RENSON®
Creating healthy spaces

Technical data sheet
Healthconnector®

The Renson Healthconnector is used to ensure the air quality is good in schools, offices, and industrial buildings.

SCOPE OF APPLICATION

- It is a suitable solution for integrating demand-driven ventilation in buildings. Demand-driven ventilation provides energy-efficient ventilation while maintaining good air quality and comfort.
- To be used in buildings with a central ventilation system, both in new construction and renovation projects.
  - Extraction (system type C):
    - Supply of fresh air using window ventilation.
    - Air extraction using central constant pressure ventilator(s).
  - In combination with heat-recovery system (system type D):
    - Supply and extraction of air using central constant pressure ventilator(s)
- Individual control of ventilation per room.
- Plug and Play principle: Healthconnector can be directly integrated into the air duct network.
- The Healthconnector with CO_2 detector is included in the best air conditioning class IDA-C6 of the European ventilation standard for non-residential buildings (NBN EN 13779:2007).

VERSIONS

There are 18 different types of the Healthconnector as determined by:
- The sensors (CO_2, RH, VOC)
- The diameter (Ø125, Ø200, Ø250)
- Manner in which it is connected to a building management system (0-10V, Modbus)
- With or without sound damper (Ø125)

Description	Type	Ø	Sensor			Connection to building management system	Incl. silencer	Article number
			CO_2	RH*	VOC*			
HSC M CO_2+RH 125/125 10V	Master	125	x	x		0-10V	Yes	66026098
HSC M RH+VOC 125/125 10V	Master	125		x	x	0-10V	Yes	66026001
HSC M CO_2+RH 125/125 10V ZDEMP	Master	125	x	x		0-10V	No	66026099
HSC M RH+VOC 125/125 10V ZDEMP	Master	125		x	x	0-10V	No	66026101
HSC M CO_2+RH 125/125 MODBUS	Master	125	x	x		Modbus	Yes	66026027
HSC M RH+VOC 125/125 MODBUS	Master	125		x	x	Modbus	Yes	66026003
HSC M CO_2+RH 200/400 10V	Master	200	x	x		0-10V	No	66026028
HSC M RH+VOC 200/400 10V	Master	200		x	x	0-10V	No	66026005
HSC M CO_2+RH 200/400 MODBUS	Master	200	x	x		Modbus	No	66026029
HSC M RH+VOC 200/400 MODBUS	Master	200		x	x	Modbus	No	66026007
HSC M CO_2+RH 250/600 10V	Master	250	x	x		0-10V	No	66026030
HSC M RH+VOC 250/600 10V	Master	250		x	x	0-10V	No	66026009
HSC M CO_2+RH 250/600 MODBUS	Master	250	x	x		Modbus	No	66026031
HSC M RH+VOC 250/600 MODBUS	Master	250		x	x	Modbus	No	66026011
HSC S 125/125 10V	Slave	125				0-10V	Yes	66026012
HSC S 125/125 10V ZDEMP	Slave	125				0-10V	No	66026112
HSC S 200/400 10V	Slave	200				0-10V	No	66026013
HSC S 250/600 10V	Slave	250				0-10V	No	66026014
4XVK – 4-position switch	Control	-	-	-	-	-	-	66016446

** RH: Relative Humidity*
VOC: Volatile Organic Compounds (odours)

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PRIMARY FEATURES

Master Healthconnector®

- The sensors continuously measure the indoor air quality IN the extraction airflow.
- The stepper motor automatically positions the internal valve blade based on the measured air quality (CO_2, relative humidity and/or Indoor Air Quality). This regulates the extraction airflow depending on the indoor air quality.
- The Healthconnector CO_2 limit value is adjustable. The specified limit value ensures that the CO_2 level will not be exceeded in the connected room(s).
- Option to (temporarily) manual adjust the ventilation extraction airflow using the (optional) control or via the building management system.
- As standard, the Master Healthconnector is equipped to control a Slave Healthconnector and/or a motorised inlet louvre (if applicable).

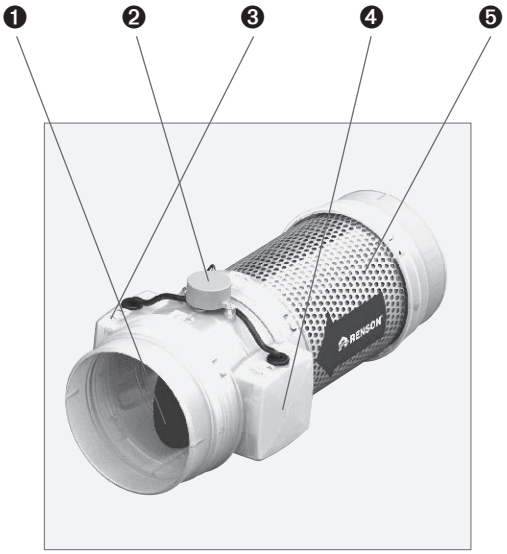
Slave Healthconnector®

- The Slave Healthconnector is a slave valve without integrated sensors that is controlled by the Master Healthconnector.
- The positioning of the valve blade is determined by the Master Healthconnector.
- The Slave Healthconnector can be powered separately or be supplied by the Master. The Plug and Play concept allows up to 6 slave valves to be supplied with power by 1 Master valve.

