

Pacific Ventilation Sense

Compact decentralised ceiling air handling unit for schools



A hand in a white sleeve points to the word "SENSE" written in white chalk on a blackboard. The word is written in a simple, slightly irregular font. The hand is positioned on the right side of the frame, with the index finger pointing towards the 'S' in "SENSE".

SENSE

Fresh and clean air contributes to greater concentration during the learning process, providing a healthy and comfortable indoor environment.

...that all makes **sense.**

sense Multiple studies show fresh air creates a healthy learning environment in your classroom. Air improves exam results and enhances student and staff productivity.

 Pacific Ventilation | **sense**



Pacific Ventilation Sense

Decentralised compact air handling unit for ceiling installation

An ideal solution for both new and existing buildings. Its quiet operation makes it a perfect choice for schools, offices and conference rooms.

- Flat, space-saving unit for ceiling installation
- Continuous fresh air supply
- Efficient air distribution throughout the entire space
- Adjustable air blow direction
- Aluminium counterflow heat exchanger
- Heat recovery efficiency up to 90%
- Energy-efficient fans with EC motors
- Efficient fresh air filtration
- Virucidal filters ePM1 90% Deltri+ (available)
- Silent operation < 40 dB(A) at 1m
- Easy to install, maintain and control
- Integrated control system
- CO₂ control (accessory)

up to
23 people



up to
700 m³/h

up to
33 people



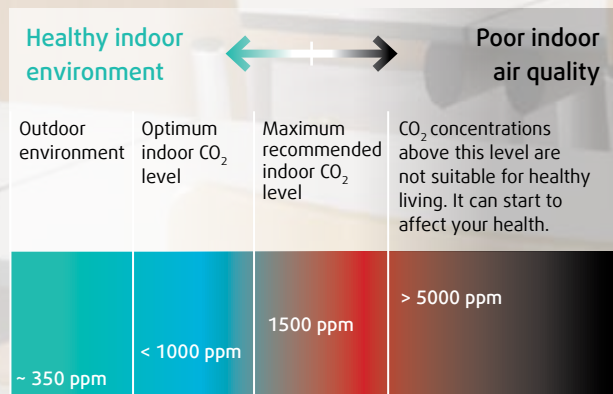
up to
1000 m³/h

2 sizes

There are two unit sizes available to choose from, depending on the size of the room or the number of people in the room.

Ventilation is crucial

In poorly ventilated indoor areas with a large number of people, the concentration of CO₂ in the air may exceed the recommended values. This can negatively affect people's health and well-being.



CO₂ concentration - keep it low!

Quick overview

As the unit is fully exposed in the room, its design is adapted accordingly. Properly specified and positioned components are essential for energy efficient operation of the unit.

Housing

The unit is delivered in one piece. The frameless housing is made of painted aluminium sheet (RAL 9010), which makes the unit lighter and more compact.

To optically lower the device, a darker strip (RAL 7016) is placed along the entire length of the unit, incorporating the discharge air grille.

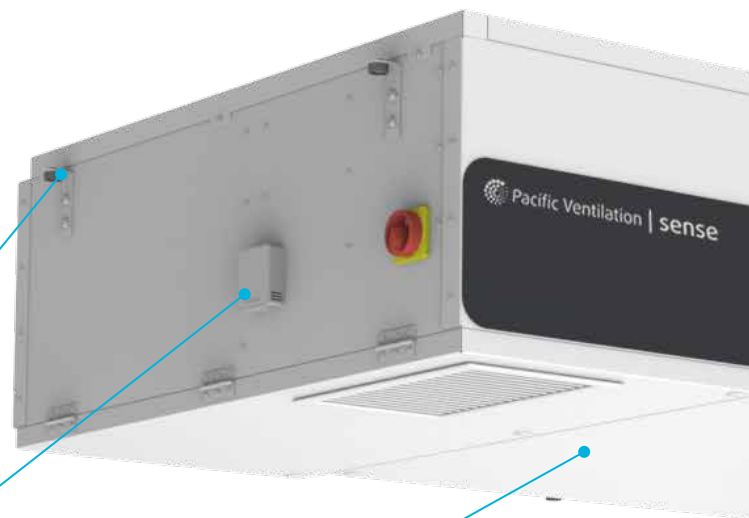
Internal components can be accessed through the bottom of the unit by means of a door on the left and right sides and a removable panel in the middle.

