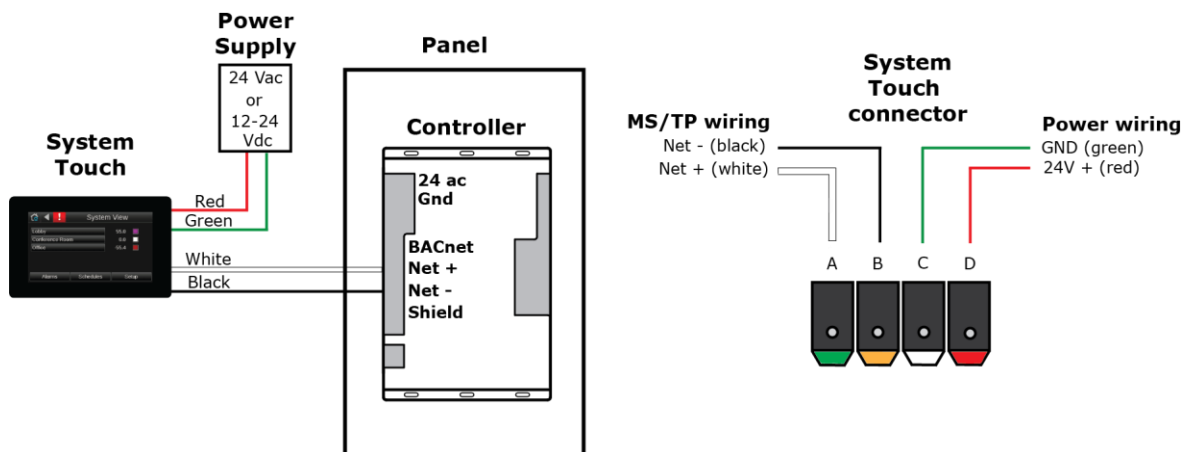
- In a panel or on the panel door
- On a wall

### Wiring

The System Touch is wired to an MS/TP network and a 24 Vac power supply.



**WARNING** Do not share power between the Carrier controller's 24 Vac transformer and an external 24 Vdc power supply unless both devices are half-wave.



## Wiring specifications

### Power wiring

2-conductor wire 18 AWG for distances up to 100 feet. All transformer secondaries must be grounded. Wiring connections must be in accordance with NEC and local codes.

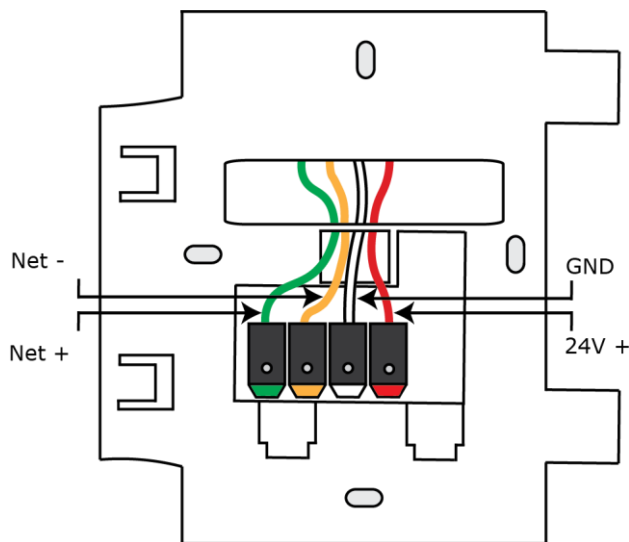
### MS/TP network wiring

22 AWG, low-capacitance, twisted, stranded, shielded copper wire.  
Maximum network length: 2000 feet (610 meters)

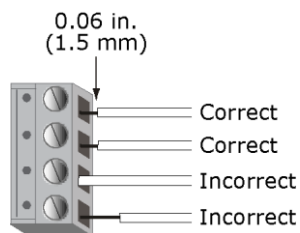
See *MS/TP Networking and Wiring Technical Instructions* for more information.

## To wire and mount the System Touch

- 1 Remove the backplate from the System Touch. While firmly pressing the 2 tabs on top of the System Touch, pull on the backplate with your index finger until the backplate releases from the System Touch.
- 2 Pull the power and communication wiring through the hole in the center of the backplate. See figure in step 5.
- 3 If wiring 1 cable to the System Touch, cut the shield wire off at the outer jacket, then wrap the cable with tape at the outer jacket to cover the end of the shield wire.  
If wiring 2 cables in a daisy-chain configuration, twist together the shield wires, then wrap the shield wires with tape.
- 4 Strip about 0.25 inch (0.6 cm) insulation from the end of each wire.
- 5 Connect wiring to the System Touch as shown below:



**CAUTION** Allow no more than 0.06 inch (1.5 mm) bare communication wire to protrude. If bare communication wire contacts the cable's foil shield, shield wire, or a metal surface other than the terminal block, the device may not communicate correctly.



