

TCS Glossary of Terms

Access Code

A 3-digit code that can be programmed into the thermostat or controller to limit access to the programming and scheduling functions.

Access to the Fan Mode

A programming function giving the user access to the *Fan Switch* button on the face of the thermostat to set the *occupied fan mode*.

Access to the System Mode

A programming function giving the user access to the *System Switch* button on the front of the thermostat, with options of AUTO, HEAT, COOL or OFF.

Adjustment Pots

Small, grey cube-shaped devices on the inside cover of the thermostat, used to *calibrate a sensor*.

Analog Output Offset Value

(SZ1017a/51/53 only)

The number of degrees above or below the thermostat's setpoint that a valve or damper will begin to modulate. Works similarly to a differential on a conventional thermostat.

Aquastat

(SZ1017a/51/53 only)

Used in conjunction with Digital Input 2, Analog Output 1 will begin to modulate a valve. When DI-2 is open then AO-1 will operate in the cooling mode. When DI-2 closes, AO-1 will operate in the heating mode.

Auxiliary Heating

A secondary heating source used to supplement the heating provided by a heat pump, or also used as emergency heating.

Auxiliary Output

(exclude SZ1009 & SZ1041)

A digital output signal wired to other equipment. The digital output "opens" or "closes" based on the *occupied* and *unoccupied* times programmed into the thermostat.

AWG shielded twisted

Wire that is twisted and covered by a shield which protects the wires from radio frequency interference.

Baud Rate

The per second signalling rate that the thermostat communicates on the *network*.

Built-in Delays

Time delays and minimum run times which the fan, cooling and heating stages will run in order to protect equipment.

Built-in Sensor

The 100 ohm temperature sensor built in to each thermostat.

Calibrate a sensor

Use of the *adjustment pots* to insure that the sensor reading on the thermostat matches the actual temperature in the zone being measured.

Common return paths

Denotes the A-to-A and B-to-B communication wiring that must be maintained throughout the *network*.

Common side

Also referred to as ground.

Compressor

Equipment that provides mechanical cooling for a zone. Contact Switch A switch that sends a digital signal to the thermostat showing that a piece of equipment has been enabled.

Control based on Discharge Air

(SZ1017a & SZ1053 only)

A method to control the temperature in the zone by maintaining a programmed temperature in the discharge air duct.

Control Mode

Programming the thermostat to control the zone based on maintaining a temperature only, or adding a time factor.

Controller Address

The unique address programmed to each thermostat or controller on a network, from 000 to 255. 248 CANNOT be used.

Cool Lockout w/ DI-2

A feature on *DI-2*, will insure that when an *economizer* is being used, only the first stage of cooling can be enabled.

Cooling Differential

The number of degrees above the thermostat's setpoint plus offset that will turn on a stage of cooling.

Cooling Differential Setpoint

The temperature of the zone arrived at by adding the thermostat's setpoint plus offset to the cooling differential.

Cool Lockout

The outdoor air temperature programmed into the thermostat that, below which, cooling stages will not be allowed to turn on.

Cooling Lockout Temperature

The outdoor air temperature programmed which will enable the cool lockout feature.

Cooling Offset

The number of degrees above the thermostat's *setpoint* where a cooling stage will turn off.

Cooling Setpoint

The temperature programmed to the thermostat or controller that will enable cooling when the zone goes above that temperature, based on the *differentials* established.

Daylight Savings Time

A feature on all 365-day thermostats which will automatically reset the clock twice per year on the dates when Daylight Savings Time occurs.

Dedicated Power

24VAC power provided to a thermostat or controller using a dedicated transformer, NOT the unit transformer

Delay On Power Up

Number of seconds that the thermostat will delay providing a signal to HVAC equipment to turn on during a power-up, or upon going to an *occupied* schedule. Each thermostat should have a different number of seconds programmed so that power spikes can be avoided.

DI-1

A dry contact device providing a digital signal into the Digital Input 1 *terminal block* on the thermostat.

DI-2

A dry contact device providing a digital signal into the Digital Input 2 *terminal block* on the thermostat.

DI-3

A dry contact device providing a digital signal into the Digital Input 3 *terminal block* on the thermostat.

Differential

The number of degrees above the cooling setpoint, or below the heating setpoint that cooling or heating will be enabled.

