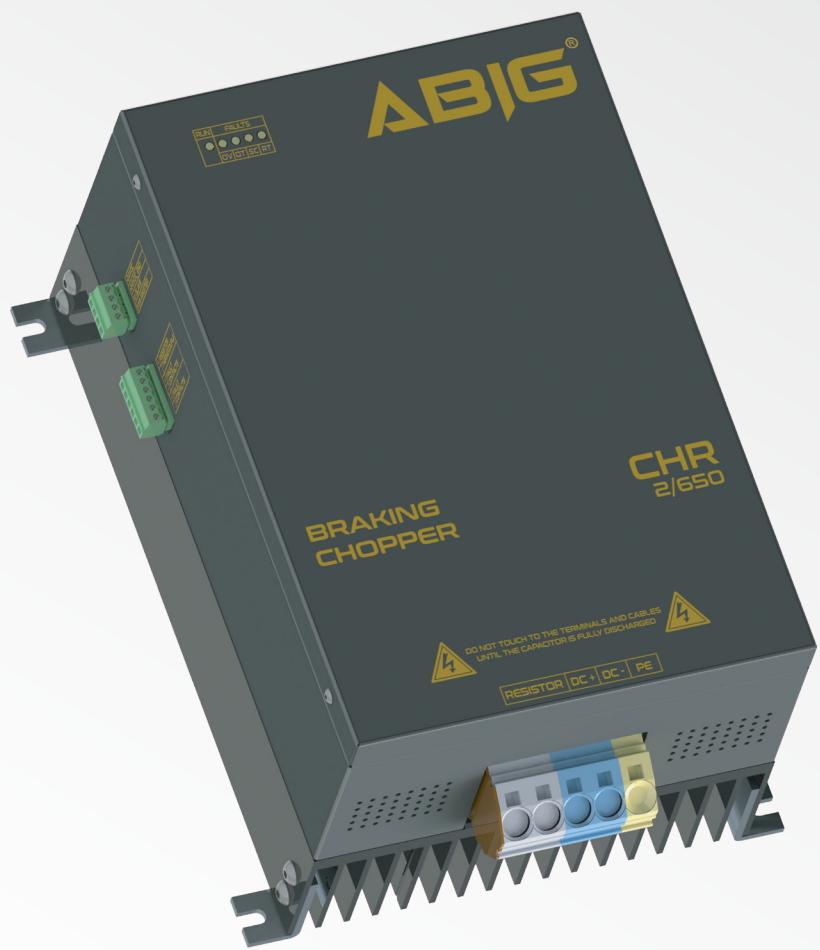


PRODUCT MANUAL

BRAKING CHOPPER

CHR
2/650



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CONTENT

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Scope

This product manual describes operation of the braking chopper CHR2/650, mounting instructions and critical safety precautions during installation. It is prepared only for the qualified technical staff who is responsible for installation, commissioning and servicing the braking chopper.

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This part of the manual describes the safety instructions which must be carefully followed during installation, operation and maintenance of the braking chopper. This part should be read and understood before attempting any work with the braking chopper.

All electrical installation and maintenance work on the braking chopper CHR2/650 should be carried out by only the qualified technical staff who takes maximum care during the work, without neglecting any instruction.



**DO NOT TOUCH TO THE TERMINALS AND CABLES
UNTIL THE CAPACITOR IS FULLY DISCHARGED**



WARNING Symbol

Warning symbol on the braking chopper means that high voltage on the terminals and cables can cause physical injury, death and/or damage of the braking chopper.

Do not attempt to work when the braking chopper is energized. Before starting any work on the chopper unit, the unit should be disconnected from the motor driver. To do so, please be sure that the motor driver is disconnected from the grid and there is not any regenerative operation of the motor. Then, wait for 10 minutes to discharge the internal DC capacitors of motor driver. Measure the DC link voltage of the driver and if it is below 25VDC, then disconnect DC cables in between chopper unit and motor driver from the driver side. Moreover, switch off all auxiliary DC power supplies connected to chopper unit.

After completion of all these steps, wait minimum 5 minutes until the internal capacitor of chopper unit discharges. It is highly recommended to measure all the terminals (DC+, DC-, Resistor terminals) with a voltage indicating instrument before doing any operation.

