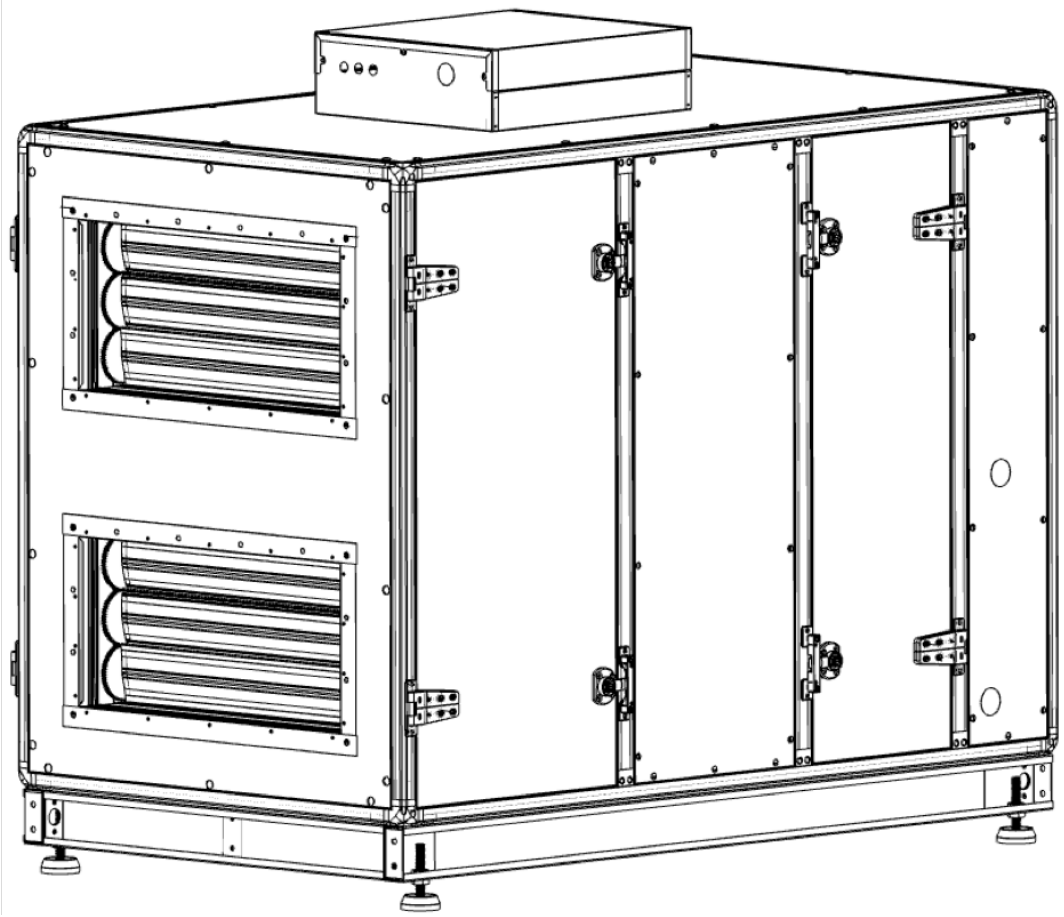
User's
Manual

EVO-R

COMPACT AIR HANDLING UNIT WITH ROTARY HEAT RECOVERY



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CHAPTER 1

GENERAL INSTALLATION AND OPERATING INSTRIUCTIONS

1.0 Important information

To ensure safety and correct operation please read and observe the following instructions carefully before proceeding. Important information is specified in the maintenance section on filter changes and necessary cleaning and maintenance activities. The user usually carries out maintenance work. The chapter “Installation” with important installation tips and basic unit adjustments is intended for the specialised installer.

⚠ **The electrical connection must be fully isolated from the supply up to the final assembly!**

⚠ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

The planning office provides the planning documents necessary for system calculations. Additional information can be requested ex works. Keep the installation and operating instructions as a reference at the device. After the final assembly, the document must be handed out to the operator (tenant/owner).

1.1 Warning and safety instructions

⚠ **The adjacent symbol is a safety-relevant prominent warning symbol. All safety regulations and/or symbols must be absolutely adhered to, so that any dangerous situation is avoided.**

1.2 Warranty claims – Exclusion of liability

This device is designed to operate efficiently and safely in the event that they are installed in accordance with the instructions in the operating instructions, and the operating and maintenance requirements are fully. All maintenance procedures required for the device must be carried out by experts and authorized persons.

Warranty Conditions

- The devices are warranted against defects in material and workmanship for two (2) years.
- During the warranty period of the device, due to material and manufacturing mistakes in the event of a malfunction, the following conditions will not be charged;

a. Labor costs

b. Change value of the parts

- The user should report within 8 days of production defects or defects, in terms of the validity of the warranty, immediately upon the detection of defects, device will be stopped
- As explained in the instruction for use and maintenance, the warranty is valid as long as the devices are periodically maintained.
- Consumables that are periodically changed during the warranty period must be originally supplied from AERA.
- Warranty does not apply to consumables, eg filters.

Issues to be Considered by Customers Related to Warranty

The AERA service personnel or the services authorized by AERA should intervene for the devices covered by the warranty. Damage caused by installation mistakes or by unauthorized persons is not covered by the warranty.

The following conditions are not covered by warranty:

- Damage due to transportation and improper placement.
- Damage caused by operating the device outside the operating conditions.
- Damage caused by the use of spare parts not approved by the manufacturer.
- Damage due to improper electrical connections, connection other than that specified on the electrical diagram label.
- Damage and failures due to factors such as impact, breaking, scratching and freezing.

- Faults that may arise from irregularities in the electrical supply where the device is installed.
- Damage caused by failure to make drainage pipe and to be corrosion inside the device.
- Damage that may be caused by the corrosive and acidic effect of the environment in which the device will operate.
- Damages caused by foreign materials forgotten in the device or fan motor.
- Damage caused by not using flexible connection in channel connections.
- Damages caused by failure to observe the points specified in this user manual.

AERA heat recovery devices do not have any parts replacement or repair work to be performed by the user other than cleaning and eye inspection. Users should contact the AERA company for faults detected during operation or maintenance.

1.3 Regulations – Guidelines

If the product is installed correctly and used to its intended purpose, it conforms to all applicable CE standards at its date of manufacture. The AERA EVO-R ventilation units in this series are compliant with Eco-Design 2018.

1.4 Receipt

The delivery contains one of the following unit types:

Unit
EVO-15R
EVO-20R
EVO-30R
EVO-50R
EVO-60R
EVO-80R
EVO-95R
EVO-120R
EVO-150R

Unit
EVO-15R/SO
EVO-20R/SO
EVO-30R/SO
EVO-50R/SO
EVO-60R/SO
EVO-80R/SO
EVO-95R/SO
EVO-120R/SO
EVO-150R/SO

Please check delivery immediately on receipt for accuracy and damage. If damaged, please notify carrier immediately.
In case of delayed notification, any possible claim may be void.

1.5 Storage

When storing for a prolonged time the following steps are to be taken to avoid damaging influences:
Protection by dry, air- dustproof packing (plastic bags with drying agent and moisture indicators). The storage place must be water-protected, vibration-free and free of temperature variations. (Ambient temperature limit, min/max, 0°C/ +40°C) Damages due to improper transportation, storage or putting into operation are not covered by warranty.

1.6 Transport

The transport of the devices must be done with carefully. All manufactured devices are shipped from the factory after all tests and controls have been made before shipment.

The transport must be carried out by trained and experienced personnel and the necessary safety precautions should be taken to prevent overturning and slipping of the device. During transport of the devices it should be ensured that the weight is evenly distributed over the four corners.

⚠ **Danger due to overhead loads – risk of grave injuries or death!**

- Never stand beneath suspended loads, since there is always a risk that the lifting gear, tackle, ropes or slings are faulty or damaged.

- Make sure that equipment is firmly seated before lifting it.

⚠ **Warning! Risk of personal injury and equipment damage!**

Due to a high center of gravity, some equipment can tend to tip over and cause damage to persons and property.

- When transporting the unit, carefully observe its behavior and do not get near any possible hazardous areas.

1.7 Intended use

EVO-R devices are designed in 9 different models to correspond the need of up to 15000 m^3/ h air flow. There is an ePM1 55% class filter on the outdoor air side and an ePM10 50% class filter on the exhaust side as standard. The units are produced according to European Union energy criteria and have EcoDesign label.

EVO-R devices are designed with energy efficient, low sound pressure radiating and low power consumption plug fans. Plug fans with EC motors can be driven with 3 fixed speeds or steplessly with the help of an air quality sensor thanks to build in smart control system.

The EVO-R units are equipped with rotary heat exchanger. More than 80 % of the extract air heat is transferred to the outdoor air. The supply air is led by the duct system to the primary (supply air needing) areas. The used air is extracted from the secondary areas (like e.g. social rooms, toilets, showers etc.). It flows back through the ducting to the ventilation unit, transfers the heat and is discharged by the exhaust air duct to the atmosphere.

The heat recovery efficiency depends on several factors, which include, among other things, air humidity and the temperature variation of outside air and exhaust air. The fan performance can be adjusted by the controller in scope of delivery. Various sensors e.g. CO_2 or humidity sensors (accessory) are available on request, with which automatic fan control is possible

⚠ If the device is used at < + 5 °C, it is necessary to use a heater in the device electronic box. (not included scope of delivery, optional)

⚠ The standard equipment permits the installation and the application in frost-free rooms > + 5 °C.

⚠ If the unit is to be used in outdoor, it is necessary to use a weather roof and outdoor spigot. (not included scope of delivery, optional)

If the unit is to be used in other applications where high humidity, excessive dust, temperature in excess of 40 °C or long periods at standstill (not running), please contact AERA sales representative. This also applies for special technical and electrical applications.

The EVO-R units are equipped with an electrical pre-heater (accessory- not included in scope of delivery); this prevents the heat exchanger from freezing at extremely cold outdoor temperatures.

Electrical after heater (accessory) used in EVO-R devices can be installed in the unit (EVO-15R, EVO-20R, EVO-30R) and module (EVO-50R, EVO-60R, EVO-80R, EVO-95R, EVO-120, EVO-150R). The after heater is controlled by the desired supply air temperature. The temperature is chosen by the user.

Water after heater (accessory) are used for increasing the supply air temperature and for bringing the supply air to the desired temperature. Hot water coils can be driven by proportional control via 2 or 3-way valves. Frost protection mechanism is available as standard to prevent the temperature of the supply water from reaching freezing conditions in extreme cold climates.

Externally module water cooling coils and DX coils (accessory) are used for such purposes as lowering the blowing temperature and dehumidifying the air in the units. It can be driven either proportionally or by on / off method.

1.8 Performance data

Mechanical connections must be made correctly in order to obtain maximum efficiency from the device. The device's thermal efficiency, sound level and electrical performance may vary depending on the ambient conditions the device is operating. These conditions may affect the measurement result on site and vary from the catalogue data.

1.9 Guideline series VDI 6022

The AERA EVO-R ventilation units in this series are produced compliant with VDI 6022. The guidelines range from operating regulations and material requirements through to construction regulations, which ensure high air quality. It must be ensured that only original AERA accessories are used for operation compliant with VDI 6022.

1.10 Heat systems

The relevant applicable regulations on the combined use of heat systems, domestic ventilation and extractor hoods (Federal Association of Chimney Sweeps (ZIV) information) must be observed!

General construction-law requirements

The EVO-R units with heat recovery must only be installed and operated in rooms with heat systems which depend on room air, if their flue gas venting is monitored by specific (on-site) safety devices, which shut down the EVO-R unit when activated. We recommend speaking with the competent chimney sweep to take account of possible wishes before procuring a negative pressure monitoring system for heat systems.

1.11 Technical data

MODEL	EVO-R								
	15	20	30	50	60	80	95	120	150
Air flow (m3/h)	1500	2000	3000	5000	6000	8000	9500	12000	15000
Rated current – ventilation (A)	2,17	3,39	2,28	3,8	3,65	5,47	5,32	7,6	9,12
Max. total rated current (A)	8,3x8,3x7,2	11,8x11,8x9,5	17,7x17,7x18,8	7,6x7,6x8,7	7,3x7,3x8,4	11x11x12,1	10,7x10,7x12,3	15,2x15,2x16,9	18,3x18,3x19,9
Power consumption – ventilation (kW)	0,5	0,78	1,5	2,5	2,4	3,6	3,5	5	6
Max. power consumption (kW)	5,4	7,6	12,3	5,2	5	7,4	7,4	10,4	12,4
Voltage/Frequency	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz
Filter class (extract/ outdoor air)	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7
Weight (kg)									
Sound pressure (dB)	56	54	57	53	58	60	59	59	59
Standby losses									
IP Class with weather roof	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54
IP Class without weather roof	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Wiring diagram									

MODEL	EVO-R/SO								
	15	20	30	50	60	80	95	120	150
Air flow (m3/h)	1500	2000	3000	5000	6000	8000	9500	12000	15000
Rated current – ventilation (A)	2,17	3,39	2,28	3,8	3,65	5,47	5,32	7,6	9,12
Max. total rated current (A)	8,3x8,3x7,2	11,8x11,8x9,5	17,7x17,7x18,8	7,6x7,6x9,3	7,3x7,3x9	11x11x13,8	10,7x10,7x13,4	15,2x15,2x18	18,3x18,3x21
Power consumption – ventilation (kW)	0,5	0,78	1,5	2,5	2,4	3,6	3,5	5	6
Max. power consumption (kW)	5,4	7,6	12,3	5,2	5	7,4	7,4	10,4	12,4
Voltage/Frequency	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz	3~400V 50Hz
Filter class (extract/ outdoor air)	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7	ePM10 50% -M5 / ePM1 55% - F7
Weight (kg)									
Sound pressure (dB)	56	54	57	53	58	60	59	59	59
Standby losses									
IP Class with weather roof	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54
IP Class without weather roof	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Wiring diagram									

EcoDesign Points									
	15	**20**	**30**	**50**	**60**	**80**	**95**	**120**	**150**
Declared typology	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional
Type of drive	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable
Type of HRS	Recuperative	Recuperative	Recuperative	Recuperative	Recuperative	Recuperative	Recuperative	Recuperative	Recuperative
Nominal NRVU flow rate [m^3/h]	1400	2200	2900	4400	5500	8000	9500	12500	15000
Thermal efficiency of heat recovery [%]	81	79	79	81	81	81	81	79	82
Static efficiency of fans [%]	58,2	61,4	52,8	63,6	63,6	62,4	64,1	67,2	63,5
Effective electric power input [kW]	0,48	0,77	1,12	2,46	2,34	3,27	3,25	4,88	5,57
Face velocity [m/s]	1,4	2,03	1,76	1,71	1,75	1,85	1,89	2,07	1,94
Normal external pressure [Pa]	250	250	300	350	350	350	350	350	350
Internal pressure drop of ventilation components [Pa]	274	368	310	274	280	288	298	334	302
SFPint [$W/(m^3/s)$]	926	1183	1157	847	867	908	914	976	936
Declared maximum external leakage [%]	<1	<1	<1	<1	<1	<1	<1	<1	<1
Declared maximum internal leakage [%]	<3	<3	<3	<3	<3	<3	<3	<3	<3
Description of visual filter warning	Pressure controled	Pressure controled	Pressure controled	Pressure controled	Pressure controled	Pressure controled	Pressure controled	Pressure controled	Pressure controled
Casing sound power level (Lwa) [dB(A)]									
ErP Compliance	2018	2018	2018	2018	2018	2018	2018	2018	2018

CHAPTER 2

INSTALLATION

2.0 Assembly

EVO-R compact devices must be mounted in a vertical position. Due to noise level which change according to working conditions, it is recommended to install the EVO-R units in the infrequently used rooms like that storage rooms, washing rooms etc. If the device to be used has a cooling coil, ensure that there is a waste water connection in the installation area. Assembly should take place in such a way to enable preferably short ventilation ducts and their trouble-free connection to the unit. Tight bends can lead to increased pressure loss and flow noise. The unit can be turned 180° for optimal installation, so that the outdoor/exhaust air and extract/supply air inlets and outlets can be on the left or right side. There is no need for bends and long stretches of pipeline due to these features. They reduce losses and increase the degree of efficiency of the system.

Important notes:

1. The ventilation ducts must not become kinked.
2. Any kind of connections (valves, flanges etc.) which associated with fluids like that air or water, must be tight and leakproof.
3. If necessary, vibration isolators can be used between unit and floor.
4. In order to prevents sound transmission, appropriate acoustic decoupling must be provided on site depending on the building material.

ATTENTION ⚠ **The outdoor spigot should be placed on the exhaust air side in case of no duct connection.**

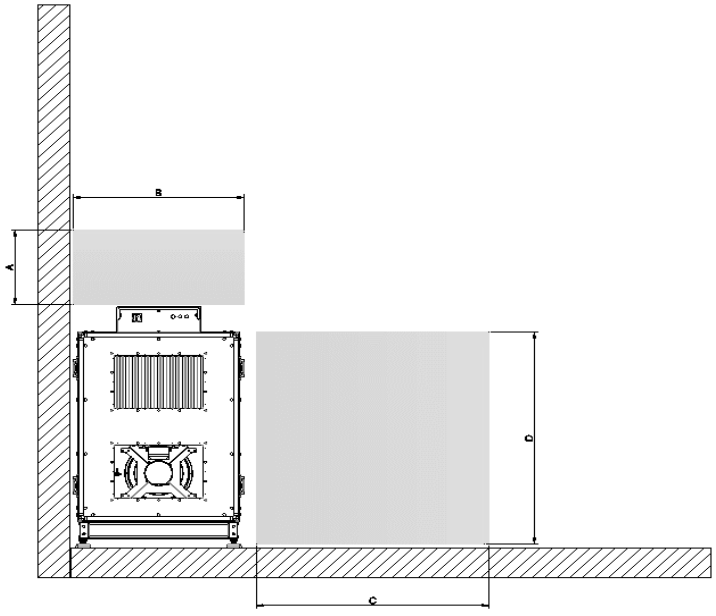
ATTENTION ⚠ **Make sure that the device is placed on a flat surface before any assembly work.**

Assembly area

Observe the following criteria during installation to ensure that the device service is comfortable. (Fig. 1)

A is the minimum distance for servicing the terminal box.

C is the minimum distance for opening service cover.



MODEL	A (mm)	B (mm)	C (mm)	D (mm)
EVO-15R	600	910	1360	1145
EVO-20R	600	1010	1460	1245
EVO-30R	600	1120	1570	1355
EVO-50R	600	1390	1840	1625
EVO-60R	600	1510	1960	1745
EVO-80R	600	1760	-	1995
EVO-95R	600	1860	2310	2095
EVO-120R	600	2010	2460	2245
EVO-150R	600	2260	2710	2495

Fig. 1

2.1 Unit insulation

The outside and exhaust air ductwork should be insulated sufficiently.

If the unit is to be used in outdoor, make sure that the necessary equipment is installed. (weather roof and outdoor spigot, optional)

2.2 Installation

EVO-R has easily adjustable stays. (Fig. 2) First of all, make sure that there is enough space for the device servicing. Therefore, the device must be assembled after the dimensions have been identified.

ATTENTION ⚠ ⚠ **Make sure that the device is placed on a flat surface before any assembly work.**

Fig. 2

2.3 Flange connection / adapter pieces

EVO-R flange connection diameters are shown below (Fig.3)

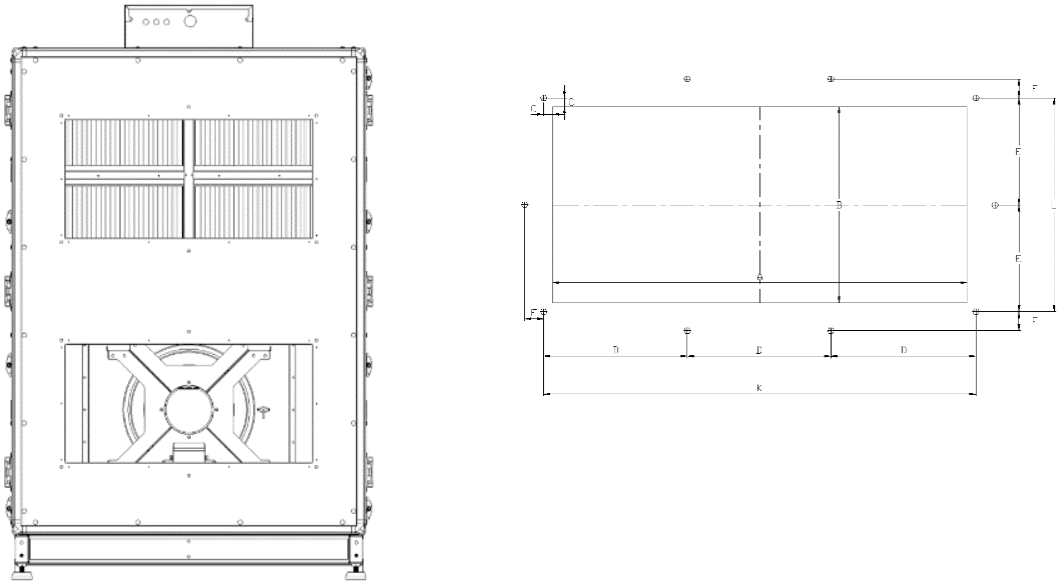


Fig. 3

Model	Dimensions (mm)									
	A	B	C	n	D	m	E	F	K	L
EVO-15R	350	310	14,14	0	-	0	-	-	378,28	338,28
EVO-20R	470	310	14,14	0	-	0	-	-	498,28	338,28
EVO-30R	580	410	14,14	1	304,1	0	-	30	608,28	438,28
EVO-50R	855	410	14,14	1	441,6	0	-	30	883,28	438,28
EVO-60R	855	410	14,14	1	441,6	0	-	30	883,28	438,28
EVO-80R	1055	410	14,14	2	361,1	0	-	30	1083,28	438,28
EVO-95R	1200	410	14,14	2	409,4	0	-	30	1228,28	438,28
EVO-120R	1475	510	14,14	2	501,1	1	269,1	30	1503,28	538,28
EVO-150R	1600	710	14,14	3	407,1	1	369,1	30	1628,28	738,28
n : number of drill hole (horizontal) (Except corner holes)										
m : number of drill hole (vertical) (Except corner holes)										
Hole/Bolt dimension : M8X20										

2.5 Air ducting, Ventilation circuit

When designing the ductwork, use the shortest possible runs. Airtight connections and changeovers must be ensured for the best possible heat recovery. To avoid pressure losses, dirt build-up and noise, use smooth ducts (plastic or rigid ducting). If supply and extract air ductworks run through unheated rooms, insulation must be provided to reduce heat losses. Fresh air should be supplied to living and bedrooms and extraction should take place in bathrooms, toilets and kitchens. The installation of extractor hoods to the system is not permitted (reasons: dirt, fire danger, hygiene).

ATTENTION ⚠ **All fire and building regulations must be observed!**

2.6 Electrical Connection

WARNING ⚠ **The unit must be fully isolated from the mains power supply before any maintenance and installation work or before opening the enclosure! The electrical connection must only be carried out by an authorised qualified electrician in accordance with the following wiring diagrams. The electrical connection must be fully isolated from the mains power supply until the assembly is complete!**

The unit is equipped with a main switch and an isolator which can be secured against unauthorized switching with a U-lock. The relevant standards, safety regulations (e.g. DIN VDE 0100) and the technical connection conditions of the local electricity supply companies must be observed. An all-pole mains switch / isolator, with a contact opening of at least 3 mm (VDE 0700 T1 7.12.2 / EN 60335-1) must be provided. The main switch and/or isolator can be secured against unauthorized switching with a U-lock.

The surface-mounted controller with touchscreen is connected to the unit by means of a 5 m connecting cable (also available in 10 or 20 m length). The electrical connection of the EVO-R takes place directly in the terminal box. If any electronic accessory is added the unit, the electrical connections must be made in the terminal box.

