

TEMPERATURE CONTROLLER K1A

USER MANUAL



DESMI

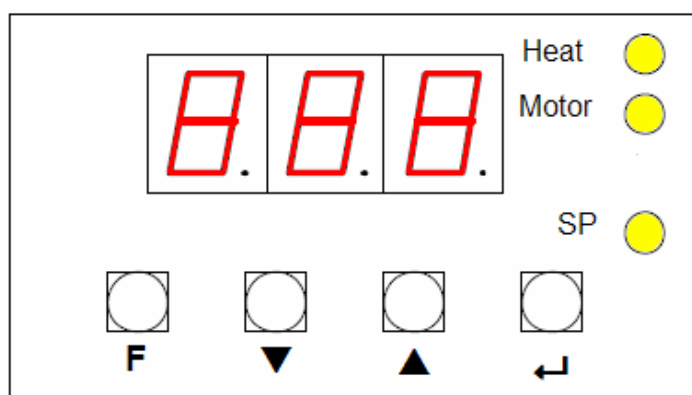
User Manual for "DESMI ROTAN" K1A temperature controller

Function of the temperature control box

The temperature control box shall secure the motor, which drives the pump, not to start until the temperature in the pump has reached the adjusted level. This level has to be adjusted to a temperature where the liquid in the pump is liquified enough to be pumped without damaging the pump. The control box turns on and shuts off the connected cartridge heaters, and sends a start signal to the motor control. The motor will be released 5 degrees before the adjusted level is attained.

Ex.: If the temperature level on the control box is adjusted to 155°C, a start signal will be sent to the motor control when the temperature level is measured to 150°C. This signal will maintain until the temperature is too low. When the temperature is at 155°C, the cartridge heaters will be shut off. If the temperature decrease to 4°C lower than the adjusted level, the cartridge heaters automatically will be turned on again.

