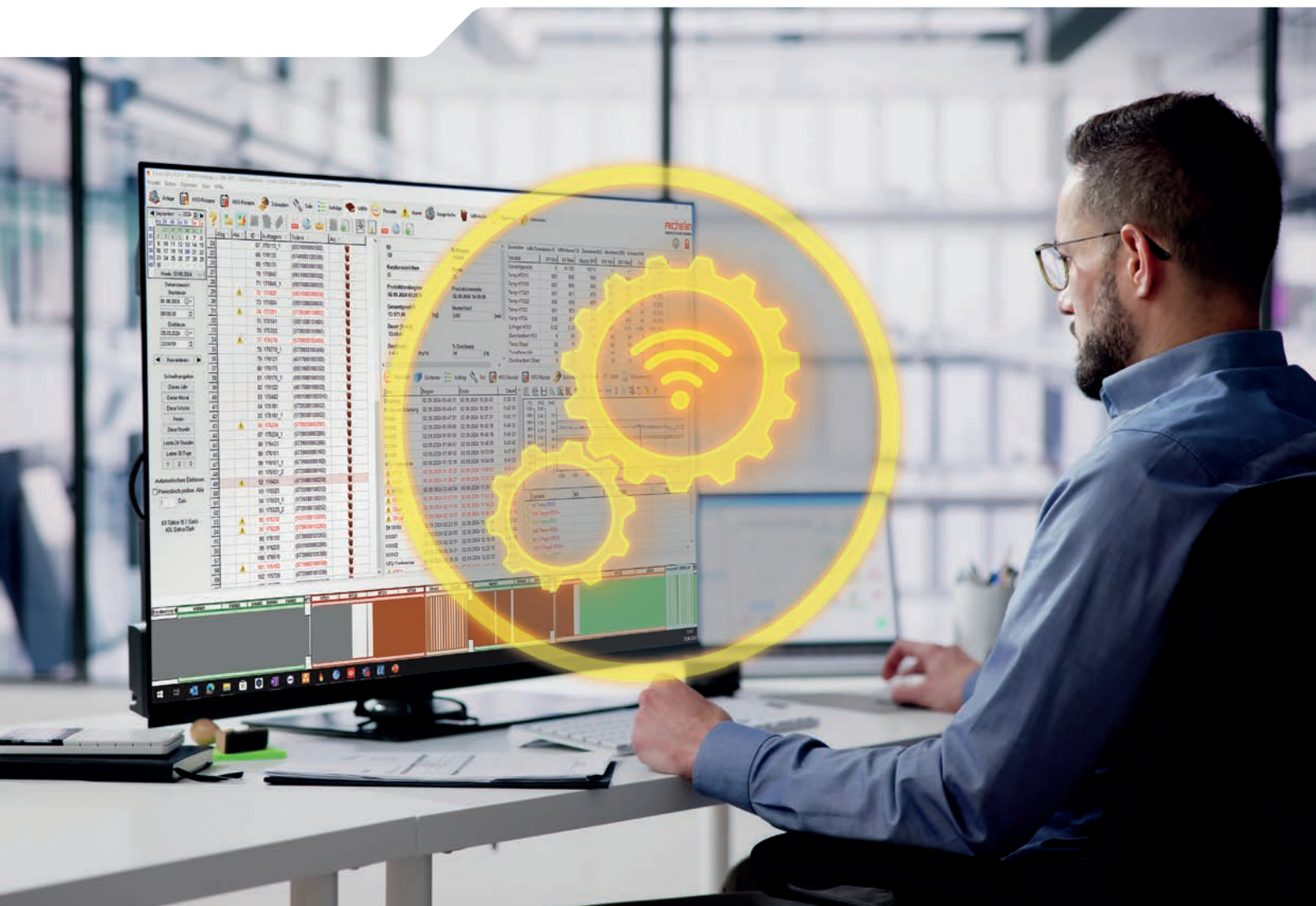AICHELIN
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# Process Control System FOCOS 4.0

# We Create Leading Global Solutions for Heat Treatment

With 1,000 employees, AICHELIN Group is one of the world's leading providers of heat treatment solutions. These include industrial furnaces, industrial heating technology, control and automation systems, Industry 4.0 solutions and services. The company, whose roots date back to 1868, supplies leading companies from the fastening technology, automotive, drive and transmission technology, aerospace, tool, bearing and semi-finished products, contract hardening, steel and forging technology, machinery and plant engineering and other sectors such as medical technology with state-of-the-art standardized or customized heat treatment systems and technologies.

