EXTECH®

User Manual

Temperature & Humidity Datalogger

Model 42280A

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1   Introduction

1.1   Overview

Thank you for selecting the Extech 42280A Temperature & Relative Humidity (RH) Datalogger. The 42280A is a portable, battery operated instrument that monitors, displays, and logs Air Temperature, Dew Point Temperature (DP), and Relative Humidity (RH).

The 42280A can monitor environmental conditions in a variety of residential and commercial storage and in-transit locations.

The 42280A is easy to use, offering a large display monitor, a five (5) button keypad, two (2) LED indicators, and an alert beeper. The 42280A is supplied with PC software that makes configuring the logger, and setting global parameters, very convenient.

The built-in temperature and RH sensor offers high accuracy, quick response to changes in ambient conditions, and can be field-calibrated using optional RH reference solutions.

1.2   Product Features

- Large monitor simultaneously displays temperature, RH, date/time, and a variety of function icons.
- Visual and audible temperature and RH alarms with programmable high/ low limits.
- Datalogger stores up to 24,000 temperature and 24,000 RH readings.
- Plug and play USB PC connectivity, USB drivers and additional software not required.
- Download readings to a PC and easily generate logger reports.
- Wall-mount, detachable desktop stands, and tripod mount options.
- Battery power (4 x AA batteries, supplied) or optional 9 V adapter.

1.3   Supplied Material

The equipment listed below is supplied with the 42280A.

- 42280A meter with built-in sensor.
- USB cable for PC connection.
- Printed Quick Start documentation.
- Four (4) AA batteries.

1.4   Optional Accessories

The following equipment can be ordered separately. Contact your Extech sales representative for more information.

- 9 V power adapter. The adapter is recommended for long datalogging sessions.
- Relative humidity calibration salt solution bottles for 33% and 75% references.

2   Quick Start (en)

Install four (4) AA batteries in the rear compartment or use the optional adapter to power the unit.	4 x AA
Short press the power button. The display will switch on. Refer to Section 3.2 for display details.	START / STOP 1 second
Configure the 42280A using a PC (recommended) or the front-panel keypad. See Section 6.2.	
Once programmed, long press the START/STOP button to start logging readings. The green recording LED and the **REC** display icon flashes while logging. The logger will not start if it has not been configured. Note that if the **REC** icon is visible, but not flashing, this indicates that a Start Delay has been programmed (see Section 6.2). The **REC** icon will flash when logging begins (after the start delay).	START / STOP 3 seconds
Place the logger in the area that will be monitored. Short press the MAX/MIN button to step through the highest and lowest recorded readings. Long press the MAX/MIN button to reset the MAX/MIN memories.	
Long press the START/STOP button to stop logging. The green LED and the **REC** display icon will stop flashing.	START / STOP 3 seconds
Connect the 42280A to a PC to generate the PDF and text file reports. See Section 6 for complete details.	
Short press the power button to switch off the 42280A.	START / STOP 1 second

3 Product Description

3.1 Front Panel Description
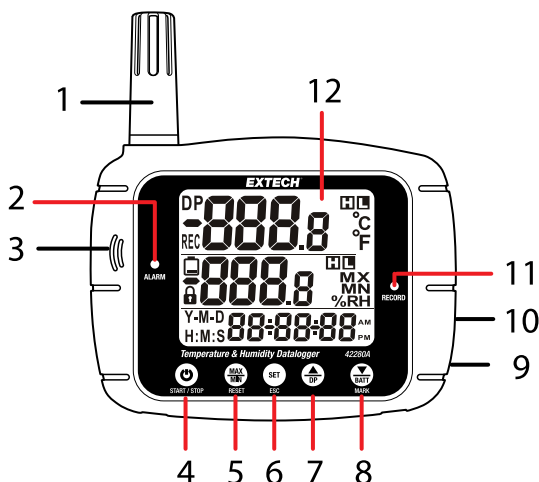
Figure 3.1 42280A front panel.

1. Temperature (thermistor) and RH (capacitive) sensor.
2. Alarm LED. Flashes every 10 seconds in an alarm condition.
3. Audio beeper.
4. Power ON/OFF and Datalogger Start/Stop button (see Section 3.3 for complete button operation instructions).
5. MAX/MIN and RESET button.
6. SET and ESC button.
7. Up arrow and Dew Point (DP) button.
8. Down arrow, battery status (BATT), and MARK button.
9. 9 V power adapter port (for optional adapter).
10. USB port.
11. Record LED flashes every 10 seconds while datalogging.
12. Display area (see Section 3.2 for complete display descriptions).

