

# **THERMOSTATS** **FOR** **COMMERCIAL** **APPLICATIONS**

Mike Kanitz  
Product Manager, Field Devices

# SUMMARY

**Modern day thermostats are built with a range of capabilities to maintain comfort and conserve energy. With a host of customizable features and accessories, thermostat technology can be fine-tuned for a variety of environments and applications.**

While residential thermostats have become increasingly popular in some commercial applications for their presumed affordability, the real cost may be the lack of capability that they can provide for complex building systems. Commercial spaces require greater integration, better ventilation and tamperproof mechanisms. Commercial thermostats offer adaptable technology and precise temperature control to ensure optimal air quality in dynamic environments.

The new Honeywell TC500 commercial connected thermostat series guarantees superior solutions for control, security and connectivity. Aesthetically pleasing and user-friendly, the Honeywell thermostat offers maximum flexibility and intuitive usability to optimize your commercial space.

# THERMOSTATS FOR COMMERCIAL APPLICATIONS

With the influx of residential thermostats in the market, many commercial building managers have considered installing residential thermostats in their spaces. Although lower-cost residential thermostats appear to be a simple way to save on the upfront cost of a thermostat, this decision comes with limitations.

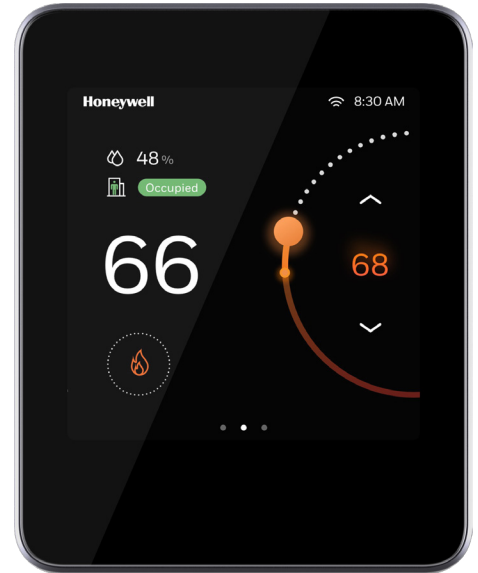
A residential thermostat isn't designed to be easily integrated within a building management system. It may not provide the desired level of precise temperature control for commercial spaces or added security from tampering – all important capabilities.

The new Honeywell TC500 commercial connected thermostat series provides solutions for most commercial and complex residential applications. It features a user-friendly operating systems and a modern aesthetic, like many new residential thermostats, but superior capabilities in terms of equipment and occupant control, security and connectivity.

## THE NEXT GENERATION

At its core, a thermostat is a temperature sensor with a simple on/off switch; however, thermostats have evolved to become capable of compensating for changes in the occupied space and outdoor conditions. They can provide more precise temperature control without wasting energy or cycling equipment unnecessarily that will adversely impact life and reliability. Commercial energy costs are a function not just of consumption but are highly dependent on peak usage. Peak energy consumption can be dramatically reduced via centralized control of multiple thermostats to stagger the loads, start-up, and timing of operation to save money while maintaining comfort. Demand management is one of the many ways building management systems integration can offer additional controls for an enhanced experience.

Smart thermostats can have complex and flexible scheduling. The temperature setpoint can be decreased/increased during unoccupied hours to save energy, to heat or cool the building to the perfect temperature before anyone arrives, or, to set other scheduling plans that save energy and cost. Scheduling flexibility with up to four scheduling events per day is preferred to support pre- and post- occupancy purge events. This meets the latest ASHRAE healthy buildings best practices recommendations.



*Honeywell TC500 commercial thermostat*

End-user expectations, even for commercial thermostats, have increased dramatically. Features such as cloud connectivity and remote access, monitoring and control are becoming standard in most thermostats. Ease of use and aesthetics are important to users, as the design and interface preference of customers is largely driven by mobile devices. The simple touch screen is sleek and contemporary, and in a world with a greater sanitation focus, flat screens make for easier cleaning. Older style thermostats with many buttons can be easily damaged through frequent use of disinfectants and other cleaning supplies. The Honeywell TC500 Commercial Thermostat series is sleek and small. It looks beautiful and is easy to keep clean so you can keep building users safer.

# COMMERCIAL VERSUS RESIDENTIAL THERMOSTATS

**As commercial thermostats have evolved superior capabilities, they have differentiated themselves from residential thermostats. Due to the complexities in application requirements, commercial grade thermostats offer expanded flexibility and capabilities.**

Because commercial spaces are more likely to undergo large fluctuations in the number of occupants over a short period, Honeywell commercial thermostats can accommodate higher, and more frequent variations in occupant density. The thermostat must be able to adjust to ensure consistent air quality, frequently introduced outside air via heavily used entryways. For more complex commercial building indoor environmental control, external sensors including CO<sub>2</sub>, TVOC, humidity, occupancy, and other technologies may be required. An expanding trend in the market to provide lower total installed cost via modern wireless technology. This is in particular relevant in retrofit applications where wired sensing technology is impractical.

