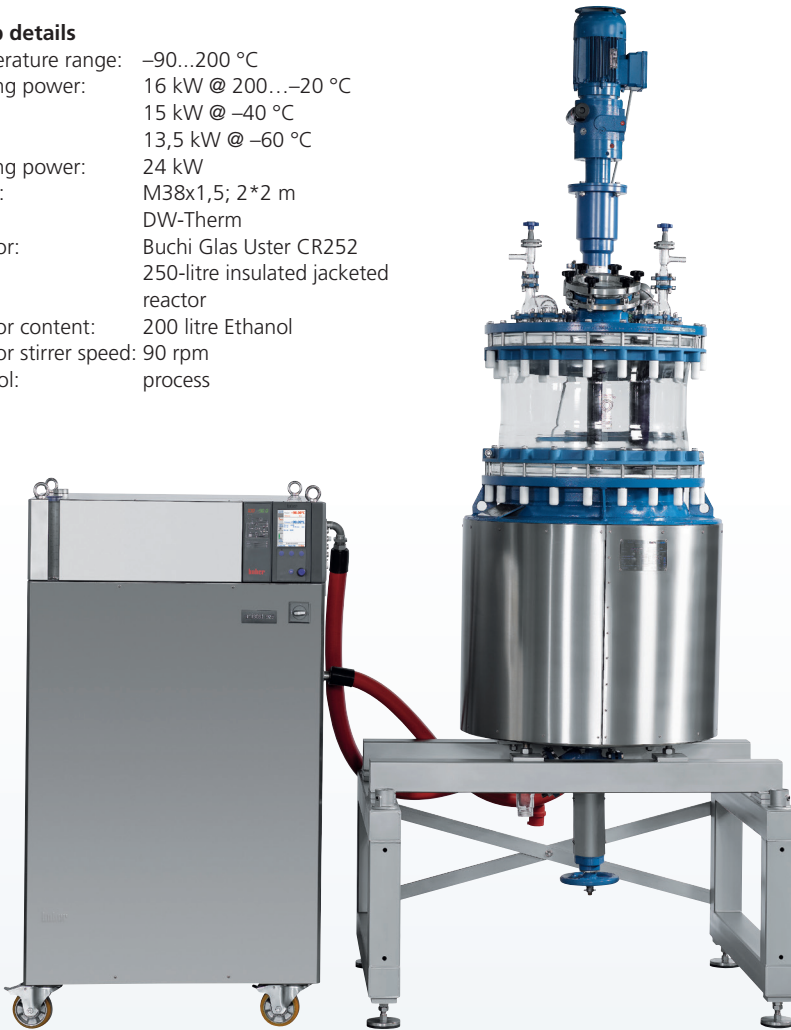


**Setup details**

Temperature range: -90...200 °C  
 Cooling power: 16 kW @ 200...-20 °C  
 15 kW @ -40 °C  
 13,5 kW @ -60 °C  
 Heating power: 24 kW  
 Hoses: M38x1,5; 2\*2 m  
 HTF: DW-Therm  
 Reactor: Buchi Glas Uster CR252  
 250-litre insulated jacketed  
 reactor  
 Reactor content: 200 litre Ethanol  
 Reactor stirrer speed: 90 rpm  
 Control: process



# Unistat® 925w

**Predictable and repeatable control of a Buchi Glas Uster CR252 GLSS reactor**

**Requirement**

This case study examines the performance of a Unistat 925w when connected to a Buchi Glas Uster 250-litre insulated jacketed GLSS reactor.

**Method**

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

**Results**

The minimum jacket temperature of the Buchi Glas Uster reactor was limited to -60 °C as was the ramp rate to avoid damaging the glass lining. It can be seen that the Unistat 925w was still well within its maximum performance capabilities at this temperature.

The first curve shows the process temperature being lowered to -50 °C from 20 °C (70 K) which the 925w achieved in approximately 2-hours. The process temperature set-point is maintained with a  $\Delta T$  of only (approximately) 2 K.

The next curve demonstrates the heat-up capability of the Unistat 925w by returning the process temperature to 20 °C from -50 °C in approximately 40-minutes.

The following curves show the repeatability and predictability of the performance of the Unistat 925w by ramping the process temperature between 20 °C and -30 °C, each curve being exactly the same.