CHAPTER 3

FUNCTIONAL DESCRIPTION

3.0 Unit overview

-Non-dividable unit (EVO-15R, EVO-20R, EVO-30R) (Fig. 4)

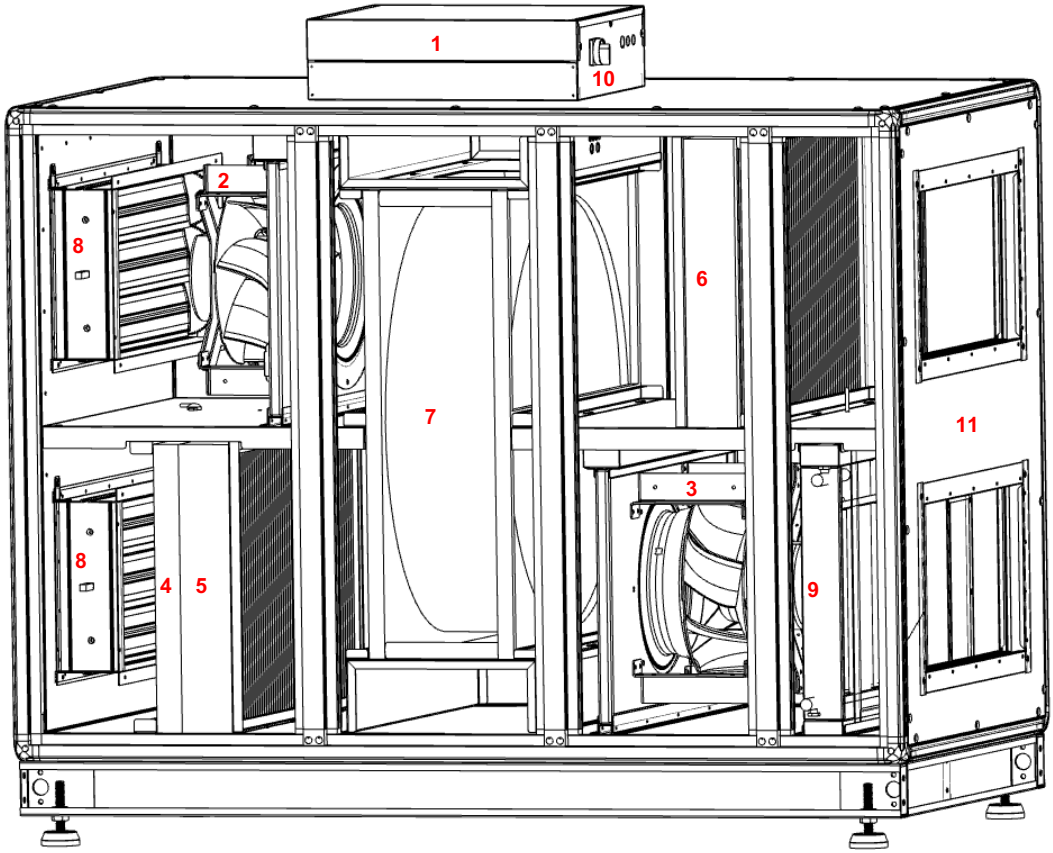


Fig. 4

1. Terminal box

2. Exhaust air fan

3. Supply air fan

4. Outdoor air pre-filter (ePM10 50%) (optional)

5. Extract air filter (ePM10 50%)

6. Outdoor air main filter (ePM1 55%)

7. Rotary heat exchanger

8. Outdoor damper (optional)

9. Water heater coil or electrical after heater (optional)

10. Main switch

11. Casing

-Dividable unit (EVO-50R, EVO-60R, EVO-80R, EVO-95R, EVO-120R, EVO-150R) (Fig. 5)

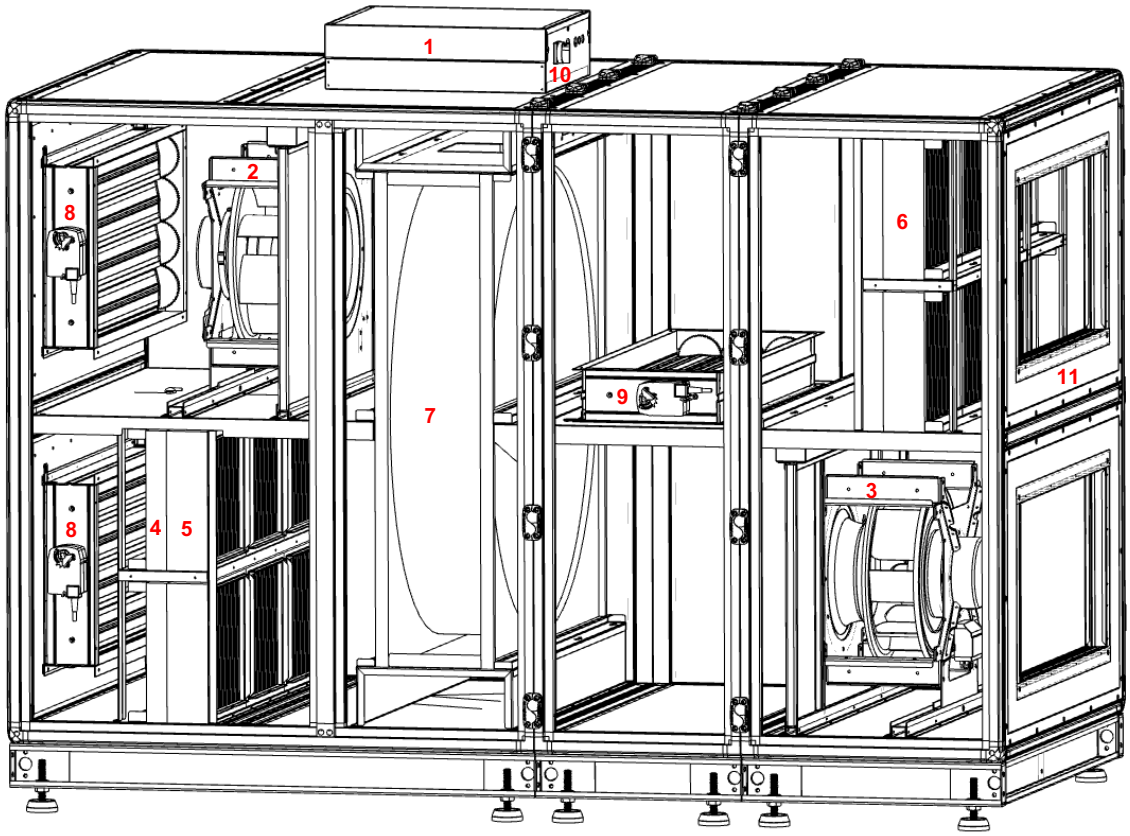


Fig. 5

1. Terminal box

2. Exhaust air fan

3. Supply air fan

4. Outdoor air pre-filter (ePM10 50%) (optional)

5. Extract air filter (ePM10 50%)

6. Outdoor air main filter (ePM1 55%)

7. Rotary heat exchanger

8. Outdoor damper (optional)

9. Recirculation damper (optional)

10. Main switch

11. Casing

CHAPTER 4

DIMENSIONS

PERFORMANCE CURVE

4.0 Dimensions

-Non-dividable unit (EVO-15R, EVO-20R, EVO-30R) (Fig. 6)

MODEL	A	B	C	D	E	F	K	L	M	N	X	Y
	Dimensions (mm) (Fig. 6)											
EVO-15R	1295	990	155	1700	760	910	205	360	415	520	350	310
EVO-20R	1400	1090	155	1700	860	1010	205	360	415	520	470	310
EVO-30R	1500	1200	155	1700	970	1120	205	360	415	520	580	410

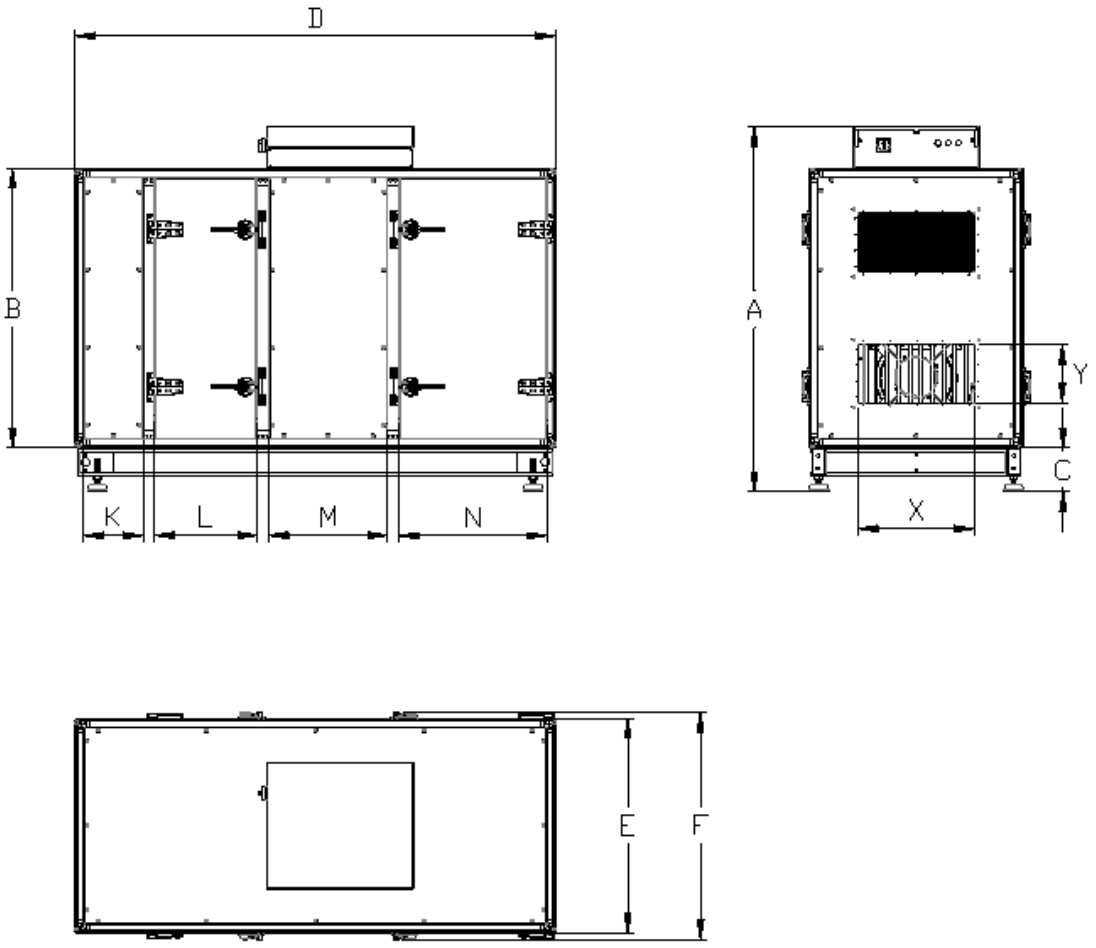


Fig. 6

MODEL	AA	BB	CC	DD	EE	FF	GG	HH
	Dimensions (mm) (Fig. 7)							
EVO 15-R	680	568	472	93,5	150	463,2	263,4	380
EVO 20-R	670	568	472	143,5	150	514,2	286,4	430
EVO 30-R	680	568	472	193,5	150	573,2	313,4	485

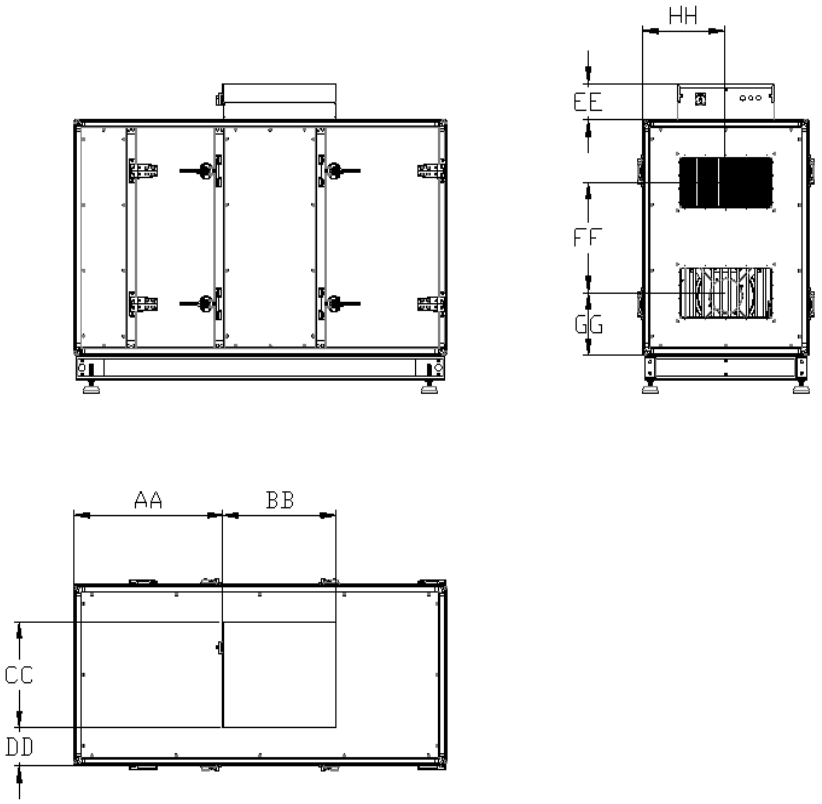


Fig.7

-Dividable unit (EVO-50R, EVO-60R, EVO-80R, EVO-95R, EVO-120R, EVO-150R) (Fig. 8)

MODEL	A	B	C	D	E	F	K	M	P	R	S	X	Y
	Dimensions (mm)												
EVO-50R	1775	1470	155	1845	1240	1390	610	1230	555	440	690	855	410
EVO-60R	1895	1590	155	2015	1360	1510	680	1330	625	480	748	855	410
EVO-80R	2145	1840	155	2100	1610	1760	750	1350	-	-	-	1055	410
EVO-95R	2245	1940	155	2315	1710	1860	830	1480	775	605	775	1200	410
EVO-120R	2400	2090	155	2450	1860	2010	895	1550	840	605	845	1475	510
EVO-150R	2645	2340	155	2535	2110	2260	940	1590	890	620	870	1600	710

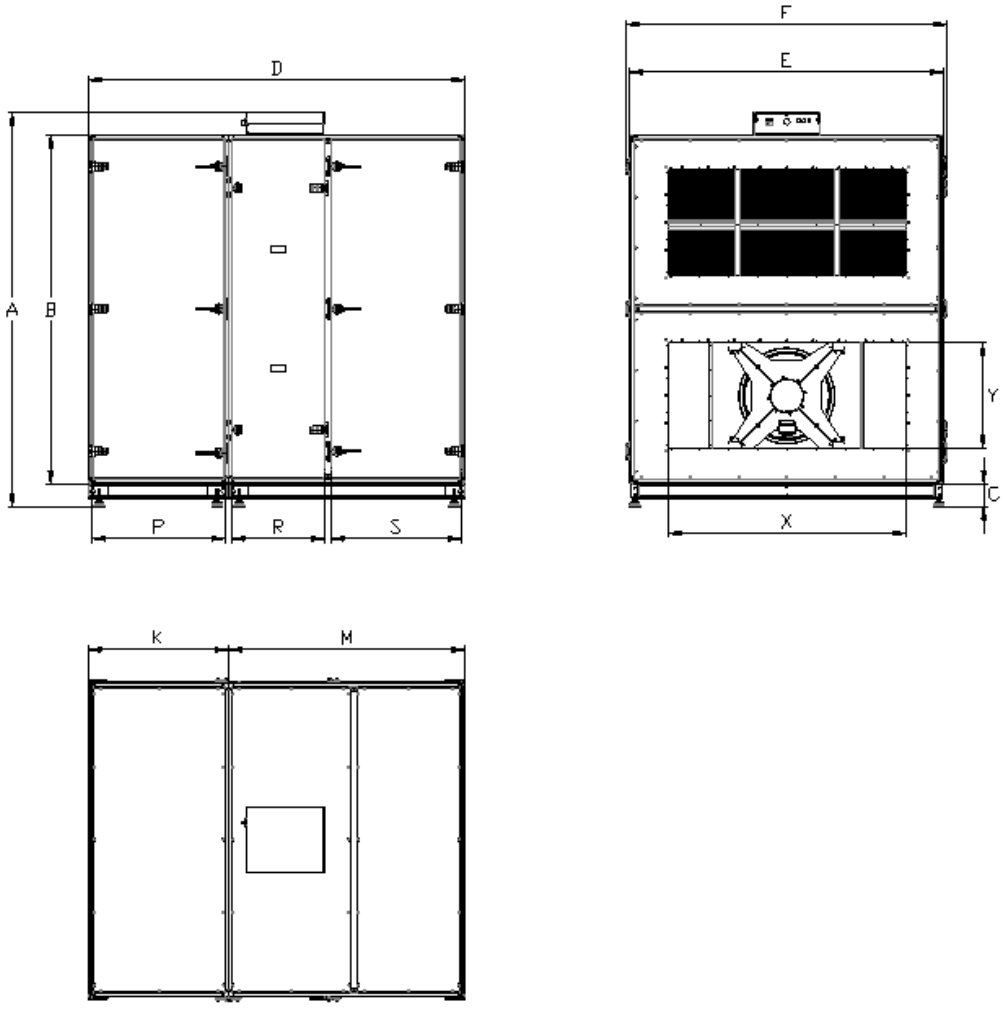


Fig. 8

MODEL	AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	LL	MM
	Dimensions (mm) (Fig. 9)											
EVO 50-R	150	45	568	615	472	366,5	620	725	372,5	59,6	130,4	106
EVO 60-R	150	125	568	690	472	446,5	680	785	402,5	179,6	130,4	106
EVO 80-R	150	---	568	---	472	---	805	---	---	429,6	130,4	106
EVO 95-R	150	125	568	840	472	616,5	855	960	490,5	529,6	130,4	106
EVO 120-R	150	125	568	910	472	696,5	930	1035	527,5	679,6	130,4	106
EVO 150-R	150	125	568	950	472	816,5	1055	1160	589,5	929,6	130,4	106

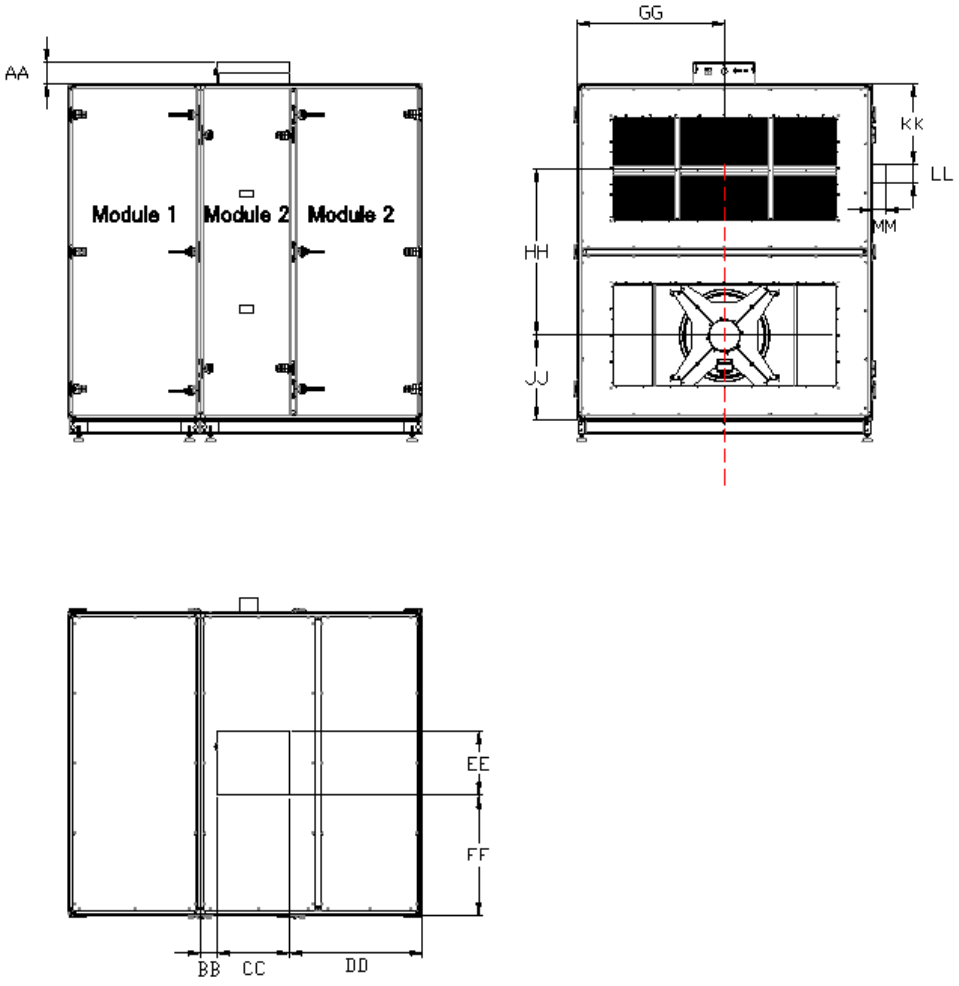
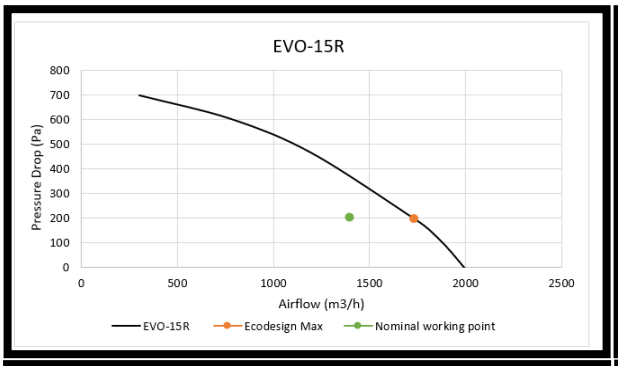
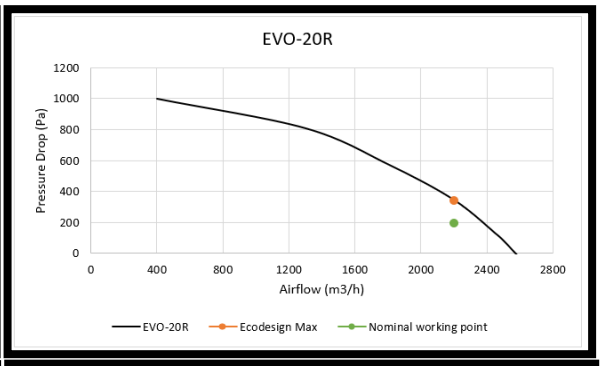
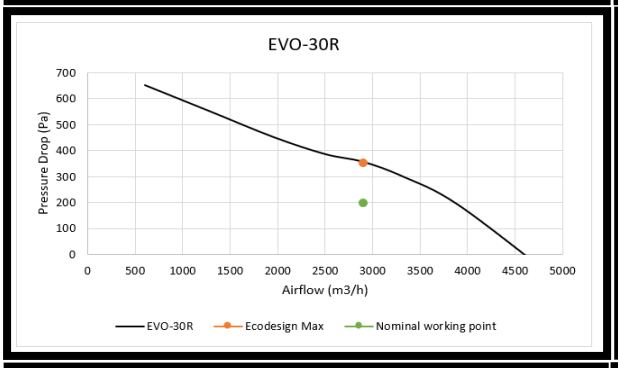


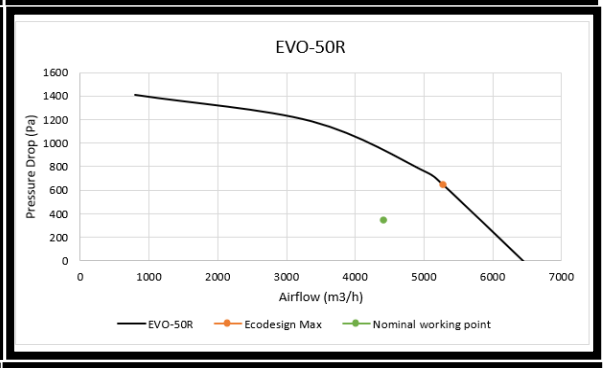
Fig. 9

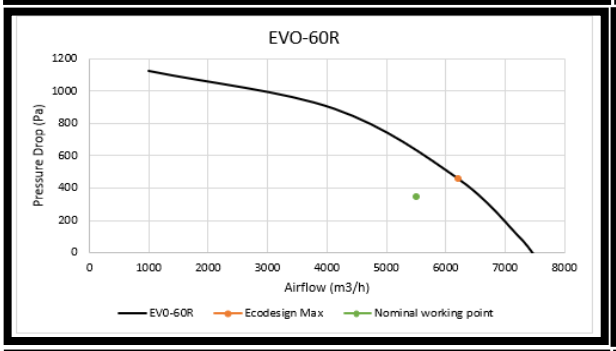
4.1 Performance curve

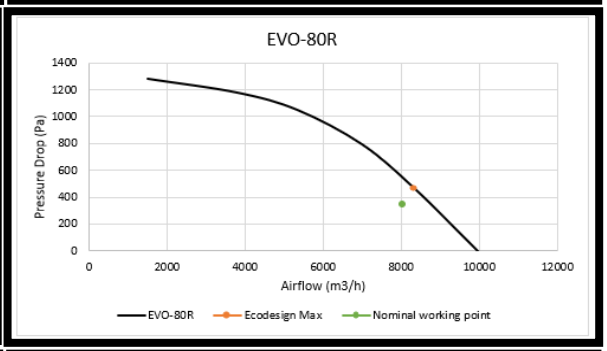


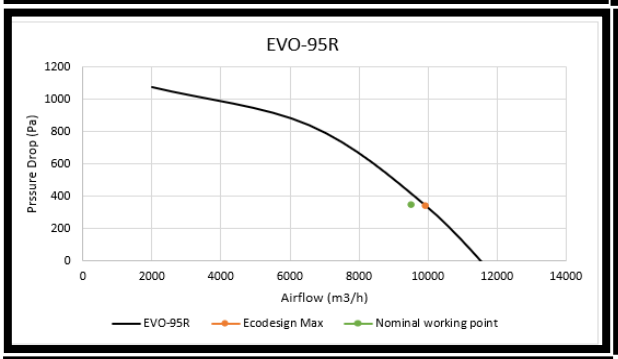


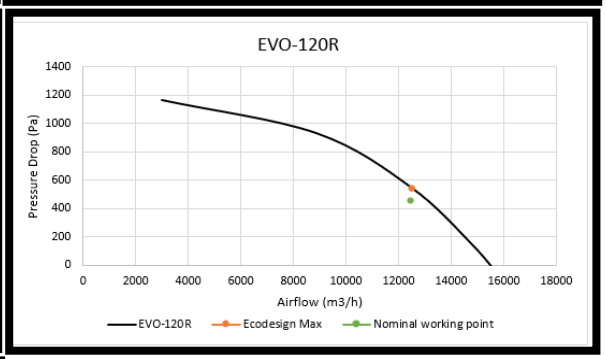


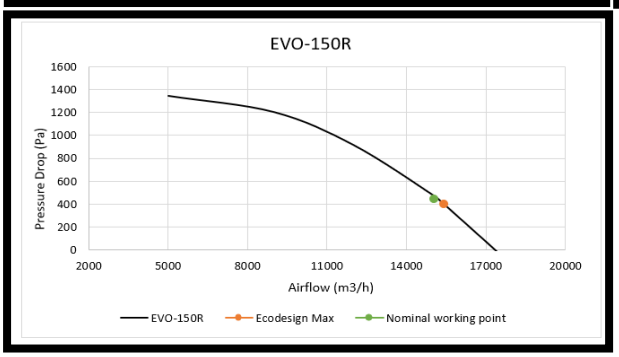












CHAPTER 5

SERVICE AND MAINTENANCE

5.0 Service and maintenance

The filter change is usually carried out by the user. Additional cleaning and maintenance work must only be carried out by qualified electricians.

The EVO-R unit must be fully isolated from the power supply and secured against reactivation with the main isolator switch located on top of the unit before any cleaning and maintenance work.
Danger of electric shock, moving parts (fan) and hot surfaces.

