

GEOTHERMAL TRAINING SYSTEM

Model Number : GOTT-GTS-01



DESCRIPTION

GOTT-GTS-01 is designed to familiarize the students to the basics of an geothermal system. The trainer will demonstrates the operation of a geothermal probe with heat pipe principle. The transparent experimental set-up provides an insight into the closed circuit of the heat transfer: it allows a clear view on the evaporation in the heat pipe, the condensation in the probe head and the reflux of the heat transfer medium on the inside wall of the heat pipe.

The set-up also allows to take a closer look at the basic methods applied for determining the thermal conductivity of the surrounding soil of the geothermal probe. The heat pipe whose operating behaviour is examined constitutes the core element of the trainer.

The heat pipe contains a lowboiling heat transfer medium. The heat input from the soil is simulated via a temperature control jacket with heating circuit.

The heat from the heat transfer medium is transferred to a working medium inside the probe head. Sensors detect the temperature and flow rate of the working medium in the heat exchanger. These measured values are used to calculate the thermal power that is transferred.

FEATURES

- Built around a special work bench that incorporates a demonstration board onto which the components are mounted
- The components are neatly laid out in a manner similar to the geothermal system circuit so as to be easily understood.
- The geothermal circuit is displayed on a colorful printed diagram.
- Transparent components allow observing how the state of the heat transfer medium changes
- Operation with low-boiling heat transfer medium

GENERAL SPECIFICATIONS

- Heat pipe
 - length: approx. 1000mm
 - Ø external, heat pipe: approx. 56mm
 - Ø external, temperature control jacket: approx. 80mm
- Heater in the heating circuit
 - output: 2kW
- Pump in the heating circuit
 - max. flow rate: 1,9m³/h
 - power consumption: 58W
- U-tube geothermal probe made of copper
 - length: approx. 1000mm
- Pump in the thermal response test
 - flow rate: approx. 4,8...28,2L/h
 - power consumption: max. 60W
- Heating element in the water tank
 - output: 100W
- Heating element in the sand container
 - output: 50W

EXPERIMENT TOPICS

- Fundamentals of geothermal energy
- Operating behaviour of a geothermal probe with heat pipe principle
- Variation of the filling level of the heat transfer medium contained
- Examination of the radial temperature profile in a sand sample and determination of the thermal conductivity
- Determination of the sand's thermal conductivity by means of a thermal response test
- Fundamentals and energy balance of a heat pump

Manuals :

- (1) All manuals are written in English
- (2) Model Answer
- (3) Teaching Manuals

General Terms:

- (1) Accessories will be provided where applicable.
- (2) Manuals & Training will be provided where applicable.
- (3) Designs & Specifications are subject to change without notice.
- (4) We reserve the right to discontinue the manufacturing of any product.

Warranty:

2 Years

ORDERING INFORMATION :

ITEM	MODEL NUMBER	CODE
GEOTHERMALTRAINING SYSTEM	GOTT-GTS-01	444-200

*Proposed design only, subject to changes without any notice.