CAUTION-1: Do not connect/disconnect DC-Link voltage cables to the Power Terminals when voltage is present on the power cables.

CAUTION-2: Do not plug/unplug the Signal Terminals when there is voltage on the signal wires. Hot plug/unplug connection/disconnection is not allowed!

Braking chopper is used for limiting the DC link voltage of a frequency converter-based motor drive. When an induction motor slows down, it acts as a generator and feeds energy back into the converter, and hence the DC link. The braking chopper transmits this braking energy of the drive to a resistor, to be dissipated as heat. A braking resistor is connected externally to ABIG CHR2/650.

Features

- Suitable for all 3 phase motor drive brands
- Panel wall-mounted
- Easy installation
- Simple wiring
- Simple operation
- Maintenance free
- High reliability
- Smart digital control
- Self and Remote RESET functions
- Over-voltage protection (OV)
- Over-temperature protection (OT)
- Short-circuit protection (SC)
- Resistor thermal protection (RT)
- LED indicators for status and faults: "RUN", "OV", "OT", "SC", "RT"



Typical Applications: Trains, cranes, centrifuges, elevators, escalators, conveyors, large fans, etc.

Technical Specifications

Input voltage	650 VDC*
Suitable drive voltage	400 VAC
Suitable drive power	2.2-100 kW
Rated continuous current	40 A
Rated pulsed current (ED=10%)	200 A
Rated continuous power	26 kW
Rated pulsed power (ED=10%)	130 kW
Minimum resistance value	3.1 Ohm
Ambient conditions	-10 to 40°C**, max 1000m** altitude
Storage temperature	-25 to 70°C
Dimensions (WxHxD)	209,2mm x 293,4mm x 146,9mm
Weight	4 kg
Protection Degree	IP 20, EN 60529

Parallel Operation

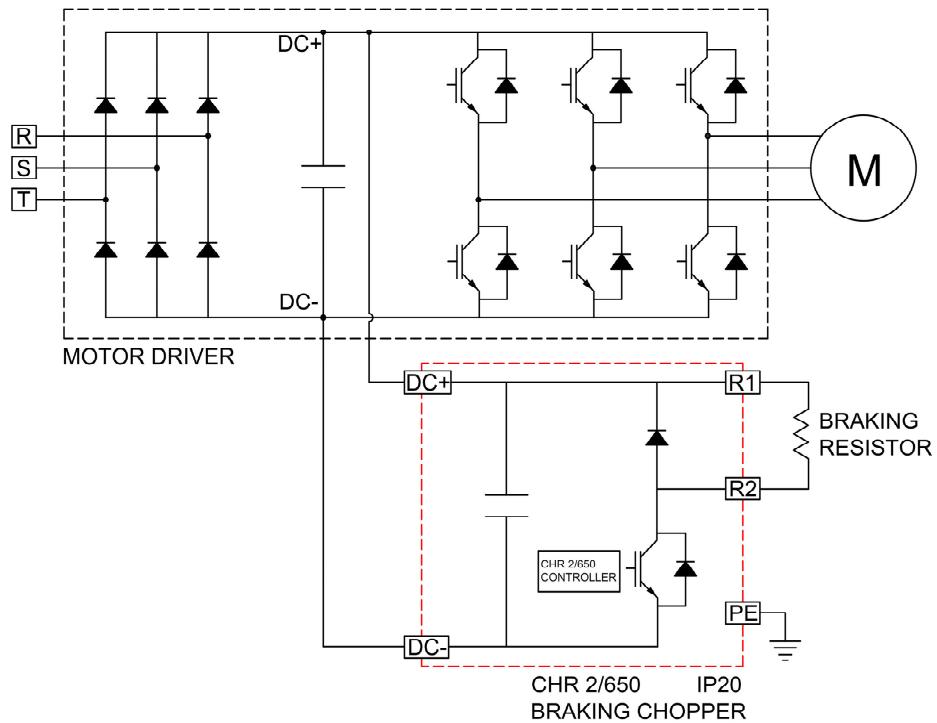
Up to 7 modules, approx. 1000kW peak braking power

* Input voltage can be between 200-900VDC. ** For higher values, please consult us.

