



EMC.ProcessDataAcquisition

Effectively record and monitor process data

EMC.ProcessDataAcquisition makes the information generated within a process, such as temperature, pressure, energy, etc., usable. **Visualize and document deviations in the process.** Evaluate the **process parameters for the order or article** over longer periods of time. The linking of process values with machine and order data and the consideration of process sequences **create the necessary conditions for transparent traceability and holistic analysis and process monitoring** of production.

Status Quo

Can every order be clearly assigned and fully tracked after X amount of time?



EMC.ProcessDataAcquisition

Continuously monitor and document processes



Process data is data that documents the **actual parameters with which a process was carried out**. As a rule, this data is **used by the system controls to regulate the process**. This **information**, such as temperatures, pressures, speeds or measured values from test systems, **usually remains in the control systems and is not used for other tasks**.

Linking the process values with machine and order data and taking the process sequences into account creates the **necessary conditions for transparent traceability and a holistic analysis of the production process**.



EMC.ProcessDataAcquisition

Easily fulfill proof of certification



The **EMC.ProcessDataAcquisition module** makes it **easier to comply with process sequences and required process standards** such as CQI-9 for heat treatment processes. It **offers optimum recording, evaluation and archiving of process data** for mobile continuous furnaces, stationary chamber furnaces, hardening systems or blasting systems.

Pos.	Machine	Worker	Start	End	Material batch
	Hardening plant 2		09.02. 03:03	09.02. 04:48	
	Hardening plant 4		07.02. 16:51	07.02. 23:03	
▲	Hardening plant 4	Employee 027,	07.02. 16:51	07.02. 19:03	
	Meas. value group	Measured value	Min Act.	Max Act.	Min Goal Max
	Chamber 1	Temperature	254.1 °C	405.5 °C	390 °C 400 °C 410 °C
▶	Hardening plant 4	Employee 042,	07.02. 21:52	07.02. 23:03	
	Hardening plant 2		07.02. 21:41	07.02. 03:53	
	Hardening plant 2		08.02. 01:50	08.02. 01:50	
▲	Hardening plant 2		08.02. 01:50	08.02. 01:50	
	Meas. value group	Measured value	Min Act.	Max Act.	Min Goal Max
	Chamber 1	Temperature	390 °C	390 °C	390 °C 400 °C 410 °C
	Hardening plant 4		09.02. 21:54	10.02. 00:09	
	Hardening plant 2		09.02. 03:03	09.02. 04:48	
	Hardening plant 4		10.02. 21:54	11.02. 04:25	
	Hardening plant 4		09.02. 13:39	09.02. 17:36	
	Furnace 3		09.02. 17:10	09.02. 19:39	
	Hardening plant 2		07.02. 00:14	07.02. 04:02	

Charge Protocol - diagrammed

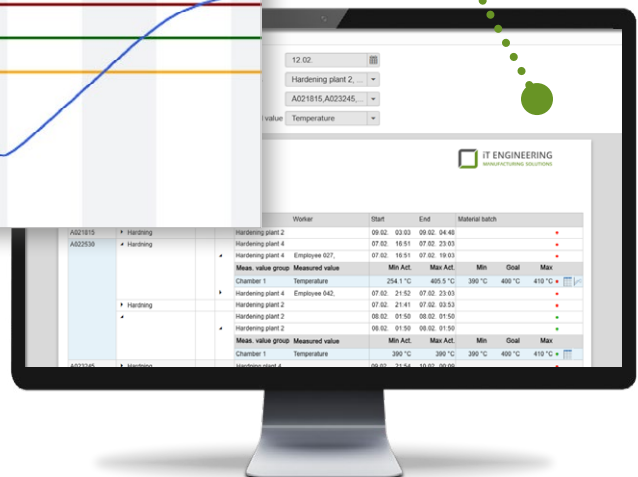
Order: A025827 Machine: Hardening plant
 User: Employee 043 Material charge:
 Measurement group: Chamber 1 Measurement: 7221

Temperature

Hold time UTOL GOAL OTOL CURRENT



Simple proof, for example in the event of a complaint.



