

AccuTherm™ SmartLOG® 2021



MANUAL ACCSL2021

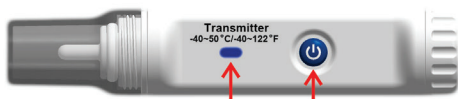


FEATURES

- Monitor 1 or 2 Wireless Temperature Sensors Simultaneously
- Ambient Room Temperature and Humidity Displayed & Recorded
- SMS and Email Alerts
- Replaceable Wireless Sensors!
No down time for sending equipment back for calibration.
No fumbling with wires in fridge.
- Bright Color Touch Display for ease of use.
- Web Dashboard, use any browser on local network
No cloud, No subscription fees!
- Enterprise Network Login for Security
- Time automatically synchronized from internet
- Reports in .PDF format
- No PC Software needed

*Second Temperature Sensor optional (cat#: ACCSLBLET)

Wireless Buffered Temperature Sensor



Front: LED Power Button



Back: SN

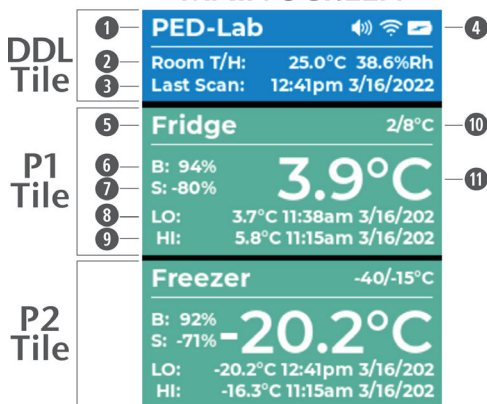
Battery Cap



SmartLOG DDL

1. Red Alarm LED
2. USB Power LED Green
3. 5v Micro USB Port
4. Factory Reset Button
Deletes All Settings
5. Power On Button
6. Wall Mount Keyhole
7. Kick Out Desk Stand
8. Battery Compartment

MAIN SCREEN



MAIN SCREEN

DDL Tile

1. Logger Name
2. Ambient Room Temperature Humidity
3. Time And Date Of Last Scan
4. Buzzer, Wi-Fi Strength, Battery Level Icons

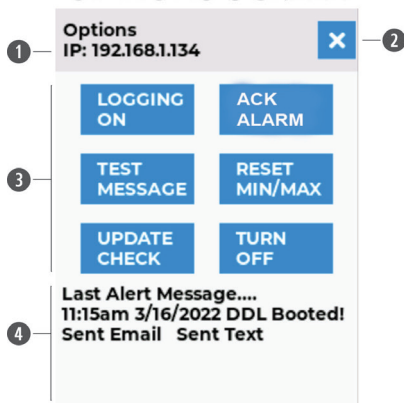
P1 Tile

5. P1 Wireless Sensor Name
6. Battery Remaining Power
7. Bluetooth Signal Strength
8. Lowest Temperature Since Last Reset
9. Highest Temperature Since Last Reset
10. Alarm Set Points Min/Max
11. Current Temperature

