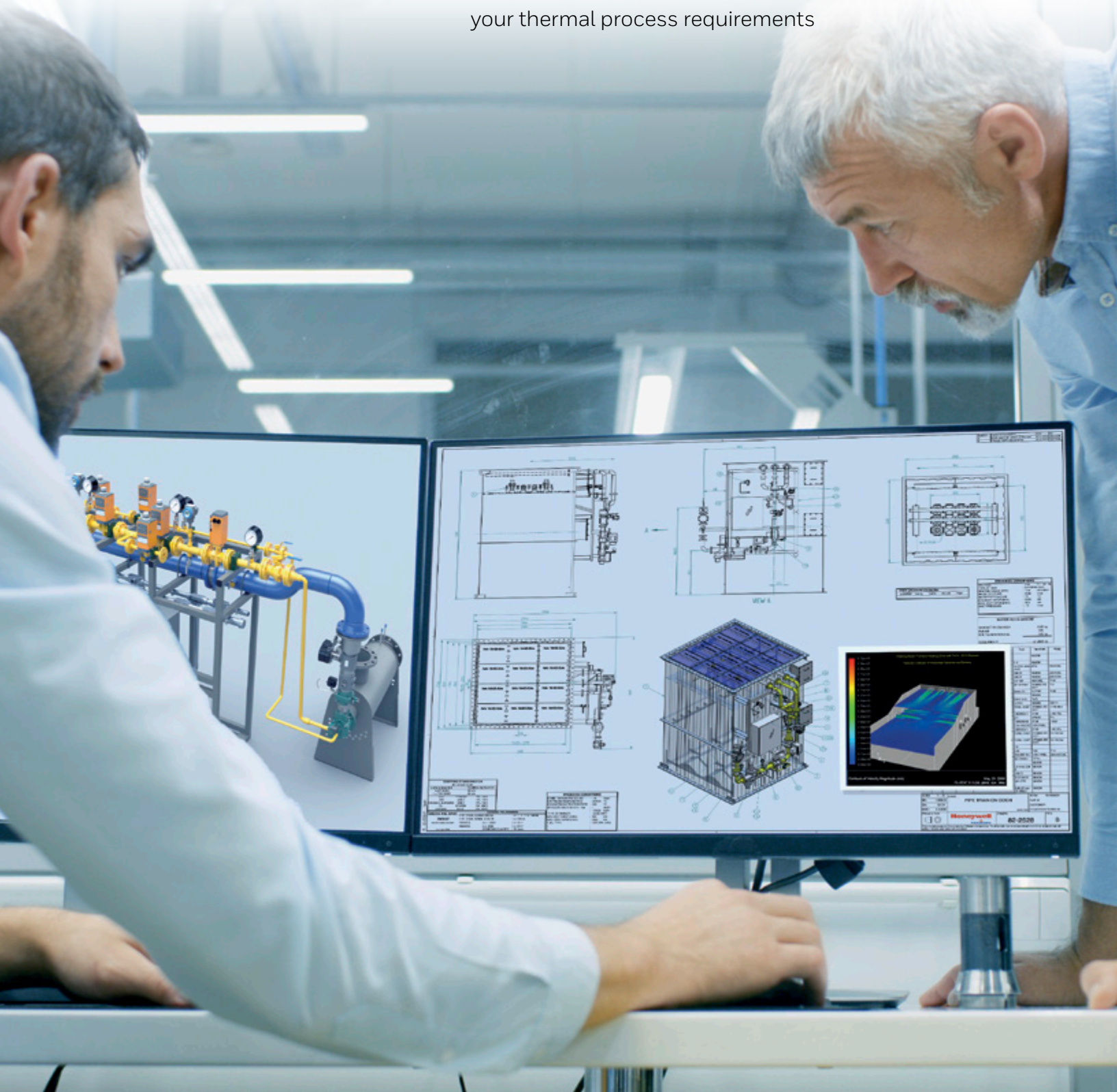


ENGINEERED TO ORDER

End-to-end solutions and services to meet your thermal process requirements





Engineered to Order (ETO)

Safe, efficient, clean and reliable operations are key requirements in today's thermal process industries. Production and process systems have to deliver value by operating in the smartest, most efficient manner possible.

