

DFE Compact

Installation and maintenance manual **EN**



Applicable to program versions TAC5
Version DT 2.8.12 & DG 2.7.3



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DFE Compact

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1.0 Installation manual

Applicable for the following units

EXCHANGER	SIZES	INTEGRATED PRE-HEATING	INTEGRATED POST-HEATING	HANDING	FAN
DFE Compact Counterflow	450/600/1000/ 1300/1600/2000	Yes, electrical	No	Left / Right	Forward (FW)

Disclaimer

Danger/Warning/Caution

- All staff concerned shall acquaint themselves with these instructions before beginning any work on the unit. Any damages to the unit or its components caused by improper handling or misuse by the purchaser or the installer cannot be considered subject to guarantee if these instructions have not been followed correctly.
- Make sure that the power supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and controls.
- Although the mains supply to the unit has been disconnected there is still risk for injury due to rotating parts that have not come to a complete standstill.
- Beware of sharp edges during mounting and maintenance. Make sure that a proper lifting device is used. Use protective clothing.
- Unit should always be operated with closed doors and panels.
- If the unit is installed in a cold place make sure that all joints are covered with insulation and are well taped.
- Duct connections/duct ends should be covered during storage and installation, in order to avoid condensation inside of the unit.
- Check that there are no foreign objects in unit, ducting system or functional sections.
- The unit is packed to prevent damage of the external and internal parts of the unit, dust and moisture penetration. If the unit is not to be installed immediately, it should be stored in a clean, dry area. If stored externally, it should be adequately protected from the weather influence.

RANGE OF APPLICATION

The DFE units are designed for use in comfort ventilation applications.

Depending on the variant selected, DFE units can be utilised in buildings such as office buildings, schools, day nurseries, public buildings, shops, residential buildings, etc.















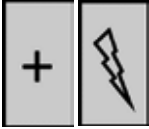

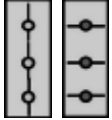
DFE units equipped with plate heat exchangers can also be used for the ventilation of moderately humid buildings; however not where the humidity is continuously high, such as in indoor swimming baths, saunas, spas or wellness centres.

HOW TO READ THIS DOCUMENT

Please make sure that you have read and understood the safety precautions below.

For new users, please read the chapter where the Symbols and Abbreviations used for DFE are listed.

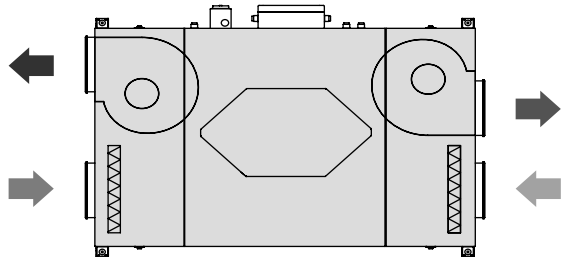
2.0 Symbols and abbreviations

	FW	FORWARD CURVED FAN		PF	PLEATED FILTER
	PX	PLATE HEAT EXCHANGER			
	WARNING				
	Must be connected by a qualified Electrician. Warning! Hazardous voltage.				
	OUTDOOR AIR		Air from outdoor to the AHU		
	SUPPLY AIR		Air from the AHU to the building		
	EXTRACT AIR		Air from the building to the AHU		
	EXHAUST AIR		Air from the AHU to outdoor		
	COOLING COIL	BA-		IBA / KW	HEATING COIL (WATER / ELECTRICAL)
	SILENCER	GD		CTm	MOTORIZED DAMPER
	PRESSURE SENSOR	P		Tx	TEMPERATURE SENSOR Nr = x (1,2,3...)
	SLIP CLAMP	SC		MS	FLEXIBLE CONNECTION
CIRCULAR DUCT CONNECTION		ER	For inlet	SR	For outlet

3.0 Product Overview

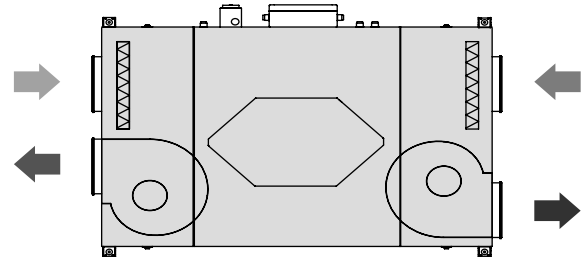
3.1 GENERAL OVERVIEW

RIGHT HAND UNIT (SUPPLY AIR TO THE RIGHT)

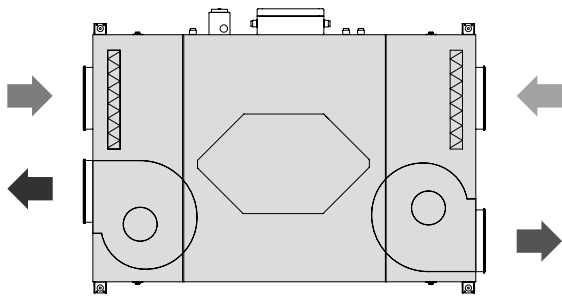


DFE Compact 450 (BOTTOM view)

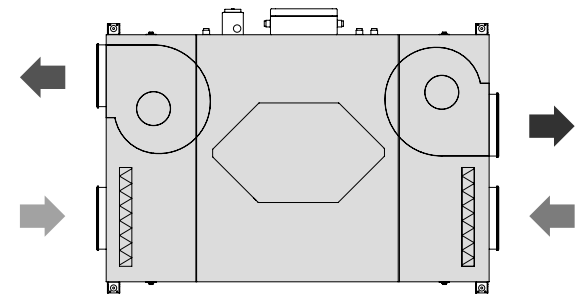
LEFT HAND UNIT (SUPPLY AIR TO THE LEFT)



DFE Compact 450 (BOTTOM view)



DFE Compact 600-2000 (BOTTOM view)



DFE Compact 600-2000 (BOTTOM view)

