

# QualiMaster MT1

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Fully automatic sinter feed testing ensures high and stable sinter quality by measuring bulk density, permeability, and moisture.



### Sinter mix preparation by Eirich

Eirich supplies mixing and agglomeration systems for feeding the sintering belt. Measuring and control technologies complete the product line and assure high quality.

### Eirich QualiMaster MT1

The Eirich QualiMaster MT1 is designed for fully automatic sampling and analysis of granulated sinter feed. Continuous optimization and constant supervision of the sintering process are the key to meet productivity goals and other business objectives in today's competitive environment in ironmaking. Eirich QualiMaster MT1 comprehensively automates and digitalizes the sampling process. The data obtained enables expert systems to fully exploit their advantages in terms of productivity and efficiency. Important parameters for the process control of a sintering plant are the moisture content, the permeability and the bulk density of the sinter raw mix.

### Robot

The robot is the reliable and flexible device for taking and handling samples in constant quality.

### Sampling

The sampler takes representative samples directly during material discharge from the conveyor to the feeding hopper of the sintering machine.

### Sample preparation

This complete sample is fed to the rotary sample divider. Cups for collecting the individual samples are completely filled in several layers. When the cups with the individual samples are removed by the robot every cup contains the same bulk volume.

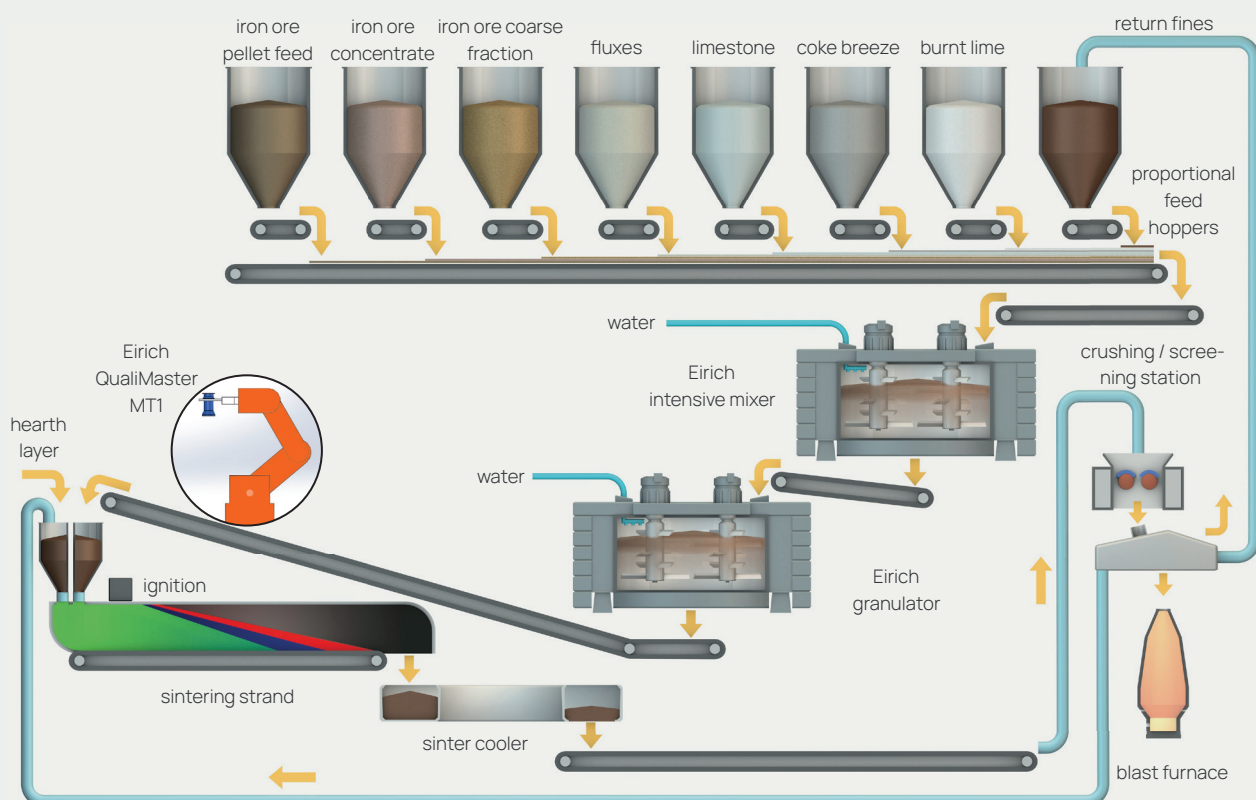
### Measurements

The robot puts several individual samples onto a scale, one after another, to determine the bulk density. The corresponding sample is subsequently placed onto the device for measuring the moisture or permeability. Additional measuring stations can easily be added.

