HONEYWELL WIFI THERMOSTAT PLUG-IN FOR HOMESEER HS3

VERSION 3.2.1

RELEASE DATE: 1/1/2023

CONTENTS

TERMS & CONDITIONS

Honeywell has chosen not to provide access to their API to anyone other than large businesses. As a result, this plugin uses the only way available to control these devices: the Total Connect™ Comfort Portal (TCCP). This means that if Honeywell changes their website, work will have to be done on this plugin to make it compatible, and that there is a chance the website changes could render it inoperable. These changes are done without my knowledge or control, and your purchase/use of this plug-in is as-is and at your own risk.

Furthermore, excessive activity on your account may result in your account being suspended, requiring you to call Honeywell and get it re-activated. While this plugin has been designed to minimize the chances of this occurring by implementing preventative measures such as queues, timers and minimum command, update and polling frequencies, these values can be changed by the user. Regardless of the values entered (be they the default, smaller or larger), by activating this plugin in your HomeSeer software, you acknowledge this risk and agree to indemnify and hold harmless the developer of this plugin, HomeSeer Technologies, and any other third party plugin developers from any damages (including but not limited to financial, time spent, opportunity cost, loss of account privileges, and the inability to control your thermostats or other connected devices).

Total Connect™ is a trademark of Honeywell International Inc.

OVERVIEW

☐	296	⚙ No Status	Thermostat	Loft	2nd Floor	10/22/2019 6:31:22 PM				
☐	298	75°F	Thermostat	Loft	Cool Setpoint	Today 8:39:49 PM	75°F ▾	-1	+1	
☐	303	Auto	Thermostat	Loft	Fan Mode	11/23/2018 6:12:05 PM	On	Auto	Circulate	
☐	304	Off	Thermostat	Loft	Fan Status	Yesterday 10:03:38 PM				
☐	299	71°F	Thermostat	Loft	Heat Setpoint	Today 8:39:49 PM	71°F ▾	-1	+1	
☐	307	None	Thermostat	Loft	Hold Type	10/12/2019 12:01:40 PM	None	Temporary	Permanent	
☐	306	44%	Thermostat	Loft	Indoor Humidity	Today 8:39:49 PM				
☐	305	71°F	Thermostat	Loft	Indoor Temp	Today 8:39:49 PM				
☐	302	Heat	Thermostat	Loft	Operating Mode	11/1/2019 8:20:58 AM				
☐	301	Idle	Thermostat	Loft	Operating Status	Yesterday 10:03:38 PM				
☐	297	✓ Success	Thermostat	Loft	Status	Today 9:27:11 PM	Update			
☐	300	Auto	Thermostat	Loft	System Mode	9/5/2019 7:09:47 PM	Auto	Cool	Heat	Off

The skWare Honeywell WiFi Thermostat Plug-In for HomeSeer provides you with a way to monitor and control your Honeywell Total Connect™ Comfort-controlled thermostat from HomeSeer.

INSTALLATION

This Plug-In is installed using the built-in updater capability of HomeSeer.

Before you set it up, you must create your account, login, and acknowledge any alerts or notifications on Honeywell's Total Connect Comfort website. It may be necessary to do this from time to time as changes are made to the site.

UPGRADES FROM 1.X

For users of earlier versions, there are a few notable changes in this version of the plugin to improve the ability to support both HS3 and HS4 (there's no charge to upgrade to HS4 release when it becomes available) and to improve the user experience. Unfortunately, some of these changes may mean some work is required in events or scripts that reference these devices.

1. There will always be two setpoint devices (heat and cool) regardless of whether or not you have enabled "Simulated Auto" mode.

2. All Event Actions have been removed; control of the thermostat is now consolidated in the normal "Control a Device" action as it would be for any other Homeseer device.

SYSTEM REQUIREMENTS

The skWare Honeywell WiFi Thermostat Plug-In for HomeSeer runs on both Windows and Linux installations of HS3, and has been tested with version 3.0.0.148+. Earlier versions of HS3 should work but have not been specifically checked. This plugin cannot be used with HS4, though a free upgrade to the HS4 version is available.

