



Setup details

Unistat® 610w & Radleys reactor

Temperature range: -60...200 °C
 Cooling power: 7.0 kW @ 200...0 °C
 6.4 kW @ -20 °C
 3.3 kW @ -40 °C
 0.8 kW @ -60 °C
 Heating power: 6.0 kW
 Hoses: 2x1.5 m; M30x1.5 (#6386)
 HTF: DW-Therm (#6479)
 Reactor: 10-litre jacketed glass reactor
 Reactor content: 7.5 litre M90.055.03 (#6259)
 Stirrer speed: 200 rpm
 Control: process

Unistat® 610w

Linear Ramping a Radleys 10-litre jacketed glass reactor

Requirement

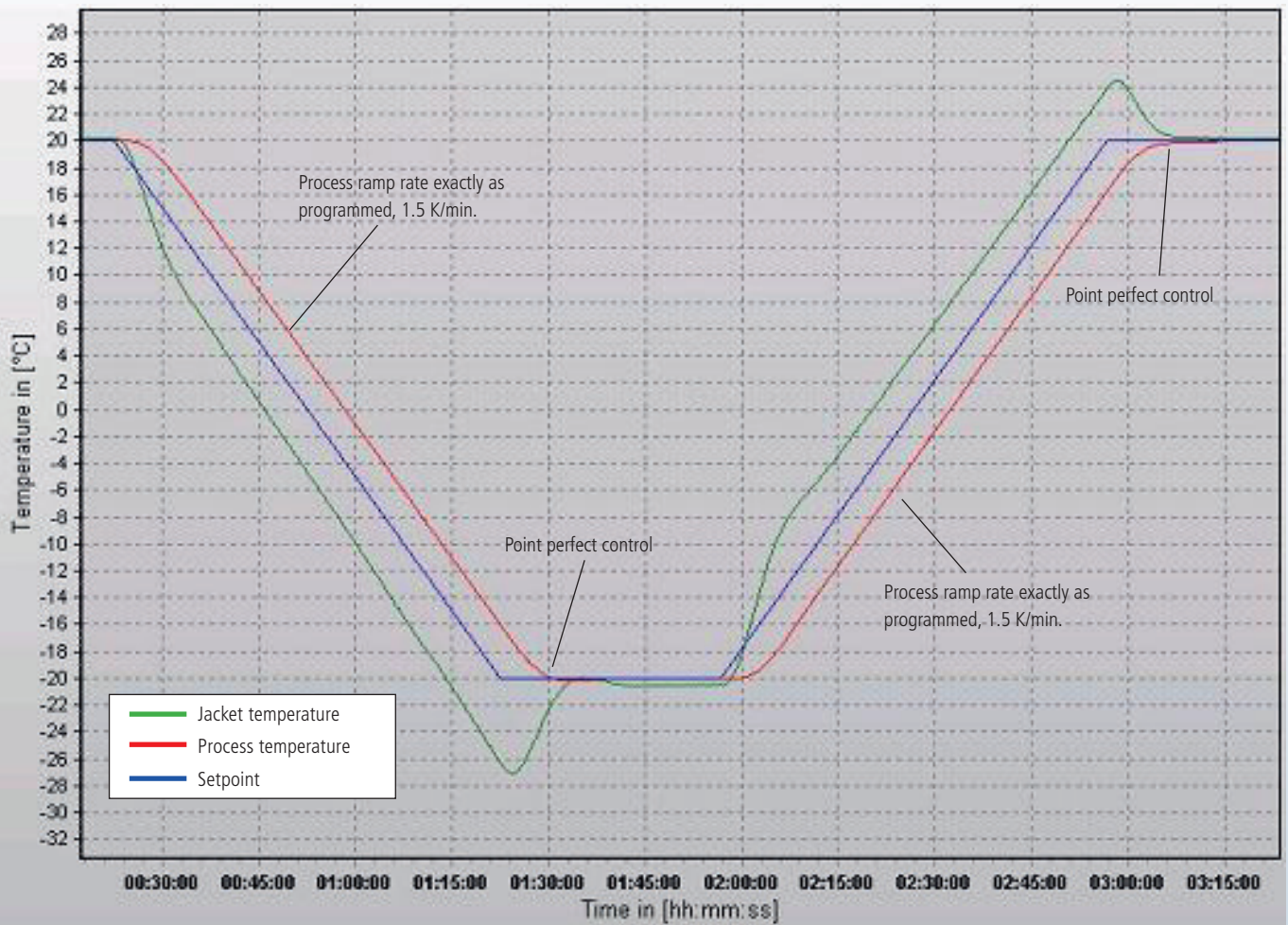
This case study demonstrates the ramp rate set to cool then heat the process from 20 °C to -20 °C in 60 minutes (1.5 K/min.) then back to 20 °C over the same time period.

Method

The reactor and Unistat are connected using two 1.5 metre insulated metal hoses. The reactor is filled with 7.5 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

The process ramp is uniform. The control is point-perfect to the setpoints with no overshoot.



Unistat® 610w

Simple setpoint change

In this case study, the Unistat 610w responds to a change in set point and cools and heats the process as fast as possible.

Method

The reactor and Unistat are connected using two 1.5 metre insulated metal hoses. The reactor is filled with 7.5 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

This graphic demonstrates the capability of a Unistat 610w when connected to a 10-litre jacketed glass reactor. The speed of response of the jacket temperature can be seen in the rapid ramping rate from 20 °C to -60 °C within 12 minutes.

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 3.3 kW @ -40 °C
 0.8 kW @ -60 °C

Heating power: 6.0 kW
 Hoses: M30x1.5 (#6386)
 HTF: DW-Therm (#6479)
 Reactor: 10-litre jacketed glass reactor

Reactor content: 7.5 litre M90.055.03
 specific heat capacity of 0.36 kcal / kg K

Stirrer speed: 200 rpm
 Control: process