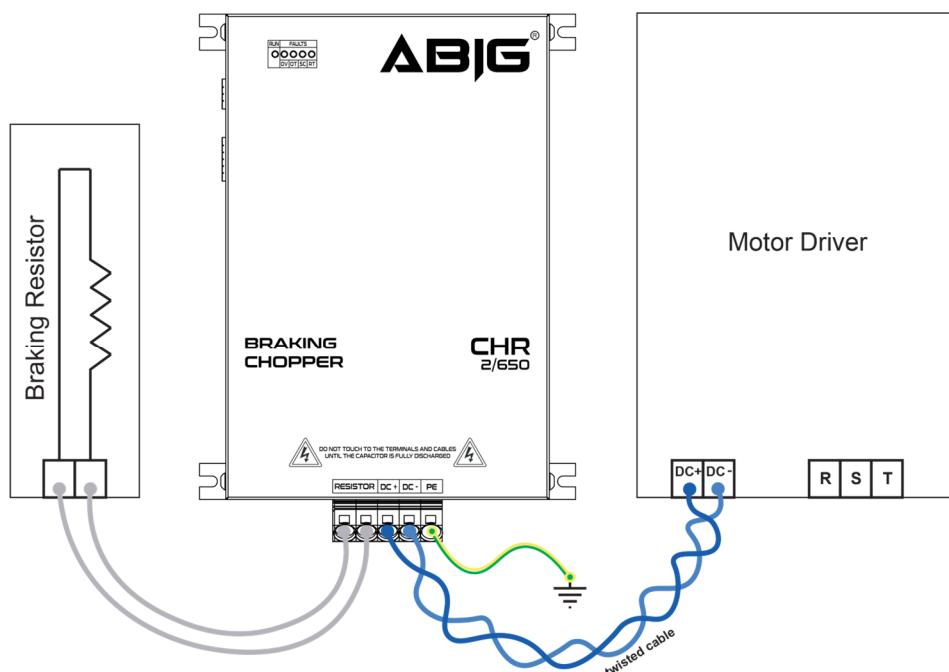
CONNECTION DIAGRAM

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The chopper module is connected to motor drive and external resistor as follows:



Connection Diagram-1



Connection Diagram-2

INSTALLATION

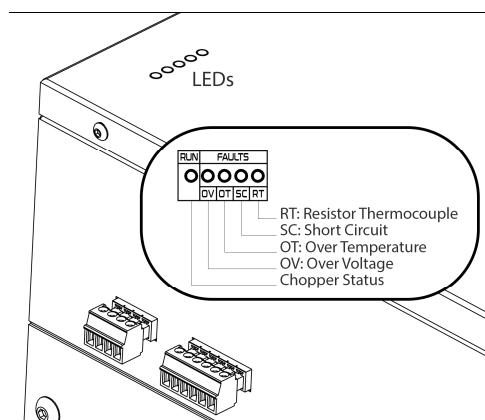
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The upside of the braking chopper is indicated with an arrow as in below. When braking chopper is mounted on a wall or mounting plate, power terminals are recommended to be on the lower side while signal terminals on the left side. LED indicators are seen clearly on the front side of the chopper with this installation scheme.



LED Indicators

LED	Color	Meaning
RUN	BLUE	Chopper Status
OV	RED	DC-Link Over Voltage Fault
OT	RED	Over Temperature Fault of the Module
SC	RED	IGBT Short-Circuit Fault
RT	RED	Braking Resistor Over Temperature Fault