As of 1.3.0: Due to security changes by Honeywell, this plugin is no longer supported on Windows XP, and for Linux/Zee users, it requires Mono version 4.8 or higher. Please see the support forum for more details.

The following thermostats have been tested with this plug-in, but any plugins controlled via the Honeywell Total Connect™ Comfort Portal (US-based models only at this time) may work. Please report back via the HomeSeer forums if you have success or problems with any specific model.

- RTH6580WF - Wi-Fi 7-Day Programmable Thermostat
- RTH9580WF - Wi-Fi Smart Thermostat
- THX9421R5021 - (Redesigned) Prestige 2.0 IAQ[*]
- THX9321R5000 - Prestige HD[*]
- THX9321R5030 - Prestige HD[*]
- TH8321R1001 - (All-New) RedLINK VisionPRO 8000[*]
- TH6320R1004 - FocusPRO® 6000 Wireless (programmable)[*]
- TH5320R1002 - FocusPRO® 5000 Wireless (non-programmable)[*]

[*]*With a RedLINK Internet Gateway (THM6000R1002).*

CONFIGURATION

After installing the Plug-In, a new "Honeywell WiFi Thermostat" menu item can be found under "Plug-Ins" menu in the HomeSeer browser interface. The "HW WiFi Tstat Config" item will take you to the configuration page, where you are able to define your thermostat connections and setup options for controlling your thermostat.
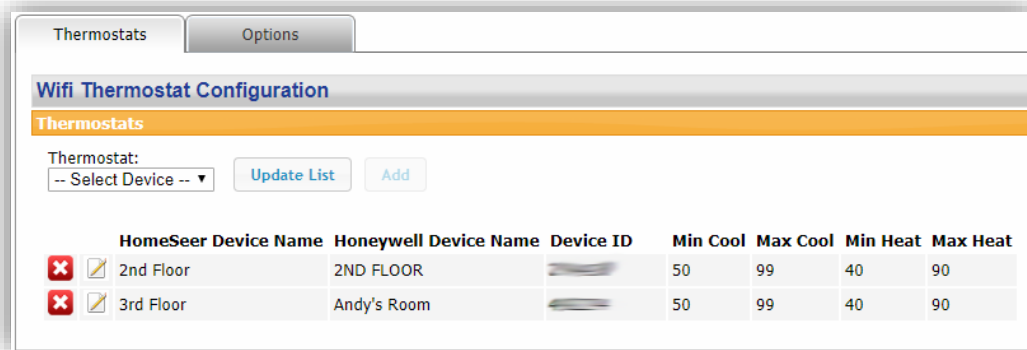
On the "Thermostats" tab, you can add one or more thermostats to be controlled by HomeSeer by selecting from the available thermostats listed on the Total Connect Comfort Portal. Click "Update List" if the list shown does not include any newly added thermostats. It will show both the assigned name in Honeywell as well as the name of the root device in Homeseer (which you're free to edit).

Once your thermostats are saved and created, for each device you can edit the minimum and maximum allowed cool or heat settings.

When you've added your thermostats to the list, a group of parent/child HomeSeer devices will be created for each thermostat based on the capabilities of your thermostat once the first update is complete, including:

- Parent Device
- Status
- Fan Mode
- System Mode
- Operating Mode
- Operating Status
- Cool Setpoint
- Heat Setpoint
- Hold Type
- Indoor Temperature
- Indoor Humidity
- Outdoor Temperature
- Outdoor Humidity

You can also highlight a thermostat in the list and click "Remove", which will delete the associated devices upon saving your changes.

