



Unistat® 520w

Unistat® 520w cycling a 50 litre Chemglass jacketed reactor

Requirement

This case study demonstrates the ability of the Unistat 520w to cool down the process temperature in the reactor from +100°C to -30°C. The graphics additionally shows a heat up curve as well as the closeness of temperature control and the minimum process temperature achievable in the process mass.

The 50 litre Chemglass reactor was connected to Unistat 520w using two M30x1.5 1-meter flexible hoses. The thermofluid used in the system was M90.055.03. "Process" control was carried out via a Pt100 sensor located in the process mass.

Setup details

Temperature range: -55°C...+200°C Cooling power: 6.0 kW @ +200°C

6.0 kW @ +100°C 6.0 kW @ 0°C 4.2 kW @ -20°C 1.5 kW @ -40°C

6 kW Heating power:

Hoses: M30x1.5; 2* 1 m HTF: M90.055.03 Reactor: Chemglass 50 litre

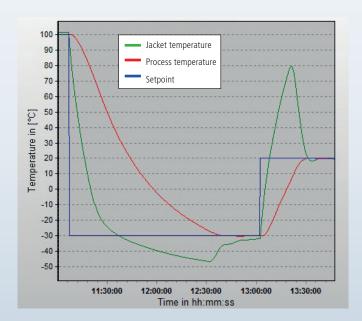
jacketed reactor 34.5 I M90.055.03

Reactor content: Stirrer speed: 100 rpm Control: process

Results

Performance:

The Unistat 520w needs approximately 92 minutes to cool down the process temperature in the reactor from +100°C to -30°C and 28 minutes to heat it up from -30°C to +20°C.



Lowest achievable temperature (Tmin):

Once stable at +20°C under "Process" control, a set-point of -55°C is entered. The Unistat 520w cools the reactor down to the minimum achievable process temperature of -50°C.

