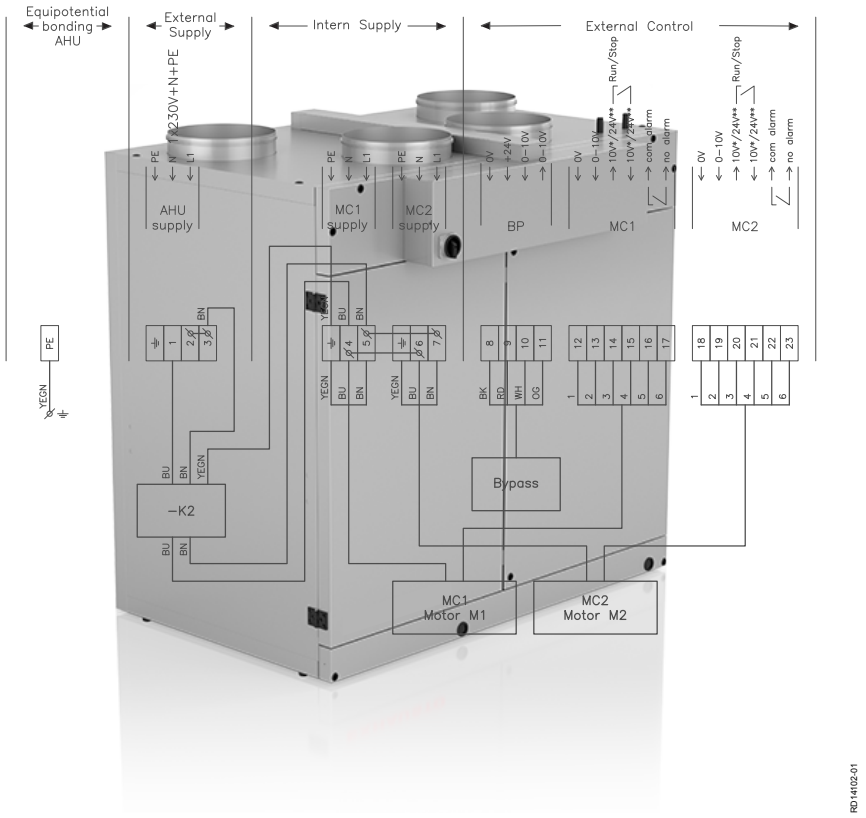
GB

Electrical installation guide

VEX310T-320T-330T-340T-350T

For third-party control systems

VEX300 RANGE
COUNTER FLOW
HEAT EXCHANGER



Electrical installation..... Chapter 2 + 3

Original instructions

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Symbols, concepts and warnings

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.

Scope of the instruction manual

This instruction manual is for use with EXHAUSTO AHUs, hereafter named as the VEX unit. This instruction manual deals with the electrical installation. Please refer to the product instructions regarding accessories and extra equipment.

The instructions must be fully observed to ensure personal safety and the safety of others, and to protect equipment and ensure the correct operation of the VEX unit. EXHAUSTO A/S accepts no liability for accidents caused by a failure to use the product in accordance with the manual's instructions and specifications.

Warning

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

Opening the air handling unit

Do not remove the detachable doors/panels until the supply voltage has been disconnected at the isolation switch and the fans have stopped.

Isolation switch

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

The isolation switch must:

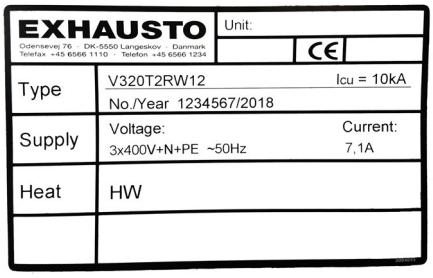
- be lockable or positioned in plain sight in the immediate vicinity of the unit
- disconnect all poles from the supply voltage
- be constructed in accordance with EN 60204-1

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

Information plate

The information plate is positioned to the left of the control system box
The VEX unit information plate shows:

