



Accessories

Type	Description
XYE460F001	Demo case for flexotron®400
0460240001	Pluggable terminal strips for flexotron®400/800
0460240010	Cabinet fitting kit for flexotron®400
EGT338F102	External setpoint adjuster, room operating unit with potentiometer

Inputs and outputs

Type	RDT405F201	RDT410F201	RDT410F301
Analogue inputs	1	2	2
Digital inputs	1	2	2
Universal inputs	1	1	1
Analogue outputs	2	2	2
Digital outputs	-	3	3
Display	•	•	•

Definition

The flexotron®400 devices are digital, pre-configured controllers for ventilation systems in building automation.

The devices feature five different prepared applications and can be operated using the push knob. The display is language neutral and displays the operating statuses and other indicators using symbols. The display is backlit; the light is activated when the operating knob is pressed or turned.

The flexotron®400 devices are available in various models, RDT405 with 5 inputs/outputs and RDT410 with 10 inputs/outputs, the latter in the variants with 24 V~ or 230 V~ supply voltage.

Engineering notes

3-point activation of the valves:

- With the RDT410F301, the valve actuators must be activated using coupling relays.
- For actuators and devices with 24 V~, the LS terminal (24 V) of the RDT is connected to the MM terminal (ground in SAUTER devices) of the actuators. If additional components are connected in the system, you must be sure to avoid ground faults. If required, coupling relays are used to activate the actuators.
- With actuators with 24 V=, the valve actuators must be activated using coupling relays.

The ground wiring for the analogue inputs and outputs and the universal inputs must be performed according to the diagram and separately in order to avoid measurement errors.

Configuration and parameterisation

The unit is configured and parameterised using the built-in display and push knob.

Access rights

The devices have various access rights, which can be activated using the push knob. All devices have a configuration menu, and the RDT410 has an additional menu for the time programme.

You can access the corresponding menus by pressing the push knob for 10 or 3 seconds.

External setpoint

The option EGT338F102 can be used to set an external setpoint of 12...28°C. This signal is activated in the configuration menu.

Alarms

With the RDT410 devices, the corresponding symbol flashes on the display in case of alarm. Four different alarms can be displayed: frost protection, overtemperature, fan operating message and sensor fault.

Time programme

Both variants of the RDT410 have a weekly time-switch. There are a total of four switching intervals available, which can be assigned to individual or all working days, or to all days of the week.

Activating the valves

With the RDT410, the valves can be activated with 0... 10 V or alternatively via 3-point activation. When using a 3-point actuator, the alarm output cannot be used.

With the RDT405, only the 0...10 V variant is possible.

Universal input for RDT410

There are four different setting options for the universal input UI1: frost protection on analogue output AO1, frost protection on analogue output AO2, overtemperature limit switch or unallocated input.

Overview of the control models

The flexotron®400 controllers have the following control models

RDT405:

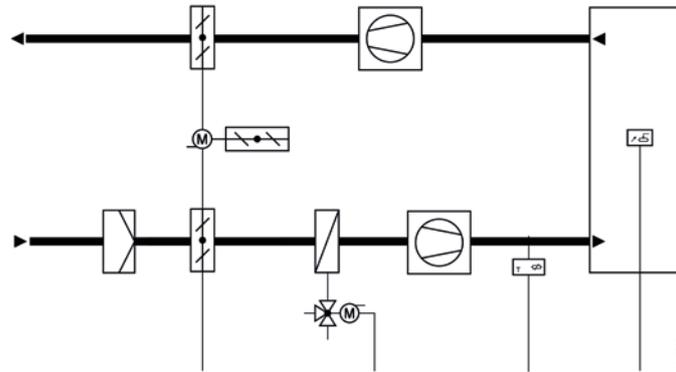
- Temperature control
- CO2 control
- Universal control, e.g. humidity
- Pressure control
- Outside-temperature sensing pressure control

RDT410:

- Supply-air temperature control
- Outside-temperature sensing supply-air temperature control
- Return-air (room) supply-air cascade control
- Heating circuit control with heating curve
- DHW control

