

ABP BASIC SAFETY PACKAGE

Designed for safety, comfort
and reports.

GROUND DETECTOR

**AUTO TEST OF GROUND
DETECTORS**

**3RD GROUND DETECTOR FOR
TWINPOWER SYSTEMS**

**LEAKAGE CURRENT DETECTOR FOR
SINGLE POWER SYSTEMS**

HEDGEHOG COILS

**MANUAL TEST OF
BATH GROUNDING**

ABP | **PEOPLE.
INDUCTION** | **TECHNOLOGY.
SUCCESS.**

THE HIGHEST LEVEL OF SAFETY FOR YOUR FOUNDRY EQUIPMENT HAS A NAME: ABP BASIC SAFETY PACKAGE.



Safety plays a major role in the world of automation. This applies both to the protection of employees at the machines and to the safe operation of the systems. With the ever-increasing complexity of machines and plants, the requirements for functional safety are also continuously increasing. The standard of safety for the operation of your machines and plants is defined by our newly designed **"ABP Basic Safety Package"**.

It offers you a high level of safety and protection. Even today, it is part of the basic equipment in every new ABP plant. With the **"ABP Basic Safety Package"**, your equipment is once again state of the art. From now on, the plant can be operated safely and effectively.

Our package is designed in such a way that it is also suitable for retrofitting in existing plants - for a reduction of downtimes, a long machine life and more safety for the employees. **In this brochure, we present all the safety features of our new standard.**

ABP | PEOPLE.
INDUCTION | TECHNOLOGY.
SUCCESS.

GROUND DETECTOR.

The "Ground Detector 05" is measuring the electrical resistance between the induction coil and the molten metal. To enable this process a ground antenna will be installed, which is in electrical contact with the melting. If the isolation resistance drops underneath a certain level, "Ground Fault" will be displayed on the "Ground Detector 05". In this case a failure signal will be send to the PLC, which will then shut off the converter.

INTEGRATED AUTO TEST OF THE GROUND DETECTORS.

Beside the test of the bath grounding it must be ensured that the Ground Detector is working correctly, and the sensitivity is adjusted properly. Therefore, the Ground Detector will be connected to the PLC and the PLC program will be modified. The PLC will trigger an artificial ground fault, which must be detected by the Ground Fault Detector. The result of this test can be stored for the traceability.

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3RD GROUND DETECTOR FOR TWINPOWER SYSTEMS.

In TwinPower systems, the two existing ground detectors are bridged during operation, as they can influence each other. In order to operate the plant safely, a Leakage Current Detector is also installed between the furnaces to monitor the plant for short circuits or voltage flashovers during operation.

To make the melting plants even safer in every operating phase - from low to high power, during sintering or melting - a third Ground Detector is used in combination with the Leakage Current Detector.

LEAKAGE CURRENT DETECTOR FOR SINGLEPOWER SYSTEMS.

- Addition safety device in converter
- Detects voltage flashovers very quickly (e.g. from coil to ground)
- Always active

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HEDGEHOG COIL.

- To notify ground fault before the melt arrives the coil
- Part of the ground fault detection
- Copper bolts are attached to the coil beyond the grouting
- Electrical potential of the coil is moved in direction of the crucible

In case of a metal penetration (fin):

- Fin contacts bolts before it gets into contact with the coil
- Ground fault detection can detect the fault earlier and switch off the converter before the coil gets into contact with the liquid metal

MANUAL TEST OF BATH GROUNDING.

It is important to check whether the Ground Detector is functioning properly to ensure that the melt is grounded. With the manual bath ground verification it is possible to check if the grounding is there.

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FOR EVEN MORE SAFETY: ABP ADVANCED SAFETY PACKAGE.



The "ABP Basic Safety Package" is an important basic protection for your assets. To ensure that you are prepared for all eventualities, we recommend upgrading to **the advanced package**. It includes **important security features** for almost complete protection:

- Automatic Bath Ground Verification
- Mechanical Yoke Insulation failure localization
- Ground Fault Locator (Metal Penetration Detector)

You can also connect your equipment to **ABP digital solutions**. This makes your plants Industry 4.0 capable, for condition monitoring and a way to support you remotely for maintenance and repair. With this solutions, ABP also offers repair, upgrade and overhaul services for equipment from other manufacturers. Find out more about our digital services for even better plant availability thanks to Predictive Maintenance and even faster service via „**Digital Expert on Demand**“ (dEoD).

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