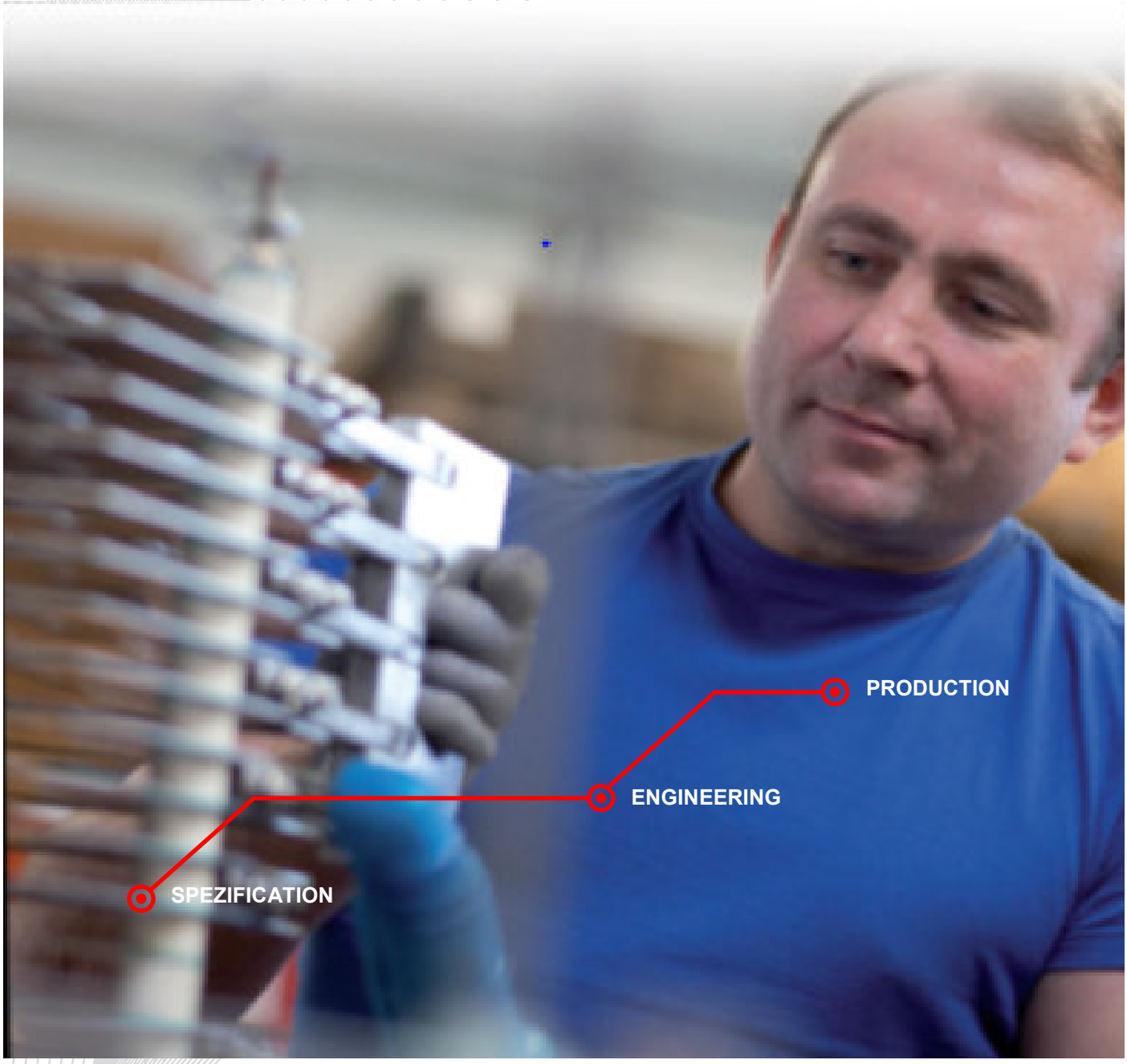
PRODUCT OVERVIEW
RESISTANCE

JOVYATLAS
Immer unter Strom



JOVYATLAS GmbH, Fennenweg 4, 26844 Jemgum, Tel: 04958 9394 0 , Email: sales@jovyatlas.de, www.jovyatlas.de

PROJECT PLANNING FROM HIGH POWER RESISTORS

JOVYATLAS
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JOVYATLAS plans and manufactures for the most diverse technical areas of application a power range from 10 watts to several megawatts.

