

WEATHERTRACKER

MODEL # 380
HEATING/COOLING DEGREE DAYS



Spectrum
Technologies, Inc.

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This manual will familiarize you with the features and operation of your new WeatherTracker. Please read this manual thoroughly before using your instrument. For customer support, or to place an order, call Spectrum

Technologies, Inc.

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between 7:30 am and 5:30 p.m. CST

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GENERAL OVERVIEW

Thank you for purchasing a WeatherTracker Model 380 Heating/Cooling Degree Day Tracker. This unit measures temperature, and the internal electronics calculate Heating Degree Days (HDD) and Cooling Degree Days (CDD). Current conditions and historical data are easily viewed on the station's LCD screen. The arrow keys allow you to scroll through the screens. The air temperature sensor that is connected to a 20 ft cable has a measurement range of -4° to 158°F (-20° to 70°C) and an accuracy of $\pm 1^{\circ}\text{F}$ ($\pm 0.7^{\circ}\text{C}$).

INSTALLATION

The display unit is designed to be mounted inside and can be attached to a wall or other surface. The four mounting holes (fig. 1) can be accessed by removing the face plate. Anchors are enclosed for mount to dry wall. To measure outside temperature, run the temperature sensor through a door or window. Twenty foot extension cables are available (Item # 3664) if the sensor needs to be located further from the building. Make sure to house the sensor in the radiation shield provided to ensure that radiative heating does not affect the temperature reading.

Mounting Hole



Figure 1: Holes for mounting screws.

METER OPERATION

The WeatherTracker does not have a button or switch for powering up and down. Instead, the device is operational whenever the battery is installed. The battery connection can be accessed by removing the face plate (fig. 2). Exercise care when replacing the plate to ensure the buttons aren't damaged. When replacing or reinstalling the battery, the time and date must be reprogrammed (see Parameter Update Screens, p. 4). The Current Conditions screen (see p. 3) is updated every 20 seconds.

Note: If an active Degree Day counter is disabled or reset, the entire archive for that counter will be erased (see Parameter Update Screens, p. 4).

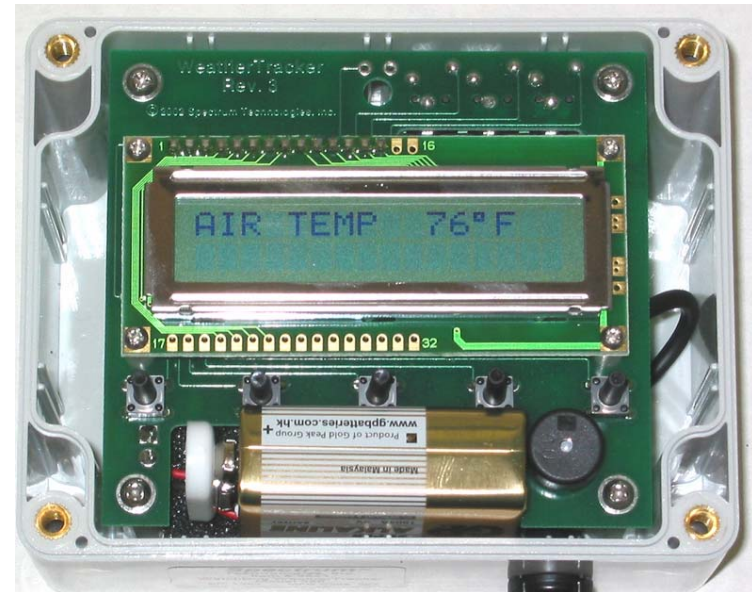


Figure 2: WeatherTracker Battery Compartment

ARCHIVES

The WeatherTracker features two archives that allow you to look at historical data for that location. The archives are regularly updated whenever the WeatherTracker is actively collecting data. The archives are accessed by pressing the **Current/Archive** key (see p. 4).

Daily Archive

The Daily Archive retains the last 30 days of data. If the battery power runs low, the WeatherTracker will stop measuring and archiving data until the battery is replaced. See **Keypad Operation** (p. 3) for information on accessing the archive information.

After using the arrow key to select a certain day from the Daily Archive, the WeatherTracker will then cycle through all the information stored for that day. This will include a screen with the high and low temperatures for that day, any active degree day counters and the average readings for any sensors connected to the device. If a currently active Degree Day Counter was not active on that day, the screen will say “No Data”.

Monthly Archive

The Monthly Archive retains 12 months of data. When a month is selected, the WeatherTracker will then cycle through all the information stored for that month. This will include a screen with high and low temperatures for the month, degree day data and the cumulative rainfall (if applicable) for that month. If a currently active Degree Day Counter was not active at the end of a month, the screen will say “No Data” for that month.

Note: If an active Degree Day counter is disabled or reset, the entire archive for that counter will be erased (see **Parameter Update Screens**, p. 4).

KEYPAD OPERATION

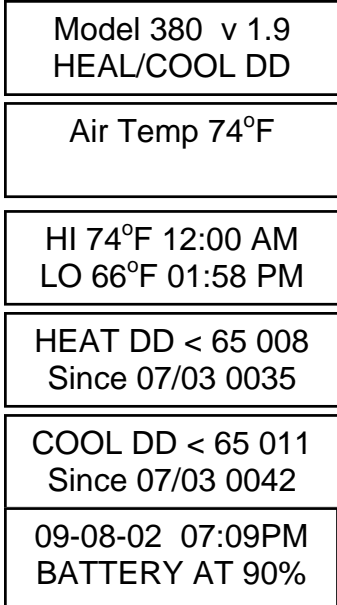


Display

Pressing the **Display** key once brings the LCD display to life. The screen will initially display descriptive information about the station. The screen then displays current conditions. Pressing the **Display** key a second time will deactivate the display. The station continues to record conditions when the display is not active. To conserve battery power, the display goes off after 2 minutes of inactivity.



