SIMULATION SOFTWARE

JENA-EL 2019

Calculation of electric currents, voltages, system powers and power density distributions in conducting fluids

e.g. **All Electric Glass Melting**

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design and optimize **Electric Boosting**,

electric feeder and related heating systems

Calculation of Electrode Currents

- Rectangular prismatic model geometry
- max. 98 electrodes
- free electrode length, diameter and orientation in space
- up to 48 galvanically coupled or non coupled heating systems
- free to choose phase shift using galvanically non coupled systems
- calculation of the complex electrode currents (magnitude, phase)
- calculation of the heating system powers and the total power
- calculation of the voltages vector diagram and of the vector diagram of the electrode currents

Calculation of the Power Density Distribution

- free to choose rectangular calculation area
- free to choose grid to calculate power density values
- power density calculation in W/m^3 or normalized

Graphics

- 2-Dim and 3-Dim drawing of the model geometry
- Graphic of the current and voltage vector diagram
- Isolines and isocolour drawing of the power density fields
- Save the model graphics, vector graphics and field drawings

The program JENA-EL 2019

The use of the software is possible also without any detailed simulation knowledge, without any long training and also after a long break.

Exclusivity of the JENA-EL Software:

Quick and close to practice calculation of electric heating problems e.g. electro glass melting
   particularly using galvanically non coupled heating systems
(In JENA-EL the voltages vector diagram is a result of the simulation, in other software
  it must be known.)

Further characteristics are: Rod electrodes, free to choose diameter, length and orientation, mean electric conductivity.   It takes you ca. 5 sec to calculate the electrode currents, the heating system powers and total electric power.
It takes you 1 - 5 minutes to calculate the power density distribution.

Further information

The software run is possible directly from the dongle (without any installation on the computer).
Without using the dongle the program works / falls down into the DEMO MODE.
If whished you may give the project data together with the program to your customers.
So they are able to use the program to watch your results online using their own computers.

If you want to have your own demonstration, calculation or a check of your all electric furnace / booster in operation you should prepare the input data :

Molten glass dimensions: (2 X - width   Y length   Z glass level)
Electrodes positions, Diameter, Length : Mean electric Conductivity (S/m)
Electric connection of the electrodes

- Using JENA-EL you model your electric design (power, system / circuit powers, power density distribution / joules heat distribution, electrode currents, voltages) and get the basic information for ordering transformers and bars / wires.

- Using JENA-EL you may modify your design / project or your furnace in operation e.g. to install more electric power.

- Using JENA-EL you are able to check your electric heating system whether the electrodes are correct connected, whether there is any electrode corrosion, whether there are any differences between expected and real currents, power data, heat production areas and other parameters.

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