Thanks to the comprehensive experience in project management and development of control systems, switchboards and PLC controls customers perceive JOVYATLAS as a competent and flexible partner for the manufacturing of most diverse resistor equipment whether configured as single components or in the form of complete solutions according to customer specification. Our project planning is fully responsive to your requests and requirements.

Of course, our company is in accordance with DIN ISO 9001 and OHSAS 18001 certified

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MODERN PRODUCTION PROCESS

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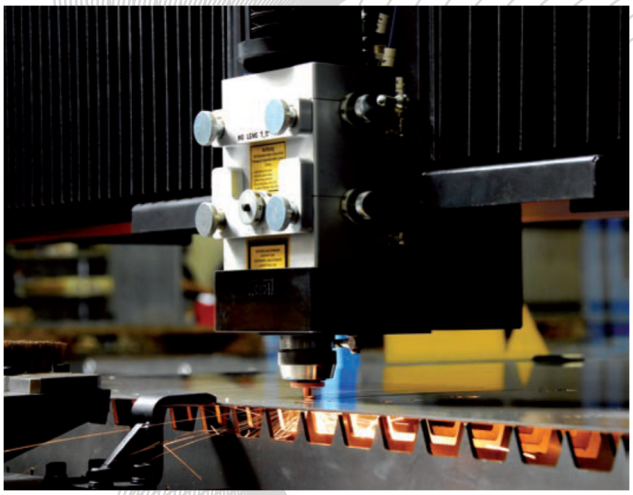
Whether on land or on water - our resistors are used in many ways. The application examples on the following pages provide a small insight into the various areas of application in industry and business. Our sales engineers will be happy to advise you on the possibilities and technical background.



The production of our resistors is based on our state-of-the-art manufacturing methods. By means of simulation models resistant materials are optimally utilized in the manufacturing process – permitting a cost optimized production of resistors directly benefitting our customers. Implementing high-end machines like CNC-controlled laser and die-cutting systems working in shifts round the clock permits satisfaction for high demands of units, even on short notice.

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OVERVIEW OF OUR RESISTOR TYPES AND DESIGNS

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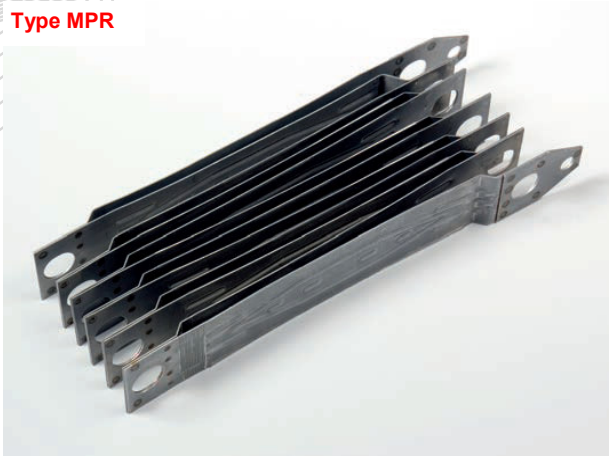
RIBBON RESISTOR
TYPE: MPR

Resistor modules of the type MPR are designed for high loads and can be adapted to meet the individual requirements of our clients. The resistor elements are manufactured by using selected stainless steel. For stabilisation and aerodynamic reasons the used resistor ribbons are die-cut in such a way that they by means of spot welding are stable strung together retaining their stabile meandering shape.
JOVYATLAS uses this type as rail resistors and compact load banks.

