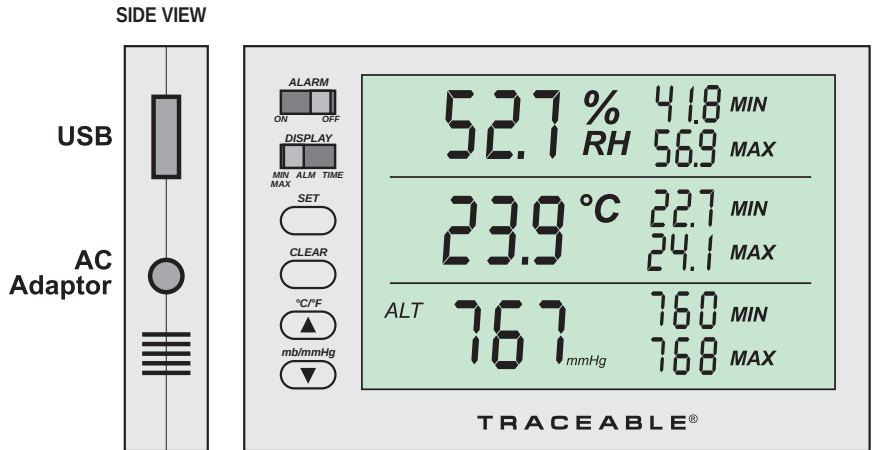


LCD DISPLAY:
LCD View Angle: 12 O'clock

FIGURE 1



TEMPERATURE:

Operating Range: Ambient: 0 to 65°C,
Resolution: 0.1°C
Accuracy: $\pm 0.4^{\circ}\text{C}$

RELATIVE HUMIDITY:

Range: 0 to 95%RH, non-condensing
Resolution: 0.1% RH
Accuracy: $\pm 3\%$ RH between 5 to 75%, otherwise $\pm 5\%$ RH
Recommended Humidity Operating Range: 20 to 80% (non-condensing) over 0 to 60°C.

BAROMETRIC PRESSURE:

Operating Range: 500 mbar to 1030 mbar
Resolution: 1 mbar
Absolute Accuracy: ± 4 mbar
Altitude Compensation: -100 to 2500 meters (10 meter intervals)

BATTERY: 3 AAA Alkaline batteries (4.5V)

DATA UPDATE FREQUENCY:

Temperature and humidity: updated every 10 seconds;
Barometric pressure: updated every 5 minutes.

Note: If a reading is out of operating range, the corresponding location on LCD will display '----', and such out of range reading will not trigger alarm.

Data Logging Frequency: 2 min by default, user-adjustable between 1 min and 12 hours with 1 min step.

Data Storage Capacity: Excursion-Trac: 525,504 data records, 2 years for two-minute logging frequency
Memory-Loc: 688,068 data records, 3 years and 1 months for two-minute logging frequency.

OPERATION INSTRUCTION:

1. Setup device:
 - a. Set-up Mode: Press and hold SET button for 3 seconds, release button once YEAR digits start flashing.
 - b. Press $\blacktriangle$ or $\blacktriangledown$ button to adjust to current year.
 - c. Press and hold $\blacktriangle$ or $\blacktriangledown$ button for 2 seconds, the value will increase or decrease faster.
 - d. Once YEAR is set, press and release SET button (don't hold SET button) to move forward to next setup item.
 - e. Setup items move forward in the following order: Year -> Month -> Day -> Hour -> Minute -> AM/PM -> Data Logging Interval -> Humidity Low Alarm -> Humidity High Alarm -> Temperature Low Alarm -> Temperature High Alarm -> Barometric Pressure Low Alarm -> Barometric Pressure High Alarm -> Local Altitude -> Exit Setup Mode.
 - f. While in Setup mode, press and hold SET button for 3 seconds to exit setup mode. Or while digits are flashing, and no SET/ $\blacktriangle$ / $\blacktriangledown$ button pressed for 15s, the device will exit Setup mode.
 - g. While setting temperature, humidity, and barometric pressure alarms, default step sizes are:
 - Temperature: 0.1
 - Humidity: 1
 - Barometric Pressure: 1 mbar or 1 mmHg
 - Altitude: 10 meters
 - Data logging interval: 1 min
- If press and hold $\blacktriangle$ or $\blacktriangledown$ button for 2 seconds, the step sizes are changed to following for fast adjustment:
- Temperature: 1
 - Humidity: 10
 - Barometric Pressure: 10 mbar or 10 mmHg
 - Altitude: 50 meters
 - Data logging interval: 10 min

Once ▲/▼ button is released from long press, the step sizes are back to default.

- h. All setup items, time, alarm settings, and local altitude are stored in the device's memory, and will not be lost if the device is powered off. While running, the device stores time to memory once a minute.