3.2   Display and LED Indicators

3.2.1   Display Description
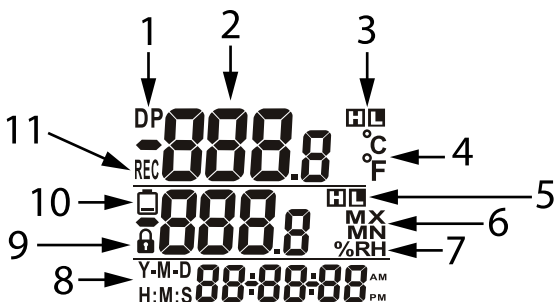
Figure 3.2 Display description.

1. Appears when Dew Point (DP) temperature is displayed on middle display row.
2. Temperature (T1) reading (updates every 10 seconds or at the sampling rate while datalogging).
3. High (H) and Low (L) Temperature Alarm indicators.
4. Temperature units of measure.
5. High (H) and Low (L) RH Alarm indicators.
6. Maximum (MX) or Minimum (MN) readings are displayed.
7. RH % reading (updates every 10 seconds or at the sampling rate while datalogging).
8. Date and Time alternate at 5 second intervals. Year-Month-Date (Y-M-D). Hours : Minutes : Seconds (H:M:S).
9. Lock mode. To unlock, the password must be entered while connected to a PC. the password is set during the datalogger configuration process per Section 6.2.
10. Low battery alert.
11. Recording (REC). Flashes once per second when the datalogger is active. Note that if the **REC** icon is visible, but not flashing, this indicates that a Start Delay has been programmed (see Section 6.2).

3.2.2   LED Indicators

Two color LED indicators are located on the front panel. The red LED (Alarm) is located on the left side of the meter display. It flashes every 10 seconds when a temperature or RH measurement exceeds the programmed alarm limits. The green LED (Record) is located on the right side of the meter display. It flashes every 10 seconds while the datalogger is running.
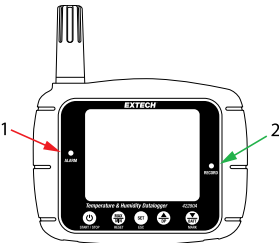

Figure 3.3 Alarm LED (1) and Recording LED (2).

3.3   Button Descriptions

⏻ START / STOP	Short press to power ON/OFF. Long press to Start/Stop the datalogger. Note that while the datalogger is running, you can short press this key to switch the display off and on, to conserve energy (the unit will remain powered, only the display will switch off).
MAX MIN RESET	Short press to step through Maximum (MN) and Minimum (MN) readings. Long press to reset the MX/MN memories. See Section 5 for additional MAX/MIN information.
SET ESC	Short press to begin configuring the datalogger through the front-panel keypad. Long press to exit (ESC) the configuration mode. Refer to Section 6.2 for complete information.
▲ DP	Short press to navigate upward in the configuration mode. Long press to show/hide the Dew Point (DP) temperature calculation. Dew Point temperature is shown on the middle row of the display.
▼ BATT MARK	Short press to navigate downward in the configuration mode. Short press in normal mode to view battery status (approximate number of days remaining). Long press while datalogging to add up to eight (8) time-stamped markers to the log report (see Section 6 for complete information).

3.4   Back of Meter

The wall mounting hole (1) and the battery compartment (2) are located on the back of the meter.

Figure 3.4 Back of meter showing wall mount hole (1) and battery compartment (2).

3.5   Bottom of Meter

The tripod mount (1) and the two detachable footer stands (2) are located on the bottom of the unit.

Figure 3.5 Bottom of meter showing tripod mount (1) and the two footers (2).
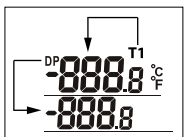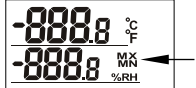
4   Monitoring Mode

4.1   Monitoring Mode Overview

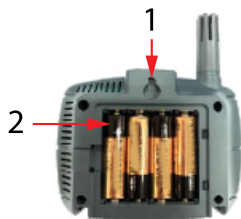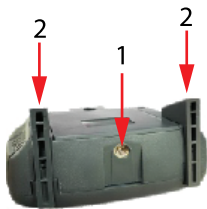The 42280A is in the monitoring mode when it is powered but not datalogging. In the monitoring mode you can view measurement readings in real time and perform other functions as detailed below. See Section 3.2 for a description of the display characters.

