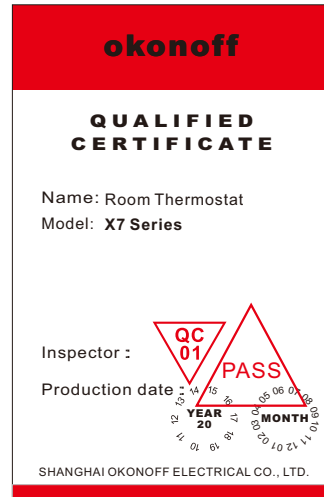


okonoff

X7 Series

Room Heating Thermostat

Installation Manual



okonoff
SHANGHAI OKONOFF ELECTRICAL CO., LTD
Http://www.okonoff.com
E-mail:okonoff@okonoff.com



KNF-X7-20150618

I. Product Summary:

X7 series is applied to control the electrical load or motorized valve in electrical floor heating system or water heating system.

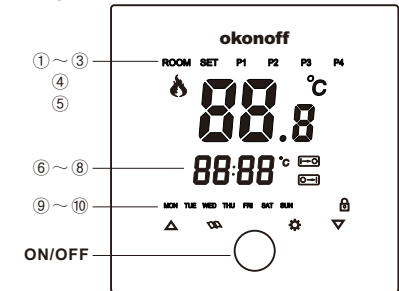
II. Technical Parameter:

- Working Voltage: 220VAC±10%, 50Hz
- Temperature Controlling Range: 5~45℃
- Current Load:
 - Electric Heating ≤ 16A (Resistive Load)
 - Water Heating ≤ 3A (Resistive Load)
- Power Consumption: < 1W
- Temperature-Sensing Element: NTC
- Button: Capacitive touch screen buttons / Mechanical button
- Temperature Controlling Precision: 0/-2℃
- Storage Environment: Temperature: -10~55℃
- Relative Humidity: RH<85%, (no dewing)
- Working Environment: 0~50℃
- Surface Material: Flame Retardant PC
- External Dimension:
 - 86.7mm (W) × 86.7mm (H) × 9.35mm (T)
- Installation: 86 Type Installation Box

III. Main Function and Characteristic

- Adopt capacitive touch screen buttons skill, gently touching buttons will realize the function running.
- Adopt LED displaying module, high brightness, and long life.
- Integrated design, easy installation, and high reliability.
- Week programming, four periods for setting the time and temperature.
- With the function of timing power on or off in 24 hours, the adjustable step is one hour.

IV. Function Operation and Display Explanation



- ① Room temperature symbol
- ② Setting symbol
- ③ Time period
- ④ Heating symbol
- ⑤ Room temperature area
- ⑥ Clock area and temperature setting area
- ⑦ Regular Boot
- ⑧ Regular Shutdown
- ⑨ Week area
- ⑩ Key lock

■ Key lock

In standby mode, long press “▲” and “▼” for 3 seconds to switch the state of Key lock.

■ Power on and Power off

In working mode, long press on/off key to switch the state of power on/off.

■ Setting Temperature

In working mode, press “▲” or “▼” to enter setting temperature mode. Then press “▲” to raise the setting temperature, press “▼” to reduce the setting temperature, adjust step is 1℃. Long press “▲” or “▼” to rapidly adjust setting temperature.

Remark:

In auto-running mode, modifying the setting temperature is only effective for the current Period. When entering the period next time, it will be running according to the original temperature setting program.

■ Advanced Mode

● In working mode, long press “” to enter the selection state of advanced mode.

● Press “▲” or “▼” to choose mode F1~F9.

● Press “” to enter mode Fx (x equals 1~9) to set the parameters, press “▲” or “▼” to adjust the parameters. Press “” to next parameters setting or back to the mode selection mode.

● Press on/off key to exit advanced mode.

Remark: If ten seconds without any operation, idiomatically exit to the normal running state!

Model	Function	Explanation
F1	Regular boot	Regular boot within 24 hours, adjust step is one hour
F2	Regular shutdown	Regular shutdown with in 24 hours, adjust step is one hour
F3	Sensor mode selection	Model 1: Internal sensor controls temperature Model 2: External sensor controls temperature Model 0: Internal sensor controls temperature External sensor limit temperature (For water heating system, model 1 by default; For electrical heating system, model 0 by default; It can be set)

Model	Function	Explanation
F4	Set the clock and week	Set the week, hour and minute in turn.
F5	High temperature protection	Adjust the temperature range: 40-70℃, the adjust step is 1℃. The default value is 50℃ (Sensor selection mode 0, the function is effective)
F6	Low temperature protection	Adjust the temperature range: 2-10℃, the adjust step is 1℃. The default value is 3℃
F7	Internal sensor measuring temperature correction	Correction temperature range: ±5℃, the adjust step is 0.1℃. Long press both “▲” key and “▼” key, then the correction reset.
F8	Weekly program setting	See item V : weekly program setting
F9	Communication address setting	Range: 1-250 Note: the same communication bus cannot have the same address. Only product with communication function

■ Manual and automatic mode switch

Under standby state, long press “▼” key, switch manual and automatic mode.

Manual mode: Only running according to one temperature setting, no time program displayed (P1~P4)

Automatic mode: Running according to the program setting. (Please see weekly program setting)

■ Checking external sensor temperature

For electrical heating systems (X7-E/PE), when the sensor is in model 0, the external sensor temperature can be checked by short press ON/OFF key.

■ Restore the factory setting

Long press “▲” key, restore the factory setting, the system shut down.