5.1 Service and maintenance of rotary heat exchanger

⚠ **Make sure that the power connection is disconnected before doing any work on the device. Danger of electric shock; moving parts (fan) and hot surfaces.**

Maintenance is restricted to regular visual inspections. Inspections should be initially carried out about every 3 months and then after trouble-free operation can be extended to 12 months. The following must be checked:

- Tension of drive belt
- Quality of bearings (assess by bearing noise)
- Function of slide seal
- Condition of casing

⚠ **RISK OF INJURY! High weight! Two people are required for dismantling! (EVO-15R, EVO-20R)**
⚠ **Use forklift to transport the heat exchanger on the EVO-30R, EVO-50R, EVO-60R, EVO-80R, EVO-95R, EVO-120R, EVO-150R models**

Unit	Rotary heat exchanger weight (kg)
EVO-15R	38
EVO-20R	45
EVO-30R	51
EVO-50R	76
EVO-60R	104
EVO-80R	136
EVO-95R	152
EVO-120R	177
EVO-150R	218

1. Unscrew the screws of the device service cover and open (Fig. 10)

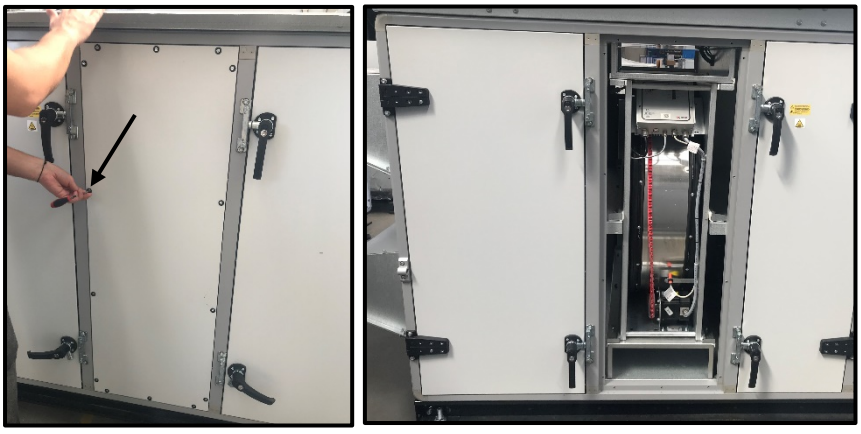


Fig. 10

2. Remove the exhaust fan to disconnected the electrical connections easily. (6.3 Service and maintenance of the fan)

3. Unplug the electrical connections on the varimax drive unit (Fig. 11)

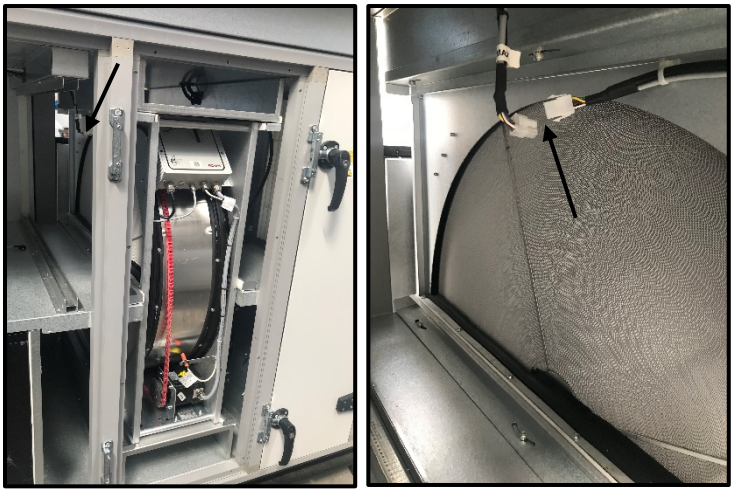


Fig. 11

3. Pull lock-bars for unlock heat exchanger (Fig. 12)

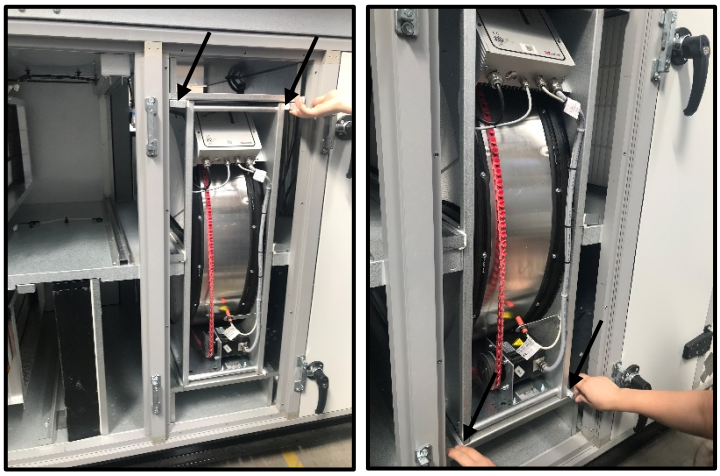


Fig. 12

4. Pull the heat exchanger to remove (Fig. 13)

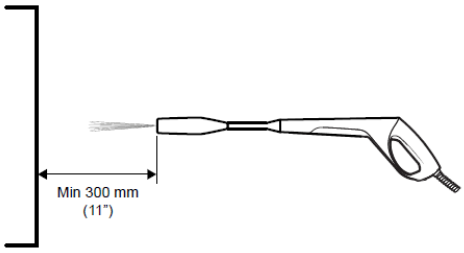
Fig. 13

Cleaning

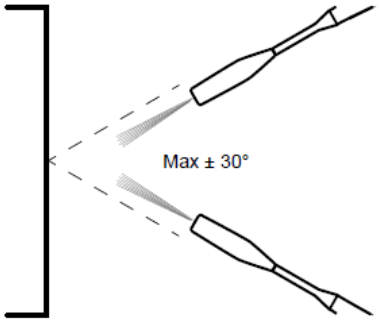
The cleaning process consists of three steps. First, rinse the heat exchanger with water using a high pressure cleaner to remove dust, particles, deposits etc. Then, use detergent to clean the heat exchanger. As a third step, remove the detergent with water. Make sure that the nozzle of the high pressure cleaner is adjusted to a plain jet.

Rotary Heat Exchanger Cleaning Procedure:

1. Place the nozzle at a distance of approximate 300 mm (11”) from the heat exchanger



2. Have the nozzle adjusted to plane jet.
3. Vary the spray angle between + 30 and - 30 degrees from the openings at a distance of 300 mm (11.81”) from the entrance



4. Spray the whole wheel. Don’t forget to rotate the wheel in order to clean the parts hidden behind the framework.
5. Let the heat exchanger air-dry.
6. Spray the heat exchanger with detergent with a low pressure sprayer.
7. Repeat point 1-5 in order to remove all detergent.

5.2 Filter change

⚠ **Make sure that the power connection is disconnected before doing any work on the device.**
Danger of electric shock; moving parts (fan) and hot surfaces.

1. Unlock the lock and turn the handles counter clock-wise direction for opening doors. (Fig. 14)

Fig. 14

2. Pull lock-bars for unlock filter and remove from slides (Fig. 15)

Fig. 15

The EVO-R compact unit is equipped with ePM1 55% (F7) class filter on the outdoor air side and ePM10 50% (M5) class filter on the extract air side as standard.

Outside/extract air:

EVO-15R Extract air filter	ELF-EVO-15R/ePM10 50% - M5/96
EVO-15R Outdoor air filter	ELF-EVO-15R/ePM1 55% - F7/96
EVO-20R Extract air filter	ELF-EVO-20R/ePM10 50%- M5/96
EVO-20R Outdoor air filter	ELF-EVO-20R/ePM1 55% - F7/96
EVO-30R Extract air filter	ELF-EVO-30R/ePM10 50% - M5/96
EVO-30R Outdoor air filter	ELF-EVO-30R/ePM1 55% - F7/96
EVO-50R Extract air filter	ELF-EVO-50R/ePM10 50% - M5/96
EVO-50R Outdoor air filter	ELF-EVO-50R/ePM1 55% - F7/96
EVO-60R Extract air filter	ELF-EVO-60R/ePM10 50% - M5/96
EVO-60R Outdoor air filter	ELF-EVO-60R/ePM1 55% - F7/96
EVO-80R Extract air filter	ELF-EVO-80R/ePM10 50% - M5/96
EVO-80R Outdoor air filter	ELF-EVO-80R/ePM1 55% - F7/96
EVO-95R Extract air filter	ELF-EVO-95R/ePM10 50% - M5/96
EVO-95R Outdoor air filter	ELF-EVO-95R/ePM1 55% - F7/96
EVO-120R Extract air filter	ELF-EVO-120R/ePM10 50% - M5//96
EVO-120R Outdoor air filter	ELF-EVO-120R/ePM1 55% - F7/96
EVO-150R Extract air filter	ELF-EVO-150R/ePM10 50% - M5/96
EVO-150R Outdoor air filter	ELF-EVO-150R/ePM1 55% - F7/96

The filters must be regularly checked (see controller display factory setting every 6 months) for degree of soiling (danger of mould formation). They must be exchanged for hygiene reasons through one-off extraction or after one year of operation at the latest. If the filters are damp or mouldy, they must be exchanged immediately.

Replacement air filters are also available online at **www.ersatzluftfilter.de**

5.3 Service and maintenance of the fan

WARNING ⚠ **RISK OF INJURY! Make sure that the power connection is disconnected, and fan is not moving before doing any work on the device**

⚠ Danger of electric shock; moving parts (fan) and hot surface.

⚠ Be careful during service and maintenance as the fans are heavy.

1. Unlock the lock and turn the handles counter clock-wise direction for opening doors. (Fig. 16)

Fig. 16

2. Unplug the power connector on the fan (Fig. 17)

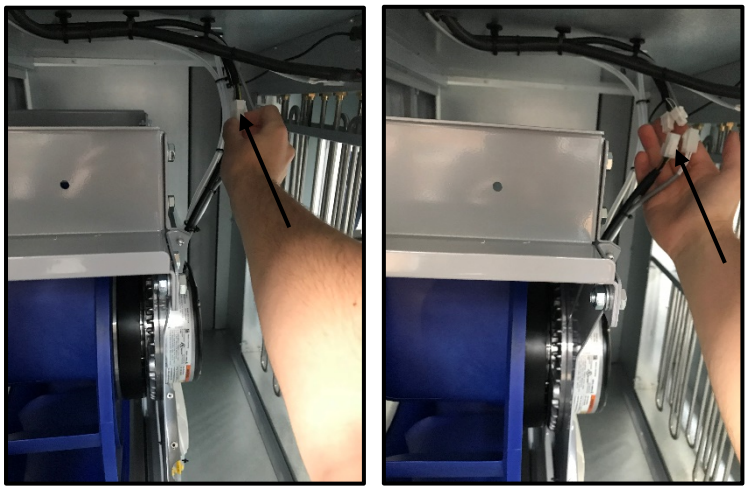


Fig. 17

3. Remove the fan pressure hoses from pressure transmitter. (Fig. 18, Fig. 19)

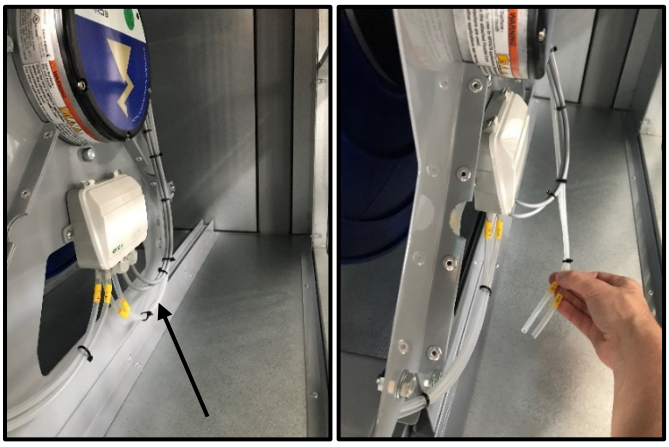


Fig. 18

Fig. 19

4. Remove the fan slowly and carefully (Fig. 20)

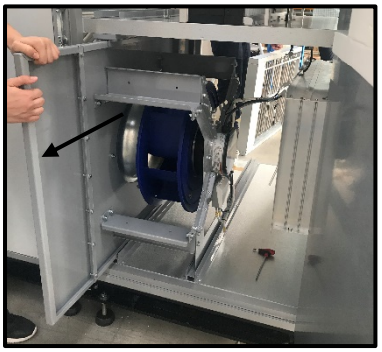


Fig. 20

⚠ **Be careful to electrical connections when installing the fans back into**

5.4 Module assembly

WARNING ⚠ RISK OF INJURY! Make sure that the power connection is disconnected, and fan is not moving before doing any work on the device

1. Bring modules closer together and tighten the bolt (Fig. 21)

Fig. 21

2. Plug the electrical connections (Fig. 22)

Fig. 22

5.5 Terminal box with isolator/main switch

The terminal box is connected to the top of the casing ensures free access to the electronic component.

CHAPTER 6

Installation, service and maintenance of accessories

6.1 Accessory list

Accessories
Outdoor Air Filter ePM10 50% / M5 (48)
Outdoor Air Filter ePM1 80% / F9 (96)
Electrical Pre-Heater
Electrical After-Heater
Water After Heater Coil (Left-Right)
Cooling Coil (Left)
Cooling Coil (Right)
Cooling DX (Left)
Cooling DX (Right)
Outdoor Damper
Recirculation Damper
Duct Adapter
Flexible Connection
Sound Attenuator
Weather Roof
Weather Roof (REc)
Weather Roof pre heater electrical
Weather Roof after heater electrical
Weather Roof after heater ww (left-right)
Weather Roof cooling CW (left)
Weather Roof cooling CW (right)
Weather Roof cooling DX (left)
Weather Roof cooling DX (right)
Outdoor Air Spigot (Outdoor)
Exhaust Air Spigot (Outdoor)
Vibration Damper Pad
E3-DSP Display
ED-T7 Display
Presigo CAP-Modus
Heater E-Box for Outside Installation
Heater Siphon for Outside Installation
Signal Converter
Hydraulic Kit (WHSH)
HMI Connection Cable (10m or 20m)

6.2 Installation of accessories

6.2.1 Installation of electrical after heater

WARNING ⚠ RISK OF INJURY! Make sure that the power connection is disconnected, and fan is not moving before doing any work on the device.

⚠ Danger of electric shock; moving parts (fan) and hot surface.

1. Remove the service panel (Fig. 23) **(EVO-15R, EVO-20R, EVO-30R)**

Fig. 23

2. Place the electrical after heater (Fig. 24)

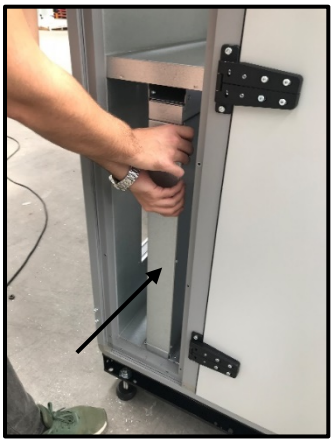


Fig. 24

3. Plug the electrical connections on the electrical heater (Fig. 25)

Fig. 25

6.2.2 Installation of outdoor air filter ePM10 50% (M5)

WARNING ⚠ RISK OF INJURY! Make sure that the power connection is disconnected, and fan is not moving before doing any work on the device.

⚠ Danger of electric shock; moving parts (fan) and hot surface.

1. Remove the filter lock. (Fig. 26)

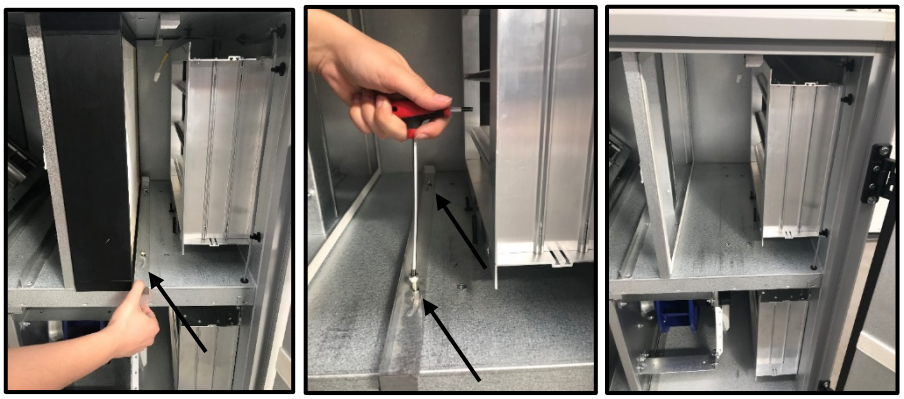


Fig. 26

2. Place the filter lock as shown below (Fig. 27)

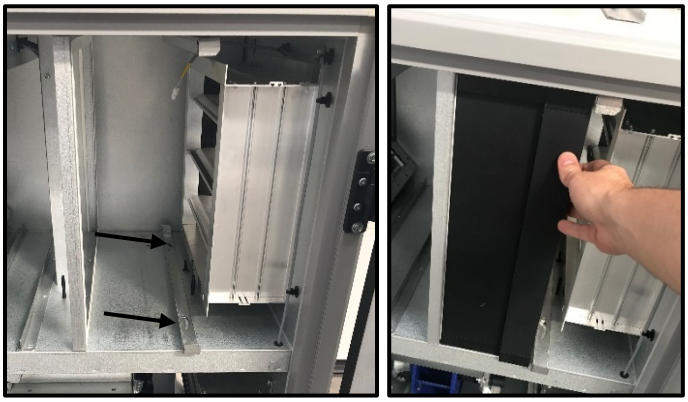


Fig. 27

6.2.3 Installation of recirculation damper

WARNING ⚠ **Make sure that the power connection is disconnected before doing any work on the device.**

1. Bring modules closer together (Fig. 28)

Fig. 28

2. Fasten the cables with cable tie and plug the electrical connections (Fig. 29)

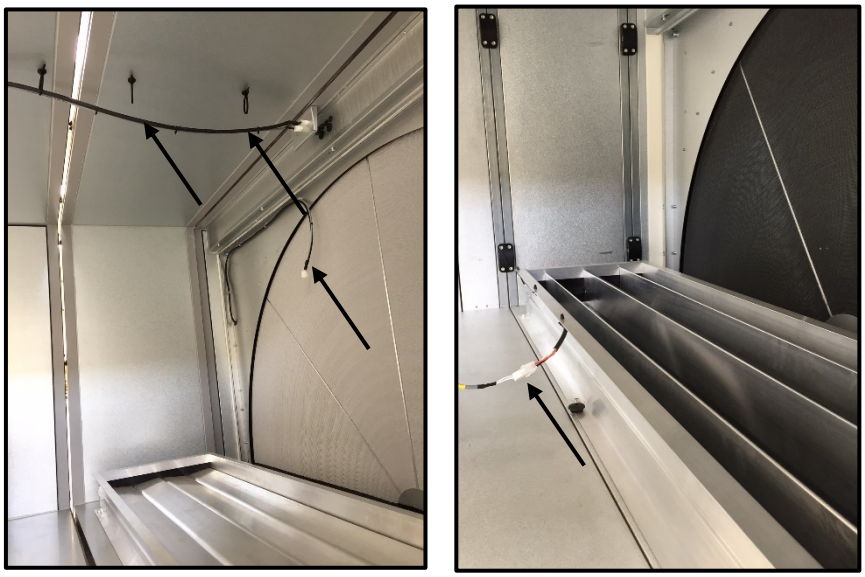


Fig. 29

3. Tighten the bolt (Fig. 30)

Fig. 30

6.2.4 Installation of outdoor damper

WARNING ⚠ **Make sure that the power connection is disconnected before doing any work on the device.**

⚠ **Before the damper installation, remove the filter and fan.**

1. Loosen the screw (Fig. 31)

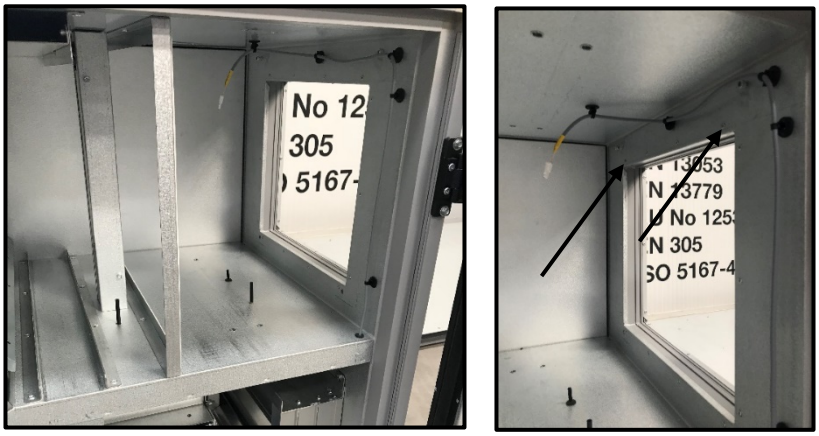


Fig. 31

2. Placed the damper from the ears to the bolts and tighten the bolts at the top and bottom of the damper. (Fig. 32)

Fig. 32

Fig. 33

3. Plug the electrical connections on the damper actuator (Fig. 34)

Fig. 34

6.2.5 Installation of condensate pump

Condensate water can be easily removed from the condensate tray. If the water needs to be raised to a certain height, a suitable pump should be used.

1. See figure 35 to determine the amount of condensate water in each EVO-R models (Fig. 35)

2. See figure 36 to check the pump working range. (Fig. 36)

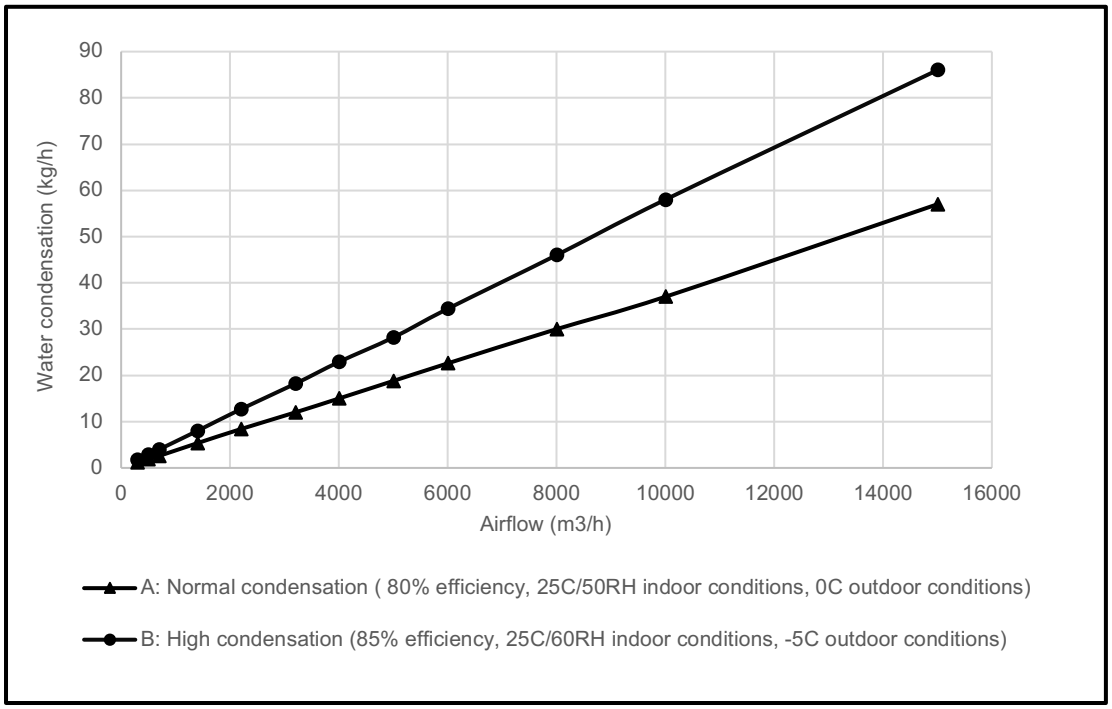


Fig. 35

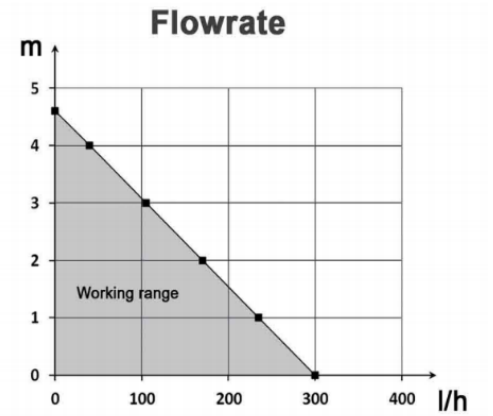


Fig. 36

6.2.6 Installation of water after heater

Make sure that the power connection is disconnected before doing any work on the device.

Make sure there is no hot water connection before doing any work on the device.

WARNING ⚠ ⚠ Danger of electric shock; moving parts (fan) and hot surfaces.