4.2   Monitoring Mode Operation

In the monitoring mode, the following functions are available.

Monitor Air Temperature (T1) on top display row. The reading is updated every 10 seconds.	-888.8 ℃℉
To change the unit of measure for temperature, refer to the configuration information in Section 6.2.	
Monitor Relative Humidity (RH) on middle display row. The reading is updated every 10 seconds.	-888.8 %RH
Date and Time displays alternate at 5 second intervals on the bottom row.	Y-M-D 88:88:88 AM H:M:S PM
To change the date/time format see the configuration information in Section 6.2.	
Short press the DP button to show the Dew Point temperature on the middle display row (replacing the RH measurement). The Air Temperature (T1) will still be displayed on the top row when DP is shown.	DP -888.8 T1 ℃℉ -888.8
Short press the MAX/MIN button to step through the Maximum (MX) and Minimum (MN) readings. Long press the MAX/MIN button to reset the MAX/MIN memories. See Section 5 for more information.	-888.8 ℃℉ -888.8 MX MN %RH
Monitor the high and low temperature and RH alarms. The front panel Alarm LED flashes and an **H** (high alarm) or **L** (low alarm) will appear when a reading exceeds the high or low alarm limit. See Section 7 for complete Alarm information.	ALARM
Check the battery status by short pressing the BATT button. The top display row will show the number of days of battery life (approx.) remaining. When battery voltage is very low, the battery status icon will appear on the display.	**143 d** (days remaining)

5   MAX / MIN Memories

The 42280A records and displays the highest and lowest temperature and RH readings. Short press the MAX/MIN button to step through the highest readings recorded (**MX** is shown), lowest readings recorded (**MN** is shown), and back to real time readings (**MX** and **MN** indicators switch off).
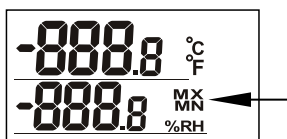
Figure 5.1 Maximum and Minimum readings display showing the MX and MN indicators.

To clear the memories, long press the MAX/MIN button until **MX/MN** flashes on the display.

The Average, Standard Deviation, and Mean Kinetic Temperature (MKT) calculations are also recorded, but shown only on the PDF log report that the 42280A generates. See Section 6 for details.

6 Datalogger Mode

6.1 Datalogging Overview

The datalogger has an internal memory that can store 48,000 readings (24,000 temperature and 24,000 RH) for later transfer to PC. Before datalogging can begin, the datalogger must be configured using a PC (recommended) or with the front-panel keypad. Each method is explained in Section 6.2.

While datalogging, the green Record LED flashes every 10 seconds, and the **REC** display icon flashes once per second. If the **REC** icon is visible, but not flashing, when the logger is started, this indicates that a Start Delay timer has been set during the configuration process per Section 6.2. The logger will start and the **REC** icon will flash after the start delay has elapsed.

When a datalogging session has ended, you can transfer the readings to a PC and generate reports in PDF and text file formats using supplied software.

6.2 Datalogger Configuration

The datalogger must be configured before it can log data. If you attempt to start logging without configuring the logger, logging will not start. Once logging has started, no changes to the logging configuration can be made. To make changes, you must stop the logger, download the recorded data, and configure it again.

You can set up a logger password during the configuration process. The password will then be required to configure the datalogger. Configure the datalogger as explained in the following sections.

6.2.1 Configuring the Datalogger using a PC

Note: If the 42280A shows 'dlF (datalogging file)' on its display, when connected to the PC, a datalogger file has been previously saved and is ready for download.

Before configuring the datalogger, ensure that the PC time zone setting is correct. The datalogger automatically synchronizes with the PC time zone setting during the configuration process.

1. Press the power button to switch on the meter.

2. Connect the meter to the PC USB port using the supplied USB cable. The meter's USB port is located on its right side. The green Record LED will glow while communication is being established. Once established, the green LED will switch off, the text '**PC**' will appear on the display, and the PC will create a new external storage drive for the 42280A in Windows File Explorer.
3. The storage drive will include a software application entitled 'PDF Logger Configuration Tool'. Launch this application to begin configuring the datalogger.

