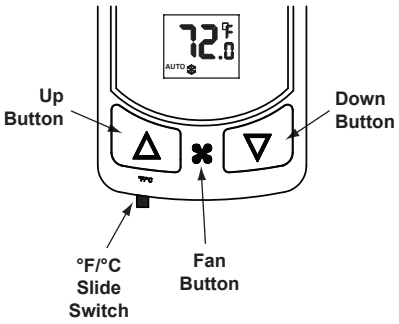
How to Program:
WS0TH-A00, WS0TH-D00

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.

Continue scrolling and changing as desired.

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. Wait for the display to return to the function type before adding another device.
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 sellect “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.
Explanation of Codes:

Equipment Type (E9P):
Selects the type of equipment

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):

Three speed fan only available for fan coil equipment
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):
Selects the compressor protection and high or low speed fan in heating

NP - Default fan coil, no compressor protection and high fan is allowed 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):
Selects continuous fan operation

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

Heat Relay Type (Hr): (Fan coil ONLY)
Selects type of heat relay

NC - Default, normally closed
NO - normally open

Cool Relay Type (Cr): (Fan coil ONLY)
Selects type of cool relay

NC - Default, normally closed
NO - normally open

Reverse Valve Type (typ):
Selects the valve type

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
Y = compressor, W = 2nd stage heat
AC - AC and electric heat
Y = cool, W = heat

Configuration Parameters: Access Code 79

Explanation of Codes:

Temperature Scale (Unt):
Selects scale parameter that will be shown

F - Default,°F
C - °C

On Power Interrupt (OPi):
Selects whether the thermostat will go into economy mode or occupied mode after a power interrupt

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):
Selects which temperature is shown on display

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.

Temperature Control Mode (HAc):

USr - Default, switch selectable, heat only, auto changeover or cool only

Ht - heat mode only

CL - cool mode only

Aut - auto mode only

Stop Function Enabled (Stp):

Selects whether or not thermostat can be turned off by pressing the fan button

Ena – Default, enabled, press fan button until Stp appears on display

dis – disabled

Economy Function Enabled (ECo):

Selects whether or not thermostat can be manually placed in economy mode by pressing the fan button

Ena – Default, enabled, press fan button until Eco and ECON appears on display

dis – disabled

Comfort Setpoint (CS):

Selects setpoint default temperature when thermostat powers up or returns to comfort mode from economy mode

72.0°F (22.0°C) Default

Programmable Range: 60.0°F to 85.0°F (15.5°C to 29.5°C)

Cooling Limit (LC):

Selects minimum room temperature in cooling

65.0°F (18.5°C) Default

Programmable Range: 60.0°F to 85.0°F (15.5°C to 29.5°C)

Heating Limit (LH):

Selects maximum room temperature in heating

85.0°F (29.5°C) Default

Programmable Range: 60.0°F to 85.0°F (15.5°C to 29.5°C)

Freeze Protection (FP):

Selects freeze protection enabled or disabled

Ena – Default, enabled at 55°F

dis – disabled

Fan Purge Timer (FPt):

Selects the amount of time the fan will continue to run after a heating or cooling call.

30 seconds Default

Programmable Range: 0 (Off) to 180 seconds (3 minutes), in 10 second increment

Clear Logged Data (CLr):

Selects whether or not the logged run time data will be reset to 0's

NO – default, no reset

yEs – reset

Setback Ramping (Sbr):

Selects setback function to step back to unoccupied setpoints or to go directly to unoccupied setpoints.

dis - Default, disabled, directly to unoccupied setpoints

Ena – enabled, steps back to unoccupied setpoints

Ramping Setback Timer (rSt):

Selects the amount of time when no motion is detected before going into unoccupied mode

30 minutes Default

Programmable Range: 5 minute to 720 minutes (12 hours), in 15 minute increments

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

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.

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