

Instruction Manual

AT200CHIM Thermometer for Stove Pipe, Chimney, w/ remote alarm Version 1.2

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1. Features

This thermometer can be used for stove pipe and chimney temperature monitoring. The meter contains two alarm settings for a built-in buzzer. One can be used for high limit alarm and the other can be used for low fuel alarm. It also has a third alarm for the connected external buzzer that can be placed at different floor from where the stove is located. The gauge is powered by 12V DC through an AC adapter (included) for continuous operation. It can also be powered by car battery.

2. Specifications

- ◆ AC adaptor: 100-240V, 50/60Hz input. 12 VDC, 1 Amp output.
- ◆ Power consumption: <0.5W
- ◆ Sampling rate: 4 samples/second
- ◆ Accuracy: 0.2% full scale
- ◆ Thermometer reading range: -320-2300°F (-200~1300°C).
- ◆ Output for buzzer: 12VDC, 1 Amp
- ◆ LED display: 0.39 inch, red
- ◆ Internal buzzer: Two set points alarm.
- ◆ External buzzer: High limit or low limit alarm
- ◆ Dimension: 2.8x3.5x1.2" (70x90x30mm)

3. Front Panel



Figure 1. Front panel

1. Display window
2. Alarm indicator : blink when alarm is triggered
3. Peak value indicator : solid on when peak temperature is displayed / blink when it shows the time when peak temperature is reached
4. Set key: enter code / confirm input value
5. Shift key: shift digit / silence alarm buzzer
6. Down key: change digit value / move to former parameter / shift to peak temperature and the time when peak temperature is reached/ reset peak values
7. Up key : change digit value / move to next parameter / change brightness

4. Connecting the meter

Figure 2 shows the terminals of the meter. Connect the 12V DC power adapter to the terminal 1 and wall outlet. Connect the external buzzer connector to terminal 2. The polarity for this socket is center pin positive (+), outer collar negative (-). Connect the K thermocouple to terminal 3. Please note that thermocouple connector also has polarity. The wide blade should go to the wide slot.



- ① POWER - 12V Power supply input
- ② OUT - Output for external buzzer
- ③ INPUT - Temperature probe input

Figure 2. Terminals (bottom view)

5. Keys for measurement operation

Figure 3 shows the function keys during the temperature measurement operation (The function keys for configuring the meter are discussed in the later section)

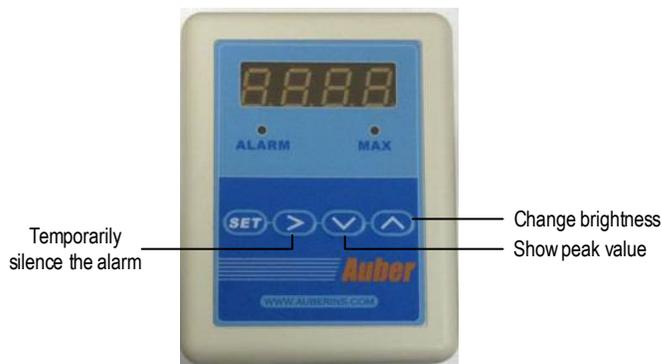


Figure 3. Function Keys

Notes:

1. **Silence the alarm.** When the temperature reaches the alarm temperature, the alarm indicator will flash and meter will start beeping. Press shift key once can temporarily silence the alarm. Alarm will be retriggered if the alarm set temperature is reached again. To permanently deactivate the alarm, set AH=AL.
2. **Show peak value.** Press down key once to show peak temperature; press again to show the time when peak temperature is reached (count from the start of temperature rising, display unit: seconds). If the temperature continued rising, a new peak temperature and its time will be recorded. They will be memorized even after power is restarted. After power is restarted, previous recorded peak and its time will stay in the memory unless: 1) there is a new peak temperature higher than the previous peak, 2) or the memory has been reset. Hold the down key for 2 seconds will reset the peak temperature and its time to 0. The new time is counted from restarting the power or from reset (display unit: seconds).
3. **Change brightness.** Press up key once to show the dimmed display reading. Press again to show the normal brightness display reading. The brightness of the dimmed display is determined by the parameter "brit" described in the later section of the manual.

6. Alarm setting (code 0001)

The meter has two programmable alarms that can be set to turn on the buzzer at a specific temperature. The alarm is controlled by parameters AH1, AL1, AH2 and AL2. It can be accessed by code 0001. AH1 and AH2 should be set to the temperature that alarm turns on. AL1 and AL2 are set to the temperature Alarm turns off. When AH1>AL1(or AH2>AL2), the alarms is set for high limit alarm. When AH1<AL1(or AH2<AL2), the alarm is set for low limit alarm. For example, if AH1=900, AL1=800(default settings), when the temperature goes up to 900°F, the buzzer will be on; when the temperature drops down to 800°F, the buzzer will be off. However, if AH2=180, AL2=185, when the temperature drops down to 180°F, the buzzer will be on; when the temperature goes up to 185°F, the buzzer will be off. User can press the shift key (>) to temporarily mute the buzzer sound. The alarm will buzz again if the alarm set temperature is reached again. To permanently deactivate the alarm, set AH1=AL1 and AH2=AL2.