Master Healthconnector® and Slave Healthconnector® set up

If a large ventilation extraction airflow (600+ m^3/h) is required at the same location, the parallel Master-Slave combination can be used. The total extraction airflow is the sum of the individual Healthconnector airflows. Different types of Healthconnectors can be used together.

HEALTHCONNECTOR® PARTS



Master
Ø125

Master
Ø200/250

	Master	Slave
❶ Valve blade	•	•
❷ Stepper motor	•	•
❸ Printed circuit board	• (with RH and/or IAQ sensor)	• (without sensor)
❹ CO_2 sensor	• (if applicable)	–
❺ Sound damper	• (only Ø125)	• (only Ø125)
Healthconnector Ø125	• The valve blade halves are made of polypropylene • The valve blade is made of ABS • The integrated sound damper is made of: – A perforated plate of size 395 mm x 200 mm x 1 mm and provides 40% airflow – Sound damping foam of size 260 mm x 358 mm F0.5/N0.5, thickness 12 mm	
Healthconnector Ø200/250	• The valve blade halves are made of ABS • The cover is made of polypropylene • The valve blade and connecting flange are galvanised	
Healthconnector Ø125 integrated sound damper	5.7 dB (i.e. the actual difference between the sound pressure level measured at the same place from the source with and without the damper under the same conditions)	

TECHNICAL SPECIFICATIONS

Type	Healthconnector 125		Healthconnector 200		Healthconnector 250	
	Master	Slave	Master	Slave	Master	Slave
Connection diameter	Ø125		Ø200		Ø250	
Airflow (max.)	125 m³/h (i.e. the maximum airspeed of 2.8 m/s)		400 m³/h (i.e. the maximum airspeed of 3.5 m/s)		600 m³/h (i.e. the maximum airspeed of 3.5 m/s)	
Sound damping	•	•	–	–	–	–
Integrated sensor(s)	•	–	•	–	•	–

Controls	
Valve position control *(via the optional control or Modbus®)*	**Nominal position:** 16 steps from completely open to minimum position **Minimum position:** From 10% to 100% of the nominal airflow
Control valve blade in normal operation	From the minimum position to nominal valve position in 7 steps
Master Healthconnector® control	
CO_2 control	**Air extraction control:** Linear control according to the specified CO_2 limit value. **Opening the valve blade:** Proportionately in 7 steps based on the measured and specified CO_2 limit value from minimum position to the nominal valve position.
Master Healthconnector CO_2limit value settings *(via the optional control or Modbus®)*	– 600 ppm – 800 ppm – 900 ppm – 1000 ppm – 1100 ppm – 1200 ppm *(default)* – 1400 ppm – 1600 ppm
RH control	**Air extraction control:** Responds to a sudden increase or high absolute relative humidity value. The set values are fixed. **Opening the valve blade:** Opening from the minimum position to nominal valve position when moisture detected.
IAQ control	**Air extraction control:** Responds to a sudden increase in or high absolute odour/VOCs value. The values are permanently set. **Opening the valve blade:** Opening from the minimum position to nominal valve position when odour detected.
Slave Healthconnector control	The Master Healthconnector uses a (wired) control signal to adjust the position of the Slave Healthconnector valve blade.

Power source connection voltage	
All types of Healthconnectors	– 12 V/24 V DC – 12 V AC
Power supply can be looped for each Healthconnector	1 Master Healthconnector can power a maximum of 6 slaves
Required amperage	1. Power for 1 Healthconnector: I ≥ 0.63 A 2. If power looped: • Power for 1 Master and 1 to 4 Slaves: I ≥ 1.26 A • Power for 1 Master and 5 to 6 Slaves: – I ≥ 1.89 A, or, – I ≥ 1.26 A if the power supply can provide a peak voltage 1.89 A or higher

OPTIONAL CONTROL

- RENSON 4-position switch with LED indicator:
  - During normal operation: the ventilation extraction airflow can be manually adjusted (only possible with the Master Healthconnector)
  - Adjustment: (temporarily) a minimum of a single 4-position switch is required to control the Healthconnector (both Master and Slave Healthconnector) unless the adjustment occurs via a Modbus building management system (only with the Master)
  - Display malfunctions
- Connection:
  - Use a 10-wire cable to connect to the Healthconnector (Min. 10 x 0.34 mm², Max. 10 x 0.8 mm²)
  - A maximum of 2 controls can be connected (in parallel) to 1 Healthconnector
  - A maximum of 1 Healthconnector can be connected per control

INSTALLATION

- When used according to system type C, the proper operation of the Healthconnector can only be guaranteed if the following two components are present and harmonised with each other:
  - Supply: Self-regulating ventilation louvres (P3 and P4).
  - Extraction: Constant pressure-controlled centralised ventilator.
    Set the ventilator pressure so that the pressure across the Healthconnector does not exceed 200 Pa.
- Multiple Healthconnectors can be connected using a central ventilator: Healthconnectors are installed in parallel.
- Installation:
  - Indoor environment (preferably within the insulated area).
  - In the air duct of the connected location(s).
  - The Healthconnector can be installed horizontally or vertically.
- Control (manual): maximum opening limit
  - A control (optional) or Modbus building management system is required to start up the control.
  - Measure the airflow (using an anemometer) at the extraction louvre in the location. The Healthconnector nominal airflow must be adjusted using the control or Modbus® (i.e. determining the nominal position of the valve blade). If necessary, additional fine-tuning can be made to the adjustable extraction louvre.