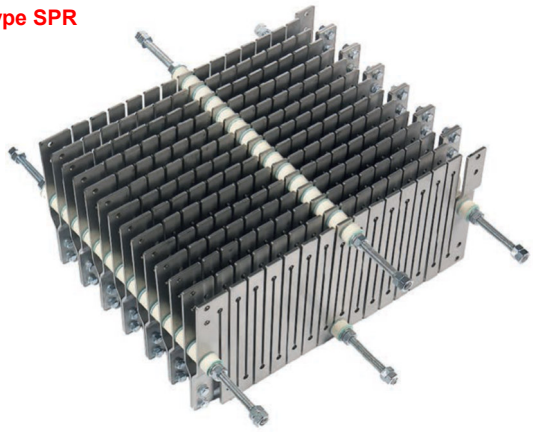
Type MPR



STEEL - GRID FIXED RESISTOR
TYPE: HWS

The stainless steel sheets of the steel-grid fixed resistors are die-cut in a meandering shape. This allows the realisation of exactly defined resistance values. Various cutting patterns or slits enable the realisation of different resistance values with equal size of elements. The continuous output power of the grid is 500 W. Spacing rollers between the grids provide for a parallel or serial connection of the individual resistance elements.

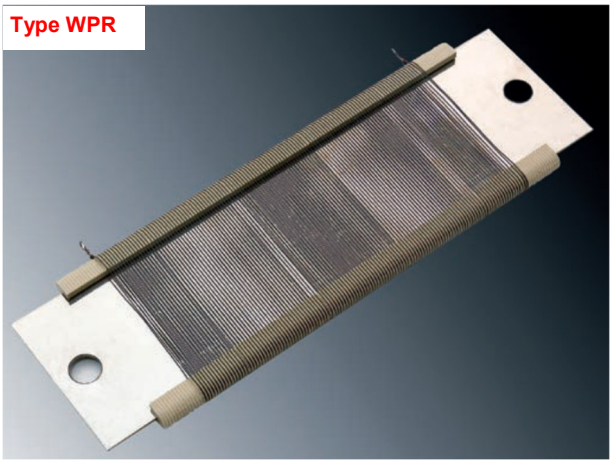
Type SPR



STEEL - GRID FIXED RESISTOR
TYPE: SPR

Also the stainless steel sheets of the steel-grid fixed resistors SPR series are die-cut in a meander shape. Unlike the HWS series, however, the dimensions of the resistor grids depend on the resistance values specified by the customers. The interconnection is enabled by screw connection. As the steel-grid fixed resistors are manufactured according to customer specifications the continuous output power of the individual grids is different. At this series we also vary the thickness of the resistance material.

Type WPR



RESISTANCE MODULES
TYPE: WPR

Resistor elements of the WPR series consist of a steel sheet equipped with ceramic carriers, on which a wire winding is applied. With this design we are able to achieve accurate high resistance values within smallest space. A further advantage: coiled elements of the WPR series can be integrated into the modular system of the HWS series.

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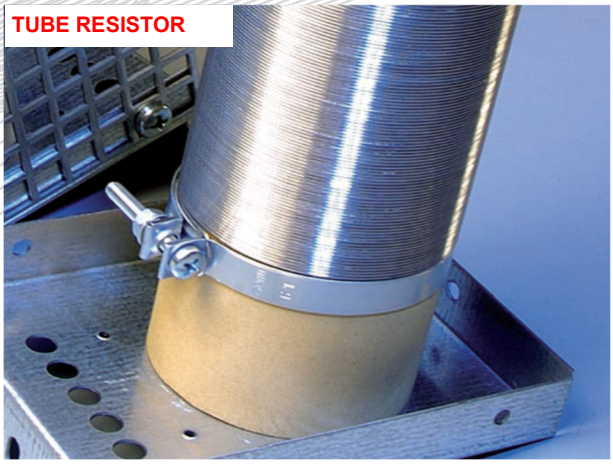
TUBE RESISTOR

