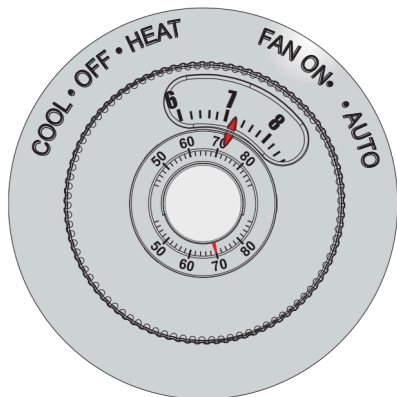




Owner's Manual



T87N Easy-To-See™

The Round®

**Read before installing
T87N, T87N1026**

Pre-installation checklist

Check package contents:

- Thermostat
- Wall anchors & screws (2 each)
- Owner's Manual
- Large Print Subbase Switch Labels
- Coverplate

Before you begin, make sure you have:

- No. 2 Phillips & small pocket screwdrivers
- Hammer
- Level (optional)
- Pencil
- Drill and bit (3/16" for drywall, 7/32" for plaster)

Must be installed by a trained, experienced technician

Read these instructions carefully. Failure to follow these instructions can damage the product or cause a hazardous condition.



CAUTION: ELECTRICAL HAZARD

Can cause electrical shock or equipment damage. Disconnect power before beginning installation.



MERCURY NOTICE

If this product is replacing a control that contains mercury in a sealed tube, do not place the old control in the trash. Contact your local waste management authority for instructions regarding recycling and proper disposal.

This thermostat contains a Lithium battery which may contain Perchlorate material.

Perchlorate Material—special handling may apply,
See www.dtsc.ca.gov/hazardouswaste/perchlorate

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Product application

This thermostat provides electronic control of 24 VAC single-stage heating and cooling systems.

System Types

- Gas, oil, or electric heat with air conditioning
- Warm air, hot water, high-efficiency furnaces, heat pumps, steam, gravity
- Heat only
- Heat only with fan
- Cool only

System Settings

- Heat, Off, Cool

Fan Settings

- Auto, On

Specifications

Temperature Range

- 40° to 90°F (4.5° to 32°C)

Shipping Temperature

- -20° to 120°F (-28.9° to 48.9°C)

Operating Relative Humidity

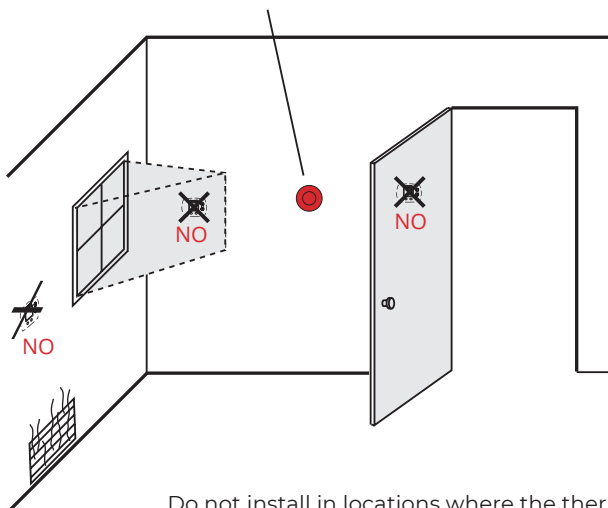
- 5% to 90% (non-condensing)

Electrical Ratings

- Voltage: 20-30 VAC
- Running current: 0.02-1.0 A, 50/60 Hz

Installation tips

Install the thermostat about 5 feet (1.5 m) above the floor in an area with good air circulation at average temperature.

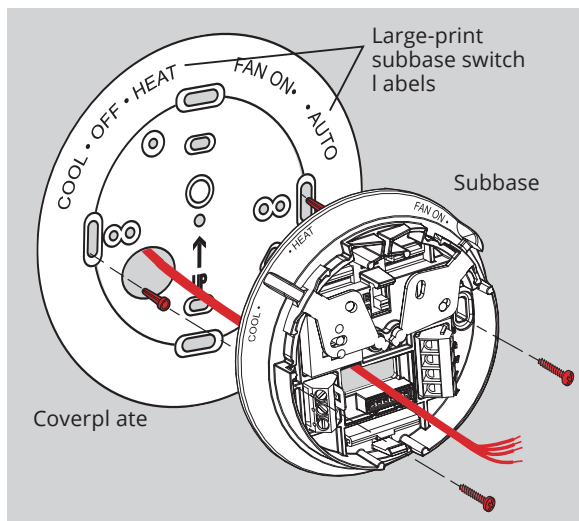


Do not install in locations where the thermostat can be affected by:

- Drafts or dead spots behind doors and in corners
- Hot or cold air from ducts
- Sunlight or radiant heat from appliances
- Concealed pipes or chimneys
- Unheated/uncooled areas such as an outside wall behind the thermostat

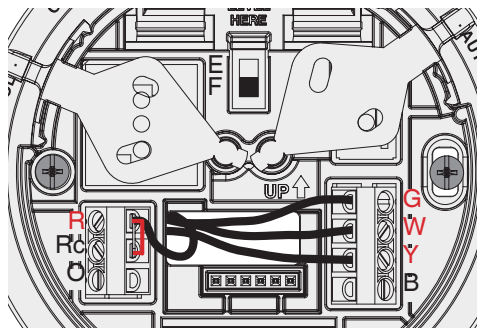
Subbase and base installation

1. Pull wires through wire hole. Position coverplate on wall, level and mark hole positions.
2. Drill holes (3/16" for drywall, 7/32" for plaster) and tap in supplied wall anchors.
3. Pull wire through coverplate and subbase, position over anchors, then insert and tighten mounting screws. Check level if desired.
4. Apply the large-print labels to the coverplate, matching the labels on the subbase.