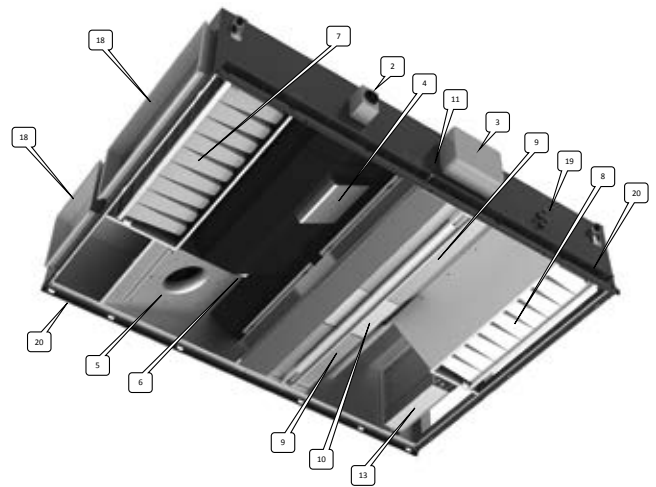
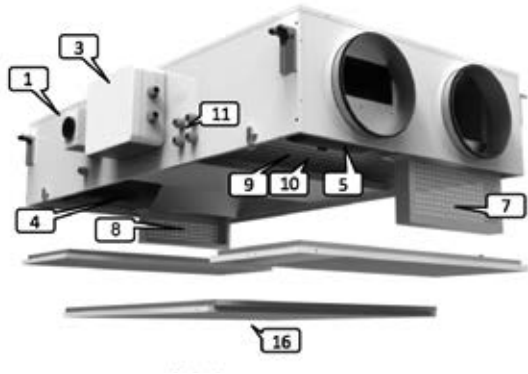


ATTENTION

Right and left hand units have different article numbers and should be ordered accordingly. Main version described in the manuals is always the hand right version.

The difference between left and right DFE Compact units is the factory placement of the controls box on opposite sides.

3.2 COMPONENTS



DFE Compact

1. Main power switch
2. Main power switch for electrical coils (both internal pre-heating and post-heating)
3. Wiring box TAC5 controller
4. Supply fan
5. Extract fan
6. Kit CA -airflow measurement (option)
7. Outdoor air filter (pleated)
8. Extract air filter (pleated)
9. Heat exchanger (Plate)
10. Modulating 100% by-pass
11. Drain pan and drain pipe
12. Pre-heating electrical antifrost coil
13. Internal post-heating water or electrical coil (accessory)
14. Motorized damper (at outdoor air side - accessory)
15. Motorized damper (at exhaust air side - accessory)
16. Access panel
17. Flexible connection(accessory)
18. Slip Clamps (accessory)
19. Water connection for postheating (accessory)