TYPE: PTR

Resistors of the type PTR are wound wire resistors of copper nickel CuNi44 on a ceramic tube. The housing is made of galvanised sheet steel. Connecting cables, terminal boxes or adjustable clips are optional items. The temperature rise during operation is calculated with the help of a simulation model in order to be able to adjust the resistor series optimally to the impulse load. This enables us to define optimally the resistance for any impulse shape required by our customers. For higher loads further tube resistors modules can be combined resulting in manifold application options for PTR-Resistors. The PTR series allows an ideal customer- oriented solution for any application even for smaller quantities.

TUBE RESISTOR



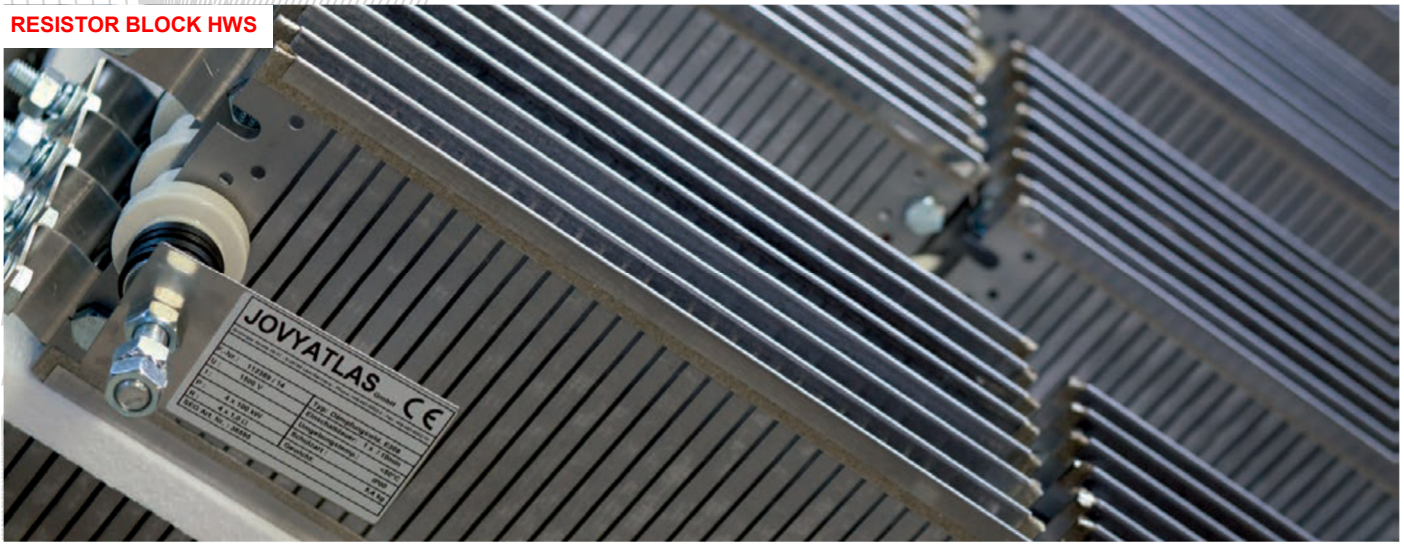
TUBULAR HEATING ELEMENTS

TYPE: RHK

The tubular heating elements of this series provide high degrees of protection and can be used under difficult environmental conditions. NiCr 80/20 as resistance wire ensures a very high accuracy of the resistance value also during continuous operation. The outer case is made of stainless steel and guarantees long life.

