RF CO_2 switch (flush-mounted)

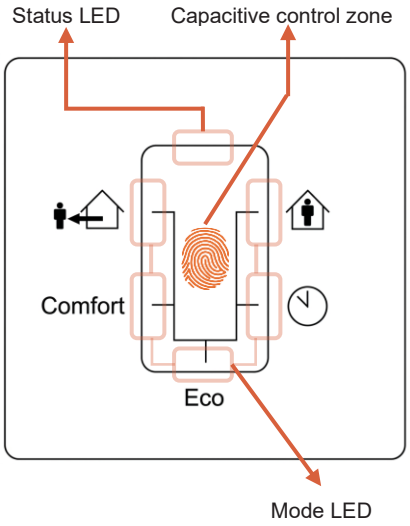
Description

The flush-mounted RF CO_2 switch is compatible with the Vasco 225 Compact (LE) and 275/350/425/500 Boost (H) ventilation units and CO_2 ZoneControl for zone-specific ventilation control.

This switch controls the ventilation unit at a fixed or variable air flow rate, with the air flow automatically adjusted based on the measured CO_2 concentration. Thanks to the integrated sensor, air quality is continuously monitored and ventilation is intelligently adjusted to ensure an optimal indoor climate.

General features

- Capacitive control area in the centre for:
  - Manual selection of ventilation speeds: absent, home, timer.
  - Automatic CO_2-controlled operation: Eco Comfort Eco and Comfort.
- LED indicators:
  - **Status LED**: Provides visual feedback on the operating status and any error messages.
  - **Mode LED**: Displays the current operating mode (manual modes: away, home, timer or automatic Eco/Comfort-mode)



Pairing options

- Support for pairing up to 3 ventilation units to one or more controls
- Ability to pair up to 20 RF switches (CO_2 RH or 3-position) to one ventilation unit
- Support for integration with CO_2 ZoneControl

Communication

- Wireless RF communication with the ventilation unit and CO_2 ZoneControl
- Radio frequency signal: 868.3 MHz

Power and consumption

- External power supply: 230 VAC
- Maximum consumption: 1.2 W

Measurement and operating data

- Operating temperature: 0 - 40°C
- Measuring range CO_2: 400 – 2000 ppm (parts per million)
- Measuring tolerance: 40 ppm + 2% of measured value at 20°C

Physical properties

- Dimensions (l x w x h): 83x83x15 mm (including design frame)
- Housing: plastic
- Protection class: IP21 (double-insulated)
- Mounting: surface-mounted wall mounting (screw fixing)

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Technical information

ECO modus

In ECO mode, a CO_2 setpoint of 1050 ppm is used. If the measured CO_2 level rises above this level, the ventilation unit automatically increases its ventilation rate. If the CO_2 level falls again, the ventilation rate is gradually reduced in accordance with the PI control. This mode focuses on energy-efficient ventilation with a slightly more relaxed indoor air quality standard.

COMFORT mode

In COMFORT mode, a CO_2 setpoint of 800 ppm is used. As soon as the CO_2 level rises above this threshold, the ventilation unit switches to a higher ventilation level more quickly to maintain optimal indoor air quality.

CO_2 control in ECO and COMFORT modes

The RF CO_2 switch (flush-mounted) continuously measures the CO_2 level in the room and automatically determines the required ventilation demand. The measured value is transmitted via RF communication to the ventilation unit, which always responds to the highest ventilation demand from the connected switches.

The ventilation flow rate is controlled based on an adjustable CO_2 setpoint (700–1100 ppm, factory-set and adjustable via the settings menu).

In automatic modes, the unit switches between low and high ventilation speeds depending on the current CO_2 concentration.

Auto Fallback Time

The RF CO_2 switch has a built-in Auto Fallback Time of 12 hours. If there is no user interaction during this period, the switch automatically reverts to the last set automatic mode (ECO or COMFORT). This prevents temporary manual settings from remaining active indefinitely.

LED behaviour when inactive

After 30 seconds, the LED indicators switch off automatically. When the control zone is pressed again, the switch displays the last setting, regardless of which linked switch set it.

Behaviour when controlling multiple ventilation units

When a single RF CO_2 or RF RH switch is connected to multiple ventilation units, the same ventilation setting (ECO, COMFORT or manual mode) is sent simultaneously to all connected units. All units always follow the most recently received RF command, ensuring that control remains uniform.

Unit-specific anomalies, such as error codes or faults, only affect the unit in question. In such cases, the status LED may light up red. The error codes can be found on the last page.

The switch displays the most recently selected local ventilation mode via the mode LEDs. When touched, the display is automatically updated to the most recently sent ventilation request (automatic or manual). All linked units continue to follow this current request mode.

Behaviour when multiple RF CO_2 and/or RF RH switches are present

When multiple RF CO_2 and/or RF RH switches are connected to the same ventilation unit, all switches synchronise with one another during any transition between manual and automatic operation. Each switch retains its own automatic mode (ECO or COMFORT) and returns to this individual setting after exiting manual mode.

The ventilation unit processes the sensor data received and always fulfils the highest ventilation demand currently being supplied by one of the linked CO_2 or RH switches.