The "Options" tab provides the connection information and control over the logging output.
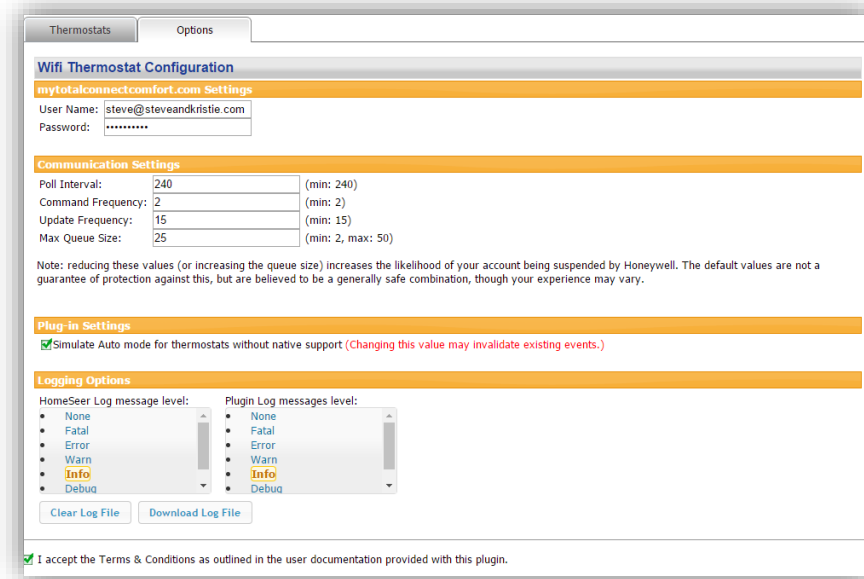
The User Name & Password are required for logging in to your Honeywell Total Connect™ Comfort Portal (HTCCP).

The polling interval (in seconds) specifies how often HS should login to the website and check the current settings. A value of 240 seconds (4 minutes) or higher is required.

The Command Frequency controls how much time must pass between commands sent to the HTCCP. A value of 2 seconds or higher is required.

The Update Frequency controls how much time must pass between update requests sent to the HTCCP. These are specific requests outside of the polling window requested manually (via the "Update" button or script commands) or following a command (required to update the values displayed in HomeSeer. A value of 15 seconds or higher is required. Requests made within less time than this will result in a "Waiting for update…" status temporarily, until the 15 seconds have passed.

The Max Queue Size specifies how many commands can be added to the queue before the plugin panics and shuts down. The most likely cause of this scenario is an event that is triggered too frequently; consider using the "Cannot Re-Run For" event option on events that control your thermostat to prevent this. The minimum recommended size is 5x the number of thermostats you have. A value > 2 and < 50 is required.

For thermostats that do not support "Auto" mode, the Plug-in can simulate this capability if you enable it. If the Indoor Temperature is greater than the Cool Setpoint or lower than the Heat Setpoint, the operating mode will be changed automatically. You must maintain a 3 degree difference between Cool and Heat Setpoints.

Optional log data can be recorded in both the HomeSeer log and in a stand-alone Plug-In log (which can be found in the "Logs" directory of your HomeSeer installation). Please note that the "TRACE" message level should only be used when troubleshooting or sending in for support as it can have a significant impact on performance.

The "Download Log File" and "Clear Log File" buttons on this page make it easier to manage the plugin log files on your server, as you are no longer required to access the file system to get them when requested for support.

DEVICES

Once your thermostats are configured, your devices will show the current values on the Home screen.

The parent "Thermostat" device will show whether the plug-in is able to connect for that thermostat or not.

The "Status" device shows the status of the last request or command, and tracks the last data refresh date/time.

The "Indoor Temp", "Indoor Humidity", "Outdoor Temp", and "Outdoor Humidity" devices are status-only displays of the data last reported at the thermostat's location, and are included based on your thermostat's capabilities.

The "Fan Mode" shows what the setting is ("On" or "Auto") and provides control buttons to change the mode.

The "Fan Status" device indicates whether the fan is actually running at this time or not ("On", "Off").

The "Setpoint" device (or the Cool/Heat Setpoint Devices if your thermostat supports "Auto" mode) shows what the current setpoint is. It provides a dropdown of valid values to adjust the setpoint for the current mode, as well as +1/-1 adjustments. If the device is currently in a Permanent Hold, that hold will be maintained, otherwise a temporary hold will be issued if your thermostat supports such a capability.

The "Hold Type" device shows whether the thermostat is following the schedule ("None"), in a Temporary Hold ("Until HH:MM") or a "Permanent" hold, depending on capabilities. Buttons are provided to change the type of hold in place.

The "System Mode" shows what the setting is ("Cool", "Heat", "Auto" or "Off", as appropriate to your thermostat model) and provides control buttons to change the mode. If you have enabled the "Simluate Auto" option, an "Auto" mode button will be added even if your thermostat doesn't support it natively, and switching will be handled by the plug-in if the temperature exceeds the cool setpoint or drops below the heat setpoint.

