

M90 is modern design flush-mounting thermostats equipment with large stylish screen. It can control your electric underfloor heating system and an extra appliance. Control your underfloor heating and appliance (towel rail or mirror demister) from the same thermostat. Carefully study this manual and make sure it is installed by qualified electrician.

### Parameter

Voltage: 220V/230V

Power consumption: 1W

UFH relay: Max 16A

Appliance relay: Max 5A

Setting range: 5-40°C

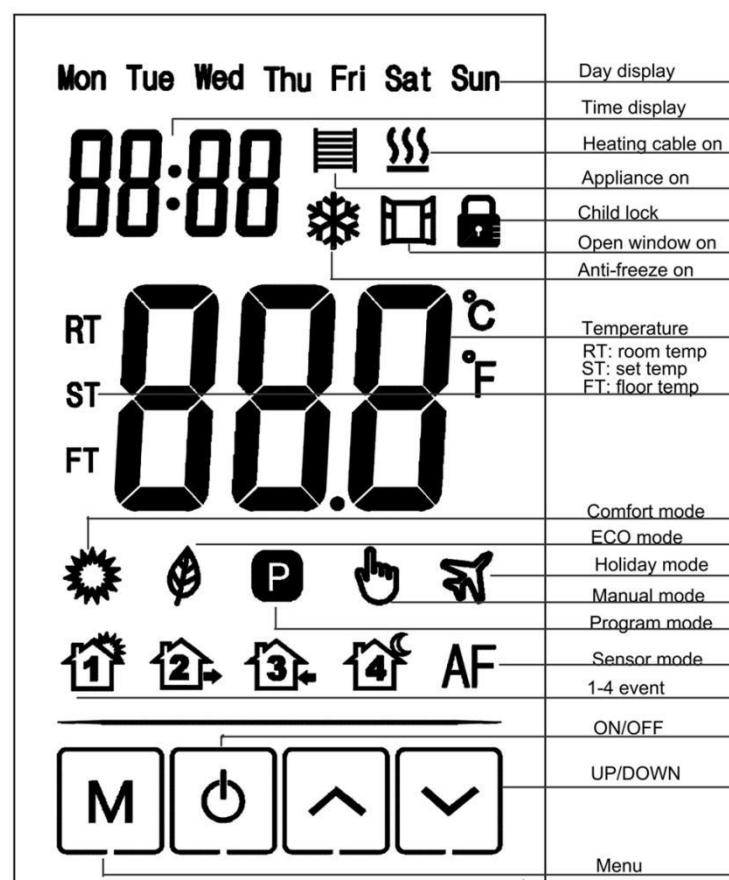
Protective range: IP20

Material: Anti-flammable ABS

Compatible sensors: 6.8kΩ, 10kΩ, 12kΩ, 15kΩ, 33kΩ (@ 25°C)

Application: Built-in sensor, floor sensor

### Symbols display



### Operation

1. UFH On/OFF: press key to turn on, press again to off.
2. Lock: on main screen, press key 3 seconds to lock, press 3 second again to unlock
3. Mode: on main screen, press **M** key to choose mode program-manual-holiday mode

Temporary mode: at program mode, press or to set temperature, thermostats enter into temporary mode, thermostats will operate under set-temperature until next heating period.

At holiday mode: press or to set temperature, need not to confirm, thermostats will operate under set-temperature according to days set in advanced setting F4. Default 10°C, max 20°C.

4. Appliance controls ON/OFF: press key 3seconds to turn on,

press 3 seconds again to off. You can switch the appliance on for 1 hour, 2 hours or 4 hours in advanced settings.

### Setting

Press for to turn off thermostat, press **M** to go F1. Use and to select F1, F2, F3, F4.

Item	Setting	Explanation
F1	Date,Time setting	Modify date, time
F2	Program	Modify time, temperature of 4 program period
F3	Read operation time	Read working time per day, month, year
F4	Advanced setting	Modify advanced setting

#### F1: Date, Time Setting

Select F1, press **M** to enter, press or to set day, hour, min, press **M** to confirm. After finish setting, press **M** to leave or thermostats will go back main screen 5 second late.

#### F2: Program

Select F2, press **M** to enter, press or to select day and program period, press **M** to enter, use or to set time and temperature, use to exit or thermostats will go back main screen 5 second late.

#### Standard program:

DAY	1	2	3	4
Mon-Fri	WAKE 06:00 21°C	LEAVE 08:30 18°C	BACK 17:00 21°C	SLEEP 23:00 18°C
Sat-Sun	WAKE 06:00 21°C	LEAVE 08:30 18°C	BACK 17:00 21°C	SLEEP 23:00 18°C

#### F3: Read operated time

Select F3, press **M** to enter, press or to see operation time per day,month,year.

Eg: 10:17 03 mean thermostat totally operate 3 days 10hours 17mins. Press **M** to leave.

#### F4: Advanced setting

Note: Menu here should be modified by installer or qualified people. Select F4, press **M** to enter, Use **M** to select item, Use or to modify value. press to leave.

Item	Default Value	Range
01: Sensor Selection	01	01: Built-in& floor limit 02: built-in sensor 03: Floor sensor
02: Room temperature calibration	0°C	-5°C~5°C
03: Floor temperature calibration	0°C	-5°C~5°C

04: Floor. Limit	35°C	5°C~60°C
05: Schedule	5-1-1	5-1-1/7
06: Adaptive start	OFF	ON/OFF
07: Adaptive start time	20mins	0-40mins
08: Open window	OFF	ON/OFF
09: Sensor type	10K	6.8K/10K/12K 15K/33K
10: Anti-freeze function	OFF	ON/OFF
11: Holiday time	1 day	1-99 days
12: Temp deviation	1°C	0.5°C,1°C,2°C,3°C
13: Display Precision	0.5°C	0.5°C,0.1°C
14: Operation step	0.5°C	0.5°C,0.1°C,1°C
15: Reset	No	No/Yes
16: Display when thermostat OFF	02	01: Show OFF 02: Show Temperature 03: Nothing
17: Temperature unit	°C	°C/°F
18: Rail Control time	1h	1h,2h,4h

**Sensor Failure:**

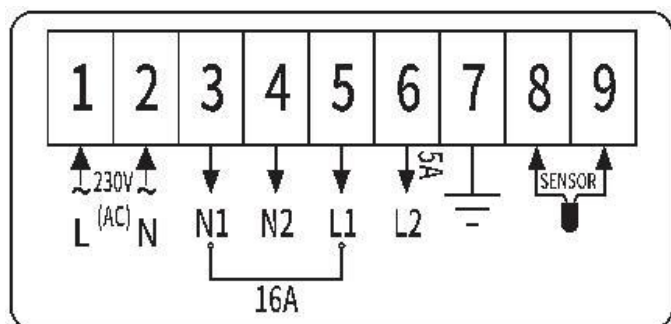
Er1: Built-in sensor short-circuited or disconnected.

Er2: External sensor short-circuited or disconnected. When shows Er1/Er2 error, thermostat must be checked till the error is eliminated.

**Sensor Failure:**

Er1: Built-in sensor short-circuited or disconnected.

Er2: External sensor short-circuited or disconnected. When shows Er1/Er2 error, thermostat must be checked till the error is eliminated.

**Wiring Diagram:**

1. Live - 230V supply
2. Neutral - 230V supply
3. Neutral - Underfloor heating
4. Neutral - Secondary relay (for towel rail or demister)
5. Live - Underfloor heating
6. Live - Secondary relay (for towel rail or demister)
7. Earth - Common
8. Floor sensor (not polarity sensitive)
9. Floor sensor (not polarity sensitive)