

RT 450.02

Controlled system module: flow



Learning objectives/experiments

- setting up of a flow control loop
- comparison of different sensors for flow measurement
- level / flow cascade control (with RT 450.01)

Specification

- [1] flow control loop setup (in conjunction with other modules from the RT 450 series)
- [2] ready-to-install compact panel assembly
- [3] rotameter with scale
- [4] stop valve in the inlet section
- [5] water as the working medium, supply via base module RT 450
- [6] optional cascade control in conjunction with RT 450.01

Technical data

Rotameter

- 0...2,5m³/h

LxWxH: 250x180x700mm

Weight: approx. 10kg

Scope of delivery

- 1 rotameter mounted on panel, complete with stop valve and connections

Description

■ main element in constructing a flow control loop

The RT 450.02 consists of a rotameter as the principle element and uses water as the working medium. A valve can be used to adjust the flow resistance and thus change the flow properties of the controlled system.

A major advantage of this controlled system is that the rotameter allows all changes in the flow rate caused by faults or responses to a control action to be directly observed.

A control loop for flow control experiments is set up using the base module RT 450, a control valve (RT 450.2x), the RT 450.10 controller and a sensor (e.g. RT 450.34).

RT 450.02

Controlled system module: flow

Required accessories

RT 450 Process automation training system: base module

Control with pneumatically driven control valve

RT 450.21 Control valve, pneumatically driven, Kvs 1,0

RT 450.10 Continuous controller module

or

RT 450.42 PLC module with software

Control with electrically driven control valve

RT 450.24 Control valve, electrically driven, Kvs 1,0

RT 450.11 Switching controller module

or

RT 450.42 PLC module with software

Sensor

RT 450.34 Flow rate sensor: electromagnetic

or

RT 450.33 Orifice with differential pressure sensor

Optional accessories

RT 450.12 Paperless recorder module

RT 450.13 Digital display

RT 450.40 Visualisation software

with

RT 450.41 Ethernet module for controller

Additionally required for level / flow cascade control

RT 450.01 Controlled system module: level

RT 450.10 Continuous controller module

RT 450.35 Level sensor, capacitive

or

RT 450.32 Pressure sensor, 0...100mbar