Control models of the RDT405

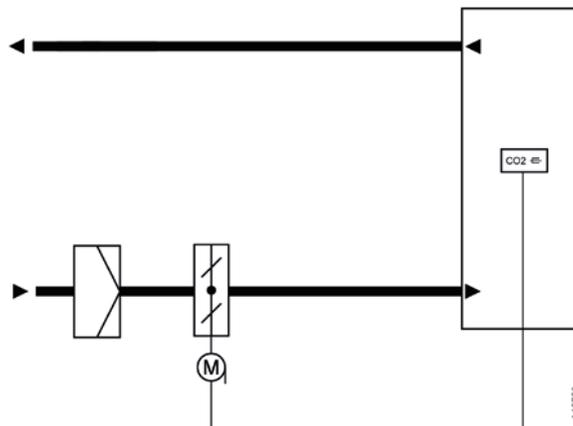
1. Temperature control



A PI control loop is used. The analogue outputs can be configured for the following combinations.

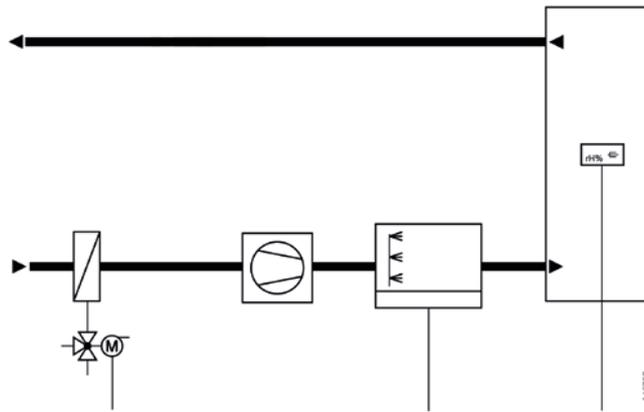
	AO1	AO2	Display symbols
1	Heating	-	\ ☀
2	Cooling	-	/ ❄
3	Heating	Cooling	\ / ☀ ❄
4	Heating	Heating	\ \ ☀ ☀
5	Cooling	Cooling	// // ❄ ❄
6	Heating	Damper	\ / ☀ ☐
7	Cooling	Damper	// // ❄ ☐
8	Change-over	-	\ / ☀ ❄ ☐

2. CO<sub>2</sub> control



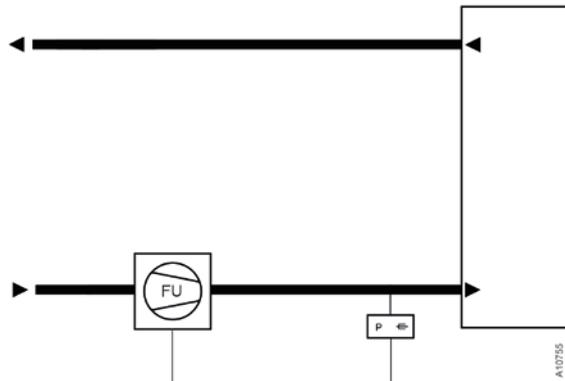
A PI control loop is used. Min./max. limitation of the output is possible.

### 3. Universal controller



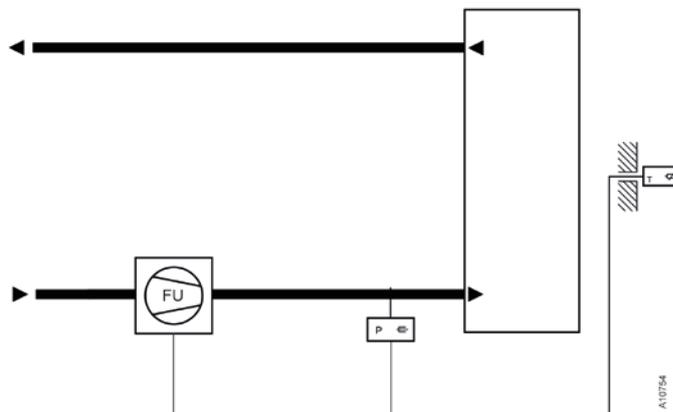
A PI-controller is used. With humidity control, humidifying is accomplished with AO1 (positive control) and dehumidifying with AO2 (negative control).

