How to Program:
WS0TH-A00, WS0TH-D00

NOTE: The programming mode has a time limit of 10 minutes. The timer is automatically activated when the programming is started. At the end of the 10 minutes the thermostat will resume normal operation. The programming parameters will remain unchanged unless the programming mode was ended in the "End" mode.

NOTE: The default values mentioned in the next column and following pages have been pre-programmed at the factory. However, if the thermostat has been custom programmed, the defaults may not apply.

To enter the programming mode:
Press and hold the up and down arrow buttons while sliding the °F/°C switch to the opposite side. 00 will appear on the display.
Do not use the °F/°C switch again while in the programming mode, this will automatically return the thermostat to operating mode.

Press either the up or down arrow button to find the access code.
Access code 20 - Settings
Access code 43 - Equipment Parameters
Access code 79 - Configuration Parameters
Access code 92 - Restoring Factory Settings

Press the fan button upon reaching the desired code. End and prog will appear on the display in codes 43 and 79. ALL will appear on the display in code 92.

Press either the up or down arrow button to scroll through the menu to reach the desired parameter. The parameters are defined and the factory set defaults listed in the next columns.
Press the fan button to access the parameter.
Press either the up or down arrow button to reach the desired change.
Press the fan button to return to the program menu.

To save the changes:
For Access code 43 and 79 -
Press either the up or down arrow button until End and prog appear on the display again.
Press the fan button to save the changes and exit the program.

For Access code 20 -
Move the F/C switch to the opposite side.

When exiting from one access code you will need to re-enter programming mode to enter a different access code.

Parameters: Access Code 20

Profile Select (PXx):
P03 – Default, EEP 07-10-03, temperature, setpoint
P04 – EEP 07-10-04, temperature, setpoint, fan control
P12 – EEP 07-10-12, temperature, humidity, setpoint

Read both Clear and Learn instructions before beginning.

Clear (CLR):
If this is the first time that any peripheral has been connected or all previously learned peripherals are to be deleted from the thermostat, the thermostat must be cleared.

Enter the Clear (CLR) mode and then Press the fan button. The display will blink (CLR) for a few seconds and will then automatically switch to learn mode.

Learn:
Enter the Learn (Lrn) mode and then Press the fan button. The display will toggle between the function type (see below) and the number of devices learned to that function type. Change the desired function type by pressing the up or down arrow buttons. Follow the device’s procedure for learning a device. After adding a device the display will show (Add) followed by the number of devices learned to that function type. If deleting a device the display will show (dEL) followed by the number of devices learned to that function type. Wait for the display to return to the function type before adding or deleting another device.

Function Type:
Entry Door (Ed): A door switch is used in conjunction with a motion detector to latch the room in either occupied or unoccupied mode. DO NOT USE without either an onboard or a remote motion detector.

Outside Door (Od): A door/window switch will place the thermostat in shutdown when any door/window is opened. When door/window is closed the thermostat will resume normal operation.

Rocker (roc): When the “O” button is pressed the thermostat will go into unoccupied mode. When the “I” button is pressed the thermostat will go into occupied mode.

Keycard (crd): The thermostat will go into occupied mode when the keycard is inserted. When the keycard is removed the thermostat will go into unoccupied mode.

Fan (idb): Learn in the teach message of “tEb” which will adjust the fan between on and auto.

Mode (idE): Learn in the teach message of “tEE” which will adjust the thermostat’s mode between heat and cool.

Pipe Sensor (idF): Learn in the teach message of “tEF” which will be the pipe sensor temperature EEP of 07-02-05.

Button Lock (idg): Activates/deactivates the thermostat buttons including the F/C switch.

Unoccupied Control (idH): Activates/deactivates the user control capabilities during unoccupied mode.

Other (oth): Motion detector or other 4BS device.
Teach-in (tin):

- **Ena** - Default, enables transmission of messages tEc, tEd and tEE
- **dis** - disables transmission of messages tEc, tEd and tEE

Sending a Teach-in Telegram:

**Press** the up or down arrow button to select “tEa” through “tEF”. **Press** the fan button to trigger the thermostat to send a teach-in message. A fan symbol will appear for messages “tEb” through “tEF” showing that the message is now enabled. **Press** the fan button again to disable the message. The fan symbol will disappear.

When enabled messages “tEb” through “tEF” will only transmit on a status change.

Message “tEa” cannot be disabled.