**6** Attach the backplate to the wall or panel. If mounting in or on a panel:

- a) Drill two 3/16 inch (4.8 mm) pilot holes in the panel.
- b) Attach backplate using pan head 6-32 x 3/8" to 1/2" long machine screws. Do not overtighten screws to prevent damage to plastic housing.

**RECOMMENDATION** Use Loctite 220 on screw threads if the System Touch will be subject to vibration.

**7** Attach the System Touch to the backplate:

- a) Place the bottom of the System Touch onto the backplate by aligning the 2 slots on the System Touch with the tabs on the backplate.
- b) Push the System Touch onto the backplate until the tabs at the top of the System Touch snap onto the backplate.



**CAUTION** Be careful to avoid bending the connecting pins when attaching the System Touch onto the backplate.

**8** Turn off the controller's power.

**9** Connect power wiring to a 24 Vac or 12–24 Vdc power supply.

**10** Turn on the controller's power.

## Setting up the system

### Step 1: Set up communications

- 1 On the **System View** (home) screen, touch **Setup > Communications**.
- 2 In the left column, select the baud rate of the MS/TP network that the System Touch is on.

- 3 Use the following information to set the 3 fields on the right.

Field	Description
<b>My Device Instance</b>	The System Touch's BACnet Device Instance. This number must be unique on the MS/TP network. Leave this at the default (160099) unless there is another System Touch or other device on the network with this number.
<b>My Address</b>	The System Touch's address. This number must be unique on the MS/TP network. Leave this at the default (127) unless there is another System Touch or other device on the network with this address.
<b>Destination Network</b>	The network number of the BACnet ARCNET or BACnet MS/TP network that the System Touch will discover controllers on. To discover controllers on the System Touch's own MS/TP network, this field must be set to 0.



**CAUTION** The System Touch's Device Instance number is added to each controller's alarm recipients list when you create the system database. If you change **My Device Instance** after you create the database, you must rediscover the controllers to have the System Touch receive alarms from controllers.

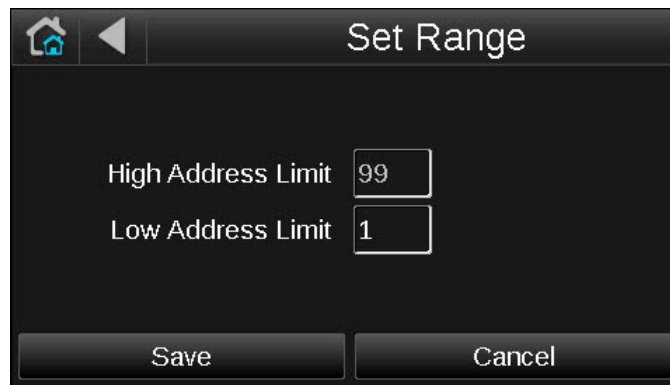
- 4 Touch **Save**.

## Step 2: Discover controllers

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In the previous step, you defined the network that the System Touch will discover devices on. To discover controllers:

- 1 On the **Setup** screen, touch **Discovery > Set Range**.
- 2 System Touch can scan the network for all MAC addresses (0 to 127), or you can define a smaller range of addresses to search for. Touch each field on the **Set Range** screen, and then enter an address.

The image shows the 'Set Range' screen in the System Touch application. At the top, there is a navigation bar with a home icon, a back arrow, and the title 'Set Range'. Below the navigation bar, there are two input fields: 'High Address Limit' with the value '99' and 'Low Address Limit' with the value '1'. At the bottom of the screen, there are two buttons: 'Save' and 'Cancel'.

- 3 Touch **Save**.
- 4 On the **Discovery** screen, touch **Discover**. When discovery is complete, the screen lists every BACnet controller that was found on the network.

**NOTE** The System Touch cannot discover controllers on a BACnet IP network, so a BACnet router that is on an IP network and the ARCNET or MS/TP network will not be discovered.

The image shows the 'Discovery' screen in the System Touch application. At the top, there is a navigation bar with a home icon, a back arrow, and the title 'Discovery'. Below the navigation bar, there is a list of discovered controllers. Each entry consists of a checkbox, a number, and a name. The first entry has a checked checkbox, the number '5', and the name 'Lobby'. The second entry has an unchecked checkbox, the number '8', and the name 'Conference Room'. The third entry has an unchecked checkbox, the number '71', and the name 'Office'. At the bottom of the screen, there are six buttons arranged in two rows: 'Clear DB', 'Set Range', 'Select All' in the top row, and 'Discover', 'Create DB', 'Deselect All' in the bottom row.