Ceiling mounting brackets

To be easily fixed into the ceiling, the unit has factory-fitted brackets with a rubber washer to reduce possible transmission of vibrations from the equipment to the building structure.

CO₂ sensor

Sensors are available as an accessory and can be attached to the outside wall of the unit. The sensor is located outside the air flow and provides data related to CO₂ concentration indoors in the indoor air.



Electric heaters

Depending on the chosen model, the unit may be equipped with an electric preheater and a reheater to ensure adequate supply air temperature and to protect against freezing of the heat exchanger.

Four possible heating combinations:

- without electric heaters
- with preheater only
- with reheater only
- with preheater and reheater

Preheaters and reheaters can be selected in a high or low electrical power capacity.

SNX	Version	Description	Preheater [W]	Reheater [W]	Voltage [V/Hz]	Fuse [A]
700	000	No heating	-	-	230/50	10
	E01	Low preheater	1250	-	230/50	13
	E02	High preheater	2250	-	230/50	13
	OE1	Low reheater	-	1250	230/50	13
	OE2	High reheater	-	2000	230/50	13
	EE1	Low pre- and reheater	1250	1250	230/50	16
	EE2	High pre- and reheater	2250	2000	400/50	16
1000	000	No heating	-	-	230/50	10
	E01	Low preheater	1800	-	230/50	13
	E02	High preheater	3000	-	400/50	16
	OE1	Low reheater	-	1800	230/50	13
	OE2	High reheater	-	3000	400/50	16
	EE1	Low pre- and reheater	1800	1800	230/50	13
	EE2	High pre- and reheater	3000	3000	400/50	16

Supply air discharge grille

Double-row painted aluminium grille (RAL 7016) on the discharge side. Two-sided adjustable blades allow the air direction to be set according to the user's preference.

Grilles achieve an effective air throw with good acoustic performance.

Doors and panels

Side-opening hinged doors allow easy access to the interior of the unit for service and maintenance.

The design of the door requires only 517/625 mm of free space under the unit.

Extract air grille

Single-row painted aluminium grille (RAL 9010) on the intake side with adjustable blades (factory set at 45°). Attached to the service door, it allows easy cleaning from both sides.

Insulation

For efficient noise and heat-loss reduction, low-flammable insulation based on melamin resin is applied on the internal walls and doors. Additional surface foil is applied to some insulation parts for extra safety and protection.

- Fire resistance B1 (DIN 4102)
- Fire & smoke resistance C-s2 d0 (EN 13501)
- Temperature resistance; -50 – 180 °C
- High resistance to hydrocarbons and alcohols

Counter flow heat exchanger

Aluminum counter flow plate heat exchanger with high heat recovery efficiency (up to 90%). It has a built-in motorised by-pass air damper, regulated by integrated control system to prevent freezing of the exchanger during the winter time.

A condensate tray with a $\Phi 28$ mm drain connection at the back of the unit is placed under the heat exchanger.

Siphon and drain pump are available as accessories.

Outdoor air filter

Panel filter available in filtration classes:

- ePM1 60% (F7)
- ePM1 85% (F9)

Extract air filter

Bag filter available in filtration classes:

- ePM10 60% (M5)
- **ePM1 90% Deltri+ (F9)**

Control system

Simplified connection, configuration and control

The powerful controller built into Sense air handling units allows you to change and set a wide range of built-in functions. The controller enables user to set any operating parameters, or select preset functions, and manage the device remotely via an app or the cloud.

Controller

Siemens controller provides reliable and easy control of the built-in components and accessories.

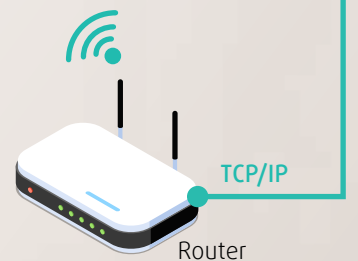
- USB interface with power supply for FW upgrade and WLAN stick
- Modbus RTU communication (one master and two slaves)
- BACnet /IP communication
- KNX PL-Link bus communication room unit and room sensors
- Hardwire inputs/outputs on-board with additional pressure sensor over modbus



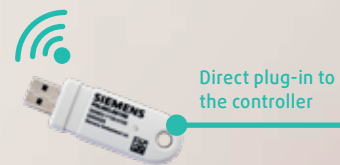
Siemens Cloud

Full control of the unit's operation

Real-time unit status and operational updates. This makes corrective maintenance decisions possible – even on the go.



