EC TECHNOLOGY

# $CO_2$ CONTROL KITS

KITS FOR CONTROLLED MONITORING AND VENTILATION,
WITH REGULATION BASED ON THE $CO_2$ CONCENTRATION

- AUTOMATIC REGULATION BASED ON $CO_2$ SENSOR READING
- BUILT-IN $CO_2$ SENSOR
- FAN WITH EC TECHNOLOGY MOTOR
- SIMPLE VENTILATION OR WITH FILTERS

SODECA®

KITS WITH SMART CONTROL FOR
$CO_2$ REGULATION THROUGH
SIMPLE CMV VENTILATION UNITS WITH FILTERS

**$CO_2$ is one of the contaminants most often found in building interiors, especially in high-occupancy buildings such as schools, restaurants and offices**

**This is because 4% of human exhalation is carbon dioxide ($CO_2$)**

In closed environments with large volumes of people, where there is inadequate ventilation, the amount of $CO_2$ gradually increases. This increase in $CO_2$ leads to headaches, fatigue, loss of concentration and a reduction in performance. Measuring and reducing it in closed areas is **essential to maintain the good quality of the interior air**, prevent respiratory diseases and maintain a healthy environment.

The more efficient and effective way to reduce $CO_2$ in closed areas is to ventilate them by means of controlled mechanical ventilation systems.

## **BENEFITS** OF CONTROLLED MECHANICAL VENTILATION

**01.**
**Reduction in the air-conditioning system energy consumption,** as ventilation is only used when necessary.

**02.**
**Reduction in the ventilation system energy consumption**, as the fan is regulated based on the $CO_2$ reading.

**03.**
Possibility of maintaining a **constant $CO_2$ level**.

**04.**
**Automation of the system**, making human intervention unnecessary.

**05.**
Possibility of directing the flow to ensure the **homogeneity of the interior air quality**.

*The SODECA kits developed for automatic $CO_2$ regulation are described below.*

SIMPLE

$CO_2$ REDUCTION KIT

This kit is appropriate for installations where indoor areas can be ventilated by **supplying external unprocessed air**.

# KIT SVE/ PLUS-CO2

$CO_2$ reduction kit formed by a smart surface control and an in-line exhaust fan for circular ducts with a low noise level and EC Technology motor.

$CO_2$ REDUCTION KIT

WITH FILTERS

This kit is appropriate for installations where it is necessary **to filter the external air supplied for ventilating** an indoor area.

# KIT SV/ FILTER-CO2

$CO_2$ reduction kit formed by a smart surface control and a series of filtering units for circular ducts with a low noise level, different filtering phases and EC Technology motor.

# CAP-CO2/EC

**The CAP-CO2/EC control panel is ideal for air ventilation systems fitted with EC Technology motors with the electronics built-in to the motor itself.**

This control incorporates all the functions required for automatic regulation of the ventilation system, adjusting the rotational speed parameters of the fan based on the sensor reading and the objective $CO_2$ value.

There are **two control options**: a simple one called CAP-CO2/EC-S and another with Wi-Fi connectivity called CAP-CO2/EC-W.

## CAP-CO2/EC-S

The CAP-CO2/EC-S is a wall-mounted control with the following features:

- **Proportional regulation based on set point and $CO_2$ measurement**
- **Time programming**
- **Built-in $CO_2$ sensor**

## CAP-CO2/EC-W

The CAP-CO2/EC-W has all the above features and is also fitted with a Wi-Fi system that permits cloud connection through the platform.

- **Remote control**
- **Wi-Fi**
- **Data monitoring**
- **Secure environment**

**The platform** covers the extensive IoT field for monitoring data received from the equipment, as well as offering the possibility of acting with respect to said data. The ecosystem is made up of the IoT hardware, servers, cloud controls and the different user interfaces for interacting with the equipment.

All the above is developed and designed to take place in a secure environment, protected by a legal framework that provides the customer with a compact, functional and safe end product.

# KIT SVE/PLUS-CO2

***Simple $CO_2$ reduction kit***

Simple $CO_2$ reduction kit consisting of an intelligent surface control and a series of in-line duct extractors.

Fan:
- Acoustic casing covered with sound absorbing material.
- All models equipped with a backward curved impeller.
- Standardised inlet and outlet flanges allowing for easy installation in ducts.
- Fitted with a folding inspection hatch.
- Support feet integrated into the box which facilitates its assembly.
- Linear airflow direction.

Control:
- Proportional regulation according to setpoint and $CO_2$ measurement.
- Time programming.
- Wall-mounted.
- Integrated $CO_2$ sensor.
- Power supply 230 V 50/60 Hz.
- Version W: with WiFi connectivity.

Motor:
- EC Technology external rotor motors with high efficiency and built-in variable speed drive controlled by 0-10 V signal.
- Single-phase 200-240 V 50/60 Hz, IP54 protection.
  Except KIT SVE/PLUS-CO2-400 model, 200-277 V 50/60 Hz. IP55 protection.
- Maximum temperature of air to be carried: -25 ºC +60 ºC. Except model KIT SVE/PLUS-CO2-200, -25 ºC +45 ºC.

Finish:
- Anti-corrosive in galvanized steel sheet.

## *Order code*

***KIT SVE/PLUS-CO2 — 100 — W***

- KIT SVE/PLUS-CO2: Simple $CO_2$ reduction kit
- Nozzle diameter in mm
- Control options
  S: Single
  W: with WiFi connectivity

## *Technical characteristics*

| Model | Speed (r/min) | Maximum admissible current (A) 230V | Max. electric power (kW) | Maximum flow rate ($m^3/h$) | Sound pressure level at 50% of max speed.* dB (A) | Approx. weight (Kg) | According ErP |
|---|---|---|---|---|---|---|---|
| KIT SVE/PLUS-CO2-100 | 3570 | 1.01 | 0.12 | 399 | 38 | 11 | 2018 |
| KIT SVE/PLUS-CO2-125 | 3570 | 1.01 | 0.12 | 480 | 36 | 11 | 2018 |
| KIT SVE/PLUS-CO2-150 | 3570 | 1.01 | 0.12 | 498 | 33 | 11 | 2018 |
| KIT SVE/PLUS-CO2-160 | 3570 | 1.01 | 0.12 | 534 | 31 | 11 | 2018 |
| KIT SVE/PLUS-CO2-200 | 3265 | 1.35 | 0.18 | 948 | 36 | 14 | 2018 |
| KIT SVE/PLUS-CO2-250 | 2850 | 1.35 | 0.18 | 1187 | 38 | 14 | 2018 |
| KIT SVE/PLUS-CO2-315 | 1920 | 1.35 | 0.18 | 1430 | 29 | 23 | 2018 |
| KIT SVE/PLUS-CO2-350 | 1460 | 1.45 | 0.19 | 1983 | 35 | 32 | 2018 |
| KIT SVE/PLUS-CO2-400 | 1550 | 2.00 | 0.46 | 2856 | 38 | 39 | 2018 |

* Irradiated sound pressure level in dB(A) at a distance of 1.5 m and at maximum flow rate.

