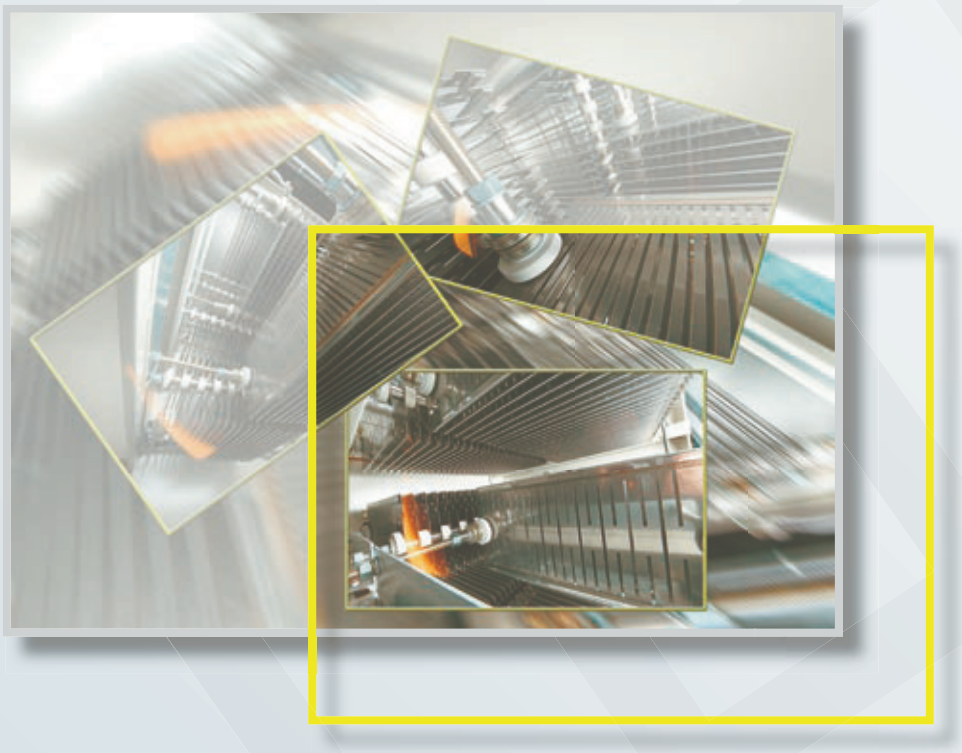
Load Resistors

Testing Resistors



customized solutions

optionally with control system and switchgear

GINO ESE

GINO Load and Testing Resistors
Inspection, Maintenance and Protection of Power Sources

Applications:

- Testing resistors in generator and switchgear test stations
- Load resistors in the airport industry (GPU)
- Base load resistors for diesel sets and diesel power plants
- Ballast resistors of emergency power sets
- Discharge resistors for batteries

Suitable for AC/DC or three-phase DS applications.
Thanks to the modular design, **any specified requirement** can be realized.