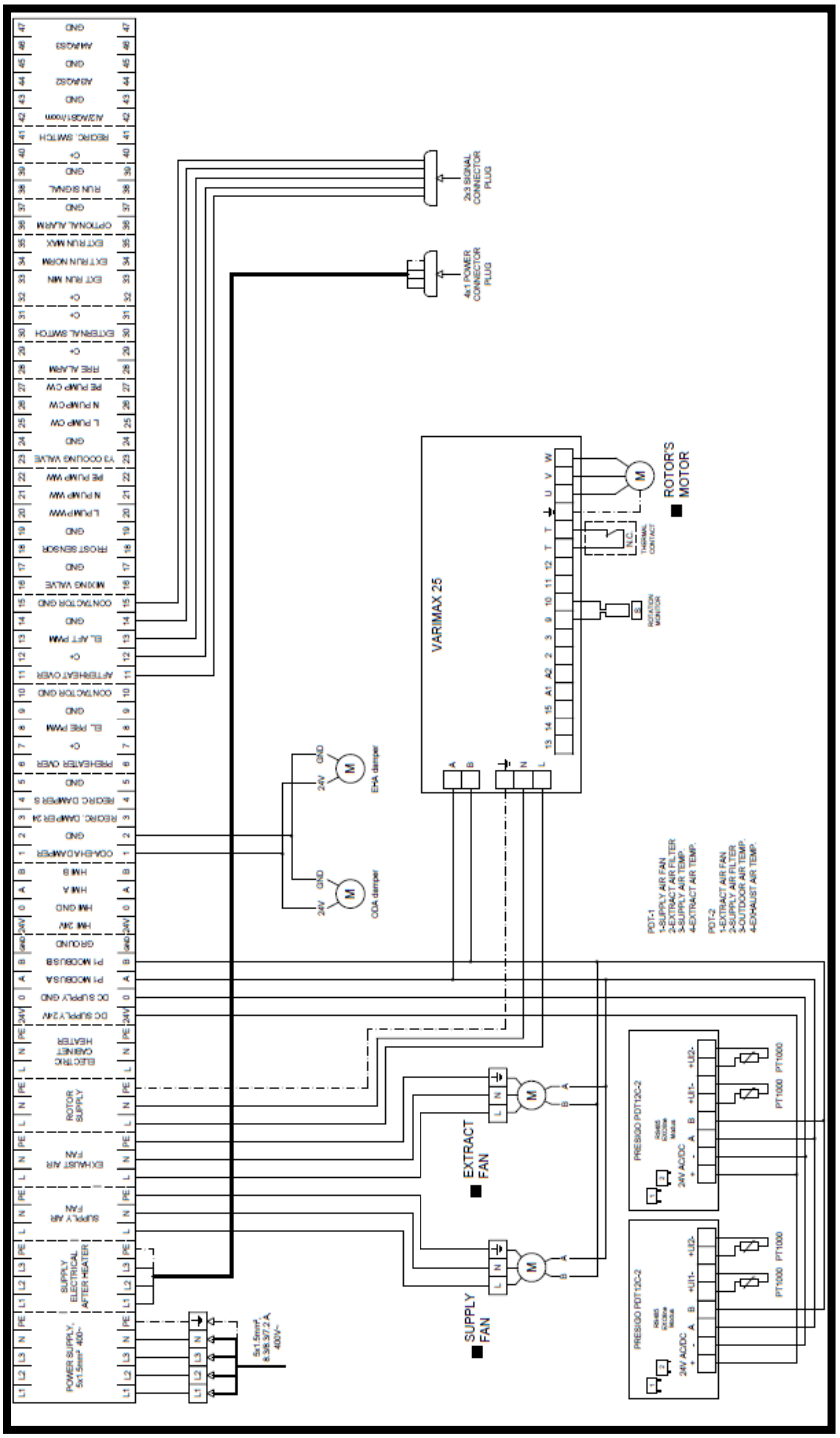
⚠ **Refer to the electrical diagrams for hot water coil signal connections.**

