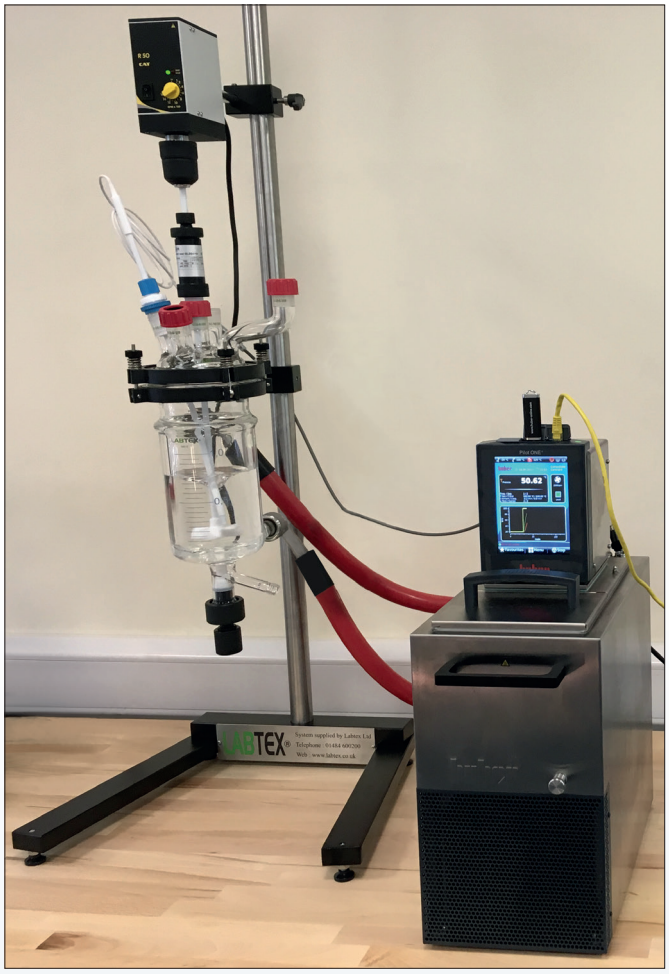


CC®-K6

CC®-K6 controlling a 1-litre Labtex reactor

Requirement
This case study looks at the efficiency and performance of a CC-K6 connected to a 1-litre Labtex reactor.

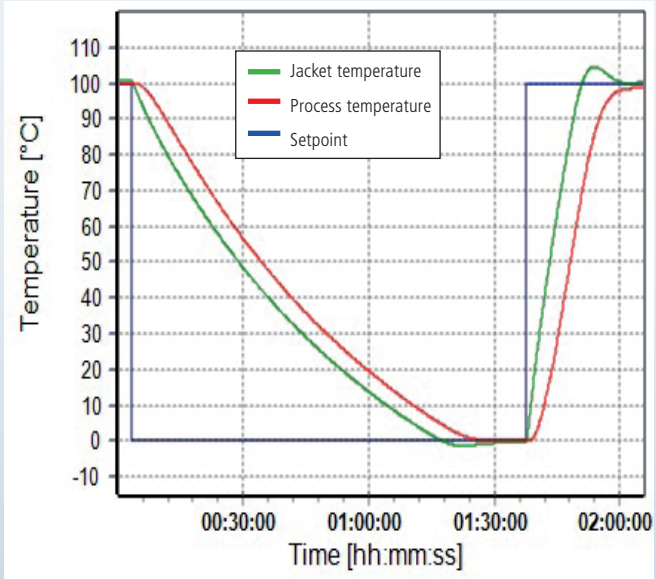
Method
The 1-litre Labtex uninsulated glass jacketed reactor, was connected to the CC-K6 using two insulated metal hoses. The thermofluid used in the system was M80.100/250.03. "Process" control was carried out via a Pt100 sensor located in the process mass. Stirrer speed was set to 300 rpm.

Setup details

Temperature range:	-25°C...+200°C
Cooling power:	0,20 kW @ +20°C 0,15 kW @ 0°C 0,05 kW @ -20°C
Heating power:	2,0 kW
Hoses:	M16x1; 2 x 1 m
HTF:	M80.100/250.03
Reactor:	1-litre Labtex glass jacketed reactor, uninsulated
Reactor content:	M80.100/250.03 (0,7l)
Stirrer speed:	300 rpm
Control:	Process

Results

Performance:
The first graphic shows the cooling and heating of the process from +100°C to 0°C achived in 83 minutes (ramp rate = 1.2 K/min) and back to +100°C acheived in 40 minutes (ramp rate = 2.5 K/min).



Lowest achievable temperature (T_{min}):
The second graphic shows the minimum achievable process temperature of -18°C. It can also be seen that the Process cool down time to -15°C from +100°C was 120 minutes (ramp rate = 1 K/min) and to -18°C took 150 minutes.