The "Operating Status" is an indication of whether the system is currently running or not ("Idle", "Heating", "Cooling").

An "Operating Mode" device is also created to show the mode the unit is currently working in for those using Auto or Simulated Auto mode.

DEVICE CONFIGURATION

The plugin also provides additional configuration information on the root thermostat device itself. Here you can change the connection between the parent device and the actual thermostat, which is useful if you need to replace your thermostat but do not want break the events that are currently configured with these HomeSeer devices. The list of devices only includes those that are not already associated with this plugin.
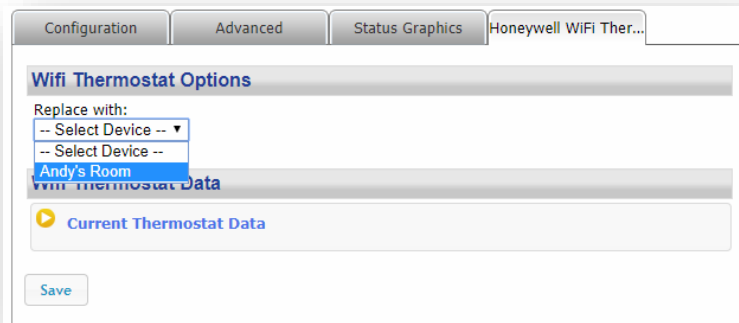
You can also expand the "Current Thermostat Data" slider to see the JSON data provided by Honeywell, which is always very useful when troubleshooting or reporting issues.

ACTIONS

The Honeywell WiFi Thermostat Plug-In for HomeSeer currently supports the following actions:

- **Change System Mode** – this action allows you to switch between supported system modes for the specified thermostat.
- **Change Fan Mode** – this action allows you to switch the fan between supported fan modes for the specified thermostat.
- **Change Setpoint** – this action allows you to change the setpoint for the specified system mode for the specified thermostat. You can choose whether this is a permanent temperature or only until the next scheduled change.
- **Change Hold** – changes the specified thermostat's hold state, either returning to the programmed temperature configured via the thermostat's online programming, or placing a temporary or permanent hold (depending on device capabilities).

FUNCTIONS

The Honeywell WiFi Thermostat Plug-In for HomeSeer currently provides the following script functions:

- **ChangeMode(DeviceID, Mode, Update)** – this action allows you to switch between supported system modes for the specified thermostat.
- **ChangeFanMode(DeviceID, FanMode, Update)** – this action allows you to switch the fan between supported fan modes for the specified thermostat.
- **ChangeSetpoint(DeviceID, Setpoint, HoldType, Mode, Update)** – this action allows you to change the setpoint for the specified system mode for the specified thermostat. You can choose whether this is a permanent temperature or only until the next scheduled change.
- **ChangeHold(DeviceID, HoldType, Update)** – If the specified thermostat is in a hold state, this action will return to the programmed temperature configured via the thermostat's online programming.

Where:

- **DeviceID** = the string ID used in adding your thermostat to the plugin
- **Mode** = 0 (Emergency Heat), 1 (Heat), 2 (Off), 3 (Cool), 4 (Auto)
- **FanMode** = 0 (Auto), 1 (On), 2 (Circulate), 3 (Scheduled)
- **HoldType** = 0 (None), 1 (Temporary), 2 (Permanent)
- **Update** = True, False (causes an update to be attempted immediately after sending the change; use False if you want to string together a number of changes, and only use True on the last one)

For example, setting the Heat setpoint to 71 with a permanent hold for thermostat 123456:

&nhs.PluginFunction("Honeywell WiFi Thermostat", "", "ChangeSetpoint", {"123456",71,2,1,true})

COMMAND PROCESSING

As mentioned earlier in this document, a lot of effort has gone into preventing excessive commands being sent to the HTCCP. As a result, when a command is issued (via device button, event action or script), it is added to a queue. If there are no other commands in the queue, it is processed immediately, and if it isn't a request to update, an update command is queued immediately after the command (unless your script command prevents this). After processing the first command, the queue waits a configurable number of seconds ("Command Frequency") to send the next command, and so on. When a command is retrieved from the queue, the queue is checked for a subsequent command that performs the same type of action on the same thermostat. If found, the current command is discarded, and the next command is processed.