Due to greater complexities of integration in commercial buildings, standardized BACnet wireless/wired connectivity not typically available in residential thermostats is recommended. Wireless integration can dramatically reduce wiring cost and complexity, while circumventing wiring in some installations. A commercial thermostat should have at least two each universal configurable inputs and configurable I/O plus modulation option to minimize SKU count for stocking and/or complexities of product selection. This ensures the contractor has the right product for nearly every installation with fewer concerns about product availability and/or associated scheduling delays.

Commercial buildings also have a greater need for ensuring proper space ventilation via Demand Controlled Ventilation (DCV) due to variations in peak occupancy rates. This requires proper integration with economizer controls for compliance with local codes such as ASHRAE and Title 24. With higher capacity heating and cooling systems, a Honeywell solution is the ideal fit for any commercial setting.

Commercial spaces also require thermostats that are protected from unauthorized or malicious tampering. Honeywell systems offer higher levels of secured access designed to achieve this. Honeywell commercial thermostats are designed to work with existing Honeywell building management systems or as a standalone solution. This flexibility helps give building owners the freedom to configure spaces with minimal rework. The ability to use pre-saved system configurations to easily program multiple thermostats minimizes mistakes and expensive callbacks while reducing time spent during the commissioning process. With professional installation, you can be sure that everything will be working properly. And customers benefit from high-quality

**THE GLOBAL COMMERCIAL  
THERMOSTAT MARKET IS  
EXPECTED TO GROW TO  
\$1.7  
BILLION BY 2022**

Source: Global Market Insights, 2019

production and outstanding customer care and technical assistance.

A thermostat with maximum flexibility to interface with virtually every system means very few SKUs to stock at the warehouse or on the service vehicle. The flexibility to upgrade firmware in the field without thermostat replacement and proper configuration to the BMS systems can also result in significant time and cost savings, allowing clients to focus on their business. With features such as 3H/3C and heat pump, external sensor support, economizer enablement and assignable outputs, the Honeywell TC500 commercial thermostat line is the perfect solution to give you the flexibility to accommodate the broadest range of systems.

# COMMERCIAL GRADE REMOTE CONNECTIVITY

Honeywell commercial thermostats offer best-in-class connectivity and remote monitoring and control capability.

All available thermostats in the commercial line are available as wired and/or wireless solutions for maximum flexibility based on the application. In addition to BMS connectivity, Honeywell commercial thermostat cloud connectivity means the user can monitor, control, and schedule their Honeywell thermostat from anywhere at any time through an easy-to-use mobile app. Additionally, BT connectivity enables contractors to set-up and commission the devices faster and more efficiently.

For enhanced insights, customers have the option to subscribe to the **Honeywell Small and Medium Building Administrator** for more information on their devices. This will give them access to analytics, energy efficiency information, diagnostics and even predictive maintenance.

## THE HONEYWELL DIFFERENCE

Honeywell commercial thermostats offer a wide range of key features to optimize your commercial space. This solution, which is flexible and easy to integrate, offers:

- Maximum flexibility for a broad range of applications
- Wireless and/or wired connectivity
- Complex external sensor integration
- Superior aesthetics and intuitive usability
- Remote cloud-based monitoring/control/scheduling
- Multi-level secured access
- BMS integration
- Enhanced commissioning
- And more

With Honeywell's precision design and engineering supported by experienced contractors who make sure the product is installed right the first time, you can be sure you have an ideal solution for your space and your building users' needs.

# HONEYWELL TC500 COMMERCIAL CONNECTED THERMOSTATS

Meet commercial needs with fast commissioning and superior communication

With the TC500, businesses have the intuitive control they want along with the advanced commercial features they need. The result is the ideal blend of comfort control and energy savings.

Honeywell's TC500 offers an exceptional, intuitive user experience with superior mobile app connectivity, flexible configuration, and BMS integration capabilities. And it looks good doing it. Designed specifically for commercial small and medium buildings, TC500 offers the perfect balance in ease of use and energy efficiency.



Find out what your building can achieve with Honeywell.

**[Buildings.honeywell.com](https://buildings.honeywell.com)**

**Honeywell is a leading global provider of hardware, software and services for connected buildings. We are continually inventing technologies that address some of the world's toughest challenges, delivering buildings that are safer and more comfortable for occupants, and building operations that are integrated, scalable and more energy efficient. We believe that the building of the future is autonomous, intelligent and responsive. After all, shouldn't your building be working as hard as you are?**

#### For More Information

[www.buildings.honeywell.com](https://www.buildings.honeywell.com)

#HealthyBuildings

#### Honeywell Building Technologies

715 Peachtree St NE

Atlanta, GA 30308

[www.honeywell.com](https://www.honeywell.com)

01-00206 | 1 | 10/20  
© 2020 Honeywell International Inc.

**THE  
FUTURE  
IS  
WHAT  
WE  
MAKE IT**

**Honeywell**