LK Automix CT

Design

LK Automix CT is a compact electronic constant temperature control. Designed to fit LK Shunt units with Siemens control valves, series VXP. The control equipment is used when constant temperature is desired for the supply. LK Automix CT consist of valve actuator 24 VAC 50/60 Hz with built in PI-control, supply sensor with 1 m cable and plug in adapter 230/18 VAC with 1,7 m cable.

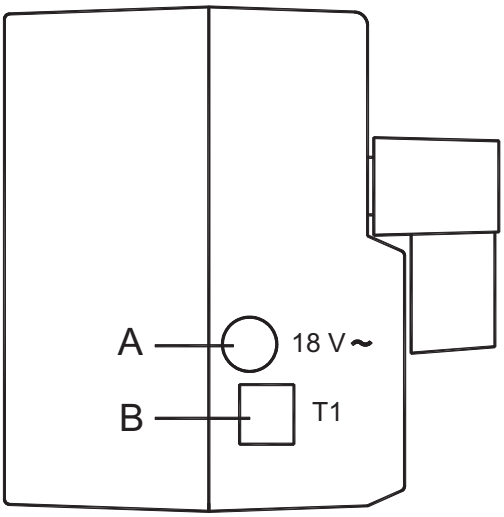
LK Automix CT works continuously and proportionally, through data by the supply sensor the motor with built-in electronics controls the valve position. The temperature setting is very accurate. The quick and easy do-it-your-self installation also saves on labour charges.

Assembling

Remove the hand knob of the Siemens control valve and mount the LK Automix CT valve actuator. Check the direction of the actuator, see below chapter "Left or right turning direction of the Valve actuator".

Supply temperature sensor and adapter

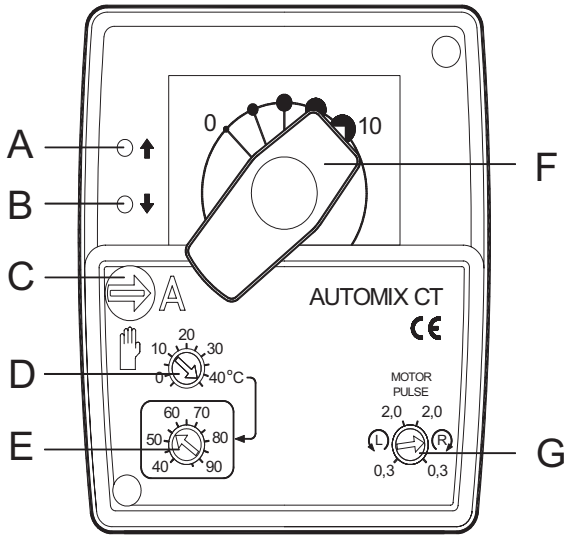
Supply temperature sensor T1 is fastened on a non-insulated part of the supply pipe min 0,2 m after the pump. For optimum temperature measuring the sensor and the pipe needs to be insulated afterwards. The power adapter is connected to A, supply sensor T1 to B.



A. Adapter

B. Supply temperature sensor T1

Operation



A. Red LED: Valve opens

B. Green LED: Valve closes

C. "A" is AUTOMATIC-position "HAND" is MANUAL-position

D. Setting of temperature, under 40 °C

E. Setting of temperature, over 40 °C

G. Right-/left turning direction of motor and setting of motor pulse

Desired temperature is set with knob D and E. When knob D is set over 40 °C the temperature scale is on knob E. In the picture the temperature is set on 55 °C. When the motor opens the valve the red LED A is bright and when motor closes the valve the green LED B is bright. When motor doesn't move no LED is bright.

LK Systems

Left or right turning direction of the valve actuator

Check that the turning direction is correct. The valve actuator shall push the valve spindle for heat/ to open. The direction right or left is set with knob G see picture above. If the direction is to be changed you must turn the scale 0…10. Remove the handle F by unscrewing its bolt. Turn the scale and remount the handle.

Motor pulse

Normal motor pulse is 1 sec. If the supply temperature is not stable owing to the flow speed, the motor pulse can be chosen between 2 sec and 0,3 sec with knob G. If the temperature is unstable/ swinging, the knob G is turned towards 0,3 sec.

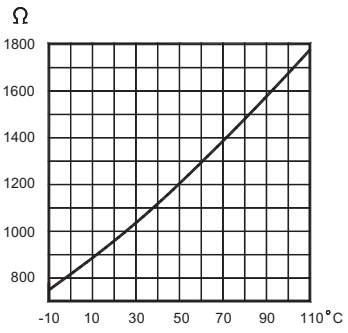
Trouble shooting

If the system does not operate satisfactory – check that:

1. The boiler or storage tank temperature is correct.
2. The circulating pump is working.
3. The power supply and condition of fuses.
4. The gate / ball valves are open.
5. The mixing valve turns easily.
6. There is no air in the system.
7. The disengaging button is in ”A” AUTOMATIC-position.
8. The system installation is correct and it works with manual operation.
9. The resistance value of the supply sensor T1 is correct. See below.

Sensor resistance

The resistance is measured at the two wires in the middle of the 4-wire cable contact.



-10 °C	754 Ω
0 °C	820 Ω
10 °C	889 Ω
20 °C	963 Ω
30 °C	1039 Ω
40 °C	1119 Ω
50 °C	1202 Ω
60 °C	1289 Ω
70 °C	1379 Ω
80 °C	1472 Ω
90 °C	1569 Ω
100 °C	1670 Ω
110 °C	1774 Ω

Technical data

PI-control with microprocessor
Voltage 18 VAC 50/60 Hz
Adapter 230/18 VAC 190 mA with 1,7 m wire
Power consumption 3 VA
Temperature range 0ºC ... +90 ºC, step less
Motor pulse 0,3 sec … 2 sec, step less
Angle of rotation electrically limited to 90 ºC
Torque 5 Nm
Running time 140 sec
2 LEDs for turning signal
Manual operation in case of power failure
Max. temperature for sensor 110°C
Ambient temperature -10 °C … 80°C
Dimensions 80 x 90 x 93 mm
Protection type IP41
Protection class II
Service free
Weight 0,4 kg