P2 Tile

Same as P1

OPTIONS SCREEN



OPTIONS SCREEN

1. Dashboard IP Address
2. Close Options Screen
3. Option Buttons
4. Last Message Today



fig. 1

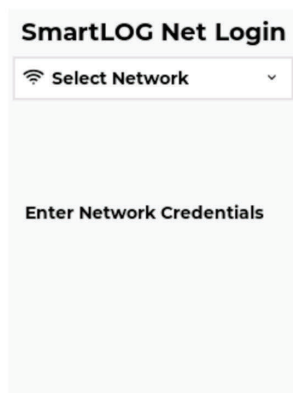


fig. 2

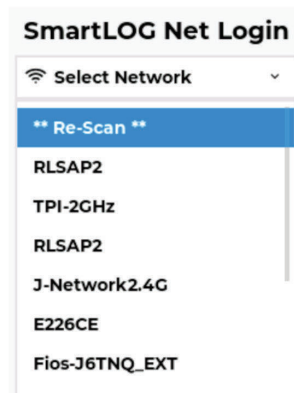


fig. 3

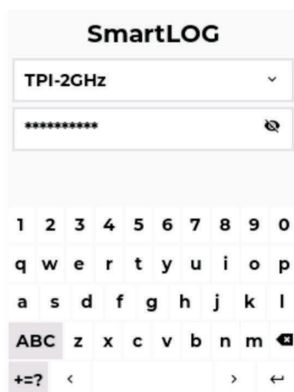


fig. 4

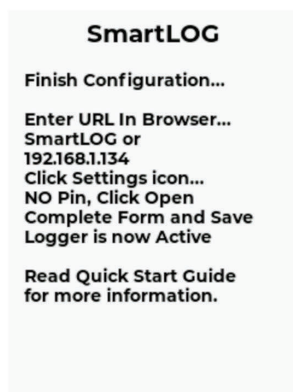


fig. 5

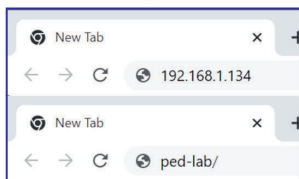


fig. 6

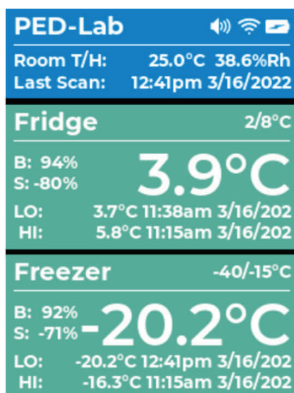


fig. 7

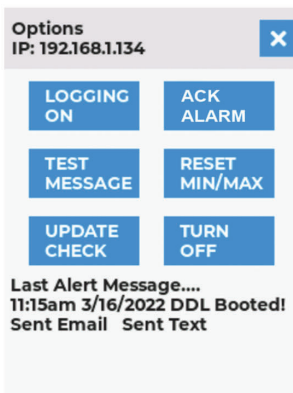


fig. 8



fig. 9

KIT CONSIST OF:

- 1 x Digital Data Logger
- 1 x Wireless Transmitter
- 1 x 5V 1A Power Adapter
- 1 x USB Cable
- 2 x AAA (for transmitter)
- 3 x AA (for DDL)
- 1 x Plastic Touch Screen Stylus

PRODUCT OVERVIEW

The AccuTherm refrigerator/freezer thermometer data logger (also referred to as SmartLOG in this document) is a Wi-Fi digital data logger (DDL) that monitors and records temperature and sensor battery status for up to two wireless sensors. It also logs the ambient room temperature/humidity and backup battery voltage.

The DDL scans for the wireless sensor in 1 minute intervals retrieving temperature, battery and signal data. This data is evaluated for temperature excursions, low battery condition or no data which indicates signal loss from the wireless sensor. If any of these conditions are true, the logger will send alerts via email and text message to contacts listed in the settings page of the dashboard. If there is a temperature excursion, alarm LED and buzzer will sound. Logger then refreshes the main DDL display screen and dashboard with all updated values. The SmartLOG dashboard can be viewed using a web browser on a PC or smart phone. Monitor all DDL conditions, generate PDF reports, and modify settings. using Dashboard (SmartLOG and PC or smart phone must be connected to same local network).

NOTE: If main power is lost, battery backup is provided by the 3 x AA batteries allow logging to continue for ~ 3 days (depending on alerts) After approximately 4 hours the DDL will turn off the display and Wi-Fi radio to conserve power allowing logging to continue until main power resumes. Tapping display will power screen for ~1 minute for viewing and then go back off. The Web Dashboard will not be accessible until main power resumes. Alerts will continue to be sent while on battery backup.

The wireless temperature sensor(s) LED blinks every 10 seconds, indicating sensor sent temperature, battery power, and signal strength.


PRODUCT SETUP:

Wireless Temperature Sensor(s)

1. Install quantity 2 AAA batteries. To open turn clip cap counterclockwise 1/8 rotation.
2. Place batteries negative end in first.
3. To close align printed arrows on clip cap and sensor to each other, push in and twist 1/8 turn clockwise.
4. To power on wireless sensor, press power button until blue LED flashes 5 times. LED should flash once every 10 seconds. To power off sensor, press power button until LED flashes two times, then release button.
5. Take note of the four digit serial number on the backside of the sensor(s) and assign to intended P1/P2 in settings page. e.g., P1 Name: Fridge SN# 000E
6. Place wireless sensor in storage unit to be monitored. Allow the sensor temperature to stabilize before setting up DDL. (wait approx. 60 minutes)

SmartLOG Digital Data Logger (DDL)

NOTE: The following instructions are only necessary on the initial Start-up of SmartLOG. All configuration settings will be retained in DDL memory.