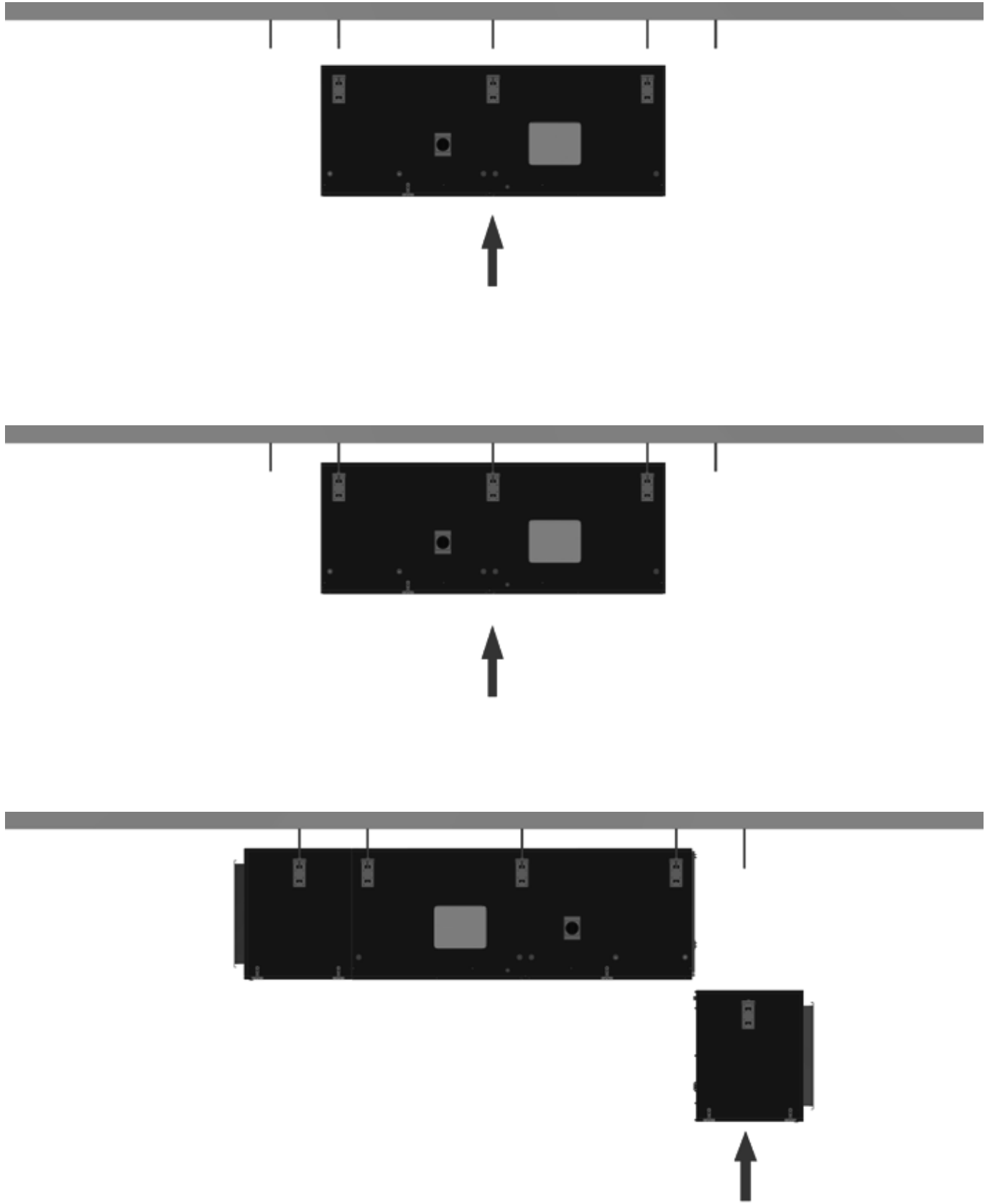


1, 2 and 3 must be installed by an accredited electrician

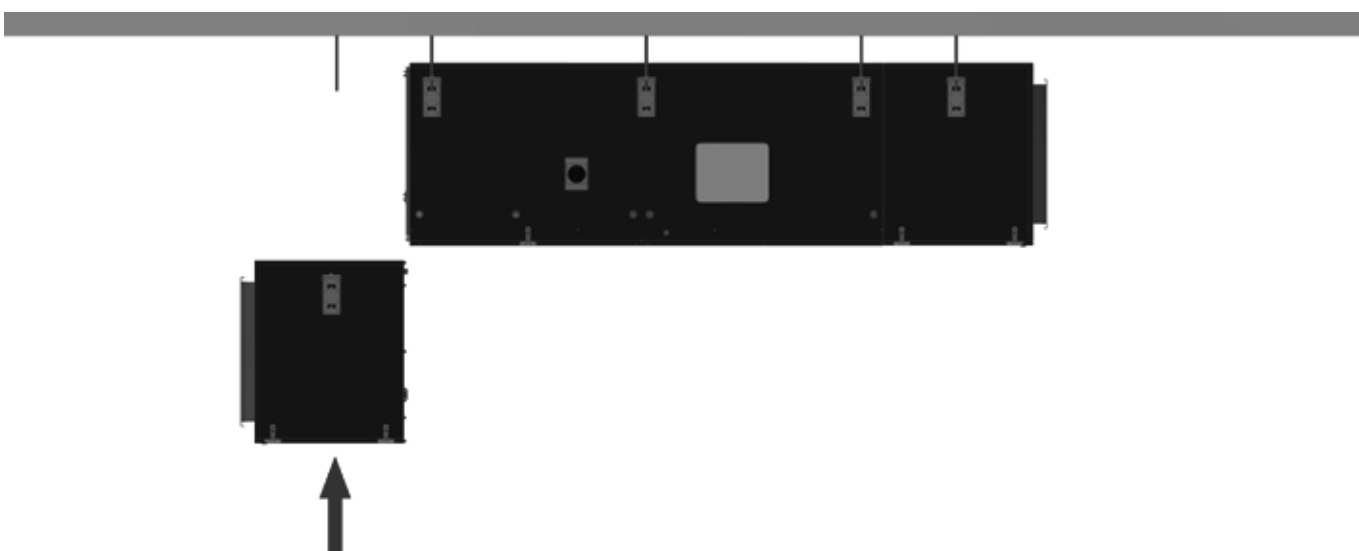
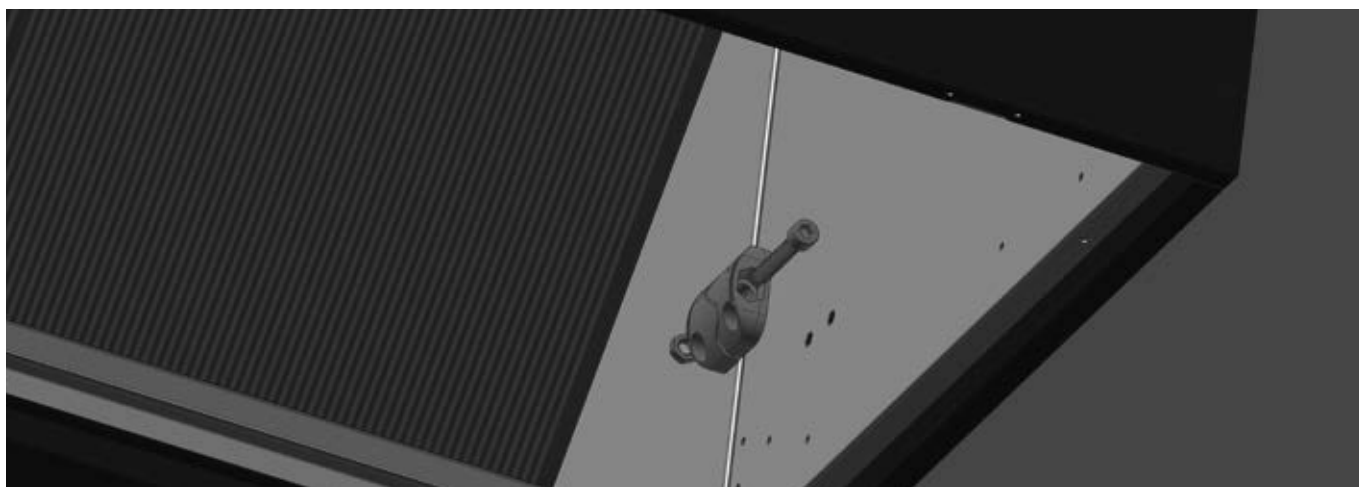
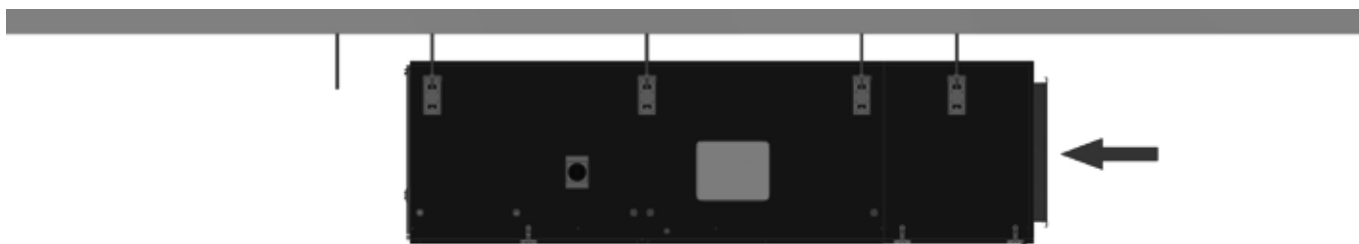
Note: internal electrical coils, motorized dampers. External heating water-coil accessory is pre-mounted but has to be hydraulically and electrically connected by the installer.