- **tEa** = transmit normal 4BS thermostat message
- **tEb** = transmit FAN RPS message (ON = 0x50, OFF = 0x70)
- **tEc** = transmit COMP RPS message (ON = 0x50, OFF = 0x70)
- **tEd** = transmit VALVE RPS message (ON = 0x50, OFF = 0x70)
- **tEE** = transmit MODE RPS message (ON = 0x50, OFF = 0x70)
- **tEF** = transmit EEP 07-02-05 for PIPE temperature sensor if attached

To exit, **Move** the F/C switch to the opposite position.

Equipment Parameters: Access Code 43

Some parameters will change depending on whether the equipment type is a heat pump or a fan coil.

**Equipment Type (E9P):**

- **FC** - Default, fan coil
- **tHp** - Trane heat pump, type O reverse valve
- **tAc** - Trane AC with electric heat
- **FHp** - Friedrich heat pump, type B reverse valve
- **FAc** - Friedrich AC with electric heat
- **gHp** - GE heat pump, type B reverse valve
- **gAc** - GE AC with electric heat
- **AHp** - Amana heat pump, type B reverse valve
- **AAc** - Amana AC with electric heat

**Fan Speed and Operation (FOp):**

- **3U** - Default fan coil, three speed user selectable fan
- **3C** - three speed constant fan
- **3A** - three speed auto fan
- **2U** - Default heat pump, two speed user selectable fan
- **2C** - two speed constant fan
- **2A** - two speed auto fan
- **1U** - single speed user selectable fan
- **1C** - single speed constant fan
- **1A** - single speed auto fan

**Compressor Protection (FCp):**

- **NP** - Default fan coil, no compressor protection and high or low speed fan in heating
- **CP** - Default heat pump, compressor protection and high fan is allowed in heating
- **nP** - no compressor protection and only low fan is allowed in heating
- **cP** - compressor protection and only low fan is allowed in heating

**Continuous Fan Operation (CFL):**

- **dis** - Default, normal fan operation
- **Ena** - continuous low fan in auto or economy modes

**Heat Relay Type (Hr):** (Fan coil ONLY)

- **NC** - Default, normally closed
- **NO** - normally open

**Cool Relay Type (Cr):** (Fan coil ONLY)

- **NC** - Default, normally closed
- **NO** - normally open

**Reverse Valve Type (typ):**

- **O type** - Default, energizes in calls for cooling
- **b type** - energizes in calls for heating

**Heat Pump or AC (Pt):**

- **HP** - Default, 2 stage heat, single stage cool
- **AC** - AC and electric heat
- **Y = compressor, W = 2nd stage heat**
- **Y = cool, W = heat**

Configuration Parameters: Access Code 79

**Temperature Scale (Unt):**

- **F** - Default, °F
- **C** - °C

**On Power Interrupt (OPI):**

- **EC** – Default, thermostat will go into economy mode after a power interrupt
- **OC** – thermostat will go into occupied mode after a power interrupt

**Display Temperature (dSp):**

- **SP** - Default, display will show setpoint only
- **rt** - display will show room temperature unless either up or down arrow button is pressed. Then the display will show setpoint.
- **Srt** - display will toggle between room temperature and setpoint. Display will revert to setpoint when either the up or down arrow button is pressed.
Degrees Per Setback (dPs):
Selects the number of degrees per time period that the setpoint will be stepped back
1.0° Default
Programmable Range: 0.0°F to 3.0°F, in 0.5°F increments

Open Door Timer (Odt):
After door switch activation, selects the amount of time to check for motion before determining occupied or unoccupied mode. Available only with door switch
15 minutes Default
Programmable Range: 5 minute to 240 minutes (4 hours), in 15 minute increments

Economy Cooling Limit (EC):
When in economy or remote setback mode, selects the highest room temperature before cooling turns on. Cooling turns off when temperature falls below EC value.
85.0°F (29.5°C) Default
Programmable Range: 72.0°F to 99.0°F (22.0°C to 37.0°C), in 0.5°F increments

Economy Heating Limit (EH):
When in economy or remote setback mode, selects the lowest room temperature before heating turns on. Heating turns off when temperature rises above EH value.
60.0°F (15.5°C) Default
Programmable Range: 41.0°F to 72.0°F (5.0°C to 22.0°C), in 0.5°F increments

Fan Refresh Frequency (FrF):
Selects how often the low fan will operate for a fan refresh
0 hours Default, disabled
Programmable Range: 0 hours to 24 hours