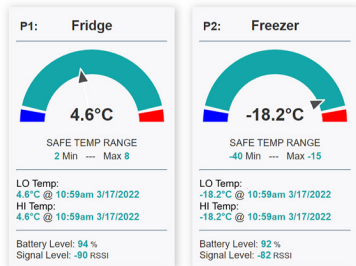
1. Install quantity 3 AA batteries in compartment behind DDL. Slide cover down to open. Batteries are for backup ONLY! Use wall 110VAC adapter as primary source of power.
2. Attach wall 110VAC adapter to DDL using USB cable and plug in AC adapter to wall outlet.
3. Push and hold ON button on back of SmartLOG DDL until beep sounds, then release.
4. Screen will show "Scanning For Networks" fig. 1
5. Then will change to "Select Network" when scan has completed. fig. 2
6. Tap using provided plastic stylus on "Select Network"
7. A drop-down "SSID's" (Wi-Fi network names) will appear in location nearest to farthest order. fig. 3
8. Tap on your desired network name you want to connect to.
9. A password field and keyboard will appear, enter the wi-fi network password. fig. 4. Tap eye icon to see hidden typed text if needed.
10. Tap the return key  on keyboard (lower right corner) to enter values. DDL will now connect to network.
11. If SmartLOG is able to make a connection to the network, a message will be displayed instructing to complete remaining setup using a web browser. fig. 5 Follow "Dashboard" section to complete settings. If SmartLOG is not able to connect to network it will return to line #4. Repeat network setup.

DASHBOARD:

1. In the address bar of a web browser fig. 6, enter "SmartLOG/" or the IP address displayed on DDL. fig. 5
Note: Host Name "SmartLOG" can be changed in settings page if desired.
2. On SmartLOG Dashboard page, click on the "Settings" (cog icon). A pop-up will appear, leave PIN field empty and click "Open".
3. The Settings Page will now open, customize SmartLOG for desired operation then click Save to complete
NOTE: The Access PIN field will require a 5 digit number in order to save the form. This PIN will be required for future access to settings page.
4. When settings are saved the SmartLOG will automatically start booting. If an Update pop-up is displayed, ignore unless there are new features you require or are having issues with SmartLOG. SmartLOG will continue booting after 5 seconds.
5. Display will show boot messages Check Memory, Get Network Time, Set Time Zone, Send Alert Message 'Booted' and Then Scan for Temp(s). Once temps are received the Main Screen will be displayed. fig. 7

PED-Lab

LAST SCAN @ 11:00am 3/17/2022



Ambient Room

Temperature: 25.8°C
Humidity: 40.8%Rh

Alerts Today

2022-03-17 Alert File***

10:59am 3/17/2022 DDL Booted!
Sent Email Sent Text

Logger Information:

P1 sn: 000E
Lost Signal 0
P2 sn: 0014
Lost Signal 0
Logging Interval: 15 min

Dashboard IP: 192.168.1.139
MAC Address: 24:0a:c4:e1:a6:44
WiFi Rssi: -40dBm
Voltage: 4.812v
CPU Temp: 137.0°F
Ram Used: 0.7Mb
Ram Free: 3.4Mb
Smart! OG: v0.0.1

Support:

[SmartLOG Online Manual.pdf](#)

[SmartLOG Online QuickStart Video](#)

[SmartLOG Online Instructional Video](#)

☒ Month ☐ Custom Select: Month October 2023 Create



TEMPERATURE LOG
PED-Lab
October 2023

Pin ID: P310017
Facility Name: Medical Center
Location: Hometown
Report Date: Dec 18, 2023
Report File Name: PED-Lab_October-2023

Sensor Info:

Sensor	Serial Number	Cert. Expires	Logging Minutes	Alarm Set - Min/Max °C	Lowest Temp - Date Time	Highest Temp - Date Time
P1 Fridge	000E		15	2 8	0.2 Thu Mar 3, 07:59 AM	22.5 Wed Mar 2, 09:34 AM
P2 Freezer	0014		15	-40 -15	-22.1 Wed Mar 2, 10:04 AM	-15.4 Fri Mar 4, 03:00 AM

Daily Summary:

Data Logger / Room					P1: Fridge					P2: Freezer				
Date Time	Initials	Temp °C	RH%	Battery	Temp °C	Min/Max °C	Min/Max Duration	Battery	Temp °C	Min/Max °C	Min/Max Duration	Battery		
Tue Mar 1	08:42 AM	19.4	39.4	CHRG	5.4	5.4	5.4 0:00:00	0 0:00:00	97	-17.7	-17.7 -17.7 0:00:00	0 0:00:00	96	
Wed Mar 2	08:05 AM	23.5	35.3	CHRG	21.1	3.6	21.1 0:00:00	0 0:00:00	96	-19.4	-21.6 -17.4 0:00:00	0 0:00:00	96	

[illegible]

SMARTLOG DASHBOARD

HOME PAGE

Navigation Icons

Logger Name, Alarm Spk, Wi-Fi, Pwr icons
Tap Speaker icon to acknowledge alarm. This will mute Alarm Buzzer and send ACK alert
Sensor(s) Name
Temperature Gauge
relative to Min/Max set points

Current temperature
Min/Max settings values

Lowest and Highest recorded
Temperature, Date and Time
Sensor Battery power remaining
Signal strength

STATUS PAGE

Logger Information: Sensor serial number
Consecutive lost signals from wireless sensor,
Logging interval
Wi-Fi IP addr, Mac addr, Signal strength
CPU temperature, Ram used and free
Firmware version running

Support: Links to online manual, QuickStart video, instructional video.

REPORT PAGE

Month: selection starts on 1st and reports to last record of month.

Custom: from/to dates for report (31 days max).

NOTE: Reports should be created weekly !

Create: button generates the report.

Report generation can take up to 1 min to create. If no response refresh web page (F5) and create report again.

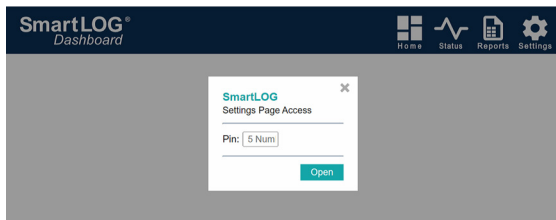
CSV Download: button creates a .csv file of data from report that can be opened in Excel.
Custom .csv if State Data is checked in seutp

Print/Save: button opens print menu, select save as PDF option to create a permanent file on your PC.

Report has 4 sections

1. Sensor Info
2. Daily Summary
3. Excursion Logs
4. Status/Alert Logs
5. Logs

All excursion values are color coded red for high values, blue for low values



SETTINGS PAGE ACCESS POP-UP

Pin: 5 digit number

If created during initial setup enter Pin number, otherwise, leave blank and click Open.



SETTINGS PAGE

Settings Page

Logger Configuration

Access Pin:

Scale: ☒ °C ☐ °F

Log Interval: 1 to 60 minutes

Time Zone: DST: ☒

Logger Name:

Facility Name:

Location:

Pin or ID#:

Wi-Fi Settings

Network Name:

Password:

Username:

Email / SMS Contact

Email:

SMS:

State Data

Custom csv: ☐

For State:

VFC ID:

P1 ID:

P2 ID:

Daily Status Messages

Time: am pm

Sensor Settings

P1 Name:

SN#:

In-Service:

Alarm Temp: min max

P2 Name:

SN#:

In-Service:

Alarm Temp: min max

Logger Configuration

Access Pin: 5 digit number (required to save)

Scale: Display & Report in °C or °F.

Log Interval: Select from 1 to 60 minutes.

Time Zone: Set your local Time Zone.

DST: Daylight Savings Time, sets clock forward by one hour when checked.

Time is automatically synchronized from internet.

Logger Name: Name is used in reposts, emails & SMS messages sent. Do not use the same name if using additional data loggers on the same network. Use up to 12 alphanumeric characters, hyphen "-", no spaces.

Facility Name: Location:, Pin or ID#: are optional fields that show on reports.

Sensor Settings

P1 & P2 Name: A drop down list to select Fridge or Freeze that will auto-populate Alarm Temp: min and max values.

Custom name & min/max values can be entered. For single sensor application, set P2 to No Sensor

Sensor SN#: Enter 4 digit serial number located on back of wireless sensor or new replacement sensor.

In-Service: Auto-populates with current date. Reports will display Sensor Expires date (+2 yrs from In-Service date).

Wi-Fi Setting

These fields are populated from the initial SmartLOG SETUP.

If you need to change the network:

Network Name: SSID (Service Set Identifier) is the name of your wireless network

Password: network password.

