Braeburn 5020

Braeburn 5020 Thermostat User Manual

Model: 5020 | Brand: Braeburn

INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your Braeburn 5020 Universal Thermostat. The Braeburn 5020 is a versatile thermostat designed for single-stage gas, oil, or electric heating/cooling systems, and single-stage heat pump systems. It also supports 250Mv – 750Mv millivolt heating-only systems and 2 or 3 wire hydronic zone systems.

Key features include:

- 7-day, 5-2 day, or non-programmable operation.
- Large 5 sq. inch display with bright blue backlight.
- Auto or manual changeover.
- Speed Bar multi-function button.
- Adjustable temperature limits.
- Indoor or outdoor remote sensing capability.
- Speed Set programming mode.
- Hardwire or battery powered options.
- Multi-level keypad lockout.
- Separate user and installer reset buttons.
- Programmable Fan with On or Auto modes.
- Adaptive Recovery Mode (ARM).
- Temporary override limits.
- Residential or commercial modes.
- Compatibility with 2 or 3 wire hydronic zone systems.

SAFETY INFORMATION

Always turn off power to the heating and cooling system at the main fuse or circuit breaker panel before installing or servicing the thermostat. Failure to do so could result in electrical shock or equipment damage. This thermostat is designed for low voltage systems only. Do not use on line voltage applications.

Ensure all wiring complies with local electrical codes and ordinances. If you are unsure about any part of the installation

process, consult a qualified HVAC technician.

SETUP AND INSTALLATION

Pre-Installation Checklist

- Ensure the thermostat is compatible with your HVAC system type (single-stage conventional or heat pump).
- Gather necessary tools: screwdriver, wire strippers, drill (if mounting new holes).
- Turn off power to the HVAC system at the circuit breaker.
- Take a picture of your old thermostat's wiring connections for reference.

Mounting the Thermostat

The Braeburn 5020 thermostat is designed for easy wall mounting. It features a separate sub-base for simplified wiring.

1. Carefully separate the thermostat from its sub-base.
2. Position the sub-base on the wall where you intend to install the thermostat. Ensure it is level.
3. Mark the mounting holes. Drill pilot holes if necessary.
4. Secure the sub-base to the wall using the provided screws.

Figure 1: Front view of the Braeburn 5020 Thermostat, displaying temperature and system status.
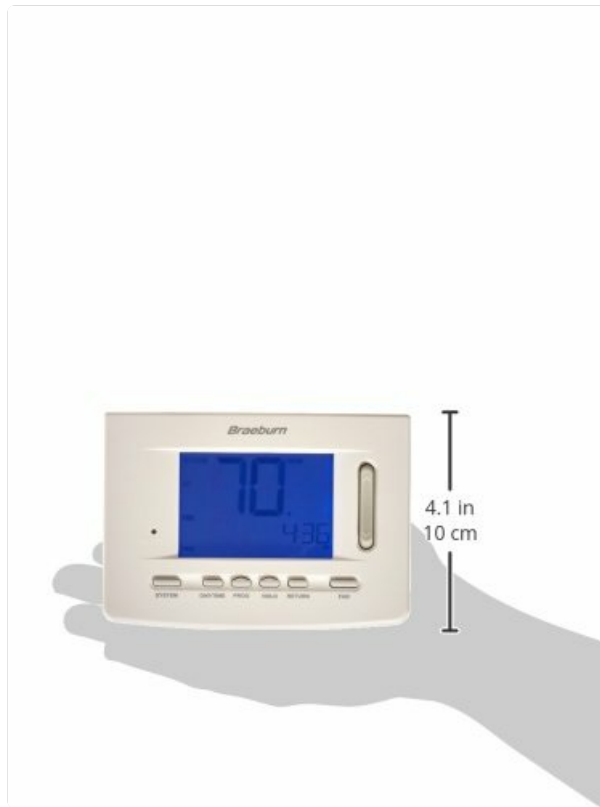
Figure 2: The Braeburn 5020 Thermostat held in a hand, illustrating its compact size and approximate dimensions.

Wiring

Connect the wires from your HVAC system to the appropriate terminals on the thermostat's sub-base. Refer to the wiring diagram provided with your thermostat packaging for specific connections. Common terminals include R (24V AC power), C (common), W (heat), Y (cool), G (fan), O/B (heat pump changeover), etc. Ensure all connections are secure.
Important: *If you are replacing an existing thermostat, match the wire labels from your old thermostat to the corresponding terminals on the Braeburn 5020. If you are unsure, consult a professional.*

Initial Power-Up and Configuration

After wiring and mounting the thermostat to the sub-base, restore power to your HVAC system. The thermostat will power on. You may need to install 2 AA alkaline batteries (included) for battery-powered operation or as a backup. The thermostat has permanent non-volatile memory to retain settings even during power outages.
Access the installer setup mode to configure system type (conventional or heat pump), temperature differential, and other advanced settings. Refer to the detailed installer guide for specific steps to enter and navigate this mode.

OPERATING INSTRUCTIONS

Setting the Time and Day

Press the **DAY**/**TIME** button. Use the **UP** or **DOWN** arrows to adjust the time and day. Press **RETURN** to save and exit.

Selecting System Mode

Press the **SYSTEM** button to cycle through available modes: **HEAT**, **COOL**, **AUTO**, and **OFF**. The selected mode will be displayed on the screen.

Setting Fan Mode

Press the **FAN** button to toggle between **AUTO** (fan runs only when heating/cooling is active) and **ON** (fan runs continuously).

