

# HIGH FREQUENCY CONVERTER DEEP PURPLE

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# About Us

## FOUNDED IN 1975, SECOM IS A LEADING COMPANY FOR THE DISTRIBUTION AND PRODUCTION OF COMPONENTS AND DEVICES FOR POWER ELECTRONICS

SECOM continuously carries out new research and technical proposal in conjunction with important clients, providing technical support to meet their specific needs.

Production excellence and efficient organization allow SECOM to commit itself to providing to the market with timely and professional service in numerous sectors of static energy conversion. Flexibility and short delivery time have become pillars to SECOM's company policy.

### WHO WE ARE



Over the years the company has become an important designer and manufacturer of power electronic devices for industrial automation manufacturing technologies

### WHAT WE DO



SECOM studies and manufactures customized solutions on behalf of its customers.

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# DEEP PURPLE

## OVERVIEW

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SECOM introduced in 2013 a new series of frequency converters designed to supply power to equipment that incorporates technology currently used in induction heating, hardening, smelting and/or other applications where a resonant circuit is required.

The “**Deep Purple**” is an IGBT power electronic inverter developed for a high-frequency induction heating application. The load current and the output frequency of the application define the rated power of the inverter. The power module is water-cooled.

Strength point of this solution are:

- IGBT High Frequency technology
- A drastically gas and smoke emission reduction typical of the old heating process
- A reduced energy consumption
- Immediate availability of the heating -> no need long start or stop sequences, as with traditional reheating furnaces.

H bridge configuration is used in SECOM induction heating converters.







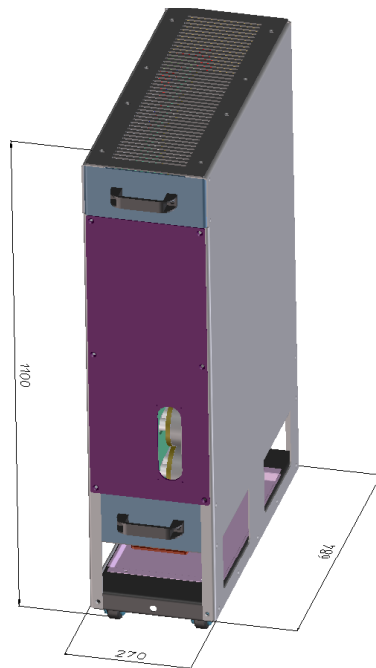


# DIMENSION

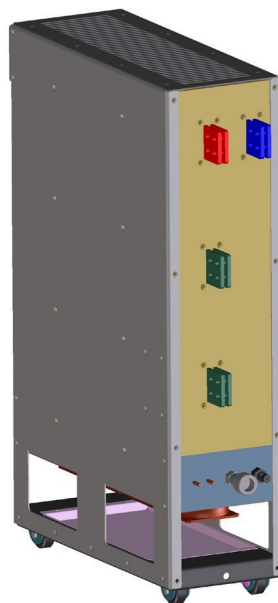
## DRAWINGS

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The power converter of the series SD\_LF is constituted by a removable module as shown in the figures below.

