



Installation regulations

CO₂-sensor
English



Air for Life

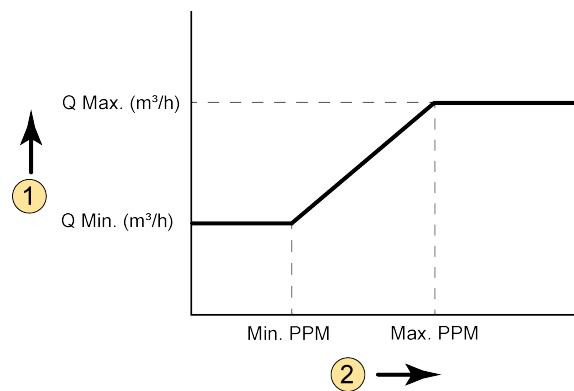
CO₂-sensor general

The eBus CO₂ sensor can be connected to all “plus versions” of the Renovent Excellent an Sky and Flair appliances. A maximum of 4 CO₂ sensors can be connected

The CO₂ sensors ensure optimum ventilation in the dwelling by automatically adjusting the air flow rate on the basis of the CO₂ content. The air flow rate is determined by the CO₂ sensor that requests the highest level.

The CO₂ sensor(s) only regulate the appliance if the position switch / Air Control, if fitted, is in position 1, 2 or 3; when the position switch is at position 0 or fan symbol (holiday mode) the CO₂ control does not work.

Depending on the minimum and maximum (set) PPM value, the CO₂ control adjusts the air flow between the setting 1 (set low) and setting 3 (set high).



1 = Air flow rate

2 = Amount of CO₂ in area where CO₂ sensor is situated

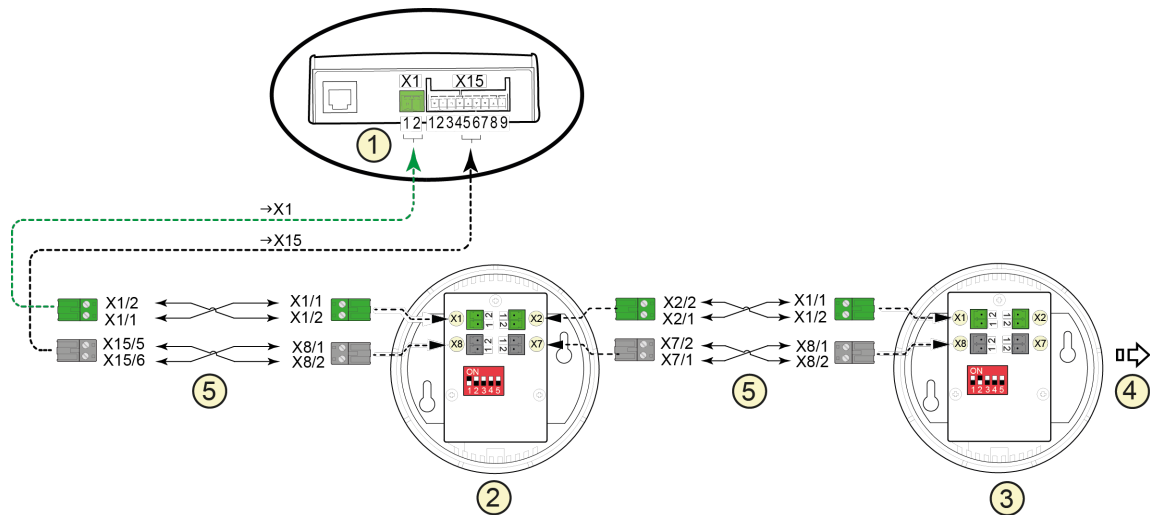
Q Min = Minimum air flow setting 1; for example Flair 325 (Plus) factorysetting step no1.2 = 100 m³/h

Q Max = Maximum air flow setting 3; for example Flair 325 (Plus) factorysetting step no1.4 = 250 m³/h