- the VEX variant designation
- unit production order no./year



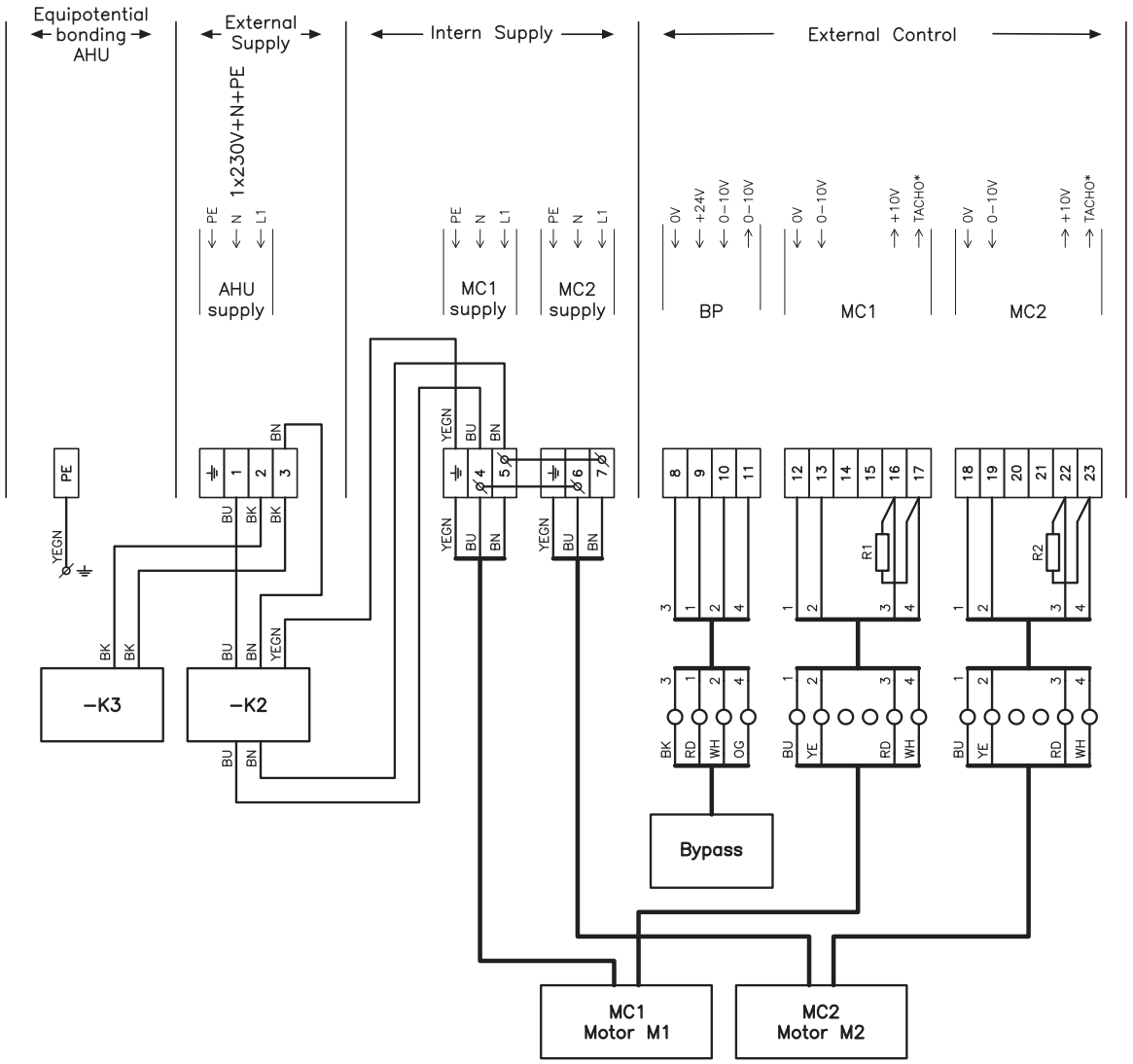
NB: **Always have the production order number ready when contacting EXHAUSTO A/S.**

1. Power supply diagram

1.1 Connection diagrams for VEX with motor control (MC)

The diagrams below illustrate connection of the power supply to the motor control, filters and bypass damper.