### 4. Pressure control



A PI control loop is used. The pressure transmitter must have an output signal of 0...10 V. The measuring range can be adjusted up to 2500 kPa.

### 5. Outside-temperature sensing pressure control

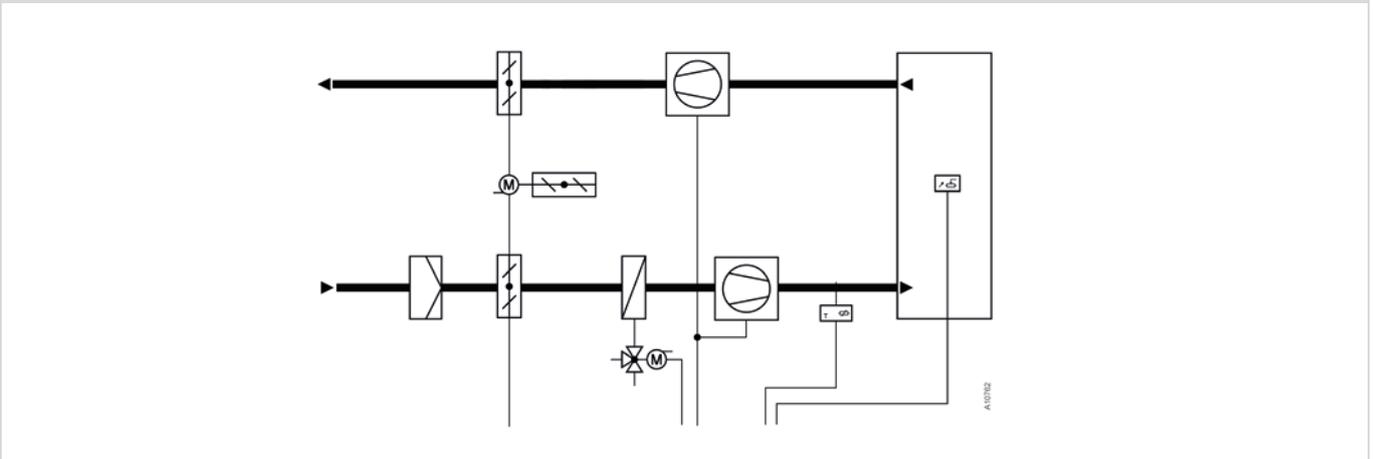


A PI control loop is used. The pressure setpoint is defined depending on the outside temperature; the temperature range is set to 20...60°C. The pressure transmitter must have an output signal of 0...10 V. The measuring range is adjustable up to 2500 kPa.

