

# EC-BASIC

## Room controller

### Technical features

**Power:** 110-240 V~, 50/60 Hz  
**Power consumption:** EC BASIC-T max 0,46 W  
 EC BASIC-H max 0,46 W  
 EC BASIC-U max 0,46 W  
 EC BASIC-CO2/T max 1,25 W

**Operating temperature:** 0-50°C, 10-90%RH without condensation.  
**Inputs (only EC Basic-U):** 1 analogue input 0-10 V=  
**Outputs:** 1 analogue output 0-10 V=  
**Working range:** EC BASIC-T 0-50°C  
 EC BASIC-H 0-100 % RH  
 EC BASIC-U 0-100 %  
 EC BASIC-CO2/T 0-2000 ppm

**Manual activation:** minimum 600 cycles  
**Automatic activation:** > 100.000 cycles  
**Dimensions:** 88 x 100 x 30,5 mm  
**Installation:** \*wall mounting  
**Impulse voltage:** 2,5 kV  
**Pollution degree:** 2  
**Classification of unit:** type 1  
**Protection class:** IP30  
**Insulation class:** class II  
**CE standard conformity:** EN 60730-1, EN 61000-6-3, EN 61000-6-1 EN 60730-2-9

\*The unit must be installed exclusively in contact with a wall. The installation with spacer that would allow the access to the back of unit is forbidden

### EC BASIC-T Temperature version

#### TECHNICAL DESCRIPTION

The controller works by comparing the current room temperature with an adjustable setpoint. It controls a 0-10 V output signal with a PI algorithm in direct or reverse action, based on the setting of jumper JP1. The output signal is applied to a ventilator.

**JP1 closed 1-2:** Heating (control signal increases if the actual value falls below the setpoint)  
**JP1 closed 2-3 (\*):** Cooling (control signal increases if the actual value exceeds the setpoint)

The setpoint is adjusted by knob in the range 5-30°C.

Proportional band and integral time are set using rotary switch SW1:

SW1	0	1	2	3	4	5	6	7
Prop. band (°C)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Integral time (s)	1800	1700	1600	1500	1400	1300	1200	1100
SW1	8	9	A	B	C	D	E	F (*)
Prop. band (°C)	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
Integral time (s)	1000	900	800	700	600	500	400	300

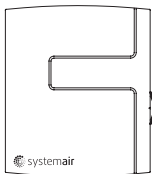
#### (\*) factory settings

The range of the voltage applied to the ventilator is defined using the MIN and MAX knobs. MIN is used to define the minimum applicable voltage to the ventilator (0-5 V), while MAX defines the maximum voltage (5-10 V). The PI controller will then operate between the relevant MIN and MAX values.

**Example 1:** If the MIN value is set to the minimum position and MAX to the maximum position, the PI controller will work from 0-10 V.  
**Example 2:** If MIN is set to 2 V and MAX is set to 7 V, the PI controller works from 2 to 7 V.

#### DESCRIPTION

EC room controller in 4 versions for control of temperature, humidity or CO<sub>2</sub> and temperature. Also available in a universal version for 0-10 V input via an external sensor.



### EC BASIC-H Humidity version

#### TECHNICAL DESCRIPTION

The controller works by comparing the current room humidity with an adjustable setpoint. It controls a 0-10 V output signal with a proportional algorithm in direct or reverse action, based on the setting of jumper JP1. The output signal is applied to a ventilator.

**JP1 closed 1-2:** Humidification (control signal increases if the actual value falls below the setpoint)  
**JP1 closed 2-3 (\*):** Dehumidification (control signal increases if the actual value exceeds the setpoint)

The humidity setpoint is set using rotary switch SW1:

SW1	0 (*)	1	2	3	4	5	6	7
Setpoint (% RH)	20	25	30	35	40	45	50	55
SW1	8	9	A	B	C	D	E	F
Setpoint (% RH)	60	65	70	75	80	85	90	90

#### (\*) factory settings

The proportional band is set using rotary switch SW2:

SW2	0	1	2	3	4	5	6	7
Prop. band (% RH)	5	10	15	20	25	30	35	40
SW2	8	9	A	B	C	D	E	F (*)
Prop. band (% RH)	45	50	50	50	50	50	50	50

#### (\*) factory settings

The range of the voltage applied to the ventilator is defined using the MIN and MAX trimmer. MIN trimmer is used to define the minimum applicable voltage to the ventilator (0-5 V), while MAX trimmer defines the maximum voltage (5-10 V). The P controller will then operate between the relevant MIN and MAX values.

