



# **HEAT EXCHANGER LEAD'AIR 2800 E**

**with Switch-Box and Speed-Drive**

(Optional automatic closing shutters)

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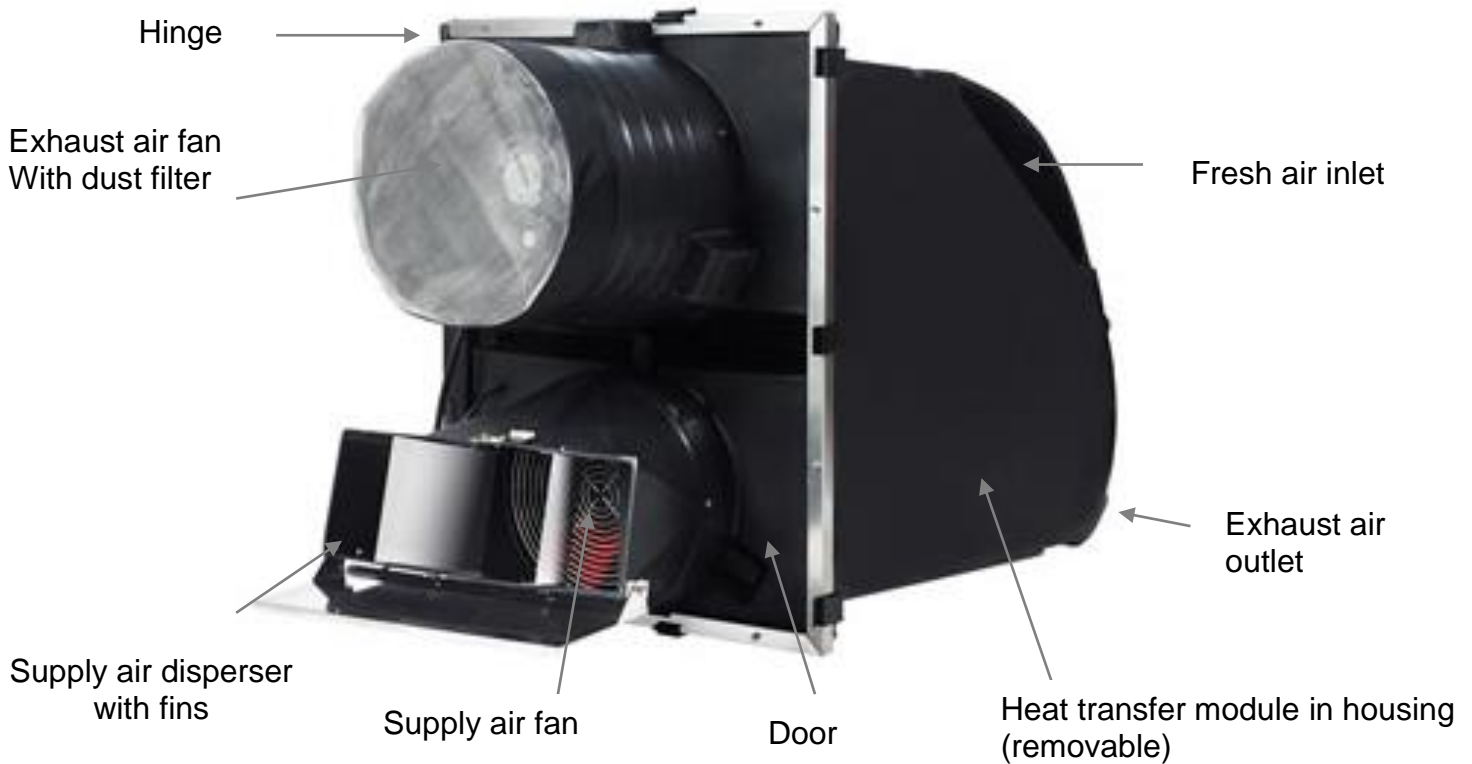
**ATTENTION: All examples and all values given in this note are indicative and must be adapted to the constraints and characteristics of your particular installation.**

Before starting up the unit(s), make sure that the ventilation of the barn is in automatic mode.

Do not drill holes in the electrical boxes for mounting. Use the mounting brackets supplied.

After cleaning, switch your unit(s) to maximum speed with the switch on the side of the control box for approx. 30 minutes.

Each time you start up, switch your units to maximum speed for a few seconds using the switch on the side of the control box.