4.0 Installation

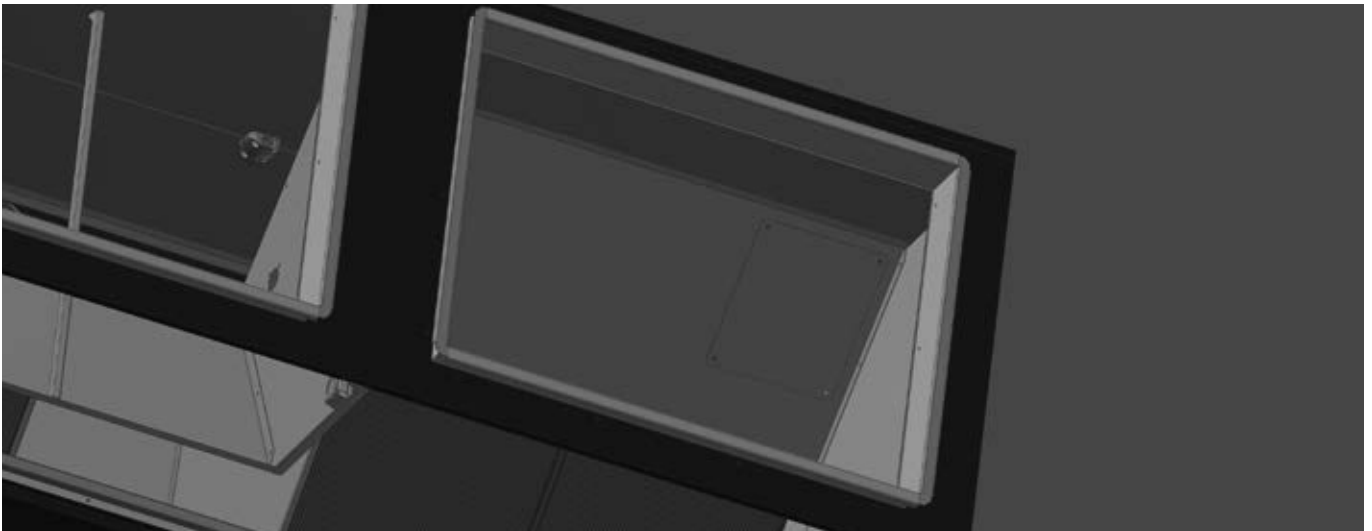
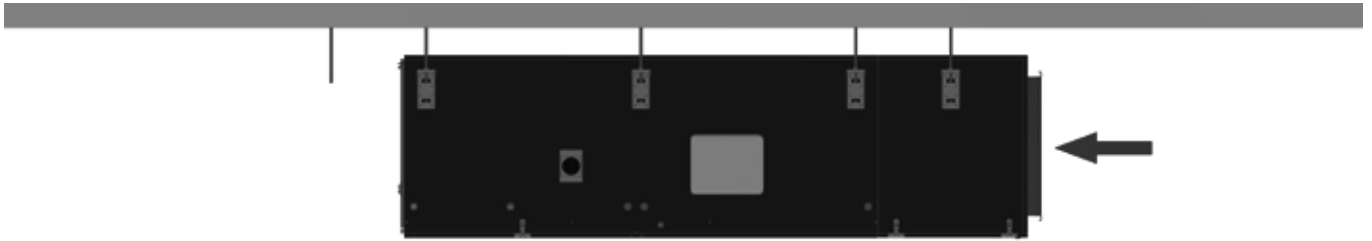
4.1 MECHANICAL INSTALLATION