**Example 1:** If the MIN value is set to the minimum position and MAX to the maximum position, the P controller will work from 0-10 V.  
**Example 2:** If MIN is set to 2 V and MAX is set to 7 V, the P controller works from 2-7 V.

### EC BASIC-U Universal version

#### TECHNICAL DESCRIPTION

The controller works by comparing the input signal with an adjustable setpoint. It controls a 0-10 V output signal with a PI algorithm in direct or reverse action, based on the setting of jumper JP1. The output signal is applied to a ventilator.

**JP1 closed 1-2:** Control signal increases if the actual value falls below the setpoint  
**JP1 closed 2-3 (\*):** Control signal increases if the actual value exceeds the setpoint

The universal setpoint is set using rotary switch SW1:

SW1	0 (*)	1	2	3	4	5	6	7
Setpoint (%)	5	10	20	25	30	35	40	45
SW1	8	9	A	B	C	D	E	F
Setpoint (%)	50	55	60	65	70	80	90	95

#### (\*) factory settings

Proportional band and integral time are set using rotary switch SW2:

SW2	0	1	2	3	4	5	6	7
Prop. band (%)	1	1.5	2	3	5	7	10	14
Integral time (s)	600	462	356	274	211	163	125	97
SW2	8	9	A	B	C	D	E	F (*)
Prop. band (%)	21	31	45	66	96	140	205	300
Integral time (s)	74	57	44	34	26	20	16	12

#### (\*) factory settings

The range of the voltage applied to the ventilator is defined using the MIN and MAX trimmer. MIN trimmer is used to define the minimum applicable voltage to the ventilator (0-5 V), while MAX trimmer defines the maximum voltage (5-10 V). The PI controller will then operate between the relevant MIN and MAX values.

**Example 1:** If the MIN value is set to the minimum position and MAX to the maximum position, the PI controller will work from 0-10 V.  
**Example 2:** If MIN is set to 2 V and MAX is set to 7 V, the PI controller works from 2-7 V.

### EC BASIC-CO2/T Temperature + CO<sub>2</sub> version

#### TECHNICAL DESCRIPTION

The controller works by comparing the input signal with an adjustable setpoint. It controls a 0-10 V internal signal with a PI algorithm in direct or reverse action, based on the setting of jumper JP1.

**JP1 closed 1-2:** Heating (control signal increases if the actual value falls below the setpoint)  
**JP1 closed 2-3 (\*):** Cooling (control signal increases if the actual value exceeds the setpoint)

The controller also compares current CO<sub>2</sub> levels with an adjustable setpoint and controls a 0..10 V proportional, secondary internal signal in direct action. The output signal applied to the ventilator constitutes the maximum between internal signal # 1 and internal signal # 2. The setpoint is adjusted by knob in the range 5-30°C.

The temperature proportional band and integral time are set using rotary switch SW1:

SW1	0	1	2	3	4	5	6	7
Prop. band (°C)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Integral time (s)	1800	1700	1600	1500	1400	1300	1200	1100
SW1	8	9	A	B	C	D	E	F (*)
Prop. band (°C)	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
Integral time (s)	1000	900	800	700	600	500	400	300

#### (\*) factory settings

SW1	8	9	A	B	C	D	E	F (*)
Prop. band (°C)	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
Integral time (s)	1000	900	800	700	600	500	400	300

#### (\*) factory settings

The CO<sub>2</sub> proportional band is set using rotary switch SW2:

SW2	0	1	2	3	4	5	6	7
Prop. band (ppm)	10	25	50	75	100	125	150	175
SW2	8	9	A	B (*)	C	D	E	F
Prop. band (ppm)	200	300	400	500	600	700	800	1000

#### (\*) factory settings

The CO<sub>2</sub> setpoint is set using rotary switch SW3:

SW3	0 (*)	1	2	3	4	5	6	7
Setpoint (ppm)	350	400	450	500	550	600	650	700
SW3	8	9	A	B	C	D	E	F
Setpoint (ppm)	750	800	850	900	950	1000	1200	1500

#### (\*) factory settings

The range of the voltage applied to the ventilator is defined using the MIN and MAX trimmer. MIN trimmer is used to define the minimum applicable voltage to the ventilator (0-5 V), while MAX trimmer defines the maximum voltage (5-10 V). The PI controller will then operate between the relevant MIN and MAX values.