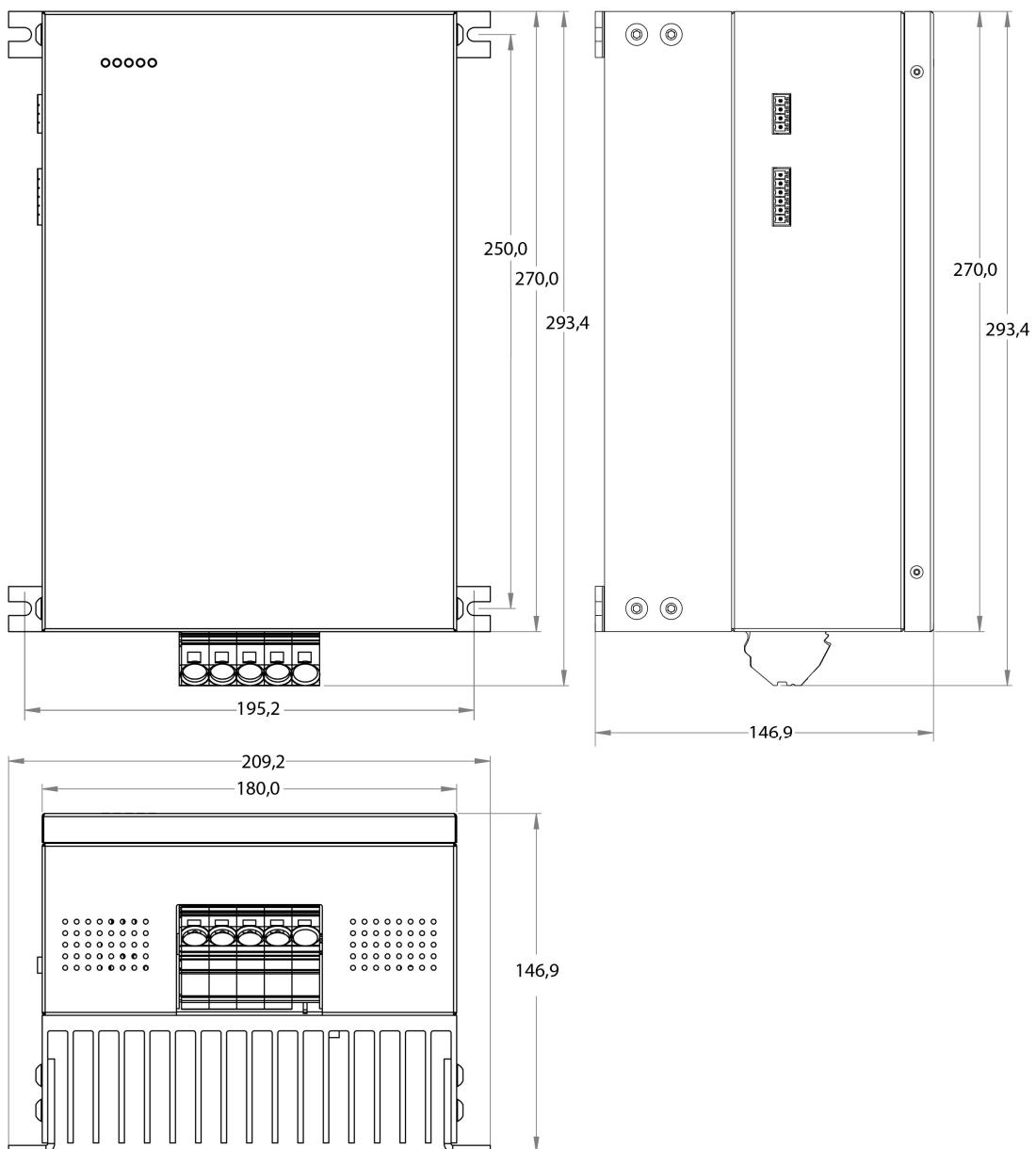
DIMENSIONS

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The dimensions of chopper module are as follows:

Dimensions of Chopper Module

Width x Height x Depth	209,2mm x 293,4mm x 146,9mm
Mounting holes	195,2mm x 250mm
Weight	4 kg

