

Unistat® 825w

Controlling a 300 W (258 kcal / hr) simulated exothermic reaction in a Buchi Glas Uster 10-litre jacketed glass reactor

Requirement

An exothermic reaction is simulated inside a Buchi Glas Uster 10-litre glass reactor with an electric heater. A sudden heat input of 300 W (258 cal/hr) is introduced to demonstrate the response of the Unistat 825w.

Method

The Unistat and reactor are connected using two 1.5-metre insulated metal hoses. The reactor is filled with 7.5 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

The process temperature increases by 3.2 K and is controlled back to 0 °C within 11 minutes. The heater is then turned "Off". The process temperature falls by 3.5 K but is recovered to its set-point within 10 minutes.

Setup details

Unistat® 825w & Buchi Glas Uster «miniPilot» 10 reactor

- Temperature range: -85...250 °C
- Cooling power: 2.4 kW @ 0...-40 °C
1.5 kW @ -60 °C
- Heating power: 3.0 kW
- Hoses: 2x1.5 m; M30x1.5 (#6386)
- HTF: DW-Therm (#6479)
- Reactor: 10-litre jacketed glass reactor
- Reactor contents: 7.5 litre M90.055.03 (#6259)
- Reactor stirrer speed: 400 rpm
- Control: process