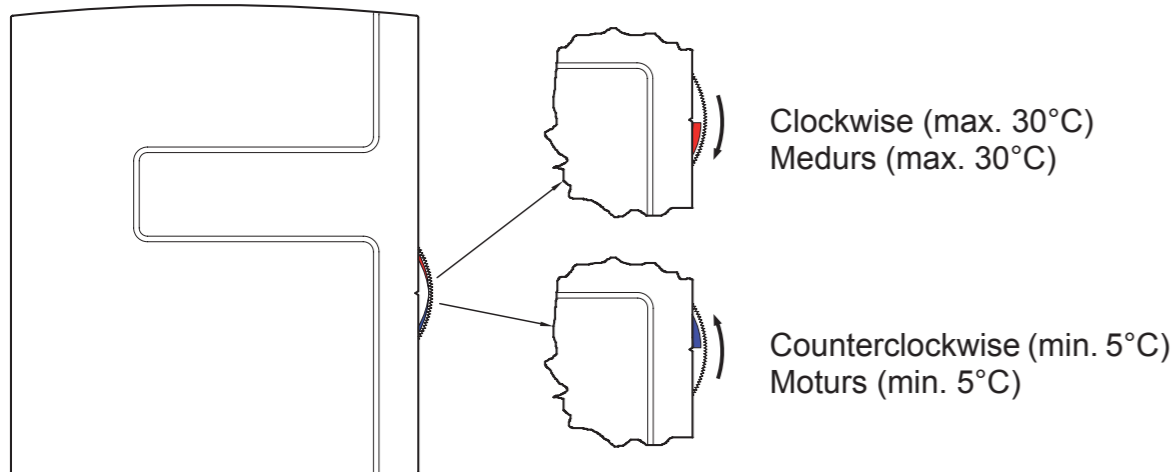
**Example 1:** If the MIN value is set to the minimum position and MAX to the maximum position, the controller will work from 0-10 V.  
**Example 2:** If MIN is set to 2 V and MAX is set to 7 V, the controller works from 2-7 V.



