

# CDEMS

## *Installation guide*



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## I- Safety Warnings



Faulty connection of the system can make a fire hazard that can cause serious injury or even death. Therefore, it is essential that this installation guide is read carefully and in full before the system connections are made. System installation, operation and maintenance must be carried out only by qualified personnel. The relevant national regulations specify who has skills and knowledge to install and operate with this kind of electrical systems and equipment.

### Warnings

The system must not operate in presence of any of the following conditions:

- Exceeded maximum or minimum values of the ambient temperature
- Vibrations, fluctuations and collision risk
- Presence of metal dusts, corrosive substances, salts or flammable gas.
- It is forbidden to modify or convert the system without authorization.
- It is important to ensure that the system housing is closed during operation.
- The system shuts down upon the occurrence of a fault condition such as over-temperature. After the system stops the competent technicians have to check CDEMS system.
- In case of fire, carbon dioxide or dry powder extinguishers should be used. The inhalation of dense smoke can cause breathing difficulties.



To prevent battery discharge always when CDEMS will not operate for a longer time turn off the main switch and switch on the battery.



Under normal conditions, only carbon dioxide and dry powder extinguishers may be used to extinguish fire. Extinguishers, that use water, can lead to personal injury from electric shock.

### Operational Safety

- During system operation, the statements and information in this installation guide must be observed. Any violation of these instructions affects the system function in normal operation.
- The system includes an electric shock or electrical short circuit risk. To prevent damage by such events, it is necessary to observe the following cautions:
  - The wearing of watches, rings or other metal objects is prohibited.
  - Only insulated tools may be used.
  - Work with insulated gloves or wear shoes with rubber soles.
  - Metal tools or other metal-containing objects should not be stored on the modules.

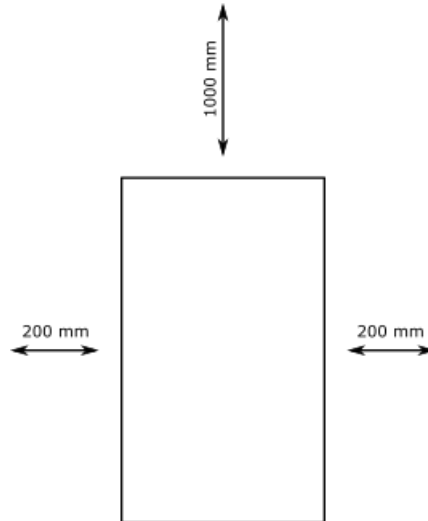
- Removal of the cable must be made without the use of force.
  
- Individual battery cells must not be opened or damaged. The electrolytes in the cells contain hazardous substances such as battery acid. In case of accidental contact with battery acid, flush the affected areas with plenty of water and visit hospital for medical care. Do not mix up anode and cathode of the system. This leads to electric shock or fire.

Choose a location for the CDEMS that offers:

- Easy access to inputs, outputs and auxiliary equipment
- Enough space to service the unit
- Air circulation sufficient to expel heat produced by CDEMS
- Protection against moisture and excessive humidity
- Protection against excessive dust and other particulate matter
- A shadow place that it is never exposed to direct sunlight
- Compliance with fire prevention regulations and practices
- Operating environment temperature of 5°C to 30°C

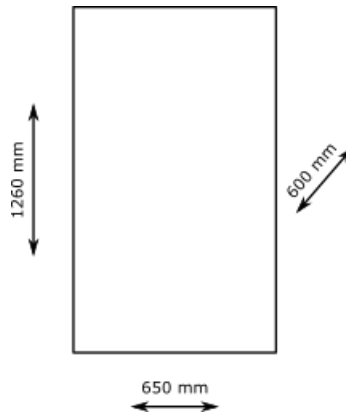
## II- Positioning

In order to ensure enough room for air circulation around the control unit, maintain clearance as specified on the diagram below.