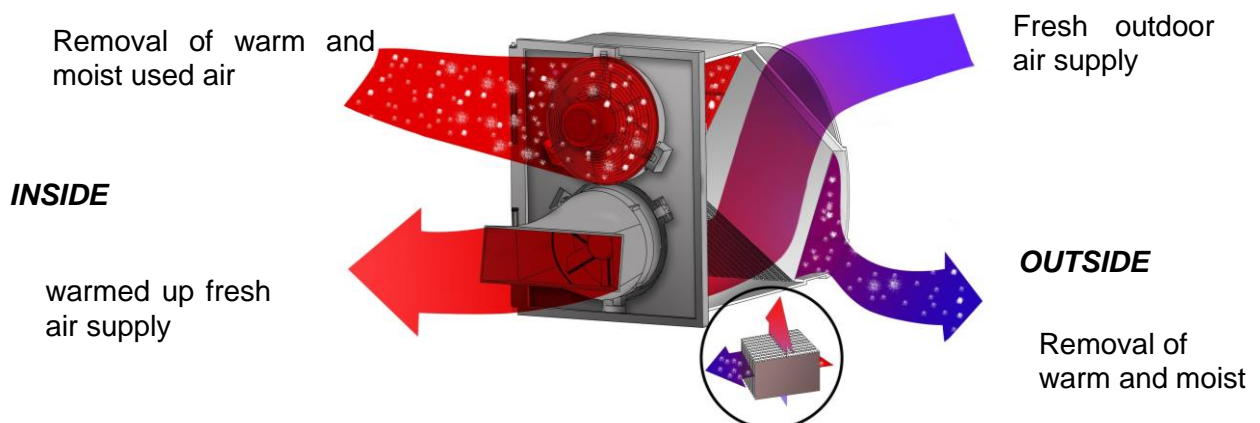


## A) OPERATING PRINCIPLE

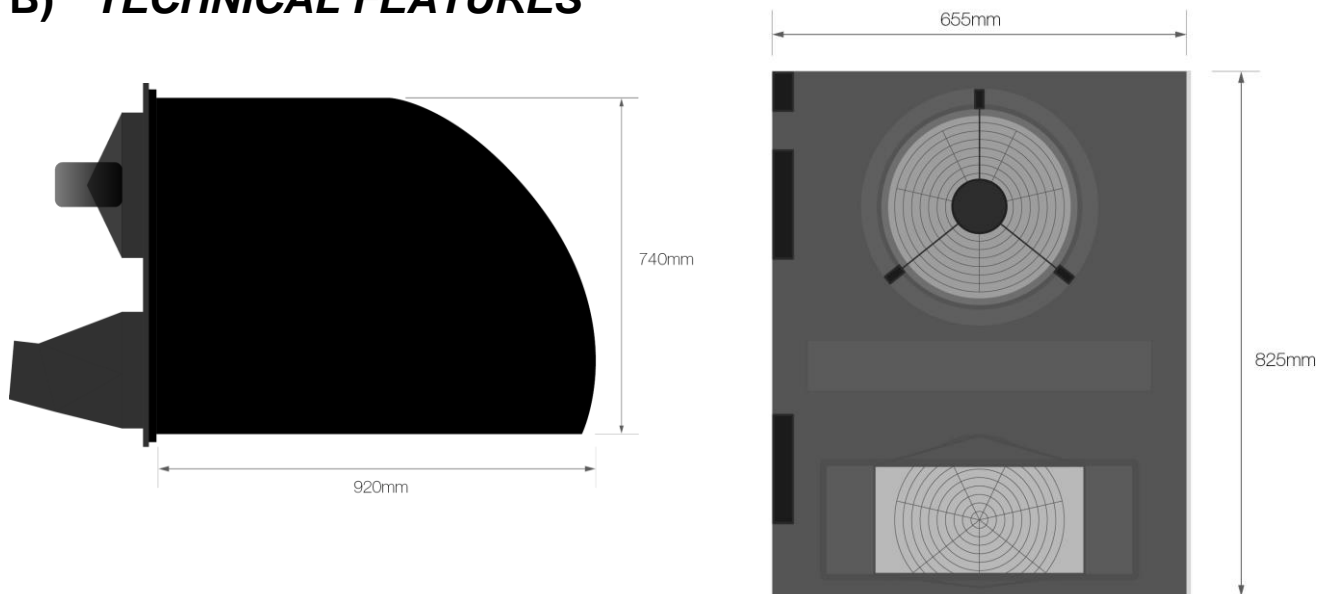
This air-to-air heat exchanger is mainly designed for poultry houses.