Router



WLAN USB stick



ABT Go

Mobile application

- End user interface
- Configuration and commissioning
- Multiple unit data settings and monitoring
- Service and maintenance
- Android and IOS free download






Touch screen HMI standard

Modern design, user friendly and clear display, quickly accessible settings and performance monitoring

5 quickly accessible modes

- Minimum
 - Medium
 - Nominal
 - Auto
 - Boost
- 
- 3 adjustable fan speed setpoints
 - 3 adjustable temperature setpoints



Boost

This function helps to bring as much fresh air as possible into the room.

This mode is usually used during breaks, when the units may be less quiet.

Function overview

Standard and extended device control options

Depending on the choice of control mode and the use of accessories, the device can extend all the operating possibilities not offered by the standard version. For more details on the control options, see the table below.

Manual or Auto?

Usually, the units are set to operate automatically, but in particular circumstances, the user can use special operating modes that can be set manually according to the requirements.

Automatic operation can be activated when a weekly operating schedule is set or on demand operation based on input data from external devices such as a CO₂ sensor.

CO₂ sensor

Automatic air flow control between minimum and nominal based on CO₂ value.

CO₂ sensors are used mainly for demand-controlled ventilation, to prevent energy losses from over-ventilation while maintaining indoor air quality.

Sense units have CO₂ sensor attached to the housing outside the air flow and it is used to control a specific area.



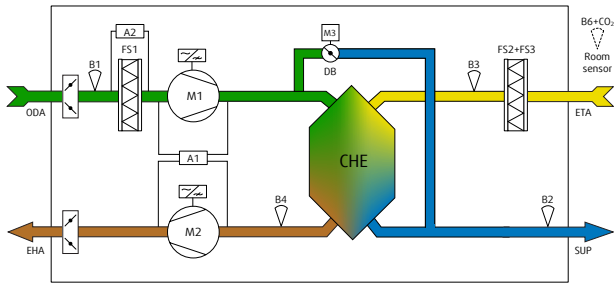
Control possibilities



	STANDARD	ACCESSORY	ACCESSORY
Functions	HMI	USB + ABT Go	Siemens Cloud
Airflow settings	•	•	•
Temperature setpoint settings	•	•	•
AUTO mode (weekly schedule, demand control, external control activation)	•	•	•
MANUAL mode (OFF, minimum, medium, nominal, boost airflow speed)	•	•	•
Alarm indication	•	•	•
Alarm details (date, type, state)	•	•	•
Alarm history log			•
Filter alarm indication	•	•	•
Reset filter period timer	•	•	•
CO ₂ alarm indication	•	•	•
Active function indication		•	•
Different access levels (password protected menus)	•	•	•
Live unit data (sensor values, I/O statuses)	•	•	•
Restore factory settings function		•	•
Sleep mode	•	•	•
Languages (5 at start – with options to increase)		•	•
Remote access to unit		•	•
Configuration file upload/download remotely		•	•
Unit parameter graph display			•

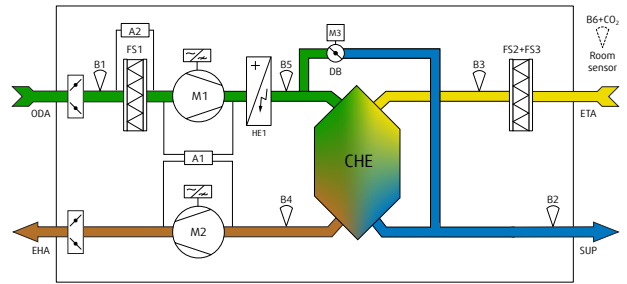
Functional diagram

The working functions are performed by carefully selected components and their positioning within the unit.