AICHELIN has subsidiaries in Austria, Germany, Slovenia, France, and Turkey. Its global presence means that there are also subsidiaries and offices in China, India, and the US as well as a sales network in another 22 countries.

**AICHELIN** group

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# Precise Control and Comprehensive Security

The operation of heat treatment plants can generally be divided into two areas: Plant control (programmable logic controller) incl. HMI (Human Machine Interface) and the process control system.

The FOCOS 4.0 process control system developed by AICHELIN provides a clear overview of your production processes with central real-time data and optimized evaluations. It simplifies your analyses with user-friendly dashboards and automated reports. The software also enables seamless integration of your furnace system data into your IT infrastructure allowing you to make informed decisions faster and more efficiently.

Combined with the AICHELIN system controls (PLC / HMI), which ensure high availability, flexibility, and safety of your systems, you can create a comprehensively optimized and safe production environment. The modular system control of your AICHELIN plant can be supplemented by the FOCOS 4.0 process control system on request.

## Your advantages

- Simple evaluation of your production (incl. "offline work stations").

- Reliable and tamper-proof documentation.

- Perfect analysis functions - even for your maintenance.

- Connection options for data transfer and forwarding to your existing production plants.

- Upgrade of existing FOCOS systems possible - for a significant increase in performance with minimal effort.

- Wide range of expansion options for future-oriented applications.

- All productions processes at a glance.

# FOCOS 4.0
# Overview and Functions

**1. CLEAR PRODUCTION PRESENTATION**
A clear and structured presentation of your production processes.

**2. PRODUCTION DETAILS**
Displays selected orders with all relevant information such as ID, order number, weight and production time.

**3. TRANSPARENT ORDER TRACKING**
Overview of which order is where in the plant.

**COMMENTS**
Highlighting of orders and batches with quality-relevant fault messages.

**4. REPORT PREPARATION**
Create reports quickly and easily in line with your individual specifications.

**5. GRAPHIC DISPLAY**
For detailed evaluations and perfect analysis functions.

**6. SIMPLE SELECTION OF TIME PERIODS**
**Calendar function with integrated data view:**
Conveniently select time periods and receive an integrated overview of the relevant data.
**Targeted definition of time periods:**
Define time periods precisely according to your needs.
**Selection of already defined areas:**
Quickly access predefined or selfdefined time ranges.