## *Erp. (Energy Related Products)*

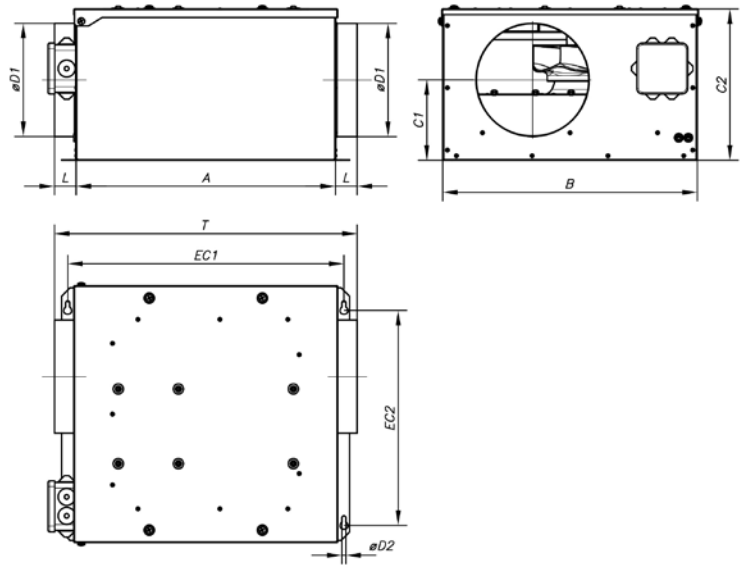
Information on Directive 2009/125/EC can be downloaded from the SODECA website or the QuickFan selector programme.

## *Acoustic characteristics*

**Sound power spectrum Lw(A) in dB(A) per Hz frequency band**
**Irradiated values at maximum speed and medium flow rate.**

| | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---|---|---|---|---|---|---|---|---|
| KIT SVE/PLUS-CO2-100 | 38 | 43 | 45 | 47 | 49 | 53 | 47 | 43 |
| KIT SVE/PLUS-CO2-125 | 37 | 43 | 45 | 48 | 50 | 53 | 48 | 44 |
| KIT SVE/PLUS-CO2-150 | 32 | 42 | 41 | 51 | 44 | 44 | 44 | 40 |
| KIT SVE/PLUS-CO2-160 | 33 | 43 | 42 | 47 | 45 | 46 | 45 | 41 |
| KIT SVE/PLUS-CO2-200 | 50 | 50 | 43 | 50 | 44 | 42 | 45 | 45 |
| KIT SVE/PLUS-CO2-250 | 46 | 44 | 43 | 45 | 55 | 35 | 34 | 30 |
| KIT SVE/PLUS-CO2-315 | 30 | 44 | 33 | 32 | 44 | 25 | 24 | 19 |
| KIT SVE/PLUS-CO2-350 | 37 | 50 | 40 | 42 | 36 | 29 | 26 | 14 |
| KIT SVE/PLUS-CO2-400 | 37 | 52 | 41 | 42 | 34 | 29 | 27 | 27 |

## *Dimensions mm*




| | A | B | C1 | C2 | øD1 | L | øD2 | EC1 | EC2 | T |
|---|---|---|---|---|---|---|---|---|---|---|
| KIT SVE/PLUS-CO2-100 | 380 | 380 | 174.5 | 255 | 100 | 37.5 | 7 | 405 | 305 | 455 |
| KIT SVE/PLUS-CO2-125 | 380 | 380 | 164.5 | 255 | 125 | 37.5 | 7 | 405 | 305 | 455 |
| KIT SVE/PLUS-CO2-150 | 380 | 380 | 160 | 255 | 150 | 37.5 | 7 | 405 | 305 | 455 |
| KIT SVE/PLUS-CO2-160 | 380 | 380 | 155 | 255 | 160 | 37.5 | 7 | 405 | 305 | 455 |
| KIT SVE/PLUS-CO2-200 | 460 | 450 | 140 | 265 | 200 | 37.5 | 7 | 485 | 380 | 535 |
| KIT SVE/PLUS-CO2-250 | 460 | 450 | 165 | 310 | 250 | 52.5 | 7 | 485 | 380 | 565 |
| KIT SVE/PLUS-CO2-315 | 565 | 540 | 210 | 390 | 315 | 57.5 | 9 | 595 | 440 | 680 |
| KIT SVE/PLUS-CO2-350 | 650 | 600 | 265 | 465 | 350 | 57.5 | 9 | 680 | 525 | 765 |
| KIT SVE/PLUS-CO2-400 | 650 | 680 | 280 | 500 | 400 | 80 | 9 | 680 | 600 | 810 |