The acquisition principle

The acquisition **takes into account the process value, the target value, the tolerances and the reference to the order.** The inclusion of the process sequence during recording **ensures reliable interpretation.**

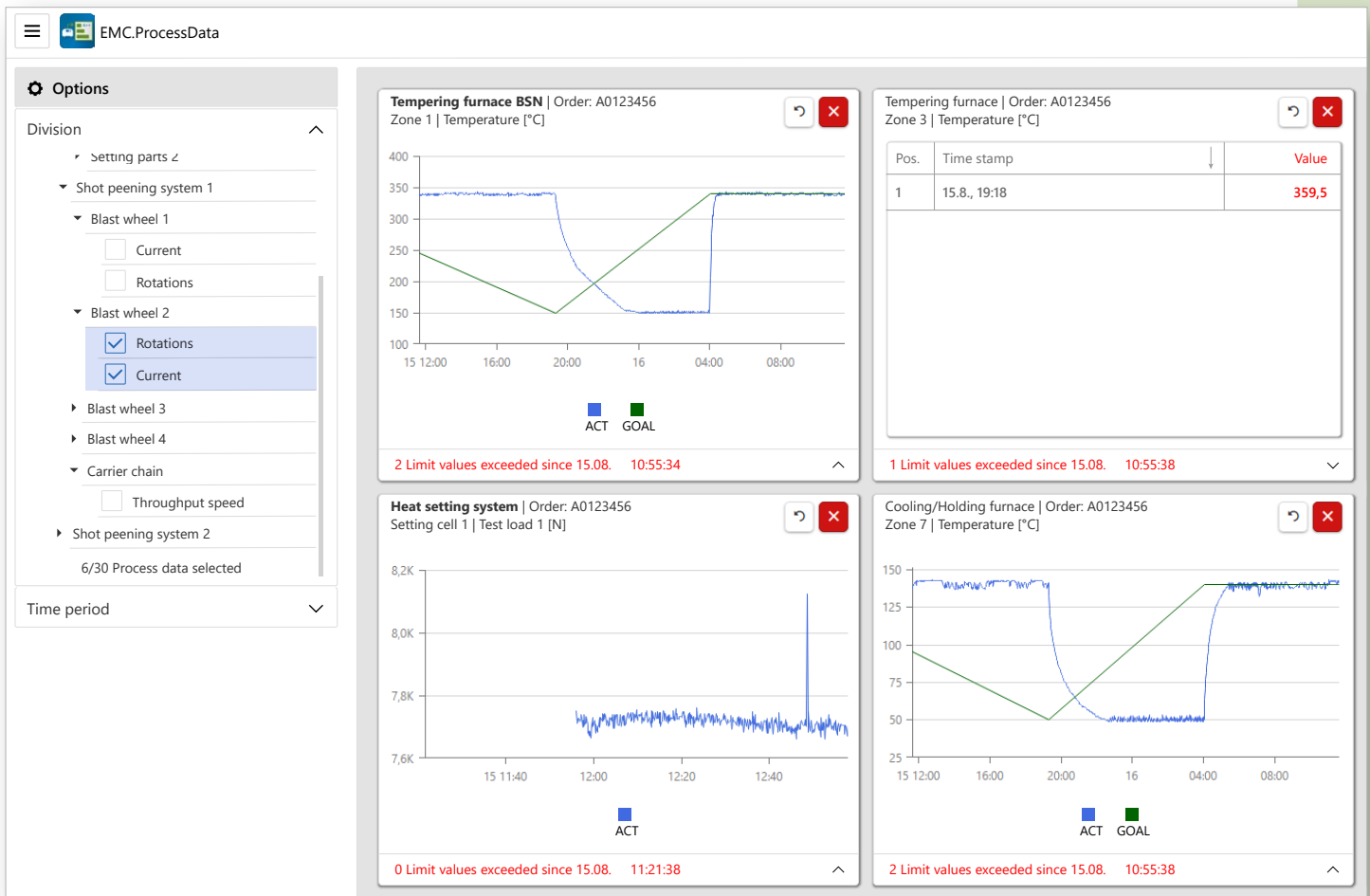
At a **definable interval** (e.g. every 2 minutes) or based on an event, the data is **read from the furnace, displayed on the MES terminal and stored centrally.**

