Ministat® 240-cc®-NR

Ministat® 240-cc®-NR with displacement insert cycling a 2 litre Radleys jacketed reactor

Requirement

This case study demonstrates the ability of the Ministat® 240-cc®-NR with displacement insert to cycle the process temperature in a range from +100°C to -20°C, the closeness of the temperature control and the minimum process temperature achievable in the process mass.

Method

The 2 litre Radleys reactor was connected to the Ministat® 240-cc®-NR using two M16x1 1-meter flexible hoses. The internal bath volume was reduced by using a displacement insert (#6820). This accessory minimize the thermal load and allows faster ramping times. The thermofluid used in the system was M40.165.10. "Process" control was carried out via a Pt100 sensor located in the process mass.

Setup details

Temperature range:	-45°C...+200°C
Cooling power:	0.60 kW @ +20°C 0.55 kW @ 0°C 0.35 kW @ -20°C 0.20 kW @ -30°C
Heating power:	2.0 kW
Hoses:	M16x1; 2* 1 m
HTF:	M40.165.10
Reactor:	Radleys 2 litre jacketed reactor
Reactor content:	1 litre M20.195.20
Stirrer speed:	200 rpm
Control:	process

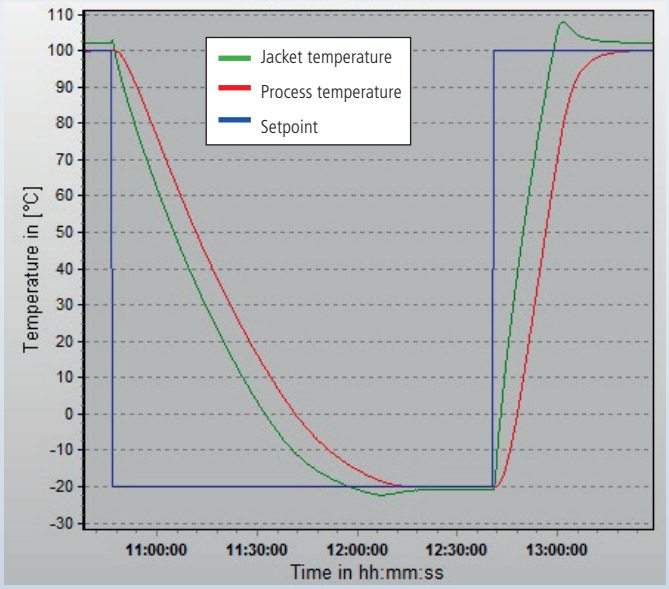
Results

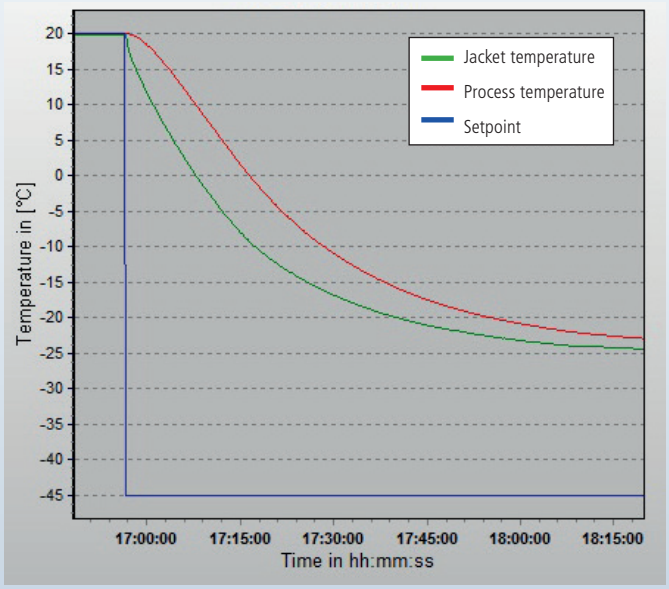
Performance:

The Ministat® 240-cc®-NR needs approximately 85 minutes to cool down the reactor from +100°C to -20°C and 35 minutes to heat it up from -20°C to +100°C.

Lowest achievable temperature (T_{min}):

The Ministat® 240-cc®-NR cools the reactor down to the minimum achievable process temperature of approximately -25°C.





Technical details and dimensions are subject to change. No liability is accepted for errors or ommisions.