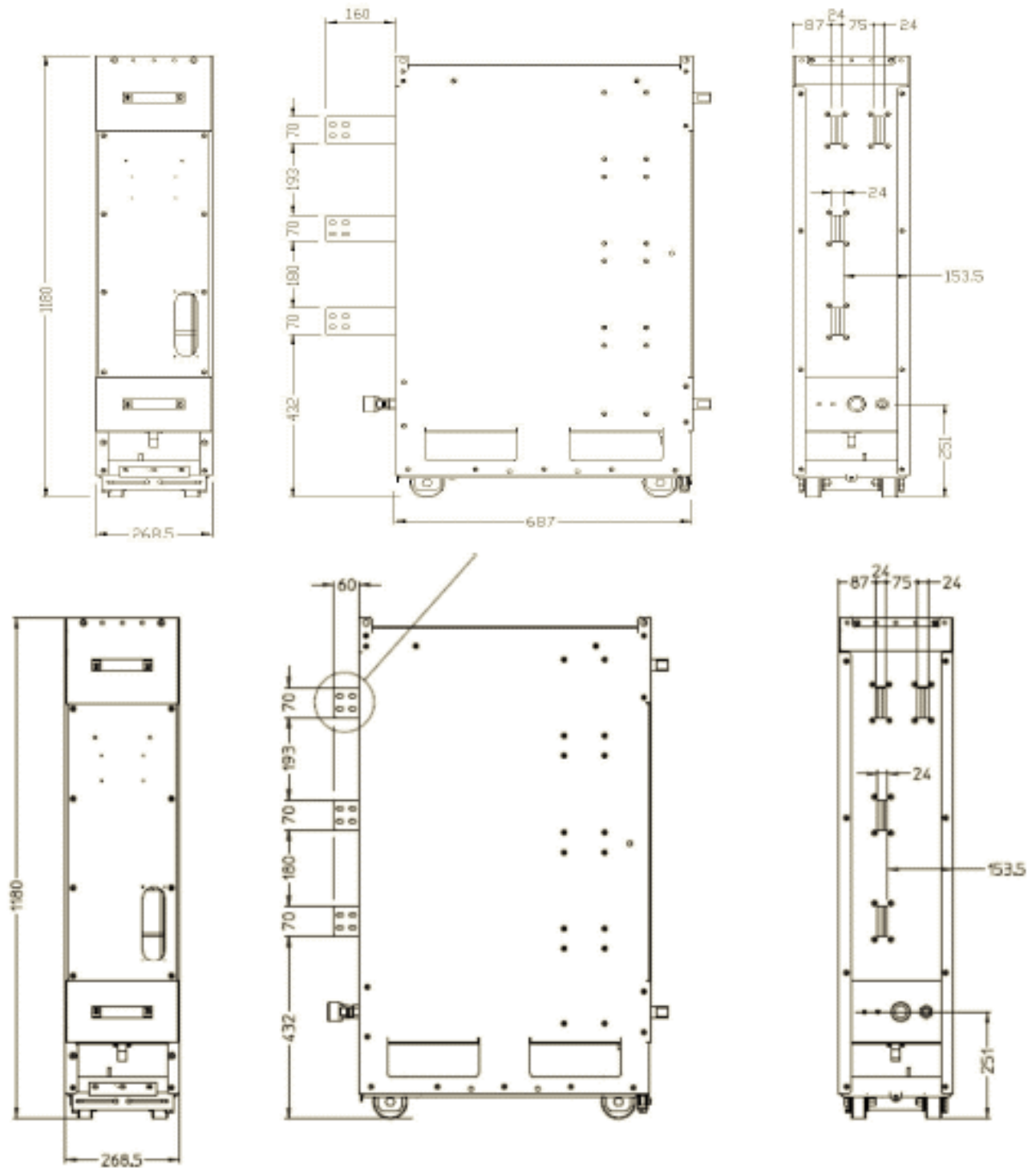


*Fig. - Dimensions*



*Fig. - Power connection*

**HF DEEP PURPLE**



# COOLING SYSTEM

The power modules are equipped with a cooling system circuit to refresh and cool down the main power devices such as IGBT and input thyristors.

The inlet and outlet of the cooling system are located on the bottom rear side of the module. A system of quick connect couplings guarantee a faster operation maintenance.

The main cooling data have described in tables below.

It is mandatory to respect the water flow value described.

Data	Value
Internal pipes water Volume (l)	4
Water Flow (l/min) min-max	35-40
Rated Pressure drop (bar)	3
Water Temperature (°C)	10-40*
Max Water Temperature (°C)	40*
Semiconductor losses (kW)	15
Busbar and internal losses (kW)	1,2

\* For higher temperature is necessary to consider a derating of the power system

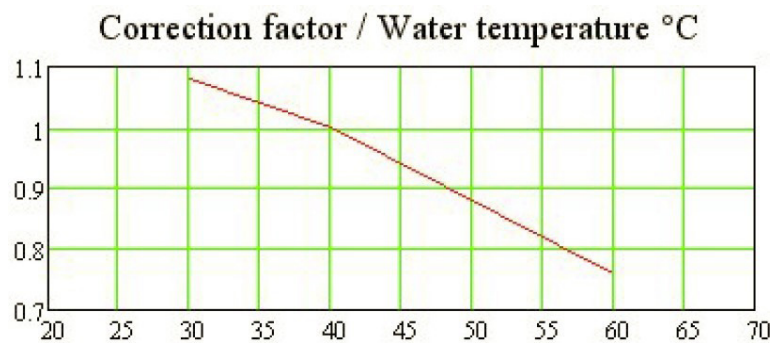


Fig. - Output current vs. water temperature

The power module is equipped with fans to ensure the cooling of the internal parts not watercooled. The cooling fans have to be supplied by an external power supply 230Vac 50Hz.



# TECHNICAL DATA

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## Ambient conditions

Altitude	1000 m. a.s.l.
Air temperature	0 ÷ 40°C
Storage temperature	0 ÷ 50°C
Relative humidity	10 ÷ 90 %

## Dimensions and weight

Height	1100 mm.
Width	270 mm.
Depth with short connection	798 mm.
Depth with long connection	898 mm
Weight	140 kg.

## Electrical data

Inverter type	IGBT single phase inverter
Cooling system	Air / water
Rated current	1700 A
Supply voltage	600 ÷ 930Vdc
Output voltage (square waveform)	up to +VDCBUS
Output frequency	200 ÷ 1000 Hz

# DEEP PURPLE

## CABINET LAYOUT

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# DEEP PURPLE CABINET LAYOUT

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