Min. PPM = Minimum (set) PPM value; for example Flair 325 (Plus) factorysetting step no. 6.2 = 400 PPM

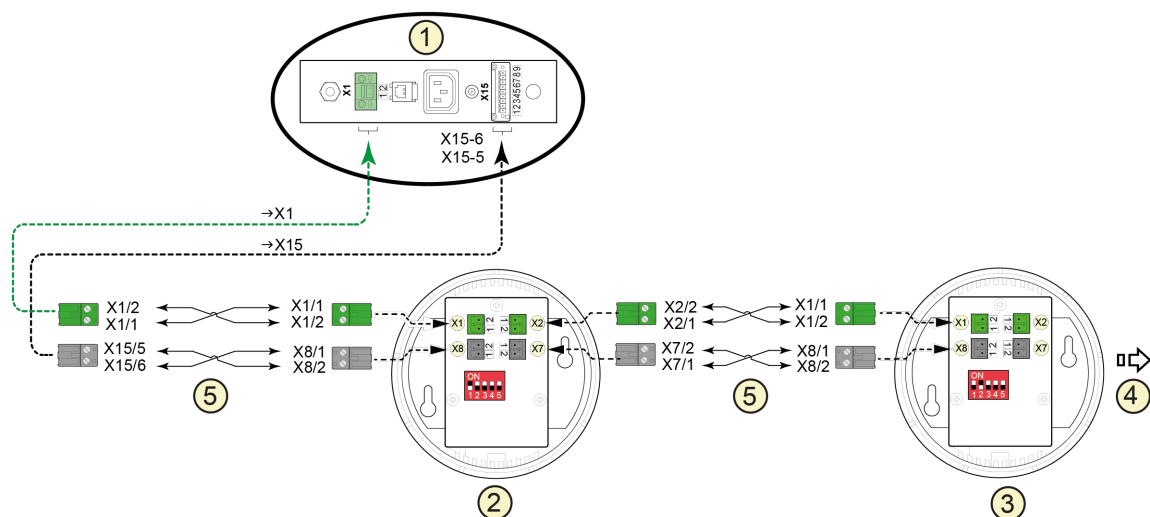
Max. PPM = Maximum (set) PPM value; for example Flair 325 (Plus) factorysetting step no. 6.3 = 1200 PPM

Step 1a Connect CO₂-sensor to Renovent Excellent appliance



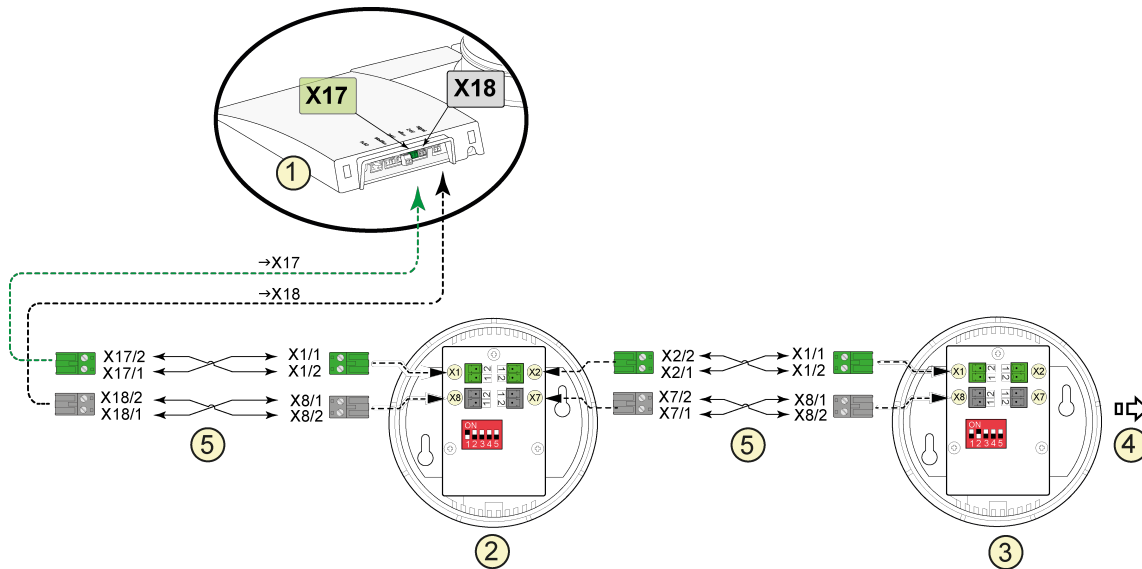
- 1 = Renovent Excellent appliance
- 2 = First connected CO₂ sensor
- 3 = Second connected CO₂ sensor
- 4 = Optionally, 3rd and 4th connected CO₂ sensors (A maximum of 4 CO₂ sensors can be connected)
- 5 = 2-wire control cable (Green plugs = eBus connection; black plugs = 24V.)