The principle of heat recovery, based on calorie exchange, is simple:

- The warm and humid indoor air of the building is guided through the fins of the heat transfer module by means of a fan and then directed outside the building.
- By means of a second fan, the fresh outside air is blown into the building through the heat transfer module, which is heated by the warm exhaust air.



## B) TECHNICAL FEATURES

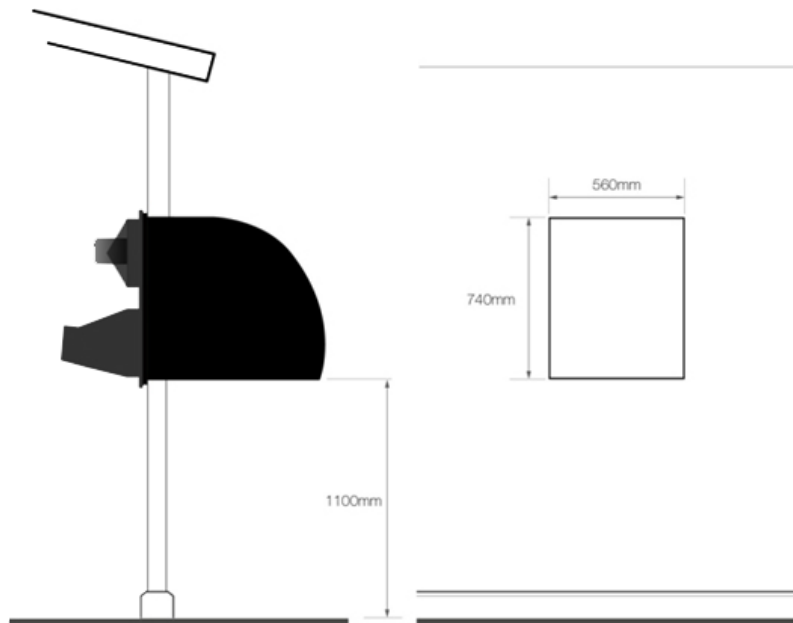


## C) INSTALLATION

### C.1 CHOICE OF INSTALLATION POSITION

- 1- The heat exchanger provides both exhaust and supply air for the barn. In contrast to ordinary fresh air inlets, the supply air is preheated by the exhaust air. One or more units can provide for the needs of ventilation, but must never operate without the ventilation system in place, especially when there are large temperature fluctuations in the barn.
  - 2- Install the heat exchanger on one side of the barn (keep as much distance as possible from any equipment with fans).
- Note:** For better performance, do not mount the unit directly in front of obstacles.
- 3- Connect the unit(s) to the mains 220V, 50 Hz. Do not use an extension cable.
  - 4- The rectangular supply air diffuser of the unit allows the orientation and speed of the supply air to be changed. For special applications it may be possible to adapt a pipe instead of the supply air diffuser.
  - 5- Install the unit on the side of the building at a floor height of approx. 1m10 so that access for operation and maintenance purposes remains possible.

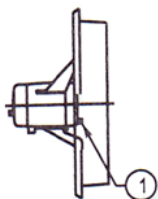
## C.2 MOUNTING



- 1- Mark an opening of 56 cm width x 74 cm height in the wall. Observe these dimensions *so that the opening is not too narrow.*
- 2- Cut out the opening from the inside.
- 3- Remove the insulation material if present.
- 4- Insert the heat exchanger (with the heat transfer module present in the unit) into the opening. When mounting, make sure that the black plastic body is horizontally and vertically aligned in the balance. *Check the opening and closing of the door several times. The heat transfer module should be able to be removed from the unit without obstruction. If this is not the case, the opening is too narrow and should be enlarged.*
- 5- Secure the unit with the help of 4 screws.
- 6- Seal the gap between the opening and the unit with silicone or foam. **CAUTION** *When using spray foam, make absolutely sure that the outer sides of the black body are not pressed inwards!*
- 7- *Close the door tightly after handling. Do not let the door open during long periods.*

## C.3 CONNECTING

Connect the heat exchanger in accordance with the fan manufacturer's instructions Vostermans Ventilation BV.



*Remove the lower plug during operation.  
During cleaning, keep the hole temporarily closed with the plug.  
If this condition is not met, the guarantee is no longer valid.*

- 1- The unit is compatible with many controllers allows connection to the 0-10V output, depending on the animal's weight curve.
- 2- Ensure that the screws of the electrical box cover are tightened to guarantee the seal.
- 3- During cleaning, take care not to spray too much water on the casing or the fan shaft. Switch on the HRV after washing or regularly during a vacuum i fit has been left for too long. Always close the HRV door tightly during cleaning, even if the heat exchanger bloc isn't inside.