Configure the software parameters as explained below. Note that the numbered items, below, are not sequenced as instructional steps, they simply explain each item on the configuration screen. The last step in the process is to click 'SAVE' which confirms the configuration.
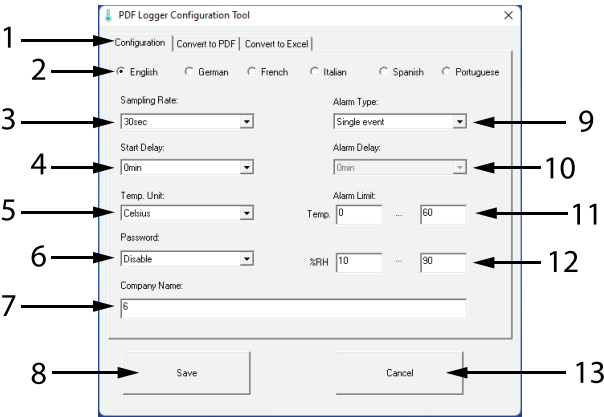

Figure 6.1 PC logger configuration screen. See numbered descriptions in table below.

Fig. 6.1	Parameter	Description	Default Setting
1	Tab selections	Configuration: Click to open configuration window. Convert to PDF: Click to generate a PDF report. Convert to Excel: Click to generate a text file.	Configuration

2	Language	Set the report language to English, German, French, Italian, Spanish, or Portuguese.	English
3	Sampling Rate	The rate at which readings are logged. Select from 30 seconds to 2 hours.	5 minutes
4	Start Delay	Set a delay so that the logger will not start, after the Start button is pressed, until the delay time elapses. Can be set up to 24 hours.	0 minutes
5	Unit of Measure	Select ℃ or ℉ temperature units.	℃
6	Password	Set a 16 character (maximum) alpha-numeric password.	Disable
7	Company Name	Add a 20 character (maximum) text string to logging reports.	n/a
8	SAVE	Click SAVE to complete the configuration.	n/a
9	Alarm Types	Single Alarm: Triggers immediately when measurement exceeds the alarm limit. Cumulative Alarm: Triggers when the *average* measurement exceeds the limit. Disable Alarm: No Alarm. See Section 7 for complete Alarm information.	Disable
10	Alarm Delay	For Cumulative alarms only, a delay interval can be set to delay an alarm trigger until after the delay timer elapses. Adjustable from 5 minutes to 2 hours.	0 minutes
11	Temp. Alarm Limit	Set the Temperature Alarm threshold range from -22 to 158℉ (–30 to 70℃).	32 to 140℉ (0 to 60℃)
12	RH Alarm Limit	Set the RH Alarm threshold range from 0 to 100% RH.	10 to 90%
13	Cancel	Click to abort a configuration session.	n/a
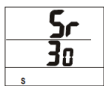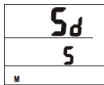
To complete and confirm the configuration, click 'SAVE', close the setup window, eject the 42280A from the PC (right-click the drive icon on the PC and select 'Eject'), and then disconnect the logger from the USB port.
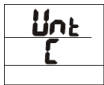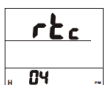
Logging can now be started by long pressing the START/STOP button until **REC** appears on the display.

6.2.2   Configuring the Datalogger using the Front-Panel Keypad

- Short press the SET button to access the configuration mode.
- Use the up/down arrow buttons to step through the parameters (P1 through P8).
- Short press the SET button to open a parameter.
- Use the up/down arrow buttons to change a setting.
- Short press SET to confirm a setting.
- Long press the SET button to exit the configuration mode. A parameter display code (P1 to P8) must be displayed in order to exit.

Note: If the 42280A shows 'dlF' (datalogging file)' on its display, when you press the SET button, this indicates that a log file is in the meter's internal memory and must be downloaded before you can configure the datalogger with the keypad (see Section 6.5).

