Made in USA

Programmable Electronic Thermostat

7-Day Programmable, Auto Changeover, Fan Speed Control, Hardwire

Daikin P/N (668811101)

- 7-Day Programmable
- Single Stage Heat Pump/Non-Heat Pump Systems
- Backlit Display
- Single Stage Heat/Cool Systems
- Two Speed Fan Control
- Field Calibration
- Auto Changeover
- Button Lockout Function
- SimpleSet™ Programming
- Remote Temperature Sensor Capability
- Title 24 Compliant / No Batteries Required
- Relay Outputs (minimum voltage drop in thermostat)
- Ideally Suited for:
  – Residential (New Construction/Replacement)
  – Light Commercial

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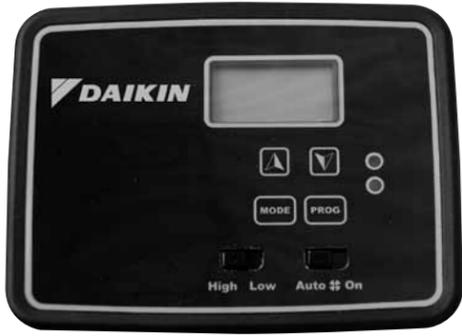
Installation, Operation & Application Guide

DAIKIN

Version C: 06-30-15

Specifications

Electrical Rating: • 24 VAC (18 to 30 VAC)
  • 3 amp maximum total load
  • 1 amp maximum per terminal
Temperature control ranges: 45°F to 90°F **Accuracy:** ± 1°F
System configurations: 1-stage heat, 1-stage cool, heat pump, gas, oil, electric
Timing: *Anti-short Cycle:* 5 minutes
  Backlight Operation: 10 seconds
Terminations: C, RH, RC, W, Y, B, O, G1, G2, S1, S2

Important Safety Information

⚠ WARNING
Always turn off power at the main power supply before installing, cleaning, or removing thermostat.

- This thermostat is for 24 VAC applications only; do not use on voltages over 30 VAC
- Do not short across terminals of gas valve or system control to test operation; this will damage your thermostat and void your warranty
- All wiring must conform to local and national electrical and building codes
- Do not use air conditioning when the outdoor temperature is below 50 degrees; this can damage your A/C system and cause personal injuries
- Use this thermostat only as described in this manual

Package Contents/Tools Required

Package includes: Daikin 668811101 programmable thermostat + Operation & Application Guide.

To Remove Existing Thermostat

⚠ WARNING
ELECTRICAL SHOCK HAZARD – *Turn off power at the main service panel by removing the fuse or switching the appropriate circuit breaker to the OFF position before removing the existing thermostat.*

1. Turn off power to the heating and cooling system by removing the fuse or switching the appropriate circuit breaker off.
2. Remove old thermostat. This should expose the wires.
3. Label the existing wires before removing wires.
4. After labeling wires, remove wires from wire terminals.
5. Refer to the following section for instructions on how to install this thermostat.

To Install Thermostat

⚠ WARNING
ELECTRICAL SHOCK HAZARD – *Turn off power at the main service panel by removing the fuse or switching the appropriate circuit breaker to the OFF position before removing the existing thermostat.*

IMPORTANT: *Thermostat installation must conform to local and national building and electrical codes and ordinances.*

1. Turn off power to the heating and cooling system by removing the fuse or switching the appropriate circuit breaker off.
2. Insert stripped, labeled wires in matching wire terminals. See "Wiring Diagrams" section of this manual.

⚠ WARNING
Be sure exposed portion of wires does not touch other wires.

3. Tighten screws on terminal block. Gently tug wire to be sure of proper connection. Double check that each wire is connected to the proper terminal.
4. Remove unused Gas/Electric jumper. Keep **gas** for oil or gas systems. Keep **electric** for heat pumps or electric heat systems.
5. Replace thermostat by snapping it in place.
6. Turn on power to the system at the main service panel.
7. Test thermostat operation as described in "Testing the Thermostat".