Programming Schedules

The Braeburn 5020 offers 7-day, 5-2 day, or non-programmable options. To program, press the **PROG** button. Follow the on-screen prompts to set desired temperatures for different time periods (e.g., Wake, Leave, Return, Sleep) for each day or group of days.

- Use **UP**/**DOWN** arrows to adjust temperature.
- Use **DAY**/**TIME** to select the day or group of days.
- Use **PROG** to advance to the next program period.
- Press **RETURN** to save and exit programming.

Temporary Override and Hold

To temporarily override the current program, simply adjust the temperature using the **UP** or **DOWN** arrows. The override will remain active until the next programmed period begins.

To permanently hold a temperature, press the **HOLD** button. The thermostat will maintain this temperature indefinitely until **HOLD** is pressed again to resume the program.

Keypad Lockout

The thermostat features a multi-level keypad lockout function to prevent unauthorized changes. Refer to the installer guide for instructions on how to activate and deactivate this feature, and to set different lockout levels (e.g., total lockout, partial lockout allowing limited adjustment).

MAINTENANCE

Battery Replacement

When the battery indicator appears on the display, replace the two AA alkaline batteries. Open the battery compartment, remove old batteries, and insert new ones, observing polarity. The thermostat retains settings during battery replacement due to non-volatile memory.

Cleaning

Clean the thermostat's exterior with a soft, damp cloth. Do not use abrasive cleaners or solvents. Avoid spraying liquids directly onto the thermostat.

TROUBLESHOOTING

Problem	Possible Cause	Solution
No display or blank screen.	Dead batteries or no 24V AC power.	Replace batteries. Check circuit breaker for HVAC system. Ensure 24V AC power is present at thermostat terminals.
System not responding to thermostat settings.	Incorrect wiring, system mode, or lockout active.	Verify wiring connections. Check system mode (HEAT/COOL/AUTO). Ensure keypad lockout is not preventing operation. Check installer settings for correct system type.
Temperature reading seems inaccurate.	Thermostat location, drafts, or sensor issue.	Ensure thermostat is not in direct sunlight or near heat sources/drafts. If problem persists, consider remote sensor (if applicable) or professional inspection.
Thermostat cycles on/off too frequently.	Temperature differential set too low.	Adjust the temperature differential in the installer setup menu to a higher value (e.g., 2 degrees).

For more detailed troubleshooting or issues not listed here, please refer to the complete installation and operation manual or contact Braeburn customer support.

SPECIFICATIONS

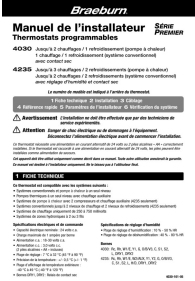| Feature	Detail
Model Number	5020
Dimensions (H x W x D)	3.86" x 5.11" x 1.42" (approx. 2 x 6 x 4 inches; 14.4 ounces packaged)
Power Source	24 Volt AC or 2 "AA" Alkaline Batteries (3.0 VDC)
Temperature Control Range	45°F to 90°F (7°C to 32°C)
Temperature Accuracy	+/- 1°F (+/- 0.5°C)
Operating Humidity Range	5% to 95% Relative Humidity (non-condensing)
Compatibility	Low voltage single stage gas, oil, electric heating/cooling; single stage heat pump; 250Mv-750Mv millivolt heating only; 2 or 3 wire hydronic zone systems.
Display	Large LCD with bright blue backlight
Memory	Permanent non-volatile memory

WARRANTY AND SUPPORT

Braeburn products are designed for reliability and performance. For information regarding the warranty period and terms for your Braeburn 5020 Thermostat, please refer to the warranty card included with your product packaging or visit the official Braeburn website.

For technical support, troubleshooting assistance, or to inquire about replacement parts, please contact Braeburn customer service. Contact details can typically be found on the product packaging or the manufacturer's website.

Note: Attempting to repair the thermostat yourself may void the warranty. Always consult with a qualified professional for complex issues.

Related Documents - 5020

[Braeburn Programmable Thermostats User Manual](#)

Comprehensive user manual for Braeburn programmable thermostats, covering models 5020 and 5220. Learn how to set up, program, and operate your thermostat for optimal comfort and energy savings. Includes features like SpeedBar®, SpeedSet®, service monitors, and various operating modes.

[Braeburn 8500 Universal Programmable Wireless Thermostat Kit User Manual](#)

Comprehensive user manual for the Braeburn 8500 Universal Programmable Wireless Thermostat Kit, detailing installation, setup, programming, operation, features, maintenance, and regulatory information.

[Manuel de l'installateur Braeburn 4030/4235 : Thermostats Programmables](#)

Guide d'installation et de câblage pour les thermostats programmables Braeburn modèles 4030 et 4235 de la Série Premier. Inclut les spécifications techniques, les paramètres et les procédures de vérification du système.

[Braeburn Thermostats: Programmable, Non-Programmable & Touchscreen Models](#)

Explore the full range of Braeburn thermostats, including Builder, Economy, Premier, and Deluxe series. Find features, specifications, and contractor solutions for optimal home comfort and energy efficiency.

[Braeburn Programmable Thermostats 5020 & 5220 Detailed Installer Guide](#)

Detailed installer guide for Braeburn programmable thermostats models 5020 and 5220. Covers specifications, installation, wiring, system configurations, installer settings, system testing, and limited warranty.

[Braeburn Thermostats: The Brighter Choice for Indoor Comfort](#)

Explore the range of Braeburn thermostats, including Builder, Economy, Premier, and Deluxe series. Discover features like large displays, easy-to-use programming, and energy-saving capabilities. Braeburn offers solutions for residential and commercial applications, focusing on reliability and innovative design.