SENSAPHONE®
REMOTE MONITORING SOLUTIONS

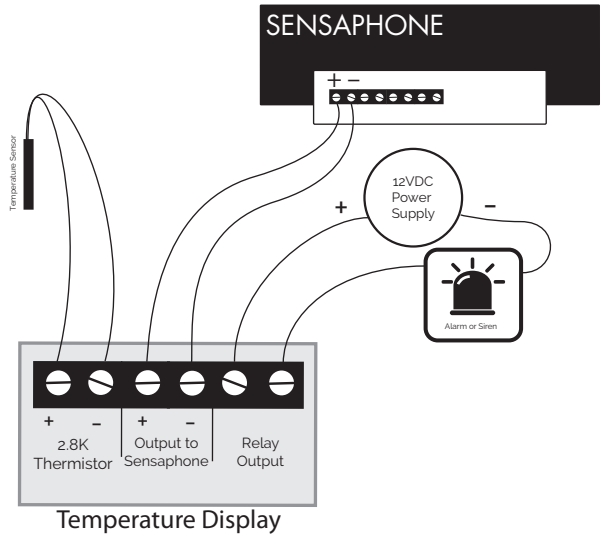
SENSAPHONE Temperature Sensor with Display
Installation Instructions

The LCD Display for 2.8K Temperature Probes is a digital thermometer for refrigerators and freezers. A thermistor probe connects to the device and is placed into the refrigerator and the display shows the temperature as well as the minimum and maximum temperatures. In addition, the device also has an output that replicates the resistance of a 2.8K thermistor that can be connected to any Sensaphone for datalogging and alarm purposes. The sensor also contains a solid-state dry contact output for connecting to an external alarm (light, siren, etc…).

Note on wiring: Use 22AWG shielded wiring for all connections (Sensaphone Part No. FGD-0010). Make all connections in accordance with national and local codes.

Set up

1. Connect a 2.8K temperature sensor to the terminal strip
2. Remove the vinyl battery strip from the Temperature Display. This will turn-on the device.
3. Connect a 2-conductor cable to the "Output to Sensaphone" terminals. Note the polarity (e.g. red to + and black to -). Connect the other end to a Sensaphone input: connect the positive wire (red) to the zone input and connect the negative wire (black) to the ground terminal. When the display recognizes it's connected to a Sensaphone input it will automatically calibrate itself and sound an audible chime. If no chime is heard when the display is connected, or when the host device is powered up, the wiring may not be correct.



Temperature Display

4. Configure the Sensaphone zone input for temperature. Consult your Sensaphone User's Manual for instructions.
5. Connect the 12V power supply to the power jack to operate the Temperature Display from an AC wall outlet. In this case the internal batteries will only be used when a power failure occurs.
6. Optional: Connect a low voltage led light or siren to indicate when the temperature exceeds the programmed High or Low limit. A separate power source (12V max) will be required. Connect the negative wire from the power source to the negative terminal of the light/siren. Connect the positive wire from the power source to the "Relay Output" terminal. Connect the light/siren positive wire to the other "Relay Output" terminal on the temperature display. Turn-on the power source.

Mounting the Sensor

Find a location on the front of the refrigerator or freezer where you would like to mount the Temperature Display. A location close to the door hinge is recommended to limit the movement of the sensor wires. Remember, one of the wires will be going inside the refrigerator and another to the Sensaphone. Remove the adhesive from the two pieces of dual lock tape on the back of the device, then firmly press the sensor against the refrigerator door.

Programming

To enter programming mode press and hold the SET button until C-F appears. Each additional press of the SET button will advance to the next programming parameter. When the current temperature is displayed you have exited the programming mode.
There are four parameters that can be programmed:

(1) Fahrenheit or Celsius
(2) Alarm High Limit
(3) Alarm Low Limit
(4) Audible alarm ON/OFF

Programming Procedure

1. Press and hold the SET button until C-F appears. Next, use the Up/Down arrows to select degrees F or C. Then press SET.
2. Next, you will be prompted to set an Alarm High Limit. Use the arrows to raise or lower the value, then press SET.
3. Next, select the Alarm Low Limit. Use the arrows to raise or lower the value, then press SET.
4. Next, select if you want the audible alarm to turn on when the alarm limits are exceeded. Use the arrows to select ON or OFF, then press SET.
5. The Temperature Display will return to normal operation.

Resetting the Min/Max Values

Press and hold the MIN/MAX button for 3 seconds. The values will reset to the current temperature.

Silencing the Audible Alarm

The audible alarm can be silenced by briefly pressing any of the rubber pushbuttons.

Calibrating the 2.8K Output

When the 2.8K Output of the Temperature Display is connected to a Sensaphone and both devices are powered on, you can calibrate the output. To do this, press and hold the Up and Down arrows simultaneously for 2 seconds, wait for the beep, then release. After a few more seconds the device will beep indicating that it has finished.

Diagnostic Commands

Hold **SET + DOWN** for 2 seconds = Displays Battery % for 60 seconds.
Hold **SET + UP** for 2 seconds = Displays the firmware version for 60 seconds.
Hold **SET + MIN/MAX** for 2 seconds = Reboots the device (settings remain the same; min/max values will reset; output to Sensaphone will recalibrate).

Battery Replacement

The device uses two CR2450 lithium coin cell batteries. These can be obtained from Sensaphone or any online retailer that sells batteries. When the battery indicator on the display shows no bars and only an outline of the battery it indicates that the batteries are low and you must replace them. Remove the four screws on the bottom of the enclosure with a small phillips screwdriver and then remove the bottom half of the enclosure. Next, lift the circuit board from the enclosure and place it down. Use a small screwdriver to push each battery from the rear of the battery holder to the edge of the circuit board until you can remove it. Next, slide in the new batteries. The sensor will make an audible chime indicating that it started up. Place the circuit board back into the housing and then replace the bottom part of the housing. Tighten the screws.
*Dispose of the old batteries according to local codes.

FGD-0120 Specifications

Monitoring Temperature Range:	-85° to 50°C (-121° to 122°F)
Temperature Probe:	2.8K Thermistor
Bottle Dimensions:	2.8” x 1.6” (72mm x 40mm)
Dimensions:	4.25” x 3.25” x 0.75” (108mm x 76mm x 19mm)
Weight:	0.25 lb. (114 gm)
Accuracy:	+/- 1°F (0.5°C)
Power:	12VDC (optional, part # XFR-0037)
Battery:	(2) CR2450 lithium coin cells
Material:	ABS Plastic
Mounting:	3M Dual Lock Reclosable Fasteners
Display:	1.4” x 2.0” LCD
Alarm Output:	Solid state alarm output (Open Drain) rated 12VDC 250mA
Sensaphone Output:	Current regulated output that simulates a 2.8K thermistor. For connecting to compatible Sensaphone models.*
Compatible Sensaphone Models	400, 800, 1400, 1800, Sentinel, Sentinel Pro, WEB600