Username: is for Enterprise Networks.

Email/SMS Contact

Email: Address to send alert email to.

SMS: 10 digit phone number to send text msg to.

State Data

Custom state .csv files can be downloaded after report creation for sending to states that have specific requirements.

Daily Status Messages

Select one or both an am or pm time for daily notifications of sensor(s) current, min, max temps and battery level plus ambient room temperature, humidity and SmartLOG battery state. These messages will be displayed in Reports

Status/Alert Logs section. Time: can be set to OFF for both am and pm to disable status messages.

TEMPERATURE EXCURSIONS

If a temperature sensor detects an excursion the SmartLOG alarm led will flash, buzzer will sound and DDL display and dashboard tiles will change to warning colors. See ACK BUTTON for more information

DDL OPTIONS SCREEN:

Tapping "Main" screen anywhere opens the "Options" screen. fig. 8

Tap X to close options screen if no change are needed.

Alert Messages * sent every hour until acknowledged ACK	* <i>Time Date</i> Temperature Excursion <i>Name</i> : Temp 8.5C (above limit of 8.0C) <i>Time Date</i> Temperature Notice <i>Name</i> : Returned to safe temp 7.5C"
	* <i>Time Date</i> POWER Failure ON Battery Backup 100% remaining <i>Time Date</i> POWER Restored OFF Battery Backup
	* <i>Time Date</i> Sensor Signal Lost <i>Name</i> : Check sensor battery or distance from logger <i>Time Date</i> Sensor Signal Found <i>Name</i> : Check sensor battery or distance from logger
	* <i>Time Date</i> Sensor Battery Low <i>Name</i> : Replace battery 24% remaining
Alert Messages From Buttons	<i>Time Date</i> User Stopped Logging
	<i>Time Date</i> User Started Logging
	<i>Time Date</i> Alarm Acknowledged
	<i>Time Date</i> Test Message Dev-Logger IP address is: xxx.xxx.xxx.xxx
	<i>Time Date</i> User Reset Min Max
Daily Status Messages	p1 <i>Name</i> : Cur:7.6C Min:5.0C Max:7.6C Bat:100% p2 <i>Name</i> : Cur:-20.0C Min:-20.0C Max:-20.0C Bat:100% Amb:22.8C/48.5% Bat:CHRG

NOTE: Alerts are sent every hour until alarm condition clears, or if logging is off.

1. If button reads "LOGGING ON" it is in the ON state, logging data active.
2. Tap this button to turn LOGGING OFF. Wait for button to transition as email/SMS alerts are being sent out. When alerts are complete, the screen will switch back to the main screen automatically showing DDL tile in red and logger name replaced with "LOGGING OFF".

1. If button reads "LOGGING OFF" it is in the OFF state, logging data stopped.
2. Tap this button to turn LOGGING ON. Wait for button to transition as Email/SMS alerts are being sent out. When alerts are sent the screen will switch back to the main screen automatically showing DDL tile blue and "LOGGING OFF" replaced with logger name.

The figure displays three sequential screenshots of the PED-Lab monitoring interface, illustrating the 'LOGGING OFF' state. Each screenshot shows a main data panel on the left and a control panel on the right.

Left Panel (Main Data):

- PED-Lab:** Room T/H: 25.0°C 38.6%Rh, Last Scan: 12:41pm 3/16/2022.
- Fridge:** 2/8°C, B: 94%, S: -80%, LO: 3.7°C 11:38am 3/16/2022, HI: 5.8°C 11:15am 3/16/2022.
- Freezer:** -40/-15°C, B: 92%, S: -71%, LO: -20.2°C 12:41pm 3/16/2022, HI: -16.3°C 11:15am 3/16/2022.

Right Panel (Controls):

- Options:** IP: 192.168.1.134.
- Buttons:** LOGGING OFF (highlighted with a red box and a hand cursor), ACK ALARM, TEST MESSAGE, RESET MIN/MAX, UPDATE CHECK, TURN OFF.
- Alerts:** Last Alert Message..., 11:15am 3/16/2022 DDL Booted!, Sent Email, Sent Text.

