AQUA24TF

Temperature controller, 3-point output

AQUA24TF is a controller in the AQUALINE series intended for controlling HVAC systems. The controller is primarily intended for control of supply air temperature or room temperature control.

- ✓ One three point floating control output, 24 V AC
- ✓ Active frost protection and shutdown function
- ✓ For heating applications
- ✓ Night set-back
- ✓ For wall mounting
- ✓ Internal or external setpoint

Function

The AQUA24TF controls three-point (floating control) actuators with a pulse-pause signal where the ratio between on-time and off-time is proportional to the temperature offset. Small offset will give short on-time pulses and longer off-time. Larger offset will give longer on-time and shorter off-time. A 20K offset will give continuous on-time. The total pulse-period is constant 4 seconds.

External sensor or setpoint

The controller has an input for connecting an external sensor. Even external setpoint can be connected.

Single sensor control

For supply air temperature control or room temperature control without limiting function.

Night set-back

Fixed 3K on potential-free closing from an external switch.

Frost protection function

The frost protection sensor must be located in a suitable position, either as an immersion sensor in the heater or as a strap-on sensor on the return line. If the temperature at the frost protection sensor falls below 10°C, the frost protection controller will start forcing the water-valve open. If the temperature at the frost protection sensor falls below 5°C, both alarm relays trip and the alarm LED comes on. The frost protection is reset using the reset button on the controller or by cutting the power to the unit for a moment.

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Shutdown mode

AQUA24TF has a special input that is wired to the fan motor relay. When the fan is shut off the controller will go into shutdown mode. It will then try to hold the frost protection sensor at 25°C. The advantage with this is that a warm heater minimizes the risk of freezing and also eliminates the discomfort of a cold air blast on startup.

Typical applications

Heating coils (valve actuators), dampers, air handling systems.

Technical data

Supply voltage	24 V AC +/-15% 50-60Hz
Power consumption	Max 5 VA
Ambient temperature	0...50°C
Storage temperature	-40...50°C
Ambient humidity	Max 90%RH
Protection class	IP20
Dimensions (WxHxD)	93 x 152 x 43 mm
Mounting	Wall
Colour	Signal white RAL 9003

CE

This product carries the CE-mark. More information is available at www.regincontrols.com.

Inputs

Sensor inputs	Three (3) inputs for main sensor, limiting sensor and frost protection sensor. See section 6-100 for choice of sensor.
Setpoint input	The setpoint can be set with an external setpoint potentiometer.
Night set-back	
Shutdown signal	The fan supervision signal controls the switching between running and shutdown mode. The contact should be closed when the fan is running.

Outputs

Control signal	Three-point (floating control) output 24 V AC (heating). Maximum load 7 VA.
Relay contact terminals 1-2	Breaking contact in the event of a frost alarm for interlock of the fan contactor. 230 V AC, 2 A.
Relay contact terminals 3,4,5	Change-over contact for alarm signal in the event of a frost alarm. 24 V AC, 2A.

Settings

Setpoint	0...30°C	
Cascade factor (CF)	1...15	Must be set to 1 for single sensor control
Minimum limit (Min)	0...30°C	Not active in single sensor control

Function switches

3-pole, control function setting

 Single main sensor control, CF must be set to 1

 Cascade control

2-pole, sensor / setpoint setting

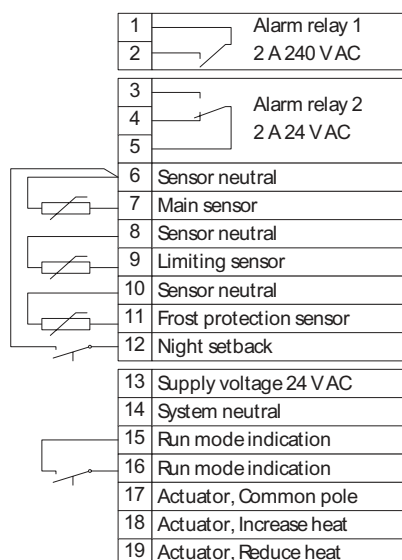 Internal main sensor and setpoint

 External main sensor and internal setpoint

 External main sensor and setpoint

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Wiring

1	Alarm relay 1
2	2 A 240 V AC
3	Alarm relay 2
4	2 A 24 V AC
5	
6	Sensor neutral
7	Main sensor
8	Sensor neutral
9	Limiting sensor
10	Sensor neutral
11	Frost protection sensor
12	Night setback
13	Supply voltage 24 V AC
14	System neutral
15	Run mode indication
16	Run mode indication
17	Actuator, Common pole
18	Actuator, Increase heat
19	Actuator, Reduce heat

The common terminal on the actuator must be connected to output common, terminal 17, on the controller.
Terminal 18 is active on increasing heat demand and terminal 19 is active on decreasing heat demand.

Product documentation

The product documentation can be downloaded from www.regincontrols.com.

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