How to set alarm:

- (1) Press "set", enter code 0001, and "set" again to enter alarm setting menu ;
- (2) Press ^ and v to select AH or AL ;
- (3) Press "set" to view the value of the parameter.
- (4) Press >, ^ and v to enter a new value.
- (5) Press "set" to confirm ;
- (6) Press ^ or v to select the new parameter.
- (7) To exit the menu, press "set" when "End" is displayed

The procedure is shown as the following flow chart in figure 4.

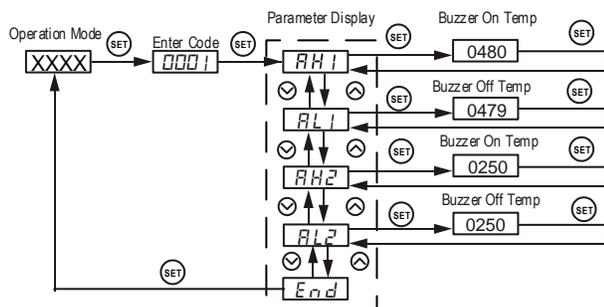


Figure 4. Flow chart of how to set the alarm

7. System configuration (code 0089)

Note: If you purchased the thermometer as a bundle (including the temperature probe), there is no need to change any of these parameters. But if you want to recalibrate the meter or reconfigure it, you need to read this section.

Table 1. System Configuration Parameters

Code	Description	Setting Range	Initial	Note
<i>Inty</i>	Inty	Input Sensor Type	-320~2400 °F	K 1
<i>PSb</i>	PSb	Input Offset	-100~100(deg)	0 2
<i>FILt</i>	FILt	Digital Filter	0~3	0 3
<i>C-F</i>	C-F	Display Unit	°C °F	°F 4
<i>brIt</i>	Brit	Brightness control	1-4	4 5
<i>End</i>	End	Exit		

Note for each parameter:

1. **Inty. Input sensor type.** This parameter defines the sensor type that is used for the thermometer. If you purchased the thermometer bundle, it is already set for the probe included in the package. You don't need to change it.
2. **PSb. Calibration offset.** PSb is used to set an input offset to compensate the error produced by the sensor. For example, if the meter displays 5 °C when probe is in ice/water mixture, set PSb= -5, will make the meter display 0 °C.
3. **FILt. Digital Filter.** If measurement input fluctuates due to noise, a digital filter can be used to smooth the input. "FILt" may be configured in the range of 0 to 3. Stronger filtering increases the stability of the readout display, but causes more delay in response to the change in temperature. FILt=0 disables the filter.
4. **C-F. Temperature unit.** Set to C if you want to display Celsius. Set to F for Fahrenheit.
5. **Brit. Brightness control.** This parameter controls the LED display brightness. (The default value is 4 for the brightest display).
6. **End.** Exit the parameter setting mode.

The flow chart in figure 5 shows how the system configuration parameters can be accessed.

- (1) Press "set", enter code 0089, and "set" again to enter system configuration menu ;
- (2) Press ^ or v to select the parameter to be changed.
- (3) Press "set" to view the value of the parameter.
- (4) Press >, ^ and v to enter a new value.
- (5) Press "set" to confirm ;
- (6) Press ^ or v to select the new parameter.
- (7) To exit the menu, press "set" when "End" is displayed.

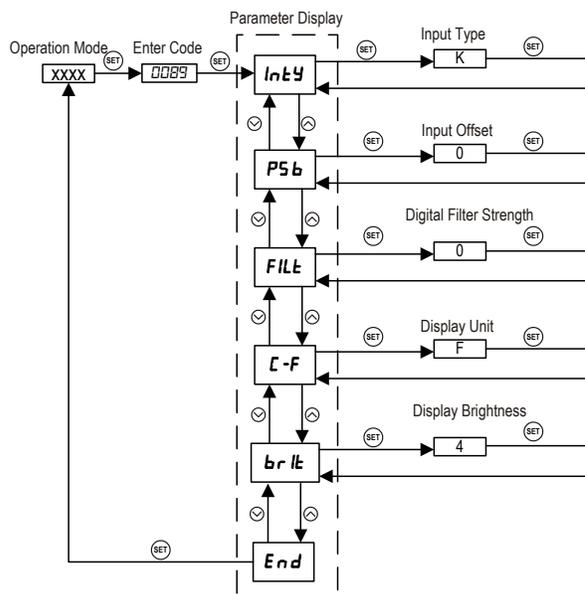


Figure 5. Flow chart of how to set the parameters

8. Placing the meter

The operating environment temperature for the meter is from -20-50C (or, 0-100F). The meter should be placed away from high heat to protect the plastic housing and electronics. Two mounting options are provided.

- 1) A pair of Velcro fastener. The Velcro has a pressure sensitive adhesive backing. You can remove the protecting film from the hook piece and stick it to the back of the meter (see figure 6). Then remove the protecting film from the loop piece and install it onto the wall. Please note that the pressure sensitive adhesive on Velcro is industrial grade with strong holding force. It needs to be stick on solid surface. Don't put it on a drywall because it may peel off the paint if you decided to remove it later
- 2) A stainless steel mounting plate. The plate allows the meter to be hung on a hook or on a nail. It also allows the meter to be permanently mounted with a screw. The bottom part of the stainless steel mounting plate is covered with pressure sensitive adhesive. To install it onto the meter, peel off the pink colored releasing film; press it firmly onto the back of the meter (see figure 6).



Figure 6. Left, using Velcro for mounting. Right, using stainless steel plate for mounting.

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