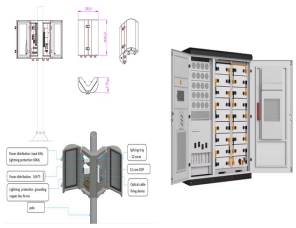
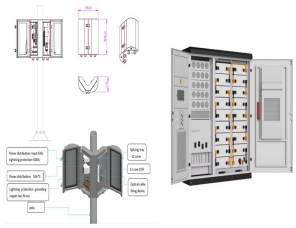
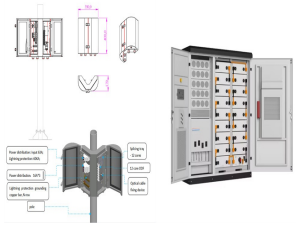
SOIL SOURCE ENERGY STORAGE



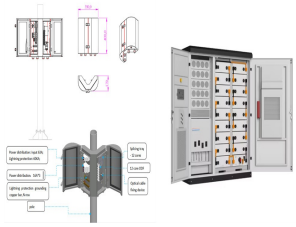
What is underground thermal energy storage? Underground thermal energy storage (UTES) is a sensible-based storage techniquethat was presented in the recent years as a feasible and potential solution to store coolth and heat for long periods with low operational costs and high long-term profitability due to the high thermal inertia of the ground along with the undisturbed nature .



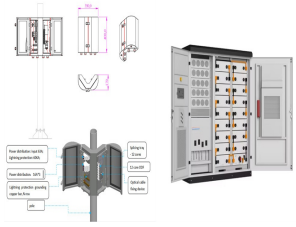
What is sensitive thermal energy storage? Sensible thermal energy storage is a well-proven storage techniquewhich has been employed long time ago in various thermal applications where water,rock and soil are common storage mediums .



Can a ground-source heat pump be used for space heating? Girard et al. have shown that coupling ground-source heat pump with solar thermal collectors (SAGSHP),for space heatingcan improve the overall system performance coefficient to 5.8 compared to 5.1 in the case of GSHP. In addition,they reported a payback period of 16 and 23 for the GSHP and SAGSHP systems respectively.



What is the thermal diffusivity of soil? It was assumed that the soil thermal properties are uniform throughout the storage medium corresponding to a thermal diffusivity of around 4.7 x 10 ???7 m 2 /swith no internal heat generation ,.



Can solar collectors reduce bore field size? A case study of a multi-unit residential buildings was considered,and it was shown that the use of such solar collectors could reduce the bore field size by 17.5%with significant energy savings and greenhouse emissions reductions; however the system was regarded non-viable economically due to the high capital costs and low utility rates.

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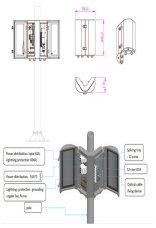
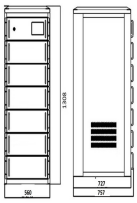
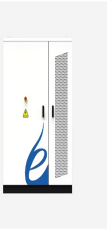



Applications will take time. The soil also has an exceptional variety of microorganisms, and some of them may prove particularly suitable for the purpose.For this reason, the hypothesis of energy storage in the soil "has the ???


This occurs through four different processes associated with energy provision; acquisition of the energy source, conversion/storage, transport/transmission and end use/disposal of residues from the energy conversion process . Acquisition ???

Soil source heat pump is one type of ground source heat pump. Soil, acting as cold source in summer and heat source in winter, plays an important role in the system since the ???

The amount of energy flowing into the soil, whether in the form of plant detritus, roots, root exudates, or deposition from human or natural processes such as spreading manures or erosion processes, determines the ???