Wiring

1. Loosen screw terminals, insert wires into terminal block, then re-tighten screws.
2. Push excess wire back into the wall opening.
3. Plug the wall opening with nonflammable insulation to prevent drafts from affecting thermostat operation.



Terminal Designations

- | | |
|----|---|
| W | Heat relay. |
| Y | Compressor contactor. |
| G | Fan relay. |
| O | Heat pump changeover valve energized in cooling. |
| Rc | Cooling power. Connect to secondary side of cooling system transformer. |
| R | Heating power. Connect to secondary side of heating system transformer. |
| B | Heat pump changeover valve energized in heating. |

NOTES

R & Rc terminals

In single-transformer system, leave metal jumper in place between R & Rc. Remove metal jumper if two-transformer system.

Heat pump systems

If wiring to a heat pump, use a small piece of wire (not supplied) to connect terminals W and Y.

Wire specifications

Wire specifications

Use 18- to 22-gauge thermostat wire. Shielded cable is not required.

Fan operation settings

Fan operation settings:

F: For gas or oil heating systems, leave the fan operation switch in this factory-set position (for systems that control the fan in a call for heat).

E: Change the switch to this setting for heat pump or electric heat systems. (This setting is for systems that allow the thermostat to control the fan in a call for heat, if a fan wire is connected to the G terminal.)

Cycle rate settings

System Type	Switch 1	Switch 2
Steam, Gravity (1 CPH)	ON	ON
Hot Water, 90%+ eff. Warm Air, Heat Pump (3 CPH)	OFF	ON
Gas/Oil Warm Air (5 CPH)	OFF	OFF
Electric Warm Air (9 CPH)	ON	OFF

Move the cycle rate switches to the proper setting for your system (see table below).

Heating System	Switch 1	Switch 2
Steamor gravity(1 CPH)	On	On
High efficiency warm air (90%+), hot water, or heat pump (3 CPH)	Off	On
Gas or oil warm air (factory setting) (5 CPH)	Off	Off
Electric warm air (9 CPH)	On	Off

Thermostat mounting

Coverplate and subbase

Thermostat

Align the slots on the base with tabs on the thermostat, then push gently until the thermostat snaps into place.

Operation

System switch

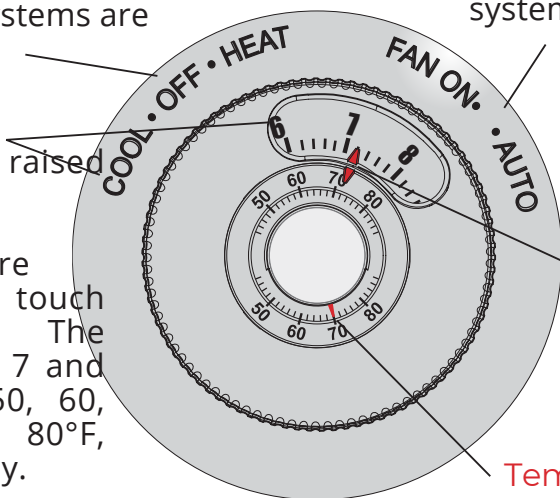
- Cool: Controls the cooling system.
- Heat: Controls the heating system.
- Off: All systems are off.

Fan switch

- On: Fan runs continuously.
- Auto: Fan runs only when heating or cooling system is on.

Markings

Enlarged, raised numbers indicate temperature range by touch or sight. The large 5, 6, 7 and 8 mean 50, 60, 70 and 80°F, respectively.



Temperature setting

Rotate to set, a click is heard every two degrees as the temperature is adjusted.

Temperature
Current indoor temperature.



CAUTION: EQUIPMENT DAMAGE HAZARD

Do not operate cooling system when outdoor temperature is below 50°F (10°C).

Limited 5-year warranty

Resideo warrants this product, excluding battery, to be free from defects in workmanship or materials, under normal use and service, for a period of five (5) years from the date of first purchase by the original purchaser. If at any time during the warranty period the product is determined to be defective due to workmanship or materials, Resideo shall repair or replace it (at Resideo's option).

If the product is defective,

(i) return it, with a bill of sale or other dated proof of purchase, to the place from which you purchased it; or

(ii) call Resideo Customer Care at 1-800-468-1502. Customer Care will make the determination whether the product should be returned to the following address: Resideo Return Goods, 1985 Douglas Dr. N., Golden Valley, MN 55422, or whether a replacement product can be sent to you.

This warranty does not cover removal or reinstallation costs. This warranty shall not apply if it is shown by Resideo that the defect was caused by damage which occurred while the product was in the possession of a consumer.

Resideo's sole responsibility shall be to repair or replace the product within the terms stated above. RESIDEO SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES

RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT.

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This warranty gives you specific legal rights, and you may have other rights which vary from state to state. If you have any questions concerning this warranty, please write Resideo Customer Care, 1985 Douglas Dr., Golden Valley, MN 55422 or call 1-800-468-1502.