Aktor T 2P

Thermal Actuators
On/Off Control

Thermal actuators are used in the heating, ventilation and air conditioning trades. The actuators can be used for room temperature control or as zone valves.
In combination with Oventrop thermostatic valves or heating circuit distributors/collectors for surface heating and Oventrop room thermostats, they enable individual room temperature control.
The control can be carried out by regulation via on/off outputs or by pulse width modulation.
If Oventrop actuators are used for room temperature control, a time-controlled setback of the room temperature via room thermostats is possible, for example by means of time programmes of the ClimaCon F room thermostats (e.g. ClimaCon F 210 / F 310).

Oventrop offers actuators in "normally closed" or "normally open" versions.
In the "normally closed" version, the valve is opened evenly when voltage is applied; this can be seen from the extended stroke indicator. If no voltage is applied to the actuator, the valve closes evenly after the idle time has elapsed.
The function of the thermal actuators "normally open" is reversed, when voltage is applied the valve is closed, in the de-energized state the valve is open.

Actuators "normally closed"

Thermal actuators "normally closed" have a first-open function. In the delivery state, these actuators are normally open. This enables heating operation during the shell construction phase, even if the electrical wiring of the individual room control has not yet been completed.
If the operating voltage is applied for longer than 6 minutes, the first-open function is released and the actuator is ready for operation.

Features

- Simple plug-in mounting on valve adapter
- Can be used in conjunction with room thermostats
- Silent operation with low power consumption
- Universally applicable
- Mounting independent of position
- Protected against overvoltage

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Product Details

Aktor T 2P Thermal Actuators 230 V

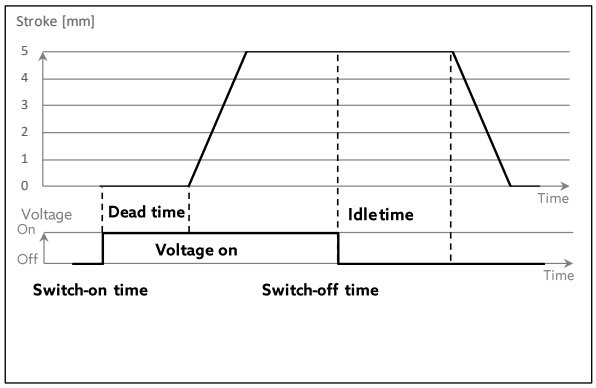
Item no.	Version	Cable length [m]	Connection cable
1012415	Normally closed	1	2 x 0.75 mm²
1012425	Normally open	1	2 x 0.75 mm²
1012435*	Normally closed with integrated auxiliary switch	1	4 x 0.75 mm²
1012452	Normally closed	2	See table cable cross-section
1012455	Normally closed	5	See table cable cross-section
1012459	Normally closed	10	See table cable cross-section

Technical Data

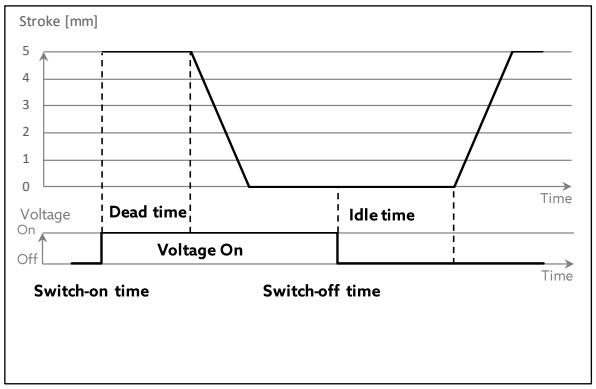
Connection thread	M 30 x 1.5
Operating voltage	230 V AC ± 10 %, 50...60 Hz
Switch-on current	< 550 mA for max. 100 ms
Continuous current	4.5 mA
Opening or closing time	approx. 5 min.
Stroke	5 mm
Positioning force	> 90 N
Auxiliary switch, switching current	5 A resistive load 1 A inductive load
Auxiliary switch, switching point	approx. 2 mm
Protection type	IP 54 in all installation positions
Protection class	II according to EN 60730
Colour	RAL 9016 (traffic white)
Medium temperature	0...+100 °C
Ambient temperature	0...+60 °C
Storage temperature	-25...+60 °C

* Actuator with auxiliary switch

Thermal actuators with auxiliary switch can switch a pump directly, for example, via the integrated potential-free contact.



Characteristic line, normally closed



Characteristic line, normally open

Aktor T 2P Thermal Actuators 24 V

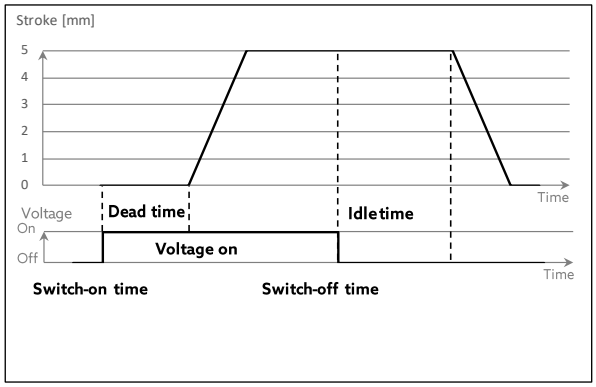
Item no.	Version	Cable length [m]	Connection cable
1012416	Normally closed	1	2 x 0.75 mm²
1012426	Normally open	1	2 x 0.75 mm²
1014235	Normally closed	1	2 x 0.75 mm²

