

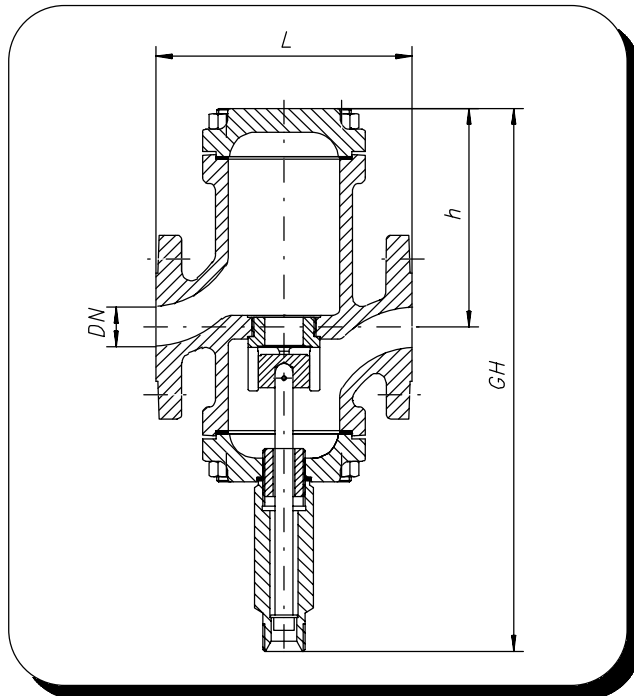


## AKO Temperature Regulator

### Type Series 220.0530

with non-balanced single-seat two-way-closing-valve

deliverable nominal sizes: 15, 20, 25, 32, 40, 50, 65 mm



#### Technical Data:

single-valve non-balanced	two-way-valve
characteristic	linear
material:	
- valve body	cast iron GG 25
- inner parts	stainless-steel
nominal pressure	PN 16
adm. working temperature	230 °C
	see DIN 2401!

#### Heat Sensor:

adjusting range:	30 - 100 °C
(other adjusting ranges on request)	
capillary tube with anti-klink	2 m standard (max. 10 m)
connection	R 1 "
diving jacket	brass
(other materials of the diving jacket on request)	

#### General

The use of AKO Temperature regulators is applicable to all branches of industry in which it is necessary to control heating or cooling systems. AKO temperature regulators have proved to be not only extremely reliable but when maintenance is called for it can easily be carried out. Depending on the control task, the regulating valve can be designed as closing valves (closing with increasing temperature) or as opening valves. The kind of regulating valve depends completely on the application.

The whole control equipment consists of the following components:

#### heat sensor including actuator and control valve

The temperature will be measured by a sensor (heat sensor) at the measuring point and in case of deviations from the assigned for desired-value, a corresponding signal will be given to the control valve. The mode of operation is based on the liquid expansion. The sensor, the capillary tube connection and the actuator form a closed hydraulic system. When the temperature which has been measured by the thermostat exceeds the adjusted desired-value, the liquid volume within the thermostat will increase due to the thermal expansion and will develop pressure. This internal pressure of the thermostat continues over the capillary tube connection to the actuator and moves over the working piston the piston rod proportionally to the absorbed heat ballast. The piston rod does have a frictional connection to the valve rod. Each motion of the piston rod does have also the effect of an adjustment of the valve cone within the control valve. The valve cone opens (or closes) the steam supply (respectively the coolant supply) and regulates thus the plant to the desired (adjustable) desired-value. Deviations from the desired-value are thus constantly controlled.



## Assembly

1. Piping has to be washed well prior to assembly of regulating valve.
2. Plugs have to be removed from inlet and outlet flanges of the valve.
3. Valve has to be assembled according to direction of bearing vertically with the heat sensor connection directing downwards.
4. Screw neck R 1 " (R 1 1/4 ") has to be welded on to a place (tube bow, boiler, or similar) where the temperature shall be kept at a constant level. However, the full length of heat sensor has to be exposed to the flow stream.
5. The double type nipple of the heat sensor has to be made tight in the screw neck and the heat sensor has to be inserted with washer.
6. The actuator has to be screwed on the heat sensor connection by means of a union nut. Thereby it has to be paid attention that the connecting tube is not being extremely bent. Smallest bending radius approx. 60 mm.
7. The capillary tube has to be mounted vibration-free.

## Adjustment

Desired temperature has to be adjusted at the head of rod scale by means of a special tool supplied along with this regulator.

Turning causes higher temperature and turning counter-results in lower temperature of passing media. Pay attention to adjustment at the scale. Adjustment of temperature from high temperature to lower temperature shall be in steps of approx.

5 - 10 °K, so that a temperature equalisation is possible.

## Mode of Operation

The passing medium flows through the valve as long until the condition planned is being achieved at the heat sensor. Simultaneously commences the throttling process by the non-balanced valve equipped with a single seat until the flow is consequently prevented totally. The control of valve is being caused by expansion of fluids from the heat sensor and transmission by the connecting tube to the actuator of valve. The valve closes in case of increasing temperature. In case of decrease of the temperature to be kept at a constant level the valve opens again gradually.

order-no.	DN	h	L	GH	KVs	$\Delta p$ adm..	Yh stroke	Heat Sensor	K <sub>R</sub>	weight
220.0530-015	15	35	130	216	3,2	16	4	230.0300A000	0	9
220.0530-020	20	35	150	216	5	10	5	230.0300A000	0	9
220.0530-025	25	130	160	340	8	5	6	230.0300A000	0,2	10
220.0530-032	32	137	180	340	12,5	4	8	230.0300A001	0,13	12
220.0530-040	40	150	200	370	20	3	10	230.0300A001	0,13	17
220.0530-050	50	150	230	370	32	1,5	12	230.0400A001	0,4	18
220.0530-065	65	178	290	405	50	0,5	14	230.0400A001	0,4	25

In this list you will find the standard combination of valve and heat sensor. A combination of each other offered heat sensor with each valve is possible, however (see data sheet I 230.xxx).

The indicated K<sub>R</sub>-value indicates the stroke of the heat sensor at a temperature difference of 1 °K.