Display, key buttons and lamps on K1A temperature controller

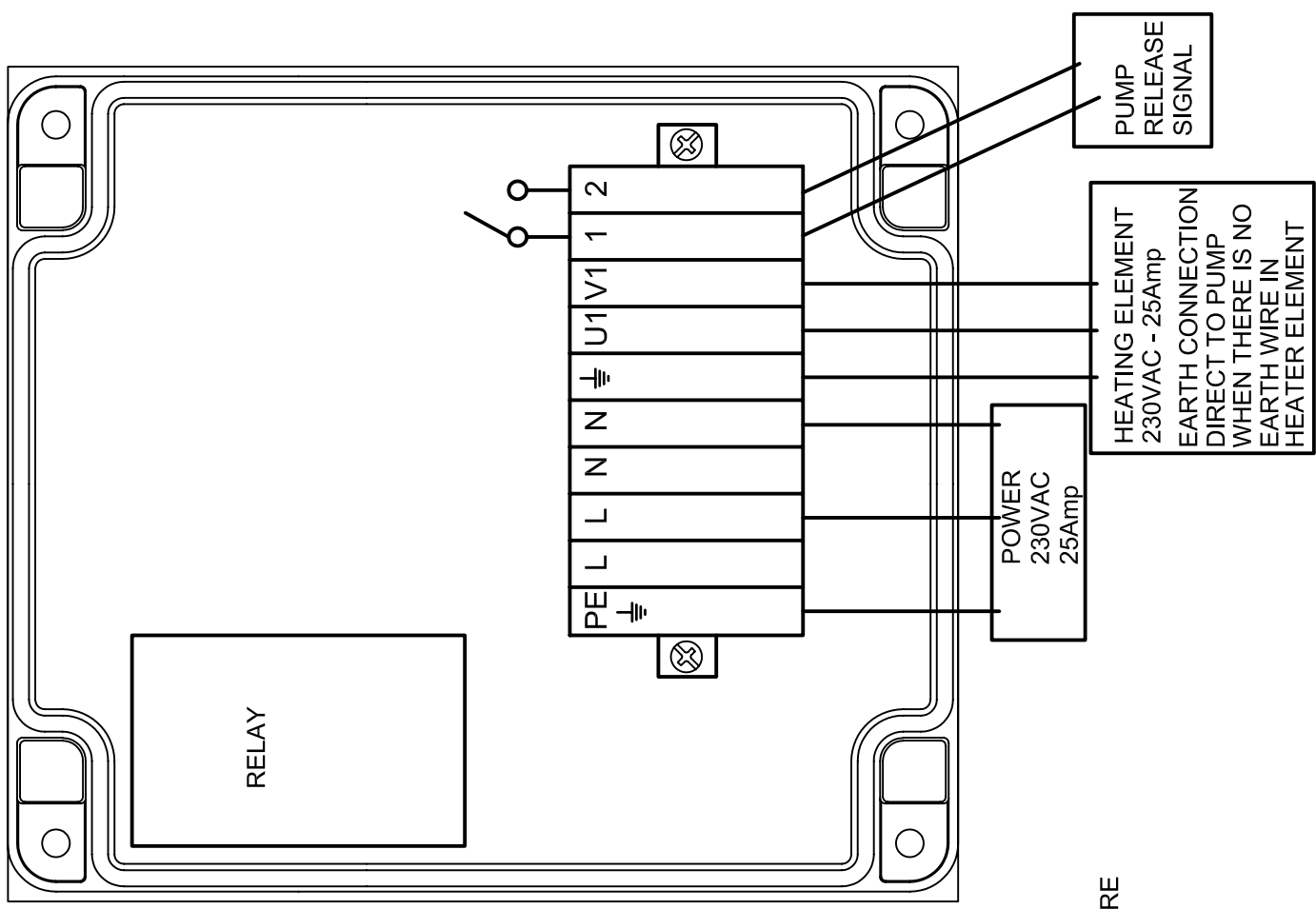
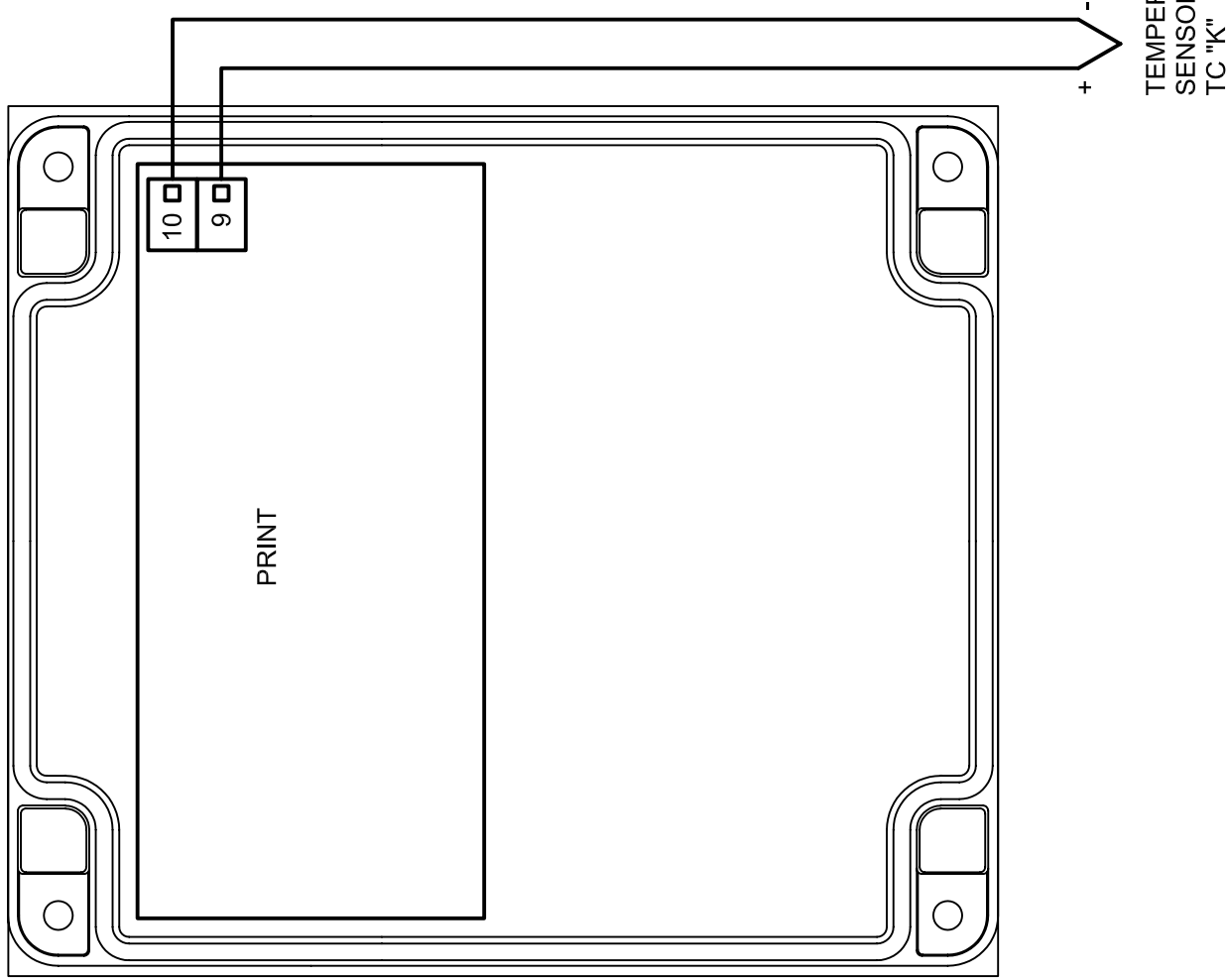


