



## Unistat® 930w

**Accurate and safe control of a Diehm 100-litre glass reactor**

### Requirement

This case study looks at the performance of a Unistat 930w heating a 100-litre reactor to 180 °C.

The HTF used is "DW-Therm" which has an upper temperature limit of 200 °C so the jacket temperature (HTF temperature) must remain below this limit.

### 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

It can be seen that the jacket rapidly heats to close to the limit of the DW-Therm while the process temperature ramps smoothly to its setpoint of 180 °C.

In addition to the limit imposed by the upper limit of DW-Therm, the reactor is also protected against thermal shock by the user set "ΔT

limit". In this case the ΔT limit is set to 100 K. This ensures that the temperature gradient between the reactor's jacket and the process never exceeds 100 K.

### Setup details

Unistat® 930w & Diehm reactor

Temperature range:	-90...200 °C
Cooling power:	19 kW @ 200...100 °C 20 kW @ 0...-40 °C
Heating power:	24 kW
Hoses:	2x1.5 m; M38x1.5 (#6656)
HTF:	DW-Therm (#6479)
Reactor:	100-litre un-insulated glass reactor VPC Bypass installed (#6259)
Reactor content:	75 litre M90.055.03 (#6259)
Stirrer speed:	400 rpm
Control:	process