Differential Pressure Switch

A device that measures the pressure within an air duct and sends a signal to the thermostat or controller if that pressure drops below its programmed value.

Dipswitch

Manual switches within the thermostat or controller that enabled sensor inputs, or enable or disable functions to be accessed from the face on the thermostat or controller

Direct Action

(SZ1017a/51/53 only)

Places the valve or damper at its minimum position at 4 mA (or 0mA) and its maximum position at 20 mA.

Direct Action Economizer Control

(SZ1041 & SZ1051 only)

Places the damper on the economizer at its minimum position at 4 mA (or 0mA) and its maximum position at 20 mA.

Discharge Air Function

A risk management function to turn off heating or cooling when the temperature in the discharge air duct goes above or below its programmed values.

Discharge Air Proportional Band

(SZ1041 & SZ1051 only)

The number of degrees above the *cooling setpoint* that will modulate the *economizer* to its fully open position.

Discharge Air Sensor

A platinum RTD sensor measuring the temperature in the discharge air duct.

Discharge Air Setpoint

(SZ1017a & SZ1053 only)

The temperature that the thermostat will maintain the discharge air temperature when *control based on discharge air*.

Discharge Air Temperature

The temperature within the discharge air duct.

Discharge High Limit

The temperature that the heating will turn off, and not turn on again until the temperature in the discharge air duct falls 3° below that high limit.

Discharge Low Limit

The temperature that the cooling will turn off, and not turn on again until the temperature in the discharge air duct raises 3° below that low limit.

Economizer

Equipment used in conjunction with HVAC equipment that modulates a damper in order to utilize cooler outdoor air when the zone is calling for cooling.

Economizer Control

(SZ1041 & SZ1051 only)

An output from the thermostat that modulates the damper on an economizer when there is both a call for cooling, and the outdoor air temperature is sufficient to provide supplemental cooling.

Electrical Noise

Interference that is created by a magnetic field such as a motor or florescent lighting.

External Override Function

Allows the thermostat or controller to utilize its own internal schedule until such time it receives a digital input signal which overrides the thermostat or controller into its *occupied* schedule.

External Time Clock Function

Thermostat will go *occupied* or *unoccupied* based on a digital input, not on its internal schedule.

Fan Mode

The selections available to operate the fan during *occupied* or *unoccupied* periods.

Fan Proving

A risk management function to insure that the fan is running while heat or cooling is being called for by the thermostat. If the fan is not running when it should, the HVAC unit will be turned off and the *SERVICE* LED will go ON.

Fan Switch

A button on the front of the thermostat to change the *fan status* during *occupied* periods

Filter Status Function

Using a signal provided by a *differential pressure switch* mounted in the duct, the thermostat can monitor the air flow status of the filter and create a call for service if the air flow goes below the switch's programmed limit.

Half-wave rectified

When converting from AC power to DC, the negative voltages are eliminated.

Heat Low Limit

(SZ1017a & SZ1053 only)

When using AO-1 to *control based on discharge air*, this function will maintain the heating *discharge air setpoint* until there is a call for cooling from the thermostat.

Heating Differential

The number of degrees below the heating *setpoint*, minus the offset, that a heating stage will be enabled.

Heating Differential Setpoint

The temperature that the stage of heating will turn on.

Heat Lockout

The outdoor air temperature programmed into the thermostat that, above which heating stages will not be allowed to turn on.

Heating Lockout Temperature

The outdoor air temperature programmed to enable the *heat lockout* feature.

Heating Offset

The number of degrees below the heating setpoint that the heating stage will turn off.

Heating Setpoint

The temperature programmed to enable heating when the zone goes below that temperature, based on the differentials established.

Holiday Period

On a 365-day thermostat, the number of days that a *holiday schedule* will operate.

Holiday Schedules

On a 365-day thermostat or controller, a schedule separate from its normal 7 day schedule that can be programmed, and then set for a number of days or a "*holiday period*".

Jumper

A wire or device connecting two different contact points. Keypad Access Access to programming, time clock and scheduling functions from the keypad interface of the thermostat or controller.

Lockout Keypad Access

A programming or dipswitch feature that can lockout user access to the keypad interface of the thermostat or controller for programming and/or the time clock and scheduling.