## *Accessories*

KIT

R

RAI

BE

V

SA

BC

BA/BI

PERSIANA SOBREPRESIÓN

AIRFILTER

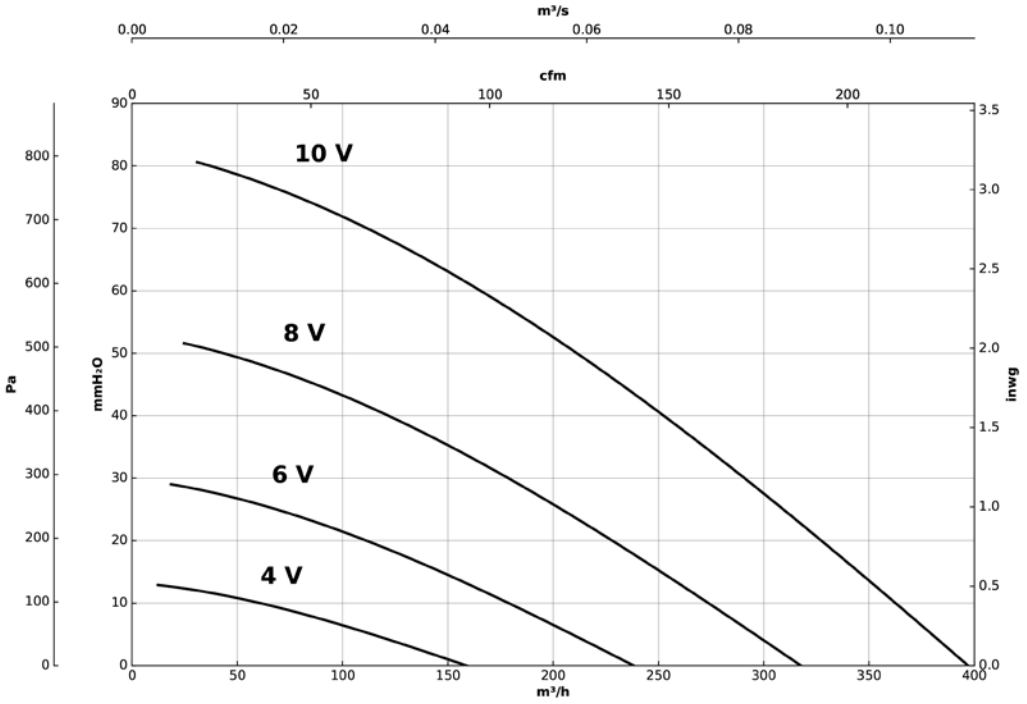
BOCAS DE SALIDA PARA VIVIENDAS

S

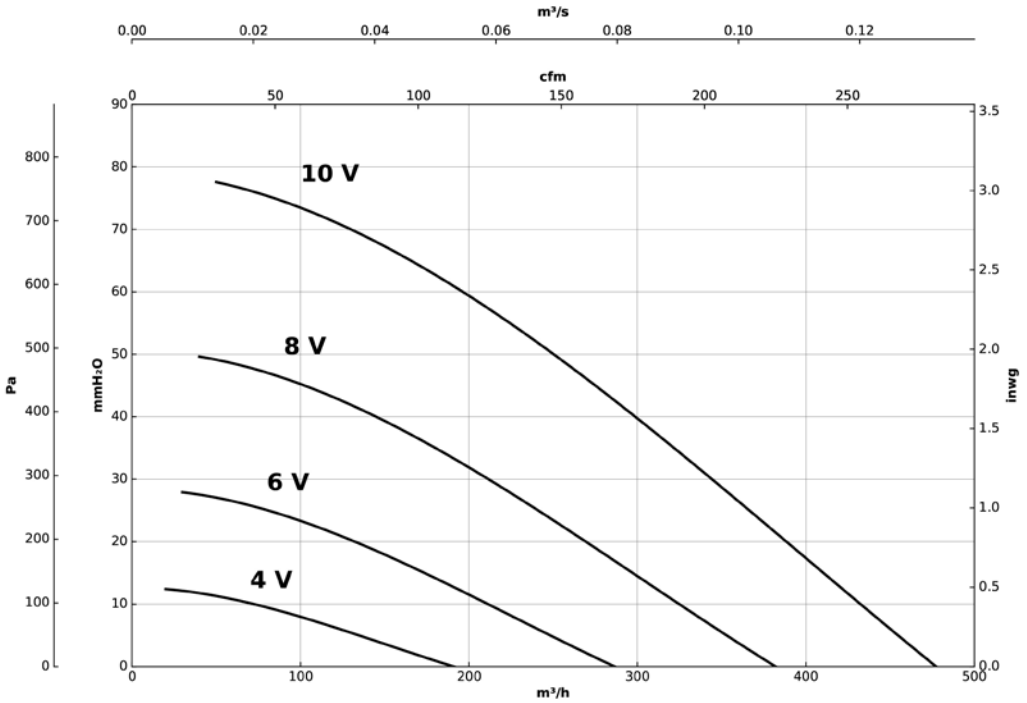
## *Characteristic curves*

Q= Flow rate in m³/h, m³/s and cfm  Pe= Static pressure in mm $H_2O$, Pa and inwg

