

CC[®]-K6

CC[®]-K6 controlling 1 liter Asahi reactor

Requirement

This Case Study demonstrates the speed and accuracy when a CC-K6 is connected together with an Asahi 1 liter vacuum insulated reactor over the temperature range +20°C to +150°C and back to +20°C.

Method

The 1 liter Asahi vacuum insulated reactor, was connected to the CC-K6 using two metal insulated hoses. The thermofluid used in the system was M20.195/235.20. "Process" control was carried out via a Pt100 sensor located in the process mass. Stirrer speed was set to 150 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: M16, 2 x 1 m
 HTF: M20.195/235.20
 Reactor: 1 liter Asahi vacuum insulated
 Reactor content: 1 l M20.195/235.20
 Stirrer speed: 150 rpm
 Control: Process
 Amb. temperature: +23°C

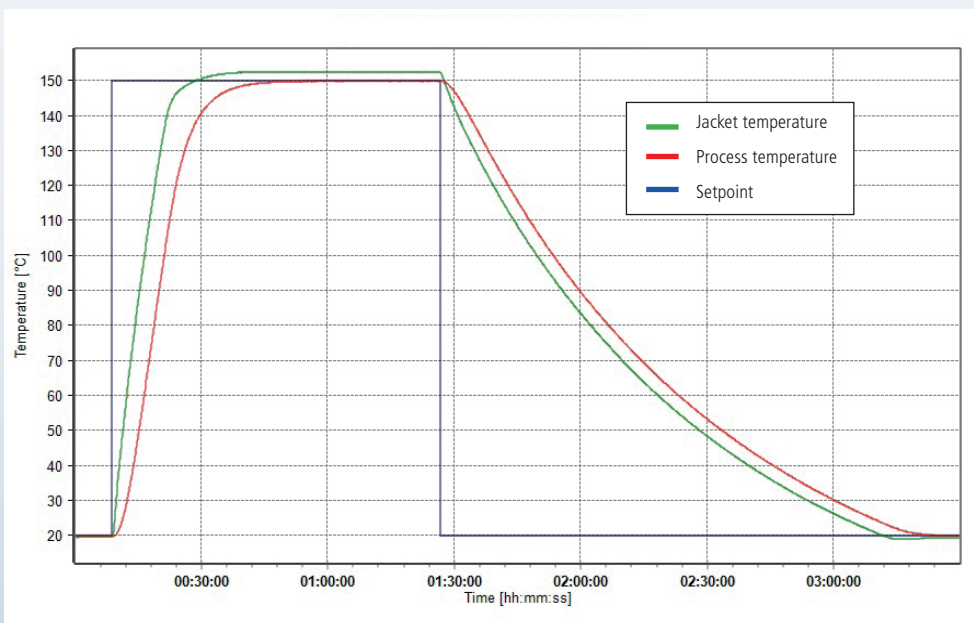


Results

1. Performance:

The graphic shows the CC-K6 reaching and maintaining each new set point.

Start T	End T	Approximate time	Av. Ramp Rate	Fastest Ramp Rate
+20°C	+150°C	38 minutes	3.4 K/min	(+30°C to +60°C) 7.5 K/min
+150°C	+20°C	117 minutes	1.1 K/min	(+130°C to +100°C) 1.9 K/min



2. Lowest achievable temperature (Tmin):

The graphic shows the CC-K6 cooling the process to -7.8°C.