Remote Sensor Installation (Optional)

1. Remove cover from remote sensor housing.
2. Select an appropriate location for mounting the remote sensor.
3. Mount remote sensor unit using hardware provided.
4. Install two strand shielded wire between remote sensor and thermostat. Shielded wire must be used. Do not run remote sensor wire in conduit with other wires.
   - **Wire 1** should run between the S1 terminal on the thermostat and the S1 terminal on the remote sensor
   - **Wire 2** should run between the S2 terminal on the thermostat and the S2 terminal on the remote sensor
   - Connect the shielding of the wire to the S2 terminal on the thermostat
5. Disable the main sensor (R12) on the thermostat by cutting it from the circuit board.

Wire 1
Wire 2
Cut R12 from circuit board
Remote Sensor (Optional)
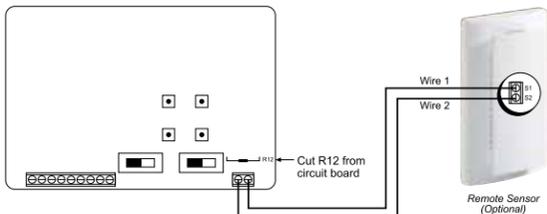
Wiring Diagram

Heating/Cooling

6-Wire, Single Transformer

Internally Jumpered
Transformer
HOT
120 VAC — 24 VAC
Optional
Heating Control
Cooling Control
Fan Control
C, RH, RC, W, Y, B, O, G1, G2 — THERMOSTAT
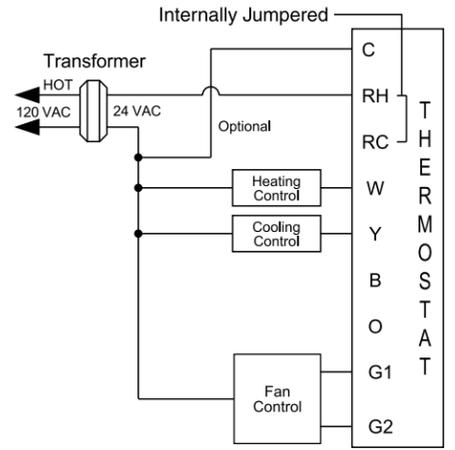
Configuration Mode

The configuration mode is used to set the Daikin 668811101 thermostat to match your heating/cooling system. The Daikin 668811101 thermostat functions with heat pump, air conditioning, gas, oil or electric heat systems.

1. To enter the configuration mode, simultaneously hold down the ∨ and ∧ buttons while the Daikin 668811101 thermostat is in OFF mode.
2. Press the ∨ or ∧ button to change settings within each screen.
3. Press the **PROG** button to advance to the next screen.
   ❖ **Note:** *The MODE button will return you to the previous screen.*
4. To exit configuration mode, hold the **PROG** button for 6 seconds.

Configuration Mode Settings

1. Temperature scale (F or C) – Choose Fahrenheit or Celsius.
   Press the ∨ or ∧ button to select.
   Press the **PROG** button to advance to the next screen.

   `FC  F`

2. Differential (1°F - 5°F) (1°C - 3°C) – Set the number of degrees between your "turn on" temperature and your "setpoint" temperature.
   Press the ∨ or ∧ button to set differential value.
   Press the **PROG** button to advance to the next screen.

   `dFF 01`

3. Deadband (1°F - 9°F) (1°C - 5°C) – Set the minimum number of degrees between your heating system activation and your cooling system activation.
   Press the ∨ or ∧ button to set deadband value.
   Press the **PROG** button to advance to the next screen

   `db 05`

4. Heat pump – Press the ∨ or ∧ button to configure as heat pump, or non-heat pump system.
   - ON = Heat pump system – 4 minute time delay with heat and cool
   - OFF = Non-heat pump system – 4 minute time delay with cool only
   Press the **PROG** button to advance to the next screen

   `OFF HP`

5. Lockout (0-8°, NITE, COOL-HEAT) – Select the number of degrees set temperature can be changed during keypad lockout or select to lockout during NITE period only. COOL-HEAT lockout allows adjustment of the set temperatures to the maximum heat set temperature selected in Step 6 and minimum cool set temperature selected in Step 7.
   ❖ **Note:** *The mode cannot be changed when the thermostat is locked.*
   Press the ∨ or ∧ button to select.
   Press the **PROG** button to advance to the next screen