**KIT SVE/PLUS-CO2-100**



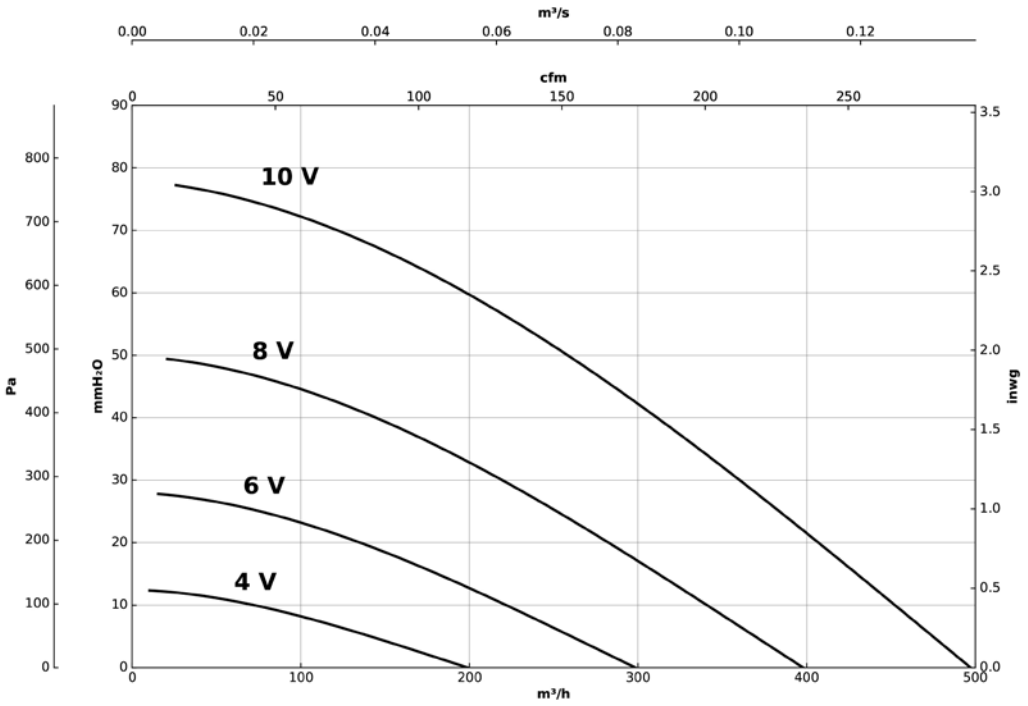

**KIT SVE/PLUS-CO2-125**



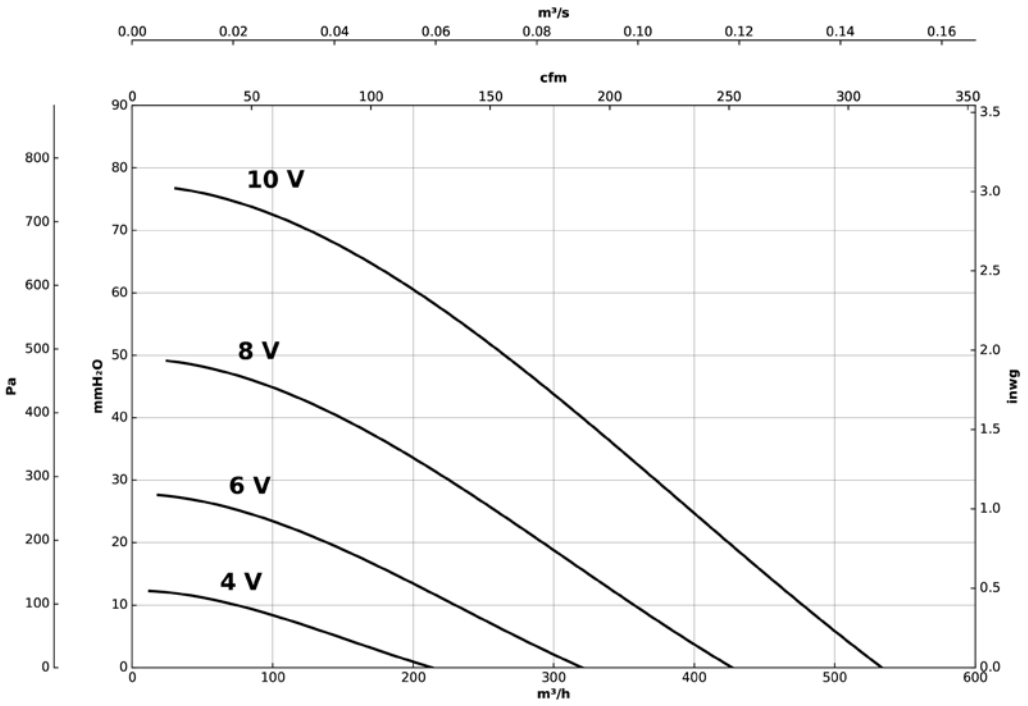
## *Characteristic curves*

Q= Flow rate in m³/h, m³/s and cfm  Pe= Static pressure in mm $H_2O$, Pa and inwg

**KIT SVE/PLUS-CO2-150**



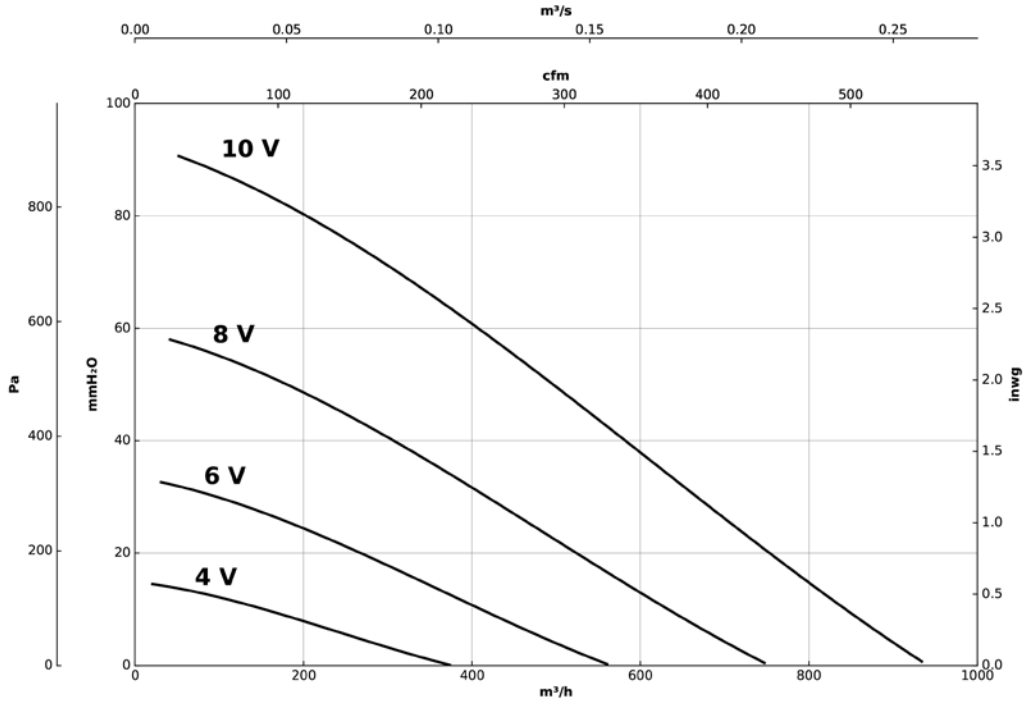

**KIT SVE/PLUS-CO2-160**



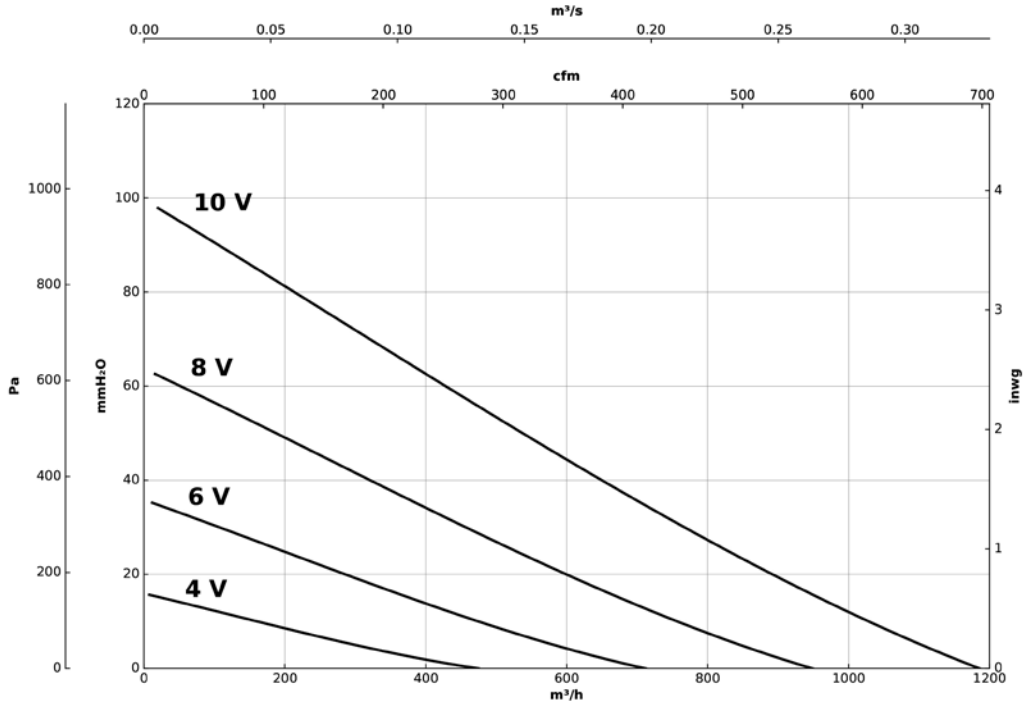
## *Characteristic curves*

Q= Flow rate in m³/h, m³/s and cfm  Pe= Static pressure in mm $H_2O$, Pa and inwg

