Setup details
Unistat® 910w & Diehm 100-litre reactor

Temperature range:	-90…250 °C
Cooling power:	5.2 kW from 250 °C to -20 °C 4.7 kW @ -40 °C 3.1 kW @ -60 °C 0.9 kW @ -80 °C
Heating power:	6.0 kW
Hoses:	M38x1.5; 1x 2m #6657; 1x1m # 6655, VPC Bypass installed
HTF:	M90.055.03 (#6259)
Reactor:	100-litre Diehm un-insulated jacketed glass reactor
Reactor content:	75 litre M90.055.03
Stirrer speed:	410 rpm
Control:	process

Unistat® 910w

Heating a Diehm 100-litre jacketed glass reactor from -60 °C to 20 °C

Requirement
This case study looks at the speed of response when the process temperature set-point is changed from -60 °C to 20 °C in a Diehm 100-litre jacketed glass reactor.

Method
The Unistat and reactor are connected using two 1.5-metre insulated metal hoses. The reactor is filled with 75 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results
It can be seen that the jacket temperature ramps rapidly from -60 °C to 85 °C in around 50 minutes (average ramp rate of around 3 K/min.) and as the process approaches its set-point, ramping back to guide the process exactly to its new set-point within 55 minutes (average ramp rate of 1.5 K/min.) with a negligible over-shoot.