

LABORATORY UNIT FOR CONTINUOUS DISTILLATION

GENERAL

This continuous distillation unit can be used for diverse purposes in laboratory. Its use reaches from processing of solvents, the application in research and teaching to process development and process optimising. The reachable separating efficiency depends on the used column type and the volume to be distilled.



Pict. 1
Laboratory unit
for continuous distillation

This laboratory unit offers the following advantages:

- Due to the small construction height, use in almost all laboratories is possible.
- All product-touching parts are made of Borosilicate glass 3.3 or PTFE, enabling the use of a wide range of substances.
- All single parts of the unit are fitted with standardised connections as NS-ground joints, spherical ground joints or flanges.
- The unit can be operated under normal pressure and under vacuum.
- The operation temperatures can reach up to 200 °C.
- The measurement and control technology is modularly constructed, so the unit can be manually or automatically operated.
- The unit has a high safety standard, but does not have an EX-protection.

Construction of the continuous distillation unit

The basic part of the unit is an horizontal circulating evaporator (V) with a capacity of approx. 2 litres, which is heated by a heating plug (HK). A condenser (K) is located below the evaporator for cooling the sump product during the drain off per pump (P2) into the vessel (B2). The unit consists of two packed columns DN 50 (K1) and (K2). Between these two columns the infeed part (E) is located which is fitted with a pre-heater. Above the column is an electromagnetic controlled column head (KK). During the operation of the unit, the start product is pumped per pump (P1) from the vessel (B1) into the pre-heater (VH) and flows via the infeed part into the column.

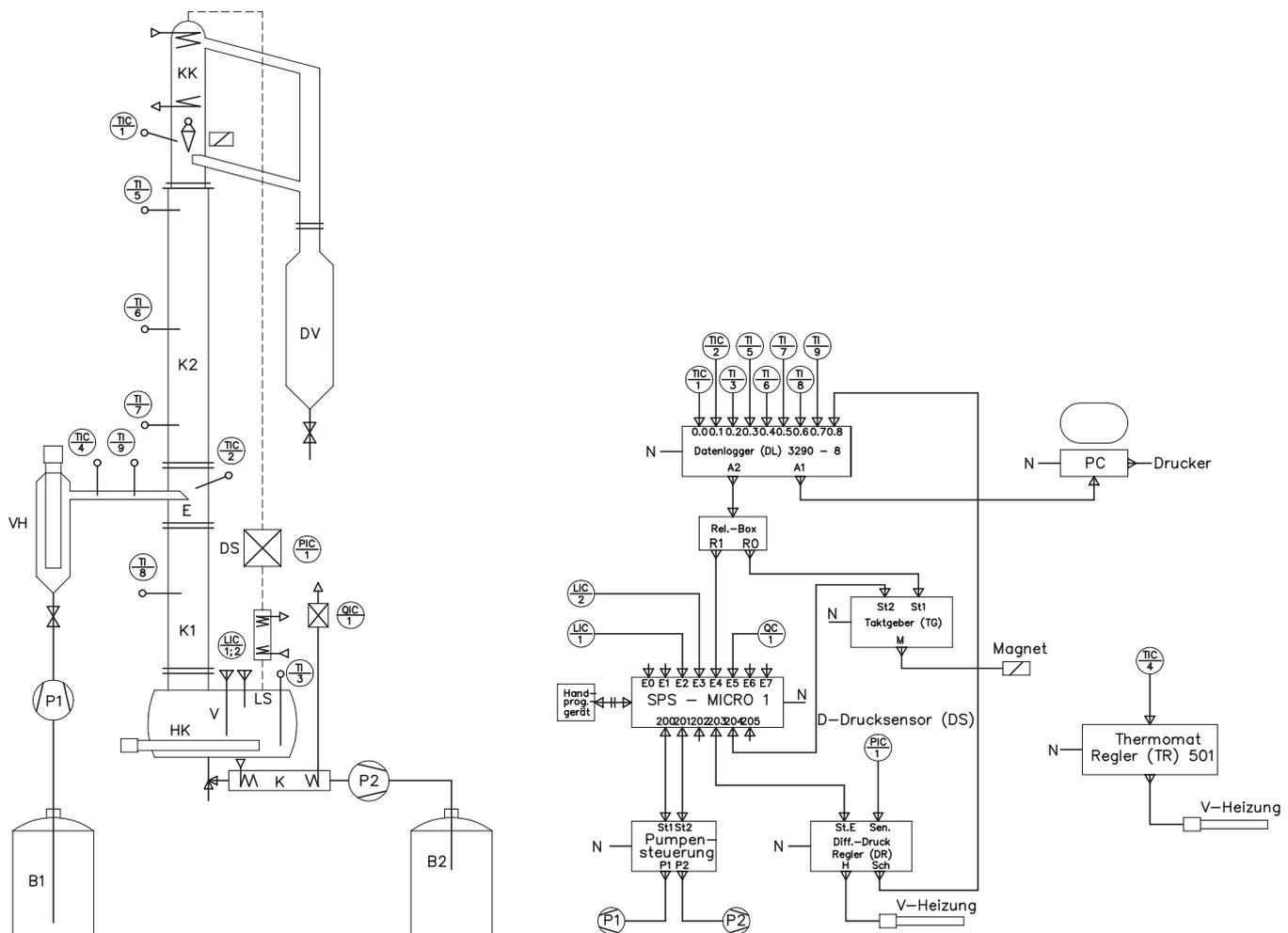
For taking the temperatures inside the evaporator, pre-heater, column and column head,

Pt 100-thermometer are used. Light rod sensors (LS) ensure the monitoring of the fill level in the evaporator. A timer (TG), a differential pressure regulating valve (DR) and a power controller are used for measurement and control of the unit.

All measuring data are captured per data logger and analysed with a computer with belonging software.

The measurement and control technology provides the facility for a fully automatic operation of the unit. A flow rate sensor, integrated in the cooling water circulation, will switch off the unit if necessary.

We will be pleased to submit you a detailed offer.



Legend:

B1 - Vessel (start product)
 B2 - Vessel (sump product)
 DR - Differential pressure controller
 DS - Differential pressure sensor
 DV - Receiver

E - Infeed part
 HK - Heating plug
 KK - Column head
 K1 - Lower column
 K2 - Upper column
 LS - Light rod

N - Mains connection
 P1, P2 - Pumps
 T - Pt 100-thermometer
 TG - Timer
 TR - Temperature controller
 V - Circulating evaporator
 VH - Pre-heater

Pict. 2 schematic description