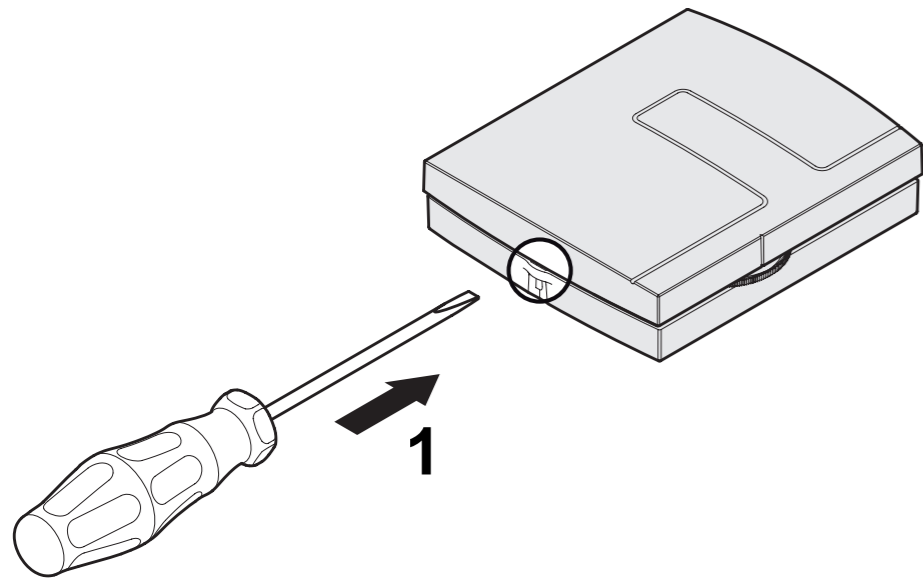
	<b>EC BASIC-T</b> (Temperature version / Temperaturversion)	<b>EC BASIC-H</b> (Humidity version / Fuktstyrningsversion)	<b>EC BASIC-U</b> (Universal version / Universell version)	<b>EC BASIC-CO2/T</b> (Temperature + CO <sub>2</sub> version / Temperatur- + CO <sub>2</sub> -version)
<b>ENGLISH</b>	<b>SW1:</b> Temperature proportional band (0.5-8.0°C) <b>JP1 closed 1-2:</b> Heating <b>JP1 closed 2-3:</b> Cooling <b>R23:</b> Temperature setpoint (5-30°C) <b>R28:</b> EC fan min. limit speed <b>R29:</b> EC fan max. limit speed	<b>SW1:</b> Humidity setpoint (20-90 % RH) <b>SW2:</b> Humidity proportional band (5-50 % RH) <b>JP1 closed 1-2:</b> Humidification <b>JP1 closed 2-3:</b> Dehumidification <b>R28:</b> EC fan min. limit speed <b>R29:</b> EC fan max. limit speed	<b>SW1:</b> Setpoint (5-95 %) <b>SW2:</b> Proportional band (1-300 %) <b>JP1 closed 1-2:</b> Reverse action <b>JP1 closed 2-3:</b> Direct action <b>R28:</b> EC fan min. limit speed <b>R29:</b> EC fan max. limit speed	<b>SW1:</b> Temperature proportional band (0.5-8.0°C) <b>SW2:</b> CO <sub>2</sub> proportional band (10-200 ppm) <b>SW3:</b> CO <sub>2</sub> setpoint (350-1500 ppm) <b>JP1 closed 1-2:</b> Heating <b>JP1 closed 2-3:</b> Cooling <b>R23:</b> Temperature setpoint (5-30°C) <b>R28:</b> EC fan min. limit speed <b>R29:</b> EC fan max. limit speed
<b>SVENSKA</b>	<b>SW1:</b> P-band för temperatur (0,5-8,0°C) <b>JP1 slutet 1-2:</b> Värme <b>JP1 slutet 2-3:</b> Kyla <b>R23:</b> Temperaturbörvärde (5-30°C) <b>R28:</b> EC-fläkthastighet, minbegränsning <b>R29:</b> EC-fläkthastighet, maxbegränsning	<b>SW1:</b> Börvärde luftfuktighet (20-90 % RH) <b>SW2:</b> P-band för luftfuktighet (5-50 % RH) <b>JP1 slutet 1-2:</b> Befuktning <b>JP1 slutet 2-3:</b> Avfuktning <b>R28:</b> EC-fläkthastighet, minbegränsning <b>R29:</b> EC-fläkthastighet, maxbegränsning	<b>SW1:</b> Börvärde (5-95 %) <b>SW2:</b> P-band (1-300 %) <b>JP1 slutet 1-2:</b> Omvänd verkan <b>JP1 slutet 2-3:</b> Direkt verkan <b>R28:</b> EC-fläkthastighet, minbegränsning <b>R29:</b> EC-fläkthastighet, maxbegränsning	<b>SW1:</b> P-band för temperatur (0,5-8,0°C) <b>SW2:</b> P-band för CO <sub>2</sub> (10-200 ppm) <b>SW3:</b> CO <sub>2</sub> -börvärde (350-1500 ppm) <b>JP1 slutet 1-2:</b> Värme <b>JP1 slutet 2-3:</b> Kyla <b>R23:</b> Temperaturbörvärde (5-30°C) <b>R28:</b> EC-fläkthastighet, minbegränsning <b>R29:</b> EC-fläkthastighet, maxbegränsning