V. Weekly program setting: (It will run according to the following setting values of time period program) .

The default value of time period program:

Time period	Start time	Setting temperature(°C)	
		Mon~Fri	Sat~Sun
P1: 6:00~8:00	6: 00	25	25
P2: 8:00~16:00	8: 00	10	10
P3: 16:00~22:00	16: 00	25	25
P4: 22:00~next day6:00	22: 00	15	15

Under the model choice state press “▲/▼” key to choose F8, then press “⚙️” key to enter the week setting interface of the time period program and “MON TUE WED THE FRI” week area will begin to twinkle at the same time.

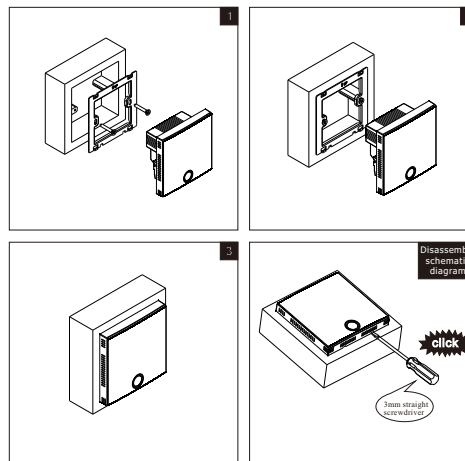
1. Press “▲/▼” key to set week: “MON TUE WED THE FRI /SAT/SUN”. After finishing the setting, press “⚙️” key to confirm and enter into the setting interface of time period and P1 at time period area will begin to twinkle at the same time.
2. Press “▲/▼” key to choose time program: P1/P2/P3/P4. After finishing the setting, press “⚙️” key to confirm and enter into the time setting interface of this time period and time will begin to twinkle at the same time.

-7-

3. Press “▲/▼” key to set the period of time, short press once to increase or decrease 15 minutes : Please pay attention to the limited time for period: 0:00 ≤P1<P2<P3<P4<24:00. After finishing the setting, press “⚙️” key to confirm and enter into the temperature setting interface of time period and temperature area will begin to twinkle at the same time.
 4. Press “▲/▼” key to set the temperature, press once to increase or decrease 1 °C. Min 5°C 6°C ---- 45°C Max. Press “⚙️” key to confirm and enter the next selected time period
 5. Repeat the operations of step 2 and step3, till finish the four time period of working days (MON TUE WED THU FRI), then enter into the time period setting interface of Saturday.
 6. Now “SAT” at week area is twinkling, and the setting method is the same as the steps from step 2 to step 5. After finishing the setting, press “⚙️” key to enter into the time period setting of Sunday “SUN”, and the setting method is the same as the steps from step 2 to step 5. After finishing the setting, press “⚙️” key to return to the mode choice interface.
- Remark: If ten seconds without any operation, automatic exit to normal running state.**

-8-

VI. Installation



-9-

VII. Installation explanation

- ⚠️ Please do the installing operation after the power is cut off, or it may damage the system units.
- ⚠️ Choose the correct installing location (about 1.6m above the floor); do not install the product in places under direct sunshine or high humidity areas.
- ⚠️ Height above Sea Level: Not surpass 2000m.
- ⚠️ If you install the product in the bathroom, please use professional water-proof cover.
- ⚠️ Open the Power Panel and LCD Main Board, and use screws to fasten the cover of the power panel to the pre-placed installing box. Please notice the cover direction.
- ⚠️ Follow the wire diagram for the electrical connection.
- ⚠️ Please refer to the fig.3, push the thermostat into box, and make sure the thermostat install well.
- ⚠️ Finish the installation and connect power supply to test.

-10-

VIII. Temperature Controlling Characteristic:

It will enter into the heating state and display the heating symbol when the temperature is less than the controlling temperature by 2°C. It will stop heating and will not display the heating symbol when the temperature reaches the setting temperature.

Under the model 0, it will stop heating when the temperature of external sensor is higher than the setting protective temperature set in F5.

Under the OFF state, it will begin to heat when the temperature is less than the protective temperature set in F6.

IX. Attention:

1. It should be installed by professional engineer and follow the user manual.
2. Before installation, please make sure if the power voltage is the same with remarks on the products.
3. Please do not install the products to the place where is near to high temperature or bad conditions.
4. Please to choose the right power line with electrical current voltage.
5. If the system abnormal or dead, please try to cut off the power and then give the power again.
6. If the product is damaged owing to wrong line connection and installation, it will beyond to our quality warranty.

-11-

X. Product Function Choice

Model	Time period program	Mainframe linked function	External sensor	Current load
X7-E			✓	≤16A (Resistive load)
X7-W				≤3A (Resistive load)
X7-WH		✓		≤3A (Resistive load)
X7-PE	✓		✓	≤16A (Resistive load)
X7-PW	✓			≤3A (Resistive load)
X7-PWH	✓	✓		≤3A (Resistive load)
X7-S-__	With RS485 communication			

XI. Solutions for Simple Faults

Error code	Fault reason	Solution
Er1	Internal sensor is wrong	Change product
Er2	External sensor is wrong	Change external sensor
Er3	Both internal and external sensor are wrong	Change product

-12-

Warning:



- The symbol means the unit is being installed, it may cause electrical shock hazard during maintaining, so please make sure it is operated by the professional technical worker.
- Make sure the power agrees with controller specified voltage before installation.
- Please read the manual in details before using the product.
- The controller must have a separate power control equipment. If long term do not use controller more than one month please cut off the power supply between the controller and control equipment.

-13-