When an update is requested (either manually or as an automatic follow-up to a command), the plugin checks the timestamp of the last requested update for that thermostat (via environment variable, so this survives restarts of HS and the plugin) and if it's too soon (based on "Update Frequency"), it sets a timer to wait until the "Update Frequency" has passed, then requests the update. Any polling timers are stopped and restarted each time an update occurs, so if you change the setpoint (which also requests an update), the next polling won't occur for the specified number of seconds ("Polling Interval") regardless of how long ago the last poll occurred.

SUPPORT

Support for the skWare Honeywell WiFi Thermostat Plug-In for HomeSeer is provided through the standard HomeSeer channels. The primary mechanism is via the Honeywell WiFi Thermostat forum on the HomeSeer website. The author can be contacted directly at steve@skware.net.

Links to the documentation and the support forum can be found on the Plugin's "Docs" page in the Plugin menu.

APPENDIX 1: FILES

The following files are used by the Plug-In. Directories in bold are part of the standard HomeSeer installation. Files marked with * are created by the software during usage; all other files are included in the installation.

```
<HomeSeer Installation Directory>
  HSPI_SKWARE_HW_WIFI_TSTAT.exe
  HSPI_SKWARE_HW_WIFI_TSTAT.exe.config
  \Bin
    \skWare
      \WiFiThermostat
        HtmlAgilityPack.dll
        Newtonsoft.Json.dll
        skWare.HomeSeer.WiFiThermostat.Core.dll
        skWare.HomeSeer.WiFiThermostat.Core.dll.config
  \Config
    HSPI_SKWARE_HW_WIFI_TSTAT.ini*
  \html
    \skWare
      \WiFiThermostat
        skWare Honeywell WiFi Thermostat Plug-In User Guide.pdf
        \images
          auto.png
          auxheat.png
          cool.png
          emergheat.png
          failed.png
          fan-auto.png
          fan-circulate.png
          fan-off.png
          fan-on.png
          fan-scheduled.png
          heat.png
          humidity.png
          nostatus.png
          off.png
          permanent.png
          schedule.png
          temporary.png
          Thermometer-cool-0.png
          Thermometer-cool-1.png
          Thermometer-cool-2.png
          Thermometer-cool-3.png
          Thermometer-cool-4.png
          Thermometer-cool-5.png
          Thermometer-generic-0.png
          Thermometer-generic-1.png
          Thermometer-generic-2.png
          Thermometer-generic-3.png
          Thermometer-generic-4.png
          Thermometer-generic-5.png
          Thermometer-heat-0.png
          Thermometer-heat-1.png
          Thermometer-heat-2.png
          Thermometer-heat-3.png
          Thermometer-heat-4.png
```

```
                    Thermometer-heat-5.png
\Logs
    HSPI_SKWARE_HW_WIFI_TSTAT.log*
```