**Temperature and temperature + CO<sub>2</sub> version / Temperatur- och temperatur- + CO<sub>2</sub>-version**

Temperature setpoint / Temperaturbörvärde



## Mounting / Montering

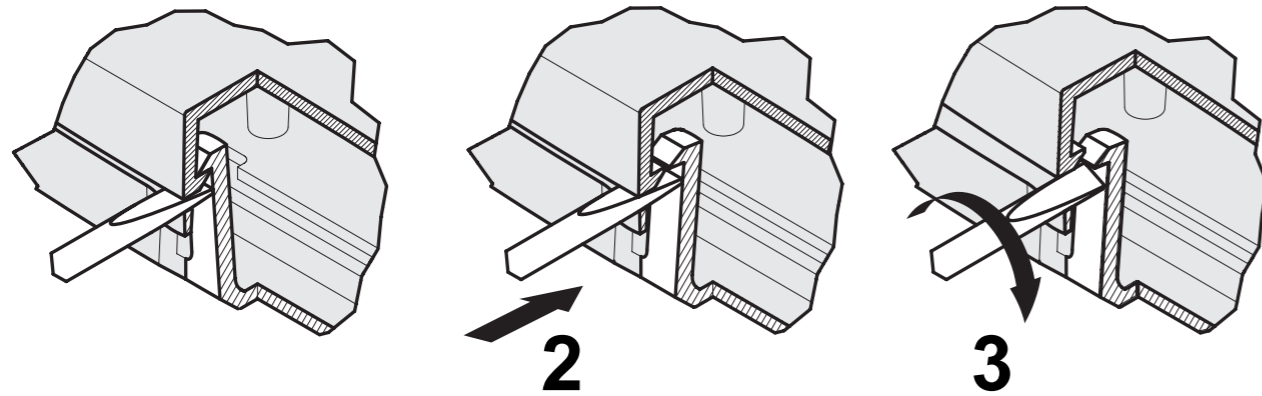


### English

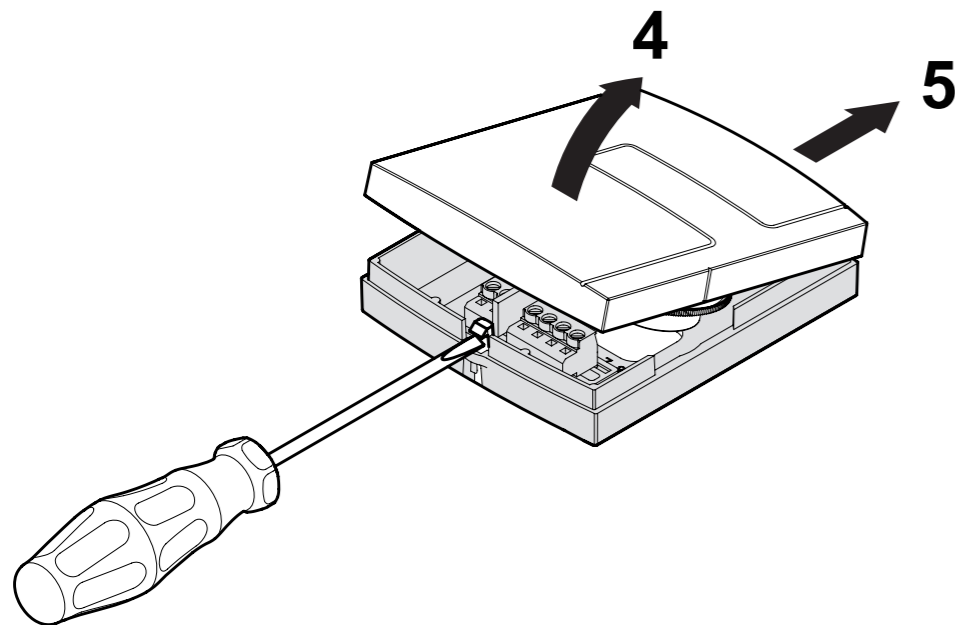
To remove the front cover, use a 3 mm flat-blade screwdriver to depress the locking tongue in the lower part of the casing.

### Svenska

Tag av locket genom att med en 3 mm bred skruvmejsel trycka in plasttungan i kåpans nedre gavel.



**English:** Press and twist the screwdriver, and at the same time pull the bottom part of the front outwards.  
**Svenska:** Tryck in och vrid om skruvmejseln och dra samtidigt locket lite utåt.

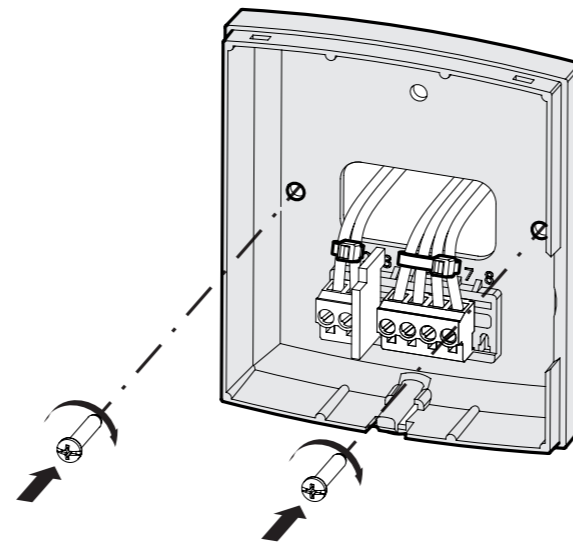


### English

When the bottom end of the front cover is free from the bottom part of the casing, slide the cover towards the top of the casing to free the hooks holding the upper edge of the front cover.

### Svenska

När lockets nedre del lossnat från botten, skjut locket i riktning mot den övre delen för att lossa på hakarna i lockets övre ände.