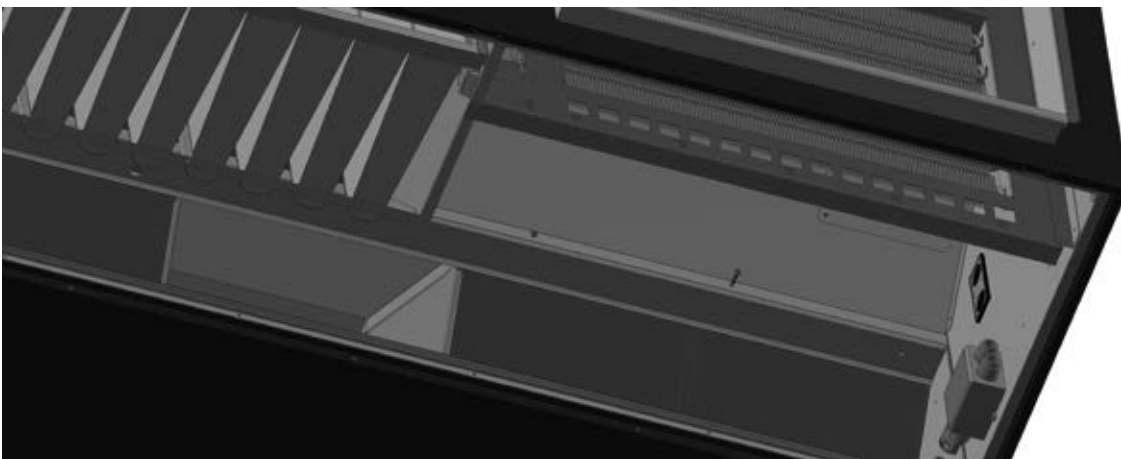
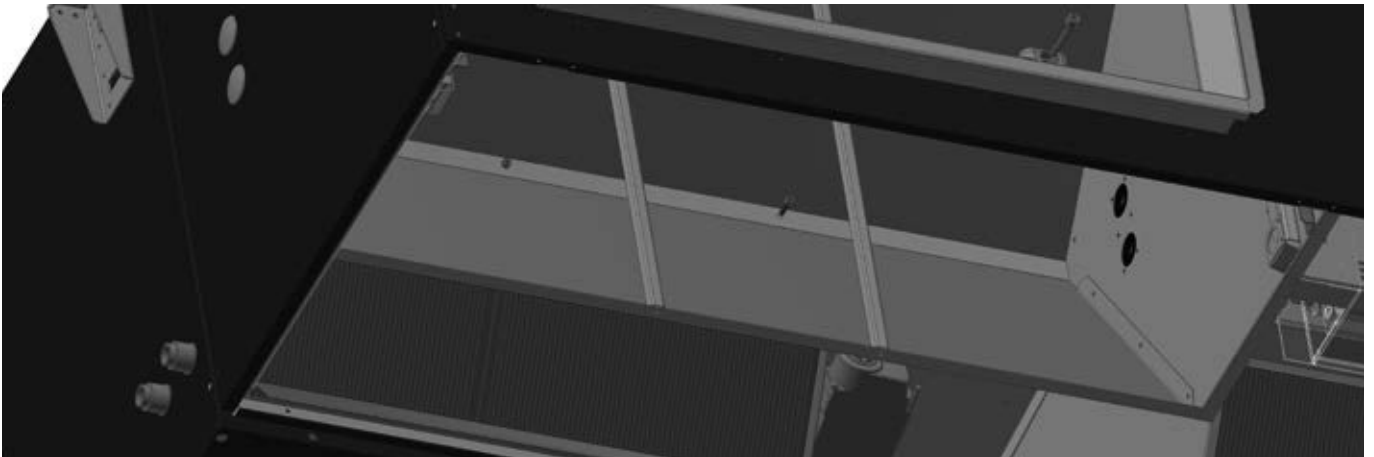
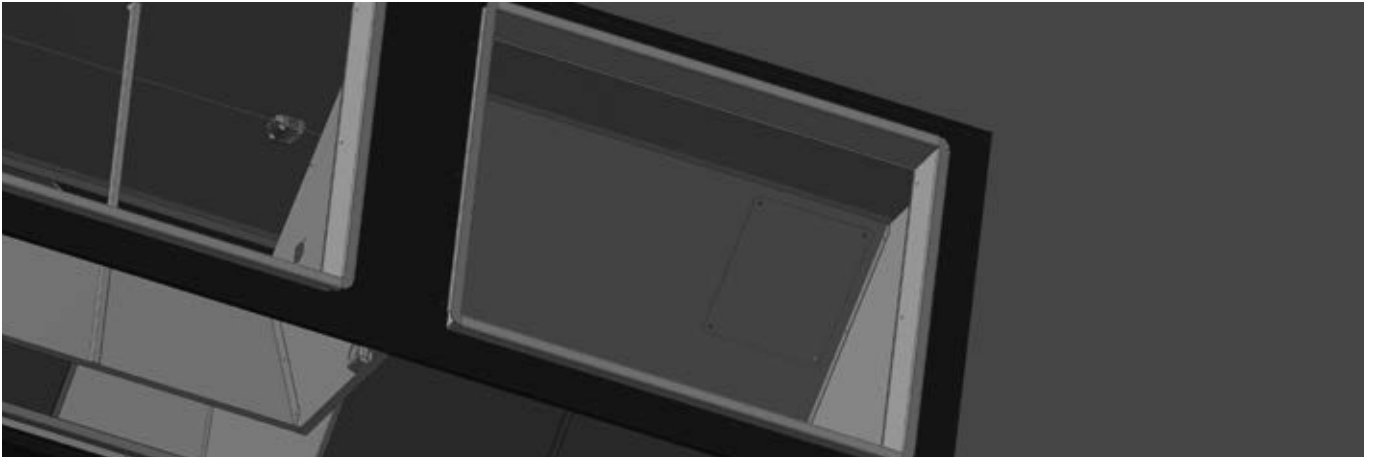
4.1 MECHANICAL INSTALLATION