**KIT SVE/PLUS-CO2-200**



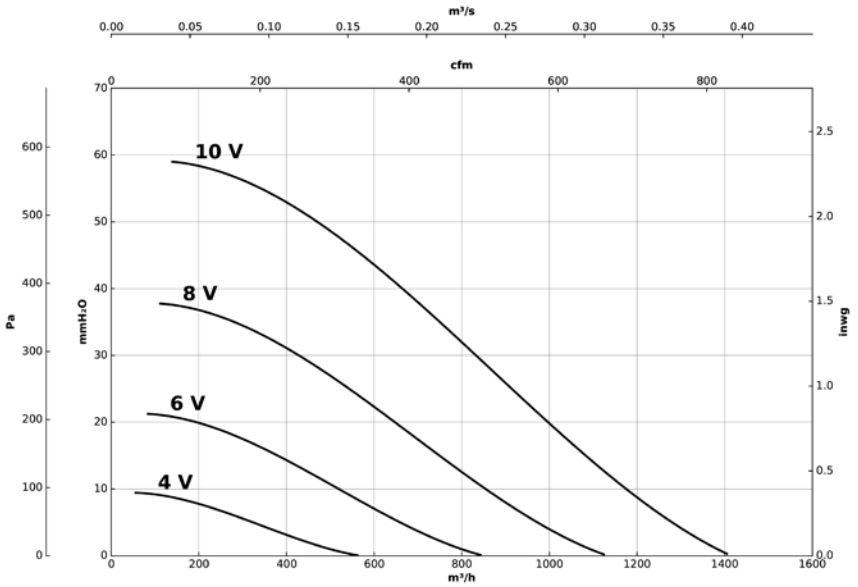

**KIT SVE/PLUS-CO2-250**



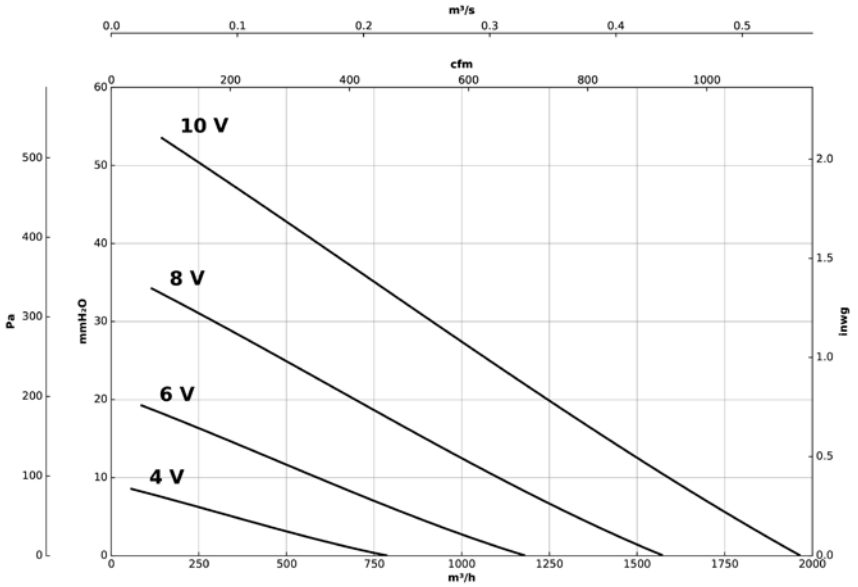
## *Characteristic curves*

Q= Flow rate in m³/h, m³/s and cfm  Pe= Static pressure in mm $H_2O$, Pa and inwg

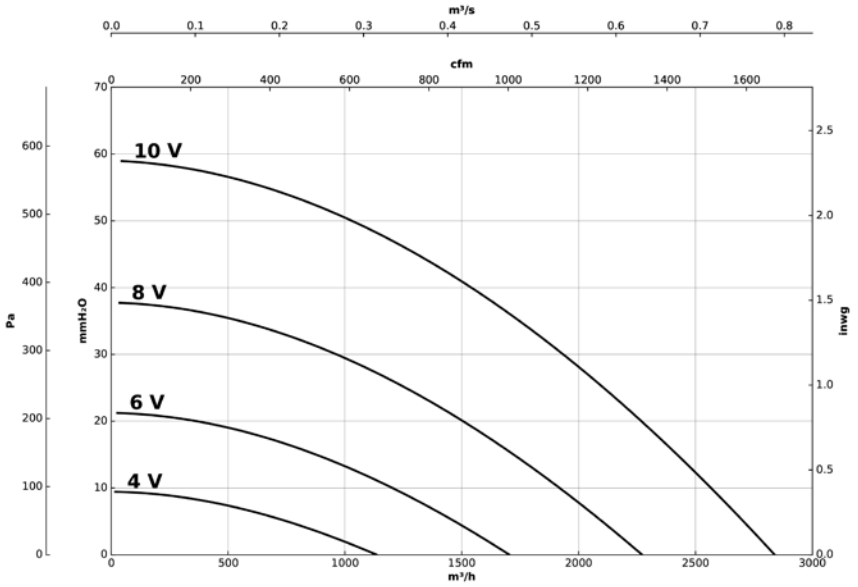
**KIT SVE/PLUS-CO2-315**




**KIT SVE/PLUS-CO2-350**




**KIT SVE/PLUS-CO2-400**



# KIT SV/FILTER-CO2

***$CO_2$ reduction kit with filtration***

$CO_2$ reduction kit with filtration consisting of an intelligent surface control and a series of filtration units for circular ducts.

Fan:
- Acoustic casing covered with sound absorbing material.
- Standardised inlet and outlet flanges with watertight joints.
- F7 + F9 filters. Other combinations on request.
- Easy access inspection and cleaning cover with manual fasteners.
- Centrifugal fan with a backward curved impeller.
- Integrated support into the box which facilitates its assembly.
- Linear airflow direction.
- 3 pressure taps for individual control of the two filtration stages.
- Installation in any position.
- With guide slot for 48 mm prefilter.
- More efficient filter anti-by-pass adjustment.

Control:
- Proportional regulation according to setpoint and $CO_2$ measurement.
- Time programming.
- Wall-mounted.
- Integrated $CO_2$ sensor.
- Power supply 230 V 50/60 Hz.
- Version W: with WiFi connectivity.

Motor:
- High efficiency external rotor EC Technology motors, adjustable via 0-10 V signal.
- Single-phase 220-240 V 50/60 Hz, IP54 protection.
- Maximum temperature of air to be carried: -25 ºC +60 ºC.

Finish:
- Anti-corrosive in galvanized steel sheet.