Step 1b Connect CO₂-sensor to Sky appliance



- 1 = Sky appliance
- 2 = First connected CO₂ sensor
- 3 = Second connected CO₂ sensor
- 4 = Optionally, 3rd and 4th connected CO₂ sensors (A maximum of 4 CO₂ sensors can be connected)
- 5 = 2-wire control cable (Green plugs = eBus connection; black plugs = 24V.)

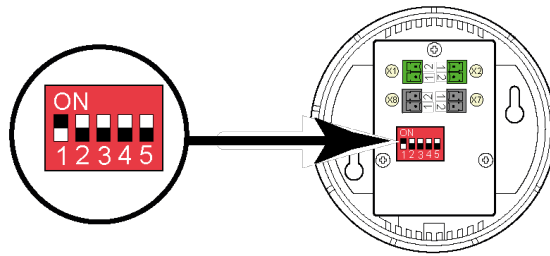
Step 1c Connect CO₂-sensor to Flair appliance



- 1 = Flair appliance
- 2 = First connected CO₂ sensor
- 3 = Second connected CO₂ sensor
- 4 = Optionally, 3rd and 4th connected CO₂ sensors (A maximum of 4 CO₂ sensors can be connected)
- 5 = 2-wire control cable (Green plugs = eBus connection; black plugs = 24V.)

Step 2 Setting CO₂-sensor

The CO₂ sensors are fitted with five DIP switches at the backside. Set the DIP switches according to the table below so that each CO₂ sensor has its own unique set combination.



Sensor	Dipswitch				
	1	2	3	4	5
CO ₂ -sensor 1	ON	OFF	OFF	OFF	OFF
CO ₂ -sensor 2	OFF	ON	OFF	OFF	OFF
CO ₂ -sensor 3	ON	ON	OFF	OFF	OFF
CO ₂ -sensor 4	OFF	OFF	ON	OFF	OFF

It is advisable to mark the CO₂ sensors as soon as dip switches are set (for example, by recording the number with a using waterproof marker on the inside of the CO₂ sensor) and to fill in the list below where the CO₂ sensor in question will be placed. When reading the PPM values of CO₂ sensors it is then easy to deduce for which area the read value applies.

	Area in which CO ₂ -sensor is placed
CO₂-sensor 1	
CO₂-sensor 2	
CO₂-sensor 3	
CO₂-sensor 4	

Step 3 Settings of CO₂-sensor on ventilation appliance

To activate the connected CO₂ sensor(s), the setting of the CO₂ sensor must be set to "ON" in the settings menu of the relevant ventilation appliance. To change settings in the settings menu, see the installation instructions for the appliance in question.

If desired, the minimum and maximum PPM values on which the CO₂ sensors are controlled can also be set in the settings menu.