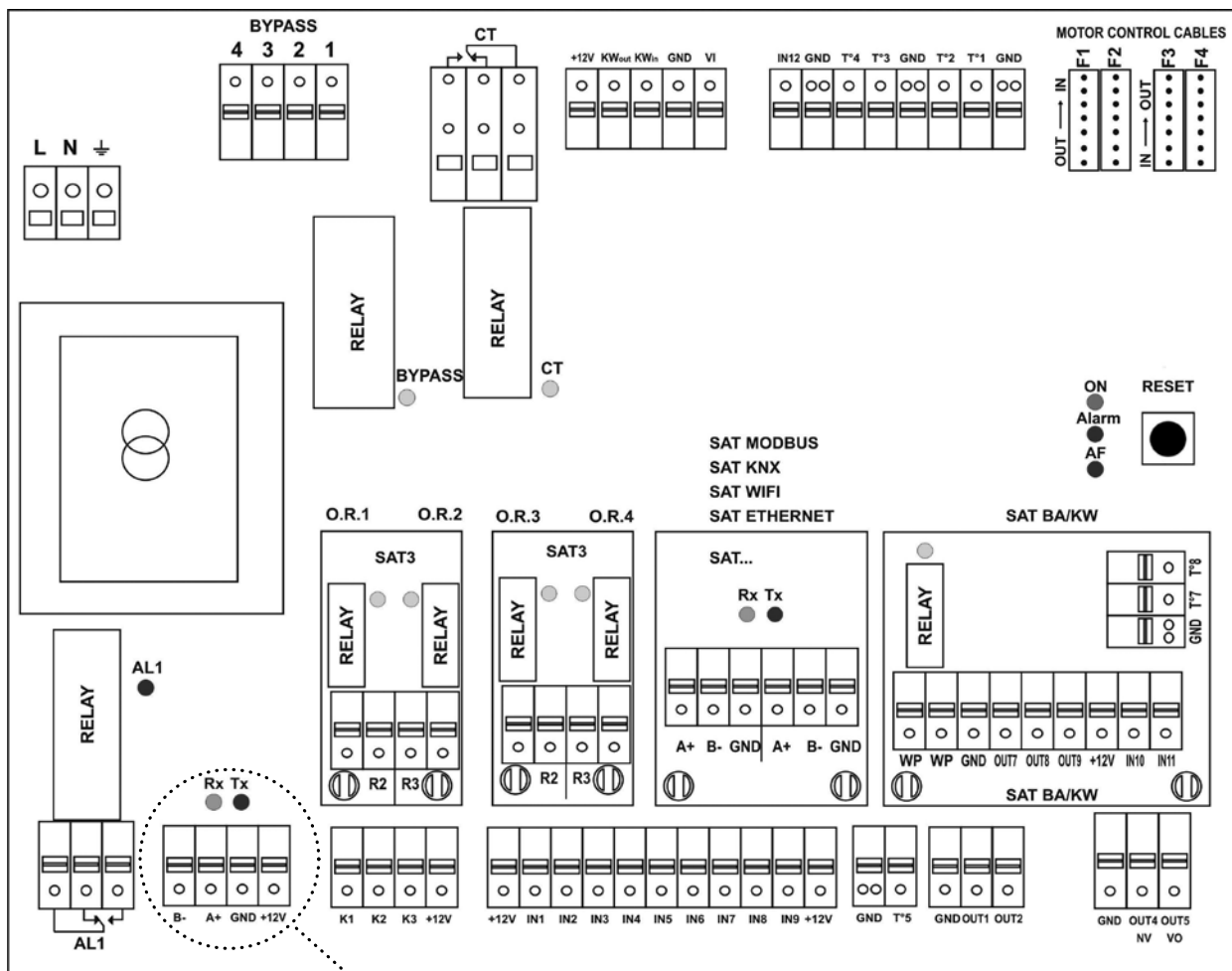
4.1 MECHANICAL INSTALLATION



4.1 MECHANICAL INSTALLATION



4.2 ELECTRICAL CONNECTIONS



B- A+ GND +12V



WHITE

BLUE

BLACK

RED



Wiring

The cables used must conform to the RS-485 Standard with twisted pair conductors. The cables must be shielded. Conductor Area 0.2 mm². The total length must not exceed 100 meters.

4.3 ELECTRICAL POWER SUPPLY

DFE designation	Without Kwin coil		With Kwin coil	
DFE Compact 450	1 x 230 V	2.9 A max	1 x 230 V	9.4 A max
DFE Compact 600	1 x 230 V	3.1 A max	1 x 230 V	11.8 A max
DFE Compact 1000	1 x 230 V	7.7 A max	1 x 230 V	20.7 A max
DFE Compact 1300	1 x 230 V	11.9 A max	3 x 400V + N	20.6 A max
DFE Compact 1600	1 x 230 V	11.9 A max	3 x 400V + N	20.6 A max
DFE Compact 2000	1 x 230 V	11.7 A max	3 x 400V + N	20.6 A max



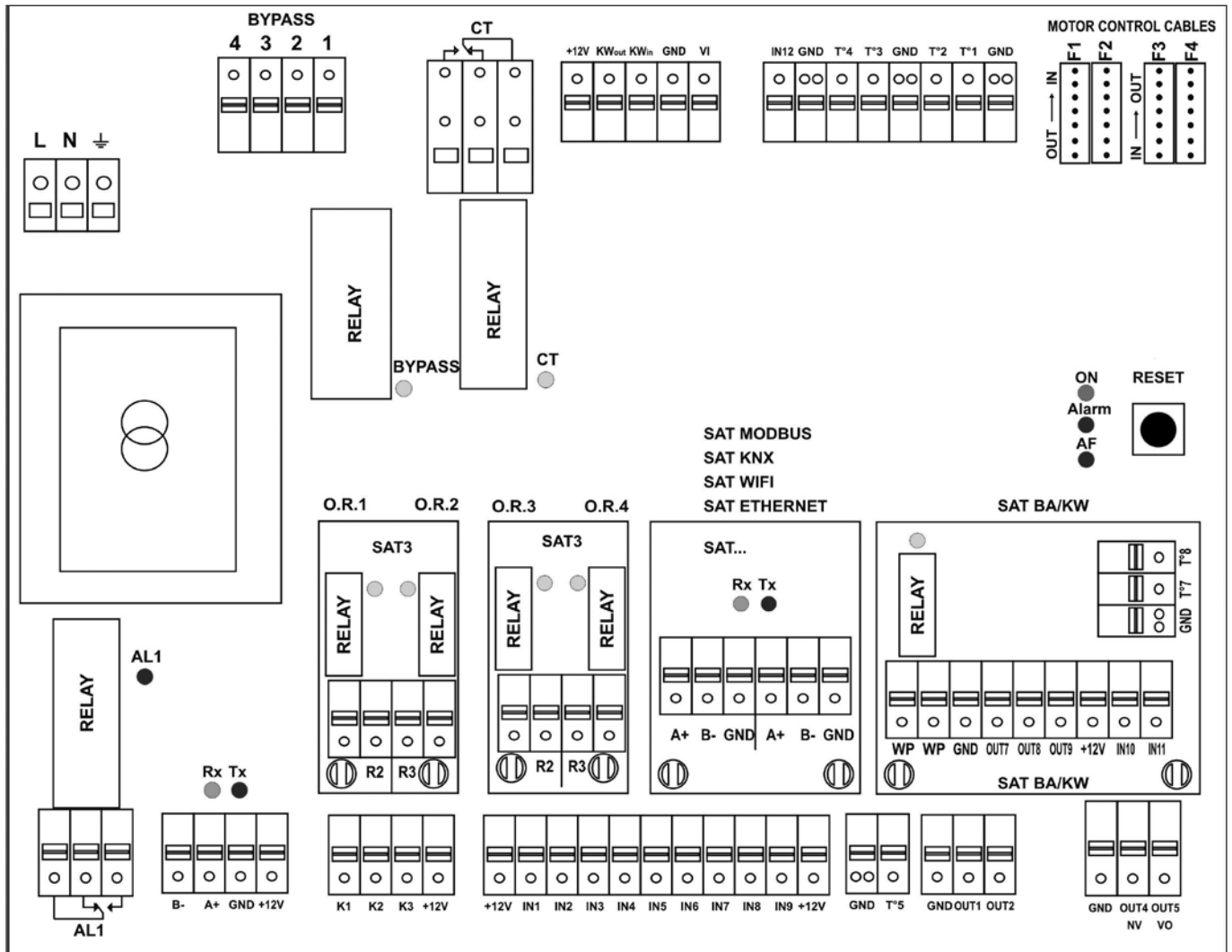
Please refer to our selection software for more detailed information of any specific lay-out or configuration.

