

Unistat® 925w

Controlling a Buchi Glas Uster 250-litre GLSS reactor

Requirement

This case study demonstrates the ability of the Unistat 925w to respond to a set-point change from 100 °C to 20 °C in a Buchi Glas Uster CR252 GLSS reactor. It also demonstrates the efficiency of the Buchi Glas Uster condensers in retrieving water vapour.

Method

The Unistat and reactor are connected using two 2-metre insulated metal hoses. The reactor is filled with 200 litre of water.

Results

From 20 °C a new set-point of 100 °C is entered. The jacket heats quickly to 132 °C bringing the water inside the GLSS reactor to its boiling point in approximately 3-hours.

Once boiling, a request from Buchi Glas Uster was to demonstrate the efficiency of the attached condensers so a set-point of 110 °C was entered to make the Unistat heater run

at maximum (12 kW) generating a Delta-T of 32 K between the jacket and process. The result was that 20 litre of water/hour was condensed in the attached condensers

Setup details

- Temperature range: -90...200 °C
- Cooling power: 16 kW @ 200...-20 °C
15 kW @ -40 °C
13,5 kW @ -60 °C
- Heating power: 12 kW
- Hoses: M38x1,5; 2*2 m
- HTF: DW-Therm
- Reactor: Buchi Glas Uster CR252, 250-litre glass-lined (enameled) steel reactor
- Reactor content: 200 litre water
- Reactor stirrer speed: 90 rpm
- Control: process