Different recording sequences can be configured for recording:

- continuous
- triggered (time or parts)

Deviations from the tolerance range are displayed directly on the MES terminal. Through the definition of minimum or maximum values, an **alarm signal can be triggered and displayed if limits are exceeded.**

Real-time display in the dashboard



Visualization and analysis

The process data, such as temperature data, is managed on an **order and item basis** and can be evaluated using **clear reports**. This makes it **easy to monitor the tempering process**. The temperature curves are **transparent and can be traced at any time**.

Dashboards with real-time information on machine statuses, causes of downtime, order progress and production performance **enable quick decisions to be made directly on the shopfloor**. The temperatures of interlinked tempering furnaces can also be displayed directly for the machine.



Hall 5

Winch machine 7

Production since 00:16 h

Performance: 99,33 %

Goal	Act.
15,02	14,92
Pcs./min.	Pcs./min.

Order: **A0123456**
Article: **P76543**

Cooling/holding furn.

Stillstandserkennung since 00:00 h

Zone 9	°C	Zone 10	°C
Goal	Act.	Goal	Act.
140	140.3	140	142.3

Order: **A0123456**
Article: **P76543**

Tempering furnace

Production since 00:00 h

Zone 11	°C	Zone 12	°C	Zone 13	°C
Goal	Act.	Goal	Act.	Goal	Act.
340	340.5	360	364.2	360	359.7
Zone 14	°C	Zone 15	°C		
Goal	Act.	Goal	Act.		
360	360.3	360	364.1		

