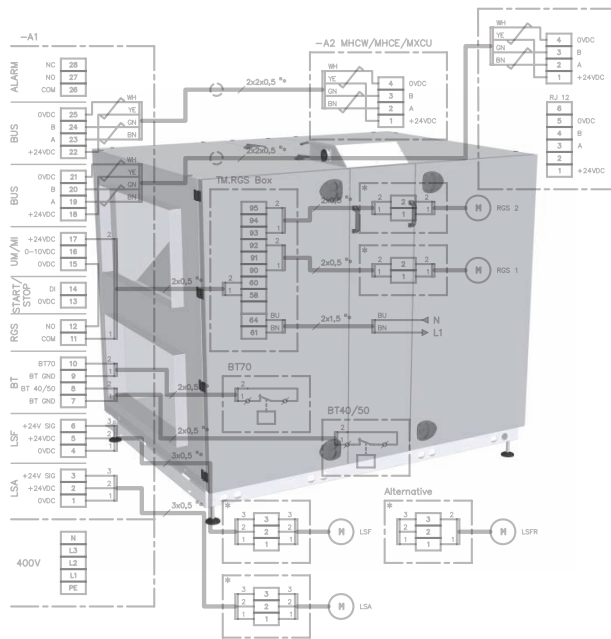


VEX200
R A N G E
R O T A R Y
H E A T E X C H A N G E R

Electrical installation guide

for VEX260/270/280HX with third-party control system



⚡ Electrical installation..... Chapter 1 + 2

Original instructions



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Symbols, terms and warnings

Prohibition symbol  Failure to observe instructions marked with a prohibition symbol may result in serious or fatal injury.

Danger symbol  Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the unit.

Warnings  The work must be performed by an authorised electrician, in accordance with locally applicable regulations and legislation.

Isolation switch  In accordance with The Machinery Directive*, an isolation switch must be permanently installed in the unit.

The isolation switch must:

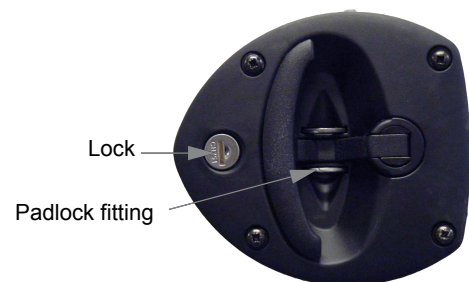
- be lockable or positioned in plain sight in the immediate vicinity of the unit
- disconnect all poles from the supply voltage
- be constructed in accordance with EN 60204-1

The isolation switch is **not** supplied by EXHAUSTO.

Lock the air handling unit during operation

The VEX unit must always be locked during operation:


- Use the cylinder lock in the handle. **Remember** to remove the key from the lock.
- Or use a padlock. Use the handle's built-in padlock fixture.



Rating plate

The VEX unit rating plate shows:

- VEX unit, type (1)
- production number (2)

EXHAUSTO <small>Odensevej 76 · DK-5550 Langeskov · Danmark Telefax +45 6586 1110 · Telefon +45 6586 1234</small>			
Type	V280H2EA2	$I_{cu} = 10kA$	1
	No./Year 1234567/2016		2
Supply	Voltage: 3x400V+N+PE ~50Hz	Current: 34A	
ECO design	$\eta = 59,0\%$ (A) N62 (2015) N = 65,1 VSD integrated		

NB

Always have the production number ready when contacting EXHAUSTO A/S.