Press the **Arrow** key to scroll through the different screens. Initially, the screen will display the latest WeatherTracker information. The **Current Conditions** screen displays the current values being read by the sensors.



Model 380 v 1.9
HEAL/COOL DD

-Initial information screen

Air Temp 74°F

-Current Conditions

HI 74°F 12:00 AM
LO 66°F 01:58 PM

-Daily High and Low Values

HEAT DD < 65 008
Since 07/03 0035

-Heating Degree Day Value

COOL DD < 65 011
Since 07/03 0042

-Cooling Degree Day Value

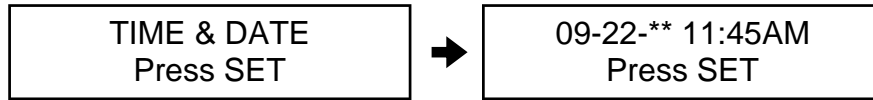
09-08-02 07:09PM
BATTERY AT 90%

-Time, Date

-Battery Level

KEYPAD OPERATION (CONT.)

Parameter Update Screens:



Successively pressing the **Set** key will allow you to set the month, day, year, hour and minute.



Allows you to select whether temperature is displayed in °F or °C. If °C is selected, rainfall will

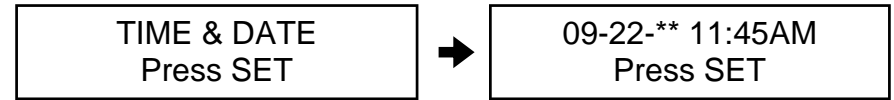
be displayed in mm.

Allows you to select the base temperatures used in the Degree Day calculations as well as configure a Degree Day counter. A Degree Day counter will display one of two modes; Enabled or Disabled. When a Degree Day counter is enabled, it is actively computing and summing degree days and adding to the Daily and Monthly archives. If the **Set** key is pressed to make this parameter modifiable (see description of **Set** key on p. 4), the user has two options; Disabled or StartNow. The Disabled option will turn off the counter and remove it from the archive and list of display screens (see p. 3). The StartNow option erases all the data from the archives and resets and restarts that counter from zero.

Caution: Be careful when entering a parameter update screen for a Degree Day counter when that counter is enabled. If the **Set** key is pressed, the counter status will become modifiable and the archives WILL BE ERASED. If this is not desirable, press one of the arrow keys instead of the **Set** key to exit the screen.

KEYPAD OPERATION (CONT.)

Parameter Update Screens:

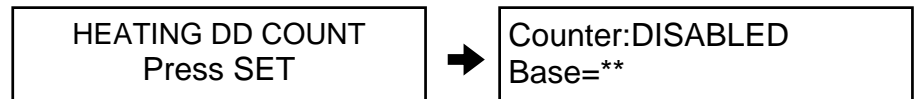


Successively pressing the **Set** key will allow you to set the month, day, year, hour and minute.



Allows you to select whether temperature is displayed in °F or °C. If °C is selected, rainfall will

be displayed in mm.



Allows you to select the base temperatures used in the Degree Day calculations as well as configure a Degree Day counter. A Degree Day counter will display one of two modes; Enabled or Disabled. When a Degree Day counter is enabled, it is actively computing and summing degree days and adding to the Daily and Monthly archives. If the **Set** key is pressed to make this parameter modifiable (see description of **Set** key on p. 4), the user has two options; Disabled or StartNow. The Disabled option will turn off the counter and remove it from the archive and list of display screens (see p. 3). The StartNow option erases all the data from the archives and resets and restarts that counter from zero.

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CALCULATING DEGREE DAYS

Heating degree days (HDD) are used to measure the fuel or energy requirement of a space when the temperature falls below a certain threshold. Cooling degree days (CCD) are used to measure the amount of energy needed to cool a space when the temperature goes above a certain base. The typical base temperature is 65 °F. The WeatherTracker calculates degree days by using an integral method. Degree Day values are calculated at 15 minute intervals to produce Degree Quarter-Hours (DQH), which are then summed over a full day. DQH are calculated as follows:

$$\begin{aligned} \text{DQH (heating)} &= (T_{\text{base}} - T_{\text{avg}}) / 96 \\ \text{DQH (cooling)} &= (T_{\text{avg}} - T_{\text{base}}) / 96 \end{aligned}$$

Where T_{avg} is the average temperature over the 15-minute interval and T_{base} is the base temperature. If the average temperature is greater than the base temperature, DQH (heating) is set equal to zero for that interval. If the average temperature is less than the base temperature, DQH (cooling) is set equal to zero for that interval.

WARRANTY

The WeatherTracker is warranted to be free from defects in materials and workmanship for a period of 1 year from the date of original purchase. During the warranty period, Spectrum will, at its option, either repair or replace products that prove to be defective. This warranty is void if the product has been damaged by customer error or negligence, or if there has been an unauthorized modification.

Returning Products to Spectrum

Before returning a failed unit, you must obtain a Returned Goods Authorization (RGA) number from Spectrum. You must ship the product(s), properly packaged against further damage, back to Spectrum (at your expense) with the RGA number marked clearly on the outside of the package. Spectrum is not responsible for any package that is returned without a valid RGA number or for the loss of the package by any shipping company.

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