**7. ZONE DATA**
Display of important zone values (min. / max. values).

**8. DETAILED VIEW OF PREDEFINED PROCESSES**
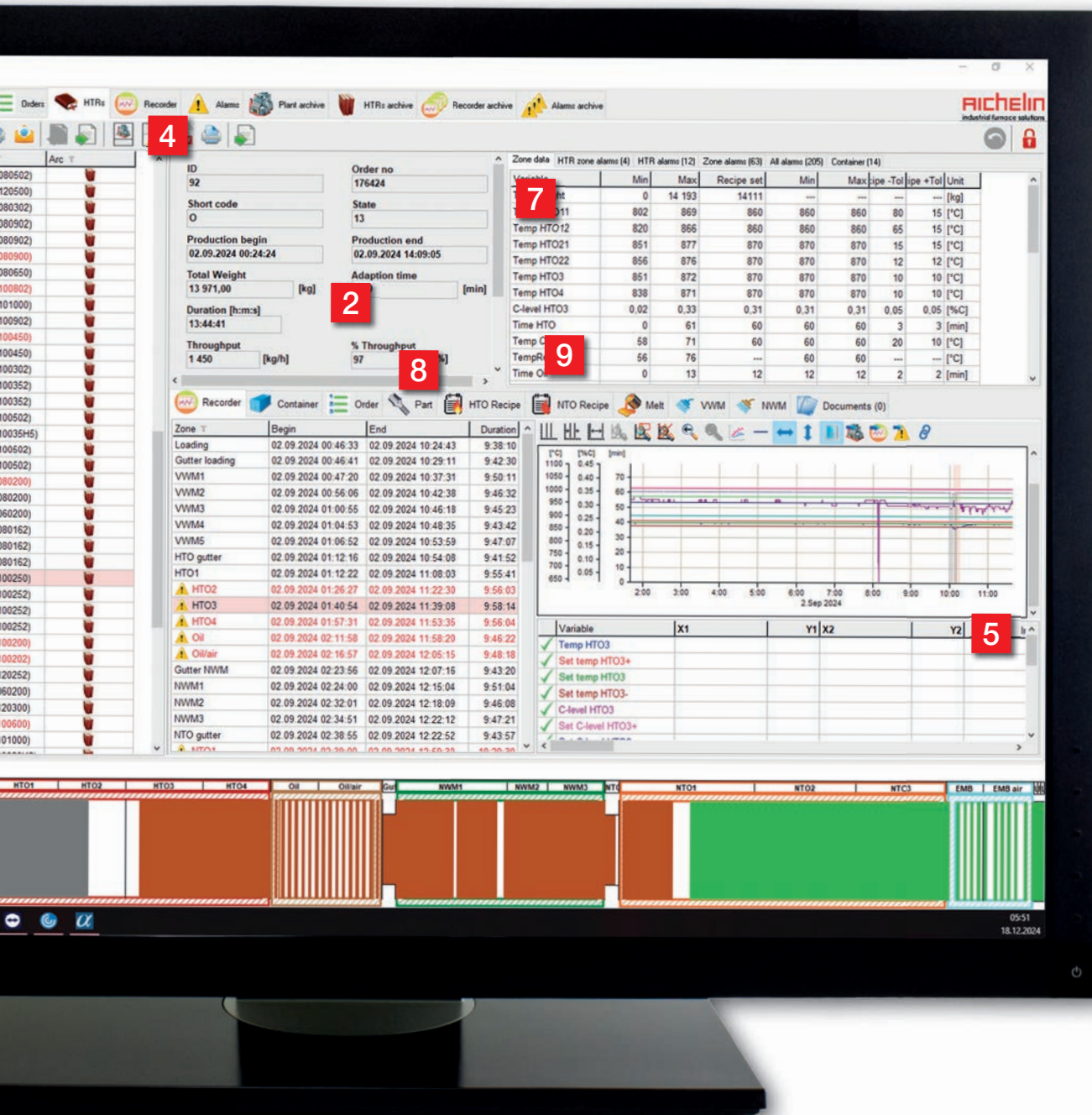Comprehensive insights into orders, parts, recipes and more.

**9. ERROR MESSAGES**
Displays either quality-relevant or all messages for the selected order and provides a link to the graphic display.

**10. IMPORT AND EXPORT FUNCTIONS**
Customizable to your needs: Easily adapt the import and export functions to your specific requirements.
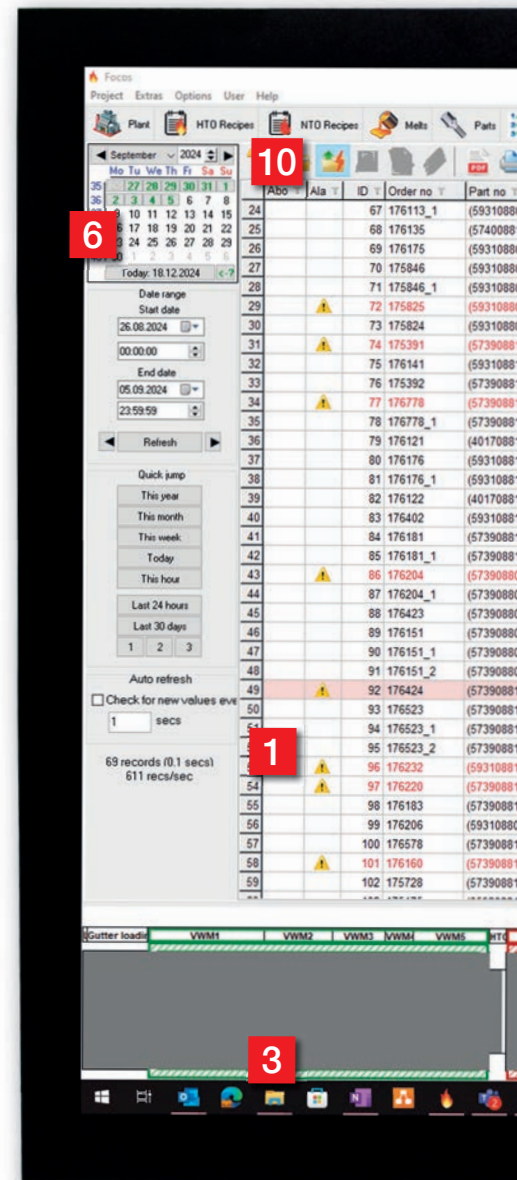
## ADVANCED FUNCTIONS