1.1.1 Diagram VEX310T



*TACHO [Hz] x 60 = rpm

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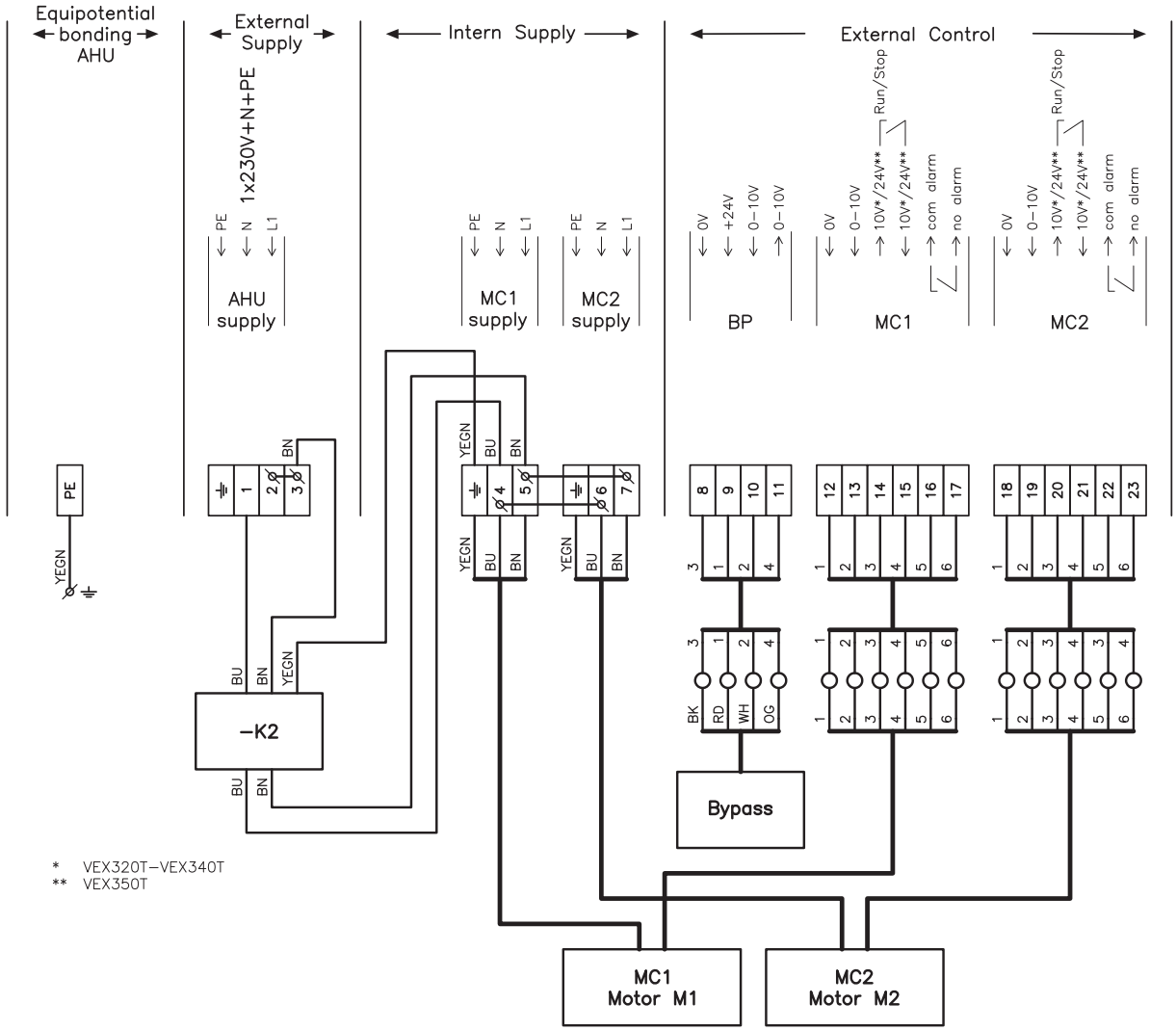
Explanation of diagram

designation	Explanation
MC1 (Supply)	Motor control supply MC1 (exhaust / exhaust air)
MC2 (Supply)	Supply for motor control MC2 (supply air / outdoor air)
Bypass	Control signal for bypass damper (return / exhaust air)
MC1 (External Control)	Control signal for motor control motor M1 (exhaust / exhaust air)
MC2 (External Control)	Control signal for motor control motor M2 (supply air / outdoor air)
-K2	EMC filter
-K3	Passive motor filter
-R1	4.7 kΩ resistor for TACHO signal from M1
-R2	4.7 kΩ resistor for TACHO signal from M2

1.1.2 Diagram VEX320T-350T

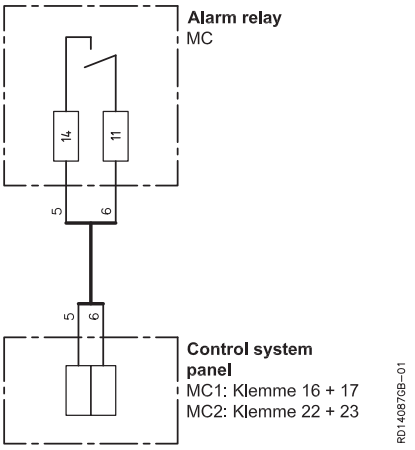
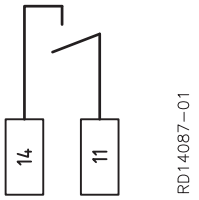
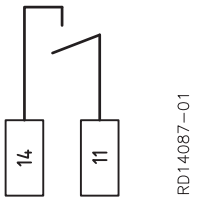
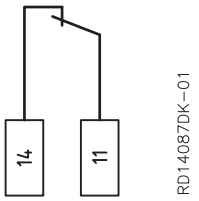


Key to diagram

Designation	Explanation
MC1 (Supply)	Power supply for motor control MC1 (exhaust air/extract air)
MC2 (Supply)	Power supply for motor control MC2 (supply air/outdoor air)
Bypass	Control signal for bypass damper (exhaust/extract air)
MC1 (External Control)	Control signal for motor control M1 (exhaust air/extract air)
MC2 (External Control)	Control signal for motor control M2 (supply air/outdoor air)
-K2	EMC filter