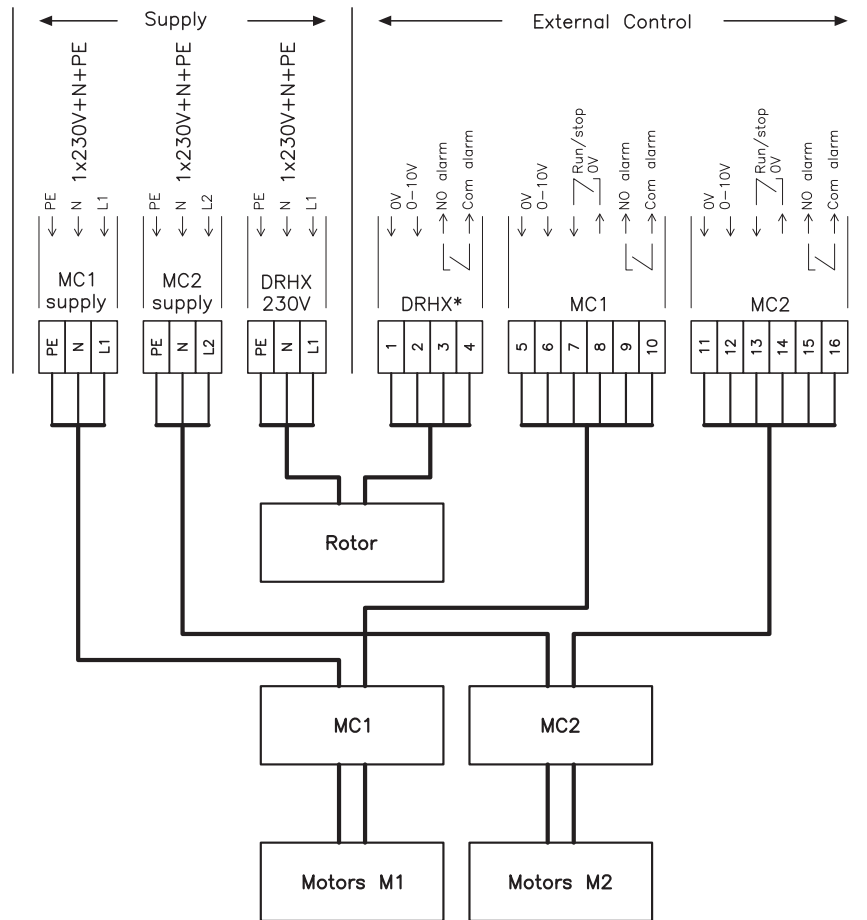


1. Voltage supply diagram

1.1 Connection diagram for VEX with motor control (MC)

VEX260 - 3 x 400 V

The diagram below illustrates connection of the supply voltage to the motor control and rotor.

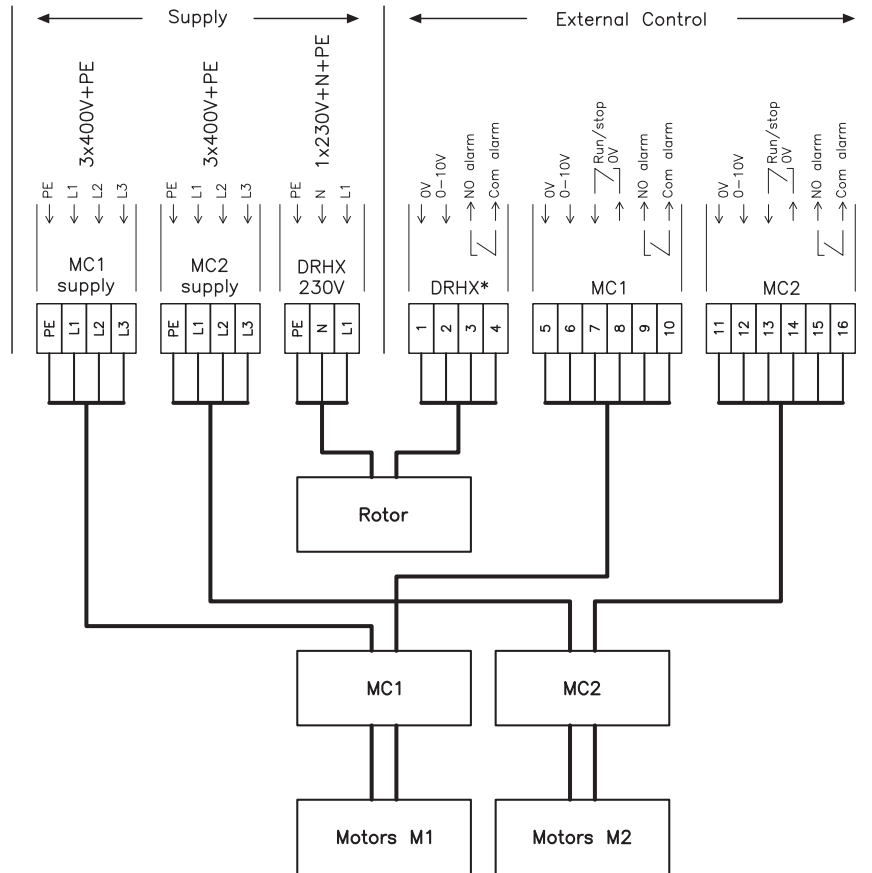


9460256B_DK_SE_NL_FR_RU-02

*) To adjust the rotor speed, see section "Control of step motor".