*The heat exchanger should not be used in the ON-OFF cycle.  
 Connection to the mains should be left to a professional in accordance with the regulations in force in the country where the appliance is installed.*

### C.4 SWITCH BOX – Speed-Drive POSITIONING



Do not place the black Speed-Drive in a vertical position



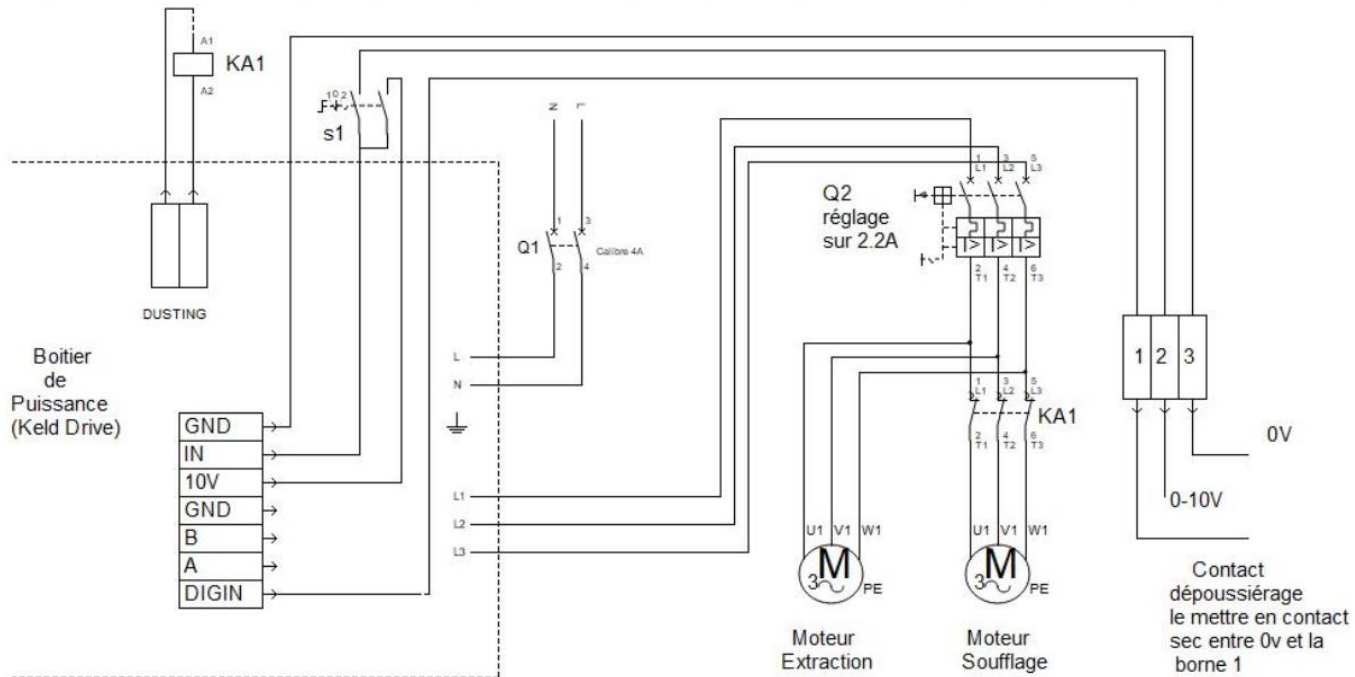
Mount the Speed-Drive horizontally so it will not compromise cooling