⚠ **Hot water coil inlet - outlet pipes should be insulated.**

CHAPTER 7

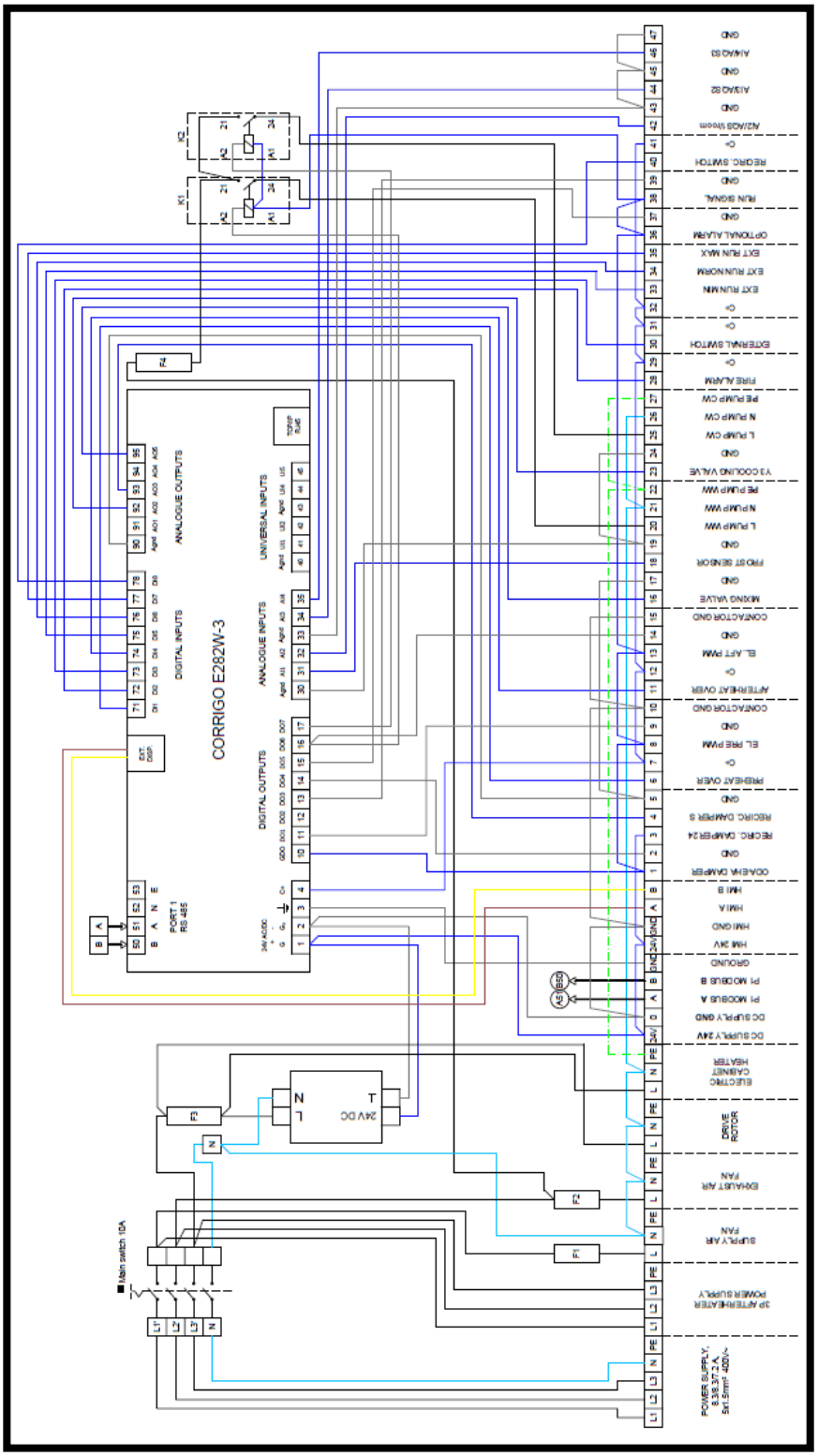
WIRING DIAGRAM OVERVIEW

7.1 EVO-15R Wiring Diagrams



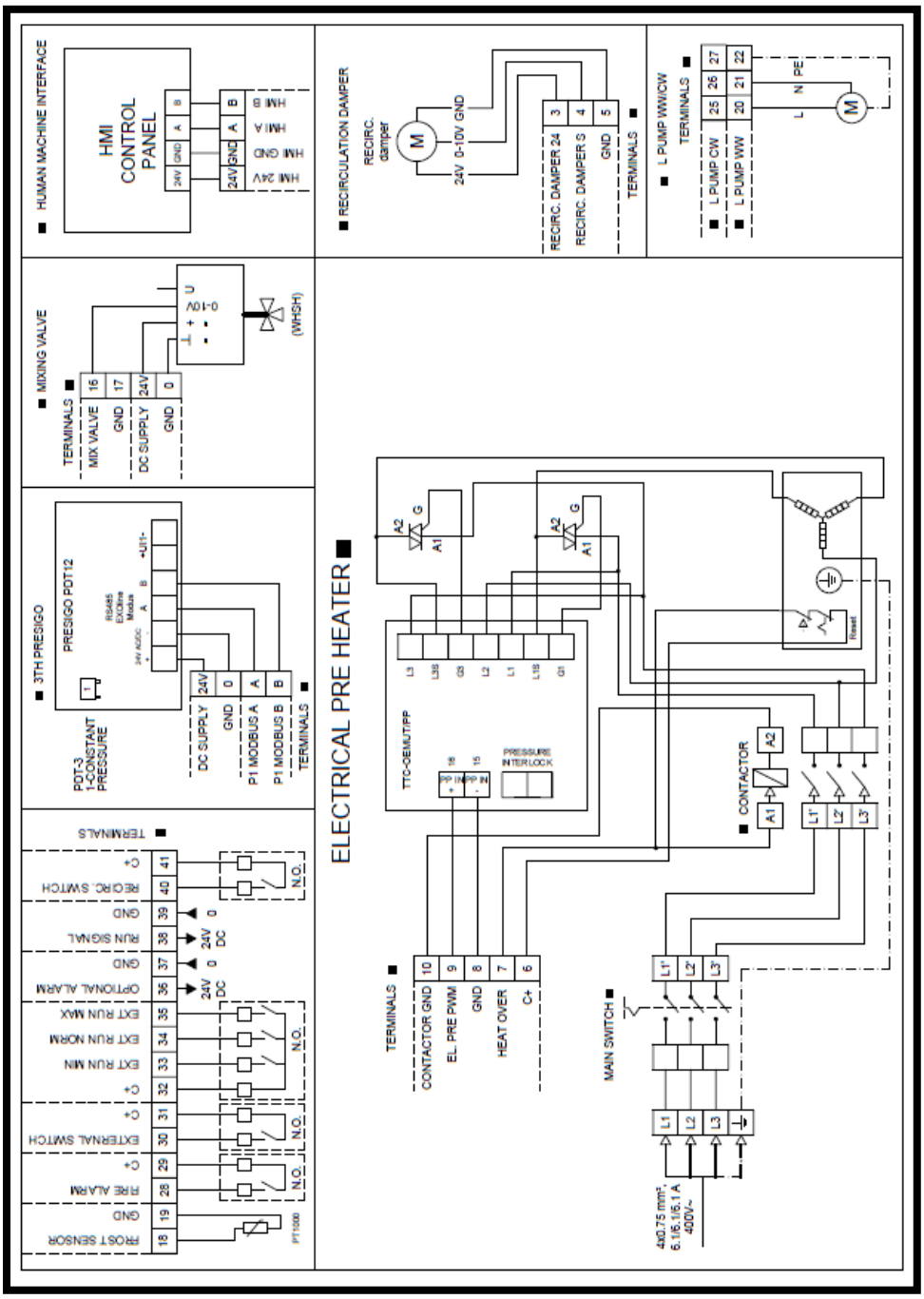
EVO-15R STANDART UNIT WIRING DIAGRAM

Fig. 37



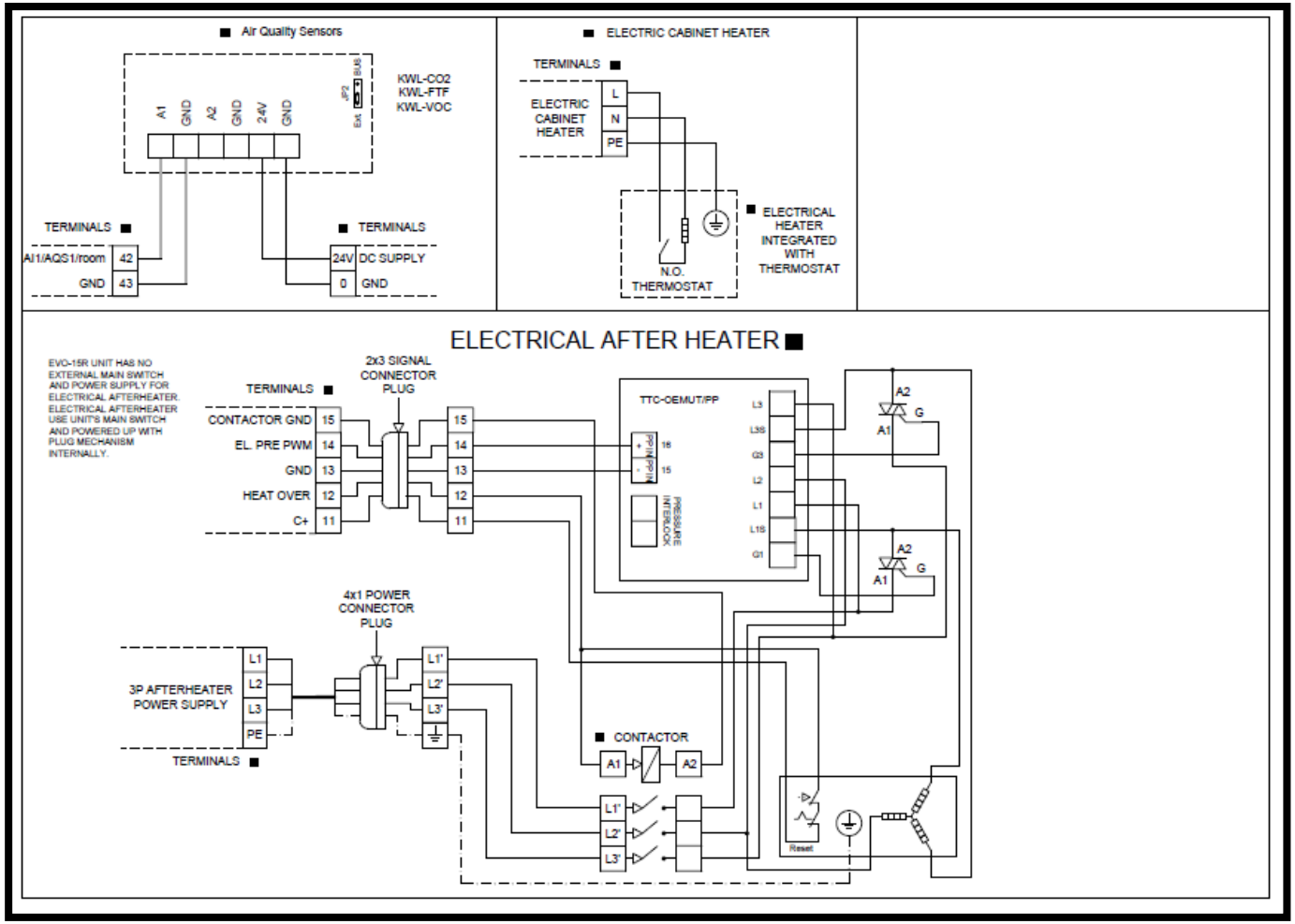
EVO-15R CONTROL PANEL DIAGRAM

Fig. 38



EVO-15R ACCESSORIES DIAGRAM 1

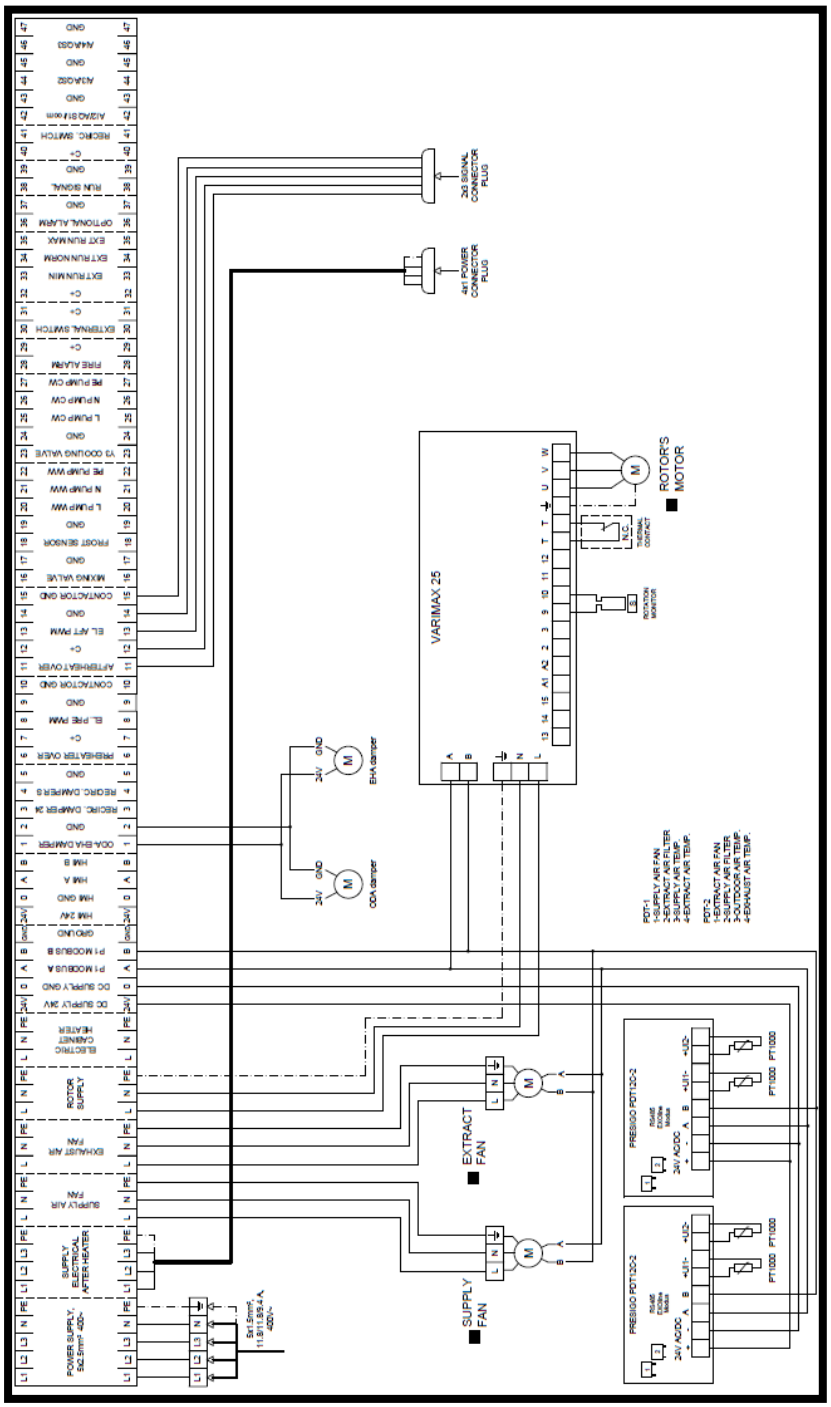
Fig. 39



EVO-15R ACCESSORIES DIAGRAM 2

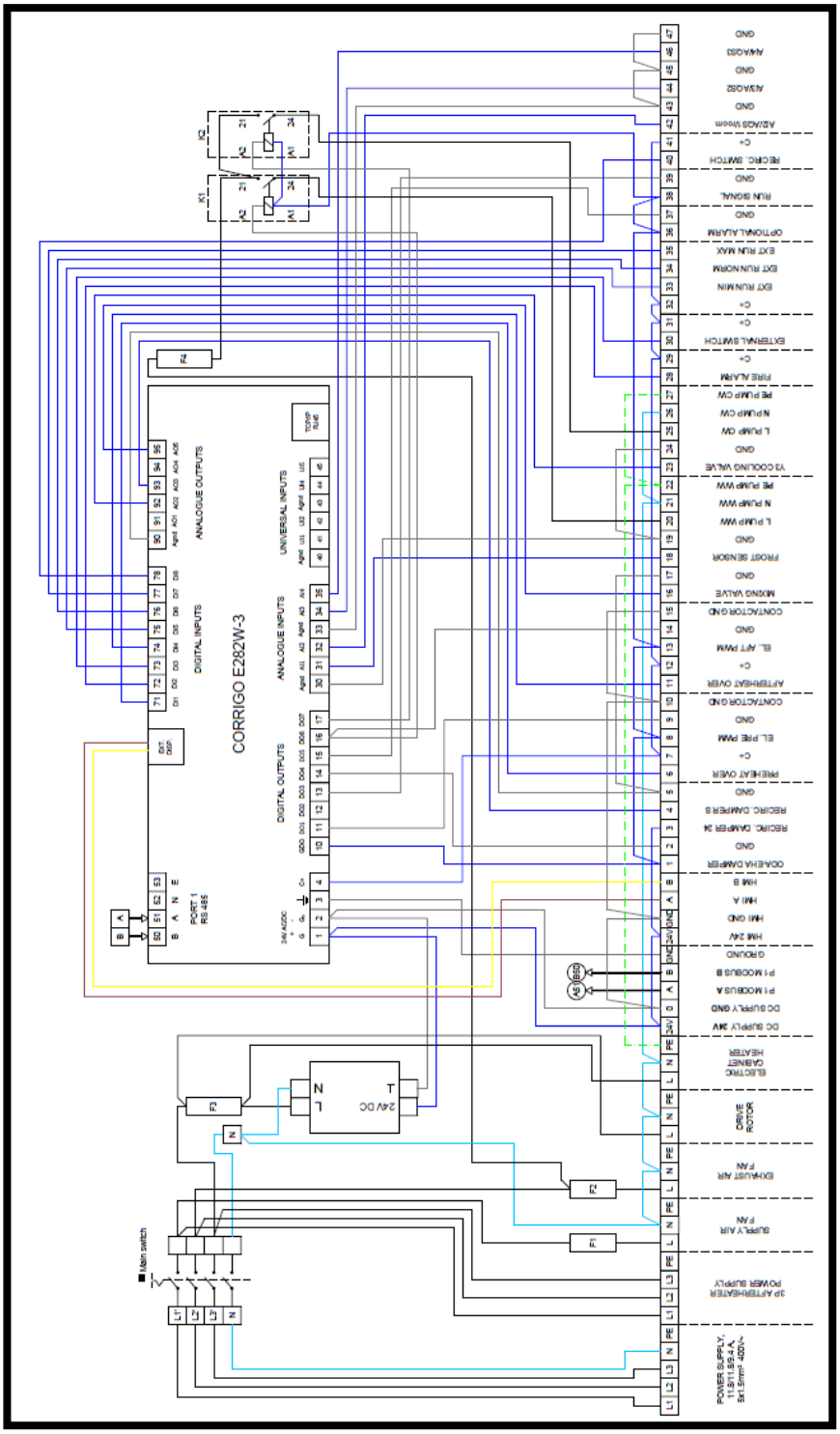
Fig. 40

7.2 EVO-20R Wiring Diagrams



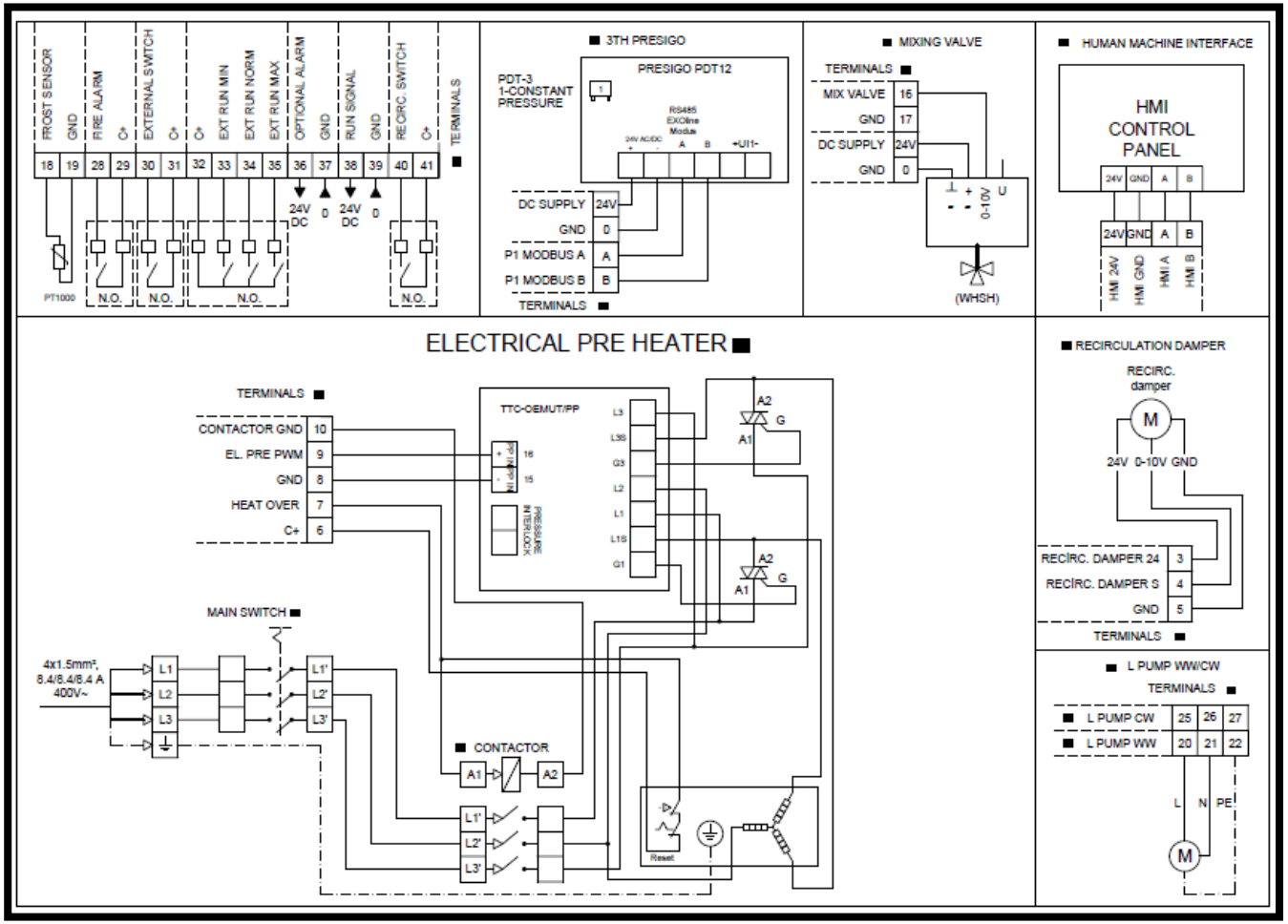
EVO-20R STANDART UNIT WIRING DIAGRAM

Fig. 41



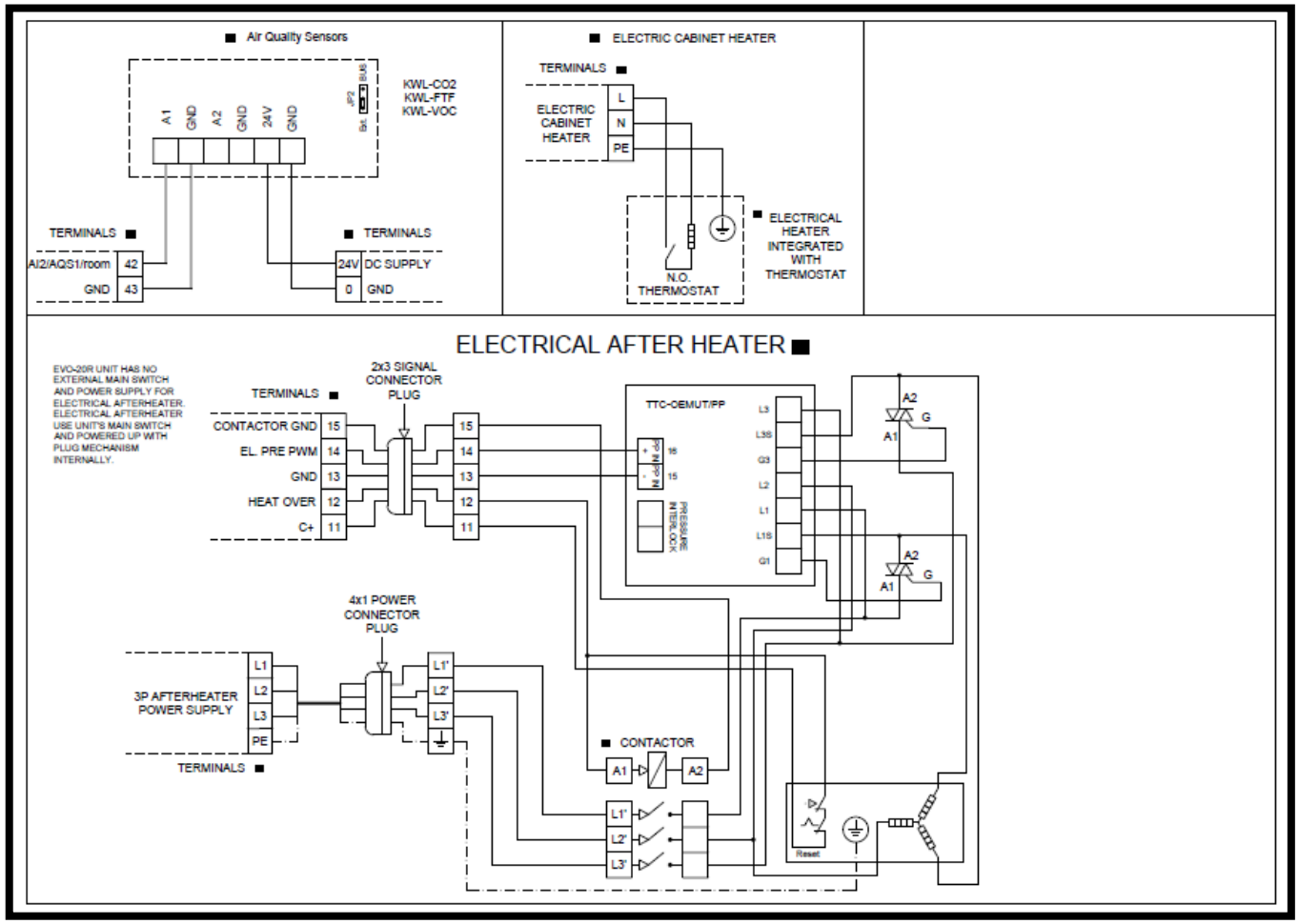
EVO-20R CONTROL PANEL DIAGRAM

Fig. 42



EVO-20R ACCESSORIES DIAGRAM 1

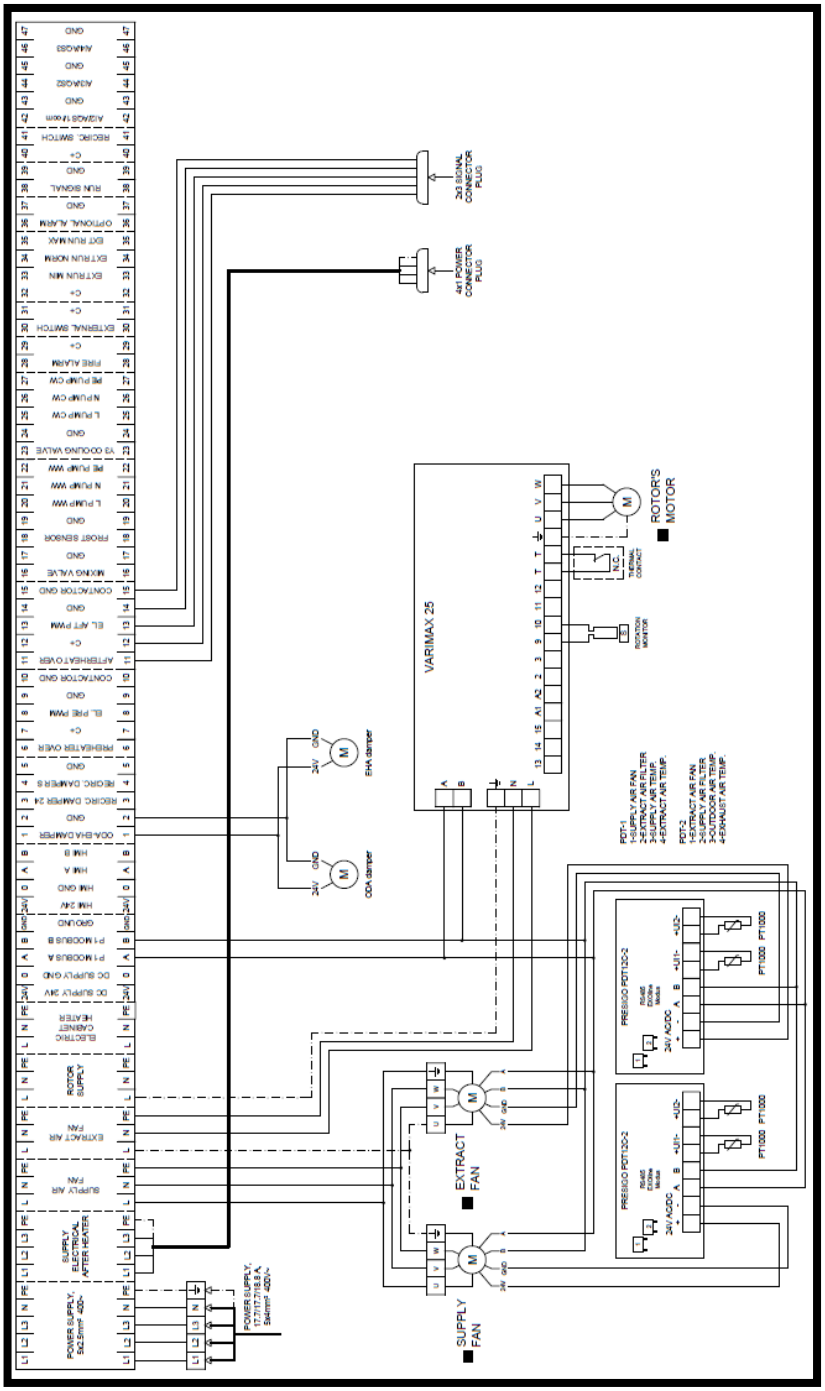
Fig. 43



EVO-20R ACCESSORIES DIAGRAM 2

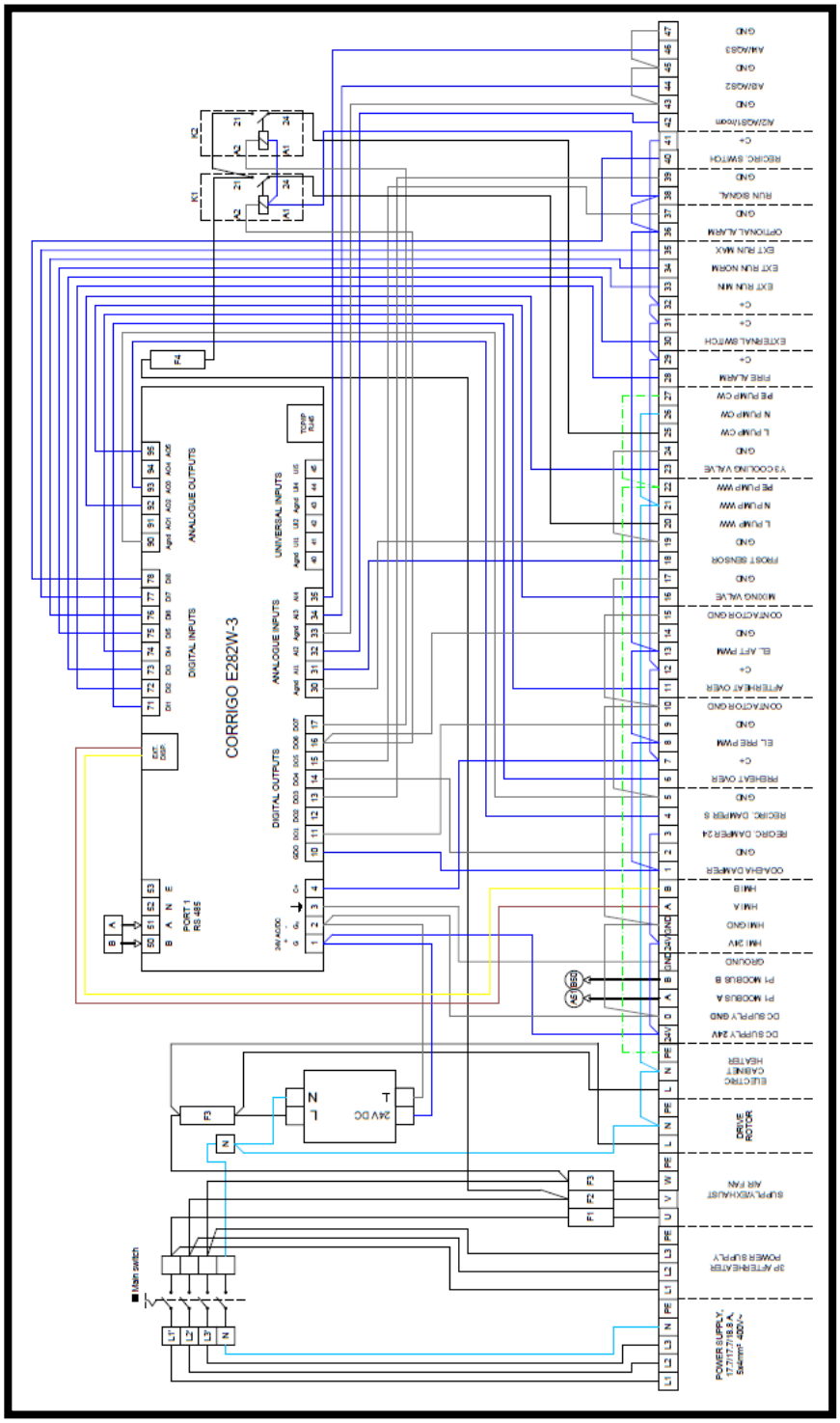
Fig. 44

7.3 EVO-30R Wiring Diagrams



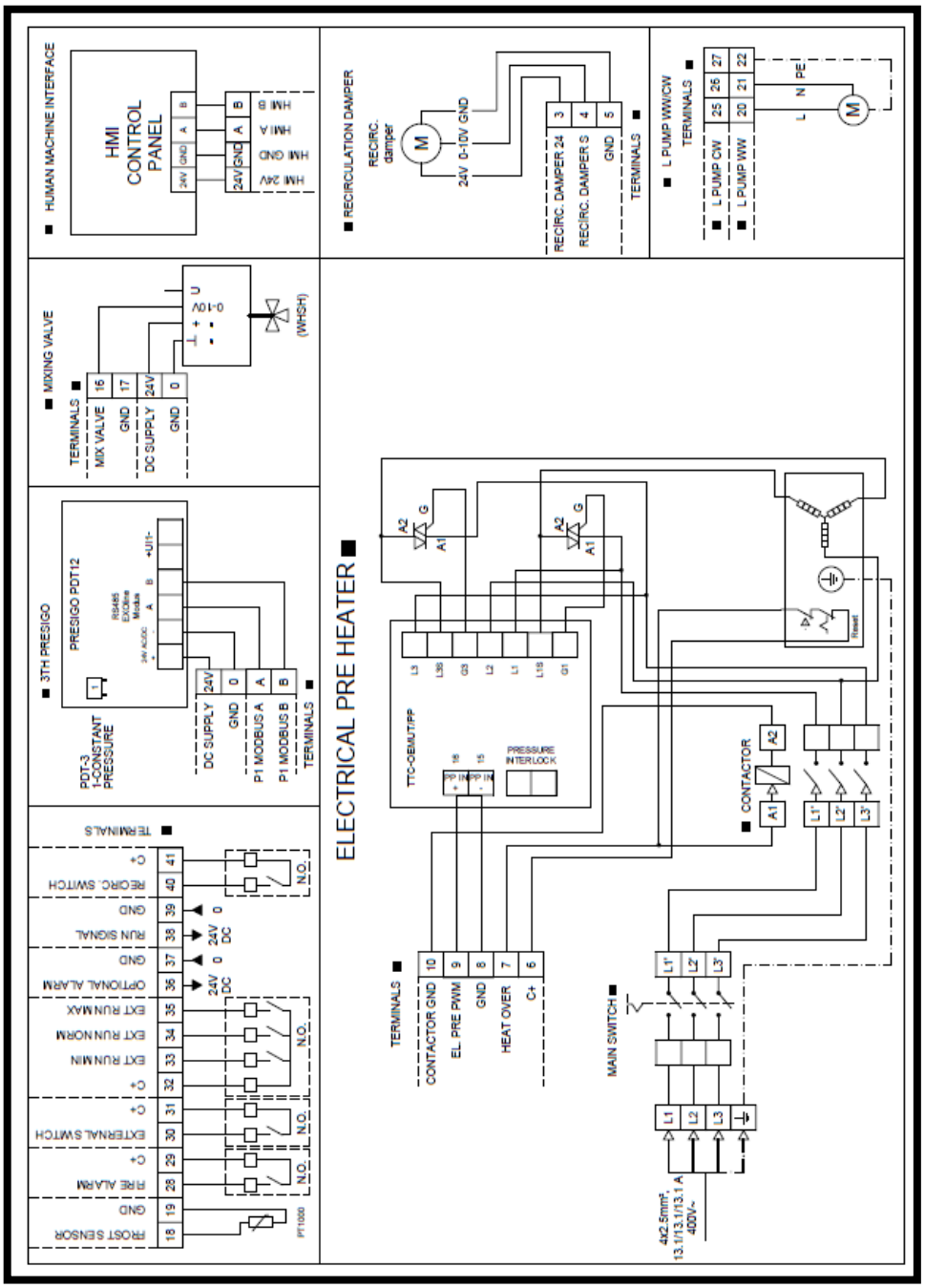
EVO-30R STANDART UNIT WIRING DIAGRAM

Fig. 45



