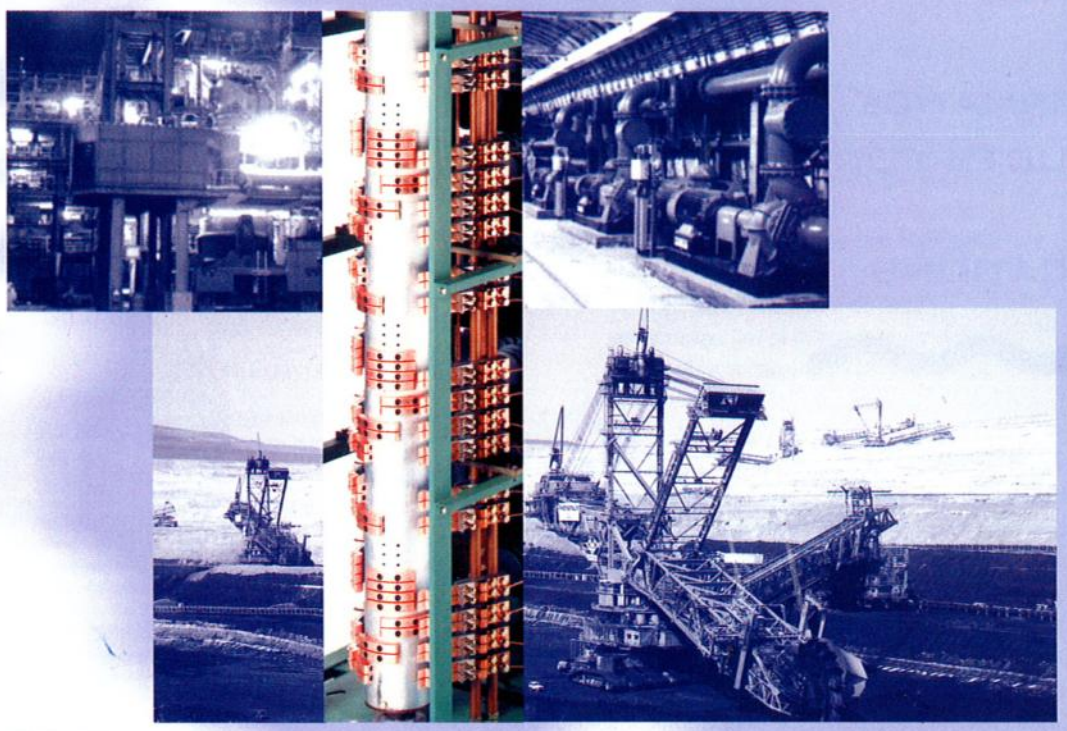
Rotor starters for slipring motors

Resistors



High-performance products – individual solutions to satisfy your requirements

PAPE & OLBERTZ

SCHALTGERÄTE UND WIDERSTÄNDE

Resistors and rotor starters from Pape & Olbertz – High-performance products for many applications

In times of constant technological innovation with the most advanced information processing and microprocessor systems continually breaking new ground, state-of-the-art resistors and three-phase rotor starters from Pape & Olbertz have maintained a leading technological position for decades now. Their major applications are in the cement industry, open-cast mining, as well as the iron and steel making industry, shipbuilding and railways. Starting resistors are used e.g. in mines for the acceleration of conveyor belt installations, whereas rotor starters are for the acceleration process of all kinds of large drives e.g. in a cement factory. These drives are normally expected to have a reliable, robust technology, so that functionally-oriented and low-maintenance Pape & Olbertz starters are ideally suited for these applications.

80 years of experience provide a basis for the ongoing further development of these products and for the design and supply of costom-built units. With this complete product range, Pape & Olbertz today offers the right units for practically all applications.

Optimal technical solutions and economic efficiency require a knowledge of all the relevant operational and ambient data. The equipment to be supplied is then specially calculated and designed for the particular application and that in series.

Contact us.
We offer you solutions to all your problems.

Applications and uses for rotor starters

Rotor starters open up the outstanding features of slip-ring-motors. Most important is that proportional relation between current-input and torque-output extends close to break-down-torque. As a result, all demands ranging from low-starting-current to extremely powerful accelleration, can be satisfied. The former helps to save gears and power-supplies, the latter means that – together with long acceleration times – even the heaviest loads with high inertia's can be accelerated. Within this range, a safe solution can be found to nearly every starting question. A further advantage is the fact that most of the waste heat produced in the rotor circuit during starting procedure occurs in the starting resistors, i.e. outside the motor.

