Instruction Manual for Digital Thermostats

TX350C

USER MANUAL TX350C DIGITAL THERMOSTAT

General Warning

This manual is an integral part of the machine's Instruction Manual, and must be kept near the machine for quick and easy reference.

Display

Display available Information:

- Main display (red colour): Real set-point
- Ancillary display (yellow colour): Probe

Display Icons

Icon	Status
°C – °F	On, when display indicates a temperature or a pressure value
⚠	Blinking in presence of an alarm
Vset	On if a Set-point (dynamic set-point) automatic modification function is activated
menu	On during the access to function menu
🔥	On if heaters are operating
Flow!	Blinking if water flow switch digital input is activated
⊡	On if water pumps are working
✿	On if funs are working
1 2	On if the relevant compressor is working; it blinks if the compressor is under the starting function at a specified time.
❄	On if the machine is working and the Cool working condition is activated
LP HP	HP and LP icons are blinking in case the High or Low pressure alarm is activated

Key Function

Key	Function
SET	Press and release during main display: It allows the set point display
	Press and release twice during main display: if the dynamic set point or tanks function is activated, the Vset icon is on and display indicates the working real set
	Press and release under programming condition: it allows the selected parameter modification access; it also allows the set value confirmation during parameter modification
	Press and release in ALrM menu: It allows the alarm reset (if it could be reset) from ALrM menu
⌃	UP: Press and release: From main display it allows the probe value display set in the high display and the corresponding label in the lower display
	Press and release during the programming: it allows the (ST, CF, etc) parameter file scrolling; it allows the parameter list scrolling. During parameter modification the value is increased
⌄	DOWN: Press and release: from main display it allows the set probe value display (temperatures) in the high display and the corresponding label in the lower display
	Press and release during the programming: it allows the (ST, CF, etc) parameter file scrolling; it allows the parameter list scrolling. During parameter modification the value is decreased
❄	Press an release: it allows the machine access or selects the STD-BY mode
menu	Press and release: It allows the function menu access
	Press and release under programming condition: It allows to exit from parameter modification

Key Combined Function

Key	Function
SET + ⌄	Press the keys simultaneously for three seconds: It allows the parameters programming access
SET + ⌃	Press the keys simultaneously: it allows the parameter programming exit

Normal Combined Function

The instrument displays under normal condition as follows:

- Main display (red colour): Real Set-point
- Ancillary display (yellow colour): Probe display, display indicates chiller set when the unit is on, OFF with unit in stand by.

Display During an Alarm Condition

In case of alarm display indicates as follows:

- LP + alarm code in the lower display*: low pressure alarm
- HP +alarm code in the lower display*: high pressure alarm
- **Flow** + alarm code in the lower display: water flow switch alarm
- ⚠ + alarm code in the lower display* in case of different alarm from high or low pressure

* The lower display indicates alarm code alternating with the normal display.

The LP, HP, Flow, ⚠ icons in presence of an alarm are on and blinking.

STD-BY Display

With the instrument in STD-BY the display indicates the "OFF" label.

How to Silence the Buzzer

The buzzer silence, in the models equipped with it, has carried out in the following way:

- Automatic silence: when the situation who has caused the alarm condition has been restored
- Manual silence: press and release one of the keys. The buzzer is off even if the alarm condition remains on.

How to Access to "Pr1" (user level) Parameters

How to access to "pr1" parameter menu:

1. Press for a few seconds the SET and "UP" keys
2. The icons ☀ blink and the higher display indicates "ALL" (parameter generic group)

3. Scroll the parameter groups by "UP" and "DOWN" keys
4. Select the group containing the parameters to be modified by pressing the set key it is possible to access the parameter list contained in the group. The lower display indicates the parameter label and the higher one displays the value.

How to Modify a Parameter Value

1. Access to parameter menu
2. Select the required parameter
3. Press the SET key to enable the value modification;
4. Modify the value by "UP" and "DOWN" key
5. Press SET to store the new value and pass to the next parameter code
6. To exit from the parameter modification procedure press SET and UP when you are in parameter display (not during the modification with blinking value) or for time-out.

Note: The new set value is stored also when you exit for time out without having pressed the SET key.

How to Set the Stand by Unit

If controller is on, the prolonged pressure of ❄ key imposes the machine to remain in STD-BY.

In STD-BY mode it is also possible to access to menu for the navigation or for the parameter modification.

The alarm management has also enables in STD-BY; the alarms, if they are activated, are normally signaled.

Access and Exit from Function Menu

Press and release the menu key; the "menu" icon is on. Press and release the menu key or wait the time out.

How to Display the Alarms

Access to function menu:

1. Select the function "ALrM" by "UP" and "DOWN" keys
2. Press and release the SET key
3. By pressing the "UP" and "DOWN" keys it is possible to display the alarms on

To exit from the alarm display, press the menu key or wait the time out time.

How to Reset an Alarm

1. Access to function menu
2. Select the "ALrM" function
3. press SET; the lower display indicates the alarm code and the higher display indicates the   label if there is the possibility to reset the alarm or the label No, if it is not the case. Scroll all the alarms on by the "UP" and "DOWN" keys
4. press SET in correspondence of the rST label to reset the alarm and pass to the next
5. To exit press the menu key and wait the time out time.

How to See the Alarm Log-file

1. Access to function menu
2. Select the ALOG function by pressing "UP" and "DOWN" keys
3. press SET, the lower display indicates the alarm code label, the higher one indicates the "n" label and sequence number
4. by pressing "UP" and "DOWN" keys it is possible to scroll all the present alarms
5. The ALOG function exit is enabled by pressing the menu key or for time-out.

