



**UK/D is an outdoor temperature compensation unit for the controllers in the Aqualine series that have an SPC input. With UK/D the setpoint for the controller can be both summer and winter compensated.**

- \* The setpoint compensation can be both raised and lowered.
- \* The same external sensor can be used for several UK/Ds.
- \* One UK/D can be used in conjunction with several controllers.
- \* All settings accessible on the front.
- \* Maximum limit for summer compensation.
- \* Input for setpoint control.

## Function

### Function

UK/D is a compensating unit for offsetting the setpoint of the controller to which it is connected depending on the outdoor temperature. UK/D affects the controller's main setpoint value. The unit comes in standard casing for DIN-rail mounting with all settings accessible on the front.

### Wiring

The output signal of the UK/D is connected to the controller's SPC input. The external sensor which should be either TG-R300 (external wall-sensor) or TG-K300 (duct sensor) is connected to the sensor input.

### Winter compensation

When the external temperature goes below the set starting point for winter compensation, SW, an offset signal is given to the controller.

The setpoint will be raised (+) or lowered (-) depending upon the value in percent shown by the setting marked WINTER. The WINTER setting gives the compensation value for every degree of change in the outdoor temperature.

For example: A setting of +20% will give a 0.2K increase of the controller setpoint for every degree the outdoor temperature falls below SW. The output signal from the UK/D is 5V +/- 5V.

Maximum reduction is obtained when the output signal is 0V and the maximum increase is obtained when the output signal is 10V. Maximum possible offset is +/- 15K. The compensation value at a particular outdoor temperature can be obtained by multiplying the compensation factor WINTER by the difference between the present outdoor temperature value and the set starting point, SW.

For example: SW is set at 15 degrees C and WINTER at +20%. If the outdoor temperature is zero the setpoint will be compensated by +3K.

Thus: Compensation value = (15 - 0) x 20% = +3K.

If the outdoor temperature is -15 degrees C the compensation value will be +6K.

### Summer compensation

When the outdoor temperature exceeds the set starting point for summer compensation, SS, an offset signal is given to the controller. The setpoint will be raised (+) or lowered (-) depending on the value in percent shown by the setting marked SUMMER. The setting is defined in the same way as for winter compensation.

### Limiting summer compensation

When the outdoor temperature exceeds the set limit, MAX, summer compensation will not increase further.

### SPC input

This is used to change the main controller's setpoint via an external signal when the external compensating unit UK/D is connected to the controller's SPC input.

Using a 0 - 10 V DC signal the output signal from UK/D can be offset -5V - +5 V corresponding to -15 - +15K.

Input signal 0V gives an offset of -5 V while a 10 V input signal offsets +5 V. Input 5 V will give no offset. When the SPC input is not used it does not affect the output signal.

### The same external sensor for several UK/Ds

The external sensor is connected to the sensor input of the first UK/D (the main unit). The output signal of terminal 3 on the main unit is connected to the sensor input terminal 1 on the ancillary unit(s). The units' respective signal neutrals are also connected.

## Technical data

### General

Supply voltage	24 V AC +/- 15 % 50-60 Hz
Power consumption	2 VA
Ambient temperature	0...50°C
Storage temperature	-40...+50°C
Ambient humidity	Max. 90% RH
Dimension	Width 53 mm (3 modules) x height 85 mm x depth 75 mm
Form of protection	IP20



This product conforms with the requirements of European EMC standards ENELEC EN 50081-1 and EN 50082-1 and carries the CE-mark.

### Inputs

Sensor	One input for main sensor. For outdoor sensor type TG-R300 or TG-K300. See datasheet 6-100.
SPC-input	0-10 V DC. See description above.

### Outputs

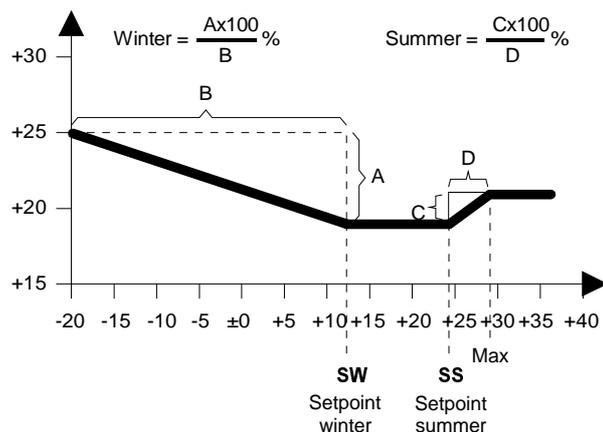
Output signal	0-10 V DC. Connect to the SPC input on the main controller. The signal will offset the value for the main controller.
Sensor signal	Connect to the sensor input on other UK/Ds if you wish to run several UK/Ds from the same sensor.

### Settings

SW	0...30°C	Start point winter compensation.
WINTER	-60...+60%	Winter compensation factor.
SS	0...30°C	Start point summer compensation.
SUMMER	-60...+60%	Summer compensation factor.
MAX	0...30°C	Maximum limitation of summer compensation.

## Wiring and description of the function

1	Outdoor sensor	
2	Signal neutral	
3	Sensor signal out	
4	Signal neutral	
5	SPC input	
6	Output 0-10V DC	
7	Neutral	Supply-voltage
8	24V~ in	
9	Signal neutral	
10	Not used	
11	Not used	
12	Not used	



FOR INDOOR CLIMATE WITH OPTIMUM CONTROL

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