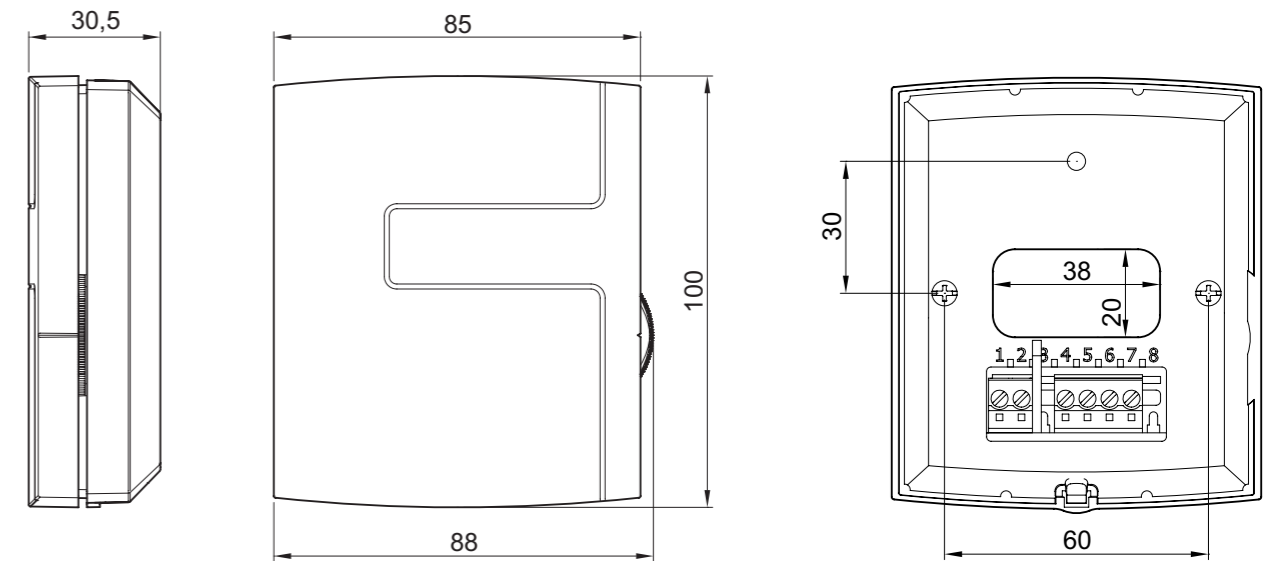
### English

Perform the connections according to electrical wiring diagram. Cables must be fixed using the 2 cable ties supplied as indicated on picture above. Screw the bottom part of the casing to the wall.

### Svenska

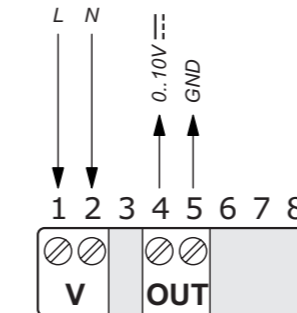
Koppla in enheten enligt inkopplingsdiagrammet. Kablarna måste fixeras med de 2 medföljande buntbanden, se ovanstående bild. Skruva fast enheten i väggen.

## Dimensions / Dimensioner



## Wiring / Inkoppling

110-240 V~  
50/60 Hz



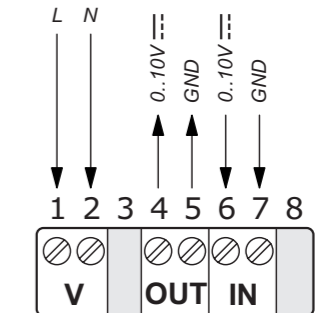
### Version

**EC Basic-T:** Temperature / temperatur

**EC Basic-CO2/T:** Temperature + CO<sub>2</sub> / temperatur + CO<sub>2</sub>

**EC Basic-H:** Humidity / luftfuktighet

110-240 V~  
50/60 Hz



### Version

**EC Basic-U:** Universal / universell



All installation, setting or maintenance of this unit must be performed with the supply voltage switched off and without any external loads on the unit! These operations should only be carried out by skilled workers. The manufacturer is not responsible for any damages caused by inadequate skills during installation and/or by any safety devices having been removed or tampered with.

Subject to change without notice.



Installation eller underhåll av denna enhet får endast utföras då enheten ej är spänningsatt! Arbetet ska endast utföras av utbildad personal. Tillverkaren är inte på något sätt ansvarig för eventuella skador som kan uppkomma p.g.a. bristande kompetens eller färdighet under installationen, eller på grund av att installatören tagit bort eller gjort ändringar i enhetens inbyggda säkerhetsmekanismer.

Kan ändras utan föregående notis.