VEX270 - 3 x 400 V

The diagram below illustrates connection of the supply voltage to the motor control and rotor.

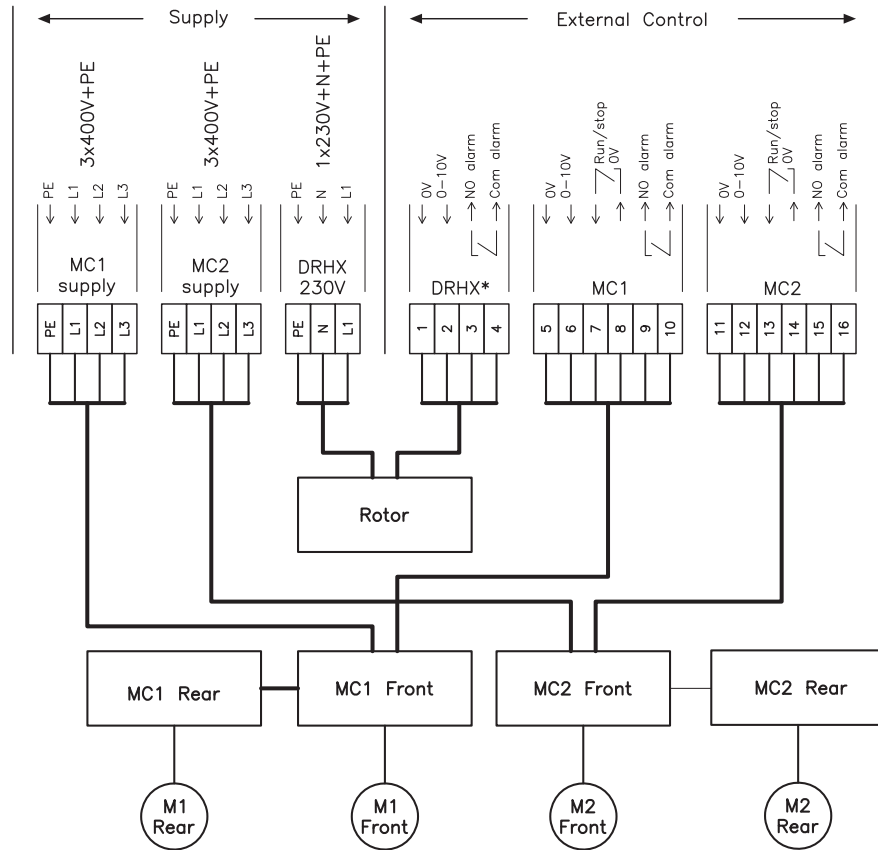


9440274-02

*) To adjust the rotor speed, see section "Control of step motor".

VEX280 - 3 x 400 V

The diagram below illustrates connection of the supply voltage to the motor control and rotor.



5440281-02

*) To adjust the rotor speed, see section "Control of step motor".

Explanation of diagrams

Designation	Explanation
MC1 Supply	Power supply for motor control MC1 (located on left of unit)
MC2 Supply	Power supply for motor control MC2 (located on right of unit)
DRHX 230V	Power supply for rotor control
DRHX	Rotor control signals
MC1	Power supply for motor control M1 (located on left of unit)
MC2	Power supply for motor control M2 (located on right of unit)

Electrical data

The table below shows max. phase current and max. neutral current

Type	Supply voltage	Max. phase current (total) [A]	Max. neutral current (Rated current)	MC1 phase current [A]	MC2 phase current [A]	DRHX [A]
VEX260	3 x 400V+N+PE	15.5	21	15.3	15.3	0.2
VEX270	3 x 400V+N+PE	14.3	-	7.05	7.05	0.2
VEX280	3 x 400V+N+PE	28.6	-	14.1	14.1	0.4

Note - VEX260

Power consumption is taken from two phases and is not sinusoidal. Phase L3 is not used.

