

**Product Name :**  
Multivariable Control Stirred Tank

**Product Code :**  
AR712



**Description :**

Multivariable Control Stirred Tank

**Technical Specification :**

Multivariable Control: Stirred Tank

A pump transports the reactant out of a collecting tank via a heat exchanger into the stirred tank. The reactant is pre-heated by the heat exchanger. A heater in the double jacket permits control of the temperature in the stirred tank. Another pump transports the heated product out of the stirred tank via the heat exchanger back into the collecting tank.

A bypass in the inlet routes the flow past the heat exchanger. A three-way motorised valve adjusts the ratio between the flow heated in the heat exchanger and the flow in the bypass. This is a further method of controlling the temperature in the stirred tank.

A control valve changes the flow rate in the outlet and thus the level in the stirred tank. The temperature and level are mutually dependent variables. It is this dependence that makes this multivariable control system so complex.

Coupled level and temperature control in one stirred tank

Circuit with stirred tank, collecting tank and pump

Heat recovery with heat exchanger

Stirred tank with double jacket and heater; level display for tank and jacket

Temperature control with heater and 3-way motorised valve as actuators

Level control with pneumatic control valve as actuator

Temperature controller and level controller configurable and parameterisable with software

2-point controller for constant temperature in collecting tank via external cooling water

Optional process control software via Profibus DP interface including PC1 Computer-System with 21" TFT-

Monitor Win 10 engl.

Technical Data:

Tanks

Stirred tank: 15L

Collecting tank: 70L

2 pumps

Flow rate: 60l/min

Head: 20m

Heat exchanger transfer surface: 0,8m<sup>2</sup>

Heater power output: 2kW

Temperature and level controller parameterisable as

P, PI or PID controller

Switching controller

Measuring ranges

Flow rate: 60...640l/h

Temperature: 0...100<sup>°</sup>C

Level: 0...1000mm

3-way motorised valve opening: 0...100%

230V, 50Hz, 1 phase

## Naugralabequipments

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