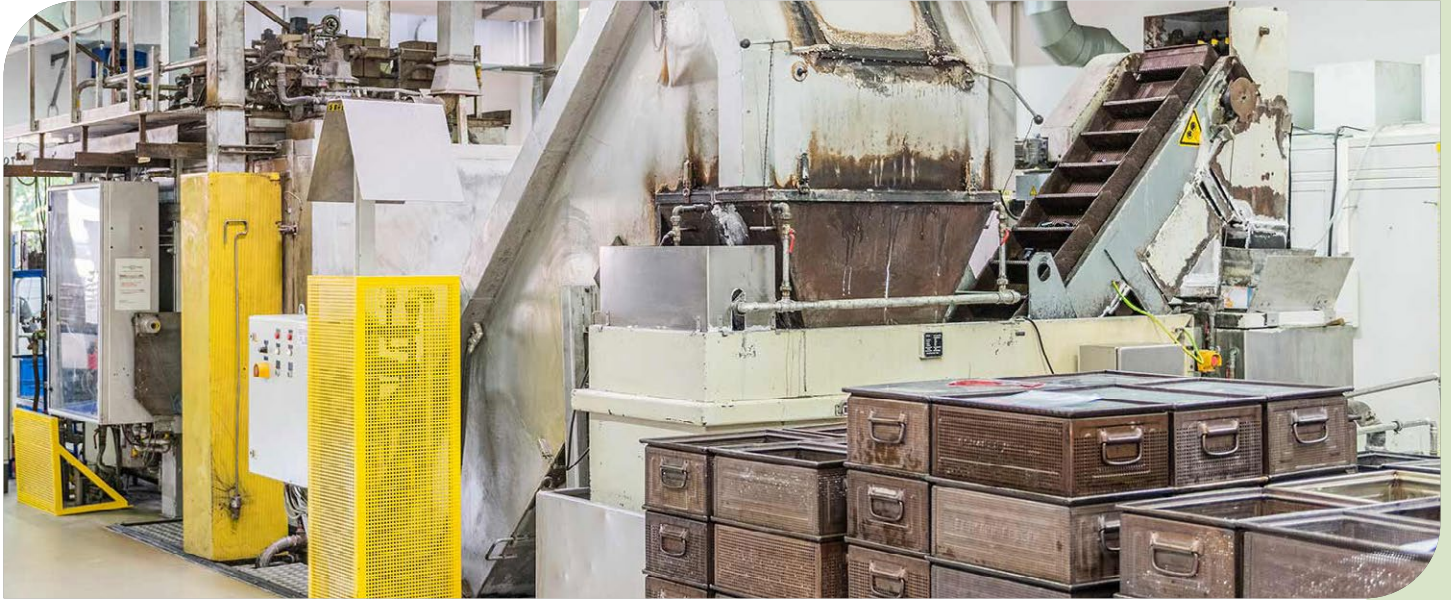
Order: **A0123456**
Article: **P76543**

Shot peening sys. 2

Production since 00:16 h

Wheel 1	A	Wheel 2	R/min.	Wheel 3	A
Goal	Act.	Goal	Act.	Goal	Act.
30	30	1150	1173.1	30	29.9
Wheel 4	R/min.	Wheel 5	A	Wheel 6	R/min.
Goal	Act.	Goal	Act.	Goal	Act.
1150	1171.2	30	29.9	1150	1171.9
Wheel 7	A	Wheel 8	R/min.		

Order: **A9876543**
Article: **P65432**



Configurable which value is recorded

Measured value list

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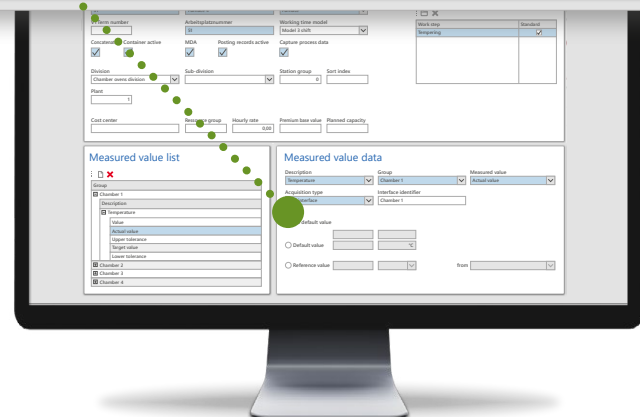
Group
☑ Chamber 1
Description
☑ Temperature
Value
Actual value
Upper tolerance
Target value
Lower tolerance
☑ Chamber 2
☑ Chamber 3
☑ Chamber 4

Measured value data

Description	Group	Measured value
Temperature	Chamber 1	Actual value
Acquisition type	Interface identifier	
OPC interface	Chamber 1	
<input checked="" type="radio"/> No default value		
<input type="radio"/> Default value		
<input type="radio"/> Reference value		

The values to be recorded are **reliably configured in the master data for each system:**

- Number of chambers
- Actual value
- Target value
- Lower tolerance
- Upper tolerance
- Target value specifications
- Lead time
- Holding time