## Step 3: Create the system database

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The discovery process finds every BACnet controller on the network, but you may not want to include them all in the system you are creating. Carrier recommends that you have no more than 32 devices in your system.



- 1 Touch each controller that you want to include in the system and change its name to something that will be meaningful to a user (maximum 21 characters). For example, if the first controller on the screen controls the lobby, change the name to "Lobby".



- 2 Select the controllers that you want to include in the system by touching individual boxes on the left side of the screen or by touching **Select All**.
- 3 Touch **Create DB** (database). The **System View** screen shows your new system.



**NOTE** **Clear DB** deletes the system (controllers, alarms, and schedule groups) and returns the System Touch to its initial state.

## Step 4: Set up scheduling functionality

You can define BACnet schedules for any controller whose control program(s) support time schedules.

To allow a user to create schedules on the Equipment Touch:

- 1 In the i-Vu® or Field Assistant tree, right-click the controller, and then select **Driver Properties**.
- 2 On the **Settings** tab, scroll down to **TouchScreen Control** and verify that **TouchScreen Schedule Edit Enable** is checked.



**CAUTION** If scheduling for this system will be done in the i-Vu® interface, you should disable scheduling in the System Touch so that they do not overwrite each other's schedules. To disable scheduling, uncheck **TouchScreen Schedule Edit Enable**.

See "To create a schedule for a group of equipment" in the *System Touch User Guide*.

## Step 5: Optional - Adjust touchscreen settings

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If needed, adjust the following touchscreen settings:

- The time of inactivity before the System Touch returns to the Home screen
- The location, units, and offset of temperature and humidity sensor values
- Whether the System Touch makes a sound when you touch the screen
- The language used for System Touch screens
- The User or Admin password, if allowed

See *To edit touchscreen settings* (page 16).

## Using System Touch's temperature and humidity sensors to control equipment

### To set up the sensors on the System Touch

Go to **Setup > Touchscreen Setup > Sensor Setup**.

On this screen, you can:

- **Select temperature units**—The sensor's temperature can be requested by a controller's control program. Select whether the temperature is to be returned as **Deg F** or **Deg C**.
- **Set an offset**—Enter a correct temperature/humidity value to create an offset for all future values.

### To use the temperature or humidity value in a control program

- 1 In Snap, place an Analog Network Input microblock  in your control program.
- 2 In the microblock's **Address** field, enter `bacnet://160099/` and then one of the following:

Use...	For...
AI:1	Internal °F temperature value
AI:4	Humidity value
AI:5	Internal °C temperature value

For example, `bacnet://160099/AI:1`

**NOTE** 160099 in the above address is the System Touch's Device Instance number. If you change this number on the **Communications** screen, use the new number in your microblock's **Address** field.

## To edit touchscreen settings

- 1 On the **System View** screen, touch **Setup > Touchscreen Setup**
- 2 Touch a button to jump to one of the following screens:

Screen	Description
<b>About</b>	Displays information about the touchscreen firmware.
<b>Inactivity Timeout</b>	Lets you define how long the System Touch can have no activity before returning to the Home screen and logging out the user. Set to 0 to deactivate this feature.
<b>Sensor Setup</b>	Lets you set up the System Touch's temperature and humidity sensors. See Using System Touch's temperature and humidity sensors to control equipment.
<b>Clean Screen</b>	Displays a one-minute countdown timer so that you can clean fingerprints from the display window without touching something that would affect equipment operation.
<b>Reload Firmware</b>	Erases the current firmware so that you can load new firmware through the USB-C port. See To update the System Touch's firmware.

### Language



English	German	Portuguese
Simplified Chinese	French	Italian
Korean	Spanish	Japanese
Traditional Chinese	Swedish	
Thai	Russian	

Lets you select the language to use for the System Touch default screens.

### Passwords

Lets you change the User or Admin password, if allowed.

**NOTE** The default password is **admin**.

## To update the System Touch's firmware

The System Touch has a USB-C port on the right side that allows you to update the device's firmware from a USB flash drive. You must use either a USB-C compatible flash drive or use a USB-A to USB-C adapter to connect a USB-A flash drive.

**PREREQUISITE** The USB flash drive must be formatted as FAT, FAT16, or FAT32. To verify, right-click the flash drive in Windows Explorer, then select **Properties**. **File system** should show **FATxx**. If **File system** shows NTFS or anything else, you must reformat the drive. Right-click the flash drive, then select **Format**. In the **File system** field, select **FAT (Default)**, then click **Start**.