Technical Data

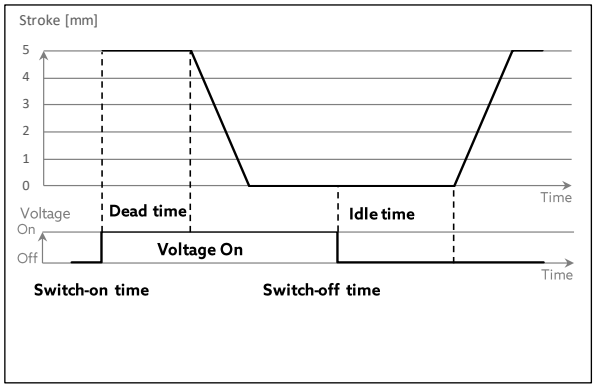
Connection thread	M 30 x 1.5
Operating voltage	24 V AC -10...+20 %, 0...60 Hz
Switch-on current	< 300 mA for max. 2 min
Continuous current	45 mA
Closing or opening time	approx. 5 min.
Stroke	5 mm
Positioning force	> 90 N
Protection type	IP 54 in all installation positions
Protection class	III according to EN 60730
Colour	RAL 9016 (traffic white)
Medium temperature	0...+100 °C
Ambient temperature	0...+60 °C
Storage temperature	-25...+60 °C

For the versions with 24 V operating voltage, a safety transformer according to EN 61558-2-6 must always be used. The dimensioning of the transformer results from the switch-on power of the actuators.

Rule of thumb:
$P_{Transformer}$ = 7,2 W x n
n = Number of actuators



Characteristic line, normally closed



Characteristic line, normally open

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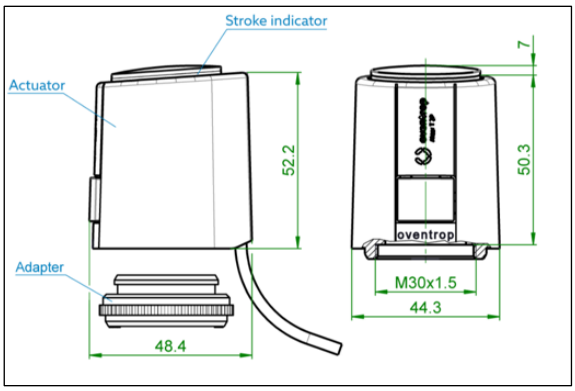
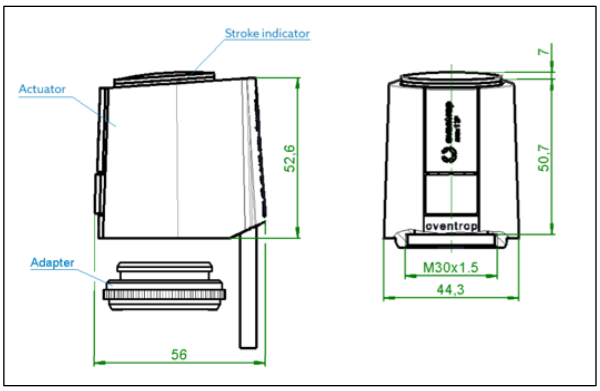
Range of application, installation and mounting

The electrical connections must comply with the regulations of the local Electricity Board.
Please note: Brown connection cable to phase (L). Fusing of the control circuit is recommended. The connection cable must not be laid on heat-carrying pipes or the like, as this accelerates the ageing of the cable material.
When selecting the switching contacts and the mains fuses, the switch-on current of the heating element must be taken into account. The voltage loss through electrical cables must not exceed 10% to comply with the specified running time.
The actuators are mounted by means of a valve adapter and do not require any tools. The valve adapter is screwed onto the valve by hand and the actuator is attached to the adapter by plug-in mounting.

The Oventrop thermal actuators can be operated in any installation position. Vertical (stroke indicator at the top) and horizontal positions are preferable. When mounted vertically downwards, special circumstances (e.g. dirty water) can reduce the service life.



Dimensions of actuators with connection thread M 30 x 1.5



Dimensions of actuators with auxiliary switch

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Accessories

Reinforcing cap

To protect the thermal actuators against vandalism.

	Suitable for	Item no.
	Connection thread M 30 x 1.5	1012450

Valve adapter

For thermal actuators.

	Suitable for	Item no.
	Connection thread M 30 x 1.5	1012461 (replacement)
	Connection thread M 30 x 1.5 high model (11 mm)	1012462
	Connection thread M 30 x 1.0	1012890 (manufactured until 1998)
	Squeeze connection	1012463

FloorCon F electrical connecting block

With automatic hydronic balancing for surface heating and cooling.

	Suitable for	Room thermostats	Item no.
	230 V, without channel allocation	8	1400984
	230 V, with channel allocation	10	1400985

Electrical connecting block for surface heating

When using item no. 1400980/82 with 24 V, an external power supply of 24 V must be available. Item no. 1153053 can be used as transformer.

	Suitable for	Control zones	Item no.
	24 V and 230 V, heating	6	1400980
	230 V, heating/cooling (C/O), pump control	10	1400981
	24 V, heating/cooling (C/O), pump control	10	1400982
	230 V, heating/cooling (C/O), pump and boiler control and integrated time switch	10	1400983

ClimaCon F Room thermostat

The room thermostat can be used as leader room thermostat.

	Suitable for	Item no.
	230 V, heating	11155021 (230 V, F 210)
		1155031 (230 V, F 310)
	24 V, heating	1155531 (24 V, F 310)

ClimaCon F Room thermostat

The room thermostat can be used as follower room thermostat.

	Suitable for	Item no.
	230 V, heating	1155009 (230 V, F 90)
		1155010 (230 V, F 100)
	24 V, heating	1155510 (24 V, F 100)

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