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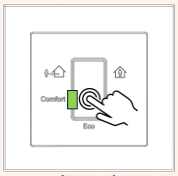
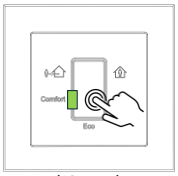
Technical specifications

Symbol	Function	Description
	Absent	Ventilation at speed 1 of the maximum air flow rate, adjustable between 10% and 40%.
	Home	Ventilation at speed 2 of the maximum air flow rate, adjustable between 30% en 70%.
	Timer	Ventilation at speed 3 of the maximum air flow rate, adjustable between 60% en 100%. By default, Timer mode remains active for 30 minutes and then automatically reverts to the previously active operating mode (Absent, Home, Eco or Comfort).
Eco	Eco	In ECO mode, the ventilation system maintains the CO_2 concentration below the ECO setpoint (Comfort setpoint + 250 ppm, default 1050 ppm). The ventilation unit operates automatically and in a modulating manner based on the CO_2 concentration measured by the sensor. When the CO_2 level rises, the ventilation flow rate increases proportionally, ensuring an energy-efficient and healthy indoor climate.
Comfort	Comfort	In COMFORT mode, the ventilation system maintains the CO_2 concentration below the COMFORT setpoint (default 800 ppm). The ventilation unit operates automatically and modulates its output based on the CO_2 concentration measured by the sensor. When the CO_2 level rises, the ventilation flow rate increases proportionally, ensuring an even more comfortable and healthier indoor climate compared to ECO mode.
 (5 sec.)	Pairing	Do not disconnect the power supply to the ventilation unit or the switch, and ensure that the mode LED indicates the automatic COMFORT mode. Then press and hold the control zone for at least 5 seconds until the status LED flashes white, after which you can release it. Green indicates success, red indicates failure. A maximum of three ventilation units or one CO_2 ZoneControl can be linked per switch. Please refer to the manual for the ventilation unit or CO_2 ZoneControl for further information.
 (10 sec.)	Resetting	Do not disconnect the power supply to the ventilation unit and the switch, and ensure that the mode LED indicates the automatic COMFORT setting. Then press and hold the control zone for at least 10 seconds until the status LED lights up white for approximately 3 seconds, after which you can release it. This indicates that the switch has been disconnected and reset to factory settings. After the reset, the switch will automatically restart and return to connection mode. Please refer to the manual for the ventilation unit or CO_2 ZoneControl for further information.

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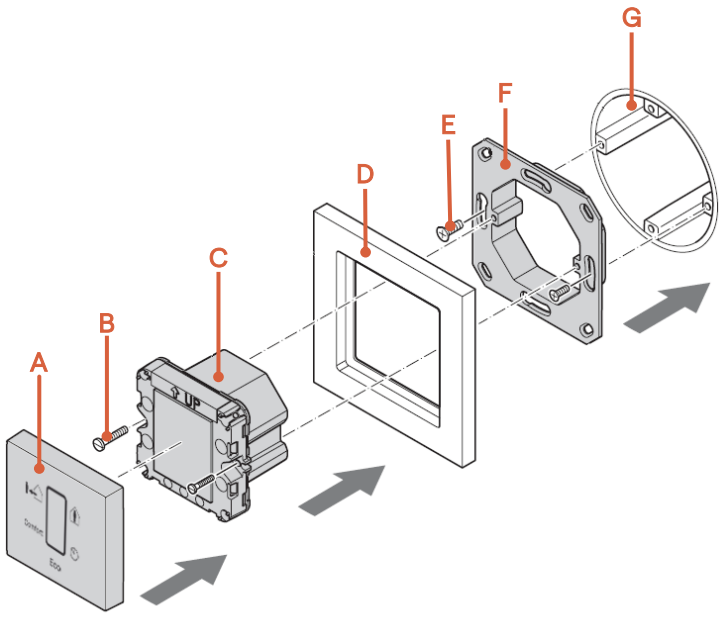
Codes + Status LED feedback

Status LED feedback	Description
Green	Status display 'Optimal': CO_2 levels below 800 ppm
Yellow	Status display 'Moderate': CO_2 levels between 800 and 1900 ppm
Red	Status display 'Alarm': CO_2 levels above 1900 ppm / RF communication fault
2x red	Filter dirty alarm
3x red	Issue with the ventilation unit/CO_2 ZoneControl
4x red	Issue with the RF CO_2 switch
Red / green	Pairing mode
Red / blue	Setting speed 1
Green / blue	Setting speed 2
Red / green / blue	Setting speed 3
Blue	Adjusting the CO_2 setpoint
White	Initialisation/Processing

Please refer to the manual for the RF CO_2 switch (flush-mounted) for further information.

Dimension drawing and connection

Always install the RF CO_2 switch (flush-mounted) in an easily accessible location within the room where you wish to monitor the CO_2 concentration. Always ensure that the switch is connected to a 230V AC power supply.



A: Cover
B: Screws
C: RF control module
D: Design frame
E: Screws
F: Wall frame
G: Back box