**Control models of the RDT410**

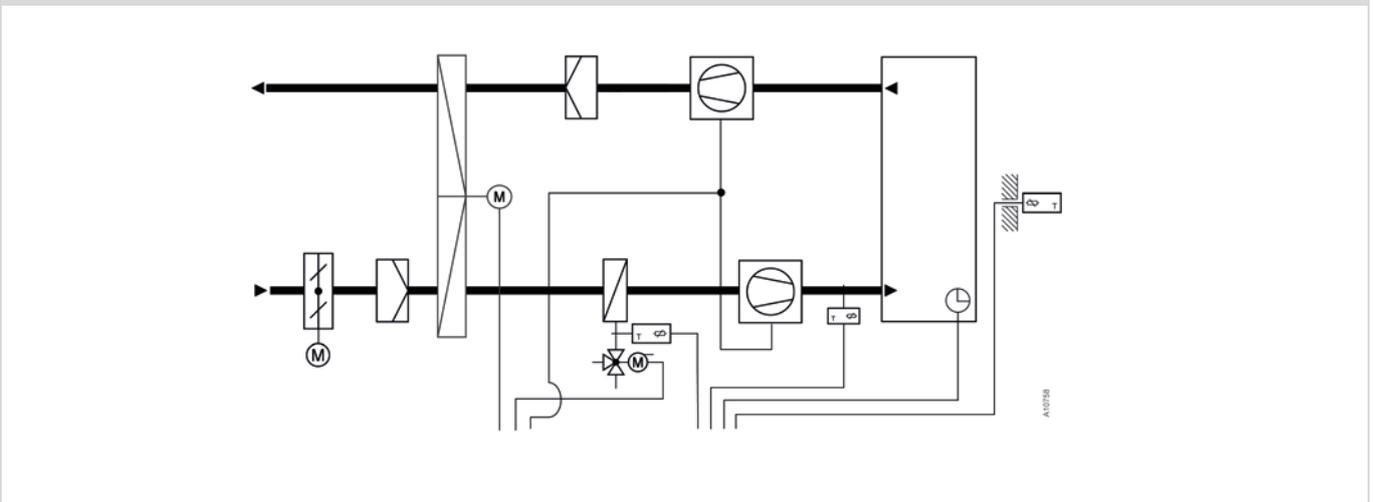
The control modes are for both variants of the RDT410, regardless of whether they are 24 V or 230 V variants.

**1. Supply-air control**



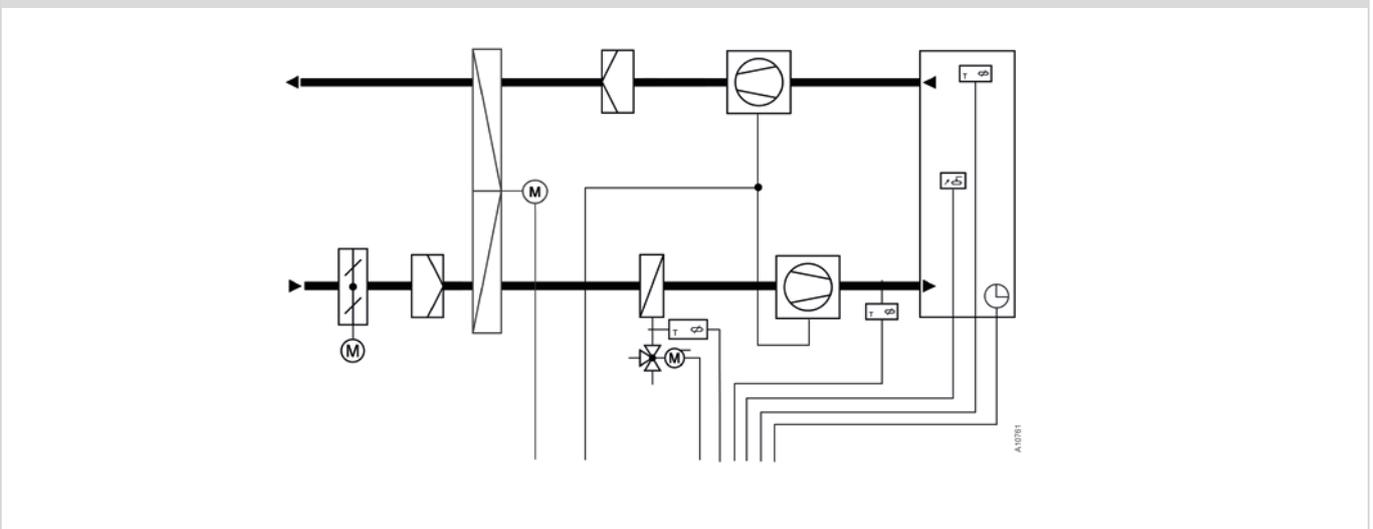
A PI control loop is used.

**2. Outside-temperature sensing supply-air control**



A PI control loop is used. The setpoint is defined automatically depending on the outside temperature.