Facility owners/operators need to minimize unplanned downtime and improve productivity, and as such, thermal process operation solutions must deliver the highest levels of performance and safety. This demands superior technology, expert application engineering, and complete support over the life of equipment assets.



Dealing With Today's Demands

In today's business environment, industrial organizations are seeking to operate with maximum productivity, availability and profitability under increasingly difficult constraints. Critical equipment such as burners, burner management systems, fuel delivery systems, and safety devices must function reliably in every application, all the time. Failures and downtime create unexpected costs, limit throughput and increase the probability of serious health, safety and environmental incidents.

Modern thermal processing operations face a number of specific challenges:

- Maximize process performance
- Reduce production cost
- Meet emissions requirements
- Enhance safety
- Improve energy efficiency
- Minimize material loss
- Extend asset life
- Reduce maintenance requirements
- Respond to a shortage of thermal expertise in the workforce

Every company must deal with changing trends in safety, codes, and standards compliance and government regulations. At the same time, controlling process variables is a meticulous business. Perfecting those abilities within a production facility is a crucial task, one that requires innovative thermal process control technology and domain expertise.



Performance And Safety Are Priorities

Safety is an important aspect when it comes to thermal processes. Thermal process control is currently monitored via codes and standards such as EN, ISO, NFPA and CSA. However, adoption of new IEC and ISA standards for safety integrity level (SIL) performance ratings is gaining acceptance in the market.

The demand for turnkey custom thermal process solutions is on the rise. Maintaining your own skilled workforce with knowledge of complex heating processes, as well as the fast-changing world of technology and codes and standards, is becoming difficult – placing greater value on a single supplier delivering entire solutions, end-to-end project management and a complete service package.

Honeywell Has Everything You Need

Most thermal process equipment vendors are either on the burner side, or focus exclusively on valve control or flame management products. What's needed is a trusted partner providing the full spectrum of thermal processing solutions and services, from start to commissioning, end-to-end.

With pressure on all aspects of your business, whether you are an original equipment manufacturer (OEM) or an end user, Honeywell Thermal Solutions is your expert partner.

Honeywell's unique Engineered to Order (ETO) offering includes advanced thermal process systems and services that can be incorporated into a complete turnkey solution, saving engineering time and expense, while ensuring compliance with local codes and standards worldwide.



Honeywell's ETO portfolio for thermal processing encompasses:

Thermal Transfer

- Low- and High-Temperature Burners
- Low-Emission Burners
- Oxy Fuel Burners

Burner Management

- Burner Control
- Remote Process Monitoring
- Air/Fuel Ratio Control
- Control Panels
- Flame Safeguard Controls
- Industrial Flame Monitoring
- PLC-based Control Panels

Fuel Delivery

- Pipe Trains and Skids
- Control Valves
- Regulators
- Pressure Switches
- Safety Shut Off Valves

Combustion Chambers and Heat Recovery

- Air-to-Air Heat Exchangers
- Packaged Heaters
- Process Air Heaters

Engineering & Services

- Custom System Design
- Application Engineering, including CFD Modeling
- End-to-End Project Management
- Commissioning & Start-Up
- Safety Inspections & Audits
- Preventive & Predictive Maintenance
- End-User/Expert Training
- Burner System Tuning
- Emissions Testing
- Combustion Efficiency Improvements
- Remote Monitoring
- Cyber-secure Connectivity

Each standard or custom-built system is designed for optimal thermal process control. This approach allows customers to focus on their core competency while saving valuable in-house resources.

Solutions Tailored To Your Application

Honeywell delivers complete, tailor-made thermal process solutions – from fuel delivery and thermal transfer, to burner management and engineering services – in one complete Engineered to Order offering.

Our approach is intended to minimize engineering effort and expense, minimize risk, and reduce commissioning time and total cost of ownership, while ensuring compliance with applicable regulatory standards, worldwide.

