Setup details
Unistat® 930w & 100-litre Buchi Glas Uster «chemReactor» CR101

Temperature range:	-90...200 °C
Cooling power:	20 kW @ 0...-40 °C 15 kW @ -60 °C
Heating power:	24 kW
Hoses:	2x1.5 m; M38x1.5 (#6656)
HTF:	DW-Therm (#6479)
Reactor:	100-litre glass-lined (enameled) steel reactor
Reactor content:	75 litre M90.055.03 (#6259)
Stirrer speed:	80 rpm
Control:	process

Unistat® 930w

Controlling an exothermic reaction in a Buchi Glas Uster CR101 GLSS reactor

Requirement
A 2.38 kW (2047 kcal / hr) exothermic reaction is simulated at 0 °C in a 100-litre reactor to determine how quickly the Unistat 930w reacts to control the process at set-point.

Method
The Unistat and reactor are connected using two 1.5-metre insulated metal hoses. The reactor is filled with 75 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results
When the control system detects an increase in process temperature it reacts immediately to create a ΔT between process and jacket temperature to induce heat flow. The „internal" (jacket) temperature ramps rapidly to approx. -42 °C to bring the process temperature back to the set-point.