**CAUTION** Follow the steps below in order. If you select **Reload Firmware** (step 3) on the display before you insert the USB drive (step 2), the touchscreen will become inoperable.

To update the firmware:

- 1 Create a folder on the flash drive called **Touch**, then put the STxxxxxx.hex file in the folder.
- 2 Plug the flash drive into the System Touch's USB-C port.
- 3 From the Home screen, touch **Setup > Touchscreen Setup > Reload Firmware**.
- 4 A warning message appears. Touch **Yes** to continue.
- 5 The following series of messages appear:  
**Erasing application download area...**  
**Reading Firmware Image from USB**  
**Valid application image found, preparing firmware update...**  
**Erasing application execution area...**  
**Programming application image...**

If the file failed to download, verify that you have placed the file correctly in step 1.

- 6 When the **Home** screen appears, remove the flash drive.

## To update ViewBuilder files

When using a native 4-inch file with the 5-inch version of the System Touch, the display is not full size and contains a black border around the screen. To fill the screen to full size, you must update your 4-inch stv files to accommodate the 5-inch System Touch device.

**NOTE** 5-inch stv files are only compatible with the 5-inch System Touch device. 4-inch stv files that you have updated to 5-inch files cannot be viewed on a 4-inch device.

- 1 Launch ViewBuilder.
- 2 Open the .stv file that was originally created for the 4 inch version of the System Touch.



**TIP** Upon opening the file, the bottom of the ViewBuilder window displays which device the file is associated with.

- 3 Click **File > Upgrade (4" to 5" display)**.
- 4 Save the file. Repeat this process for each file to update.

# Resetting the System Touch

You can create a reset.dat file and put it on a USB flash drive to reset some of the System Touch's functionality. You must use either a USB-C compatible flash drive or use a USB-A to USB-C adapter to connect a USB-A flash drive.

**PREREQUISITE** The USB flash drive must be formatted as FAT, FAT16, or FAT32. To verify, right-click the flash drive in Windows Explorer, then select **Properties**. **File system** should show **FATxx**. If **File system** shows NTFS or anything else, you must reformat the drive. Right-click the flash drive, then select **Format**. In the **File system** field, select **FAT (Default)**, then click **Start**.

- 1 Insert the USB flash drive into your computer.
- 2 Create a folder on the flash drive named **Touch**.
- 3 In a text editor such as Notepad, start a new file.
- 4 In the file, type a function number from the table below.
- 5 Save the file to the flash drive's **Touch** folder with the name **reset.dat**.
- 6 For the second function 01 in the table below or function 02, copy any updated firmware .hex file or .stv file in the **Touch** folder.
- 7 Insert the flash drive into the USB-C port at the bottom of the System Touch.
- 8 Cycle power to the System Touch.

If...	Then you should...	Function number
You cannot get to the <b>Touchscreen Setup</b> screen	Restart the firmware	01
You need to quickly update the firmware on several System Touch devices	Reload the firmware—place the new firmware in the <b>Touch</b> folder with the reset.dat file.	01
Your custom screens did not provide links to the system screens	Reload the .stv file—fix the .stv file in ViewBuilder, and then save it to the <b>Touch</b> folder with the reset.dat file.	02
<ul style="list-style-type: none"><li>• You want to carry your System Touch from site to site</li><li>• Your System Touch has a unrecoverable error</li></ul>	Reset factory defaults	04
You want to revert to the System Touch's default password	Reset the System Touch's password to factory defaults  See <i>To edit touchscreen settings</i> (page 16) for default passwords.	10

## Compliance

### FCC Compliance

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference.
- 2 This device must accept any interference received, including interference that may cause undesired operation.

**NOTE** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with this document, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.



**CAUTION** Any modifications made to this device that are not approved by Carrier will void the authority granted to the user by the FCC to operate this equipment.

### CE and UKCA Compliance

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**WARNING** This is a Class B product. In a light industrial environment, this product may cause radio interference in which case the user may be required to take adequate measures.

### Industry Canada Compliance

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This Class A digital apparatus complies with Canadian ICES-003.  
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.



## Document revision history

Important changes to this document are listed below. Minor changes such as typographical or formatting errors are not listed.

<b>Date</b>	<b>Topic</b>	<b>Change description</b>	<b>Code*</b>
9/16/24	Setting up the system – Step 5	Removed reference to warning sound	X-PM-DS-E
8/1/24	Wiring and mounting the System Touch	Added caution note regarding sharing power	X-TS-JC-J

\* For internal use only





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