Unistat® 705w

Cooling a Buchi Glas Uster 3-litre metal reactor from 180 °C to 20 °C

Requirement
This case study shows the performance of a Unistat 705w cooling a Buchi Glas Uster 3-litre un-insulated metal pressure reactor from 180 °C to 20 °C under "process" control.

Method
The Unistat and reactor are connected using two 1-metre insulated metal hoses. The reactor is filled with 2.25 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results
It can be seen from the narrow ΔT between "internal" (jacket) and the process temperatures that thermal transfer in this reactor is very good. Total time to ramp the process through 160 K (180 °C to 20 °C) is approximately 65 minutes.

Setup details
Unistat® 705w & Buchi Glas Uster 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	3500 rpm
Hoses:	2x1 m; M24x1.5 (#9325)
HTF:	DW-Therm (#6479)
Reactor:	3-litre un-insulated metal pressure reactor
Reactor contents:	2.25 litre M90.055.03 (#6259)
Reactor stirrer speed:	200 rpm
Control:	process