   `LOC 00`

6. Maximum Heat Setpoint (45°F - 90°F) (7°C - 32°C)
   Adjust to control the maximum heat set temperature allowed.
   Press the ∨ or ∧ button to select.
   Press the **PROG** button to advance to the next screen

   `HI 90`

7. Minimum Cool Setpoint (45°F - 90°F) (7°C - 32°C)
   Adjust to control the minimum cool set temperature allowed.
   Press the ∨ or ∧ button to select.
   Press the **PROG** button to advance to the next screen

   `LO 45`

8. Room temperature offset (+9°F to - 9°F) (+5°C to -5°C).
   Adjust to calibrate displayed room temperature to match actual room temperature.
   Press the **PROG** button to advance to the next screen.

   `CAL 0`

9. Maximum compressor cycles allowed per hour (d, 2-6).
   – – – = as many as needed, 2-6 = maximum cycles/hour
   Press the **PROG** button to advance to the next screen

   `CYc --`

10. Status indicator light (ON, OFF).
    Press the ∨ or ∧ button to select.
    To exit configuration mode, press the **PROG** button for 6 seconds.

    `ON LEd`

Starting the Thermostat

❖ **Note:** *First button press activates backlight only.*
1. Move the Fan Auto/On switch to the Auto position.
2. Press the **MODE** button to enter desired operating mode.
3. Press **PROG** to select program or non-program option.

Testing the Thermostat

Once the thermostat is installed, it should be thoroughly tested.

⚠ CAUTION
Do not energize the air conditioning system when the outdoor temperature is below 50 degrees. It can result in equipment damage or personal injury.

Cool Test
1. Press mode button until cool mode is displayed.
2. Adjust set temperature so it is 5 degrees below room temperature.
3. Air conditioning should come on. Green LED turns ON.
4. Adjust the set temperature 2 degrees above the room temperature and the A/C should turn off. There may be a fan delay on your system.
   ❖ **Note:** *There is a four-minute time delay to protect the compressor after it turns off.*

Heat Test
1. Press mode button until heat mode is displayed.
2. Adjust the set temperature so it is 5 degrees above the room temperature.
3. Heat should come on. Red LED turns ON.
4. Adjust the set temperature 2 degrees below the room temperature and the heat should turn off. There may be a fan delay on your system.
   ❖ **Note:** *For heat pumps, there is a four-minute delay to protect your compressor.*

Fan Test
1. Slide fan switch to ON position.   Indoor fan turns ON.
2. Slide fan switch to Auto position.   Indoor fan turns OFF.

Mode of Operation

The Daikin 668811101 thermostat is a programmable, auto changeover, single stage heat, single stage cool thermostat. It functions with air conditioning, heat pumps, gas, oil or electric heat systems.

The thermostat activates the heating appliance when the room temperature is below the set heat temperature (by the differential temperature) and the red indicator light on the thermostat will light. The Daikin 668811101 thermostat will stop outputting and the red light will turn off when the call for heat has been satisfied. With heat pumps, the thermostat will not let the compressor come on for 4 minutes after it turns off. This protects your compressor.

When the room temperature is greater than the set cool temperature (by the differential temperature), the cooling device is activated and the green indicator light on the thermostat will turn on. The Daikin 668811101 thermostat will stop outputting and the green light will turn off when the call for cooling is satisfied. The thermostat will not let the compressor come on for 4 minutes after it turns off. This protects your compressor.

The Daikin 668811101 thermostat has five possible operating modes: OFF, Heat, Cool, Heat & Cool and Program mode. In off mode, the thermostat will not turn on heating or cooling devices. The manual fan can be turned on in all operating modes using the fan switch and the fan speed can be set in all operating modes using the fan speed switch. In heat mode, the thermostat controls the heating system. In the Cool mode, the thermostat controls the cooling system. In heat & cool mode, the thermostat controls both the heating and cooling systems. In program mode, the thermostat will automatically be controlled by the set program. Program mode can function with heat mode, cool mode or heat & cool mode. The clock display alternates with the set temperature display for heat & cool mode.

The program schedule can be overridden by changing the set temperature ($\vee$ or $\wedge$ button). This puts the Daikin 668811101 thermostat thermostat into a 2 hour temporary hold. After 2 hours, it will automatically return to the program schedule.