Without electric heaters

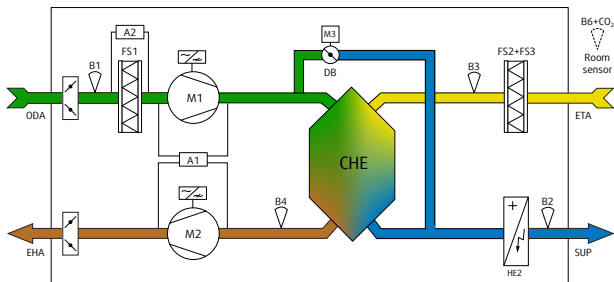
000 - Unit has no electric heaters, the outdoor air is heated only with a counterflow heat exchanger.



Electric preheater (HE1)

The preheater protects against too low outdoor air temperature entering the heat exchanger.

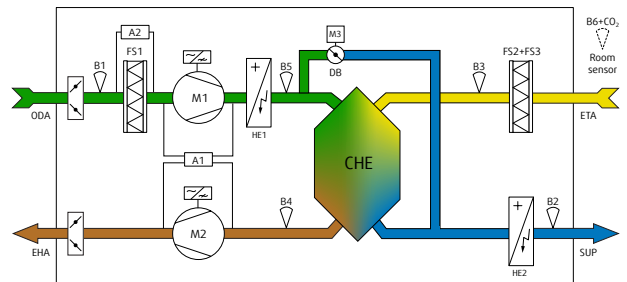
- E01** - Low power
- E02** - High power



Electric reheater (HE2)

The reheater heats the fresh air to the desired temperature before entering the room.

- OE1** - Low power
- OE2** - High power



Electric preheater (HE1) and reheater (HE2)

The preheater protects against too low outdoor air temperature entering the heat exchanger.

The reheater heats the fresh air to the desired temperature before entering the room.

- EE1** - Low power
- EE2** - High power

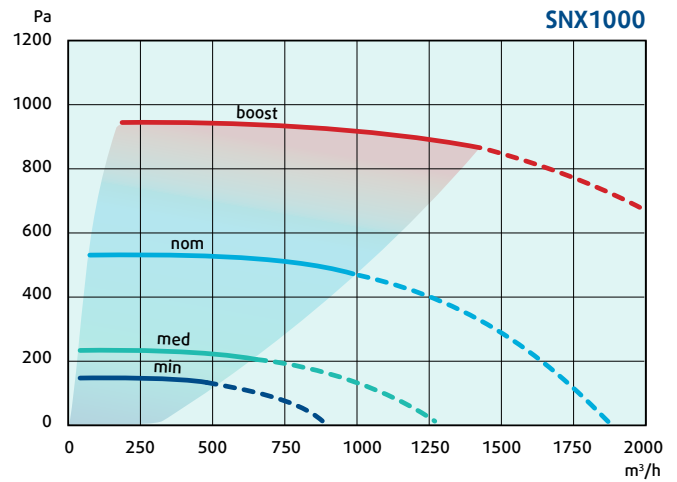
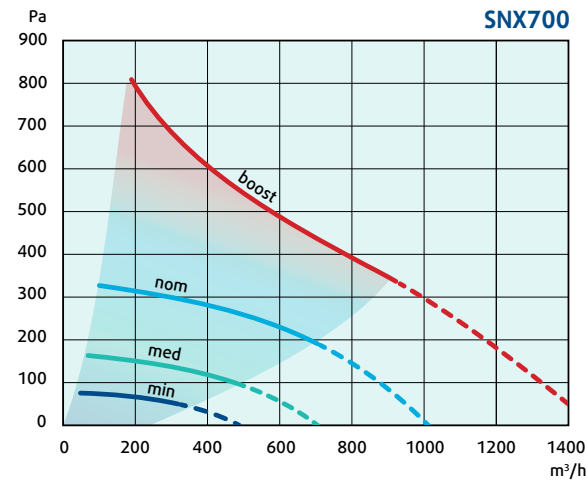
ODA	Outdoor air
SUP	Supply air
ETA	Extract air
EHA	Exhaust air

standard
 --- accessory

B1 Outdoor air temperature sensor	M3 Heat exchanger bypass damper actuator	FS1 Outdoor air filter
B2 Extract air temperature sensor	A1 Presigo Duo 2500	FS2+FS3 Extract air filter
B3 Extract air temperature sensor	A2 Presigo Duo 2500	
B4 Defrost sensor of plate heat exchanger	CHE Counter-flow plate heat exchanger	
B5 Electric preheater temperature limitation	HE1 Preheater (electrical)	
B6 Room temperature + CO ₂ sensor	HE2 Reheater (electrical)	
M1 Supply air fan		
M2 Extract air fan		