APPENDIX 2: CHANGE HISTORY

Version	Date	Notes
1.0.0	1/18/2016	Added back +1/-1 buttons in addition to dropdown control for setpoints.
1.0.1	1/24/2016	Added support for Emergency Heat mode.
1.0.2	1/24/2016	Fixed an issue with the setpoint device value not being updated correctly when in Emergency Heat mode.
1.1.0	6/18/2016	Added "Fan Status" device.
		Added "Operating Status" device.
		Added "Simulate Auto Mode" option.
		Incorporated the HomeSeer Thermostat API. This required a change in the status values for System Mode. Please verify your events and scripts to ensure they are updated properly. Also note that the default HSTouch project does not work properly with multiple thermostats if the device names are not unique (it doesn't use location 1 or location 2).
		Amazon Echo integration is not yet working properly - waiting on updates from HomeSeer as to why it claims the device cannot be found.
		No longer automatically set Location 1 or Location 2 when creating a thermostat device.
1.1.1	11/25/2016	Fixed an issue with Heat-only or Cool-only devices showing both setpoints and allowing "Simulate Auto" mode.
1.1.2	11/27/2016	Removed unfinished logic around humidification control that was causing error messages.
1.1.3	12/1/2016	Fixed a login issue caused by a change in the Honeywell Web Portal.
1.1.4	1/27/2017	Added "Operating Mode" device.
		Changed some parameters to improve communication with Honeywell Web Portal.
1.1.5	2/2/2017	Fixed an issue with the Thermostat API settings for the "System Mode" and "Operating Mode" devices.
1.1.6	2/5/2017	Fixed an issue with "Operating Mode" device graphics on Linux-based versions of HomeSeer due to capitalization.
1.1.7	5/14/2017	Added "Download" and "Clear" buttons to the logging section on the configuration page so you can access the plugin log file for support without needing to get onto your server's filesystem.
		Fixed an issue where "Simulate Auto Mode" would revert to the Operating Mode in some cases.
1.1.8	6/7/2017	Fixed an issue where "Simulate Auto Mode" would fail to switch between Heat and Cool correctly.
1.1.9	6/11/2017	Fixed an issue where the thermostat would not enter "Simulate Auto Mode" in some situations.
1.1.10	7/11/2017	Fixed an issue with the log file not being written properly.
		Fixed an issue with loading the Newtonsoft DLL with HS3 version 3.0.0.333.
1.1.11	7/21/2017	Fixed an issue with changing the Cool Setpoint when in "Simulate Auto Mode" in some situations.
1.1.12	10/17/2017	Added logic to report Operating Status as Idle when the System Mode is "Off" and the Fan Status is "Idle" to overcome a defect in Honeywell's JSON data that incorrectly reported the Status as active if it had been at the time the Mode was switched off.
		Added "Docs" page to Plugin menu with links to local documentation and the support forum.
1.1.13	2/15/2018	Added the ability to change the device ID and name used when registering the thermostat in the plugin on the root Device's config screen.

1.2.0	2/23/2018	Replaced the entire HTTP client with CurlSharp to avoid Mono defects and to provide full TLS support for XP and Linux users.
1.2.1	2/25/2018	Reverted previous change because of user issues with dependencies and other unexplained behaviors.
1.2.2	4/30/2018	Re-release of the libcurl-based solution to resolve TLS issues for Windows XP and Linux-based users, with additional logging for potential failure areas.
1.2.3	5/5/2018	Fixed an issue with incorrectly reporting failed logins. Improved logging for failed requests.
1.2.4	5/7/2018	Fixed an issue with incorrectly detecting successful logins for systems with only one thermostat.
1.2.5	5/12/2018	More login detection fixes. Added logic to detect maintenance downtime and delay the next update for 15 minutes. Added 5 second timeouts for connections. Added additional logging around each web request. Added logic to prevent interactions until the thermostat has had a chance to update.
1.3.0	5/20/2018	Reverted to HTTP client for web interactions. This will require mono 4.8 or higher for Linux/Zee users. Add thermostat device ID to log messages wherever known. Improved performance of logging. Changed the tracking of login frequency and added a config-file-only login timeout value (in minutes) for how often the plugin should perform a fresh login (vs assuming the session is still good).
1.3.1	5/23/2018*	Fixed an issue with using the Device Config page to change the Device ID if the original device is no longer present on the TCC portal.
1.3.2	6/1/2018	Adjusted logging to prevent output of large HTML components unless LogLevel is set to 7 (TraceHTML, not available in the Options UI). Fixed an issue where the Config page allowed adding a thermostat with a duplicate ID value. Fixed an issue where deleting thermostats from the Config page did not remove all devices.
1.3.3	6/4/2018	Added additional error handling and logging when adding a new thermostat's "PlugExtraData" to HomeSeer.
1.3.4	6/10/2018	Improved status reporting via "Plug-ins > Manage" page during startup to indicate when all thermostats are not yet ready, and to indicate a FATAL status if an unsupported operating system is in use. Fixed an issue with a few log lines wrapping and repeating device id. Fixed an issue where some HS3 buttons in the web interface allowed you to attempt to control the thermostat before the plugin was ready. Fixed an issue where an erroneous message about not supporting Windows XP was reported for those not on XP.

Starting with version 1.4.0, all future release notes can be found here:
http://plugins.homeseer.com/releasenotes?productid=265