Note Other parts, shown on the front page of the VEX instructions, are supplied by EXHAUSTO **(Assembly and installation)**

1.1.3 The alarm relay function VEX320T-350T

	Description	Drawing
Connection	The drawing shows which two terminals from MC are connected to the terminal block -X1 in the control system panel.	
Function	The alarm relay position in the case of power failure or similar. (Power OFF)	
	The alarm relay position in case of alarm. (Alarm)	
	The alarm relay position during operation. (Power ON, no alarm)	

2. Installation of the VEX unit

2.1 Scope of installation

Control system panel

Wiring configurations for the terminal block in the control system panel:

- Motor and motor control (MC) supply voltage
- Motor control (MC) signals and Tacho signal/alarm relay
- Bypass damper control signal

NB:

- The fan motors have overload protection and are pre-programmed at the factory.
- The motor control must have short-circuit protection.

For other technical data, see the “Technical data” section in the VEX instructions. **Assembly and installation**.

Bypass damper function

When connecting the control signal to the bypass damper, the following must be taken into consideration:

Control voltage for BP1	Function
≤ 2V	100% heat recovery. Outdoor air is led through the counterflow heat exchanger.
10 V	0% heat recovery. The outdoor air bypasses the counterflow heat exchanger (bypass).

2.2 Dimensioning and installation

- **The supply cable must be dimensioned and installed in accordance with applicable rules and regulations.**
- **The earth terminal (PE) must always be connected.**

Diagram

The supply voltage must be connected to the isolation switch as shown in the diagram in section 1.

Fuses

The fuses must be suitable for:

- Short-circuit protection of the VEX unit.
- Short-circuit protection of supply cable
- Overload protection of supply cable

Maximum fuse rating

VEX size	Maximum fuse rating
310T	C-10A
320T	C-16A
330T	C-16A
340T	C-16A
350T	C-16A

Note For a VEX unit with short-circuit protection, the fuse rating must not be greater rating than stated in the table above.

2.2.1 Electrical connection/data

The following table shows the dimensioned power consumption and phase current.

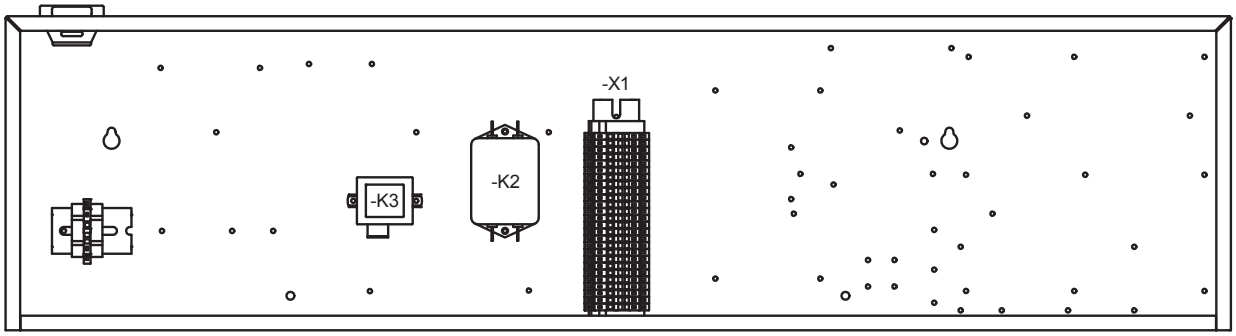
VEX size	Material (fan impeller)	Power supply (nominal)	MC1/MC2 phase current [A]	Dimensioned power consumption (total) [A]
310T	composite	1 x 230 V + N + PE ~50/60Hz	1.7/1.7	3.4
320T	composite	1 x 230 V + N + PE ~50/60Hz	2.1/2.1	4.2
330T	composite	1 x 230 V + N + PE ~50/60Hz	3.7/3.7	7.4
330T	aluminium	1 x 230 V + N + PE ~50/60Hz	2.1/2.1	4.2
340T	composite/ aluminium	1 x 230 V + N + PE ~50/60Hz	3.5/3.5	7.0
350T	composite	1 x 230 V + N + PE ~50/60Hz	5.9/5.9	11.8
350T	aluminium	1 x 230 V + N + PE ~50/60Hz	5.7/5.7	11.4

Note Power consumption is not sinusoidal.

2.3 Electrical components

2.3.1 Control system panel

The illustration below shows the electrical components' positioning in the control system panel:



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Component list

Code	Electrical component	PCS.
-X1	Terminal block 2.5 □	3 (yellow / green) 3 (blue) 20 (gray)
-K2	EMC filter	1
-K3	Passive motor filter (only in VEX310T)	1

For positioning of electrical components in the VEX unit, see the VEX instructions. **Assembly and installation**.

Scan code and go to addresses at
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