**3. Room (return-air) supply-air cascade control**

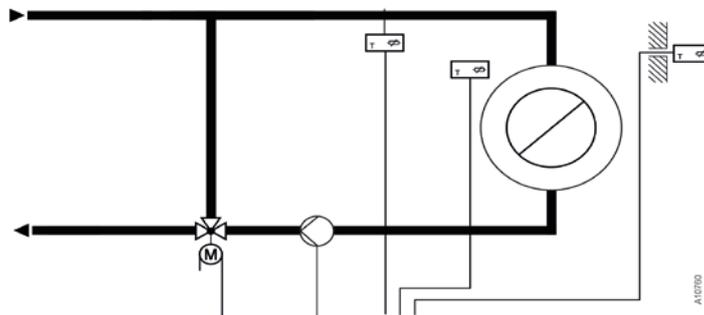


A P-PI cascade controller is used. The supply air can be limited to a maximum and minimum. A return-air or room-temperature sensor must be used.

In the control modes 1 to 3, the analogue outputs can be selected for the following combinations.

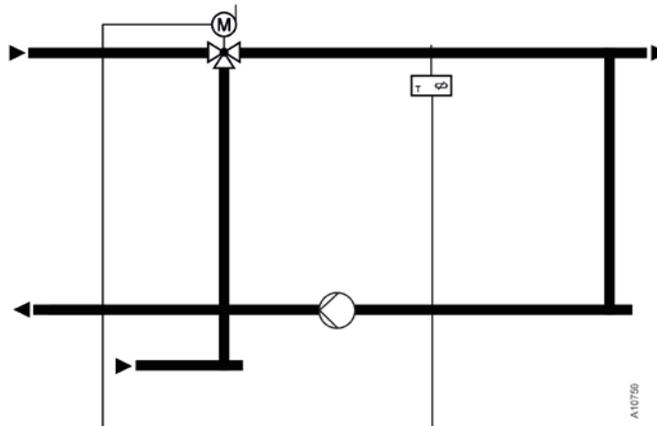
	A01	A02	Display symbols
1	Heating	-	\ ☀
2	Cooling	-	/ ❄
3	Heating	Cooling	\ / ☀ ❄
4	Heating	Heating	\ \ ☀ ☀
5	Cooling	Cooling	// // ❄ ❄
6	Heating	Damper	\ / ☀ ☑
7	Cooling	Damper	// // ❄ ☑

#### 4. Heating control



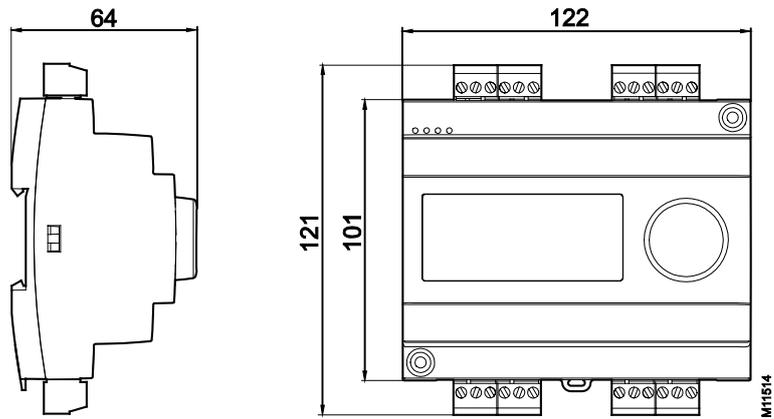
A PI control loop is used. The setpoint of the supply temperature is defined automatically depending on the outside temperature.

#### 5. Hot water control

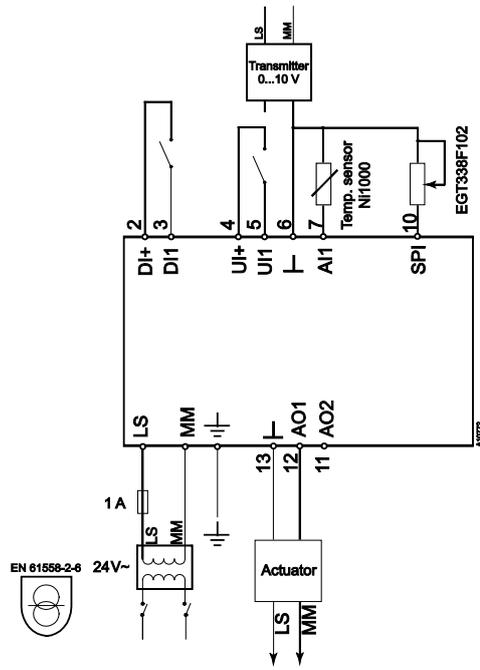


A PID control loop is used.

