



AL24A1K

Duct controller with one 0...10V output

AL24A1K is a controller intended for duct mounting with built-in sensor and 0...10V output. It is designed primarily for control of heating or cooling in HVAC systems.

- Adjustable P-band and selectable I-time
- P or PI-function
- Input for external setpoint or SPC

AL24A1K is a compact controller for duct-mounting with built-in sensor and one 0...10 V output. It is intended for control of heating or cooling in ventilation and air handling systems. It can be set to P- or PI-control and has an input for seasonal change-over between heating and cooling.

The P-Band is adjustable 0.5...50 K and the I-time can be set by a function switch in 2 or 20 minute steps.

Sensor

The controller has a built-in sensor inside the top of the probe.

Setpoint

The setpoint is set by the potentiometer placed under the cover. An external setpoint device can be connected to the controller. See overleaf.

Change-over

AL24A1K has input for change-over, that causes the control function to switch between heating or cooling. This input can be connected to a REGIN NTC-sensor or a closing relay contact.

On closed contact the controller works with heating output and on open contact with cooling.

When using sensor for change-over, the temperature range must be 0...30°C and the sensor mounted on the supply to the battery in order to give accurate temperature values.

When the temperature at the sensor exceeds 22°C, the output function is switched to heating and when the temperature falls below 18°C it is set to cooling.

- Heating or cooling output
- Setpoint 0...30° C, located under the cover
- Change-over function

SPC (SetPoint Control)

The setpoint can be remote-controlled by an external signal, 0...10 V. At 5 V input the SPC signal gives no change, higher voltage raises and lower voltage lowers the setpoint. The setpoint shift +/- 15 K corresponds to the input signal shift of +/- 5 V.

If the SPC is not in use the input is left open. SPC can only be used with internal setpoint.

Setting heating/cooling function

If the external change-over function is not in use, and heating output is desired, a wire must be connected between terminals 7 and 8.

If using cooling output, the input is left open.

Indication

AL24A1K has a red LED for output indication. The light intensity varies according to the output voltage level. It has a pair of LEDs for indicating the output function. The green LED indicates that the output is set to cooling and the red LED indicates that it is set to heating.

Mounting

The controller is mounted directly in a duct. Its insertion length is 220 mm.

Technical data

Supply voltage	24 V AC $\pm 15\%$, 50...60 Hz
Power consumption	2 VA
Ambient temperature	0...50°C
Storage temperature	-40...+50°C
Ambient humidity	Max. 90 % RH
Protection class	IP65



EMC emissions & immunity standards: This product conforms to the requirements of the EMC Directive 2004/108/EC through product standards EN 61000-6-1 and EN 61000-6-3.

RoHS: This product conforms with the Directive 2011/65/EU of the European Parliament and of the Council.

Inputs

External setpoint/SPC	One input for external setpoint or for setpoint displacement (SPC) using an external potentiometer or a 0...10 V DC signal
Change-over function	For RegIn NTC sensor, I.E. TG-A130 or potential-free closing contact

Output

Control signal One, 0...10 V DC, 1 mA

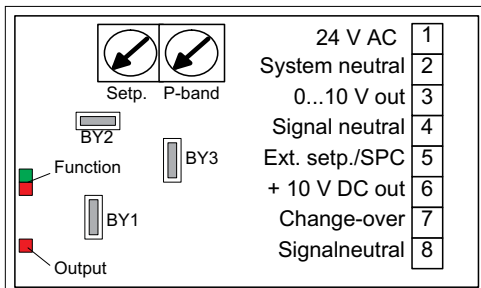
Settings

Setpoint	0...30°C, is set by means of potentiometer underneath the cover
Proportional band	0.5...50K
Reset time (I-time)	2 or 20 minutes, is set by jumpers (see below)

Indications

Output indication	Red LED, proportional intensity according to output voltage level
Output function indication	Green LED for cooling control and red LED for heating control

Jumpers



Jumper BY1 Closed = I-time is 2 minutes (*delivery setting*)
Open = I-time is 20 minutes

Only active if jumper BY2 is set to PI-control

Jumper BY2 Closed = P-control
Open = PI-control (*delivery setting*)

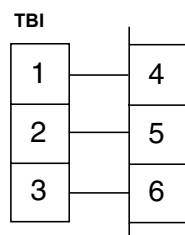
Jumper BY3 Closed = Internal setpoint and SPC (*delivery setting*)
Open = External setpoint

To obtain open position, place jumper on one pin only.

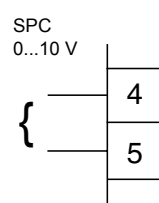
Wiring and dimensions

1	Supply 24 V AC
2	System neutral 24 V AC
3	Output 0-10 V
4	Signal neutral
5	External setpoint/SPC
6	+ 10 V DC
7	Change-over
8	Signal neutral

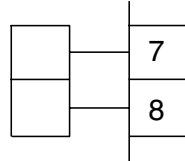
External setpoint with set-point device TBI-30



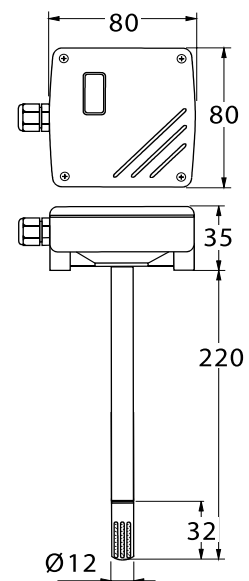
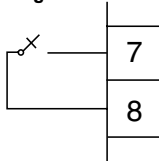
External SPC signal



Change-over sensor



Switch for Change-over



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