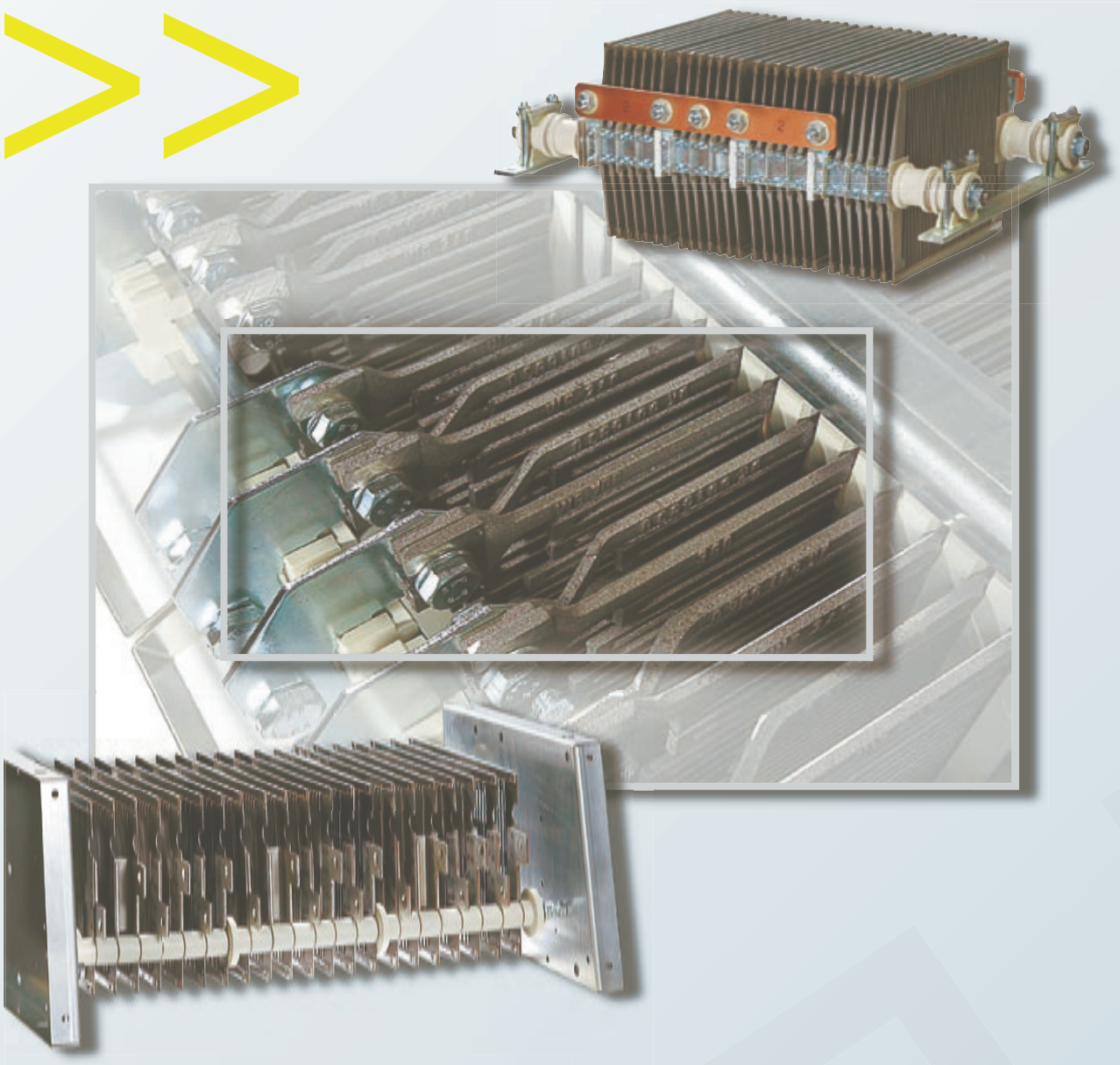
Models:

- Stationary load resistor units with forced air cooling using integrated axial fans
- Transportable units on rollers or trucks, also with road permit as per German Road Transport Licensing Order (StVZO)
- Units without fans for natural air cooling in case of lower power ratings
- Enclosed units for indoor installation with type of enclosure IP00/IP20, or for outdoor operation with type of enclosure IP13/IP23

Design / Equipment:

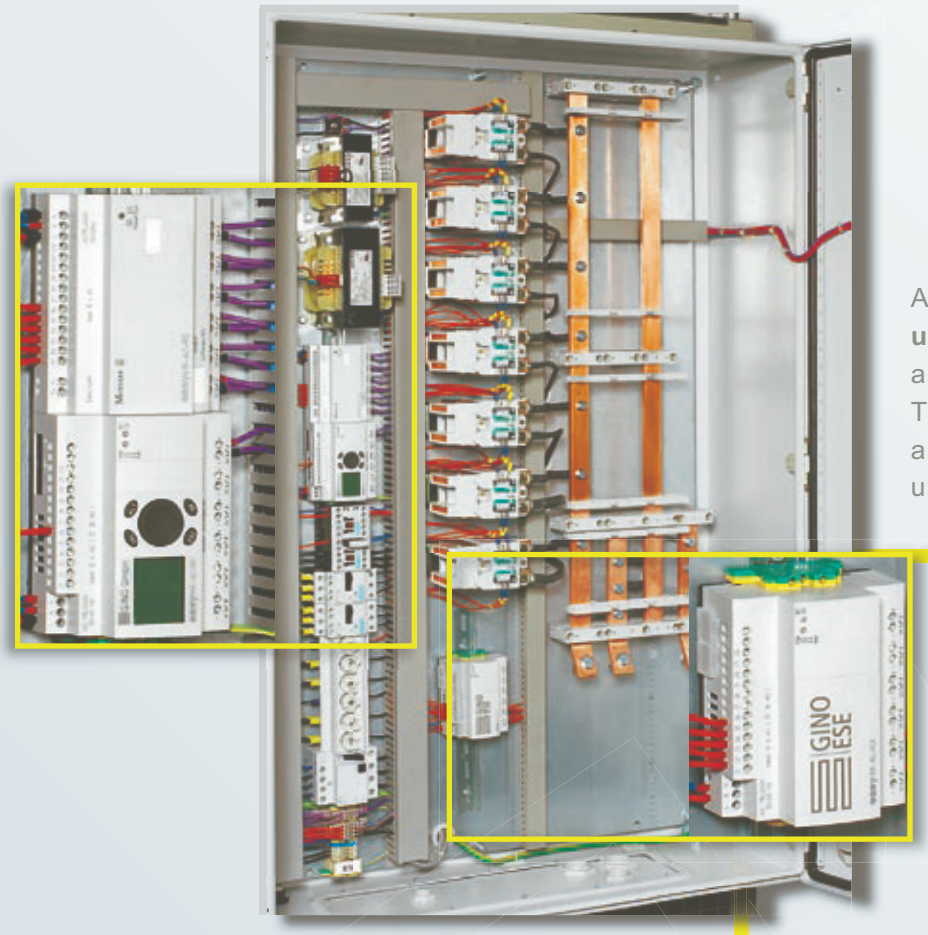
Depending on the application, various steel grid elements, type NW / WG or DWG of X10 CrAL13 or X5 NiCr 18 9, are employed as **resistor material**. Especially for the lower load stages with higher ohm values, wire-wound frames with CuNi 44 or NiCr 3020 windings are available. For short-time loads with very high pulse energy, resistor elements of high graded cast iron are used.

The resistor elements are combined in packages and mounted in the housing/air duct. Temperature-resistant insulated wire or copper bars, depending on the power rating, are used for **wiring** the load stages.



On request, the load resistors are also suitable for operation in **maritime climate** or high-moisture areas. For this purpose, a special mounting material of stainless steel and an appropriate housing design are employed.

Thermal contacts and adjustable **temperature switches** are provided as a protection against resistor overload. In units with axial fans to ensure forced air ventilation, every fan is equipped with an **air flow switch** to monitor the cooling air flow.



As an option, a complete **switchgear unit** with fuses, contactors, operating and monitoring elements is offered. This switchgear is usually mounted in a separate cabinet on the load resistor unit.

An electronic **control system** to switch, control, activate and monitor all relevant procedures can be integrated:

- PLC of the Easy or MFD series
- Communication with the load resistor unit possible via Profibus, Ethernet, Device Net or Canopen
- Optional OPC server with customized user interface to ensure control from one single PC with an overview of all parameters

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Optional **measurement unit:**

The following measured values can be displayed with the aid of shunts or current and voltage transformers as well as a special measuring transducer:

- Current and voltage value display
- Power rating display
- Power factor display
- Frequency display
- Sense of rotation monitoring (e.g. for fans)
- Over/undervoltage monitoring
- and many others ...

We develop, design and manufacture the individual solution tailored to your specific needs and requirements.

Challenge us ...

Standards:

The relevant DIN standards and VDE regulations as well as individual customer specifications are applied.

- DIN VDE 0100 / IEC 364 Erection of Power Installations with Voltages up to 1000 V
- DIN VDE 109 / IEC 664 Insulation Coordination within Low-Voltage Systems
- DIN VDE 0110 Determination of Clearances and Creepage Distances
- DIN VDE 0560 Low-voltage Switchgear and Controlgear Assemblies
- DIN 40050 / IEC 144 Types of Enclosure

The units comply with the EC Low-Voltage Directive and obtain CE marking.

Highly qualified project engineers guarantee that the design corresponds to state-of-the-art technology.

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DIN EN ISO 9001:2000 certified

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