Unistat® 705w

Heating a Radleys 1-litre jacketed glass reactor from 20 °C to 100 °C

Requirement

This case study looks at the performance of a Unistat 705w heating a Radleys 1-litre glass reactor from 20 °C to 100 °C under "process" control.

Method

The Unistat and reactor are connected using two 1-metre insulated metal hoses. The reactor is filled with 0.75 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

The control dynamic is set to "no overshoot" so the final approach to the set-point is slower to ensure that the process does not overshoot its target temperature.
Even with this dynamic set it can be seen in the graphic the speed of the ramp to the set-point.

Setup details
Unistat® 705w & Radleys reactor

Temperature range:	-75…250 °C
Cooling Power:	0.6 kW @ 250…100 °C 0.65 kW @ 0 °C 0.6 kW @ -20…-40 °C 0.3 kW @ -60 °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 un-insulated jacketed glass reactor
Reactor contents:	0.75 litre M90.055.03 (#6259)
Reactor stirrer speed:	200 rpm
Control:	process