

# Unistat® 405w

Heating and cooling a Glas-Keller 1-litre jacketed glass reactor between 20 °C and 180 °C

### Requirement

This case study looks at the response to a wide set-point change in the process contained within a 1-litre Glas-Keller reactor.

### Method

The Unistat 405w is connected to the Glas-Keller 1-litre reactor with two 1-metre insulated metal hoses. The reactor is filled with 0.75 litre of "M90.055.03", a silicon based HTF.

### Results

The process is ramped through 160 K (20 °C to 180 °C within 40 minutes, ramp rate > 4 K/min.). The cooling curve ramps at a rate of 5.3 K/min. changing from 180 °C to 20 °C (160 K) in approximately 30 minutes.

### Setup details

Unistat® 405w & Glas-Keller reactor

- Temperature range: -45...250 °C
- Cooling power: 1.3 kW @ 250...0 °C  
0.7 kW @ -20 °C
- Heating power: 1.5 kW / 3 kW
- Pump speed: 3300 rpm
- Hoses: 2x1 m; M24x1.5 (#9325)
- HTF: DW-Therm (#6479)
- Reactor: 1-litre jacketed glass pressure reactor
- Reactor contents: 0.75 litre M90.055.03 (#6259)
- Reactor stirrer speed: 200 rpm
- Control: process