ALARM

1. Once an alarm is triggered by any of temperature, humidity, or barometric pressure out of set alarm range, the corresponding LCD display will flash and the buzzer will beep.
2. Buzzer continues to beep for 60 seconds, and then will beep every 15 seconds.
3. Press CLEAR button will clear the alarm, both LCD flashing and beeping.
4. If temperature, humidity, or barometric pressure falls back to normal range, and then back to out of alarm range, alarm will be triggered again.

SELECTING UNIT OF MEASURE:

1. Slide DISPLAY switch to MIN/MAX or ALM.
2. Press ▲ (C/F) to select Celsius or Fahrenheit.
3. Press ▼ (mb/mmHg) to select mbar/hPa or mmHg

VIEW CURRENT MIN/MAX

1. Minimum values stored in memory are the minimum readings measured since the minimum memory was cleared. The maximum values stored in memory are the maximum readings measured since the maximum memory was cleared.
2. Min/Max values are not programmable; neither are they stored in permanent memory. Min/Max values are reset upon power cycle.
3. Slide DISPLAY switch to MIN/MAX position.
4. Current Min/Max values are displayed.
5. To clear current Min/Max values, while DISPLAY switch is in MIN/MAX position, press CLEAR button once.

VIEW ALARM LIMITS

1. Slide DISPLAY switch to ALM position.
2. Alarm setting are displayed on LCD.

ENABLE/DISABLE ALARMS

1. Slide ALM switch to ON or OFF to enable or disable the alarms.
2. Alarms are enabled or disabled for all channels, can't be enabled or disabled individually.

DATA LOGGING OPERATION

1. Device will continuously log measurements from all channel in memory in user-specified intervals. Each data point contains humidity readings, temperature readings, and barometric pressure readings.
2. Note: All data stored in %RH, Celsius, mbar. Date/time format is MM/DD/YYYY.
3. Note: DO NOT LEAVE USB Mass Storage Flash Drive inserted in the unit. Insert, DOWNLOAD, and then remove. Device cannot continuously write to a USB.
4. The device will also store the most recent 30 alarm events. Each alarm event data point contains channel

number which alarmed, the alarm set point that was triggered, the date and time the channel reading went out of range, and the date and time the channel reading returned to within range.

VIEW THE MEMORY CAPACITY

1. Slide DISPLAY switch to TIME position
2. First line displays current percentage of memory full, the second line displays the number of days remaining before memory is full at the current data logging interval, and the third line displays current date/time.

Note: For Excursion-Trac: the MEM symbol will become active on the display when the memory is full. Once memory is full, the oldest data points will be overwritten with new data points.

For Memory-Loc: MEM symbol will become active on display when the memory is 95% full. Once memory is full, device will stop logging new data points.

CLEAR THE MEMORY

1. Slide DISPLAY switch to TIME position.
For Excursion-Trac: Press and hold CLEAR button for 2 seconds until LCD displays "E donE", then release the button.
For Memory-Loc: Memory cannot be cleared.

VIEW UNIQUE DEVICE ID NUMBER

1. Slide DISPLAY switch to TIME position.
2. Press ▼ button once, second line will display first eight digits of ID number, and '—' is displayed at end.
3. Press ▼ button again, second line will display last eight digits of ID number.
4. Press ▼ button a third time to return to default display.

DOWNLOAD DATA

1. USB download will only occur if AC Adaptor LCD symbol is shown on display. Plug supplied AC adaptor into device to provide sufficient power for USB operation.
2. Data can be downloaded directly to a USB Mass Storage Flash Drive. To begin download, insert USB flash drive into USB port located on right side of device.
3. Download will begin upon insert. USB LCD symbol will appear on display to indicate download has begun. Wait up to 60 seconds for USB LCD symbol to appear after insertion of flash drive. Flash drives with larger amounts of data stored on drive prior to downloading will take longer to begin the download.
4. Once download process is complete, USB LCD symbol will disappear from display and a short beep will sound. Do not remove USB drive until process is complete.
5. Data transfer rate is approximately 200 data points per second.

Note: DO NOT leave USB Mass Storage Flash Drive inserted into unit. Insert, DOWNLOAD, and then remove. Device cannot continuously write to a USB.

REVIEW STORED DATA

1. Downloaded data is stored in a comma-delimited CSV file on flash drive. Filename naming convention is "D1D2D3D4D5D6D7R1.CSV" where D1 through D7

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are the last seven digits of the thermometer's unique ID number and R1 is the revision of file starting with letter "A".

2. If more than one file is written from same device to USB flash drive, revision letter will be incremented to preserve previously downloaded files.
3. Data file can be opened in any software package supporting comma-delimited files including spreadsheet software (Excel) and text editors.
4. File will contain device unique ID number, the most recent 30 alarm events, and all stored temperature readings with date and time stamps.

Note: All data stored in %RH, Celsius, mbar. Date/time format is MM/DD/YYYY

DISPLAY MESSAGE

1. If no buttons are pressed and --.-- appears on display, this indicates reading being measured is outside of the operating range of device, or sensor is damaged

LOW BATTERY DISPLAY

If battery falls below 3.4V, Low Battery symbol will display on LCD. Device checks battery voltage every two hours.