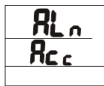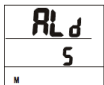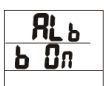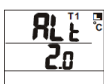| Parameter (P)	Display	Description
Sampling Rate (P1)	**Sr** **30** s	Set the datalogging sample rate (Sr) from 30 seconds to 120 minutes. The middle row shows the setting, and the bottom row shows **S** for seconds or **M** for minutes.
Start Delay (P2)	**Sd** **5** M	Set the start delay time (Sd) from 0 minutes to 24 hours. The middle row shows the setting, and the bottom row shows **S** for seconds, **M** for minutes, or **H** for hours.
Alarm Types (P3)	**ALn** **Acc**	Select Single (Sin), Cumulative (Acc), or no Alarm (dis) on the middle row. See Section 7 for Alarm type descriptions.
Alarm Delay (P4)	**ALd** **5** M	A time interval can be set to delay an alarm trigger (ALd), adjustable from 5 to 120 minutes. Available only with the Cumulative alarm. The middle row shows the setting and the bottom row shows **M** for minutes.
Alarm Beeper (P5)	**ALb** **b On**	The alarm beeper (ALb) defaults to the ON state. Set the beeper OFF to save power.
Alarm Threshold (P6)	**ALt** T1 °C **2.0**	Set the Alarm threshold (ALt). There are four screens for this parameter: High Temp. limit (H), Low Temp. limit (L), High RH limit (H, RH%), Low RH limit (L, RH%). The programmable ranges are -22 to 158°F (–30 to 70°C) for temperature, and 0 to 100% for RH. See Section 7 for additional Alarm information.

Units Setting (P7)	**Unt** **C**	Select ℃ or ℉ temperature units (Unt), shown on the middle row.
Real Time Clock (P8)	**rtc** н **04** м	Set the logger's real time clock (rtc) to the local time. Set the Year (Y), Month (M), Day (D), Hours (H), Minutes (M), Seconds (S) on the bottom row.

6.3   Starting the Datalogger

After configuring the datalogger, long press the Start button, until the **REC** display icon switches on, to start logging at the rate selected in the configuration process. For example, if a 10 second rate is selected, one reading will be logged every 10 seconds.

The **REC** display icon will flash once per second and the green Record LED will flash once every 10 seconds, indicating that logging is in progress. If the **REC** icon is visible, but not flashing, this indicates that a Start Delay has been programmed in the configuration process per Section 6.2.

The displayed readings are updated at the sampling rate, in the datalogging mode.

The red Alarm LED will flash if a measurement exceeds the programmed limits. See Section 7 for details on Alarm functions.

For long logging sessions, use the optional power adapter to ensure no loss of data resulting from low battery voltage.

6.3.1   Start Delay Timer

If a 'Start Delay' has been programmed in the configuration process, the **REC** display icon will switch on but will not blink until the logging begins (after the start delay time has elapsed). Set the delay time from 0 minutes to 24 hours in the configuration process. For example, if 5 minutes is selected, logging will begin 5 minutes after the Start button is pressed.

6.3.2   Adding Markers using the MARK button

If you wish to add a time-stamped Marker to the logging record, long press the MARK button at any time during the logging session until the display flashes three times. Markers will appear in the logging reports, up to eight (8) markers can be added to a logging record. Markers are typically used to pin-

point an exact time when the logger was moved to a new test location or when a sudden environmental change was noticed, for example.

6.3.3   Putting the Display to Sleep while Logging

While the logger is running, you can short press the START/STOP button, just as you would to switch the meter off, to switch off only the display. This is useful for conserving battery energy.

In sleep mode, the meter is still powered and the logger is running, but the display is asleep. Sleep mode is only available when the logger is running. To restore the display from sleep mode, short press the START/STOP button again.

6.4   Stopping the Datalogger

To stop the logger, long press the START/STOP button. The **REC** display icon and the green recording LED will switch off. Data is now ready to be downloaded to a PC. The datalogger will automatically stop if its internal memory is full (48,000 readings).

6.5   Downloading Data to a PC

After a logging session, reconnect the logger to the PC using the supplied USB cable and reopen the application 'PDF Logger Configuration Tool'.

To save the logged data as a PDF, click the 'Convert to PDF' tab. To save the logged data as a text file, for opening in a spreadsheet, click the 'Convert to Excel' tab. Text files are tab-delimited ASCII files.