Midpoint

(SZ1017a/51/53 only)

A selection in programming of the aquastat function so that both a heat and cool valve can be modulated from a single output.

Minimum Damper Position

(SZ1041 & SZ1051 only)

On an *economizer*, the minimum position that the damper must be open to allow a constant supply of fresh outdoor air.

Minimum or maximum reading

A thermostat reading either 40° (minimum) or 90° (maximum), indicating the need to troubleshoot the device. See FAQ's for troubleshooting.

Modem

A device that allows the network to transmit data over a standard telephone line. It converts digital pulses to audio tones that an analog telephone line is set up to handle, and vice versa.

Modulating Output

(SZ1017a/41/51/53 only)

An output that sends a 4-20 mA (or optional 0-20mA) analog signal to another device or piece of equipment.

Modulating Output Proportional Band

(SZ1017a/51/53 only)

The number of degrees away from the *setpoint* that a valve or damper will operate from it's minimum (or closed) position at *setpoint*, to fully open.

Modulating Output Range

(SZ1017a/41/51/53 only)

Either 4-20mA or 0-20mA.

Monitor

A function in programming that will allow a digital input, such as a temperature, to simply be monitored without initiating a response.

Network

A series of thermostats or controllers, linked together through communications wiring to a modem device or communications center such as the TCS QD2020 series.

Network Wiring

The communications wiring that connects the thermostats and controllers to form a network.

Occupied

The scheduled times when the building, space or zone will be operated based on the *occupied setpoints*.

Occupied Cool Differential Setpoint

The temperature above the *occupied cool setpoint* plus offset that cooling will engage.

Occupied Cool Setpoint

The temperature that, if exceeded, the equipment will begin to cool the space in it's *occupied* mode.

Occupied Heat Differential Setpoint

The temperature below the *occupied heat setpoint* minus offset that heating will engage.

Occupied Heat Setpoint

The temperature that, if the zone goes below, the equipment will begin to heat the space in it's *occupied* mode.

Occupied Setpoints

The two *setpoints* for heating and cooling that, if exceeded, will engage equipment to bring the zone back to the *setpoint*. Usually, this *occupied* range will be within a few degrees, such as a 72° *occupied cool setpoint* and a 70° *occupied heat setpoint* to maintain comfort levels.

Occupied Times

The times of day that the thermostat will operate equipment at the *occupied setpoints*.

Offset

The number of degrees above the *cooling setpoint*, or below the *heating setpoint*, that a stage will turn off.

Outdoor Air Economizer Setpoint

(SZ1041 & SZ1051 only)

The minimum outdoor air temperature that would be required to enable the *economizer*.

Outdoor Air Function

The function of the thermostat which reads the outdoor air temperature, then disables heating stages if the outdoor air reaches the *heating lockout*, or disables cooling stages if the outdoor air reaches the *cooling lockout*.

Outdoor Air Sensor

A platinum RTD temperature sensor that reads the outdoor air temperature for monitoring, or to enable various functions.

Outdoor Air Temperature

The reading provided by the *Outdoor Air Sensor*.

Outdoor Cooling Lockout

As part of the *Outdoor Air Function*, the outdoor air temperature which, when reached, "locks out" stages of cooling to insure cooling stages are not running unnecessarily on cooler days.

Outdoor Heating Lockout

As part of the *Outdoor Air Function*, the outdoor air temperature which, when reached, "locks out" stages of heating to insure heating stages are not running unnecessarily on warmer days.

Override

The function provided by the "Override button" on the front of the thermostat or controller which changes the *setpoints* from their *unoccupied* to *occupied* setpoints for a pre-programmed period of time.

Override Time

The pre-programmed number of minutes that the thermostat or controller will remain in the occupied mode when the "Override button" is pressed.

P+I

A function which controls the zone based on both the *setpoints* and a time factor. If the zone remains above the *cooling setpoint*, but below the *cooling differential* thus not engaging any cooling of the zone, the *differentials* and *offsets* will move 1° closer to the setpoint every five minutes until the cooling engages and the zone returns to its *cooling setpoint*. This is also the case for heating.

Polarity

Maintaining +24V to +24V and -24V to 24V power connections and A to A and B to B communications wiring throughout a *network*.

