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Future-oriented automation solution for burner applications

## Modular Scalability Secures Burner Operation

Automation projects can be time-critical and cost-intensive. Integrated skids and pre-assembled stations can offer effective solutions for modular automation of applications in the process industry. Of particular interest is when turnkey solutions for industrial applications are delivered with pre-tested safety concepts. With HIMA and KROHNE, two leading experts have joined forces to supply complete modules for burner safety and combustion control.

### Trendsetting automation solution

Modular skids offer the complete instrumentation of a SIL 2 / SIL 3 valve train for use in burner applications. Pipe flanges (DIN, ISO, ANSI) ensure simple integration into existing installations. The safety-relevant interlocks, start and stop sequences and the combustion control of fuel and combustion air are incorporated in the SIL 3 controller installed in an IP65-rated control box. Once connected to the mechanical components and power supply, Plug-and-Play BCS PRO Skid is ready for use in burner applications. The simplified integration of standardized interfaces to the process and the supervisory system accelerates many technical processes, which translates, for example, to faster time to market in forward production. MTP enables flexible and simple connection to the supervisory system of the safety controller.

### Advantages of the skid:

- Integration via MTP (plug-and-play)
- Capable of being integrated via fieldbus interface
- Fully certified SIL 2 / SIL 3 valve train for use according to DIN EN 50156 / DIN EN IEC 61511 and EN 298 / EN 13611
- SIL certified total solution (SIL 1 / SIL 2 / SIL 3)
- Parameter setting via configuration routine within higher-level system or separate monitor (HMI)
- No programming necessary
- Fast upgrade of burner systems with high reliability within the required functionality
- Proven process measurement technology designed and configured specifically for the skid



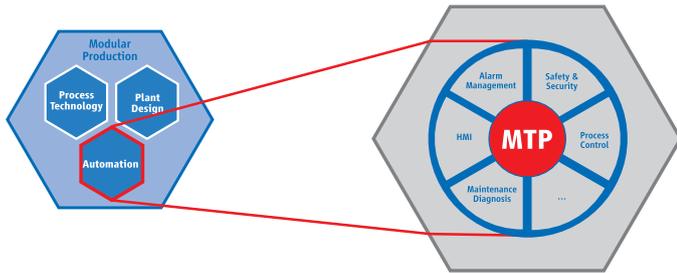
Measurement technology from KROHNE is used in the entire value-added chain of the process industry, e.g., in safety instrumented systems and complex measuring systems. HIMA provides the safety solution to operate burner systems with high reliability in the required functionality. And what's more, up to safety classification SIL 3.

## Module Type Package (MTP)

MTP helps harmonize various aspects of future production in the process industry. MTP is considered a standardized, non-proprietary description of modules for process automation. Using MTP, the skid's functions and process engineering are transferred to the process control system. The basic philosophy

is that many devices with individual functions, manufactured by different companies, can exchange information with each other via the common MTP data structure (plug&play). MTP offers multiple time and cost benefits, including quicker integration and lower coordination effort. With programming no longer necessary, system integration is reduced to parameter setting.

