

**BETTER
FOR YOUR
BUSINESS**

**BETTER
FOR OUR
PLANET**

We provide combustion solutions to customers in the heating portion of the HVAC market for enhanced management and operability of the burners, boilers and thermal systems that heat our commercial buildings.

Honeywell

INTRODUCTION

The world's focus on global warming has implications for businesses of all kinds, not the least of which are institutional, commercial and industrial operations – heavy energy users.

Universities, hospitals, hotels, commercial office buildings and manufacturing plants rely on a variety of HVAC systems to maintain internal temperatures, while external temperatures fluctuate to extremes more and more each year. In addition, many of these operations run on legacy systems that use fossil fuels like natural gas. Potentially harmful carbon emissions increase with rising temperatures when buildings are heated.

Controlling energy costs, providing comfortable working environments and meeting ever-growing country, federal and state regulatory requirements related to emissions and energy efficiency targets increase the need to find new solutions. At Honeywell Thermal Solutions, our broad portfolio of burner management systems, gas valves and flame detectors helps HVAC customers gain more control over the management and operability of their burner and boiler ecosystems that keep buildings warm.

Our products and solutions deliver greater emissions control and general operating efficiency through enterprise-wide system visibility and connectivity. These smart thermal devices, technologies and software applications, like HVAC monitoring systems, enable remote control, predictive analytics and real-time system intelligence, which means better decision-making and faster action taking.

Holistic management of the thermal ecosystem is especially important as legacy HVAC systems are being asked to do more while enterprises are exploring the adoption of newer technologies, such as electricity-based systems like electric boilers and heat pumps.



PUBLIC POLICY IMPACT ON PRIVATE INDUSTRIES AND INSTITUTIONS

The regulatory pressures facing commercial, industrial and institutional enterprises are increasing rapidly as the world seeks answers to control global warming. The charge is being led by government entities around the world at the national, country, state and local levels.

- The Department of Energy (DOE) has established aggressive targets to curb greenhouse gas emissions and enhance energy efficiency in commercial sectors. For instance, the DOE's Better Buildings Initiative aims for a 20% improvement in energy efficiency by 2025 compared to baseline levels. Furthermore, the Energy Policy Act and subsequent amendments mandate regular energy audits and the implementation of energy-saving measures.¹
- The Environmental Protection Agency (EPA) also plays a pivotal role, mainly through the Clean Air Act, which sets stringent emissions standards. Businesses are required to limit their carbon footprint by adopting cleaner technologies and fuels.²
- On a state level, initiatives such as California's Title 24 Building Standards Code impose even stricter requirements on energy consumption and emissions. These regulations often necessitate the adoption of advanced HVAC systems, integration of renewable energy sources and implementation of smart energy management practices.³
- In the European Union (EU), the Energy Performance of Buildings Directive mandated that all new buildings be nearly zero energy buildings by 2020, with existing buildings required to improve energy performance through regular renovations, including enhancements to HVAC systems.⁴
- Internationally, the ISO 50001 standard provides a framework for energy management systems, encouraging businesses to improve energy performance systematically. These regulations collectively drive the adoption of advanced HVAC systems, renewable energy integration and smart energy management practices, aiming to significantly reduce the environmental impact of commercial operations and promote sustainable development worldwide.⁵



Our Thermal Solutions can help companies and institutions meet the increasing regulatory and societal demands around emissions and efficiency, starting with sustainable burner solutions and intelligent controls for HVAC systems.

SOLUTIONS AT A GLANCE

Honeywell Thermal Solutions has the equipment, technology and expertise to elevate the sustainability, reliability and performance of buildings' heating systems for greater energy efficiency and operational efficiency across commercial buildings.

Heating equipment must help reduce emissions and deliver clean, safe heat while giving building managers greater control of their operations. And that's what the thermal solutions in our comprehensive portfolio do, including the following:

THERMAL SOLUTIONS IN OUR COMPREHENSIVE HVAC SYSTEMS PORTFOLIO



BURNER CONTROL UNITS

- The 7800 SERIES product line has been an industry standard of safety, longevity and robust burner management for decades. A recent electronic update, supply chain coalescence and expanded burner control and display offerings have this platform primed to retain and grow its leadership position for many years to come.
- Each 7800 SERIES burner control captures valuable burner performance data. This data is easily viewed when simply mounting any of the S7800 displays to the 7800 SERIES burner control. No additional setup required.
- The S7800 displays also provide Modbus communication, allowing your applications' operational data to be seamlessly migrated into our Thermal IQ™ system and transformed into predictive, actionable information, allowing end-users and service personnel to be notified when key indicators have detected potential operational or energy inefficiencies prior to shutting down a system.



