

Tender specification:

Oventrop electrothermal actuator for steady control. Proportional actuator (0-10 V) with connection thread M 30 x 1,5, closed with current “off”, with First-Open function, stroke index and automatic adjustment to neutral point. The actuator can be installed in any position. Easy plug-in connection with valve adapter. Protection against dismounting through removable release flap.

Model:	Item no.:
“Aktor T ST L NC”	
24 V, proportional actuator (0-10 V) closed with current “off”	101 29 52

Performance data:

Operating current:	24 V AC, 10% up to +40%, 50/60 Hz
Start up load:	< 250 mA for a max. of 2 min.
Continuous current:	about 80 mA
Control voltage:	0-10 V DC
Input impedance:	100 kΩ
Piston stroke:	4.0 mm
Operating power:	> 90 N
Medium floating time:	30 s/mm
Protection:	IP 54 in any position
Protective system:	III according to EN 60730
Fluid temperature:	0 °C up to 100 °C
Ambient temperature:	0 °C up to 60 °C
Storage temperature:	-25 °C up to +65 °C
Connecting cable:	3 x 0.22 mm ² , length 1 m, plug-in connection

Installation and fitting:

Electrical connection must be carried out in accordance with national standards.

The connecting cable must not come into contact with the hot pipe as excessive heat will accelerate the ageing of the cable insulation.

When choosing the switching contacts and the network fuses, the start up of the heating element has to be taken into consideration. The loss of potential must not exceed 10% so that the indicated operating time is kept.

Max. length of cable for 1 actuator, with given cable cross sections (indication with a voltage drop of about 5%, for 24 V voltage drop of about 1.2 V):

Cable cross section [mm ²]	24 V Max. length [m]
2 x 0.60	160
2 x 1.00	268
2 x 1.50	400

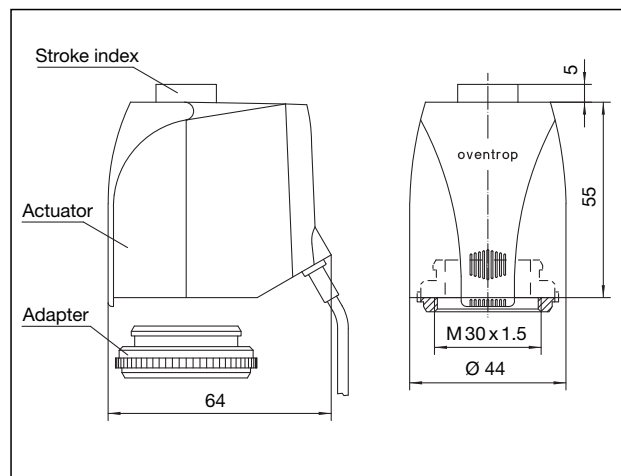
When installing several actuators, the indicated length of cable must be divided by the number of mounted actuators.

A safety transformer according to EN 61558-2-6 must always be used. Dimensioning of the transformer is determined by the start up power of the actuators.

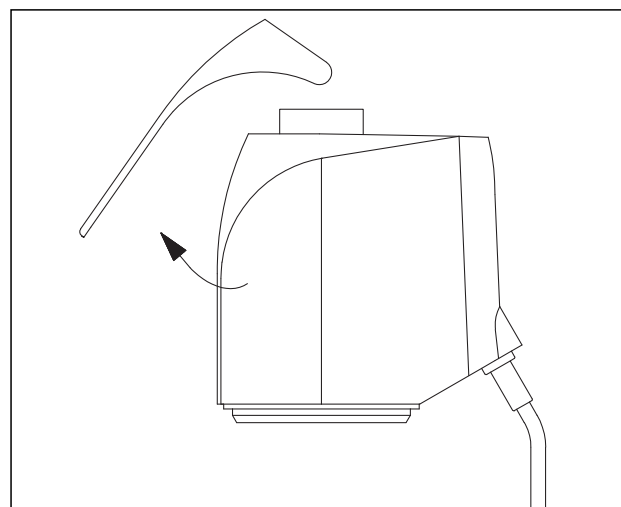
Rule-of-thumb: $P_{\text{Transformer}} = 6 W \times n$
n = Number of actuators



“Aktor T ST”



Dimensions



Protection against dismounting

The actuator is mounted with the help of the valve adapter, no tools are required. The valve adapter is manually screwed onto the valve and the actuator is fixed to the adapter using the plug-in connection.

Oventrop electrothermal actuators can be installed in any position but a vertical (stroke index pointing upwards) or horizontal installation is preferable. In case of vertical downward installation, special circumstances (e.g. dirt water) may reduce the service life.

If the transparent release flap is removed, the actuator is secured and cannot be dismantled from the valve.

Application:

The Oventrop electrothermal actuator (0-10 V) is used for heating, ventilation and air-conditioning. In conjunction with Oventrop thermostatic radiator valves or regulating valves “Cocon” / “Hycococon” and an Oventrop room thermostat or a central controller in the centralised building control system, the actuators allow individual room temperature control.