Refer to Sections 6.6 and 6.7 for descriptions of these reports.
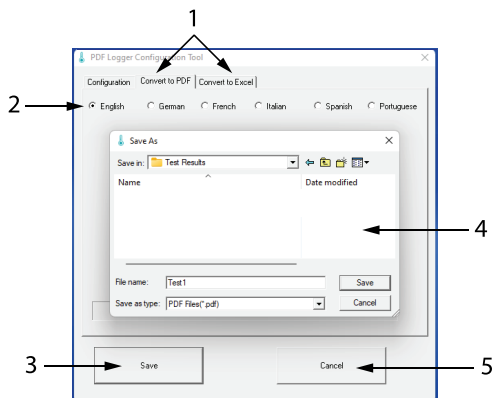
Figure 6.2 PC download window example.

1. Click the 'Convert to PDF' or the 'Convert to Excel' tab.
2. Select the desired report language.
3. Click the 'SAVE' button.
4. In the 'Save As' window, name the file, choose a storage location for the log report, and click 'Save'.
5. Click 'CANCEL' to abort the process.

6.6 PDF Log Report

After you complete the steps in Section 6.5, for downloading data and opening a PDF file, the PDF report shown below will be opened and saved to your PC. The units of measure and language used in the report are selected in the configuration process (Section 6.2).
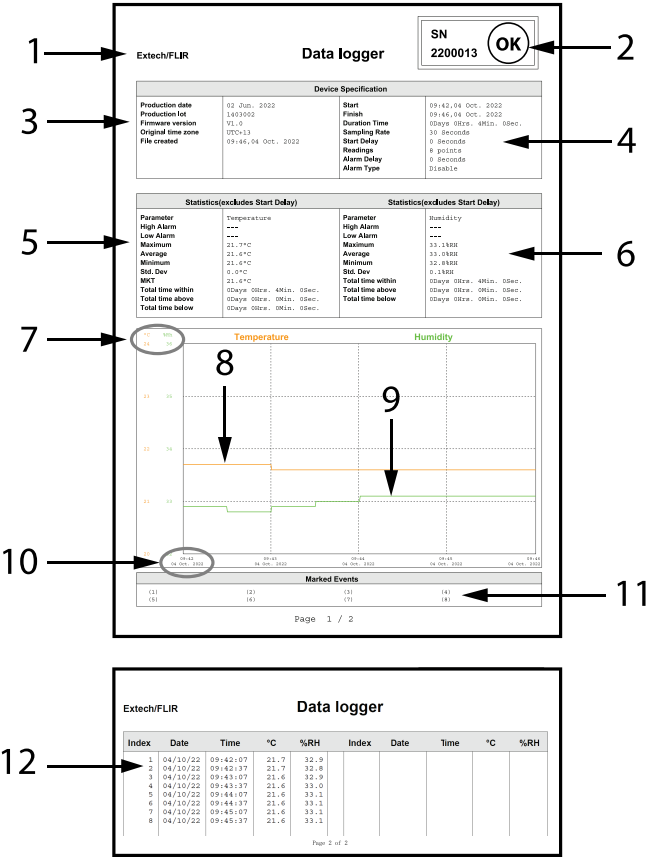
Figure 6.3 PDF Log Report.

1. The text string that was added during the logger configuration.

2. Logger serial number and OK indicator (informs that no alarms were triggered).
3. Factory information and date the log file was created.
4. Logger configuration other logging details.
5. Temperature Alarm report. For Alarm information see Section 7.
6. RH Alarm report. For Alarm information see Section 7.
7. y-axis Temperature and RH ranges.
8. Temperature recorded data points.
9. RH recorded data points.
10. x-axis date and time.
11. Time-stamped markers (events placed in the logging report by long pressing the MARK button).
12. Logged readings.

6.7 Text File Log Report

After you complete the steps in Section 6.5 for downloading data to a text file, the report shown below will be opened and saved to your PC. The information in the text file is essentially the same as the information shown in the PDF report (refer to Section 6.6 and Section 7 for report details and alarm statistical information listed in the text file report below).

