

# COMPRESSED AIR DRYER OPERATING AND MAINTENANCE MANUAL



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## 1. TECHNICAL SPECIFICATIONS

### 1.1. TECHNICAL SPECIFICATIONS FOR AIR DRYER

Large quantity of water in vapor form is contained within the air that is taken in from the atmosphere and which is compressed inside the compressor and whose pressure is brought up to the required level. This water in vapor form will surface out in liquid form partly as water under the influence of the pressure and the cooling. Discharge of water in vapor form contained in the air by cooling can be carried out by using pressurized air dryer.

2 units of temperature sensors are included on the the air dryer as well as a microprocessor controlled electronic board. This control system;

- Controls the temperature of the ambient in which the air dryer is positioned,
- Controls the compressed air conveyed inside of the air dryer,
- Sends out warning for the need for the periodical maintenance,
- Puts the air dryer out of operation when the design requirements are not met and sends out the required warning through audible alarm and flashing LED indicators during faults and incorrect operations.

1. Temperature sensor (compressor sensor) controls the dew point temperature of the AIR DRYER. It keeps the temperature between values of 5°C and 2°C.

For models between 900 lt/min and 6500 lt/min; an automatic expansion valve is used. In these models, the fan is operated on and off, according to the condenser pressure through the pressure switch and not according to the temperature. The pressure regulated automatic expansion valve provides the equipment to have constant dew point temperature at the value of +3 °c by ejecting gas coolant on the heat exchanger.

For models 8500 lt/min and above; fan operates according to the value of the pressure of the condenser. Thermostatic expansion valve ejects the gas coolant on the heat exchanger and at the same time mechanical hot gas by-pass valve continuously feeds the heat exchanger with hot gas and hence the equipment is maintained at constant dew point temperature of + 3 °C.

2. The temperature sensor (fan sensor) controls the outlet temperature of the coolant gas at the exit of the condenser. In all models of the dryer series this stops the operation of the air dryer when the temperature rises to excessively high levels.

**A)** The condenser exit temperature could rise under following circumstances:

- Failure of the fan motor,
- Obstruction of condenser cooling winglets and blocking of gaps between wings,
- Increase of ambient temperature above the value of 45°C.

While the second temperature sensor controls the abnormal conditions indicated above, fan warning light will flash and it notifies about the situation. After a certain time, the control system will put the air dryer out of operation.

**B)** LED indicator lights might come on under following conditions;

- Increase of the operating temperature of the air compressor (low level of lubricant, blocking or obstruction of the oil separator, increase of the ambient temperature)
- When correction factors are not taken into account when determining the air dryer capacity,
- When weather conditions during summer and winter times are not taken into account.

The temperature sensor first controls these abnormal conditions. Warning is issued through the flashing S1 warning light and after this, the system puts the air dryer out of operation.

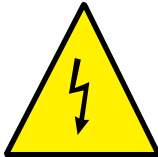


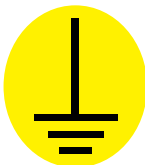

## Form No: KLV01 Rev. No: 007 Date: 01.10.2019

High Temperature Label:

It is affixed on the condenser. Compressed air is circulated through the air dryer. Any parts of the air dryer should not be removed without first making sure that the pressure is discharged. Otherwise, injuries might take place. Because the pressure contained in the system is the source of danger. Eye protection should be worn.

**Water Drain And External Discharge Connection Label:**

These are affixed on the rear panel of the equipment and on the panel of the heat exchanger. This indicates the outlet of the pneumatic water drain solenoid valve of the equipment. It also indicates the zero air loss ZEROMAT device or the manual drain place used instead of the wait and drain solenoid valve that is used for standard production models.