The following standard units are available

Three-phase rotor starters
- up to 90 kW power
- air cooled, hand operated
- suitable protection IP20, IP23

Three-phase drum-type rotor starters
- up to 18000 kW power
- air-cooled or oil-cooled
- remote-control and hand-operated,
- suitable protection IP23, IP54, IP65

Three phase contactor starters
- up to 4000 kW power
- air-cooled or oil-cooled
- suitable protection IP23, IP54, IP 65

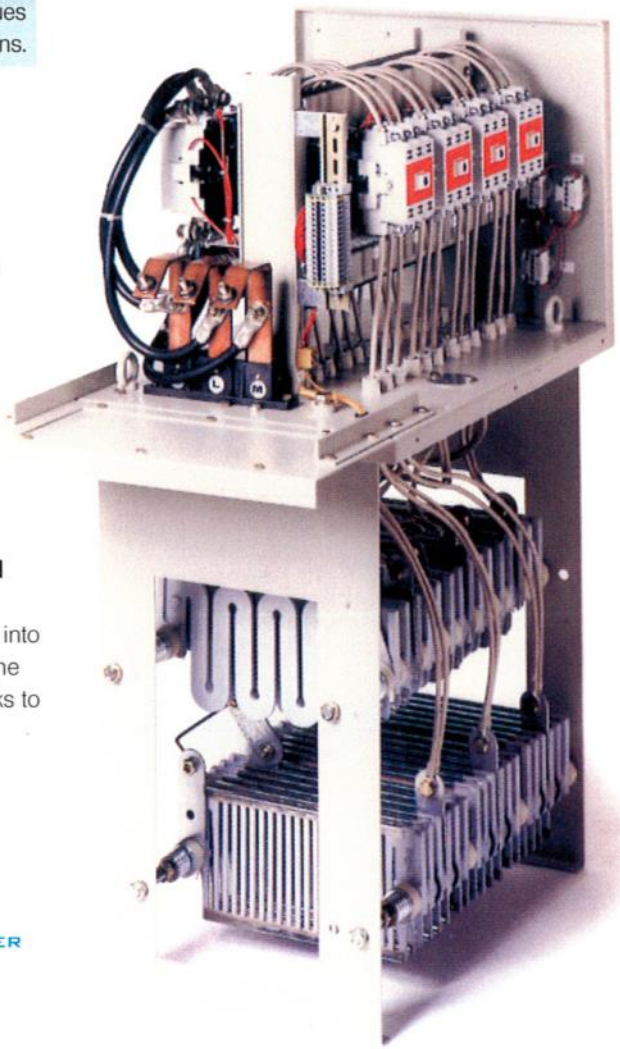
The above-mentioned power values refer to full-load starting conditions.

Special cases

If the output range of a given application is not covered by the standard units, a suitable and economically viable solution, based on decades of experience, can be developed for special operating and ambient conditions.

Documentation

Smooth integration of the starters into the overall project, even during the tendering stage, is possible thanks to detailed documention.



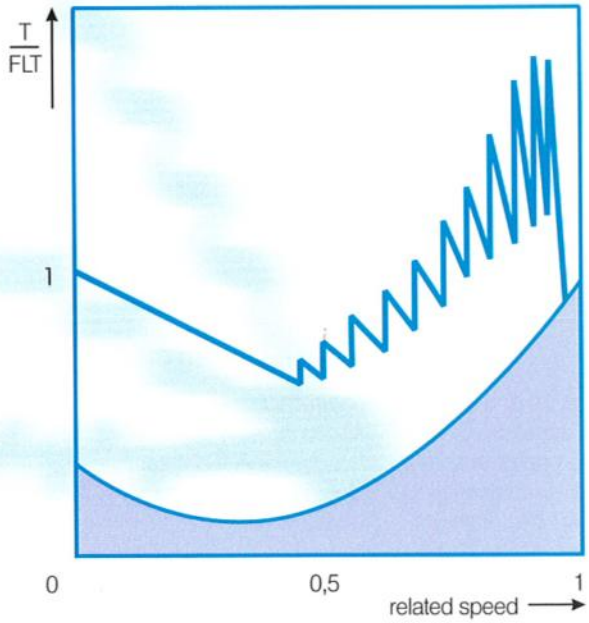
Contactor Starter "ODAS 2.."

