Tender specification:

Oventrop electromotive actuators for steady control, as proportional actuator (0-10 V) with connection thread M 30 x 1.5 and manual setting. Multiple characteristic lines and the mode of operation are adjustable via the DIP switch. Furthermore, this actuator features an automatic anti-blocking and flushing function as well as an automatic recognition of neutral point.

Models:

	Item no.
"Aktor M ST L", 24 V, proportional actuator (0-10 V), characteristic lines adjustable	1012705
"Aktor M ST L", 24 V, proportional actuator (0-10 V) with position feedback, characteristic lines adjustable	1012706

Technical data:

Operating current:	24 V AC/DC ±10 %; 50/60 Hz
Power consumption:	2.5 VA for AC 0.8 W for DC
Drive:	0–10 V DC
Input impedance:	500 kΩ
Position feedback:	Item no. 1012706 0–10 V DC, 5 mA for 0–100 % piston stroke
Max. piston stroke:	4 mm
Operating power:	150 N
Floating time:	15 s/mm
Protection:	IP 40 according to EN 60529
Protective system:	III according to EN 60730
Max. fluid temperature:	100 °C
Ambient temperature:	0 °C up to 50 °C (not condensing)
Storage temperature:	0 °C up to 50 °C (not condensing)
Connecting cable:	Item no. 1012705 3 x 0.34 mm², length 1.5 m
	Item no. 1012706 5 x 0.25 mm², length 1.5 m

Installation and fitting:

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

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

Oventrop electromotive actuators can be installed in any position, except for vertical downward position.

Application:

The Oventrop modulating electromotive actuators "Aktor M ST" are used for heating, ventilation and air-conditioning. In combination with conventional radiators, radiators with integrated distributor, distributors/collectors for surface heating, radiant ceiling panels, chilled ceiling systems and induction air systems, the electromotive 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:
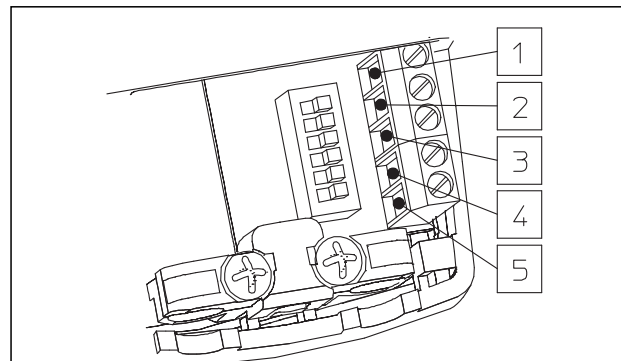
– Regulating valves "Cocon 2TZ/QTZ"
– Thermostatic radiator valves, all series (except for "Series ADV 6" and "Series KTB")
– Three-way diverting and mixing valves
– Regulating valves "Hycocon ETZ/HTZ"
– Distributors/collectors for surface heating systems (please observe ambient temperature within the cabinet)
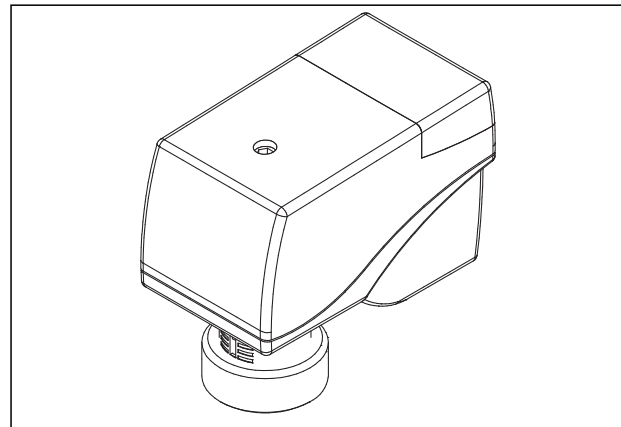
"Aktor M ST"
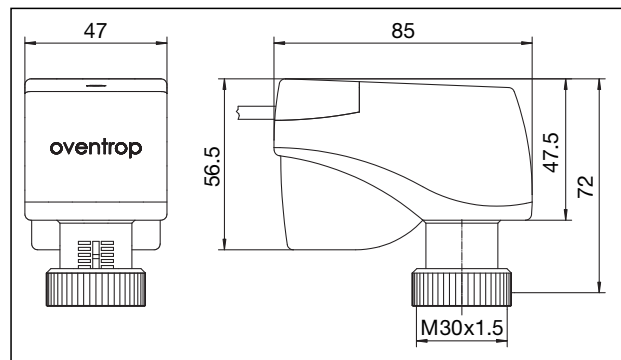
Dimensions

Item no.: 1012705		
1	0 V AC/DC	white WH
2	24 V AC/DC	brown BN (V)
3	0-10 V DC	green GN (Y)

Item no.: 1012706		
1	0 V AC/DC	white WH
2	24 V AC/DC	brown BN (V)
3	0-10 V DC	green GN (Y)
4	0 V DC	yellow YE (Y0)
5	0-10 V DC	grey GY (Y0)

Wiring diagram of the terminals

Function:

In combination with Oventrop valves and the Oventrop electronic room thermostat with proportional output, item no. 1152151, or a central controller in the centralised building control system, the Oventrop electromotive actuators with steady control allow for precise individual room temperature control. When installing the pipework correspondingly, several terminal units (zones) may be controlled with one valve only.