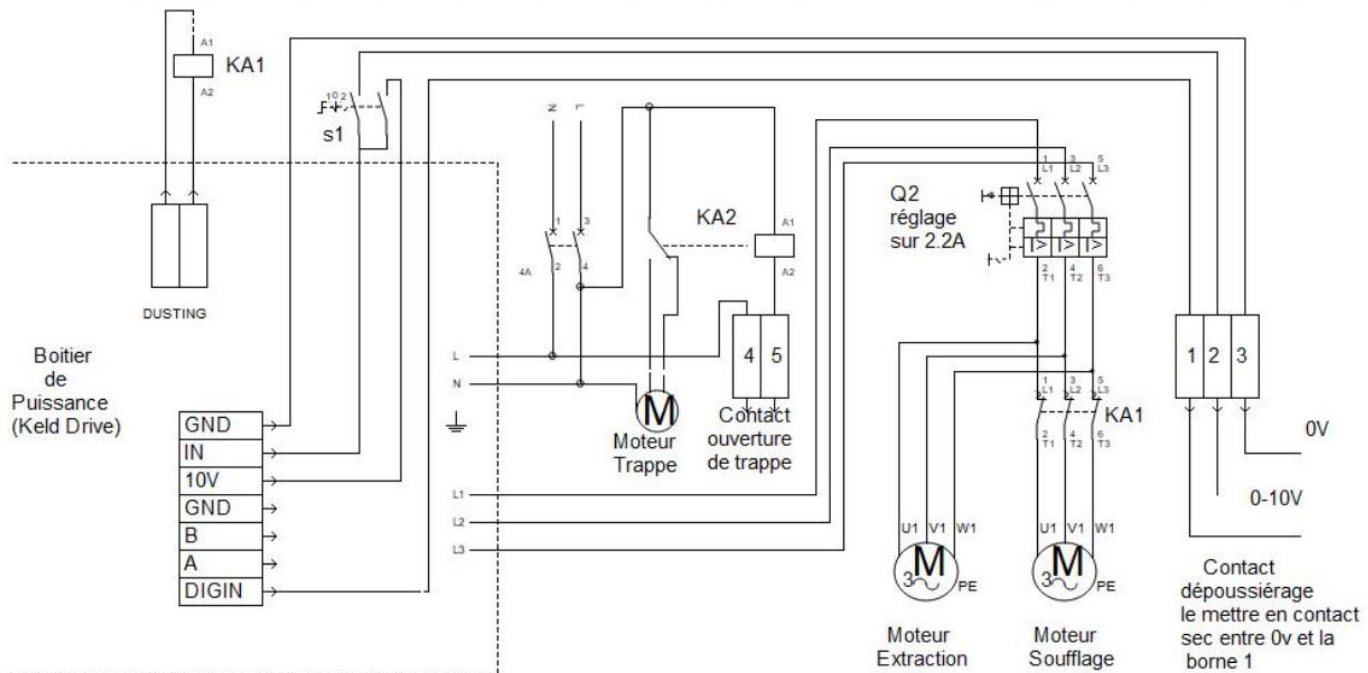
Use the supplied mounting clips

## C.5 WIRING and SETTINGS

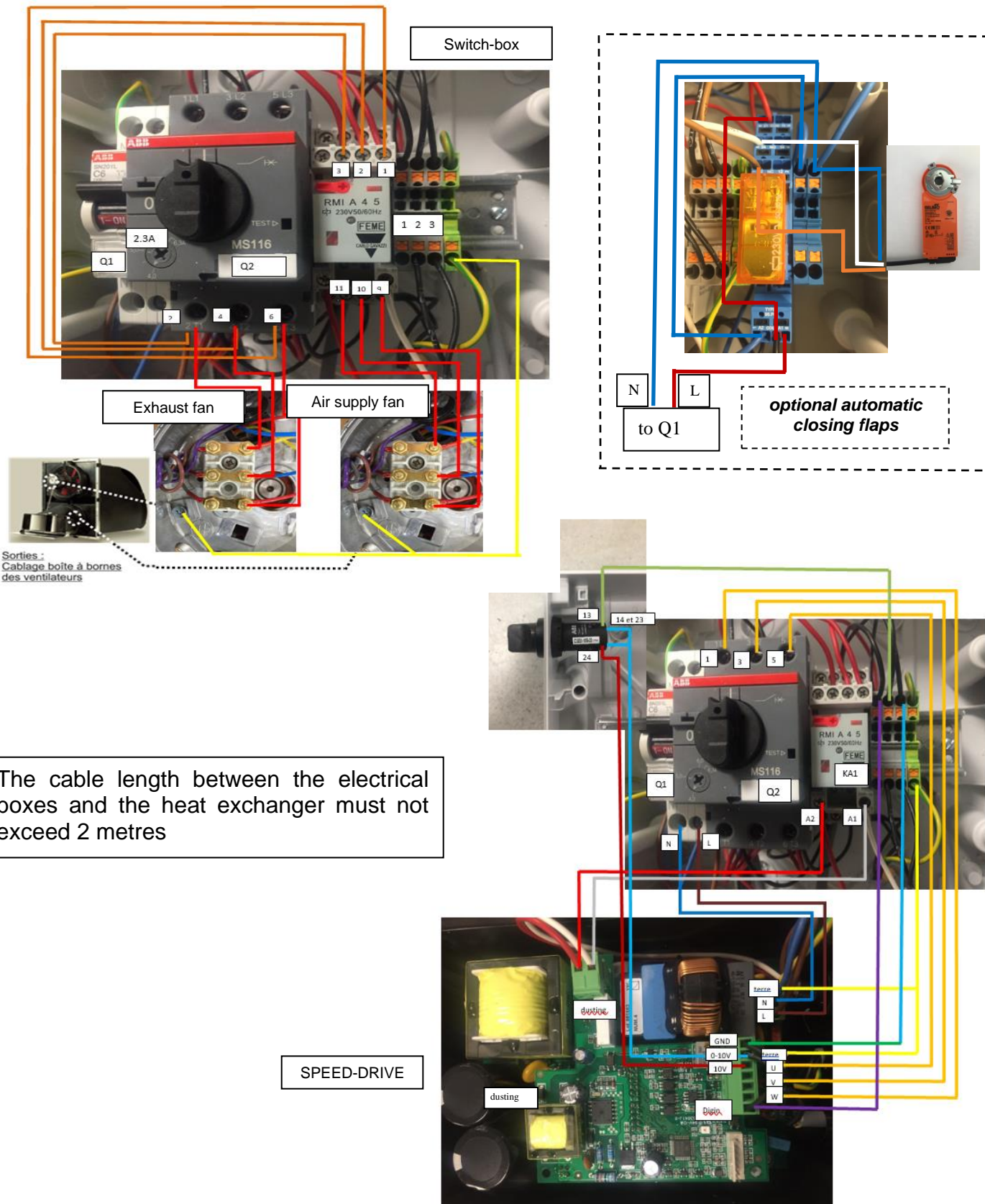
### General circuit diagram (without auto-closing shutters)