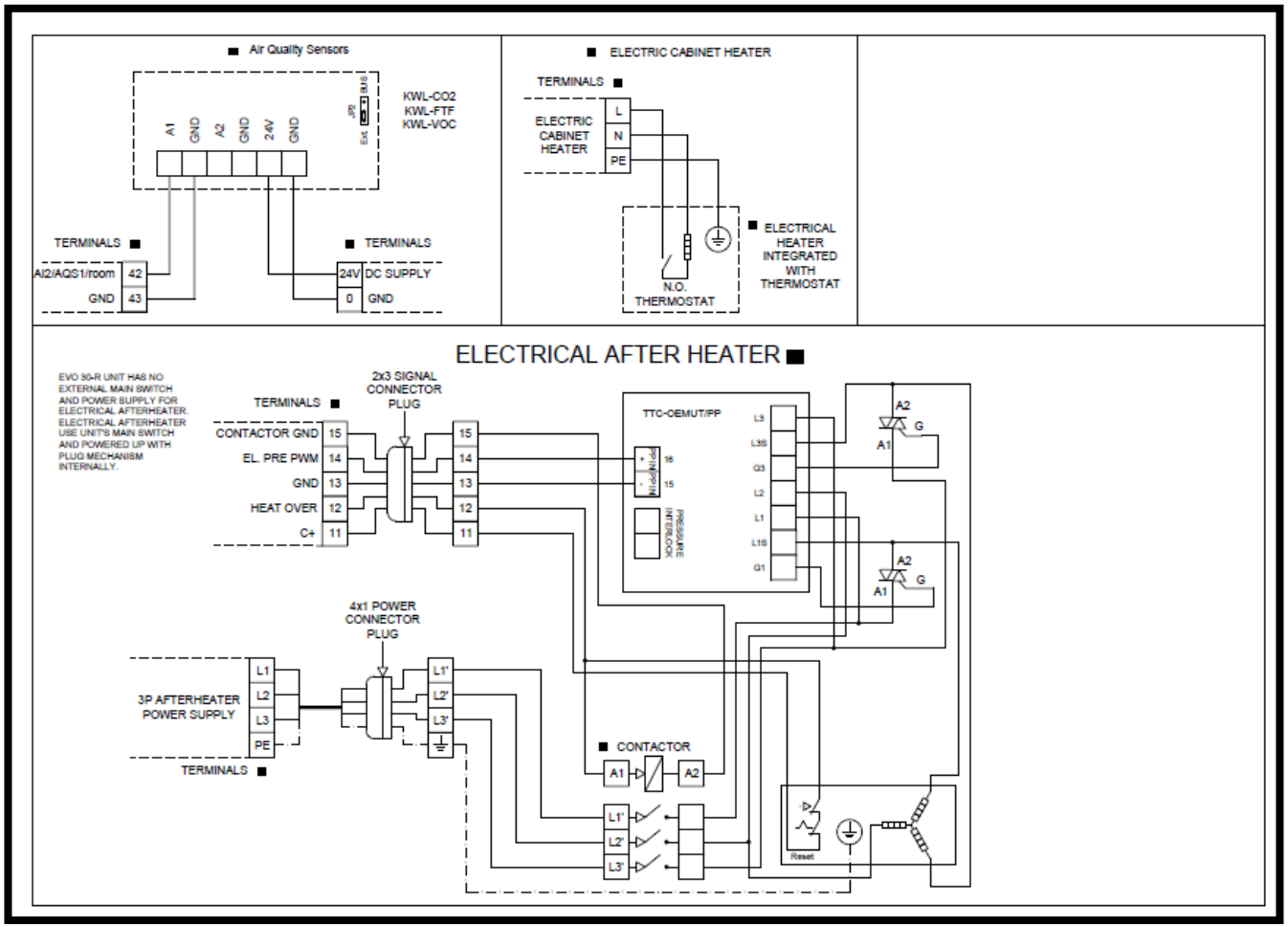
EVO-30R CONTROL PANEL DIAGRAM

Fig. 46



EVO-30R ACCESSORIES DIAGRAM 1

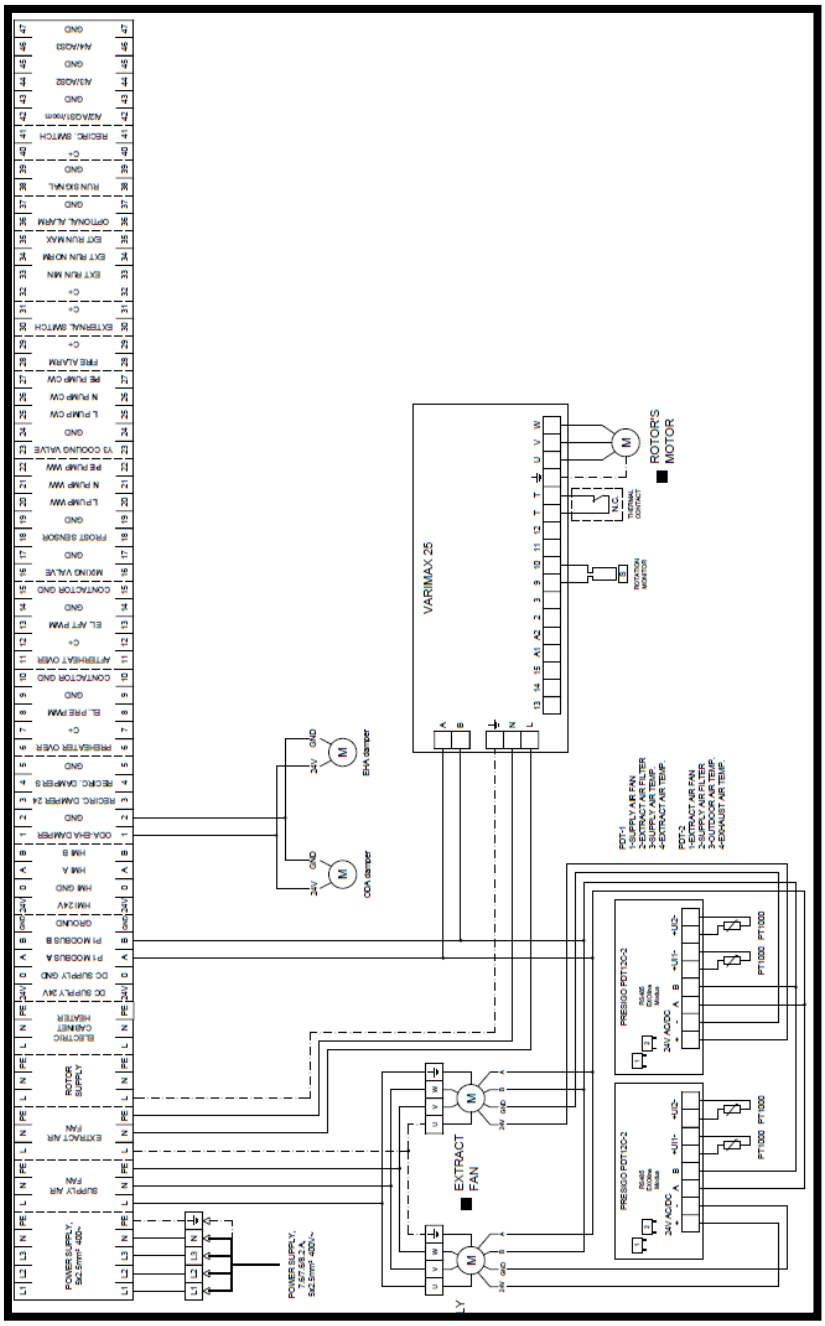
Fig. 47



EVO-30R ACCESSORIES DIAGRAM 2

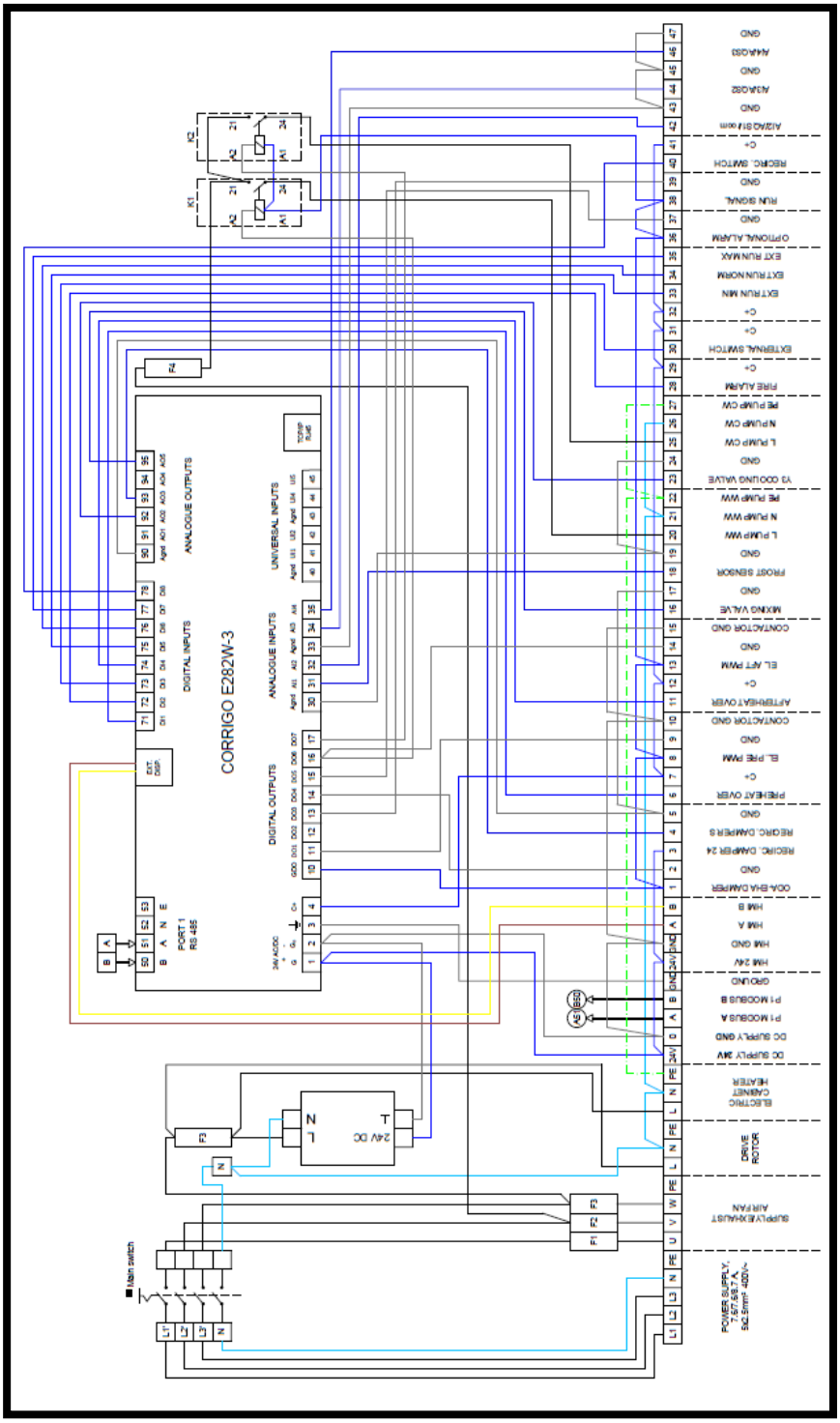
Fig. 48

7.4 EVO-50R Wiring Diagrams



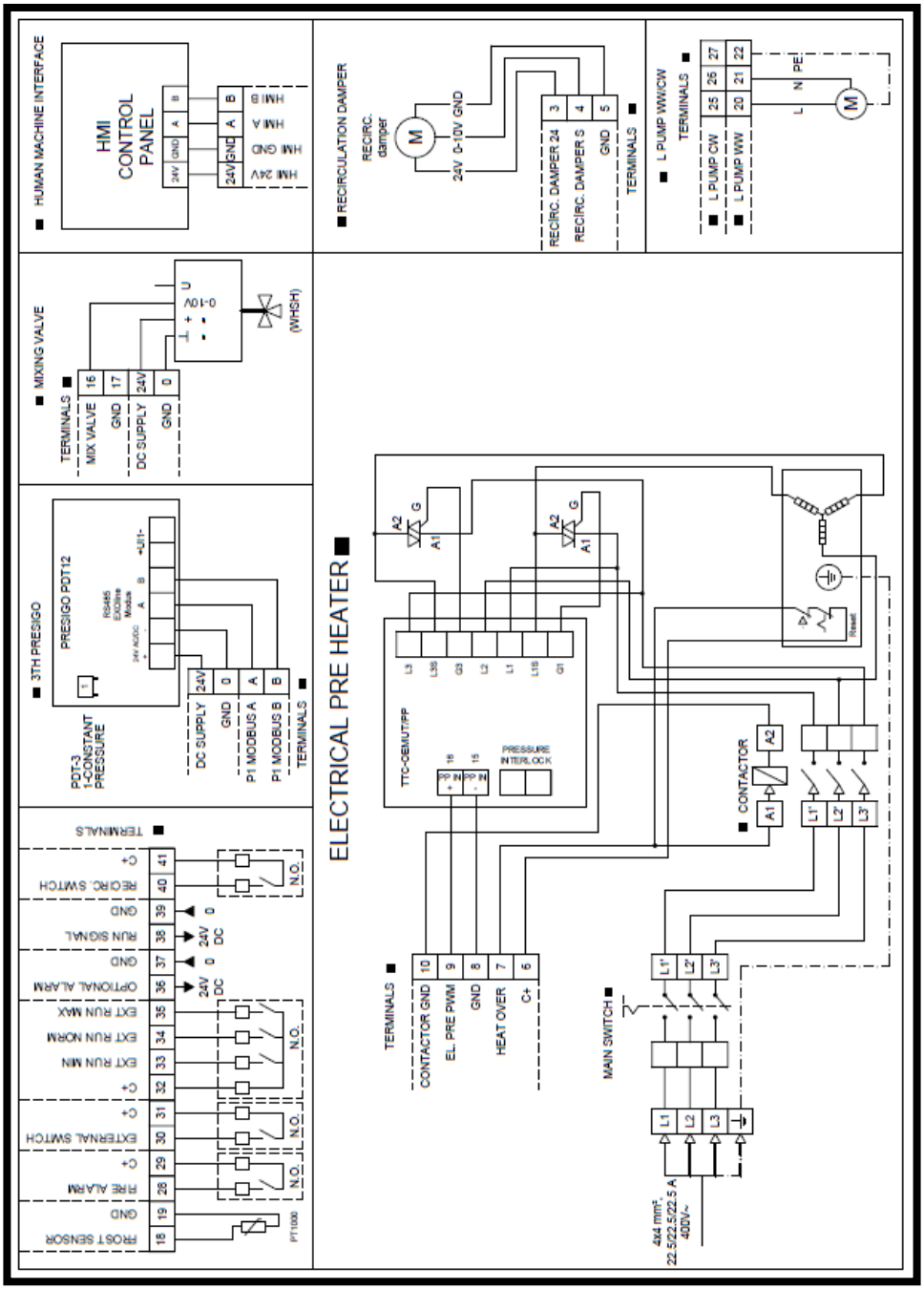
EVO-50R STANDART UNIT WIRING DIAGRAM

Fig. 49



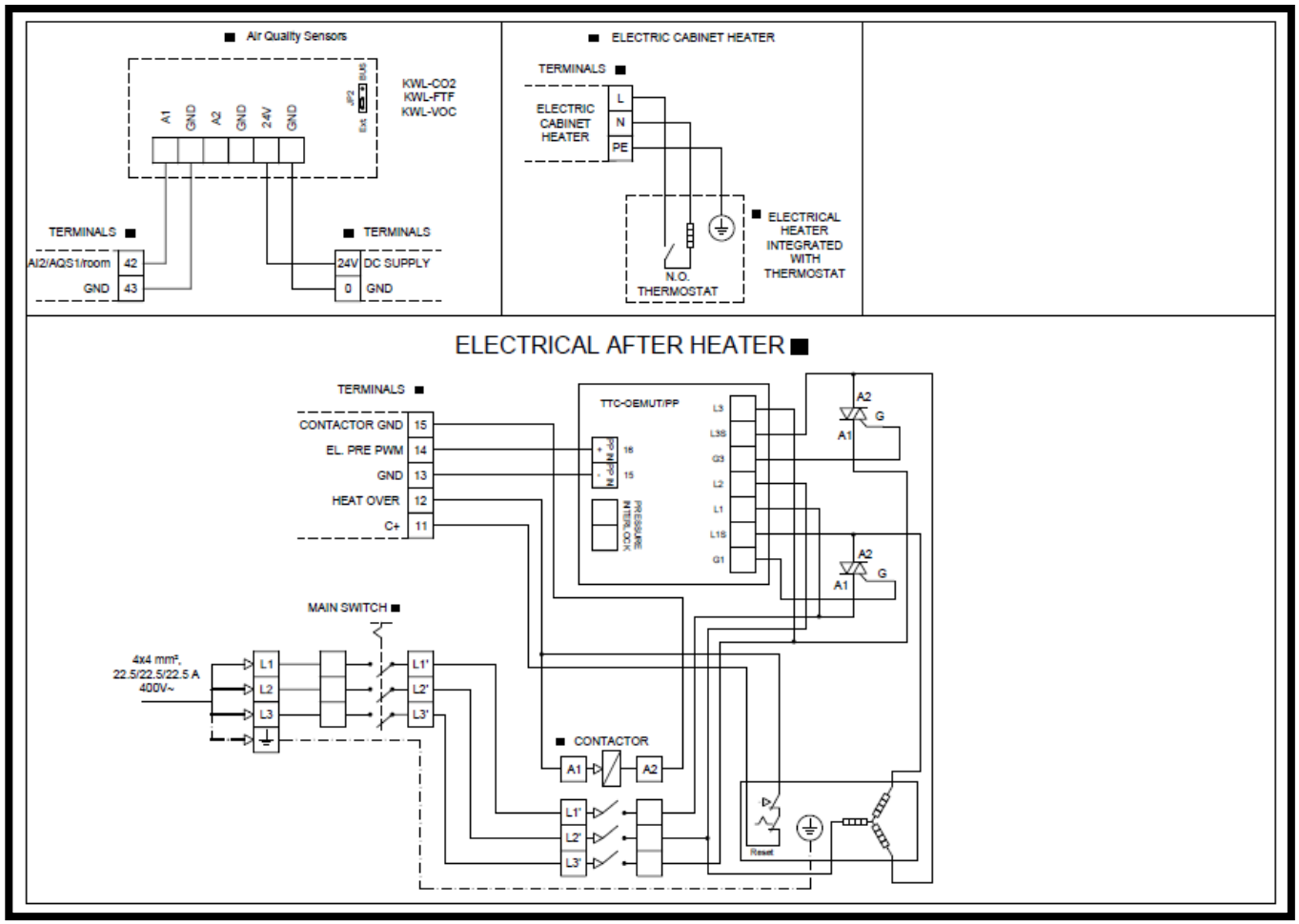
EVO-50R CONTROL PANEL DIAGRAM

Fig. 50



EVO-50R ACCESSORIES DIAGRAM 1

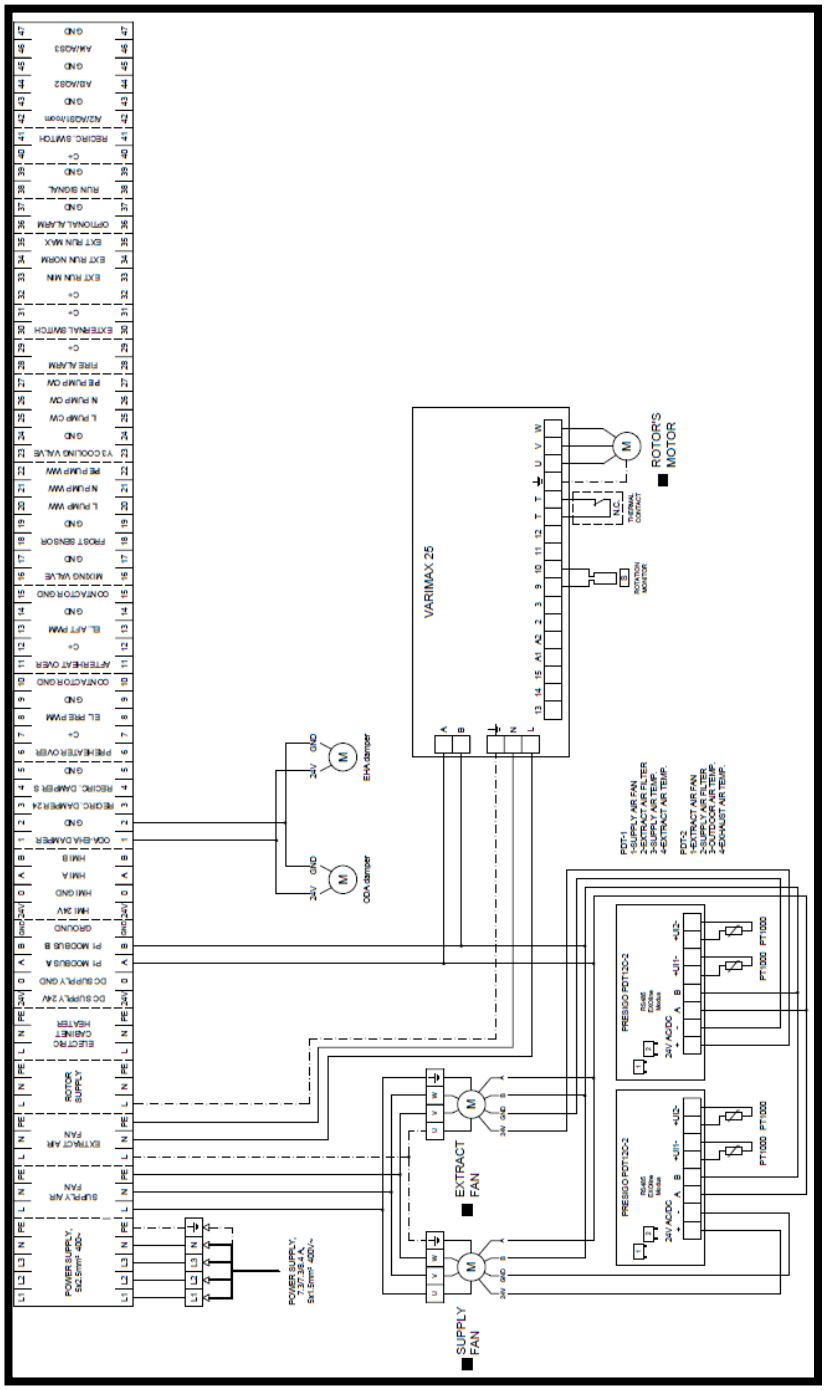
Fig. 51



EVO-50R ACCESSORIES DIAGRAM 2

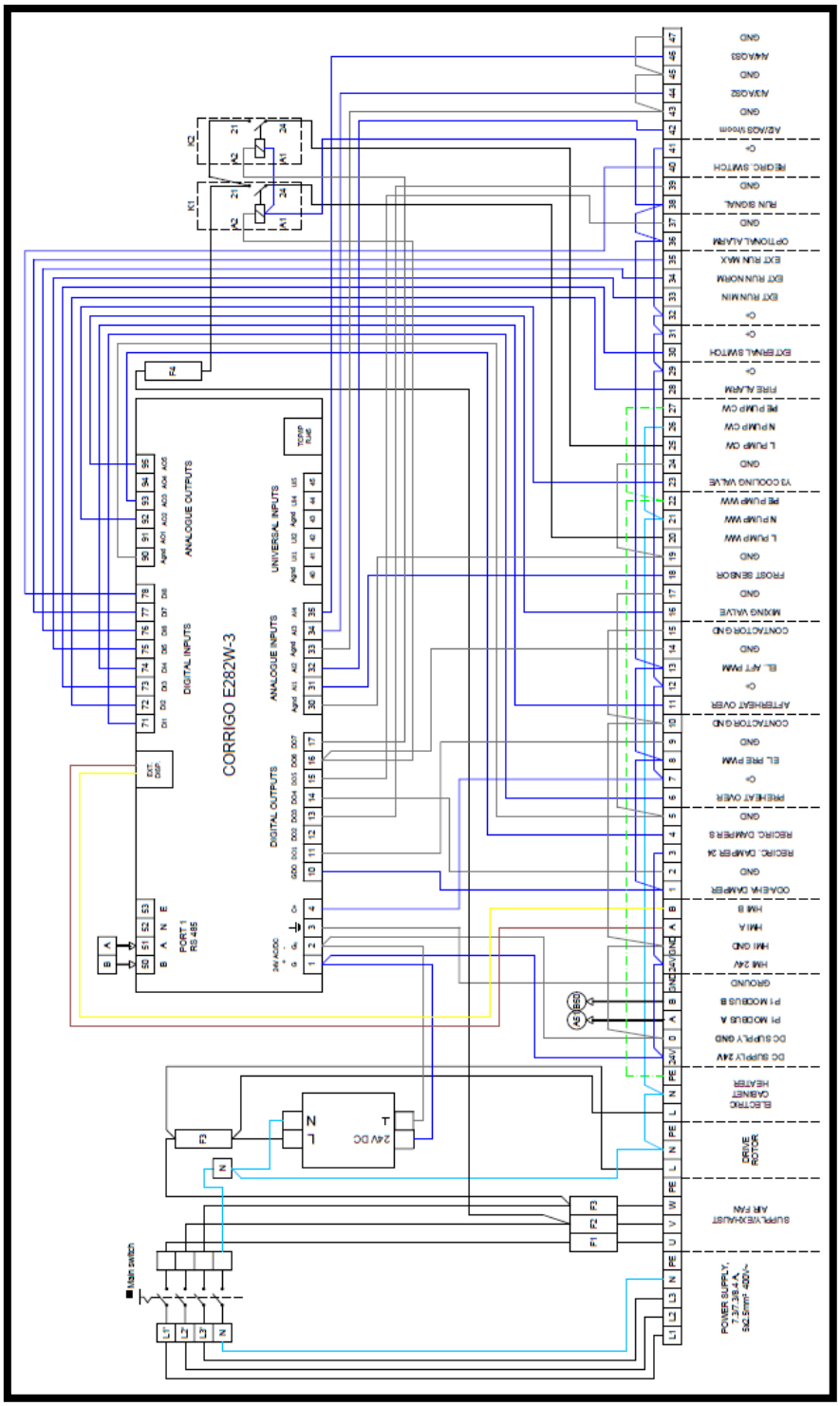
Fig. 52

7.5 EVO-60R Wiring Diagrams



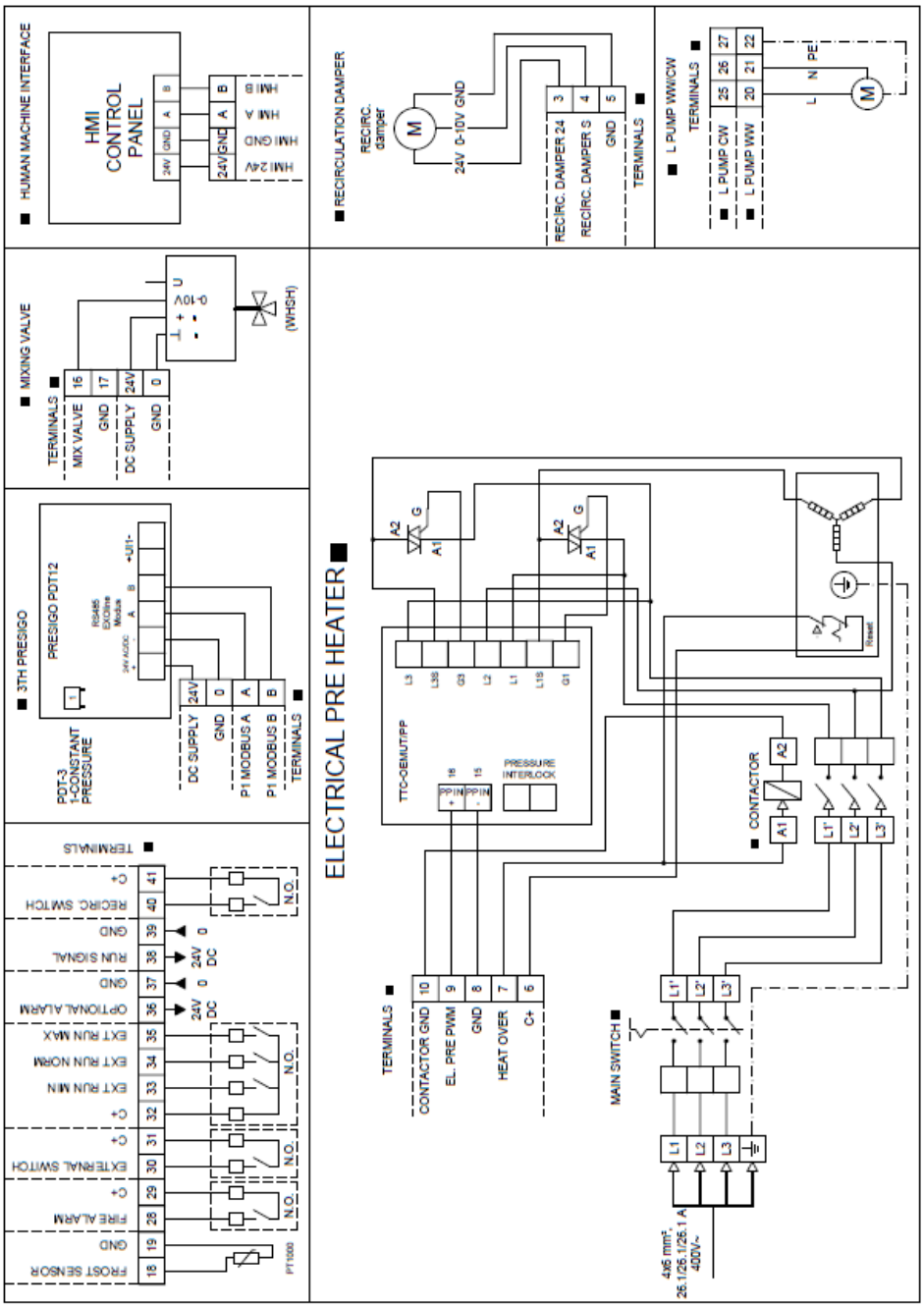
EVO-60R STANDART UNIT WIRING DIAGRAM

Fig. 53



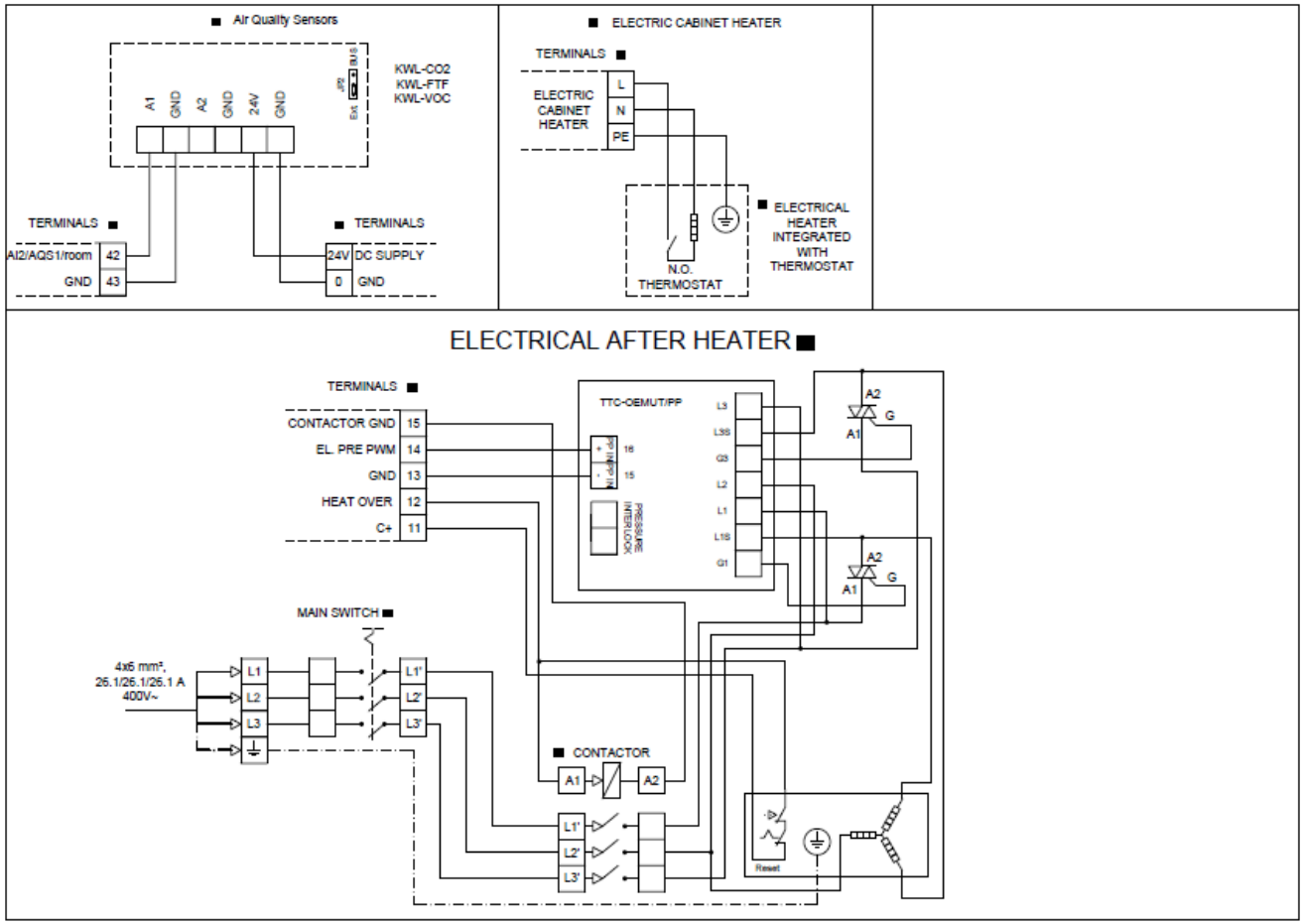
EVO-60R CONTROL PANEL DIAGRAM

Fig. 54



EVO-60R ACCESSORIES DIAGRAM 1

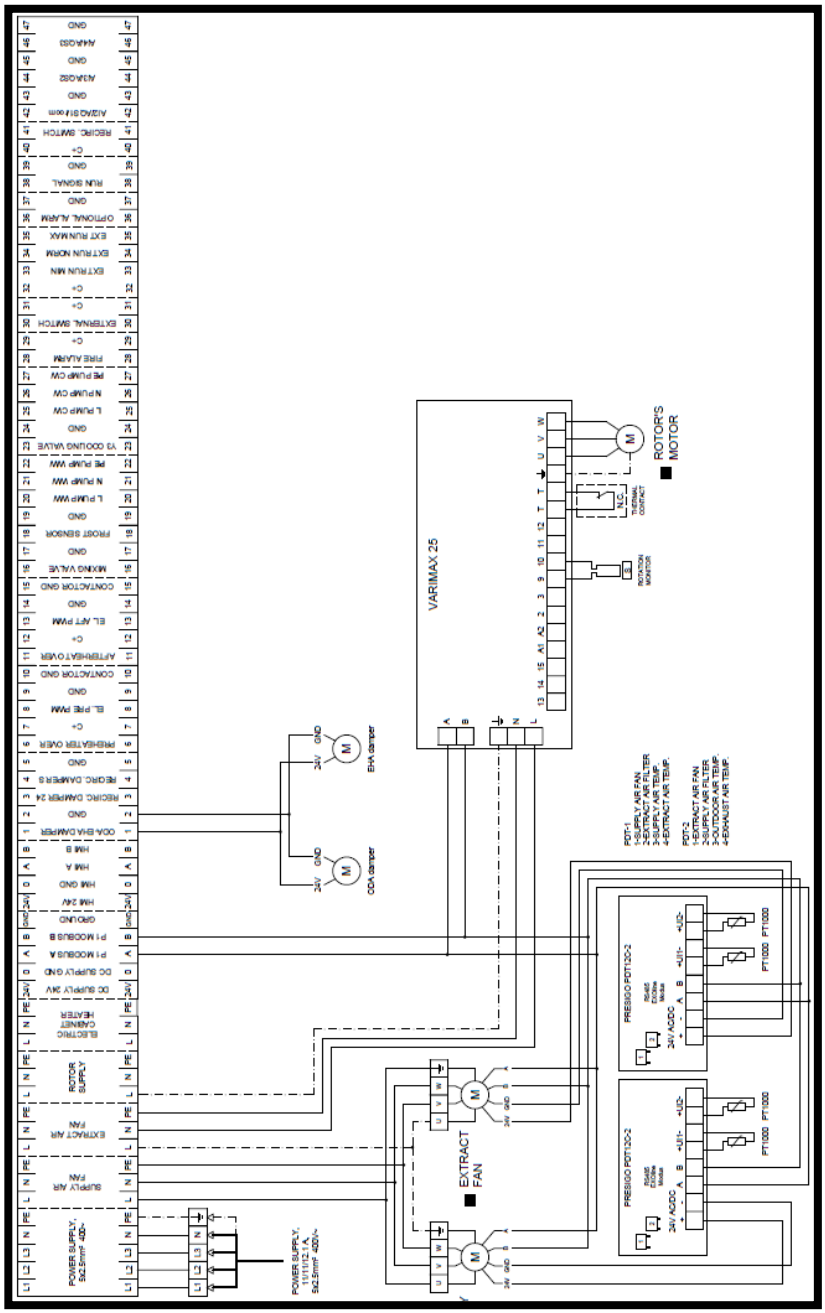
Fig. 55



EVO-60R ACCESSORIES DIAGRAM 2

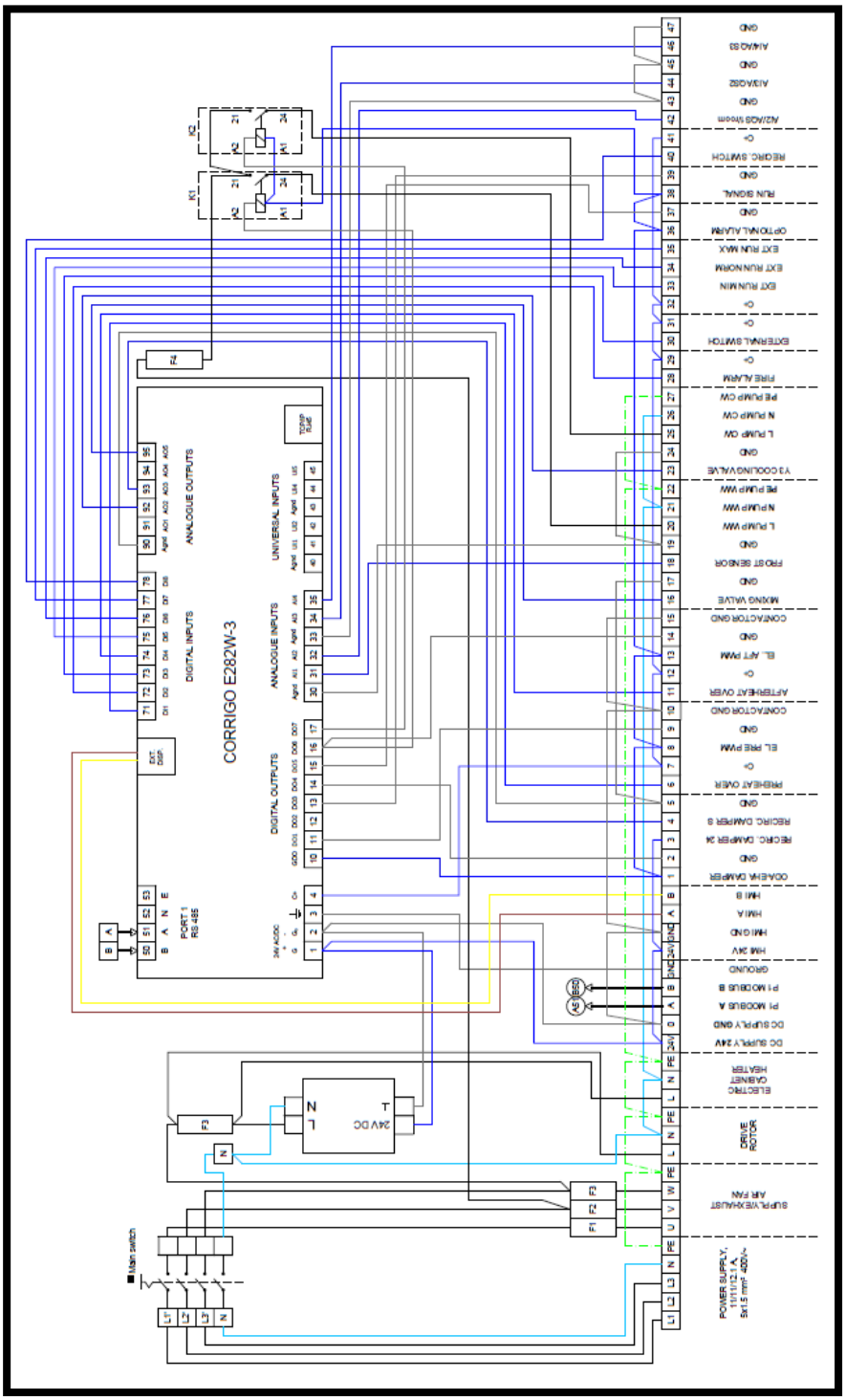
Fig. 56

7.6 EVO-80R Wiring Diagrams