Connectivity Is Key

In a highly competitive global marketplace, industrial organizations increasingly seek digital intelligence to manage and operate hundreds or thousands of assets, from a single site or across an enterprise, to address critical operating demands. More and more thermal process industry customers need effective tools to transform their process data into real-time information regarding process performance, equipment health, energy consumption and emissions monitoring.

Honeywell has developed innovative connected solutions to address this development, which can be offered within ETO:

Thermal IQ™ for Remote Process and Equipment Monitoring

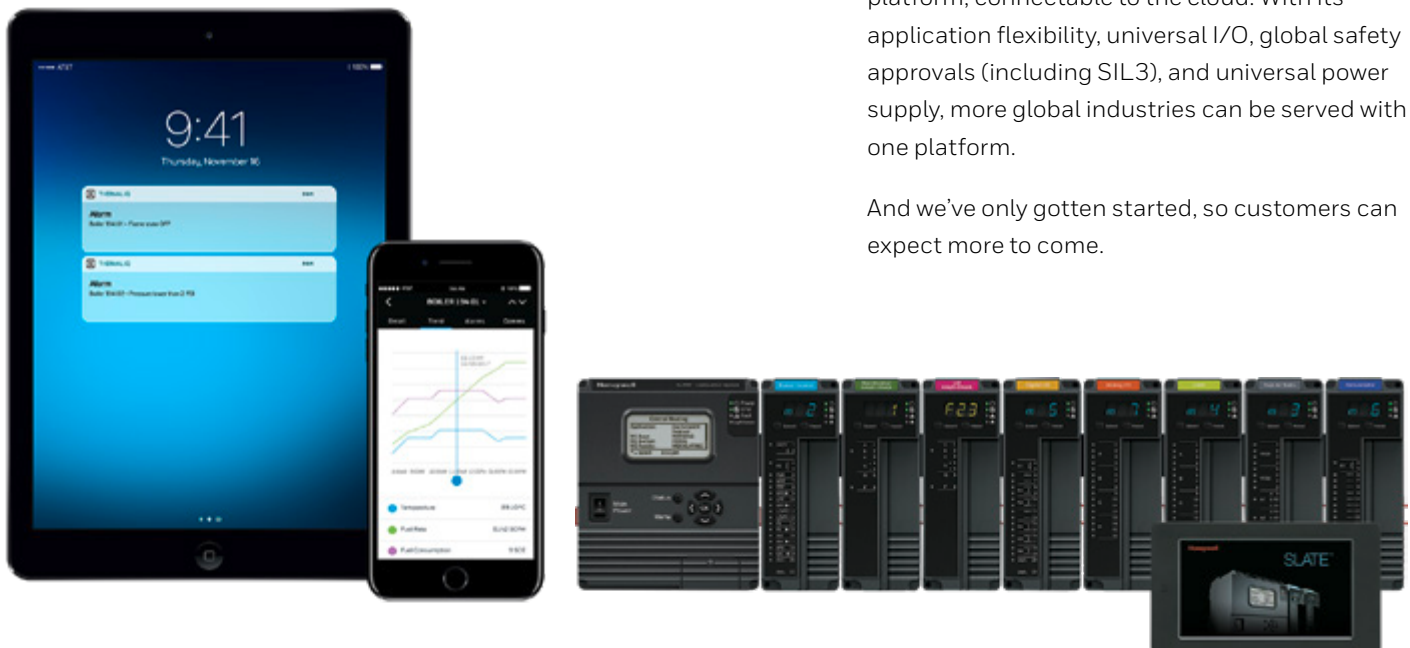
Thermal IQ is a cyber-secure offering designed to connect thermal process equipment to the Honeywell cloud, making critical thermal process data available anytime, so users can optimize operations, predict plant failures and eliminate unplanned downtime.

Thermal IQ is part of the Honeywell Connected Plant portfolio, which is turning data into actionable insight, to help customers improve their bottom line.

