

Unistat® 425w

Cooling a Buchi Glas Uster 20-litre jacketed glass reactor

Requirement

This case study looks at the performance of a Unistat 425w cooling a Buchi Glas Uster 20-litre glass reactor from 100 °C to 20 °C under "process" control.

Method

The Unistat 425w is connected to the 20-litre Buchi Glas Uster reactor using two insulated metal 1-metre hoses. The reactor is filled with 15 litre of "M90.055.03", a silicon based HTF.

Results

The jacket temperature ramps through 115 K (100 °C to -15 °C) within 28 minutes (ramp rate > 4.1 K/min.) to pull the process to its new set-point. As the process approaches target temperature the jacket heats to guide the process precisely to its target temperature.

Setup details

Unistat® 425w & Buchi Glas Uster reactor

Temperature range:	-40...250 °C
Cooling power:	2.8 kW @ 250...100 °C 2.5 kW @ 0 °C 1.9 kW @ -20 °C 0.2 kW @ -40 °C
Heating power:	2.0 kW
Hoses:	2x1 m; M38x1.5 (#6656)
HTF:	DW-Therm (#6479)
Reactor:	20-litre un-insulated glass reactor
Reactor contents:	15 litre M90.055.03 (#6259)
Reactor stirrer speed:	150 rpm
Control:	process

