

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).

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Required accessories

080.45000	RT 450	Process Automation Training System: Base Module
Control with pneumatically driven control valve		
080.45021	RT 450.21	Control valve, pneumatically driven, Kvs 1,0
080.45010	RT 450.10	Continuous controller module
or		
080.45042	RT 450.42	PLC module with software
Control with electrically driven control valve		
080.45024	RT 450.24	Control valve, electrically driven, Kvs 1,0
080.45011	RT 450.11	Switching controller module
or		
080.45042	RT 450.42	PLC module with software
Sensor		
080.45034	RT 450.34	Flow rate sensor: electromagnetic
or		
080.45033	RT 450.33	Orifice with differential pressure sensor

Optional accessories

080.45014	RT 450.14	Software for controller configuration
080.45012	RT 450.12	Chart recorder module
080.45013	RT 450.13	Digital display
080.45040	RT 450.40	Visualisation software
with		
080.45041	RT 450.41	Profibus DP module for controller
or		
080.45043	RT 450.43	Profibus DP module for PLC
Additionally required for level / flow cascade control		
080.45001	RT 450.01	Controlled system module: level
080.45010	RT 450.10	Continuous controller module
080.45035	RT 450.35	Level sensor, capacitive
or		
080.45032	RT 450.32	Pressure sensor, 0...100mbar