Perfect regulation behaviour with high accuracy is guaranteed by the 32 different stored characteristic lines (adjustable via DIP switch S1-S5) which are adapted to the Oventrop valves regarding effective valve lift and valve characteristics. The adjustable linear or equal percentage characteristic lines allow an adaptation to the regulation characteristics of the terminal units. (Exact DIP switch assignment: see operating instructions)

The actuator features an automatic neutral point recognition depending on the motive force. Each time the operating current is switched on, the actuator closes the valve and returns to the position set at the room thermostat. Moreover, the neutral point is readjusted each time the valve closing dimension has been reached and each time a different characteristic line has been chosen.

Please note that the actuator must always be connected to the valve when power is switched on.

The automatic anti-blocking function will avoid sticking of the valve stem. Should no piston stroke have been carried out during 24 hours, the actuator opens the valve for a few seconds to avoid sticking of the valve stem.

If characteristic lines with small maximum piston strokes (0.5 and 1 mm) have been set, the actuator opens every 24 hours to rinse out dirt particles which may have gathered in front of the valve seat.

Item no. 1012706 provides a position feedback facility whereby the current spindle position is transmitted via the 0-10 V output signal (terminals 4 and 5).

The actuator is silent in operation with low power consumption. The stroke lift of the actuator is clearly visible via the position indicator.

The facility for emergency setting allows a manual operation of the actuator in idle position by use of a 4 mm Allen key. The integrated slip clutch protects the gear against excessive operating forces.

In addition to the cable connected at works, the integrated terminal allows the direct connection to the installation cable laid on site without additional clamping device.

LED display:

The operating status of the actuator is displayed on the LED display which is located under the cover.

☼ On Power supply available

☼ Flashes Recognition of neutral point

● Off No power supply

DIP switch settings:

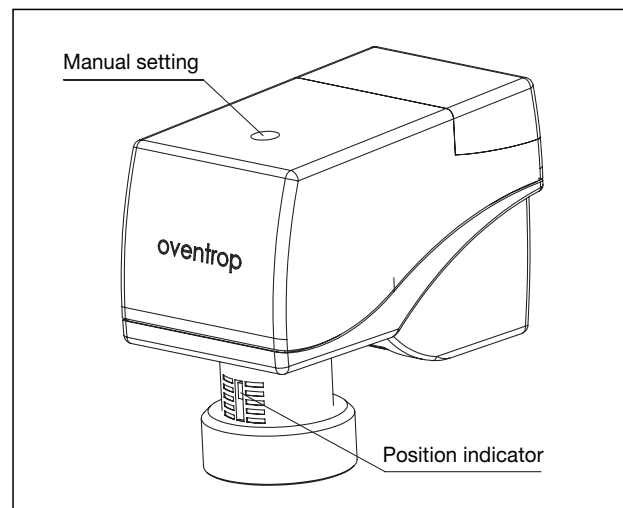The DIP switch is located under the cover which is secured with a Torx screw (factory setting: S1 – S6 = OFF).

– S1 – S5: Choice of the characteristic line and of the type of characteristic line (linear or equal percentage) according to operating instructions

– S6: Reversal of the mode of operation
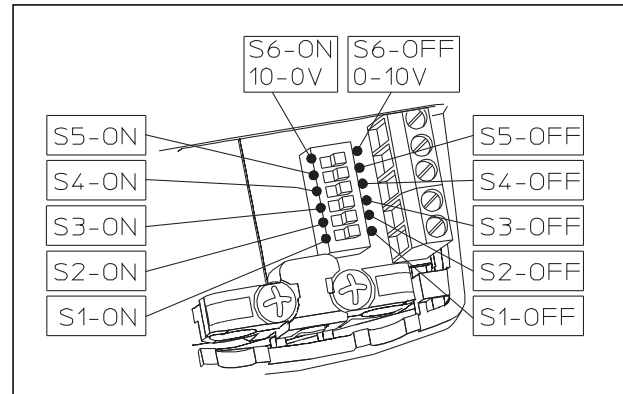
DIP switches – Choice of the characteristic lines
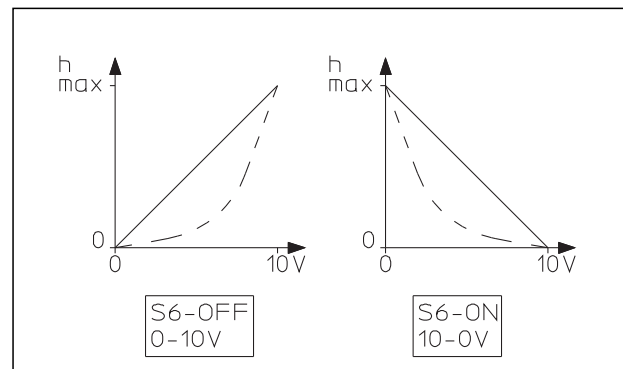
DIP switch S6 – Reversal of the mode of operation

Manual setting and position indicator

Subject to technical modification without notice.