CO₂- settings at Renovent Excellent and Sky appliance				
Step no.	Description	Factory setting	Setting range	Step
35	Switching ON and OFF eBus CO ₂ sensor	OFF	ON - OFF	-
36	Minimum PPM eBus CO ₂ -sensor 1	400	400 - 1200	25
37	Maximum PPM eBus CO ₂ -sensor 1	1200		
38	Minimum PPM eBus CO ₂ -sensor 2	400		
39	Maximum PPM eBus CO ₂ -sensor 2	1200		
40	Minimum PPM eBus CO ₂ -sensor 3	400		
41	Maximum PPM eBus CO ₂ -sensor 3	1200		
42	Minimum PPM eBus CO ₂ -sensor 4	400		
43	Maximum PPM eBus CO ₂ -sensor 4	1200		

CO₂- settings at Flair appliance				
Step no	Description	Factory setting	Setting range	Step
6	CO ₂ -sensor			
6.1	Switching ON and OFF eBus CO ₂ sensor	OFF	ON - OFF	-
6.2	Minimum PPM eBus CO ₂ -sensor 1	400	400 - 1200	25
6.3	Maximum PPM eBus CO ₂ -sensor 1	1200		
6.4	Minimum PPM eBus CO ₂ -sensor 2	400		
6.5	Maximum PPM eBus CO ₂ -sensor 2	1200		
6.6	Minimum PPM eBus CO ₂ -sensor 3	400		
6.7	Maximum PPM eBus CO ₂ -sensor 3	1200		
6.8	Minimum PPM eBus CO ₂ -sensor 4	400		
6.9	Maximum PPM eBus CO ₂ -sensor 4	1200		

Step 4 To check CO₂ values on ventilation appliance

In the readout menu (for Renovent Excellent and Sky with Plus print) or information menu (for all Flair appliances) the values of the connected CO₂ sensors can be read out. With this you can also check the proper operation of the connected CO₂ sensors.

Only values can be read in this readout menu or information menu; changing of settings is not possible. For more information regarding the readout menu / information menu, see the installation instructions for the appliance in question.

Readout menu at Renovent Excellent and Sky:

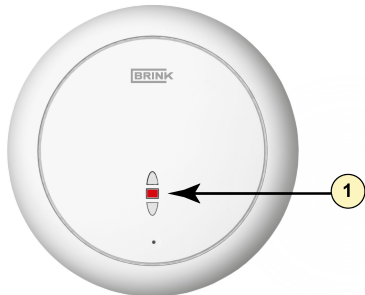
Step no. read out value	Description of readout value	Unity
10	Read out CO ₂ -sensor 1	PPM
11	Read out CO ₂ -sensor 2	PPM
12	Read out CO ₂ -sensor 3	PPM
13	Read out CO ₂ -sensor 4	PPM

Information menu at Flair appliances:

Press the info button ⓘ on the display and use the ▲ and ▼ button to go to the reading values of the CO₂ sensors.

LED function on CO₂-sensor

The CO₂ sensor has a red LED on the front.




1 = Red LED on front CO₂ sensor

This red LED on the CO₂ sensor has the following functions:

Led on CO ₂ -sensor	Description
Led is constantly on:	CO ₂ sensor is defect.
Led is constantly off:	CO ₂ sensor is off (no power) or is operating normally.
Led lights up and phases out slowly every 4 seconds:	The CO ₂ sensor is warming up during powerup phase.
Led lights red for a short period every half of a second:	The sensor detected a failure or it is not being read on the eBus. i.e. it has no eBus connection or heat recovery appliance is not set for reading CO ₂ sensors or demand control 2.0 does not detect the CO ₂ sensor.
The led blinks; the light is long on and short off every 2 seconds	This is a search option. This can be used in demand control 2.0 to easy the process of finding the right sensor during assigning it to a zone using the control unit.

Failure

When there is a problem with the CO₂ sensor at a Renovent Excellent or Sky appliance, the error message E109 will appear on screen.

Multiple error messages are possible with Flair devices; this error message always comes in combination with the wrench symbol  on the display.

Fault code	Description
152	Sensor must be replaced.
160	Internal connection with sensor element is poor.
161	Sensor element is defective.

An error message can also be displayed by means of a red LED on the front of the CO₂ sensor (→ [LED function on CO₂-sensor](#) page 8).



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