COMPREHENSIVE APPLICATIONS

- Connection with inlet louvre with motorised inner valve
  The Healthconnector can be connected to Renson motorised inlet louvres (0-10 V signal). This allows the motorised inner valve in the inlet louvre to be controlled based on the indoor air quality.
- Connection with building management system:
  The Master Healthconnector can be connected to an (external) building management system via a Modbus® or via a 0-10 V voltage signal. For example, this allows the ventilation airflow to be controlled by the logic in the building management system.

Modbus®

- Control and display the valve position (7 steps and valve blade completely closed)
- Control and display of HD and ECO ventilation modes
- control: setting the maximum and minimum valve position
- Display measured CO_2 value (in PPM) (if CO_2 sensor present)
- Set CO_2 threshold (if CO_2 sensor present)
- Feedback from the Healthconnector in operation:
  - sensors
  - display malfunctions
  - valve blade position
  - control active yes/no for CO_2, RH and/or IAQ

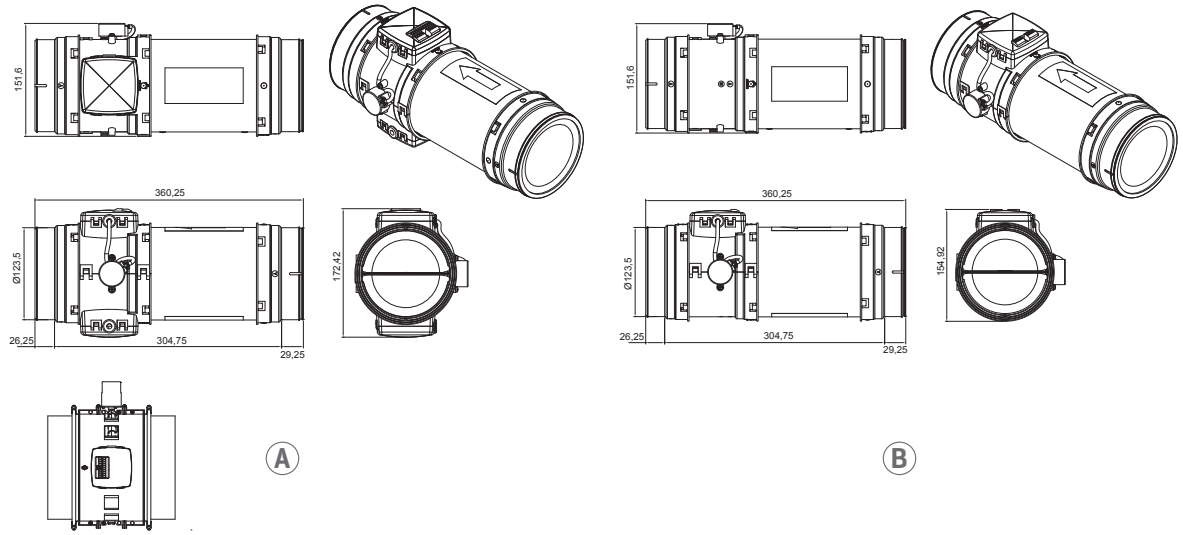
0-10 V voltage signal

- Valve position manual control (7 steps and valve blade completely closed)
- HDC ventilation mode control

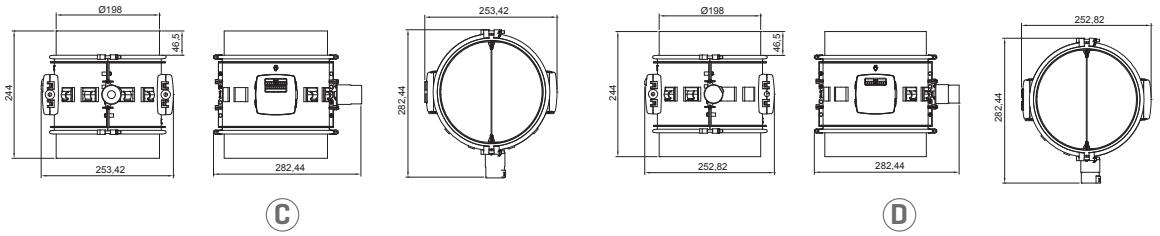
TECHNICAL DRAWINGS

Healthconnector	Ø125	Ø200	Ø250
Master	A	C	E
Slave	B	D	F

Ø125



Ø200



Ø250