Note - VEX270/280

Power consumption is taken from three phases and is not sinusoidal.

1.1.1 Alarm relay function

Description		Drawing
Connection	The diagram shows which two terminals from MC and RHX2M are connected to the terminal block in the connection box	<p>Alarmrelay MC</p> <p>Connection box</p> <p>5450255GB-01</p> <p>MC: terminal 9-10 and terminal 15-16</p>
Function	The alarm relay position in the case of power failure or similar	<p>Power off</p>
	The alarm relay position in case of alarm	<p>Alarm</p>
	The alarm relay position during operation	<p>Power on, No alarm</p>



2. Installation of the VEX

2.1 Scope of installation

VEX unit

The electrical installation for the VEX unit comprises the following tasks:

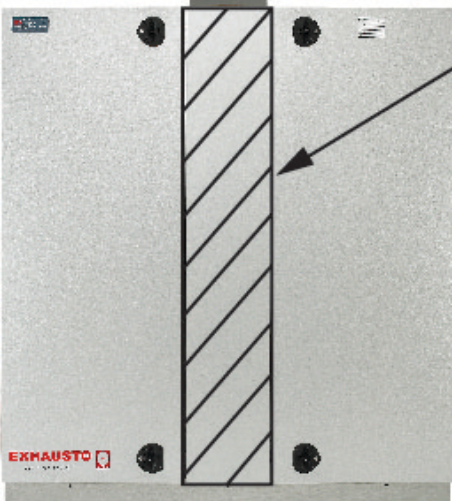
Connection box

Wiring configurations for the terminal board in the connection box:

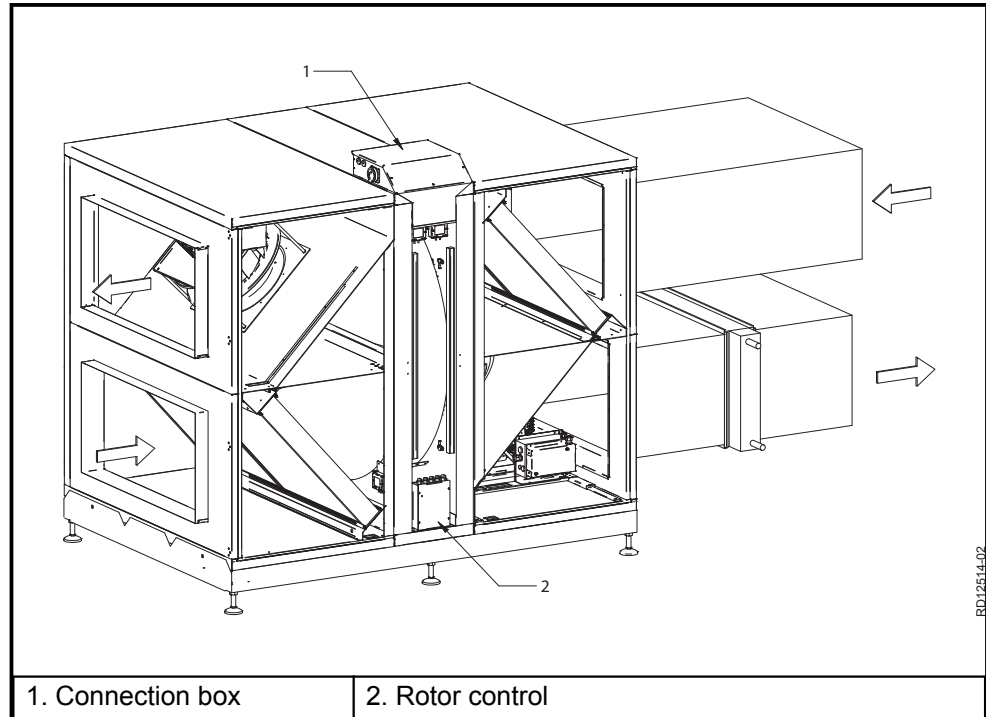
- Supply voltage for motor controls 1 and 2
- Supply voltage for rotor control
- Rotor control signals
- Motor control signal (MC) and alarm relay

For other technical data, see the “Technical data” section in the main instructions of the VEX.