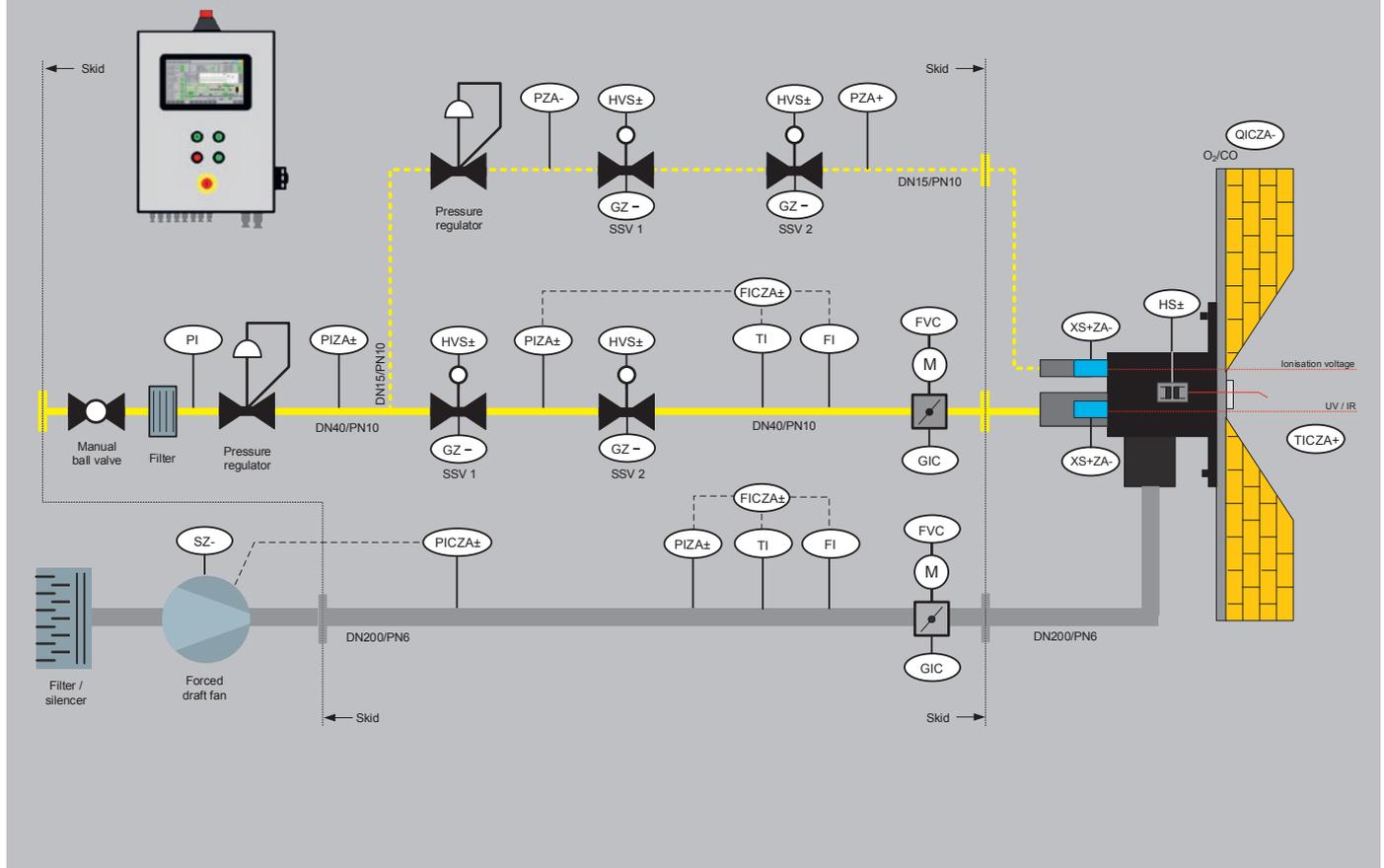
## Modular production improves efficiency



Modular automation underscores the benefits of modular production and helps meet the challenges of the process industry through:

- Increased production flexibility to manufacture more than one product with the available resources (multipurpose production systems)
- Improved efficiency by reusing physical equipment, reducing the technical effort required to rearrange the equipment
- Reduced time to market

## Process Know-How Included



Plug-and-Play BCS PRO Skid includes a preconfigured HIMA safety controller for typical burner applications.

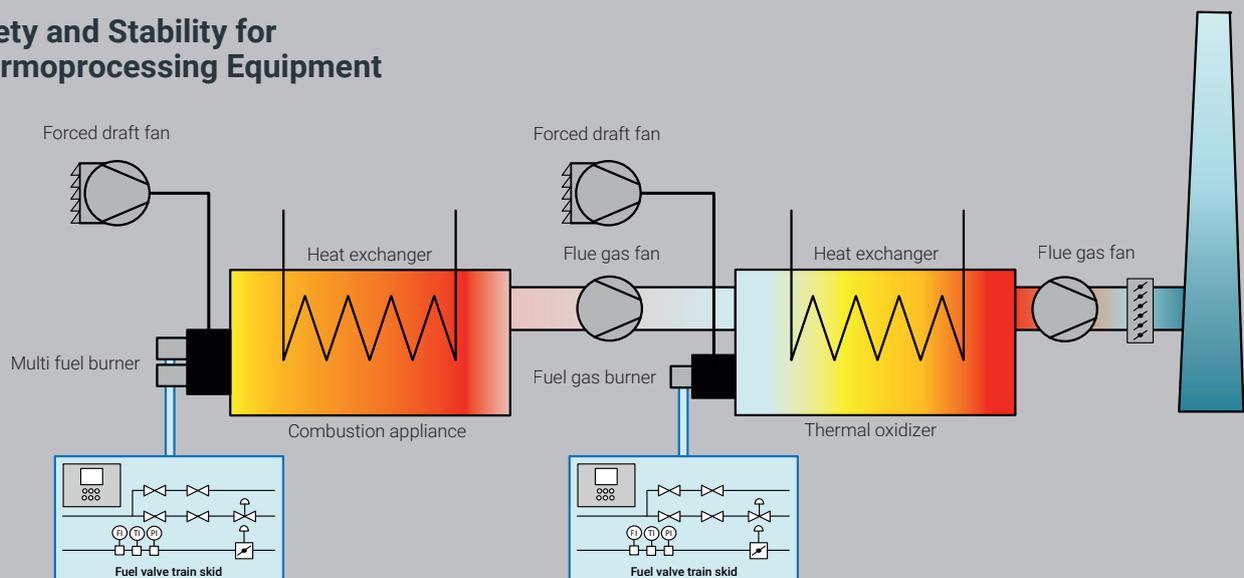
#### Availability of skids for the following burner capacities:

