Unistat Grande Fleur®

Baby Tango - Grande Fleur - controlling QVF 6 litre reactor

Requirement
This Case Study examines the cooling, heating and temperature control capabilities of the Unistat Grande Fleur connected to an uninsulated QVF 6-litre glass jacketed reactor.

Method
The 6 litre QVF reactor was connected to Grande Fleur using two M16 1-meter flexible hoses. The thermofluid used in the system was "M40.165/220.10 (6 l). "Process" control was carried out via a Pt100 sensor located in the "process" mass. Stirrer speed was set to 270 rpm.

Setup details

Temperature range:	-40°C...+200°C
Cooling power:	0.60 kW @ +20°C 0.60 kW @ +200°C 0.60 kW @ 0°C 0.35 kW @ -20°C 0.20 kW @ -30°C
Heating power:	1.5 kW
Hoses:	M24x1,5
Thermofluid:	M40.165/220.10
Reactor:	QVF 6 litre glass jacketed reactor
Reactor content:	5 litre M40.165/220.10
Stirrer speed:	270 rpm
Control:	Process

Results

Performance:
The first graphic shows the time taken to heat the process from 25°C to 100°C. It can be seen that it takes approximately 43-minutes with the process temperature reaching and stabilising at the new set-point perfectly.

The second graphic shows the time taken to cool the process from 100°C to 20°C. It can be seen that the time taken is approximately 64-minutes, again the stability and accuracy of the control is clearly demonstrated.