## *Order code*

***KIT SV/FILTER-CO2 — 220 — F7+F9 — W***

| KIT SV/FILTER-CO2 | 220 | F7+F9 | W |
|---|---|---|---|
| KIT SV/FILTER-CO2: $CO_2$ reduction kit with filtration | Impeller size mm | Combination filters F7+F9 | Control options S: Single W: with WiFi connectivity |

## *Technical characteristics*

| Model | Speed (r/min) | Maximum admissible current (A) 230V | Maximum power (kW) | Maximum flow rate ($m^3/h$) F7+F9 | Sound pressure level at 50% of max speed.* dB (A) | Approx. weight (Kg) | According ErP |
|---|---|---|---|---|---|---|---|
| KIT SV/FILTER-CO2-150 | 3540 | 0.97 | 0.12 | 527 | 38 | 14 | 2018 |
| KIT SV/FILTER-CO2-200 | 3265 | 1.35 | 0.18 | 734 | 45 | 17 | 2018 |
| KIT SV/FILTER-CO2-250 | 2850 | 1.35 | 0.18 | 850 | 49 | 19 | 2018 |
| KIT SV/FILTER-CO2-315 | 2320 | 2.00 | 0.45 | 1806 | 52 | 34 | 2018 |
| KIT SV/FILTER-CO2-350 | 1460 | 1.45 | 0.19 | 1382 | 42 | 39 | 2018 |
| KIT SV/FILTER-CO2-400 | 1700 | 4.70 | 0.75 | 3024 | 52 | 66 | 2018 |

* Irradiated sound pressure level in dB(A) at a distance of 1 m.

## *Erp. (Energy Related Products)*

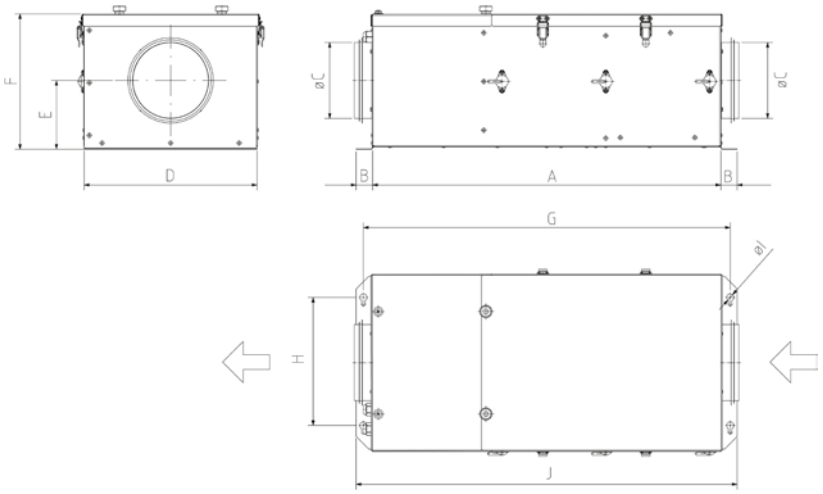
Information on Directive 2009/125/EC can be downloaded from the SODECA website or the QuickFan selector programme.

## Acoustic characteristics

**Sound power spectrum Lw(A) in dB(A) per Hz frequency band**
**Irradiated values at maximum speed and medium flow rate.**

| | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---|---|---|---|---|---|---|---|---|
| KIT SV/FILTER-CO2-150 | 56 | 52 | 56 | 54 | 48 | 43 | 39 | 33 |
| KIT SV/FILTER-CO2-200 | 63 | 59 | 63 | 61 | 55 | 50 | 46 | 40 |
| KIT SV/FILTER-CO2-250 | 67 | 63 | 67 | 65 | 59 | 54 | 50 | 44 |
| KIT SV/FILTER-CO2-315 | 69 | 66 | 70 | 67 | 61 | 57 | 53 | 47 |
| KIT SV/FILTER-CO2-350 | 59 | 56 | 60 | 58 | 53 | 50 | 47 | 41 |
| KIT SV/FILTER-CO2-400 | 70 | 66 | 70 | 68 | 62 | 57 | 53 | 47 |

## Dimensions mm




| | A | B | ØC | D | E | F | G | H | ØI | J |
|---|---|---|---|---|---|---|---|---|---|---|
| KIT SV/FILTER-CO2-150 | 680 | 34.5 | 150 | 340 | 134.5 | 262.5 | 715 | 250 | 14 | 750 |
| KIT SV/FILTER-CO2-200 | 700 | 38.5 | 200 | 395 | 152 | 300 | 735 | 290 | 14 | 780 |
| KIT SV/FILTER-CO2-250 | 750 | 48.5 | 250 | 420 | 162 | 323 | 785 | 335 | 14 | 850 |
| KIT SV/FILTER-CO2-315 | 830 | 58 | 310 | 520 | 202 | 404 | 865 | 435 | 14 | 950 |
| KIT SV/FILTER-CO2-350 | 920 | 56 | 350 | 610 | 223.5 | 446 | 955 | 525 | 14 | 1030 |
| KIT SV/FILTER-CO2-400 | 1000 | 60.5 | 400 | 670 | 251.5 | 505.5 | 1030 | 575 | 14 | 1120 |