2.1.1 NB:

	NB:
	<p>The door must be kept clear. No cables or equipment of any kind may be fitted to the door</p>

Positioning of electrical components



1. Connection box 2. Rotor control

2.2 Selection of rotor direction of rotation

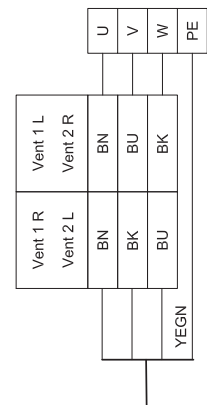
Left/Right

The term R for Right indicates the supply air is to the right of the cooling unit, as seen from the operating side. Supply air to the left is indicated by L for Left

Selecting Left/Right

To change the VEX from, e.g., Left to Right, 2 of the 3 motor cables to the rotor motor must be switched.

Step	Action
1	Open the doors – the rotor control is located at the bottom of the VEX.
2	Detach the DRHX rotor control door
3	Determine the fan positioning (1 or 2) of the VEX (see the model overview in the main VEX manual) and connect according to the cable plan.

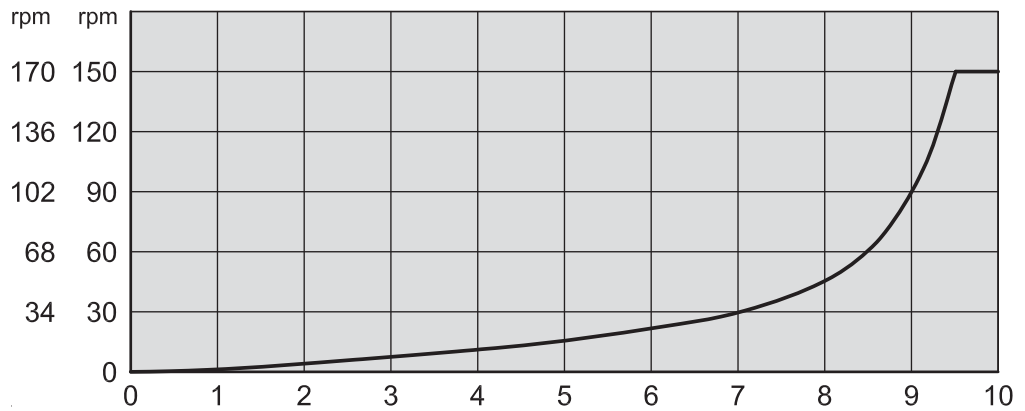


RD13998

2.3 Control of step motor

Rotational speed/ control voltage

The diagram below shows the relationship between step motor rotational speed and motor signal voltage.



RD13696-02

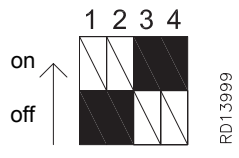
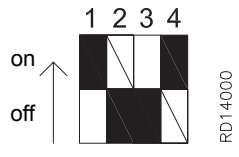
If the rotor control step motor receives a:	Then
0-10V signal less than 0.6 V	the motor stops
0-10V signal greater than 1.1 V	the motor starts
0-10V signal greater than 9.5 V	the motor runs at max rpm

The table below shows the maximum permitted step motor rotational speed – dependent on the size of the VEX. If the rotational speed exceeds the given value, the motor will become overloaded and shut down.

VEX model	Max. speed step motor	Max. no. of revolutions in step motor per min.	Optimum no. of rotor revolutions per min.*	Voltage 0 - 10V
VEX260	150	106.5	10	9.21
VEX270	150	132.5	10	9.42
VEX280	170	170	10	10

*When the rotor operates with this rpm, the highest temperature efficiency is achieved.

DIP-switch setting

VEX model	Configuration
VEX260	
VEX270	
VEX280	

The black marking on the above sketch indicates the position of the button on the dip-switch.



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