### Laboratory samples

To perform tests in the laboratory, samples can be removed from the robot's safety area through a security gate.

### Clean-up:



System for the preparation of sinter with QualiMaster MT1

After measuring, the cups are cleared, cleaned and restored. The waste container below the rotary sample divider is cleared and returned.

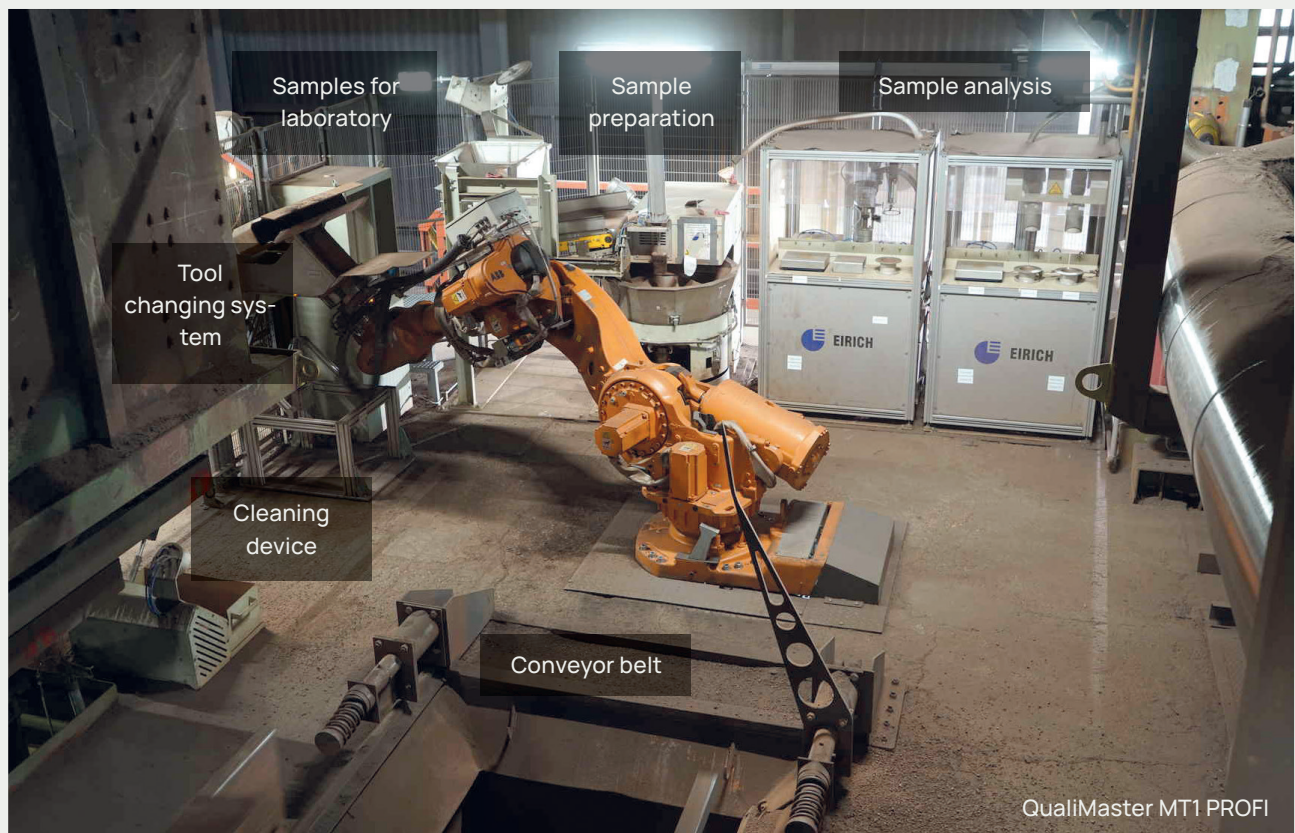
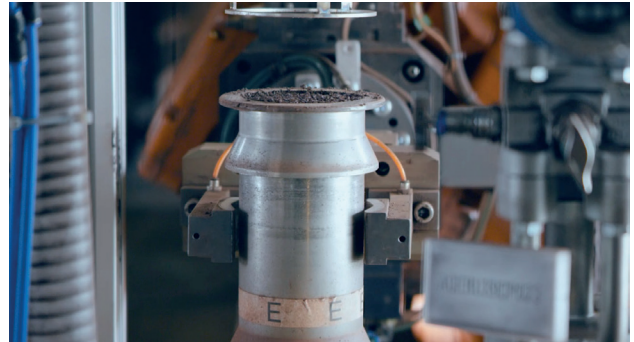
Technical characteristics\*