## Accessories

INT

ACE ACE/400

SI-PRESOSTATO

SI-PRESIÓN

R

RAI

RC

V

SA

BC

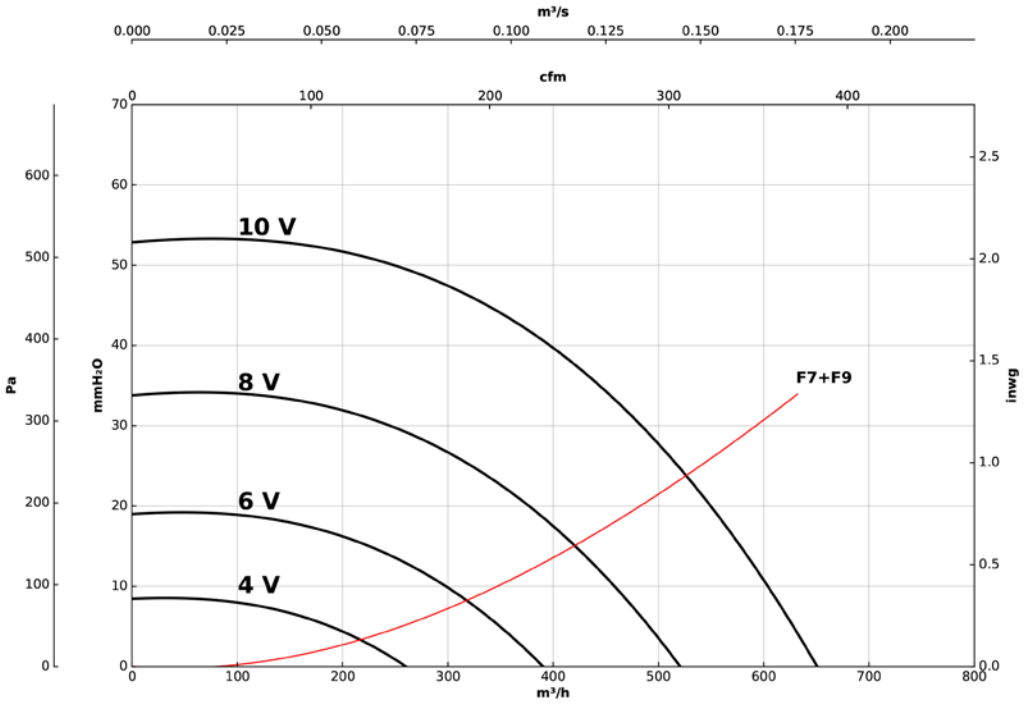
SC

RD

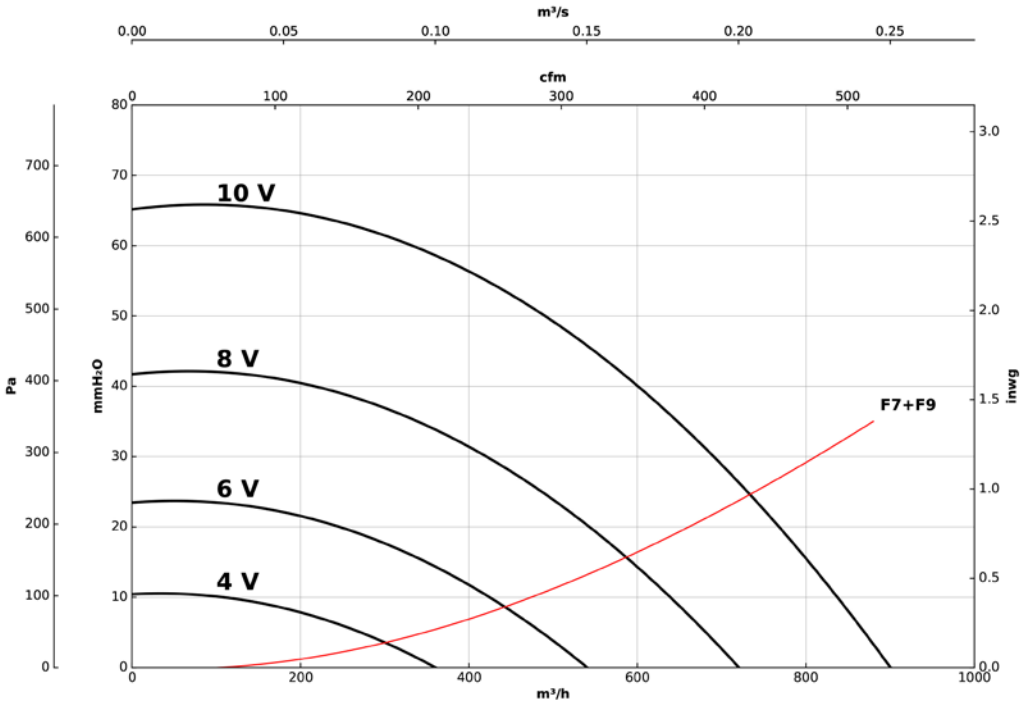
## *Characteristic curves*

Q= Flow rate in m³/h, m³/s and cfm  Pe= Static pressure in mm $H_2O$, Pa and inwg