All internal components (fans, controls, sensors, actuators...) to the control board are pre-wired at the factory.

The power supply must be connected to the safety isolating switch by a qualified electrician. Earthing is obligatory according EN61557. The fuses are of D-type, the circuit breaker is of B or B+ type.

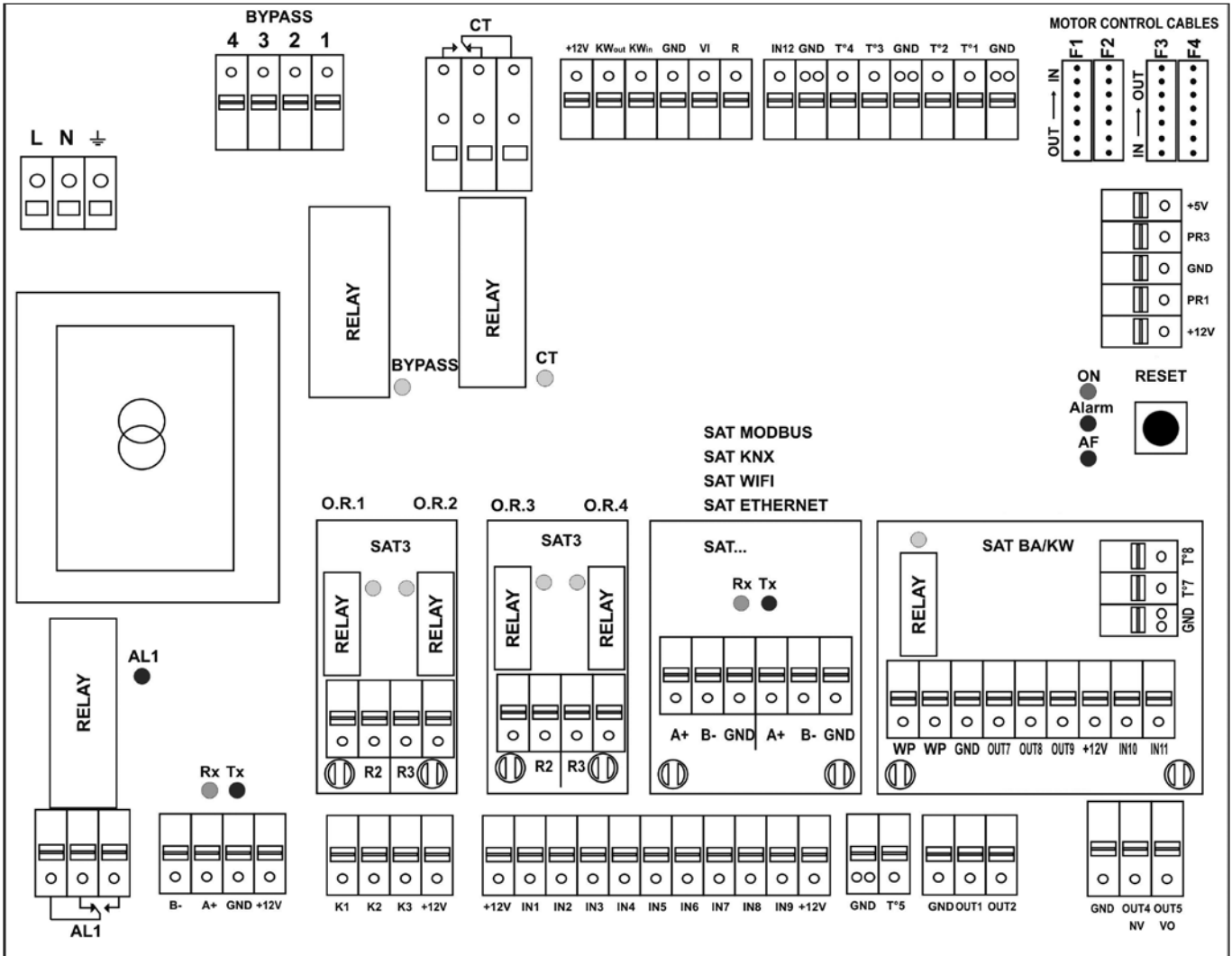
5.0 Wiring Overview

MAIN CONTROL BOARD TAC5 DG



DFE Compact	
CT = output to CT actuator(s) (option - prewired)	IN1 = Master selection
BYPASS = output to bypass actuator (prewired)	IN2 = dPa (pressostat digital input)
AL1 = ALARM OUTPUT (230V/5A)	IN3 = Fire alarm input
B- / A+ / GND / +12V = connection to HMI TACtouch	IN4 = Bypass open / Stop heat recovery
K1 : Airflow MODE = m³/h K1 Demand/Pressure control = START/STOP	IN5 = Real time clock auto/manu
K2 : Airflow control = m³/h K2 Demand/Pressure control = 0-10V INPUT	IN6 = ON/OFF post heating (IBA/KWout)
K3 : Airflow control = m³/h K3 Demand/Pressure control = % ON K3 or 0-10 V INPUT	IN7 = ON/OFF SUPPLY if fire alarm
T1 = from outdoors T° sensor (prewired)	IN8 = ON/OFF EXHAUST if fire alarm
T2 = from indoors T° sensor (prewired)	IN9 = BOOST Airflow
T3 = to outdoors T° sensor (prewired)	IN12 = PWM input bypass position
T4 = IBA anti freeze protection T° sensor	OUT1 = 0-10V OUTPUT (airflow / pressure)
T5 = supply T° sensor for IBA/KWout coil (option - prewired)	OUT2 = 0-10V OUTPUT (airflow / pressure)
	OUT4 = 0-10V OUTPUT internal post heating (IBA)
	OUT5 = 24VDC / 1A
	O.R.1 (output relay 1 - SAT3) = PRESSURE ALARM
	O.R.2 (output relay 2 - SAT3) = FAN ON
	O.R.3 (output relay 3 - SAT3) = HEATING DEMAND OUTPUT
	O.R.4 (output relay 4 - SAT3) = BYPASS STATUS
	KWIn = output for KWIn capacity control (option - prewired)
	KWout = output for KWout capacity control (option - prewired)

MAIN CONTROL BOARD TAC5 DT



DFE Compact

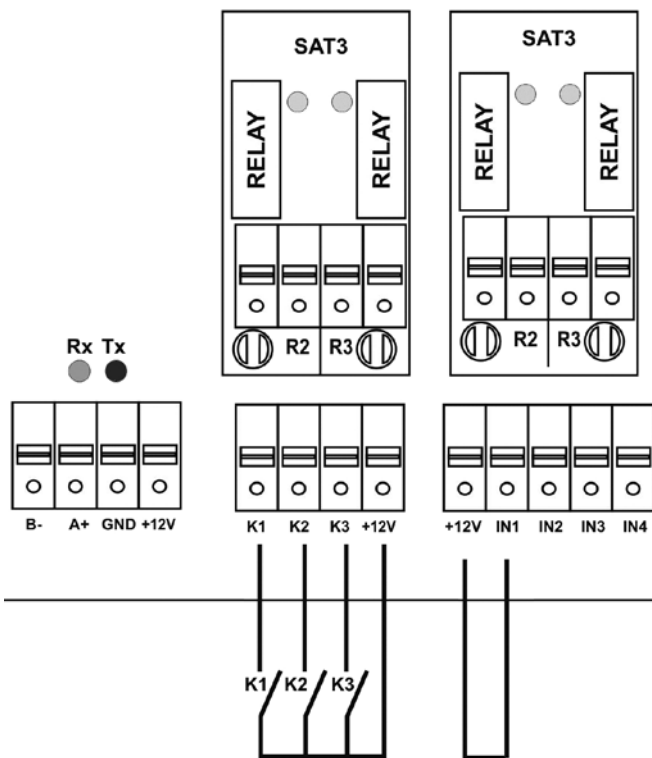
CT = output to CT actuator(s) (option - prewired)	IN1 = Master selection