The Daikin 668811101 thermostat also has a button lockout feature. This enables the thermostat to be set to the proper mode and temperature and locked so it cannot be tampered with.

Operating Modes

There are six possible operating modes for the Daikin 668811101 thermostat. Off, Cool, Heat, and Cool & Heat modes are accessed by pressing the Mode button. Program mode is accessed by pressing the Prog button. Continuous fan mode is accessed by setting the auto/on switch to ON.

OFF Mode
• In this mode, the thermostat will not turn on the heat pump.

Continuous Fan Mode
• The indoor fan can be turned on manually in every operating mode by sliding the auto/on switch to ON.

Cool Mode
• In this mode, the thermostat controls the cooling system
  ❄ **Note:** *There is a four minute delay for your compressor to restart after it has turned off.*

Heat Mode
• In this mode, the thermostat controls the heating system
  ❄ **Note:** *For heat pumps, there is a four minute delay for your compressor to restart after it has turned off.*

Cool and Heat Mode (Auto Changeover) – In this mode, the thermostat controls the cooling and heating systems, automatically changing over from one to the other as needed.

Program Mode – In this mode, the program function is on (PROG displays), and the thermostat will automatically be controlled by the set program schedule. Program mode can function with heat mode, cool mode or heat & cool mode. The program schedule can be overridden by changing the set temperature ($\vee$ or $\wedge$ button). After 2 hours, the program schedule will automatically be resumed. To manually return to the program schedule, press the **PROG** button twice.
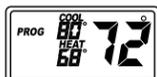
Setting the Time and Day of the Week

The time and day of the week must be set for your program schedule to operate correctly.

1. Press the **MODE** button until you are in the OFF mode.

2. Press the **PROG** button in for 6 seconds. Time displays.
3. Press the $\vee$ or $\wedge$ button to adjust the time.

4. Press the **PROG** button while the time is displayed. The display shows the day currently set on the thermostat (1=Monday, 2=Tuesday, etc).
5. Press the $\vee$ or $\wedge$ button to set the correct day of the week that today is.
   ❄ **Note:** *Press the PROG button in for 5 seconds to lock values into memory and return to the OFF mode or press the PROG button once to enter programming.*
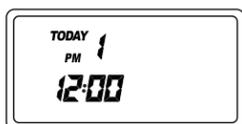
Programming

Program Overview
The Daikin 668811101 thermostat programmable thermostat has four periods (MORN, DAY, EVE, NITE) that are customizable for each day of the week. Each period will have a start time, heat temperature, and cool temperature. The Daikin 668811101 thermostat monitors the day and time, while maintaining the specific conditions you have chosen for each period in your program.

1. Press the **MODE** button until you are in the OFF mode.
2. Press the **PROG** button for 6 seconds.
3. Press the **PROG** button twice.
• Day is displayed (1-7)
4. Press the $\vee$ or $\wedge$ button to change the day you want to program (1=Monday, 2=Tuesday, etc.).

5. Press the **PROG** button to advance to the next screen.
   ❄ **Note:** *You can always press the MODE button to return to the previous parameter.*

• Period is displayed (MORN, DAY, EVE, NITE)
6. Press the $\vee$ or $\wedge$ button to change period of day.
7. Press the **PROG** button to advance to the next screen.
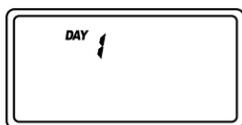
• Set time is displayed
8. Press the $\vee$ or $\wedge$ button to change set time.
9. Press the **PROG** button to advance to the next screen.
   ❄ **Note:** *Transitions required after 11:59 PM must be programmed in the next day's MORN transition.*

• Heat temperature is displayed (45°F to 90°F)
10. Press the $\vee$ or $\wedge$ button to adjust heat set temperature.
11. Press the **PROG** button to advance to the next screen.

• Cool temperature is displayed (45°F to 90°F)
   ❄ **Note:** *Cool cannot be set lower than heat temperature.*
12. Press the $\vee$ or $\wedge$ button to adjust cool set temperature.
13. Press the **PROG** button to advance to the next screen.