**KIT SV/FILTER-CO2-150**



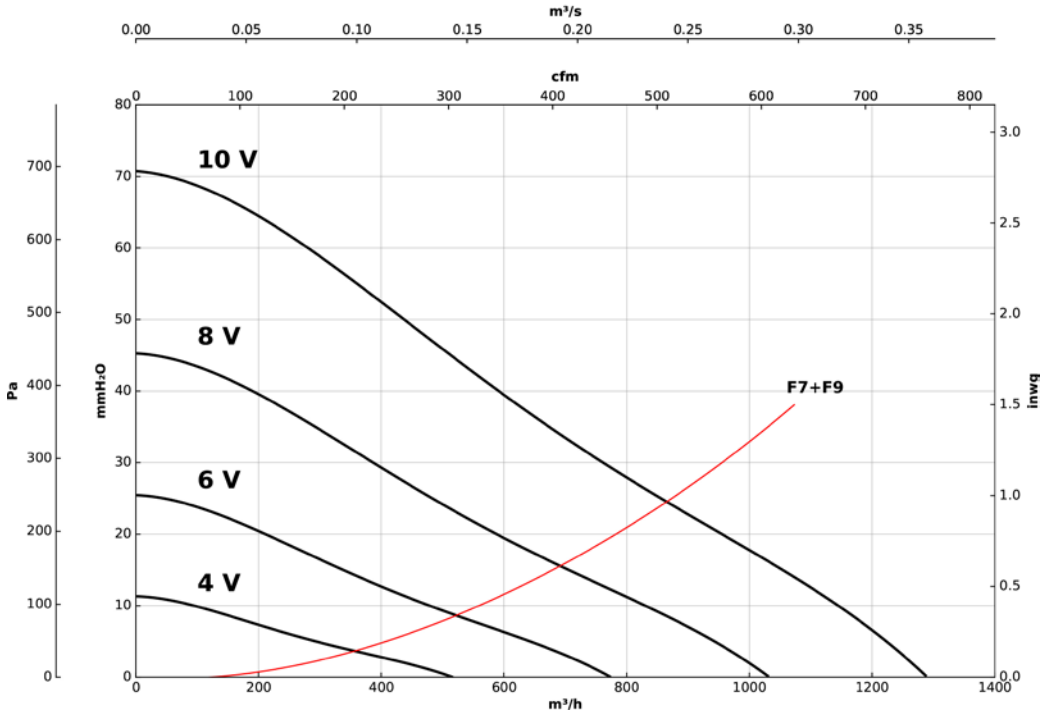

**KIT SV/FILTER-CO2-200**



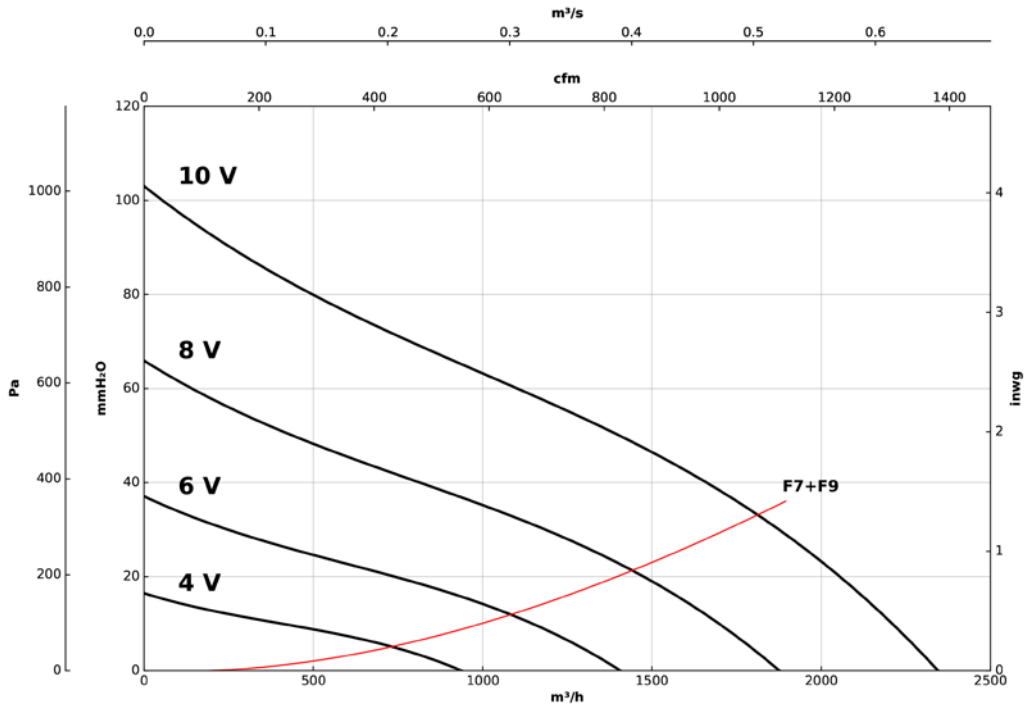
## *Characteristic curves*

Q= Flow rate in m³/h, m³/s and cfm  Pe= Static pressure in mm $H_2O$, Pa and inwg

**KIT SV/FILTER-CO2-250**



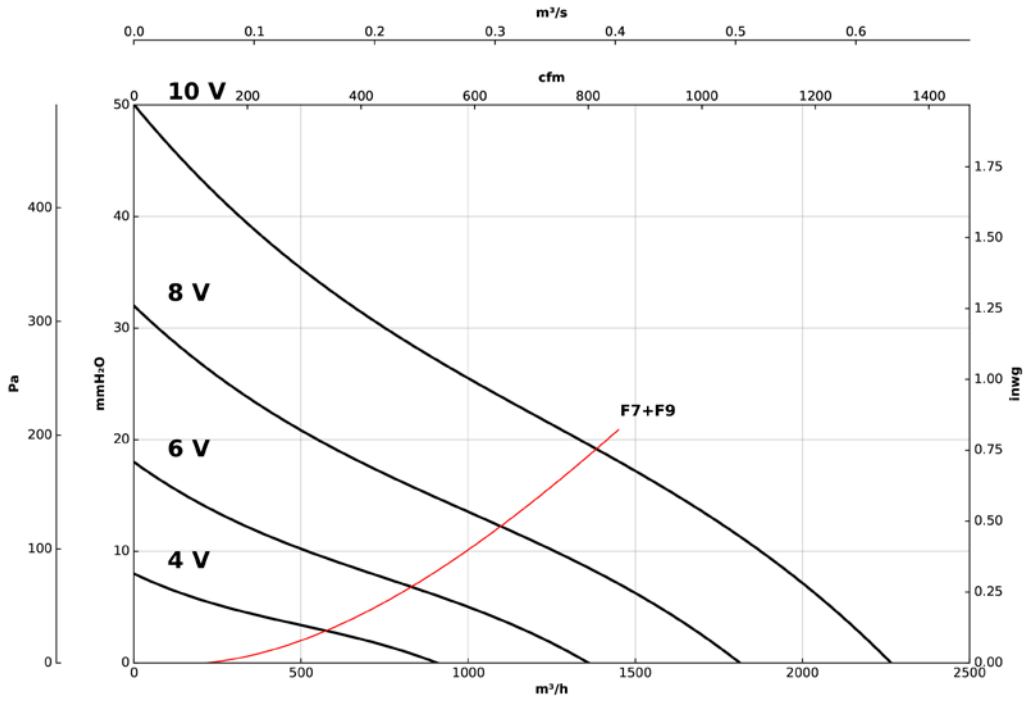

**KIT SV/FILTER-CO2-315**



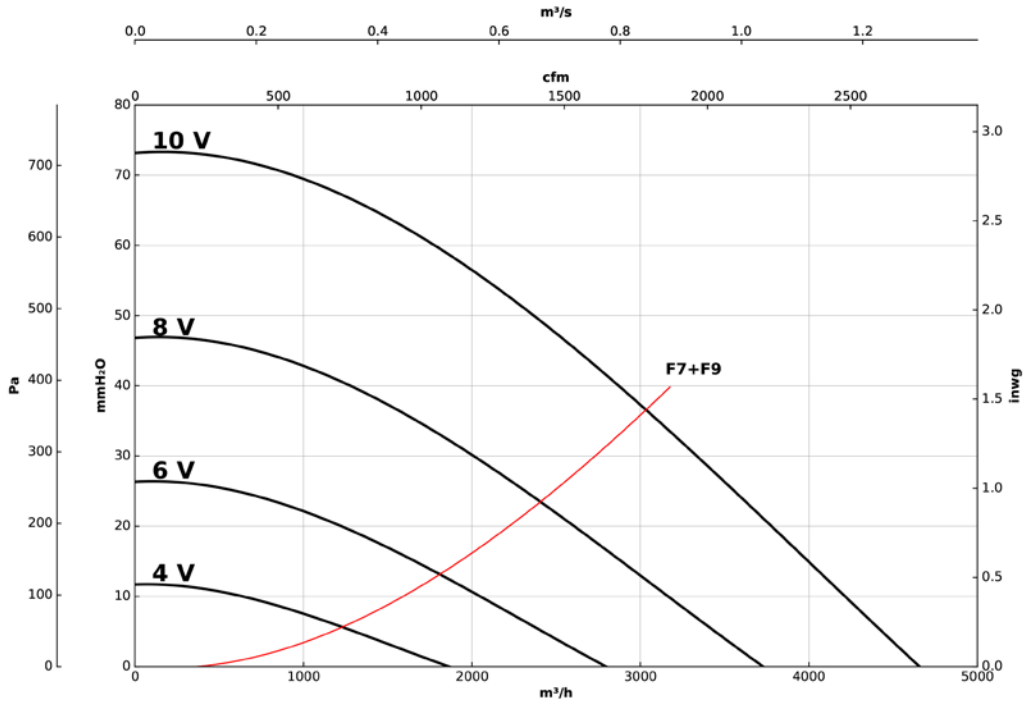
## *Characteristic curves*

Q= Flow rate in m³/h, m³/s and cfm  Pe= Static pressure in mm $H_2O$, Pa and inwg

**KIT SV/FILTER-CO2-350**




**KIT SV/FILTER-CO2-400**



09/2022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