

Load Resistors Testing Resistors

customized solutions
optionally with control system and switchgear



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

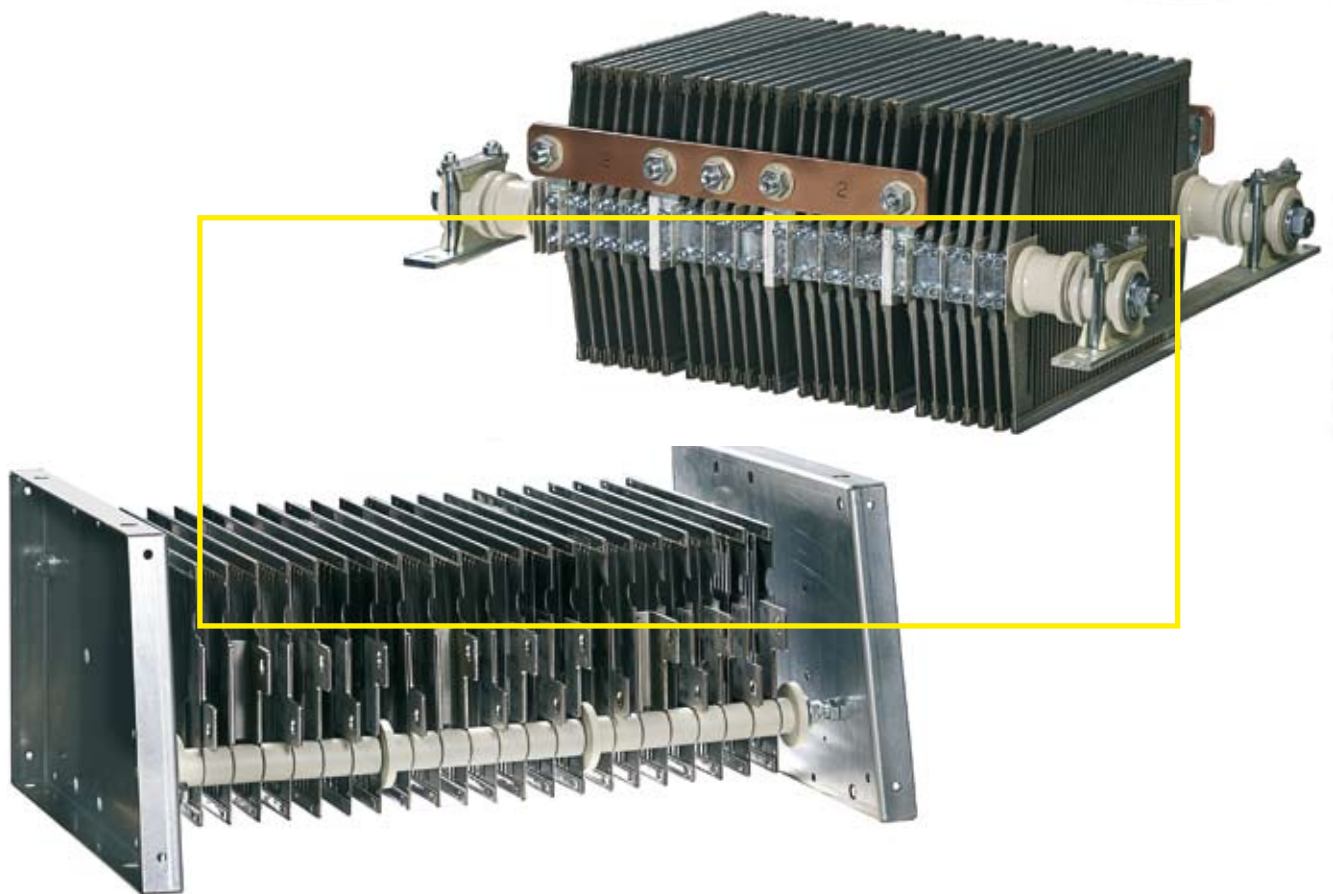
Design / Equipment:

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.