FLAME DETECTORS

- The C7027 and C7035 continue to remain the UV standard flame detectors for the HVAC application segment.
- C7027 and C7035 Flame Detectors – Compact analogue UV flame sensor can help detect ultraviolet radiation emitted by combustion flames. Can be used to provide flame supervision for commercial and industrial HVAC burner applications.
- C7061 Flame Detectors are available when self-check flame detectors are needed. This product line includes a solid-state electronic UV flame sensor to detect ultraviolet radiation emitted by the combustion of most carbon-containing fuels.
- These flame detectors can be used with Honeywell burner controls to provide flame supervision in continuous operations for industrial HVAC burner applications.



DG SMART PRESSURE SENSING

- DG Smart provides gas and air pressure measurement to accurately monitor performance and control your combustion system more efficiently.
- Easily incorporate DG Smart with existing burner management or building automation systems using either the 4-20ma output or Modbus TCP communication port.
- Remote notification of irregular combustion air or gas pressure levels, prior to system shutdown, is easily realized through Honeywell's Thermal IQ system.



GAS VALVES

- The Kromschroeder gas solenoid valve (VAS) can be used in gas control and safety systems across HVAC applications. With global approvals, multiple voltages and compact modular design, the VAS is well suited to meet HVAC requirements.

IT'S NOT EASY BEING GREEN WE CAN MAKE IT EASIER

In addition to helping our customers meet evolving regulatory directives, our thermal solutions can help with real-world HVAC system management issues in real time. Our burner and combustion management systems, along with our remote monitoring capabilities offered by our Thermal IQ™ digital platform, allow for greater control of emissions, energy efficiency and heating maintenance.



Thermal IQ is a powerful digital thermal management tool that reduces HVAC systems' emissions by adding speed, intelligence and efficiency to thermal operations through remote monitoring. Remote monitoring gives buildings complete visibility of thermal assets at an enterprise, site or asset level to drive better business outcomes with real-time analytics. Just one example is the ability to avoid unplanned shutdowns because you can see everything that happens across your system in real time.



Regarding energy efficiency, our burner management system enables the safe start-up, operation and shutdown of the multiple-burner furnace section of a boiler. It reduces maintenance, improves uptime, and provides a safe environment for boiler and plant personnel. Our SLATE™ Burner Control is a core component of our integrated combustion management system. It controls light-off sequencing and flame supervision for combustion systems. It can control fired gas, oil or a combination fuel for single burner applications.

By helping increase efficiency, enterprises realize lower maintenance, repair and replacement costs, and companies don't have to send repair personnel out as frequently, which keeps operational costs down. This is especially important as the skilled, trade-based workforce is shrinking. According to a recent report from McKinsey, the U.S. is facing a huge dilemma when it comes to skilled labor.⁶

Looking solely at electricians, who are critical to both the construction and manufacturing industries, an estimated 30% of union electricians are expected to reach retirement age in the next decade. Additionally, 70% of supervisors in the electrical industry are baby boomers (according to the National Electrical Contractors Association), implying that experienced frontline leaders could become particularly scarce.⁷ This shortage threatens the pace of the energy transition. Our intelligent technologies can help bridge the gap by creating a multiplier effect when management and maintenance teams become smaller, allowing enterprises to do more with less.

THE MOVE TO ELECTRIFICATION

According to a report from the International Energy Agency, heating in buildings is responsible for 4 gigatons of CO₂ emissions annually – 10% of global emissions. Installing heat pumps instead of fossil fuel-based boilers significantly reduces greenhouse gas emissions in all major heating markets, even with the current electricity generation mix, an advantage that will increase further as electricity systems decarbonize.⁸

While it seems inevitable that there will be a significant transition to electrification, with an emphasis on the integration and adoption of heat pumps, it will take several years. During this evolution, the maintenance, management and regulatory requirements around HVAC systems will not disappear. Thermal management systems will continue to play a critical role; at Honeywell, we're here to support our customers as they navigate this transition.



HVAC SYSTEM CHANGES ARE ONLY THE START

Global warming is impacting enterprises of all kinds and requiring changes of all kinds. Reducing emissions and increasing efficiencies of HVAC systems are just two examples. The good news is Honeywell has years of industry experience and a portfolio of advanced thermal solutions to help create an environment that is better for your business and better for our planet. Let's see what we can do together.



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For more information

<https://automation.honeywell.com/us/en/solutions/thermal-solutions>

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