Data logger						
Company Name	Extech/FLIR		SN	2200013	OK	
Device Specification						
Production date	02 Jun. 2022		Start	09:42,04 Oct. 2022		
Production lot	1403002		Finish	09:46,04 Oct. 2022		
Firmware version	V1.0		Duration Time	0Days 0Hrs. 4Min. 0Sec.		
Original time zone	UTC+13		Sampling Rate	30 Seconds		
File created	09:47, 04 Oct. 2022		Start Delay	0 Seconds		
			Readings	8 points		
			Alarm Delay	0 Seconds		
			Alarm Type	Disable		
Statistics (excludes Start Delay)						
Parameter	Temperature		Parameter	Humidity		
High Alarm	---		High Alarm	---		
Low Alarm	---		Low Alarm	---		
Maximum	21.7°C		Maximum	33.1%RH		
Average	21.6°C		Average	33.0%RH		
Minimum	21.6°C		Minimum	32.8%RH		
Std. Dev	0.0°C		Std. Dev	0.1%RH		
MKT	21.6°C					
Total time within	0Days 0Hrs. 4Min. 0Sec.		Total time within	0Days 0Hrs. 4Min. 0Sec.		
Total time above	0Days 0Hrs. 0Min. 0Sec.		Total time above	0Days 0Hrs. 0Min. 0Sec.		
Total time below	0Days 0Hrs. 0Min. 0Sec.		Total time below	0Days 0Hrs. 0Min. 0Sec.		
Marked Events						
Index	Date	Time		°C		%RH
1	4/10/2022	9:42:07		21.7		32.9
2	4/10/2022	9:42:37		21.7		32.8
3	4/10/2022	9:43:07		21.6		32.9
4	4/10/2022	9:43:37		21.6		33
5	4/10/2022	9:44:07		21.6		33.1
6	4/10/2022	9:44:37		21.6		33.1
7	4/10/2022	9:45:07		21.6		33.1
8	4/10/2022	9:45:37		21.6		33.1

Figure 6.4 Text file report example.

7 Alarms

7.1 Alarm Overview

The 42280A has a temperature and a RH alarm function. Alarms function in both Monitoring mode (when not logging) and in the Datalogging mode. The front panel Alarm LED flashes when an alarm is triggered.

7.2 Alarm Types

The alarm type is selected in the configuration process. Please refer to Section 6.2 for instructions on how to select an alarm type. The alarm types are explained below.

1. Single Alarm: The alarm triggers when the measured temperature or RH exceeds the alarm threshold that you program when you configure the logger (Section 6.2).
2. Cumulative Alarm: The alarm triggers when the *average* measured temperature or RH exceeds the alarm threshold.
3. Disabled Alarm: No alarm action.

7.3 Alarm Thresholds

The temperature and RH alarm thresholds are set when you configure the datalogger (see Section 6.2). The alarm threshold is a range of values that represent a normal measurement region. Measurements outside this region will trigger the alarm.

Temperature alarms can be set from -22 to 158°F (–30 to 70°C). RH alarms can be set from 0 to 100% RH. The default temperature alarm range is 32 to 140°F (0 to 60°C) and the default RH alarm range is 10 to 90%.

Note that the high temperature threshold cannot be set lower than the low temperature threshold, and the low alarm threshold cannot be set higher than the high temperature threshold.

7.4 Alarm Delay Timer

To reduce nuisance and false alarms, a delay timer can be employed. The delay timer is set when you configure the datalogger (Section 6.2). Set the delay timer from 5 minutes to 2 hours.

7.5 Alarm Alerts

An alarm is triggered when the temperature or RH exceeds the limits you set when configuring the logger per Section 6.2.

When an alarm is triggered, the alarm beeper will sound, the visual alarm (red LED) will flash, and an **L** (low alarm) or **H** (high alarm) will appear next to the temperature or RH display. If the beeper is disabled per Section 6.2 it will not sound when an alarm is triggered (the visual alarms will still be active).

Figure 7.1 Alarm LED flashes when an alarm is triggered.

In Datalogger mode, the alarm LED latches (remains flashing, even though the measurement is no longer in the alarm condition). In Monitoring mode, the alarm LED does not latch (the LED switches OFF when the measurement is no longer in the alarm condition).

Data log reports provide alarm statistical data as listed in Section 7.6, below.

7.6   Alarm Statistics

When logging data, the 42280A records the following readings and calculations. These are provided in the logging reports generated by the 42280A as shown in Sections 6.6 and 6.7.