KW_{out} = output for KW _{out} capacity control (option - prewired)	IN2 = dPa (pressostat digital input)
AL1 = ALARM OUTPUT (230V/5A)	IN3 = Fire alarm input
B- / A+ / GND / +12V = connection to HMI TACtouch	IN4 = Bypass open / Stop heat recovery
K1: Airflow control = m ³ /h K1 Demand/Pressure control = START/STOP	IN5 = Real time clock auto/manu
K2: Airflow control = m ³ /h K2 Demand/Pressure control = 0-10V INPUT	IN6 = ON/OFF post heating (IBA/KW _{out})
K3: Airflow control = m ³ /h K3 Demand/Pressure control = % ON K3 or 0-10 V INPUT	IN7 = ON/OFF SUPPLY if fire alarm
T1 = from outdoors T° sensor (prewired)	IN8 = ON/OFF EXHAUST if fire alarm
T2 = from indoors T° sensor (prewired)	IN9 = BOOST Airflow
T4 = IBA anti freeze protection T° sensor	IN12 = input pulse from heat exchanger magnet (prewired)
T5 = supply T° sensor for IBA/KW _{out} coil (option - prewired)	OUT1 = 0-10V OUTPUT (airflow / pressure)
PR1 = ΔPa from supply inlet fan (only on RX - option)	OUT2 = 0-10V OUTPUT (airflow / pressure)
PR3 = ΔPa from exhaust inlet fan (only on RX - option)	OUT4 = 0-10V OUTPUT internal post heating (IBA)
	OUT5 = 24VDC / 1A
	O.R.1 (output relay 1 - SAT3) = PRESSURE ALARM
	O.R.2 (output relay 2 - SAT3) = FAN ON
	O.R.3 (output relay 3 - SAT3) = HEATING DEMAND OUTPUT
	O.R.4 (output relay 4 - SAT3) = BYPASS STATUS
	R-GND = output for heat exchanger wheel speed command (prewired)

6.0 Test start

GLOBAL Air handling Unit

Quick test start on site with factory settings (not yet commissioned). This is designed to make an initial functional test. A complete Set-up must be performed afterwards.

6.1 TEST START WITHOUT USER INTERFACE



- K1 & K2 & K3 open: Off
- K1 closed: Speed 1
- K2 closed: Speed 2
- K3 closed: Speed 3
- Nb. Only available for constant airflow mode.

6.2 TEST START WITH TACTOUCH INTERFACE

Main menu: Control





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