Type RHK

RESISTOR BLOCK HWS



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RESISTORS

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JOVYATLAS designs and manufactures resistors for most different technical areas of applications with a power range from 10 watt up to several megawatts. Subsequently we point out some applications of our resistor components and systems:

GROUNDING RESISTORS

Grounding resistors consist of the active electrical part (resistor block and control) and the resistor steel casing specially designed for the application (passive part). In principle JOVYATLAS provides the sheet steel casing for grounding resistors in a galvanised version or in stainless steel on request. Coated grounding resistors can be carried out in the colour of choice. For coating a high performance powder coating on polyester basis is applied. Depending on size and weight the actual grounding resistance is encased in a self-supporting body housing or on a stable base frame.
JOVYATLAS delivers grounding resistors with the protection class IP00, IP20, IP23 and IP54. All our manufactured grounding resistors are designed according to the international standards of IEEE-STD 32-1972. Grounding resistors of JOVYATLAS are employed worldwide – e.g. our neutral star point grounding resistances are of greatest importance on near shore transformer stations or on offshore platforms with multiple transformers. Numerous companies in the on- and offshore industry trust our technology. We are providing grounding resistances in the range of 12 up to 36 MV, for instance, for the largest German offshore platform „BorWin beta“ and for multiple further platforms.

RAIL RESISTORS

Thanks to its flexibility and innovation our company has also successfully established itself worldwide on the rail transport market. Beside others, rail resistors like the ET 481 for the suburban railway Berlin and rail resistors for the Transrapid, and acceptance according to the DB inspection certificate grade II APZ 3.1B have been realised. In order to comply with the manifold environmental requirements for rail resistors we work with state-of-the-art computer simulation systems.

LOAD BANK FOR GENERATOR TESTS

For testing of generators we have developed special load bank series in a very compact version. On demand these load banks are remote controlled and have a precision of 1kW. For the individual load increments we use special stainless steel with low temperature coefficients in order to realise a nearly constant resistance value also during a temperature rise. JOVYATLAS provides load banks for both, as permanent fixed position or as mobile version fixed on reels or trailers.

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APPLICATIONS

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JOVYATLAS is established in the shipbuilding industry as a competent and reliable supplier. Inspections by the classification societies like DNVGL, Lloyds Register of Shipping, American Bureau of Shipping, and R.I.N.A. are daily business.

RESISTORS FOR THE MARINE SECTOR

The fields of application in the marine sector for resistors are manifold, e.g.:

- Resistors for the activation/control of bow thrusters of large vessels
- Brake resistors for cranes on ships or ports
- Load resistances for generator testing and for battery discharge
- Neutral point grounding resistors for generators
- Discharge resistors for submarine batteries

ON — AND OFFSHORE INDUSTRIE RESISTORS

Brake resistors absorb power peaks. In wind parks without inverters brake resistors enable speed control of the generators, e.g. in gusting winds. In wind parks with inverters brake resistors are used to manage excess energy in case of power dips by absorbing energy of the inverter (pursuant to E.ON directive 2003).

Filter or damping resistors from JOVYATLAS are used for condensers, inductors and compensation systems. All our manufactured resistors are of course constant load and high voltage-capable. Whenever transforming power peaks of an electromechanical process into heat is essential, brake resistors are used.

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PRODUCT OVERVIEW

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PORTABLE LOAD BANK HANDY - THE TEST RESISTOR UP TO 30 KW FORFLEXIBLE SERVICE ASSIGNMENTS

The easy to transport load banks of these series are available with an output up to 30 kW and ideally suited for flexible service assignments. Depending on the type they can be used to test voltage values up to 3x400 VAC or 690 VDC. We also provide voltage pick-ups with those systems and further optional equipment. Due to its low net weight, easy operation and transportation facility, the JOVYLOAD HANDY is a must for any service technician carrying out stress tests. The housing with IP 20 protection class are made of stainless steel and all versions have handlebars and supporting feet.