- Maximum readings: Highest readings recorded over the course of the datalogging session.
- Minimum readings: Lowest readings recorded.
- Average reading: Average of all readings recorded.
- Standard Deviation: Represents how close all readings are to the Average (mean).
- Mean Kinetic Temperature (MKT). Provides insight as to how temperature fluctuations, during storage or transit, effect perishables.
- Total time within: The time (in days, hours, minutes, and seconds) that the measured variable is not in an alarm condition (set the alarm limits in Section 6.2, *Datalogger Configuration*).
- Total time above: The time (in days, hours, minutes, and seconds) that the measured variable was in a high alarm condition (above the programmed set point range).
- Total time below: The time (in days, hours, minutes, and seconds) that the measured variable was in a low alarm condition (lower then the programmed set point range).

8   Relative Humidity Calibration

8.1   Calibration Overview

The 42280A can be calibrated by the user, or it can be returned to Extech for service. Field calibration requires the use of optional 33% and 75% calibration salt bottles. Contact your local distributor, or Extech directly, for information regarding the purchase of calibration bottles.

8.2   Calibration Process

1. With the meter OFF, insert the sensor into the 33% Calibration Reference bottle.
2. Simultaneously long press the START/STOP, SET, and MARK buttons to enter the 33% Calibration mode. '32.8%' will flash on the display.
3. After approximately 60 minutes, the '32.8%' display will stop flashing, indicating that the 33% calibration is complete.
4. Plug the RH sensor into the 75% Calibration Reference bottle.
5. Press and hold the SET button to enter the 75% Calibration mode. '75.3%' will flash on the display.
6. After approximately 60 minutes, the display will stop flashing, indicating that the entire calibration is complete.
7. Press and hold the SET button to return to the normal operating mode.

8.3   Calibration Notes

•   To abort a calibration, long press the START/STOP button before reaching step 6 in the procedure above.
•   For best accuracy, perform the calibration at room temperature 73.4°F ± 3.6°F (23°C ± 2°C).
•   For best accuracy, ensure that the calibration bottles are tightly sealed around the sensor.

9 Specifications

	Range*	Resolution	Accuracy at 77℉ (25℃)
Temperature measurements	-22 to 158℉ (-30 to 70℃)	0.1°	± 0.9℉ (0.5℃)
RH measurements	0.1 to 99.9%	0.1%	± 3% from 10 to 90% (otherwise ±5%)
Dew Point calculation	32 to 122℉ (0 to 50℃)	0.1°	n/a
Temperature sensor	NTC thermistor.		
Relative humidity (RH) sensor	Capacitive type.		
USB Interface	USB 2.0 (no driver required).		
Data log sample rate	Programmable: 30 seconds, 5, 10, 30, 60, 90, and 120 minutes.		
Data log start delay	Programmable: 0, 5, 10, 30, 60, 90, 120 minutes, and 24 hours.		
Internal memory	24,000 temperature readings and 24,000 RH readings, maximum.		
Alarm types	Single event, Cumulative (average), or OFF.		
Meter power	4 x AA batteries (supplied). Optional 9 V adapter.		
Battery life (typical)	Three (3) months with beeper disabled. Two (2) months with beeper enabled.		
Operating and storage temperature	-4 to 158℉ (-20 to 70℃)*		
Operating and storage humidity	< 90% RH, non-condensing.		
Dimensions	Meter: 4.7 x 3.5 x 1.5 inches (121 x 89 x 38 mm) Display: 2.0 x 2.5 inches (51 x 63 mm)		
Weight	5.7 oz. (163 g)		

*Note that the temperature sensor can measure down to -22℉ (–30℃) but the meter should not be used below -4℉ (–20℃).

10 Two-year Warranty

FLIR Systems, Inc. warrants this Extech brand instrument to be free of defects in parts and workmanship for **two years** from date of shipment (a six-month limited warranty applies to sensors and cables). To view the full warranty text please visit: *http://www.extech.com/support/warranties*.

10.1 Calibration and Repair Services

FLIR Systems, Inc. offers calibration and repair services for the Extech brand products we sell. We offer NIST traceable calibration for most of our products. Contact us for information on calibration and repair availability, refer to the contact information below. Annual calibrations should be performed to verify meter performance and accuracy. Product specifications are subject to change without notice. Please visit our website for the most up-to-date product information: www.extech.com.

10.2 Contact Customer Support

Customer Support Telephone List: https://support.flir.com/contact

Calibration, Repair, and Returns e-mail: repair@extech.com

Technical Support: https://support.flir.com

EXTECH®

User Manual

Website
http://www.flir.com

Customer support
http://support.flir.com

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