Dimension drawing

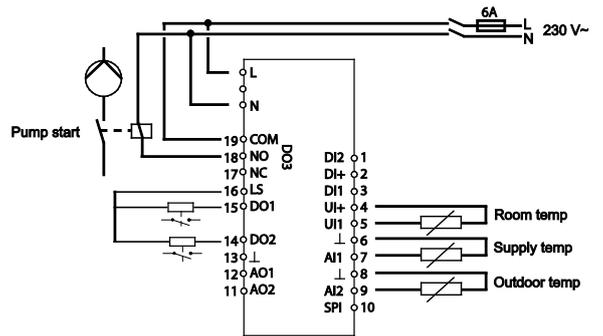
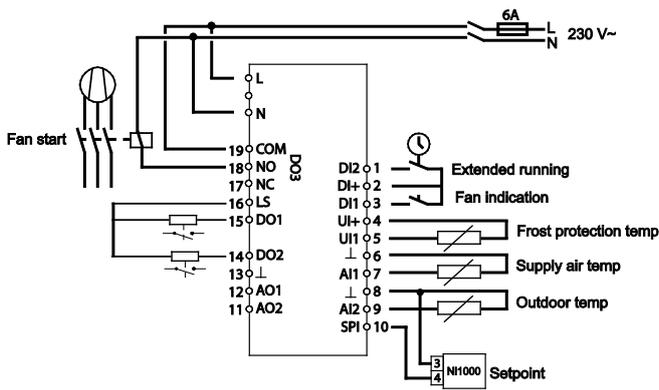
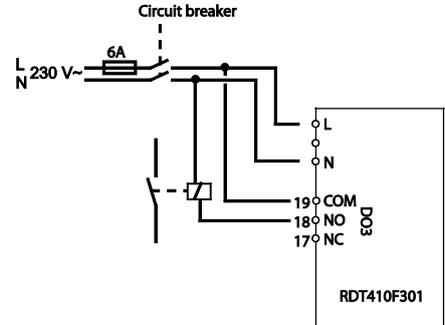
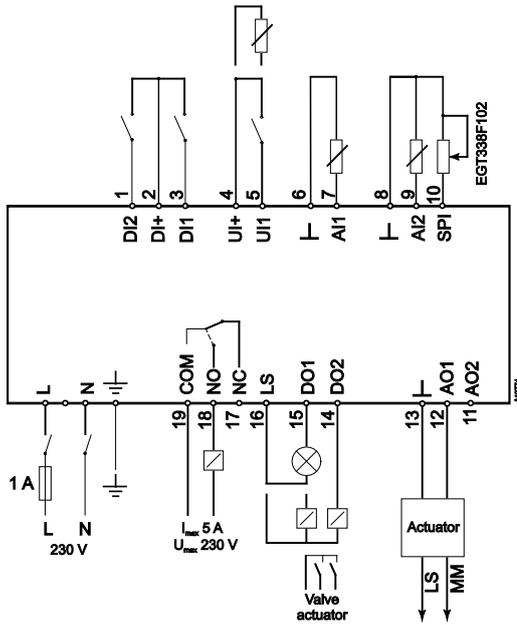


Connection diagram RDT 405





Connection diagram RDT410F301



Terminal assignment RDT410F301 with heater (water), 3-point output. Outdoor-temperature sensing supply-air temperature control with external setpoint transmitter.

Control mode 4: Terminal assignment RDT410F301 with 3-point actuator and room-temperature sensor (possible use without room sensor)