LOADBANK HANDY

SMALL MOBILE LOAD BANKS SMART UP TO 20 KW

The small load banks JOVYLOAD SMART were developed especially for easy mobility. These load banks meet the needs of a power range from 5 up to 20 kW. The compact design as well as the handlebars and swivel castors guarantee easy transport and handling. With devices of the JOVYLOAD SMART series you can quickly execute load tests at any time and any place. For easy handling the level increments are chosen directly by manual switches on the device. The load connection takes place via the externally accessible insulated toggle clamps. In order to ensure independence from external supply voltage, all types of these series are self-ventilated.

LOADBANK SMART

LOADBANK EASY

SMALL MOBILE LOAD BANKS EASY UP TO 250 KW

The load banks JOVYLOAD EASY series are compact and easy to dismantle into 3 components in just a few simple steps. While the large types EASY XL (output range 150/200/250 kW) require a van for transport, the resistors of the type EASY (output range 50/75/100 kW) just need a passenger vehicle for easy transport. Depending on the version these load resistors can be used for up to 3x400 VAC or 920 VDC. The installation and connection of JOVYLOAD EASY are done quickly and only need a few steps. A stable transport frame with lockable swivel castors enables flexible use in direct proximity of the test sample. All load levels of the JOVYLOAD EASY load banks are secured and will be switched off in case of a fan fault. The devices are standard grey/red coated – we gladly finish customised colours or print your company name.

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Widerstände

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TESTING RESISTORS PLM UP TO 1000 KW

The load banks of the JOVYLOAD MOVE series are of modularly constructed and designed for an output from100 kW up to 1000 kW. The individual load levels are installed as plug-in units into a resistance tunnel. Load banks of this type can be adjusted with a control box to a precision of 1kW. This control box can easily be manufactured as remote control with a cable length of 100 m. The load increments have a very low temperature coefficient thanks to the use of special stainless steel, which allows the chosen load to remain nearly constant even in case of warming of the resistor elements. A special design and the arrangement of elements enable a low air outlet temperature also in case of full load selection. The housing of the load bank can be provided for both, as permanent fixed position or as mobile version on reels.

LOADBANK PLM

MOBILE LOAD BANKS ML UP TO 2000 KW

The mobile load banks of the series ML are mounted on a trailer. Variable trailer versions are available for both, passenger vehicles and trucks. The load resistors of these series cover the load range up to 2000 kW. The active load can be combined with inductive or with capacitive load steps. An extreme constant heat distribution can be achieved in the resistance tunnel, first by the use of special stainless steel with a very low temperature coefficient for the resistor elements and secondly by the effective arrangement of all components

The operation of the resistor units can be done either via conventional switches or via SPS control. The trailer includes the integrated switchgear control.
The installation of all ML systems is carried out according to customer's requirements. The individual switching stages, cable harnesses as well as operation via remote control are tailored to your needs.

LOADBANK ML

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RESISTORS

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LOAD CONTAINER CONPOWER

With the type series CONPOWER we offer extremely efficient load resistances up to 5 MW, which are ideal not only for tests on new generators, but also used in the area of controlled battery discharge. The load increments of load container CONPOWER can be switched current- depended in order to ensure sparing and regulated battery discharge. The resistor units of these series are mounted into customary commercial sea containers together with their load units as well as the entire switchgear to control the load bank integrated into them. By its compact structural shape and its great degree of stability the use of standard containers ensures a good possibility of transport with the help of cranes or trucks and an easy access to the installations. The lateral ventilation of the containers allows stacking and sea transport (CSC authorisation optional). The load bank used in the type series CONPOWER consists of independently installed load tunnels. In each case two load tunnels are arranged one above the other with further load tunnels connected adjacent to them depending on the desired power performance.
Remote control Steel shipping container - customized
Steel shipping container with HV transformer
load bank CONPOWER