Primary sample:	20 - 40 liters
	6 times per hour
Individual sample:	2 liters
	6 pieces
Moisture values:	6 per hour
Density values:	24 per hour
Permeability values:	24 per hour

\*All values are approximate data

## Benefits

- Standardized sample taking
- Fully automatic sample preparation and analysis
- Improved operator safety
- Fast response to changing process parameters
- Greater flexibility in the selection of raw materials
- Increased plant productivity
- High and stable sinter quality
- Substantial energy savings thanks to optimized process control



## Eirich QualiMaster MT1 modular concept

The robotized system makes it possible to select a great variety of functions according to individual requirements.

The **ECO** line operates with direct sampling. The cups are directly filled in the material flow of the sinter belt.

The **PROFI** line works with representative sampling and a rotary sample divider. Thus the **PROFI** line achieves the highest quality of measurement results.

For the measurements, an individual selection of the units for moisture control, bulk density and permeability is possible. Additionally, the security gate for collecting samples out of the safety area can be added to the system.

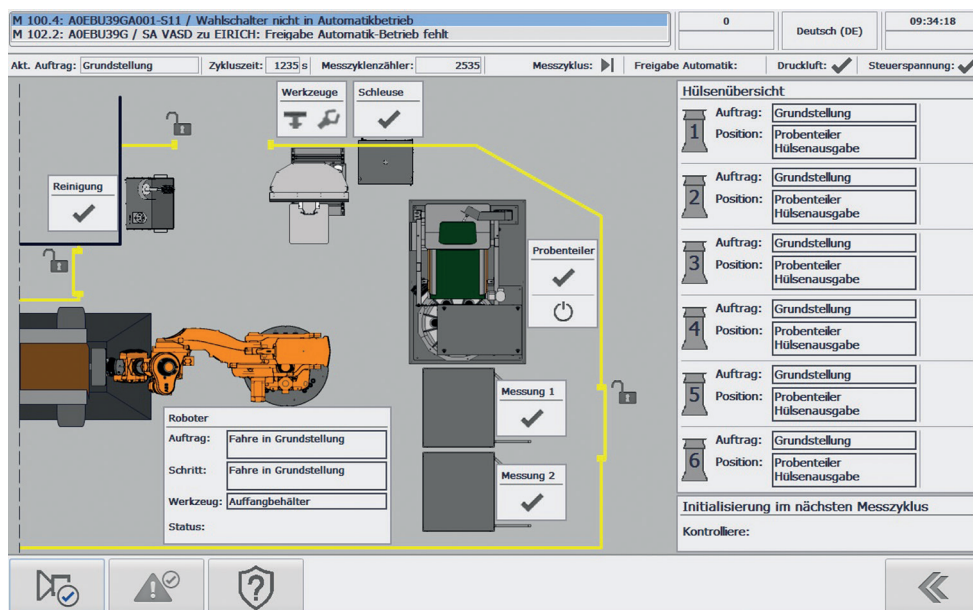
### The Eirich Control system – flexible and professional

The control of the QualiMaster MT1 is designed as a modular system. The operator can allocate one or more measuring tasks to each individual sample. The control optimizes the entire process online. Depending on the occupancy of the measuring stations, measuring tasks are brought forward or postponed. This self-learning software concept simplifies the time optimization of the process for the operator.



QualiMaster MT1 ECO

The controller comprehensively records and archives the various measurement results. Along with the basic results of measurement tasks, the adjustable machine parameters required for calculations and the measured variables of the individual sensors are also stored. In addition, the measurement results are evaluated according to adjustable thresholds and marked as valid or invalid. The data are transferred to the expert system via interface. This enables the expert system to perform a comprehensive evaluation and to react quickly to spontaneous events / process fluctuations. Eirich offers a control system from a single source. Hardware and software are engineered and implemented at Eirich in order to guarantee an integrated system with a high level of functionality. The Eirich control is able to communicate with different robot systems.



Eirich control interface

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