



The Oventrop Quality Management System is certified to DIN EN ISO 9001

Technical information

Tender specification:

Oventrop electrothermal actuators, are two point actuators, with First-Open function (except for actuators opened with current "off") and stroke index. Available as model closed with current "off" and opened with current "off" and opened with current "off". The actuators can be installed in any position. Simple plug-in connection with valve adapter.

Models 230 V:

Connection thread M 30 x 1.5	Item no.:
230 V, closed with current "off"	101 28 15
230 V, opened with current "off"	101 28 25
230 V, closed with current "off" with integrated auxiliary switch	101 28 17
Squeeze connection	
230 V, closed with current "off"	101 28 18

Performance data:

Operating current:	230 V AC, $\pm 10\%$, 50/60 Hz
Start up load:	300 mA for a max. of 200 ms
Current:	8 mA
Closing/opening time:	about 4.5 min.
Piston stroke:	4.5 mm
Operating power:	> 90 N
Auxiliary switch, switching current:	5 (1) at 230 V AC
Auxiliary switch, switching point:	about 2 mm
Protection:	IP 54 in any position
Protective system:	II 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 +60°C
Connecting cable:	2 x 0.75 mm ² , 1 m long 4 x 0.75 mm ² (item no. 101 28 17)

Models 24 V:

Connection thread M 30 x 1.5	Item no.:
24 V, closed with current "off"	101 28 16
24 V, opened with current "off"	101 28 26
Squeeze connection	
24 V, closed with current "off"	101 28 19

Performance data:

Operating current:	24 V AC/DC, +20 up to -10%, 0 up to 60 Hz
Start up load:	250 mA for a max. of 2 min.
Current:	75 mA
Closing/opening time:	about 4.5 min.
Piston stroke:	4.5 mm
Operating power:	> 90 N
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 +60°C
Connecting cable:	2 x 0.75 mm ² , 1 m long

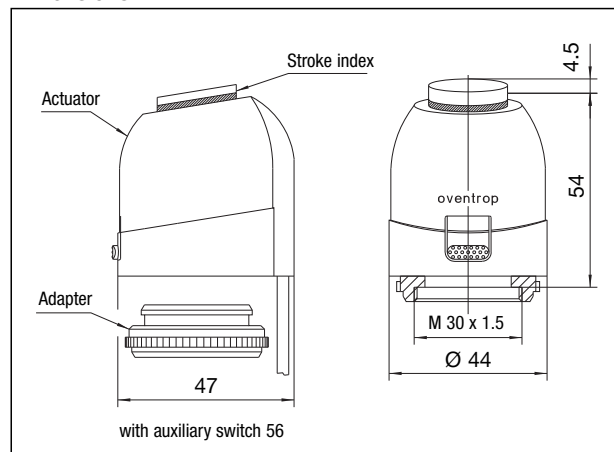
Installation and fitting:

Electrical connection must be carried out in accordance with the requirements of the local Electricity Board.

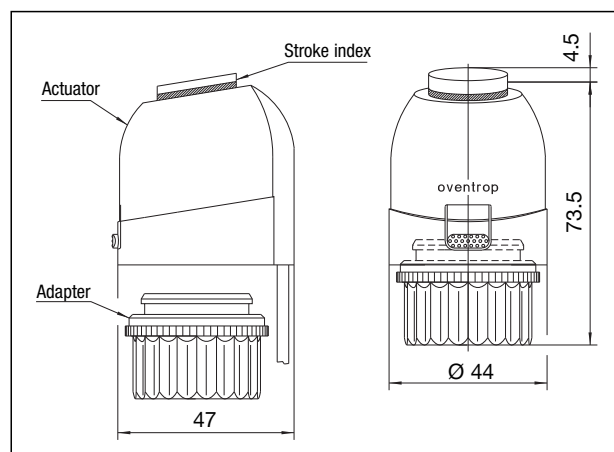
Please observe: The brown cable must be connected to phase (L). It is recommended that the electric circuit should be fused. Connecting cables must not be laid alongside hot pipework as excessive heat will accelerate the ageing of the cable insulation. When choosing the switching contacts and network fuses, the start up load 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.



Dimensions:



Actuators with connection thread M 30 x 1.5



Actuators with squeeze connection

Max. length of cable for 1 actuator, with given wire cross sections (indication with a voltage drop of about 5%, for 230 V voltage drop about 10 V, for 24 V voltage drop about 1 V).