Fan Refresh Duration (Frd):
Selects the length of time the low fan will operate during a fan refresh
1 minute Default
Programmable Range: 1 minute to 45 minutes

Cycle Rate Timer (crt):
Limits the number of heat/cool cycles per hour
8 cycles per hour Default, fan coil
6 cycles per hour Default, heat pump
Programmable Range: 0 (Off) to 24 cycles per hour, fan coil
Programmable Range: 0 (Off) to 12 cycles per hour, heat pump

Differential (dif):
Selects the minimum room temperature above or below setpoint when heating or cooling will turn on or off.
0.4°F (0.2°C) Default
Programmable Range (°F): 0.2, 0.4, 0.6, 0.8, 1.0, 1.2
Programmable Range (°C): 0.1, 0.2, 0.3, 0.4, 0.5, 0.6

Setpoint Hold Timer (SH):
Selects a time limit that the occupant's setpoint will be saved, when in economy mode.
0 hours Default, disabled
Programmable Range: 0 to 24 hours

Fan Hold Timer (Hft):
Selects a time limit the high and low fans will operate before automatically returning to auto mode.
0 hours Default, disabled
Programmable Range: 0 to 24 hours
Remote Sensor (rS2):
When a remote sensor is connected, it may be used to control the thermostat instead of the on board sensor or it may be averaged with the on board sensor.

- **NS2 - Default, no remote sensor available**
- **rt - remote sensor is used only**
- **Art - temperature is averaged between on board sensor and remote sensor**

NOTE: If sensor is not connected, the only valid selection is NS2.

Remote Pipe Sensor (rS):

**FAN COILS ONLY:**
When the pipe sensor is connected it will control the thermostat functions based on pipe temperature.

- **NS - Default, pipe sensor and related functions disabled**
- **EA - pipe sensor and related functions enabled**

See parameters in next column

NOTE: If pipe sensor is not connected, the only valid selection is NS.

Shutdown Delay (Sdd):
Selects the amount of time delay between remote shutdown signal and the thermostat going into shutdown mode.

- **0 seconds Default, immediate**
- **Programmable Range: 0 seconds to 200 minutes**

Setback Override (Sbo):
Selects the amount of time the remote setback or shutdown can be overridden by the occupant pressing the up, down or fan buttons.

- **0 minutes Default, no override**
- **Programmable Range: 0 minutes to 8 hours, in 15 minute increments**

If Remote Pipe Sensor (rS) is set to EA the following parameters are available:

**Heating Activation Temperature (HAt):**
Selects the pipe temperature that activates heating and fans.
- **80.0°F (26.5°C) Default**
- **Programmable Range: 75.0°F to 99.0°F (24.0°C to 37.0°C)**

**Cooling Activation Temperature (CAt):**
Selects the pipe temperature that activates cooling and fans.
- **65.0°F (18.5°C) Default**
- **Programmable Range: 40.0°F to 70.0°F (4.5°C to 21.0°C)**

**Fan Coil Functions (CFg):**
Selects the desired 2-pipe fan coil system.
- **2Ps - Default, 2-pipe single, normally closed valve fan coil**
- **2Po - 2-pipe single, normally open valve fan coil**
- **2PE - 2-pipe with electric heat**
- **2Pn - 2-pipe valveless**

NOTE: Refer to Installation Instructions for further explanations

**Valve Purge Frequency (Pgf):**
Selects the length of time between valve purges.
- **60 minutes Default**
- **Programmable Range: 30 minutes to 120 minutes (2 hours), in 10 minute increments**

**Valve Purge Duration (Pgd):**
Selects the length of time that the valve is in purge mode.
- **180 seconds (3 minutes) Default**
- **Programmable Range: 30 seconds to 300 seconds (5 minutes), in 10 second increments**

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**To restore factory presets:**
Press and hold the fan and down arrow buttons while sliding the °F/°C switch to the opposite side. 00 will appear on the display.

Press either the up or down arrow button to locate the erase mode **Access code 92.**

Press the fan button upon reaching the code. **All and erase** will appear on the display.

To restore **ALL** factory presets, simply press the fan button when ALL appears on the display. The program will exit also.

To restore individual parameters, press either the up or down arrow button until the parameter is reached. Press the fan button and the factory preset is restored.

To exit, press the up or down arrow buttons until End and ERASE appear on the display.

Press the fan button to exit.