STEEL SHIPPING CONTAINER - CUSTOMIZED

REMOTE CONTROL

STEEL SHIPPING CONTAINER WITH HV TRANSFORMER

TYPE CONPOWER 2.2

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PRODUCTS

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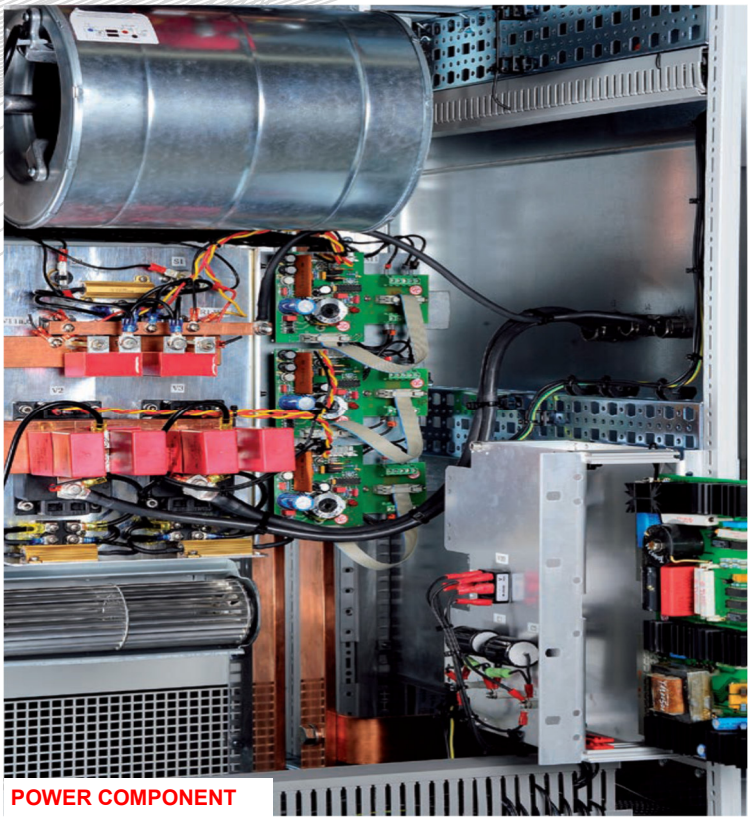
LOAD BANKS FOR PULSE OPERATIONS – LOADBANK PULSE

The demand of microprocessor-controlled resistance load banks suitable for pulse operation has increased steadily during recent years. The term pulse load describes loads that can be switched on and off in a very short time. Conventional switches such as contactors and relays are not suitable for such operating conditions. The systems of these series are therefore equipped with advanced IGBT technology. All LOAD BANK PULSE units operate as DC load. They can optionally be equipped with a rectifier so that they can be connected to AC loads too. Further customer-specific adaptations for various applications are feasible of course. The load build-ups are realised with our proven steel-grid resistors of the HWS and SPR series as well as with our resistance modules of the type series MPR. All used resistance elements are extremely strong and robust. They are produced from stainless steel sheets, the composition of which is based on a recipe created especially for JOVYATLAS.



POWER COMPONENT

CABINET DESIGN

In order to perform load changes quickly and without any loss, we have developed ‘intelligent’ electronics for the LOAD BANK PULSE. By opening or closing of MOSFET power semiconductors via an interface the load to the test sample is raised or lowered respectively by a fixed amount. A MOSFET power semiconductor switches virtually loss-free and is therefore in the position to perform many shift operations in short time. Conventional power switches reach their limits here. Load banks of the PULSE series can be integrated ideally into computer-controlled test stands and existing computer systems.

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JOVYATLAS accompanies you during of the entire product cycle. From the idea to the finished product: we provide you with the individual solution for your needs, from individual resistor components to complete resistor systems with or without control, as standard or special solution.

The reliable quality of our components ensures the safe use over the entire product life cycle. Should extensions or modifications be necessary or spare parts are needed we are happy to assist you with our knowledge at your side - and that over decades.

FROM THE IDEA TO THE PRO-DUCT-
WE WILL ACCOMPANY YOU!

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