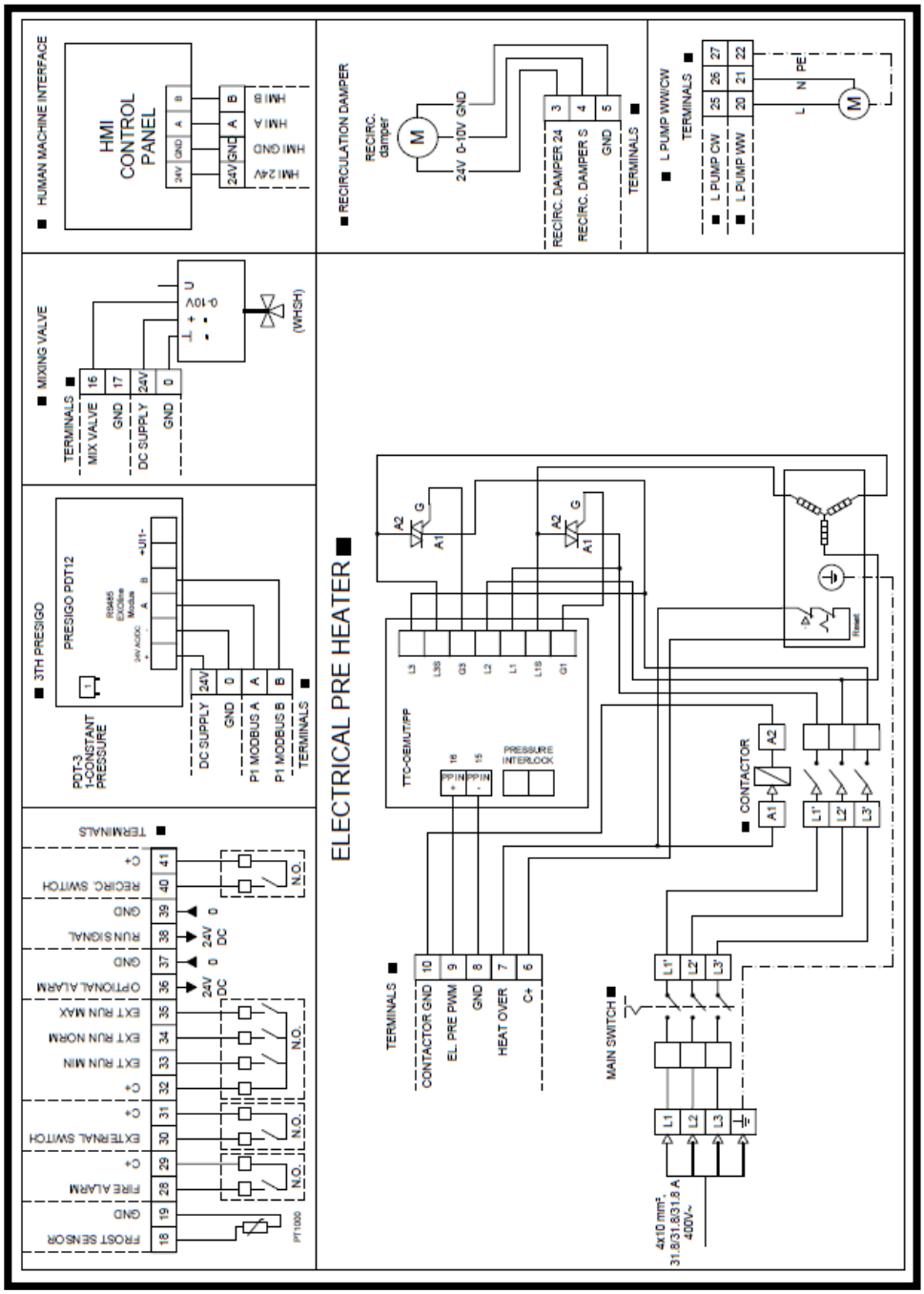
EVO-80R STANDART UNIT WIRING DIAGRAM

Fig. 57



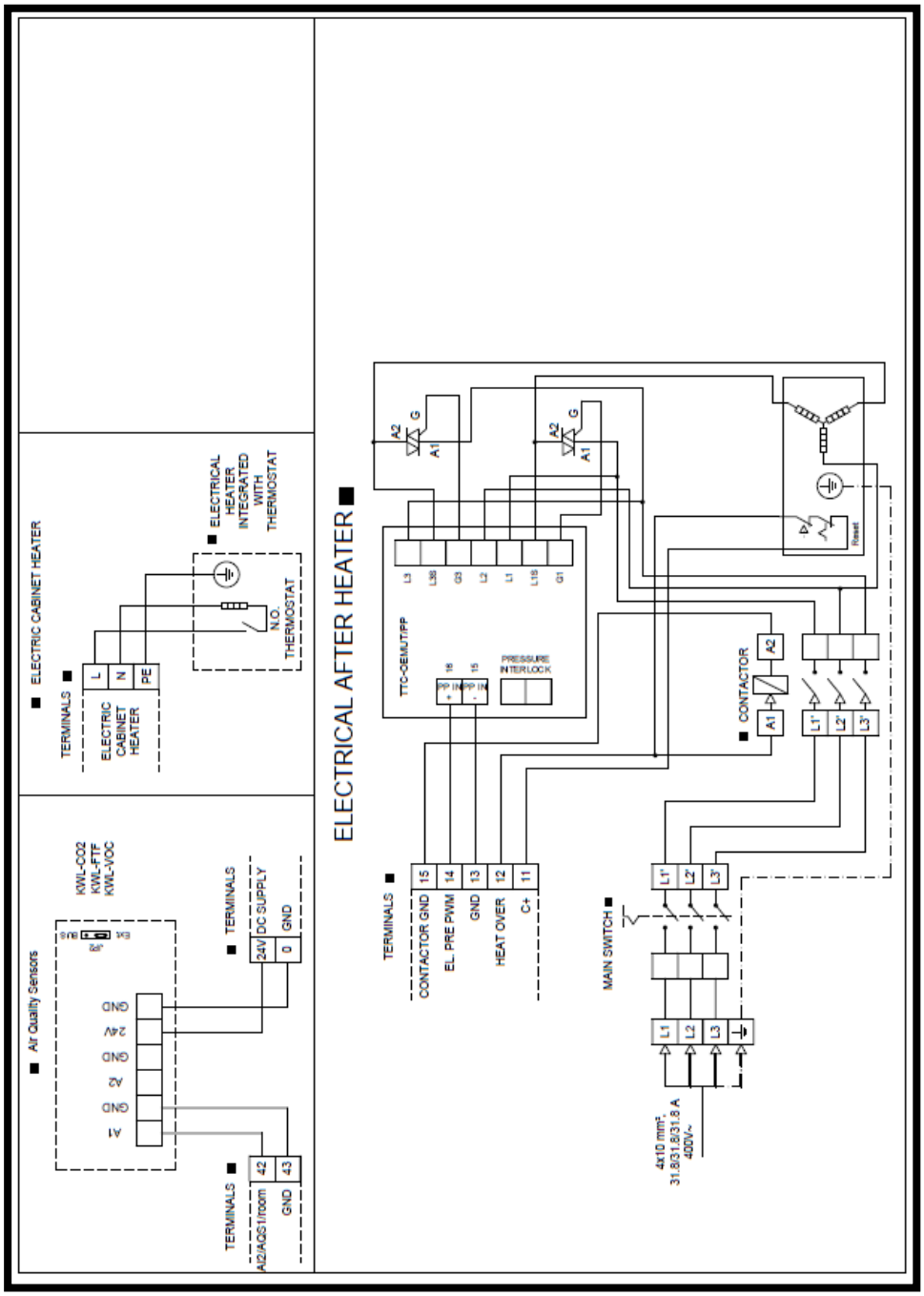
EVO-80R CONTROL PANEL DIAGRAM

Fig. 58



EVO-80R ACCESSORIES DIAGRAM 1

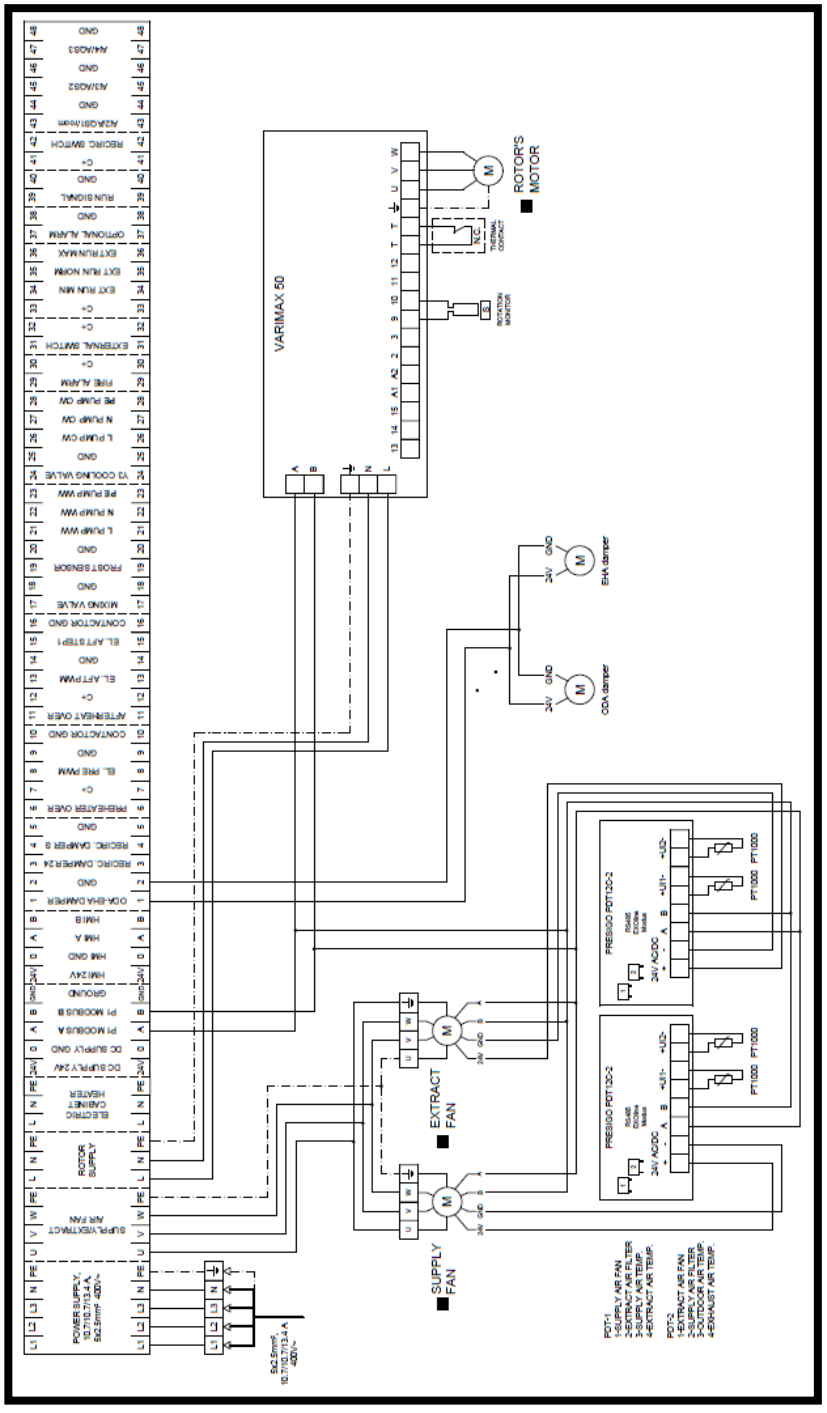
Fig. 59



EVO-80R ACCESSORIES DIAGRAM 2

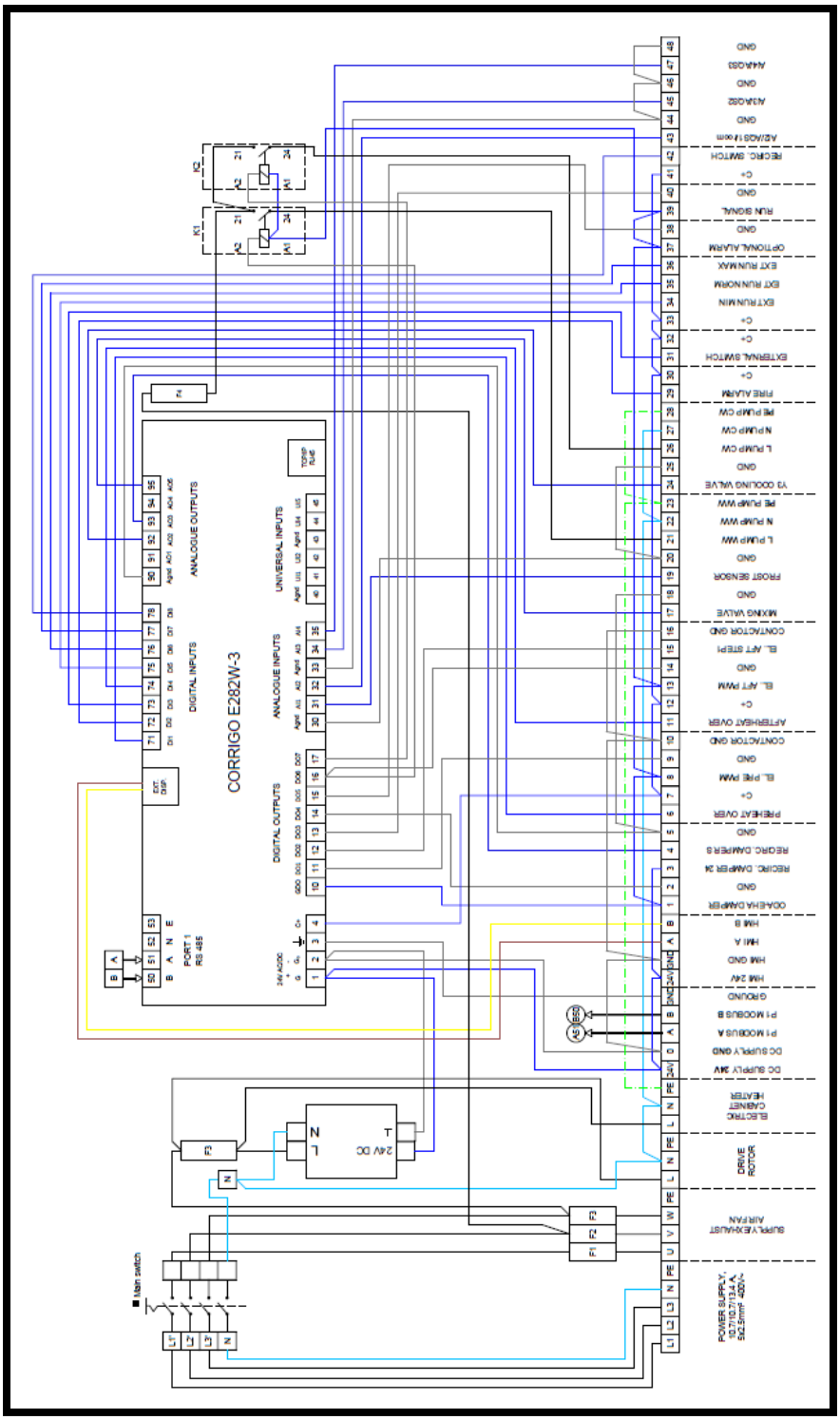
Fig. 60

7.7 EVO-95R Wiring Diagrams



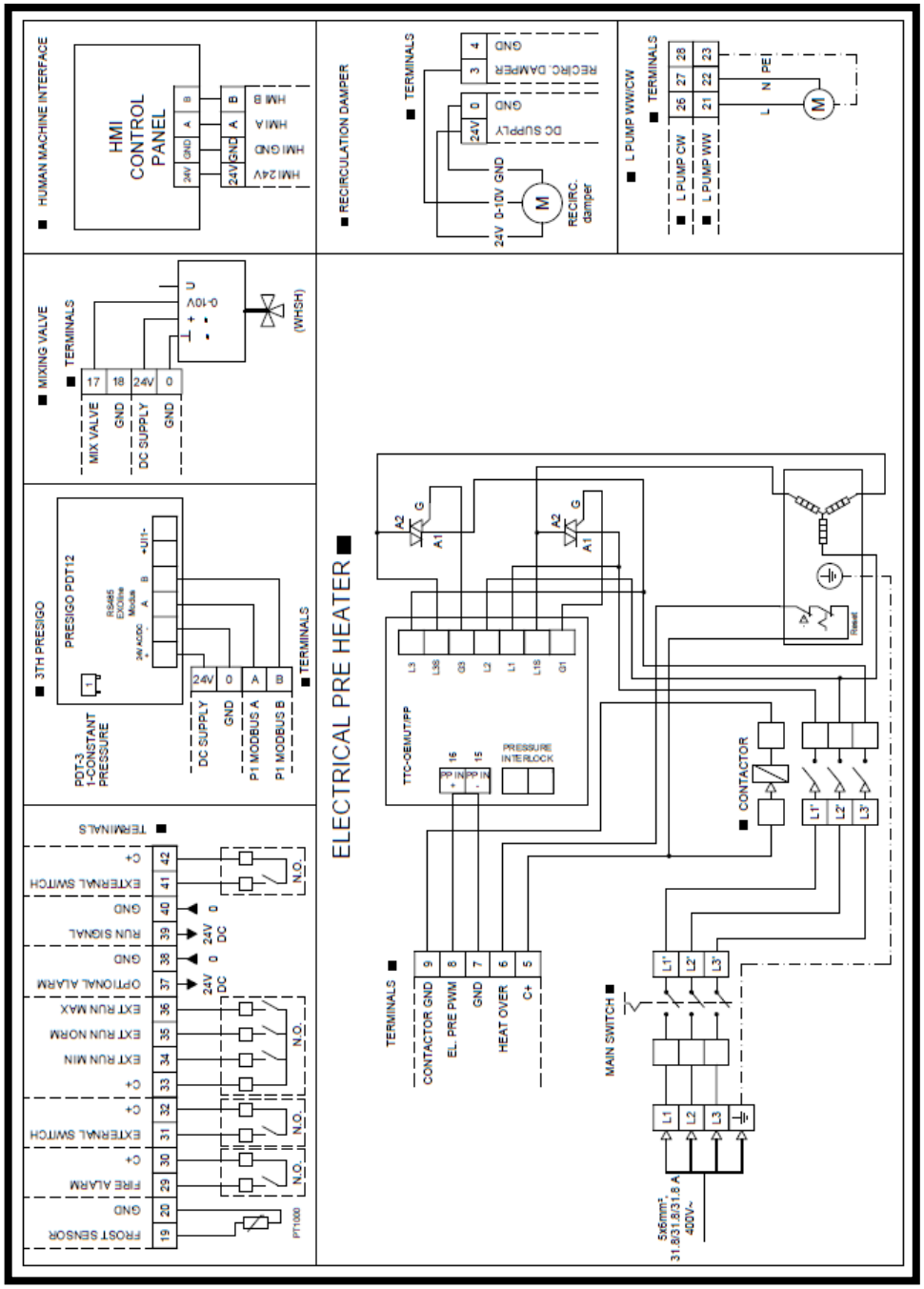
EVO-95R STANDART UNIT WIRING DIAGRAM

Fig. 61



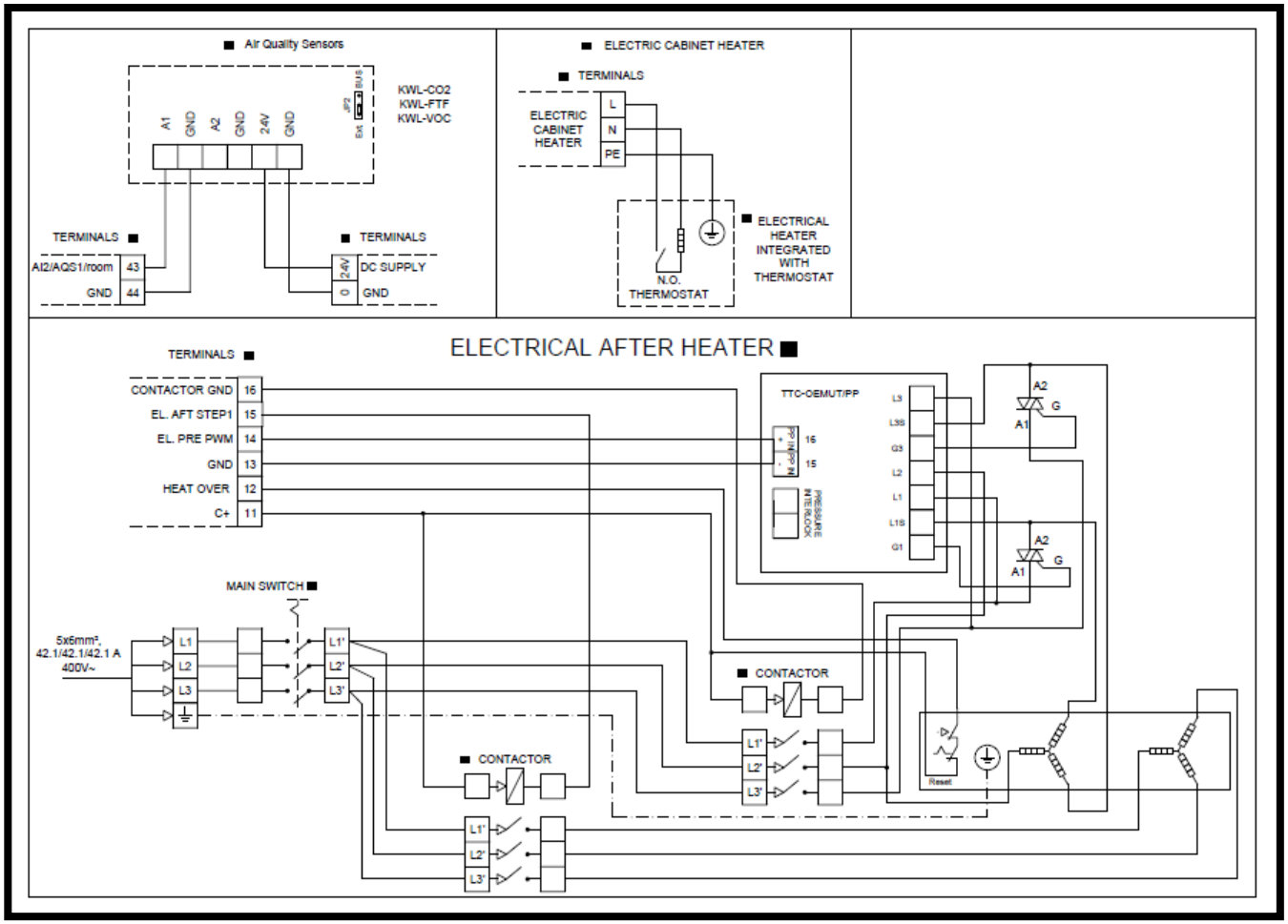
EVO-95R CONTROL PANEL DIAGRAM

Fig. 62



EVO-95R ACCESSORIES DIAGRAM 1

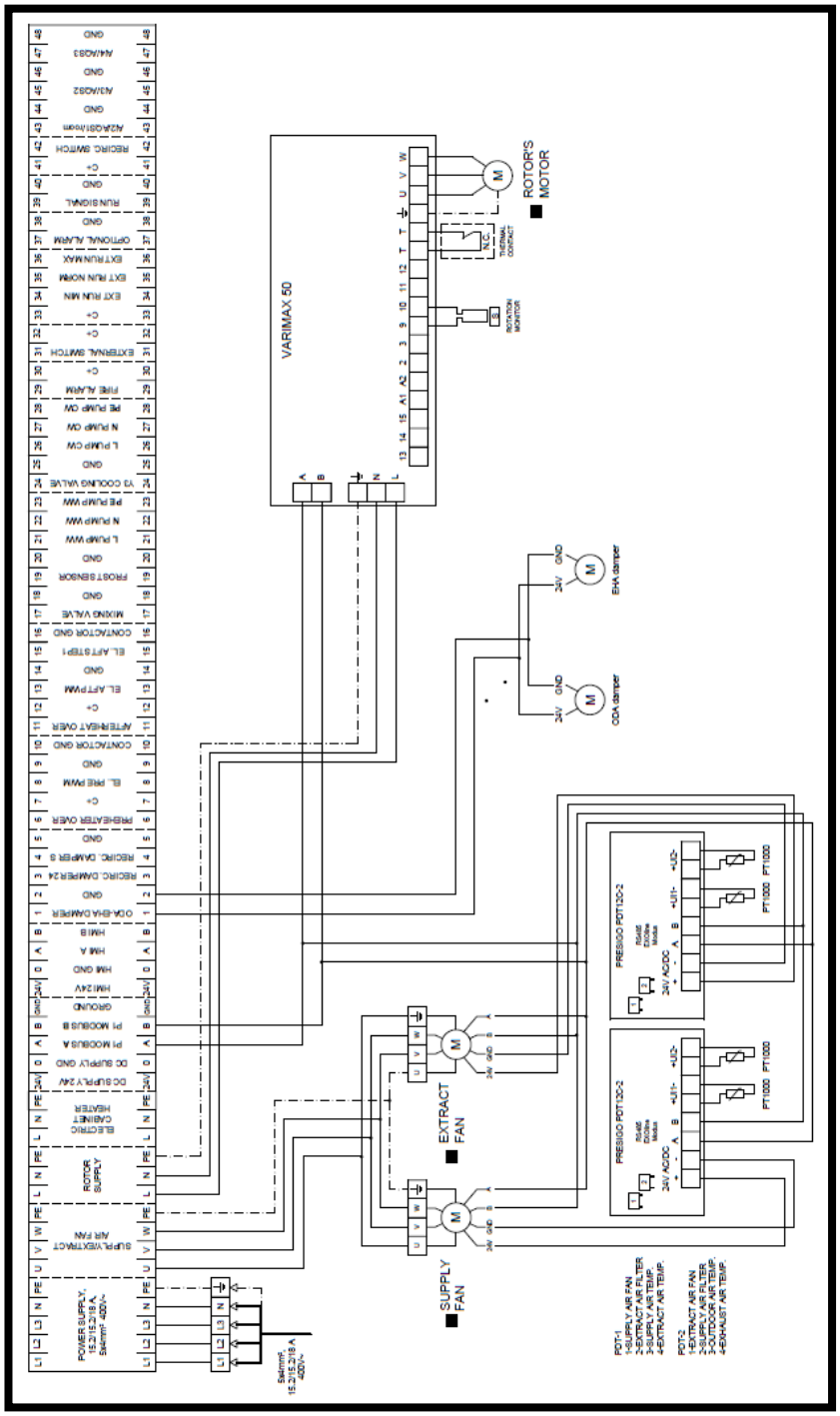
Fig. 63



EVO-95R ACCESSORIES DIAGRAM 2

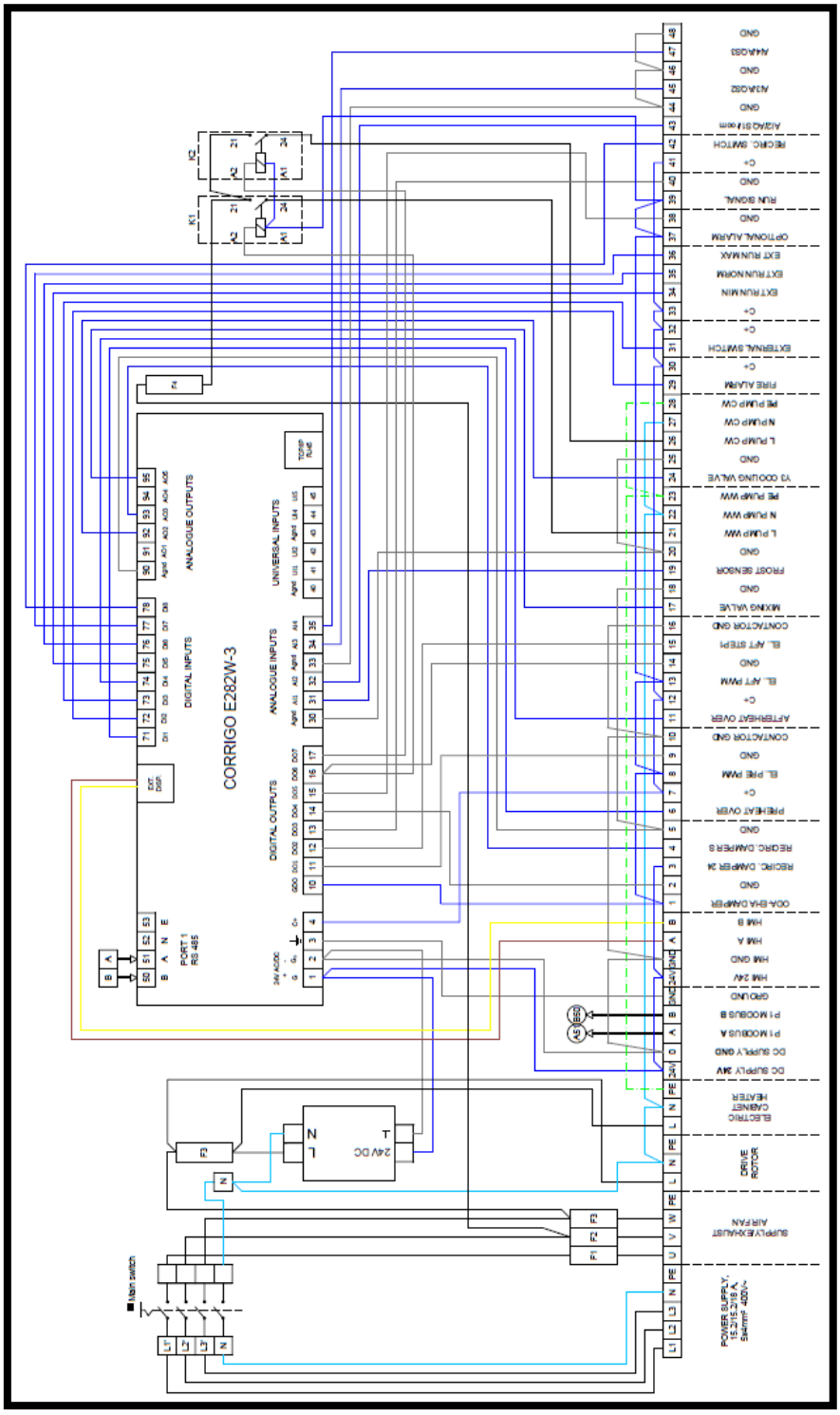
Fig. 64

7.8 EVO-120R Wiring Diagrams



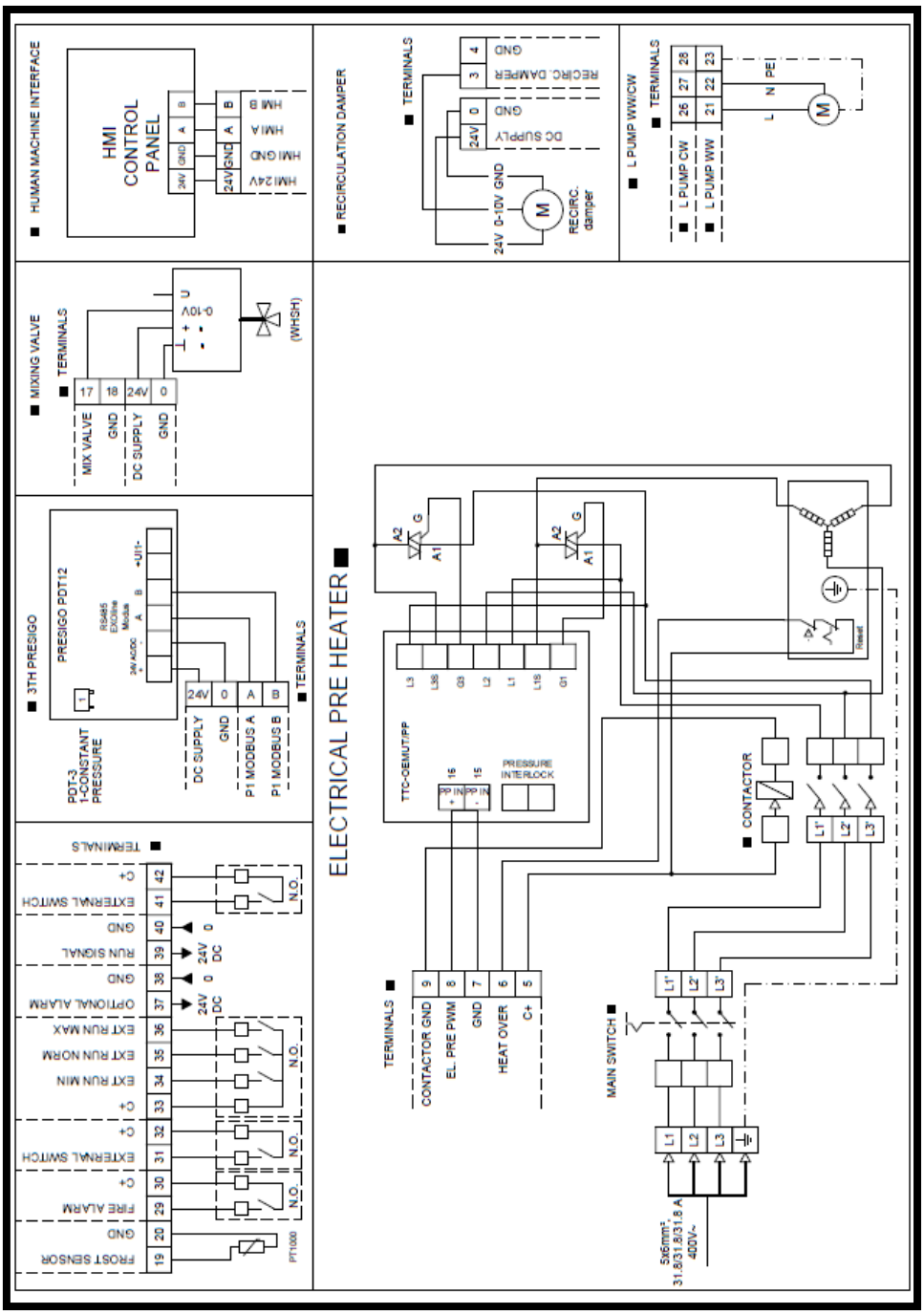
EVO-120R STANDART UNIT WIRING DIAGRAM

Fig. 65



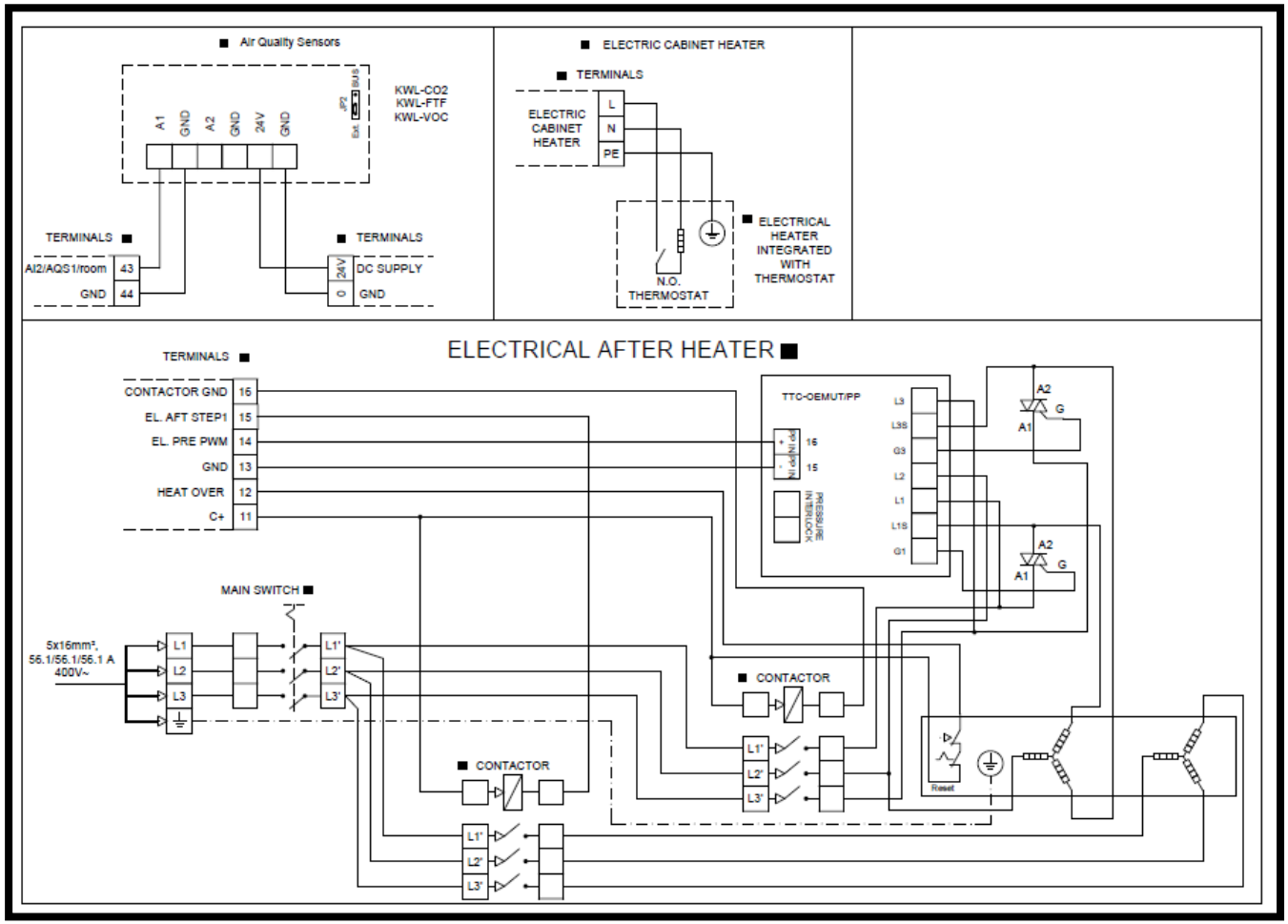
EVO-120R CONTROL PANEL DIAGRAM

Fig. 66



EVO-120R ACCESSORIES DIAGRAM 1

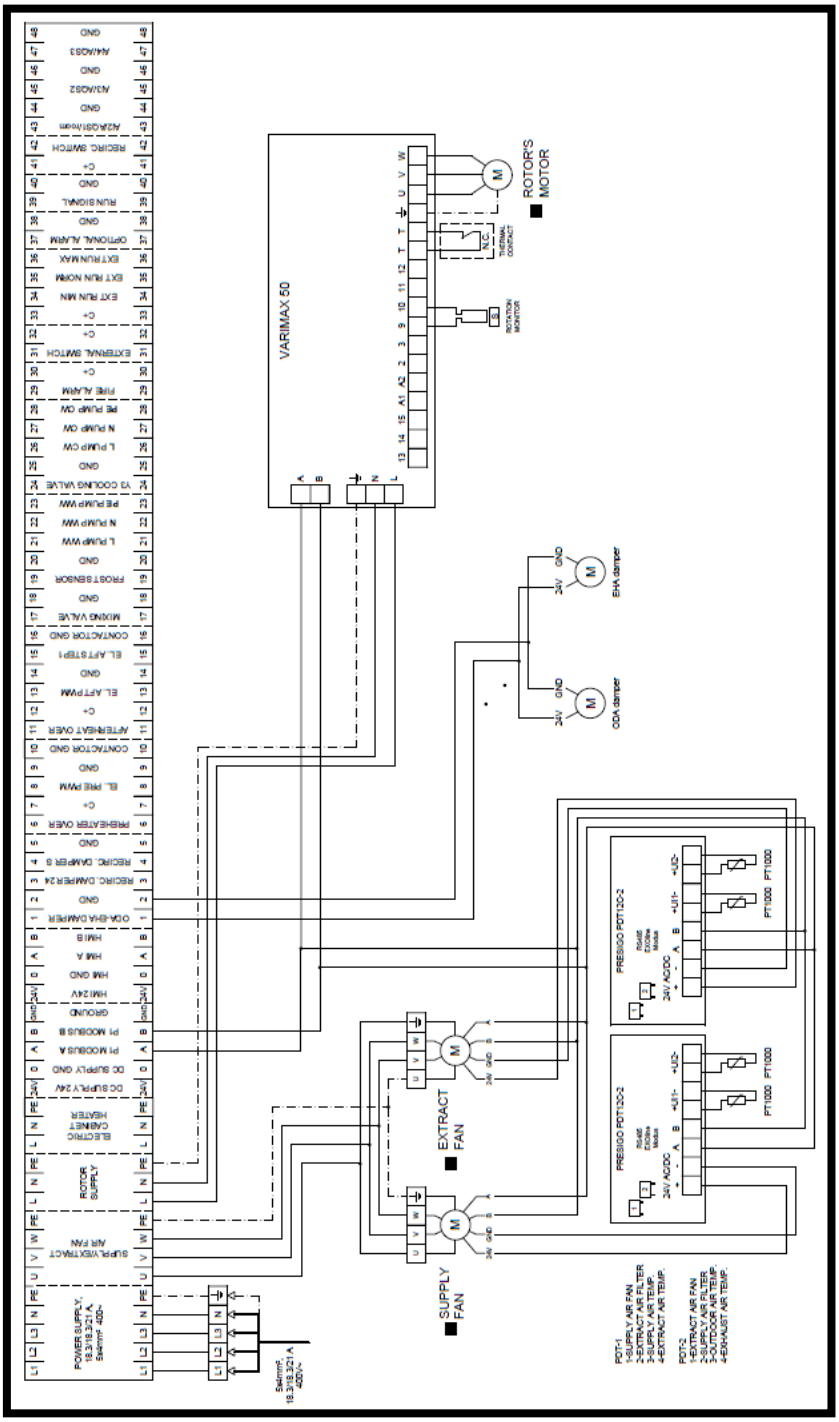
Fig. 67