### General circuit diagram with auto-closing shutters

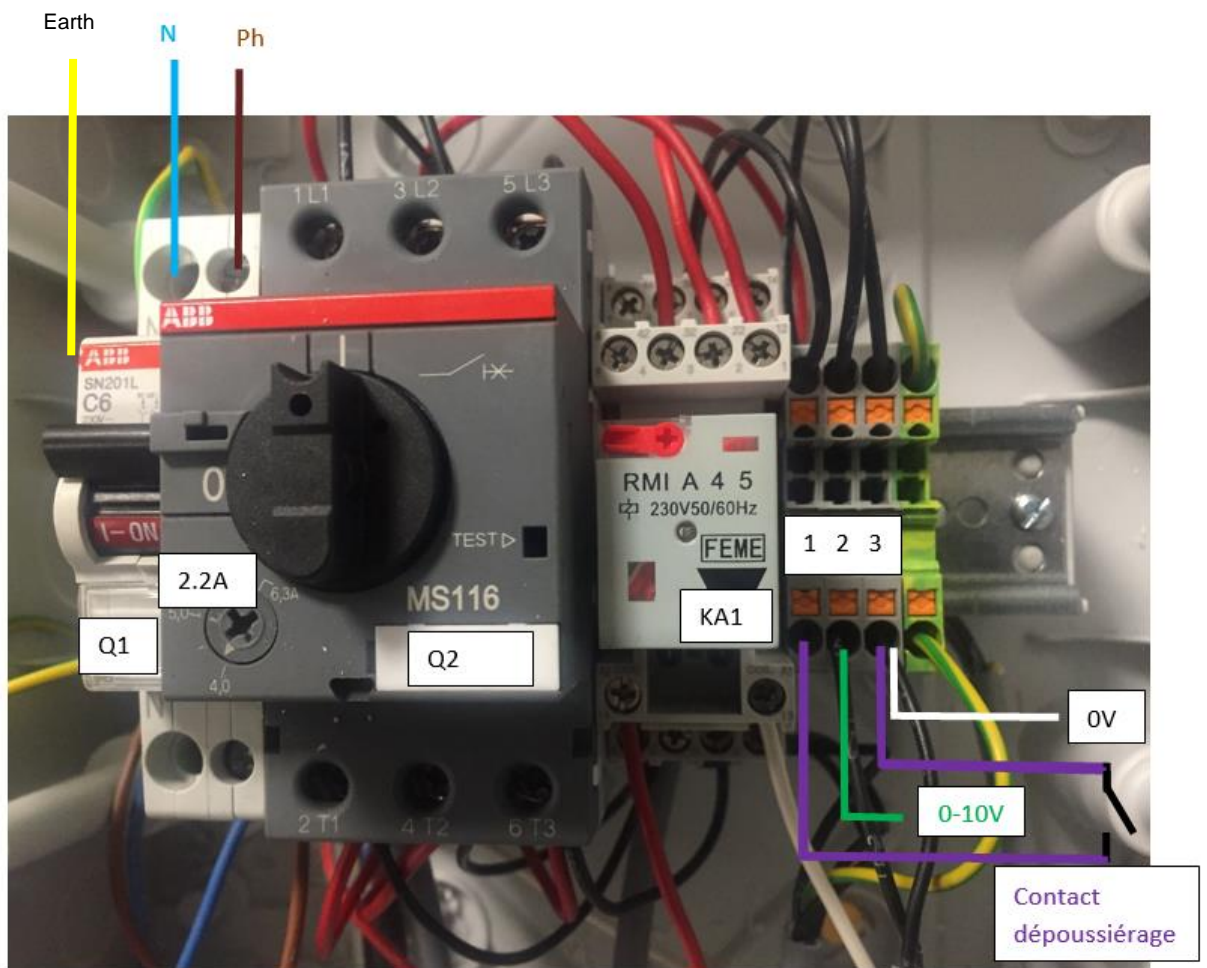


### Pre-wiring of switch Box and Speed Drive





**Wiring for the electrician :**



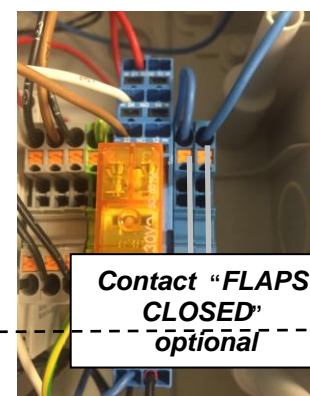
Electric cables to be layed :

- Power supply: cable 3x1,5<sup>2</sup>
- Control cable: 3 x 0.75mm<sup>2</sup> (without automatic closing flaps)
- **Control cable: 5 x 0.75mm<sup>2</sup> (with automatic closing flaps)**

Make sure that exhaust and supply ventilators turn in the correct direction.




**Be careful with the length of the supply cable, increase the cross-section according to the required length. Current consumption of the heat exchanger : 2.2 amps.**



For the dust removal contact, use a relay (not supplied, to be installed in the general cabinet) to separate the control from the dust collector, because interferences issued from the induction could generate (rarely observed) the launch of the dedusting program in continue