The maximum number of registered alarms is 50; the 51st alarm will cancel and automatically replace the oldest alarm (display has made in ascending order from the oldest to the most recent one).

How to Display the Set Point

The pressure and release of the SET key allows the set point display. It is possible to display the set-point with the device in STD-BY condition by pressing and release the SET key.

How to Modify the Set Point

1. Press the SET key for at least 3 sec
2. Set point should be displayed blinking
3. To modify the value press "UP" and "DOWN" keys
4. Store the new set Point by pressing the SET key or wait the time out time to exit from the programming.

How to Display the Set Point with TEMPERATURE RANGE COOLING Dynamic Set Function (Optional)

The temperature range cooling setting (dynamic Set-point) is available upon request. The thermostat is already prearranged for this function, it needs simply add the second probe (Ambient probe) and modify some parameters.

This operation foresees the "Dynamic" fluid set-point , where the fluid set-point temperature pursues the air temperature with a fixed temperature range of 2°C less. This operation is also foreseen inside the ambient temperature range between 15°C and 27°C. Lower than this range the set-point will always remain the same set value (13°C) besides higher than this range the set-point value will reach the maximum set value (25°C), even if the ambient temperature increases again.
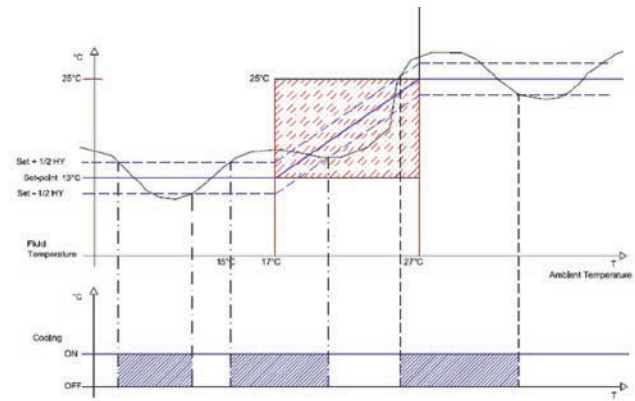
The cooling plant working will be always in on-off mode with a temperature range on set-point (changeable or fixed) always of 2°C.
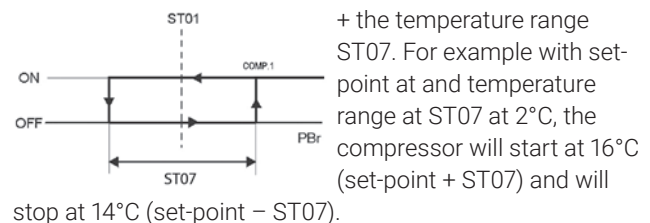
The first SET key pressing allows to display the set-point chiller, the lower display indicates the label and the higher one the relevant value.

The second SET key pressing allows to display in the lower display the dynamic-set whereas the higher one displays the set point real value.
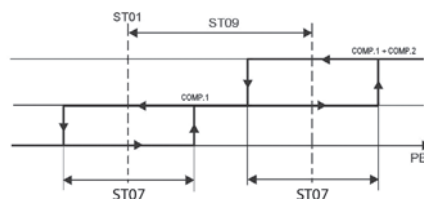
Compressor Working

Single compressor machine

The compressor starts working when the temperatura del fluid temperature exceed set-point value

+ the temperature range ST07. For example with set-point at and temperature range at ST07 at 2°C, the compressor will start at 16°C (set-point + ST07) and will stop at 14°C (set-point – ST07).

Machine with two compressors

Loss of Voltage

Once reset the power supply due to a black-out:

1. The instrument starts from the condition stated before the black-out
2. All the outstanding specified times are reset and started again.

Alarms

Cod	Meaning	Cause	Reset
AP1-6	Probe alarm PB1-6	Fault probe	Automatic
AP2	Probe alarm PB2	Fault probe	Automatic
AP3	Probe alarm PB3	Fault probe	Automatic
AP4	Probe alarm PB4	Fault probe	Automatic
b1HP b2HP	Maximum pressure switch alarm	Maximum pressure switch activation	Manual
b1LP b2LP	Minimum pressure switch alarm	Minimum pressure switch activation	Automatic The alarm becomes manual after 4 interventions/ hour
b1AC	Anti-freezing alarm	Anti-freezing probe activation	Automatic
AEFL	Water flow switch alarm	Activation from water flow switch	Automatic
C1tr C2tr	Compressor 1-2 thermal alarm	Compressor activation	Manual
C3tr C4tr	Compressor 3-4 thermal alarm	Compressor activation	Manual
b1tF b2tF	Condenser fan 1-2 thermal alarm	Fan activation	Manual
AEht	High water temperature alarm	Probe activation	Automatic
AtE1 AtE2	Water pump thermal alarm 1-2	Water pump activation	Manual
AEE	EEPROM error alarm	Loss of stored data	Manual
Afr	Frequency alarm	Input frequency error	Automatic

Thermoregulation Parameters

Para meters	Description	TCW	TCO	Risol
ST01	Set point	15	30	dec
A061	Plant inlet high water temperature alarm set point	35	45	dec
A062	Temperature range alarm of inlet high water temperature	0.5	0.5	dec
CF63	Mains frequency selection 0 = 50 Hz 1 = 60 Hz	0	0	dec

In case of failure to solve operation issues, email the assistance centre:

North America: service@nVent.com
Europe: texa.service@nVent.com

Our powerful portfolio of brands:

CADDY   ERICO   HOFFMAN   ILSCO   SCHROFF   TRACHTE