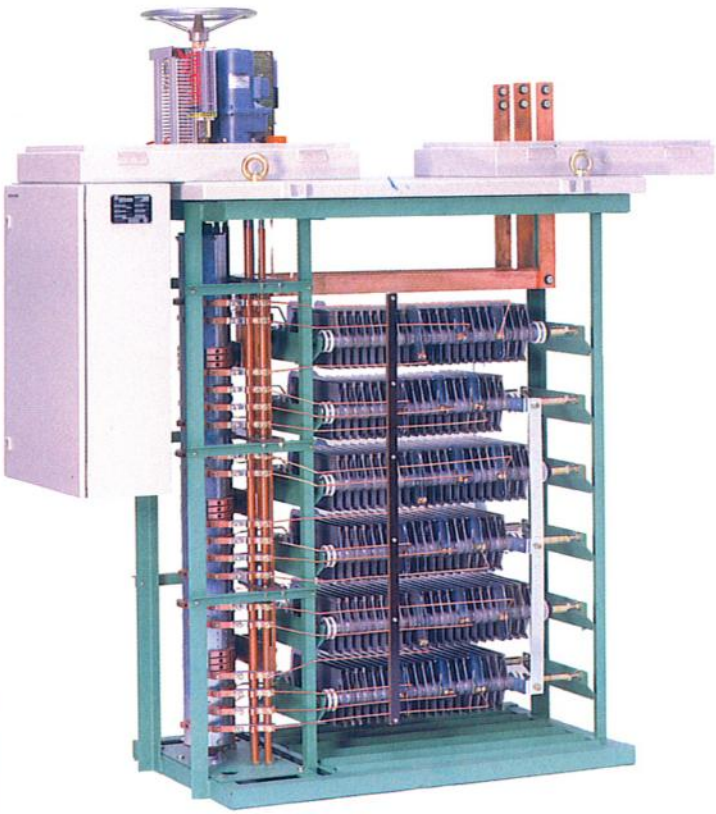
Example

OADAK 6412R28SP

Application:	Pump
Rated motor power:	P = 3550 kW
Rotor-voltage:	U_{er} = 2030 V
Rotor-current:	I_{er} = 1058 A
Starting time:	t_s = 26 s
Starting severity:	f = 1,0
No. of successive starts:	z = 3
No. of perodic starts p.h.:	h = 2

Run-Up-Diagram



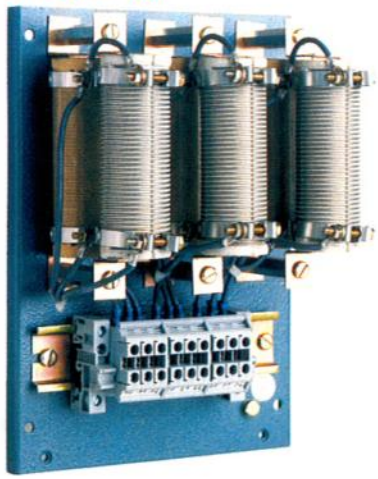


Oil-Cooled Drum-Type
Rheostatic Rotor Starter
"OADAK 6412R28SP"

Applications and uses for resistor units

Resistor units are used if currents, voltage and speeds are to be limited or adjusted in an appropriate manner. Depending up on the given operating conditions, the resistor elements are installed in suitable housings and assemblies. The clear-cut arrangement of the components ensures easy connection to the switchgear which is provided by the customer when the overall installation is completed.

Resistor Unit
ZW 6, IP 00



Applications

Load resistors and series resistors are used for diverse applications including loading of electric machines or adjustment and limitation of voltages and currents.

For example:

Single-phase stator series resistor are used to achieve smooth starting characteristics of squirrel-cage asynchronous motors.

Slip resistors are recommended or necessary if high motor peak loads are expected.

Earth fault currents can be limited by means of suitable resistors connected between transformer star-point and earth.

Starting resistors are necessary for the starting of three-phase motors with slipring rotor and DC motors.

Resistors units are also used for excavators in open-cast mines, for cranes in lifting, slewing and traversing mechanisms as well as public transport vehicles.

These applications are only a few examples of the vast range of applications for resistor units.

Power range

The continuous rating of individual units ranges from 140 W for the model ZW2 to 17 kW for the model W130. This range encompasses a large choice of individual units, permitting optimal adjustment to given operating conditions.
The models W118 to W130 can also be designed as four-level units.

Higher ratings require the use of several resistor units. Forced ventilated resistor units should be used for continuous rating of 150 kW and above. Special units were already built for ratings up to 6600 kW. Resistor units and assemblies are built to the most varied forms of protection, from IP 00 to IP 23.

Resistor elements

Resistor cylinders, resistor frames, as well as steel, cast iron and wire grids are used, depending on the requirements to be met.

Resistor Unit
3WP130, IP23

Manufacture and Supply of **AEG** Original Resistors and Parts

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