Wire cross section [mm ²]	230 V max. length [m]	24 V max. length [m]
2 x 0.75	1680	168
2 x 1.00	2240	224
2 x 1.50	3360	340
2 x 2.50	5600	560

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

When using 24 V 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

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 by use of 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.

Application:

The Oventrop electrothermal actuators with two point control are used for heating, ventilation and air-conditioning. In conjunction with Oventrop thermostatic radiator valves or distributors/collectors for surface heating systems and the Oventrop room thermostats, the actuators allow an individual room temperature control. The actuators can be combined with the following Oventrop valves with connection thread M 30 x 1.5:

- Thermostatic radiator valves, all series (except for "Series ADV 6")
- Three-way conversion valves
- Distributors/collectors for surface heating systems (please observe ambient temperature within the cabinet)
- Regulating valves "Cocon 2TZ", "Cocon QTZ", "Cocon 4TR"
- Regulating valves "Hycocon ETZ/HTZ"
- Three-way diverting and mixing valves

Function:

The Oventrop actuators work 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. As for the model closed with current "off", the valve is opened constantly by the lift of the push rod each time the operating current is switched on - after termination of the idle time. By switching off the operating current 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 actuators (the model closed with current "off" only) are 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 by switching the operating current on (more than 6 min.) and the actuator is ready for operation.

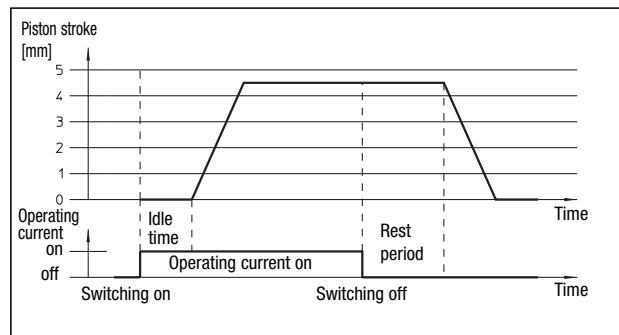
If room temperatures are controlled via the Oventrop actuators, it is recommended to carry out the room temperature setback via the room thermostat, e.g. the Oventrop room thermostat-clock (see technical data sheet "Wireless controls").

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.

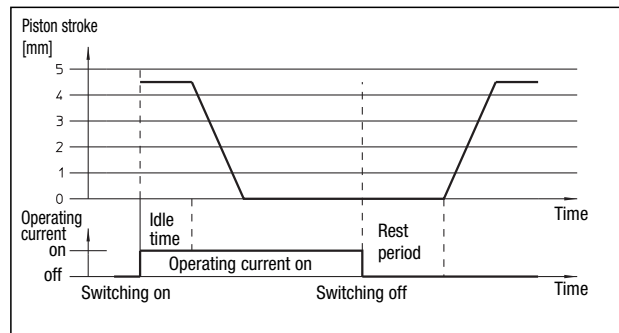
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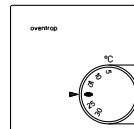
Characteristic line, closed with current "off"



Characteristic line, opened with current "off"

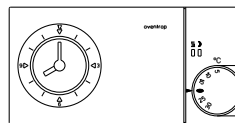
Accessories:

- Room thermostat 230 V Item no. 115 20 51 / 71
- Room thermostat 24 V Item no. 115 20 52 / 72
- Room thermostat-clock 230 V, with daily setting Item no. 115 25 51
- as above, 230 V, with weekly setting Item no. 115 25 52
- as above, 24 V, with weekly setting Item no. 115 25 54
- Room thermostat Heating/Cooling 24 V Item no. 115 22 51
- Valve adapter, connection thread M 30 x1.5 Item no. 101 28 90



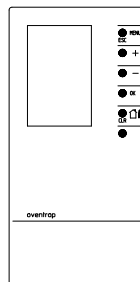
Room thermostat

for electrical individual room temperature control. Temperature setback via external time switch (item no. 115 25 51/52/54) (not with actuator opened with current "off")
Item no. 115 20 51/71 or 52/72



Room thermostat - clock

for electrical individual room temperature control and central temperature setback.
Item no. 115 25 51/52/54



Room thermostat Heating/Cooling

with proportional and proportional-plus integral control, for electrical individual room temperature control and central temperature setback.
Item no. 115 22 51

OVENTROP GmbH & Co. KG
Paul-Oventrop-Straße 1
D-59939 Olsberg
Germany

Telephone +49(0) 2962 82-0
Telefax +49(0) 2962 82-450
E-Mail mail@oventrop.de
Internet www.oventrop.de

For an overview of our global presence visit www.oventrop.de.