EVO-120R ACCESSORIES DIAGRAM 2

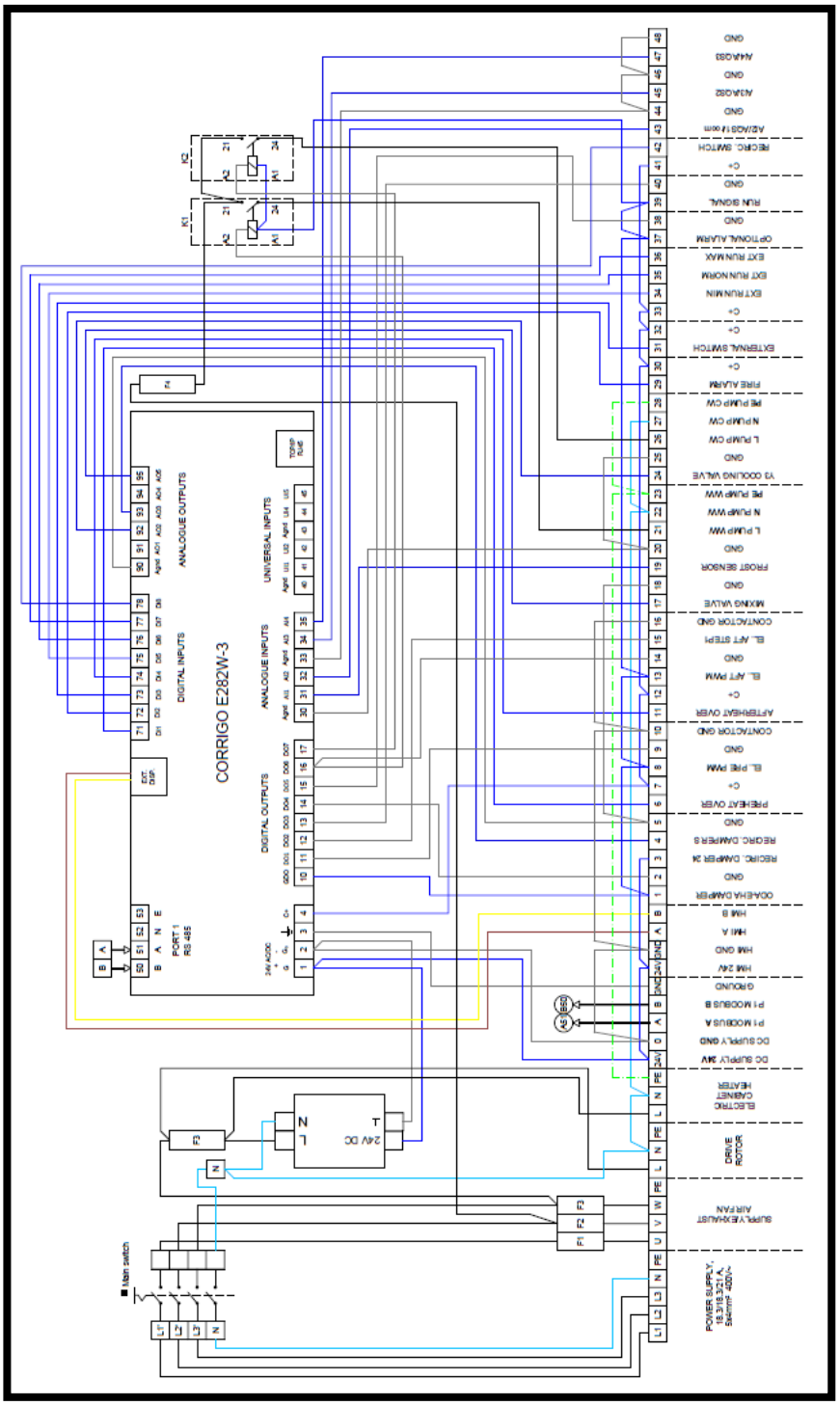
Fig. 68

7.9 EVO-150R Wiring Diagrams



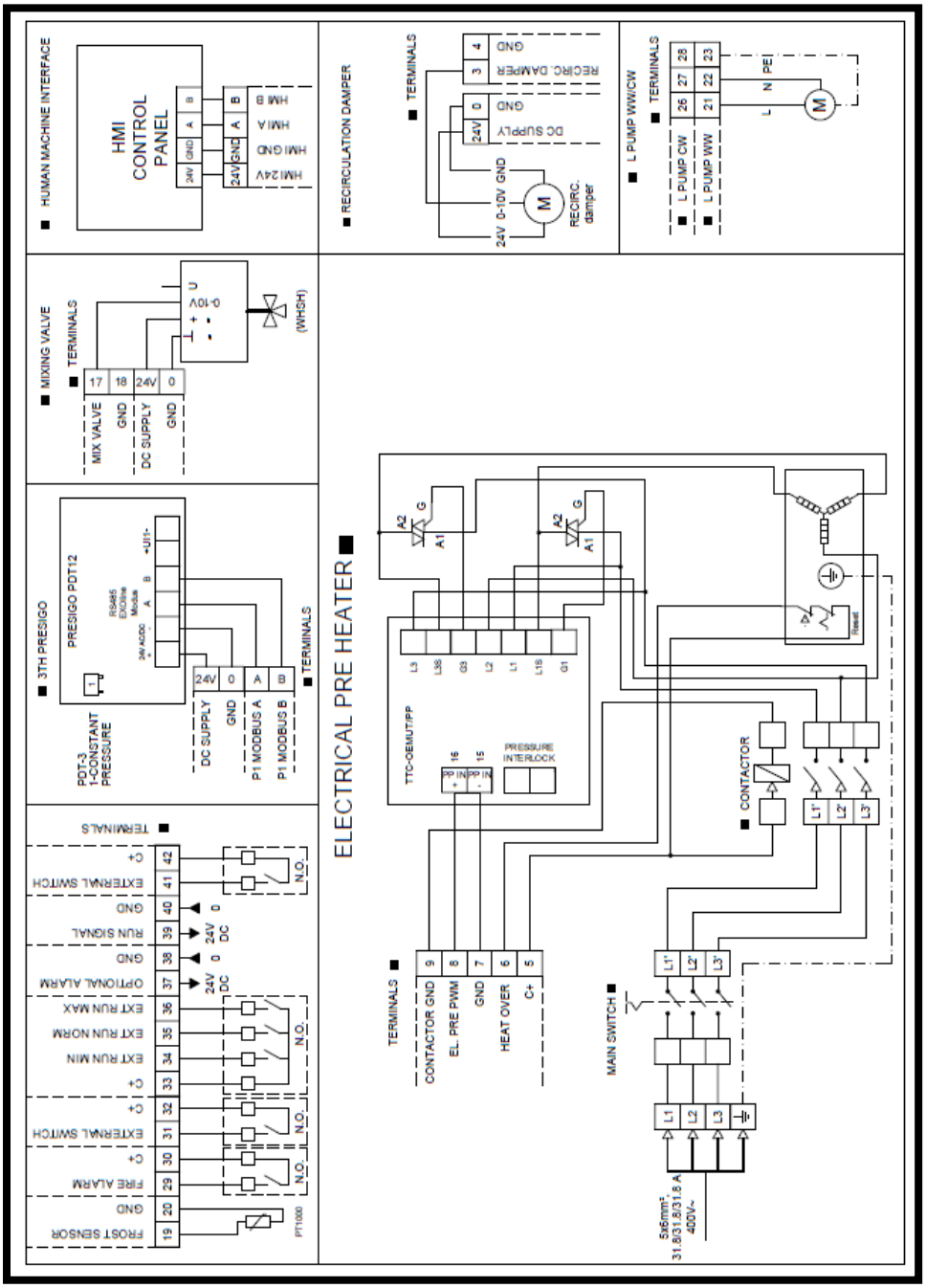
EVO-150R STANDART UNIT WIRING DIAGRAM

Fig. 69



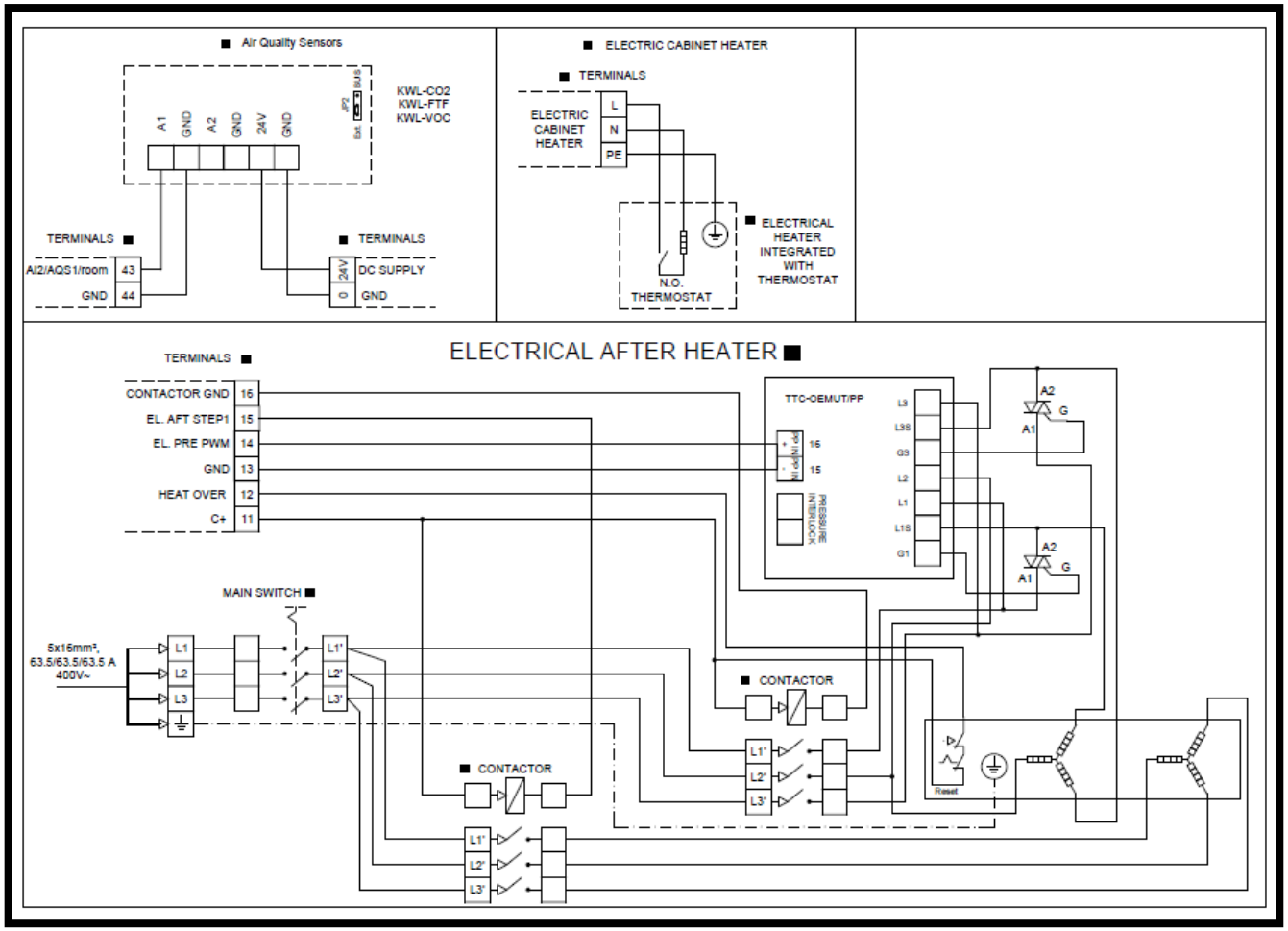
EVO-150R CONTROL PANEL DIAGRAM

Fig. 70



EVO-150R ACCESSORIES DIAGRAM 1

Fig. 71



EVO-150R ACCESSORIES DIAGRAM 2

Fig. 72

CHAPTER 8

SPARE PART

8.1 Spare part list

You may use only original EVO-R spare parts are allowed, since EVO-R is not liable if any third party spare components are used.

Spare part
Exhaust Air Fan Assembly
Fresh Air Fan Assembly
Heat Exchanger
Step Motor and Controller Rotor
Rotational Sentinel
Thermal wheel chain
Main PCB
Presigo PCB
Main Transformer
Fuse
Fuse holder
Main switch
Terminal box (Cover)
Terminal box (mainpart w/ top hat rail)
HMI Connection Cable (5m)
Relais (Bypass-motor / WW/CW pump)
Air Temperature Sensor (PT1000)
Door handle
Service Panel hinge
Service Panel Lock
Unit Foot
PVC Foam Gasket 5x15 (10m)