- **Time travel function for fast troubleshooting**
  Visual and to-the-second navigation through production and process data
- **Merging of recorder curves and fault messages**
- **Easy export for further processing**
- **Fast loading time**
- **Intuitive handling**

# Further Optional Functions

## CONDITION MONITORING (CM)

The Condition Monitoring (CM) module in FOCOS 4.0 offers an effective solution for predicting and preventing unplanned failures of critical plant components. Integrated into the statistical process control, the CM module visualizes anomalies and enables early preventive maintenance measures to avoid expensive downtimes. By continuously monitoring vibrations, temperatures, and current consumption, creeping changes in condition are detected early on and visualized.

A key advantage of the CM System is based on the PF interval: It uses the advance warning time between the first signs of a deviation ("Potential Failure") and the actual failure ("Failure"). This early warning system enables proactive maintenance, increases system reliability and minimizes unexpected downtime.

The **CM cockpit** provides clear, easy-to-understand monitoring information. It consists of three main displays:

- **Trend:** Shows the direction and intensity of changes in a variable over time.
- **Activity:** Measures the dynamics of a variable, how far it fluctuates between the standard curve and the warning or action limits.
- **MW deviation** (mean value deviation): Shows how far a variable deviates on average from its norm.

A **status traffic light** provides an overview of the status of the variables at a glance. The worst of the three values determines the displayed traffic light color (green, yellow or red) and thus allows for a quick assessment. This clear visual representation makes it possible to recognize immediately when preventive measures are required to avoid major failures.
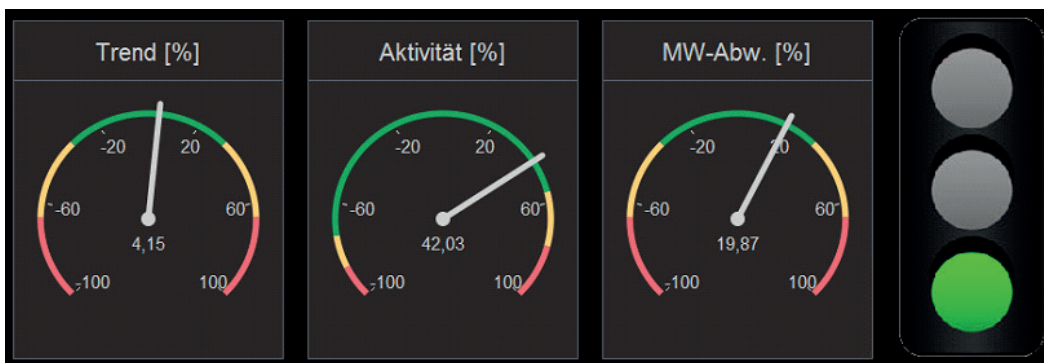
## MULTIEDIT FUNCTION FOR DATA ENTRY

The MultiEdit function offers maximum flexibility: When MultiEdit is switched off, you edit a single line precisely, while multiple lines can be selected. If MultiEdit is activated, you can edit several lines at the same time to save time - ideal for quick, repeated changes such as adding comments or adjusting settings. This makes work much easier, especially with large amounts of data.

Another advantage is that copying and deleting multiple lines is always possible, regardless of the mode. In the order table, you can adjust the order of individual lines using drag & drop when MultiEdit is deactivated. When MultiEdit is activated, you benefit from the option of editing or deleting several lines simultaneously - saving valuable time.

## VERSION HISTORY

With version history for recipes, programs and parts tables, you always have an overview of all changes. Every saved change is automatically recorded as a new version so that you can access previous versions at any time. This not only provides transparency, but also security, as all changes are fully documented.

The different versions of an object can be conveniently displayed via the table pop-up menu. An additional tab shows the history, highlighting differences between versions. This makes it easier to identify changes quickly. If a new version of a linked object is created (e.g. HTO recipe), the associated object is automatically versioned - a major advantage for the traceability of linked data. You can also adjust the filter to display either only the versions of a specific object or all versions in the history.

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