**Dust removal no longer functions when the drive is de-energized (circuit breaker Q1 set to off).**

 Before any intervention in the wiring, wait 1 minute after switching off the voltage until the capacitors are discharged..

- **Control by 0/10V analogue signal from the existing controller of the barn.**
- **0V** : If the Speed-Drive receives a control signal of voltage=0V, the fans stop.
- With voltage signal above 0V, the output voltage varies proportionally according to the 0/10V command.
- **10V** : If the Speed-Drive receives a control signal voltage=10V, this corresponds to an output voltage of maxi (230V).

**Rating (proportional 0-10V ):**

<b>0/10V</b>	<b>m3 per Hour</b>	<b>%</b>
0	0	0
1	250	10
2	380	15
3	620	25
4	950	38
5	1230	49
6	1500	60
7	1800	72
8	2100	83
9	2400	95
10	2500	100

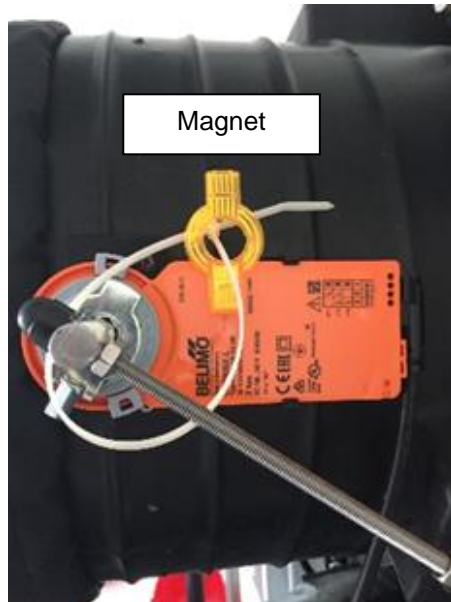
**Dust removal**

A pulse (dry contact) from the control unit engages dust removal.  
 The contact is connected between terminals 1 and 3.  
 When dust removal is activated, the 2 motors stop for 5 seconds.  
 The extraction motor runs for 10 seconds in reverse and the supply stop for 10 seconds and resume their normal operating cycle.