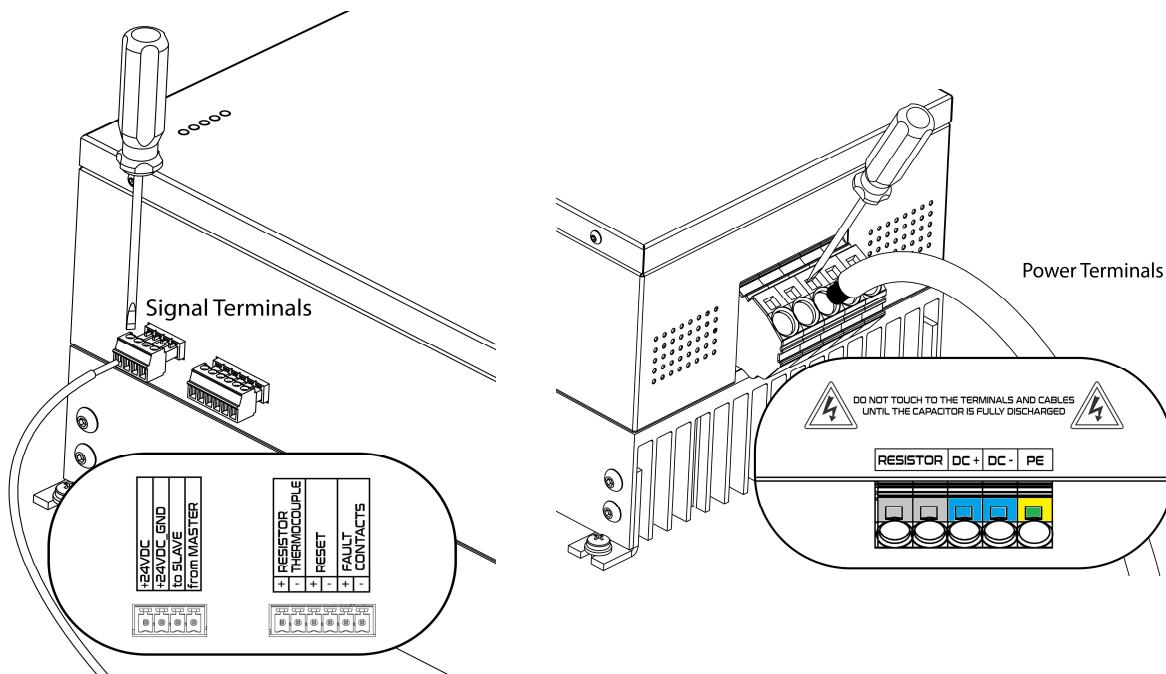


Braking Chopper Dimensions

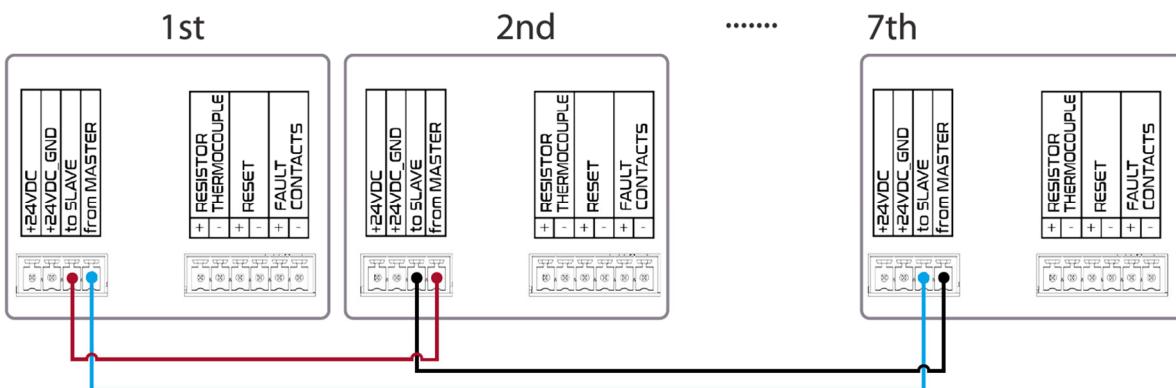
TERMINAL CONNECTIONS

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The details for terminal connections are as follows:



Parallel Operation Connections (Daisy Chain)



Cable list for power and signal terminals

Terminal Name	Cable Type	Max. Length(m)
Resistor Terminals	2x16mm ² stranded Cu cable	20
DC Link Terminals	2x16mm ² stranded Cu cable (twisted)	5
Protective Earth Terminal	16mm ² stranded Cu cable	5
24V Power Supply Inputs	2x1,5mm ² stranded Cu cable (twisted)	5
from Master Input	1,5mm ² stranded Cu cable	5
to Slave Output	1,5mm ² stranded Cu cable	5
Resistor Thermocouple Inputs	2x1,5mm ² stranded Cu cable (twisted)	20
Reset Inputs	2x1,5mm ² stranded Cu cable (twisted)	20
Fault Contacts Outputs	2x1,5mm ² stranded Cu cable (twisted)	20



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