Technical data

Performance



--- Non-applicable area

Unit	Minimal flow** [m³/h]	Medium flow** [m³/h]	Nominal flow** [m³/h]	Boost flow [m³/h]
SNX 700	350	500	700	900
SNX 1000	500	700	1000	1450

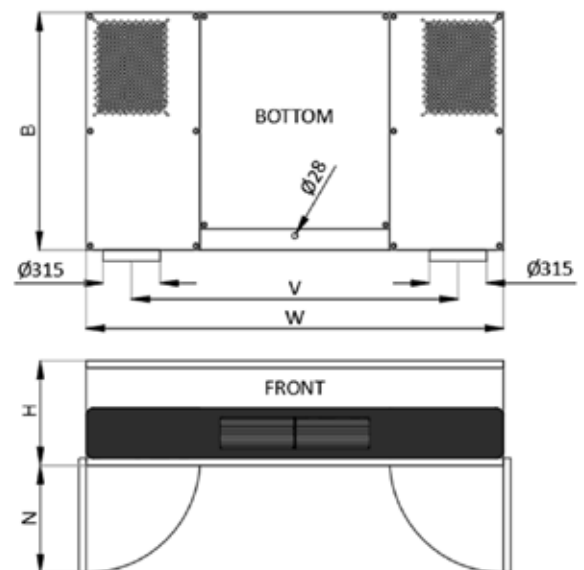
* Expected air flows at 0 Pa external pressure drop.

** Factory set values. Values can be modified by the user.

Parameters

	Unit	SNX 700	SNX 1000
Frequency	Hz	50	50
Voltage (nominal)*	V	230 / 400	230 / 400
Phase(s)*		1~ / 3~	1~ / 3~
Speed regulation		Stepless	Stepless
Product type		Heat recovery unit	Heat recovery unit
Input power, supply fan	W	170	500
Input power, extract fan	W	170	500
Exchanger type		Counter flow	Counter flow
Installation placement		Horizontal	Horizontal
Weight	kg	165	200
Dimensions			
W	mm	2030	2300
B	mm	1150	1300
H	mm	450	570
V	mm	1620	1800
N	mm	520	630

* depending on the type of electric heater, see page 6



Accessories

Circular wall grille

A weather protection aluminium grille for installation in exterior walls. The grille is used in ductwork for supply and exhaust air, available in size 315mm DN and has a mesh bird screen. Other RAL colours possible on request.



Rectangular wall grille

A weather protection aluminium grille for installation in exterior walls. The grille protects the outside supply and exhaust wall openings against water penetration, available in size 350x350 mm. Other RAL colours possible on request.



Filters

1x supply air filter needed (Panel)

- ePM1 60% (F7)
- ePM1 85% (F9)

2x extract air filter needed (Bag)

- ePM10 60% (M5)
- ePM1 90% (F9) Deltri+ (Virucidal)



Installation material

M8 threaded rods

- 4 x 500 mm (SNX 700)
- 6 x 500 mm (SNX 1000)

Suitable for mounting brackets attached to the unit.



Siphon

Concealed drain siphon for installation into the wall. Connection pipes are not included.



Condensate pump

Powerful and silent condensate pump together with installation console.

- 42 l/h pumping capacity
- 20 metres delivery head
- <19 dB noise level
- No float problems thanks to digital sensor



CO₂ and temperature sensor

Used for demand-controlled ventilation to prevent energy losses from over-ventilation while maintaining the best indoor air quality (IAQ).

Wired, wall mount sensor is used to control specific area such as conference room, classroom, meeting hall or any regular room in the apartment.



WLAN USB Stick

For plug-in directly to the Sense controller.

Allows a Wifi connection for easy access to the device parameters via ABT Go app or Siemens Cloud.





$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$



$$\sqrt{27}$$

$$y = \sqrt{x}$$

$$B + C = D$$



Contact your sales representative for a more detailed unit calculation and technical data.

...this makes sense.