### *MANUAL DISENGAGEMENT OF THE AUTOMATIC FLAPS (optional)*

Position the supplied magnet at the exact spot on the motor housing as shown in the illustration.

**Only then can you operate the flaps manually without damaging the motor gearbox.**



## **D) MAINTENANCE and CLEANING**

You have the option of using a complementary heat transfer module, for replacing the dirty module whilst the unit is operating.

For thorough cleaning:

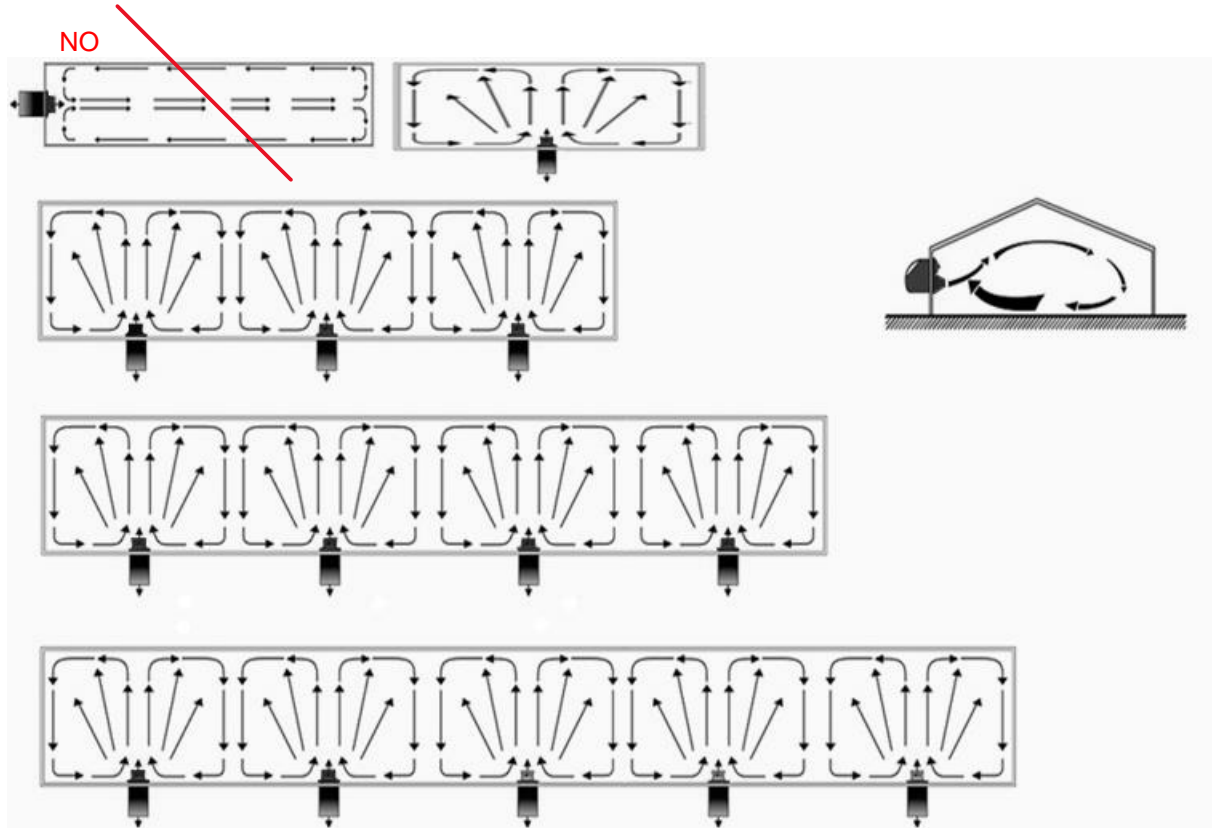
- 1- Remove the heat transfer module from the unit
- 2- Leave to soak in water
- 3- Soak for at least two hours
- 4- Then rinse thoroughly on all sides but **NOT WITH A HIGH-PRESSURE CLEANER.**
- 5- Lastly allow to dry



Soaking the module allows all dirt particles in the cavities to be impregnated. An anti-bacteria/salmonella liquid solution helps to disinfect the module during soaking. Washing by soaking is more efficient and the amount of detergent required remains low.

**After washing the heat exchanger, close the front door immediately to avoid deformation and set the fans for 30 minutes to dry the unit.**

**E) LAYOUT EXAMPLES**



**Tunnel Ventilation**

