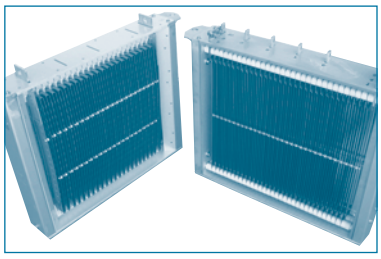
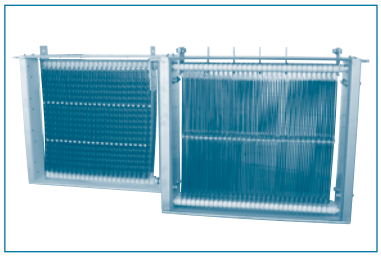
BARTH
GMBH E-MOTOREN & TRAFOS

„AC HAUL TRUCK“

PROJECT

Braking Resistor , Motor Control Resistor





GINO ESE

„AC HAUL TRUCK“

Braking Resistor Type 3PQ4207 - B00120

GINO manufactures this resistor with forced-air cooling for Siemens Alpharetta, USA.

This resistor is installed in the largest modern haul trucks with Diesel-electric drive operated in the main mine regions of the world. Fully loaded vehicles have a total weight of over 560t. To bring such a colossus from a speed of 60 km/h to almost standstill requires braking powers of up to 4480 kW.

For such applications, GINO uses its proven, wear-free and easy-maintenance 3PQ4 technology which offers very high power reserves in the boundary region in view of the admissible strip temperature of 850°C. The corresponding resistor strip made from NiCr 3020 is corrosion-proof and heat-resistant up to temperatures beyond 1000°C. It is continuously folded and mounted between two ceramic insulators arranged on two support brackets.

In heavy-duty mining operations, the emphasis is on particularly robust technologies. GINO accommodates these demands also regarding the frame structure of the resistor unit:

The resistor frame consists of reinforced stainless steel sections and is thus corrosion-proof throughout its complete service life. For air guiding and insulation, a particularly thick micanite plate is used which additionally reinforces the frame and makes it suitable for access by the operators.

Technical data:	
Type:	3PQ4207 - B00120
Strip:	NiCr 3020; 0.9 x 100 mm
Resistance:	R = 0.263 Ohm
Nominal power:	P_N = 235 kW
Nominal voltage:	U_N = 2000 V
Nominal input current:	I_N = 945 A
Protection:	IP 00
Weight:	33 kg

Motor Control Resistor Type 6GN1-B00119

In addition, these vehicles are equipped with so-called motor control resistors to limit the operating voltage of the fan motors. These resistors are provided with a series of taps to make them suitable for the specific vehicle conditions.

In this context, another tried and tested design, the 6GN1 technology, is used where embossed and gilled strip elements connected in series by spot welding are mounted with ceramic insulators on support brackets provided with additional insulation.

NiCr 6023 is used as the active resistor material in view of its relatively high specific resistance value which allows for a very compact unit.

The motor control resistor, too, is characterized by its robustness.

Technical data:	
Type:	6GN1-B00119
Strip:	NiCr 6023; 0.5 x 25 mm
Resistance:	R = 9 Ohm
Nominal power:	P_N = 235 kW
Nominal voltage:	U_N= 2800 V
Protection:	IP 00
Weight:	32.5 kg

GINO-Representation Austria:

BARTH GMBH E-Motoren & Trafos

A-1100 VIENNA, NEILREICHGASSE 45

T: +43(0)1 / 604 22 98 - 0

F: +43(0)1 / 604 22 98 - 50

SERVICE-LINE: 0820 - 988 070

info@barth-gmbh.at

www.barth-gmbh.at