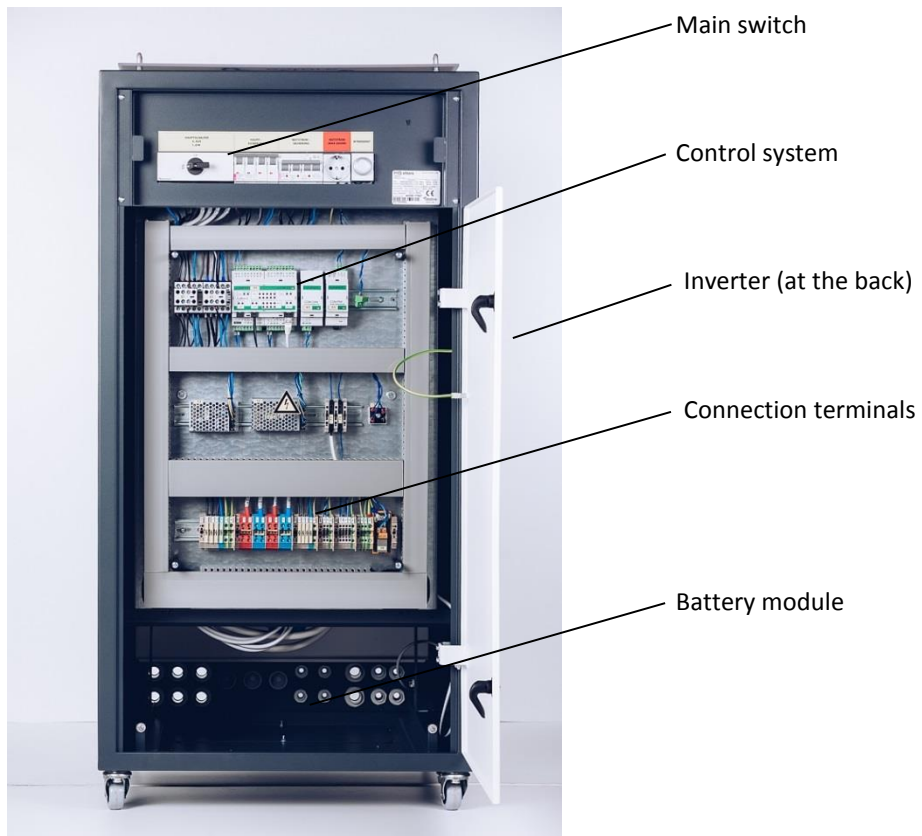


## III- Dimension

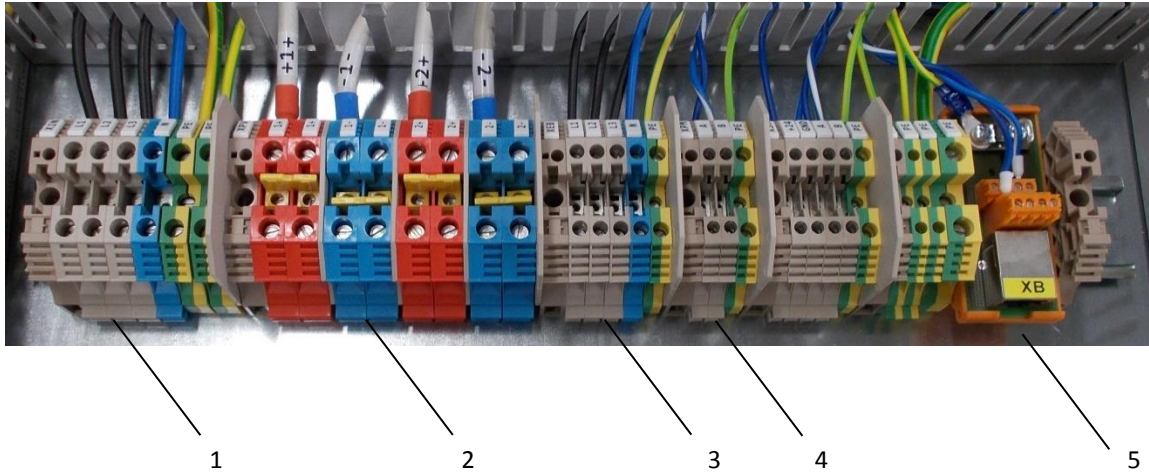
Dimension of the CDEMS unit are specified on the diagram below.



## IV- Main components



## V- Connection terminals - details



No.	Function	Connection terminals	Max. cable section	Example of standard cable
1	Utility	XIN	6 mm <sup>2</sup>	NYM-J 5x2,5
2	Energy back-up	XEB	6 mm <sup>2</sup>	NYM-J 5x2,5
3	Communication with power meter	XPM	2,5 mm <sup>2</sup>	2 x 0,5 mm <sup>2</sup>
4	Photovoltaic	XPV	10 mm <sup>2</sup>	Standard PV cable
5	Batteries	XB	/	UTP cable

## VI- Technical data

<b>CDEMS system</b>	
Coupling	DC/AC
Type of inverter	hybrid (utility , battery, photovoltaic)
Visualization	web
<b>PV input</b>	
Max power	14850 W
Max charging voltage	900 VDC
Min charging voltage	320 VDC
Mppt range	350 VDC – 850 VDC
Max. current	2 x 18.6 A (4 strings)
MPP-trackers	2
<b>Out power</b>	
Discharging power	10000 W
Voltage	230 VAC (P-N) / 400 VAC (P-P)
Output current	14.5/ phase
Grid-phase	3
3 phase compensation	Yes
<b>Battery</b>	
Cell	Power cell 19Ah
Cell type	LiFePO4
Cycles	4500
Max. charging / discharging current	30 A per battery module
<b>General</b>	
Dimensions (housing in cm) B / T / H	60 cm / 57 cm / 126 cm
Weight (in kg)	106 kg + 38kg per battery module
Ambient temperature (in °C)	5°C – 30°C

## VII- List of Appendix

- Electrical diagram of eStore D