Programming Code

The three digit code that, if required, needs to be entered for programming and/or scheduling.

Remote Sensors

Any sensors that are NOT built-in to a thermostat or controller and wired to one of the appropriate inputs.

Reset Ratio Factor

(SZ1017a & SZ1053 only)

When *control based on discharge air*, the number of degrees the discharge air is raised or lowered when the temperature in the zone changes 1° from *setpoint*.

Revelation Professional

A TCS/Basys Controls PC based network interface for programming, scheduling and monitoring. Can be used on a direct connection to a PC on site, or on a dial-in network over a standard phone line.

Reverse Action

Places the valve or damper at its minimum position at 20 mA, and its maximum position at 4 mA. (or 0mA).

Reverse Action Economizer Control

(SZ1041 & SZ1051 only)

Places the damper on the *economizer* at its minimum position at 20 mA, and its maximum position at 4 mA (or 0mA).

Scheduling

The function of establishing *occupied* and *unoccupied* times for each day of the week.

Service

An LED light that indicates a need for service based on discharge air limit, fan failure, filter status, or when other input on DI-2 which is programmed for service becomes closed.

Setpoint

The temperatures established to maintain a zone, and if exceeded will engage cooling or heating functions.

Setpoint Adjust

If enabled, will allow the user a programmed number of degrees to adjust the zone temperature by pressing the "Warmer" or "Cooler" buttons in the face of the thermostat or controller.

Setpoint Shift

If enabled, the number of degrees the cooling setpoint will raise and heating setpoint will lower when an input on DI-2 closes.

Share a remote outdoor air sensor

The ability of a network to share the reading from the outdoor air sensor input from one thermostat or controller to any other thermostat or controller throughout a network as long as the thermostat or controller has the outdoor air function.

Smart Recovery

The function of the thermostat to gradually "ramp" the zone to its setpoint. Prior to its *occupied* time, the thermostat will insure that the zone is 1° closer to setpoint every 15 minutes. This will have the zone to its setpoint temperature at the beginning of its occupied time without the need to run HVAC equipment excessively in order to do so.

System Mode

The five selections that the thermostat will base operation of the HVAC equipment. See FAQ for further information.

System Switch

If enabled, the user will be able to change the *system mode* from the face of the thermostat.

Terminal Blocks

The terminals where wires are attached to the thermostat or controller. Each terminal block can be detached from the posts for easier installation of wiring.

Throttling Range

(SZ1041 & SZ1051 only)

Same as *discharge air proportional band*. The number of degrees above the *cooling setpoint* that will modulate the *economizer damper* to it's fully open position.

Time Clock

The time of day (and date on 365-day models) that the thermostat or controller can be programmed to maintain *occupied* and *unoccupied* schedules.

Time Clock and Scheduling Codes

If required, a 3-digit code that would be required to access time clock and scheduling functions from the face of the thermostat or controller.

Ubiquity

The TCS internet ASP application for interfacing with TCS control networks.

Unit Transformer

The 24V transformer on the HVAC equipment that may be used to provide power for thermostats or controllers if used as stand-alone ONLY.

Unoccupied

The scheduled times when the building, space or zone will be operated based on the *unoccupied setpoints*.

Unoccupied Action

(SZ1017a/51/53 only)

Choosing to maintain an analog output as modulating, fully open or fully closed while *unoccupied*.

Unoccupied Cool Differential Setpoint

The temperature above the *unoccupied cool setpoint* plus offset that cooling will engage.

Unoccupied Cool Setpoint

The temperature that, if exceeded, the equipment will begin to cool the space in it's *unoccupied mode*.

Unoccupied Heat Differential Setpoint

The temperature below the *unoccupied heat setpoint* minus offset that heating will engage.

Unoccupied Heat Setpoint

The temperature that, if the zone goes below, the equipment will begin to heat the space in it's *unoccupied mode*.

Unoccupied Setpoints

The two setpoints for heating and cooling that, if exceeded, will engage equipment to bring the space back to the setpoint. Usually, these unoccupied settings will be a broad range of degrees, such as a 80° *unoccupied cool setpoint* and a 60° *unoccupied heat setpoint*. In this way energy is not wasted while the zone is *unoccupied*, but equipment or contents within the zone are protected.