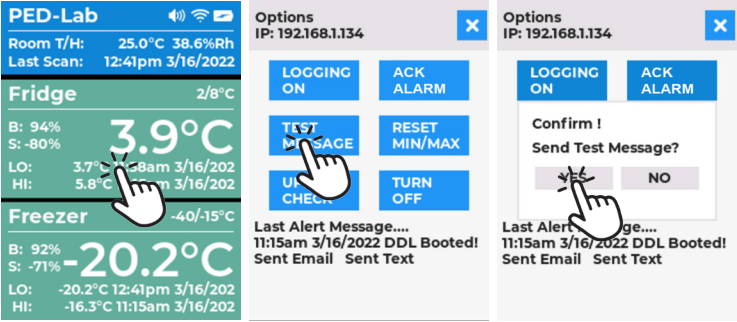
ACK BUTTON: When temperature excursions are acknowledged with the ACK button the audible buzzer will be muted and an alert message will be sent. The screen will switch back to the main screen automatically after Email/SMS are sent. Speaker icon will have an X indicating speaker is muted. You can acknowledge an alarm with text message also.

The figure displays three screenshots of the PED-Lab and Fridge temperature monitoring system. The left screenshot shows the PED-Lab interface with a 'Last Alert Message' dialog box. The middle screenshot shows the PED-Lab interface with a 'Last Alert Message' dialog box. The right screenshot shows the Fridge interface with a 'Last Alert Message' dialog box.

If ACK BUTTON was clicked and temperature returns to a safe range, DDL display and dashboard will return to normal.

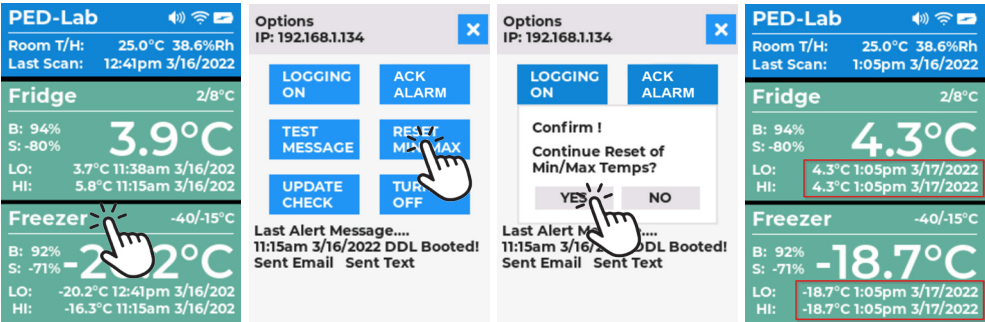
TEST MESSAGE BUTTON: Will send an email and/or SMS to recipients in contact list. Received message links will open Dashboard in a browser.

- 1. Tap TEST MESSAGE button.
- 2. Tap YES in Confirm pop-up window will send a Test Email and SMS message then return to main screen. If you tap NO, the pop-up will close and you will be sent back to main screen automatically.



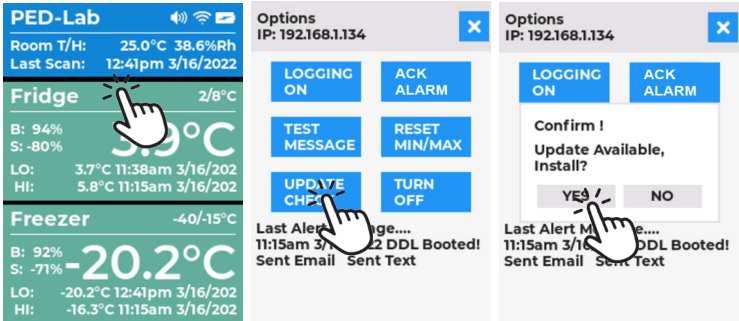
RESET MIN/MAX BUTTON: Sets memory recorded min and max values to current temperature, time and date and removes alert and alarm colors from display if excursion was triggered.

- 1. Tap RESET MIN/MAX button.
- 2. Tap YES in confirm pop-up window to reset values. Wait for button to transition as email/SMS alerts are being sent out. Pop-up will close and switch back to the main screen automatically. If you tap NO, the pop-up will close and will be sent back to main screen automatically.



UPDATE CHECK BUTTON: Checks online for new firmware. If new firmware is available, user has option to update. NOTE: Only recommended if having issues or new features you require.

- 1. Tap UPDATE CHECK.
- 2. Taping YES in confirm pop-up window will download and install firmware then return to main screen. If you tap NO, the pop-up will close and will be sent back to main screen automatically. Other responses: No Wi-Fi: SmartLOG not connected to network, No Updates: SmartLOG is up to date.