Key button functions:

- F** = This key button is only used in the special operator menu. It is not used by the ordinary user.
- ▼** = This key button is used for decreasing/changing the temperature value set point. Press the key button until the wanted value is shown in the display.
- ▲** = This key button is used for increasing/changing the temperature value set point. Press the key button until the wanted value is shown in the display.
- ←** = This key button is only used in the special operator menu. It is not used by the ordinary user.

Lamps:

- Heat** ● = Lights up when the cartridge heater is turned on.
- Motor** ● = Lights up when the motor may start. A start signal is sent to the motor control.
- SP** ● = Lights up when the temperature set point is shown in the display. When this lamp is turned off, the actual measured temperature is shown in the display.



Electrically heated ROTAN pumps for Asphalt and Bitumen.

Temperature sensor

The pump is equipped with a temperature sensor Type K DIN EN 60584 Class 2, with a 3 m twin core cable. The green core is the positive pole and the white core is the negative pole. This temperature sensor, which is placed in the rear cover, has to be connected to an operating device which will prevent the motor from starting up until the pump medium is liquid enough to be pumped.

If the distance to this operating device is more than 3 m, the temperature sensor can be connected to a temperature transmitter or the wire can be elongated with a Type K cable (NiCr-Ni).

Electrical Cartridge heaters

The voltage for the electrical heaters used in electrically heated ROTAN pumps are 230V. Wattage: see separate scheme.

If the pump is equipped with more than one cartridge heater, the cables from the cartridge heaters can be joined together in a junction box, and a single cable from there can be connected to the operating device, for instance a temperature control box

Heating time

The heating time for HD and GP pumps, equipped with electrical cartridge heaters, from 20°C to 150°C is about four hours. This is when the pump is insulated. When the pump is not insulated, the heating time will extend about 50% or more. The heating time will vary depending on the ambient temperature and air.

It is highly recommended to insulate the front cover, the pump casing and the rear cover against the pump casing with 50 mm windtight insulation. The bearing bracket (item CQ) **may not** be insulated, because this will cause the ball bearing (item CU) to be too warm.

Stuffing Box

The stuffing box packings with Desmi/Rotan material code 825, used in ROTAN pumps for Asphalt and Bitumen, is made of discontinuous aramidic yarns with a graphite based compound impregnation.

The temperature range is between -100°C to +400°C. For rotating pumps the pressure rating is up to 50 bar and the speed limit is 15 m/s. The chemical resistance is pH 2 - 12.

Mechanical shaftseal

When the pump is equipped with a mechanical shaft seal, the temperature sensor has to be installed near to the shaftseal. This is to prevent the pump from starting up until the pump medium is liquid enough to secure the dynamic parts in the shaft seal to work properly.