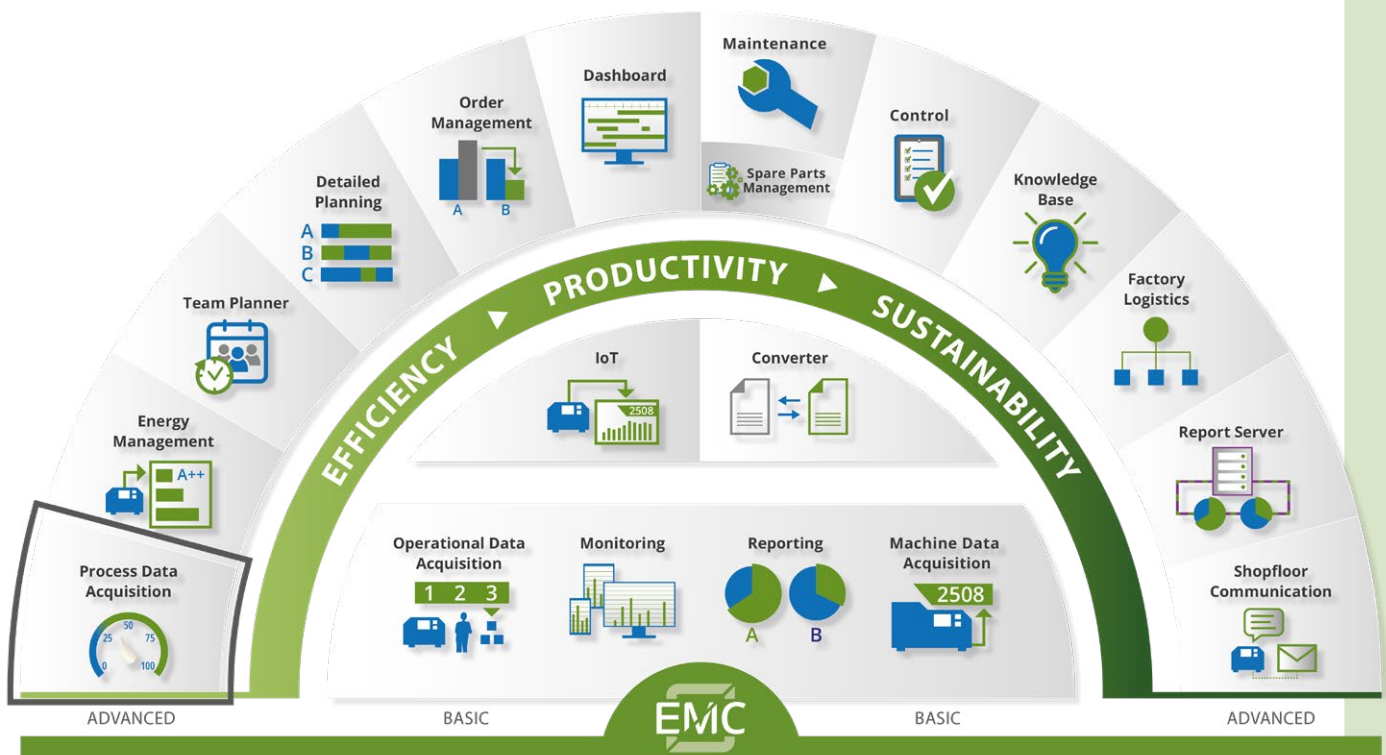


MES Software EMC

The solution for your smart networked manufacturing

Our user-friendly MES Software EMC controls all digital processes on the shopfloor **from planning, implementation, maintenance to traceability, shipping, production orders and a sustainable evaluation.**

It adapts completely to your needs, integrates into your existing IT landscape and brings together the data streams from ERP and the shopfloor.



The **modular architecture** of the MES Software EMC offers you the important **freedom and flexibility** in the implementation of your future-oriented production. Together with the **central MES database**, it is the basis for a **customer-oriented implementation - step-by-step or holistically - individual modules or as a complete system.**

No matter which solution you choose, with EMC you are always one step ahead and have the **best possible transparency** in production. All with the aim of **increasing your efficiency.**



iT Engineering Manufacturing Solutions GmbH is your provider of a well-developed Manufacturing Execution System in production management.

As an IT and MES expert in the metal forming industry and thanks to our large network of partners and memberships in associations (including VDFI and netzwerkdraht e.V.), as well as the best contacts with machine manufacturers, we know exactly how to obtain the important data and how to use it to digitalize processes and thus increase efficiency and productivity in manufacturing.

Our MES Software EMC acts as a central information hub and, by integrating the production data, ensures integration of production data for transparent production processes, flexibility and cost efficiency.

With a high level of technical and industry competence as well as many years of experience and expertise, we accompany you personally and step by step in transforming your production into a digital factory.

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