TURN OFF BUTTON: Powers off SmartLOG.

1. Tap TURN OFF button.
2. Tap YES in confirm pop-up window to power off. Wait for button to transition as email/SMS alerts are being sent out.

Confirm pop-up window "Powering Off In 5 Seconds".

The figure displays three sequential screenshots of the PED-Lab monitoring application interface, illustrating the process of turning off an alert.

- Left Screenshot:** Shows the main monitoring screen. The 'Fridge' section displays a temperature of 9.0°C, and the 'Freezer' section displays -20.2°C. A hand icon points to the 9.0°C temperature reading.
- Middle Screenshot:** Shows the 'Options' menu for IP: 192.168.1.134. The menu includes buttons for 'LOGGING ON', 'ACK ALARM', 'TEST MESSAGE', 'RESET MIN/MAX', 'UPDATE CHECK', and 'TURN OFF'. A hand icon points to the 'TURN OFF' button.
- Right Screenshot:** Shows the 'Confirm!' dialog box. The dialog asks 'Continue Turning Off' and provides 'YES' and 'NO' options. A hand icon points to the 'YES' button.

TROUBLESHOOTING GUIDE

Logger not powering on	Check 5v adapter, USB cable, batteries
Not receiving wireless temperatures	Check batteries and/or shorten distance between DDL and sensor
Data logger not responding	Remove USB power and batteries: reinstall batteries and connect USB power cord. Push on button until you hear beep. If no response data logger may be faulty.
Incorrect Time	Turn logger off. Start logger, will update from online time server.
Not able to connect to browser	Name or IP must be entered in the ADDRESS BAR not SEARCH SmartLOG DDL must be connected to same network as PC or smart phone
Unresponsive web page	Click the refresh icon or press the F5 key for PC
Reset to factory	Press RESET button on back of unit until you hear 2 beeps. Unit will reboot. Will need to re-configure logger.
Email Response: Timed Out	Was not able to connect to your email server, incorrect credentials, email and/or password.

SPECIFICATIONS

SMARTLOG® DDL MONITOR GATEWAY

Wi-Fi: 802.11 b/g/n (2.4 GHz only)
Security: WPA/WPA2 Enterprise
Display: 240x320 pixel TFT Color Display w/Touch Screen
Screen Update: 60 seconds
Memor: 16MB [2 years of records @ 5 minute intervals]
Ambient Sensor: Temperature range -40 to +125°C (-40°F to 257°F), Humidity range 0-100%RH
Alarms: Audible Piezo Buzzer/Visual LED/SMS/Email
Date/Time: NTP clock synchronization during boot
Power: 5v wall adapter w/5' micro USB cable
Batteries: Alkaline 1.5v 3 x AA (backup only for power loss)
Battery Life: ~ 3 days with no alarms, [NOTE: replace all batteries after any power loss of more than 1 day]
Working Temp: -20 °C ~ 70 °C
Dimensions: 83 (W) X 120 (H) X 26 (D) mm,

WIRELESS BUFFERED TEMPERATURE SENSOR

Temperature Range: -40C to 50°C [-40°F to 122°F]
Accuracy: ±0.5°C (±1.0°F)
Distance: 50m/164ft (open field), 10m/32ft (inside fridge/freezer)
Buffer medium: Glycol
Batteries: Alkaline 1.5v 2 x AAA
Battery Life: ~1yr
Certification: 2yr NIST ISO17025 Certificate Included

Warranty:

With respect to the goods, unless expressly agreed otherwise in writing, Thermco Products, Inc. provides warranty for material and manufacturing defects for a period of one (1) year from date of purchase. During said period, Thermco Products, Inc. offers to provide physical examination of goods, provide repair of goods and/or components, or replace defective goods. This process would be subject to Thermco Products, Inc. issuing a Return Goods Authorization (RGA), which may or may not be at customer expense. Warranty shall not be considered for components such as batteries, incompetent installation, faulty maintenance by customer, normal wear and tear or deterioration of components due to improper use or non-compliance with proper use of goods.

Note:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Contains FCC ID: 2AC7Z-ESP32WROVERE

Contains IC: 2109-ESP32WROVERE

CAN ICES-003(A)/NMB-003(A)

DTS (Digital Transmission Systems) rules replace DSS (Direct Sequence Spread spectrum)