CC®-508

CC®-508 cycling a 40-litres steel enamel De Dietrich reactor

Requirement
This case study demonstrates the ability of the CC-508 refrigeration bath circulator to cycle the process temperature in a range from +0°C to +37°C, the closeness of the temperature control and the minimum process temperature achievable in the process mass.

Method
The 40-litres steel enamel De Dietrich reactor was connected to the CC-508 using two insulated metal hoses. The thermofluid used in the system was M60.115/200.05. "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:	-55°C...+200°C
Cooling power:	1,5 kW @ +100°C 1,5 kW @ +20°C 1,5 kW @ 0°C 1,0 kW @ -20°C 0,3 kW @ -40°C
Heating power:	3,0 kW
Hoses:	M16x1; 2 x 1 m
HTF:	M60.115/200.05 (20l)
Reactor:	40-litres steel enamel De Dietrich reactor
Reactor content:	M40.165/220.10 (30l)
Stirrer speed:	300 rpm
Control:	Process

Results

Performance:
Cooling and heating over the range 0°C to +37°C.
The CC-508 needs approximately 96 minutes to cool the reactor from +25°C to 0°C and 95 minutes to heat it from 0°C to +37°C.

Lowest achievable temperature (T_{min}):
The CC-508 cools the reactor to the minimum achievable process temperature of -18°C.