

Press Release

Berlin, 08.07.2021

GeoT*SOL, the heat pump simulation program, has been expanded and optimized to make it even more user-friendly

The design program for heat pump systems from Valentin Software has been expanded again to support system designers, installers and engineers around the world.

The most important plants can be mapped

As before, air, brine and water heat pumps can be calculated and simulated. Air, geothermal probes (up to 100 meters deep), groundwater and geothermal collectors installed in the ground can be used as heat sources.

In addition to the heat performance factor, the program calculates the annual energy yields and makes statements about cost-effectiveness and emissions reduction compared to conventional systems. The software presents all of the results graphically. These include the annual course of the relevant temperatures, the useful heat and the electrical energy as well as the weekly heat performance factor.

Systems can be variably parameterized

When designing a system, the user can choose between various predefined system configurations that have proven themselves in practice. In addition to the monovalent and monoenergetic systems with heat pump and solar thermal system, bivalent systems with additional heat generators are included. Thus, it is possible to simulate existing systems with condensing boilers, compact heating systems and other boilers, with the addition of a heat pump. New plants with a conventional heat generator as backup can now also be simulated and optimized. In addition to heat pumps, all heat generators can of course also be selected from a comprehensive and up-to-date database of nearly 1,600 products.

Annual performance based on operating minutes

As with the previous version, GeoT*SOL 2021 also determines the annual performance factor through simulation on the basis of minute values. The annual performance factor results from the quotient of the heat supplied and the electricity consumption, averaged for each minute of a whole year. In addition to the simulation result, the software calculates the annual performance factor in accordance with VDI guideline 4650, which the German Federal Office of Economics and Export Control (BAFA) requires for the approval of funding applications.

Combination with PV*SOL to determine the own consumption of electricity from a PV system

After a simulation of the heat pump system with GeoT*SOL, an interface to PV*SOL, the simulation program for solar electric systems, can be used to determine the power supplied by the PV system directly to the heat pump system. This is done by simulating the PV system in PV*SOL with the heat pump as an appliance from the minute-by-minute simulation results in GeoT*SOL. This makes it possible to precisely determine the degree of self-sufficiency of an existing energy supply for both the power supply and the heat supply of a building.

Storage tanks can be selected from the database

The extensive and revised T*SOL storage tank database is now available in GeoT*SOL. There are currently over 600 products from leading manufacturers to choose from. Standard storage tanks can of course be used for your own optimization and calculations, the volume and heat losses of which can be edited. As with heat pumps, collectors and boilers, certain storage tanks can also be marked as favorites and can therefore be selected quickly and easily.

Optimization of heat pumps

In the simulation in parallel operation mode, the heat pumps cover a larger proportion of the heat generation than in earlier program versions. This was achieved by extending the lead time for the heat pumps so that the boiler starts up later.

Further information on GeoT*SOL 2021 is available here:

<https://valentin-software.com/en/products/geotsol/>.

About Valentin Software

Valentin Software GmbH has been in business for over 30 years. With the PV*SOL, T*SOL and GeoT*SOL brands for dynamic simulation, design, yield and profitability forecasts for photovoltaic, solar thermal and heat pump systems, the Berlin-based software company has made a name for itself as a world leading provider of innovative design software for sustainable energy supply. Its customers include engineers, system designers, architects, installers and building technicians, as well as manufacturing companies in the field of electrical, heating and building technology.

Image captions

System selection in GeoT*SOL 2021

https://valentin-software.com/wp-content/uploads/GeoTSOL_2021_System_HPS8.tif

Results graph in GeoT*SOL 2021

https://valentin-software.com/wp-content/uploads/GeoTSOL_2021_ResultGraphics.tif

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