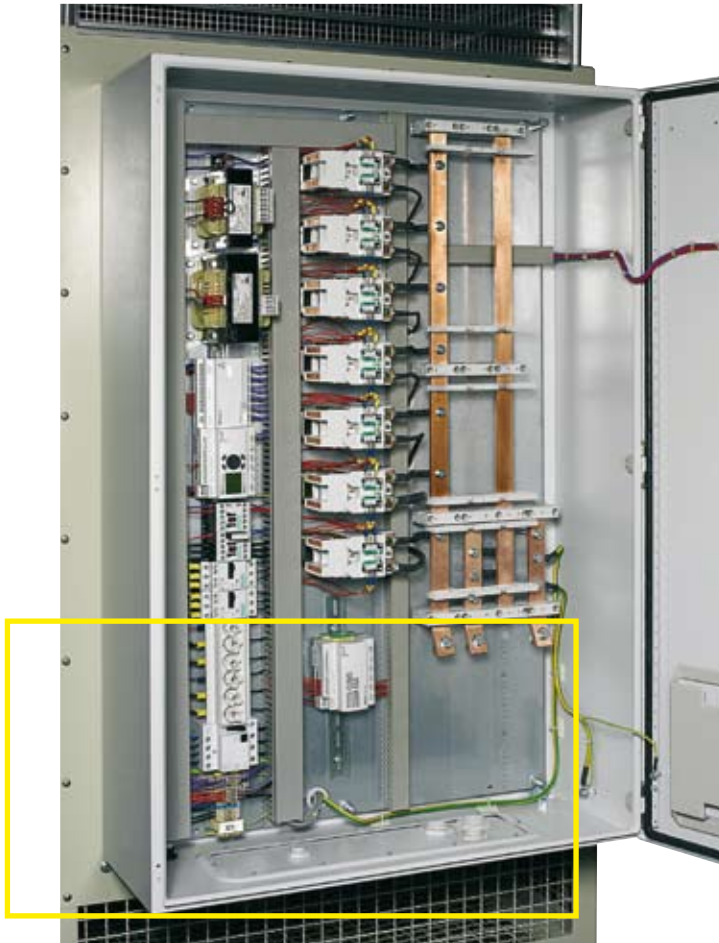
Temperature-resistant insulated wire or copper bars, depending on the power rating, are used for wiring the load stages.

On request,



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.

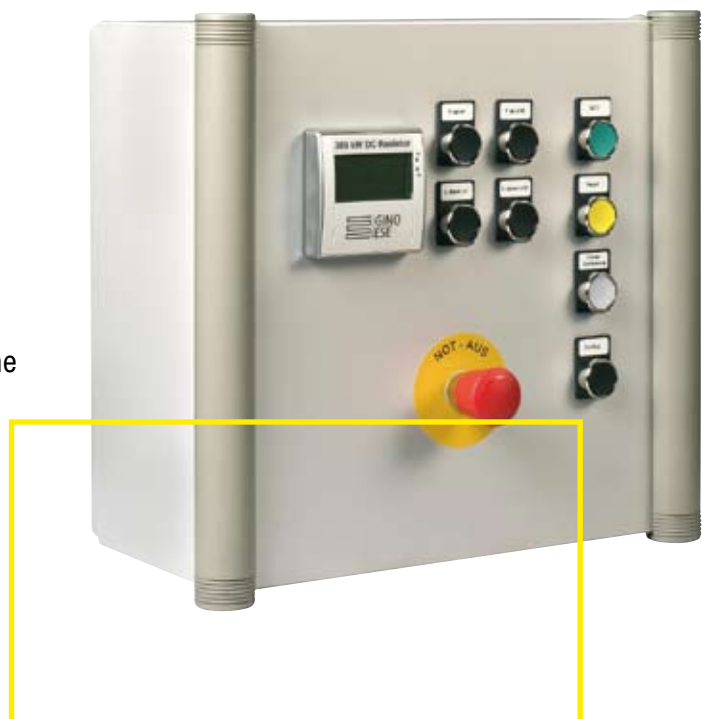
Thermal contacts and adjustable temperature switches are provided as a protection against resistor overload. In units with axial fans to ensure forced air ventilation, every fan is equipped with an air flow switch to monitor the cooling air flow..



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



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.



IRIS
Certification

GINO AG
Elektrotechnische Fabrik
Friedrich-Woehler-Str. 65
D-53117 Bonn

Tel: +49 (0) 228 98 98 6-0
Fax: +49 (0) 228 98 98 6-34

info@gino.de | www.gino.de/en