The actuators can be combined with the following Oventrop valves with connection thread M 30 x 1.5:

- Thermostatic valves, all series (except for “Series ADV 6” and “KTB”)
- Three-way conversion valves
- Distributors/collectors for surface heating systems (please observe ambient temperature within the cabinet)
- Regulating valves “Cocon 2TZ / QTZ”
- Regulating valves “Hycococon ETZ/HTZ”
- Three-way diverting and mixing valves

Function:

The Oventrop actuator “Aktor T ST” works with an expansion type working element which is heated electrically by a PTC heating element. A silent operation and low power consumption are thus guaranteed.

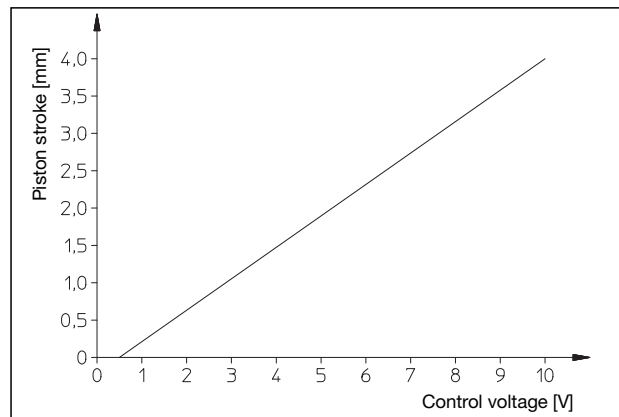
The First-Open function is released by switching the operating current of 24 V AC on for the first time. Then the actuator determines the closing point of the valve and switches to control operation. This way, a perfect co-ordination with the respective valve is guaranteed.

If a control voltage of 0.5 – 10 V DC is applied after the closing point has been determined, the actuator opens the valve (after termination of the idle time) by lifting the push rod proportional to the control voltage. Within a range of 0 V to 0.5 V, the actuator remains in the idle position to ignore ripple voltage caused by long cables. By reducing the control voltage and after termination of the rest period, the valve is closed constantly by the closing pressure of the pressure spring.

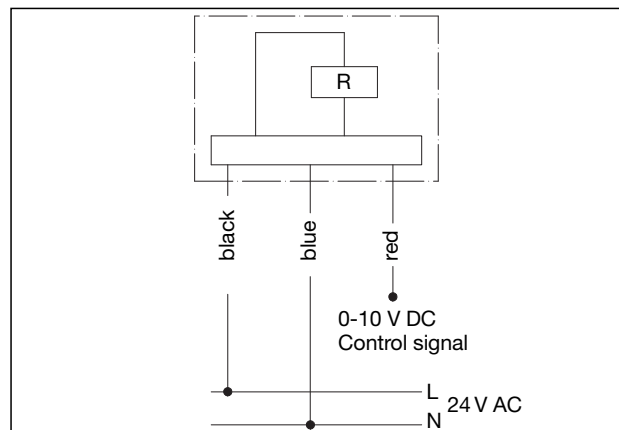
Due to the First-Open function, the actuator is supplied opened with current “off”. This allows the operation of the heating system during construction work even if the electric wiring of the individual room temperature control has not yet been terminated. During initial operation, the First-Open function is released automatically - before determination of the closing point - by switching the operating current on (more than 6 min.). This happens only once during initial operation. After initial operation, the actuator immediately switches to control operation each time the operating current has been switched off. The actuator is ready for operation.

If room temperatures are controlled via the Oventrop actuators, it is recommended to carry out the room temperature setback via the room thermostat.

If for some reason a setback of the flow temperature is required during night hours or at other times, a setback of the room temperature via the room thermostat should be carried out additionally.



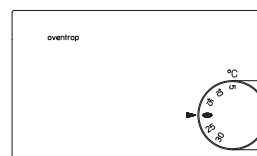
Stroke – control voltage diagram



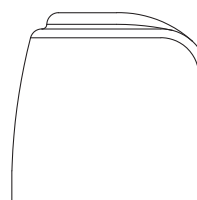
Wiring diagram

Accessories:

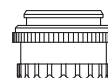
Room thermostat 24 V	Item no. 115 21 51
Reinforcing cap	Item no. 101 28 80
Valve adapter, M 30 x 1.0	Item no. 101 28 90
Valve adapter, high model, M 30 x 1.5	Item no. 101 28 92



Room thermostat with one proportional output each for heating and cooling (can be used for four pipe systems). Setting of the nominal value via the rotary knob, adjustable idle time.



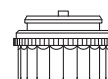
Reinforcing cap for the protection of the actuator against vandalism.



Valve adapter with connection thread M 30 x 1.0 (for Oventrop valves up to 1998)



Valve adapter high model, connection thread M 30 x 1.5 (11 mm higher than standard)



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Subject to technical modification without notice.
Product range 1
ti 290-0/10/MW
Edition 2014

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