- 1000 kW DN 40 / PN 10 for gas (e.g. natural gas)  
DN 200 / PN 6 for combustion air
- 2500 kW DN 65 / PN 10 for gas (e.g. natural gas)  
DN 300 / PN 6 for combustion air
- 5000 kW DN 100 / PN 10 for gas (e.g. natural gas)  
DN 400 / PN 2,5 for combustion air
- 10000 kW DN 150 / PN 10 for gas (e.g. natural gas)  
DN 400 / PN 2,5 for combustion air

#### Certifications:

- Applicable up to SIL3 according to EN 50156
- Applicable up to SIL3 according to IEC 61511
- Applicable according to ANSI/ISA 84.00.01
- Applicable according to ISA TR 84.00.05

## Safety and Stability for Thermoprocessing Equipment



## Safety and control systems for burner applications:

**HIMatrix F, the SIL 3 safety system from HIMA, includes the following TÜV-certified functionalities:**

- Start/stop sequence for pre-purging
- Start/stop sequence for ignition
- Start/stop sequence for the main burner
- Fuel / air ratio monitoring
- Fuel / air ratio control
- Load or power control
- O<sub>2</sub> correction control
- Air factor ( $\lambda$ ) correction curve

**Process instrumentation for use in safety-related applications:**

- OPTIBAR PC/PM 5060: Pressure transmitter for process pressure applications
- OPTIBAR DP 7060: High-performance differential pressure transmitter with integrated line pressure measurement, also for flow measurement using orifices
- OPTITEMP TRA-F: Resistance temperature assembly (RTD)
- OPTISWIRL 4200: Vortex flowmeter

**Further instrumentation:**

- Safety shutoff valves according to EN 161, class A
- Pressure limiter according to EN 1854

**Optional:**

- SIL 2 / SIL 3 flame detector (main burner)
- Ionization relay (igniter)
- O<sub>2</sub> / CO sensor (zirconium)

## About HIMA

The HIMA Group is the world's leading independent provider of smart safety solutions for industrial applications. With more than 35,000 installed TÜV-certified safety systems worldwide, HIMA qualifies as the technology leader in this sector. Its expert engineers develop customized solutions that help increase safety, cyber security, and profitability of plants and factories in the digital age.

For over 45 years, HIMA has been a trusted partner to the world's largest oil, gas, chemical, and energy-producing companies. These rely on HIMA solutions, services and consultancy for uninterrupted plant operation and protection of assets, people, and the environment.

HIMA's offering includes smart safety solutions that help increase safety and uptime by turning data into business relevant information. HIMA also provides comprehensive solutions for the efficient control and monitoring of turbomachinery (TMC), burners and boilers (BCS), and pipelines (PMC). In the global rail industry, HIMA's CENELEC-certified SIL 4 COTS safety controllers are leading the way to increased safety, security, and profitability.

Founded in 1908, the family-owned company operates from over 50 locations worldwide with its headquarters in Brühl, Germany with a workforce of approximately 800 employees.

For further information, please contact us:

### HIMA Applications

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## About KROHNE

KROHNE is your reliable partner for process instrumentation and automation. As our client, you benefit from our ability to solve your applications with matching measurement solutions; we offer a complete product portfolio, industry specific system solutions and complementary services for instrumentation projects of any size.

By having specialised in industrial process measurement since 1921, we have gained an enormous amount of application knowledge in various industries that is integrated into our products, solutions and services. We have truly mastered the physical principles our meters are based on: our ability to utilise physical effects and to find a matching measuring solution time after time are the reasons we are trusted by clients worldwide.

The primary measured value is as accurate as possible to avoid consecutive faults that might affect your process control. It also enables our meters to measure reliably, even under changing or difficult process conditions.

For further information, please contact us:

### KROHNE Solutions

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Or visit us online:

 <https://de.krohne.com/en/solutions/flow-metering-solutions>

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