SLATE™ Integrated Burner Control

The SLATE solution combines configurable safety with programmable logic – all in one platform, connectable to the cloud. With its application flexibility, universal I/O, global safety approvals (including SIL3), and universal power supply, more global industries can be served with one platform.

And we've only gotten started, so customers can expect more to come.



ETO Step-By-Step Process

Concept & Quote:

A Honeywell sales representative will work with you to discuss your needs. Supported by our expert application engineering team, you get a solution with detailed project costs and delivery estimates.

Schedule:

Our engineering team will manage your project from kick-off to commissioning, and is responsible for applying performance and safety related aspects.

Approve and Finalize:

You will review, approve and formally sign off on the proposal. Following approval, we will finalize the build prints and initiate production.

Build & Test:

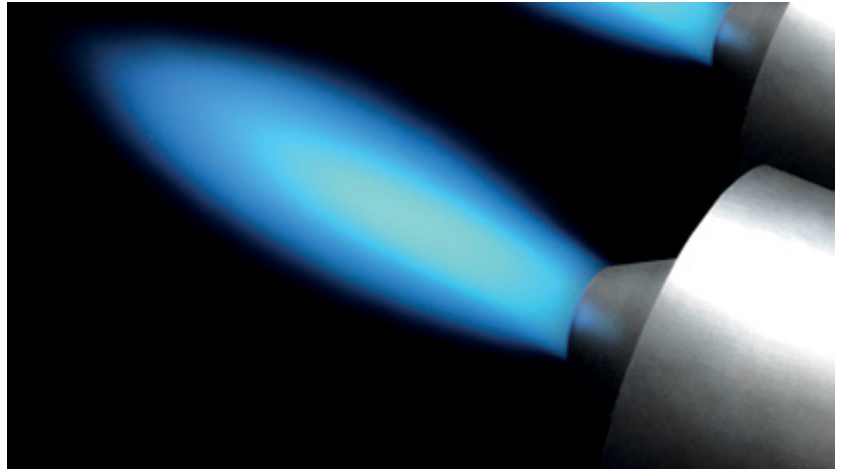
Our experienced staff will build your system to exact specifications, ensuring compliance with codes and standards. Before shipment, each system is function-tested, which ensures smooth, concise commissioning.

Deliver:

After the system is function-tested, we will ship the system and all necessary documentation directly to your facility or job site.

Start-up & Commissioning:

Our experienced team is trained in performing initial start-up and commissioning of new combustion equipment should you need it.



Benefits Of A Single Vendor Approach

Honeywell Thermal Solutions has decades of experience and domain expertise in thermal process applications. As a “one-stop shop” for a wide array of markets and applications, we are committed to providing combustion and heating solutions that are safe, reliable, efficient and clean. Our strong legacy helps customers increase profitability, reduce emissions, optimize connectivity and address their toughest challenges.

With Honeywell’s comprehensive offering, you are assured of:

- One trusted expert partner
- Best-in-class product quality
- Ease of installation
- Confidence in performance
- Reduced commissioning time to get processes running faster
- Less operational risk
- Compliance to local codes and standards worldwide
- Savings in time and engineering cost
- Expert diagnostics and continuous system monitoring
- Long-term asset lifecycle support
- Lowest total cost of ownership



Safe, efficient, clean and reliable operations are key requirements in today's thermal process industries. Production and process systems have to deliver value by operating in the smartest, most efficient manner possible.

Wide Spectrum Of Applications:

- Process Heaters
- Heat Recovery Systems
- Heat Treating/Metal Finishing
- Ovens – Baking, Heating, Drying, Curing
- Thermal Oxidizers
- Make-up Air
- Dryers
- Furnaces
- Heaters
- Boilers – Water, Steam
- Kilns
- Spray Dryers
- Water and Wastewater Treatment
- Incinerators



For more information

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Controls, Honeywell Combustion Safety, Honeywell Combustion Service, Eclipse, Exothermics, Hauck, Kromschroder and Maxon.

To learn more about our Engineered to Order solutions, visit www.honeywellprocess.com/HTS or contact your Honeywell Sales Engineer.

Honeywell Process Solutions

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