

Unistat® Tango® Nuevo

Exothermic reaction at 20 °C in a 2-litre reactor

Requirement

This case study looks at the response capability of the Unistat Tango Nuevo and the resulting impact on process temperature control.

Method

The Unistat Tango Nuevo was connected to a 2-litre un-insulated glass reactor using two 1-metre insulated metal hoses. The reaction was simulated using an electric heater placed inside the reactor contents.

Results

An exothermic reaction of 50 W (43 kcal / hr) is simulated with an immersion heater at 20 °C in an un-insulated 2-litre glass reactor. The process curve shows how fast the Unistat Tango Nuevo compensates for a sudden rise in process temperature. The rapid generation of a wide ΔT to induce heat flow to bring the simulated reaction under control can be seen in the response curves.

Setup details

- Unistat® Tango® Nuevo & DDPS reactor
- Temperature range: -45...250 °C
- Cooling power: 0.7 kW @ 250...0 °C
0.4 kW @ -20 °C
- Heating power: 1.5 kW / 3 kW
- Hoses: 2x1 m; M24x1.5 (#9325)
- HTF: DW-Therm (#6479)
- Reactor: 2-litre un-insulated glass reactor (#6259)
- Reactor content: 1.5 litre M90.055.03 (#6259)
- Stirrer speed: 200 rpm
- Control: process