Repeat steps 1-13 to program each day of the week individually or use the Simpleset® feature to program every day the same as Monday.

When programming is complete, press and hold the **PROG** button in for 5 seconds to return to the OFF mode. PROG must display on the screen for the thermostat to follow the program schedule. If PROG does not appear, press the PROG button until PROG displays.

Simpleset® Programming

Simpleset® programming is a convenient method of programming the thermostat. Once the entire Monday (Day 1) schedule is set, Simpleset® programming will copy the Monday schedule to every day of the week.

After the complete Monday schedule is set (see Programming), you are at the Day 2 screen:
1. Press the $\vee$ button once. Day 1 screen displays.
2. Press and hold the $\vee$ button for 3 seconds.
   • The days of the week will count down from 7 to 1 and this will lock the settings into memory.
   • Once the schedule is locked in, you can go through each day and make any changes you require. This feature speeds up the programming of the standard weekday/weekend schedule.
3. Press and hold the **PROG** button for 5 seconds to exit program mode and return to the OFF mode.

Lockout Function

The Daikin 668811101 thermostat thermostat has a button lockout feature so the settings cannot be changed or tampered with. With the lockout activated, any button press will result in "LOC" being displayed.
To activate the LOC function:
1. Press the **MODE** button and hold it in.
2. Also press the **PROG** button and keep both depressed for 10 seconds.
3. LOC will display and all buttons will be disabled.
To deactivate the LOC feature, repeat steps 1 & 2 above.

Factory Preprogramming

The Daikin 668811101 thermostat comes preprogrammed with the following schedule:

	MORN	6:00 AM	DAY	8:00 AM	EVE	6:00 PM	NITE	10:00 PM
MONDAY thru SUNDAY	HEAT	70°F	HEAT	62°F	HEAT	70°F	HEAT	62°F
	COOL	78°F	COOL	85°F	COOL	78°F	COOL	82°F

Personal Program Schedule

Use the following personal program schedule to record your settings:

	MORN		DAY		EVE		NITE	
MONDAY 1	HEAT		HEAT		HEAT		HEAT	
	COOL		COOL		COOL		COOL	
TUESDAY 2	HEAT		HEAT		HEAT		HEAT	
	COOL		COOL		COOL		COOL	
WEDNESDAY 3	HEAT		HEAT		HEAT		HEAT	
	COOL		COOL		COOL		COOL	
THURSDAY 4	HEAT		HEAT		HEAT		HEAT	
	COOL		COOL		COOL		COOL	
FRIDAY 5	HEAT		HEAT		HEAT		HEAT	
	COOL		COOL		COOL		COOL	
SATURDAY 6	HEAT		HEAT		HEAT		HEAT	
	COOL		COOL		COOL		COOL	
SUNDAY 7	HEAT		HEAT		HEAT		HEAT	
	COOL		COOL		COOL		COOL	

Troubleshooting

Symptom	Remedy
No display	Check for 24 VAC at thermostat; display is blank when 24 VAC is not present
System fan does not come on properly	Verify wiring is correct
All thermostat buttons are inoperative	Verify 24 VAC is present; unit locks out when 24 VAC is not present
No response with first button press	First button press activates backlight only
Program schedule activates at the wrong time	Check time (AM/PM) set on thermostat (see "Setting the Time")
Thermostat turns on and off too frequently	Adjust temperature differential (see "Configuration Mode Setting 2")
Thermostat does not follow program	Verify it is operating in program mode (PROG displays); check time (AM/PM); check if in 2 hour program override
Fan runs continuously	Check Fan On/Auto switch, fan runs continuously in On position
Status indicator light not on during call	Turn status indicator function on (see "Configuration Mode Setting 10")
Room temperature is not correct	Calibrate thermostat (see "Configuration Mode Setting 8"). If remote sensor is used, check S1 and S2 terminal connections
LOC displays when any button is pressed	Thermostat has the button lockout function activated (see "Lockout Function")
– – on display instead of room temperature	Check for a bad connection at S1 and S2 terminals, if used
Problem not listed above	Press Reset button once*

* Reset Button Function: Time, day and mode changed to last saved settings (saved after power loss or when exiting program setup), configuration and program settings are unchanged.

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