	<p><b>Caution Label:</b></p> <p>It is affixed on electrical connection terminals on the equipment. It indicates that there is a risk of electric shock.</p>			
 <p>Do Not Operate With The Cover Open</p>	<p><b>General Warning Label:</b></p> <p>It is affixed on the top panel. The guard should be kept closed in order that the air dryer will operate in secure form.</p>			
	<p><b>General Warning Label:</b></p> <p>It is affixed on the top panel. It will be in operation within 2 minutes of power supply.</p>			
<table><tr><td>USE APPROPRIATE AUTOMATIC FUSE AND ELECTRICAL WIRING</td></tr><tr><td>NEUTRAL LINE AND EARTHING LINE SHOULD BE SEPERATED.</td></tr><tr><td>DEFINITELY DO NOT FEED FROM ANOTHER DEVICE BOARD.</td></tr></table>	USE APPROPRIATE AUTOMATIC FUSE AND ELECTRICAL WIRING	NEUTRAL LINE AND EARTHING LINE SHOULD BE SEPERATED.	DEFINITELY DO NOT FEED FROM ANOTHER DEVICE BOARD.	<p><b>General Warning Label:</b></p> <p>It is affixed on the electric cable. Instructions issued for individual and installation safety should be followed.</p>
USE APPROPRIATE AUTOMATIC FUSE AND ELECTRICAL WIRING				
NEUTRAL LINE AND EARTHING LINE SHOULD BE SEPERATED.				
DEFINITELY DO NOT FEED FROM ANOTHER DEVICE BOARD.				
	<p><b>Grounding:</b></p> <p>Grounding point is available on the electronic board installation cover of all of the dryer models.</p>			
	<p><b>Condenser Warning Label:</b></p> <p>This is placed over the top cover. When the air circulation through the condenser is obstructed or when air passages have been blocked by dust accumulation, the condenser temperature will rise and the cooling compressor pressure will increase in relation. As a result of this, cooling function would not take place, even though the compressor will work under load. Thermal fuse on the cooling (gas) compressor line could blow out for this over load. When it cools down, this thermal protection will function again. If this condition is to continue, then the gas compressor could burn out. Therefore, the condenser should be clean with the use of dry compressed air once a week. If this procedure is not to be performed, then the guarantee clause for the Air Dryer will be INVALID automatically. Damages caused by condenser being obstructed will make guarantee clause for the air dryer invalid.</p>			

## 2. SAFETY INFORMATION

### 2.1 GENERAL SAFETY WARNINGS AND INFORMATION AGAINST RISKS

1. This manual should be read and understood prior to operation of the air dryer.
2. The air dryer should not be left standing under direct sun rays nor under rain /water. The air dryer should not be placed in dusty, rusty, contaminated and in insufficiently ventilated environments when used externally.
3. The air dryer should not be placed on shelves and inside of covered areas etc. It should be kept away from inflammable and erosive substances such as gasses, caustic etc.
4. Appropriate materials should be used for pressurized air piping and for hoses.
5. Cleaning materials which would have abrasive effect on material and parts of the air dryer should not be used for cleaning of the air dryer.
6. The air dryer and its pipes and hoses should not be submerged in water.
7. Appropriate ground connection should be made. Electrical connections should be carried out by authorized electricians.
8. Electrical connection for the air dryer should not be made from a common panel with that of the compressor or other equipment.
9. Electrical cable of the air dryer should not be bent. Care should be taken that the electrical cable does not come into contact with hot surfaces; otherwise the cable might be damaged and the air dryer could not be operated. In such cases the air dryer could not be used and authorized service should be sought.
10. Electrical cable should not be removed from the socket by pulling the cable itself.
11. The air dryer should not be used under different voltages other than the indicated voltage on the label.
12. Compressed air is circulated within the air dryer. The pressure should be discharged before performing any kind operations on the air dryer. Otherwise, parts could disperse around under the pressure.
13. The air dryer should not be operated at pressure, flow rate and temperature values other than the ones indicated on the label.
14. Air hose and other devices that are connected on to the air dryer should be secured on a suitable place. Hoses could be displaced under pressure and could become dangerous.
15. A fuse is provided for small capacity air dryers on their electronic boards. A fuse should be provided on the main supply for higher capacity air dryers for safety of the equipment.
16. Care should be taken during cleaning of the condenser with compressed air. Dust accumulated on the condenser could be dangerous. Eye protection should be used during cleaning.
17. Noise level for AIR DRYER is around 70dB.
18. Care should be taken against harmful gasses that takes place during welding of copper pipes.
19. Any load that is more than 10 kg in weight should not be placed over the air dryer.

### 2.2. PROHIBITED APPLICATIONS

Any operations, other than ones stated here for assembly, operation and for maintenance, should not be performed on air dryers.

### 2.3. TRANSPORTATION INSTRUCTIONS

1. Air dryer should not be turned upside down nor laid on its side.
2. Centre of gravity of the air dryer is at its middle point (Figure1b),
3. The air dryer should be carried by holding it on its handles for short distance of transportations.

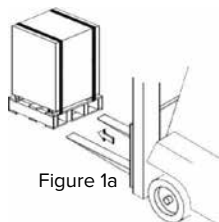


Figure 1a



Figure 1b

## 2.4 STORAGE INSTRUCTIONS

### 1. If the air dryer is not to be used immediately;

- The air dryer should be kept in covered locations that are free from humidity with its packaging on a pallet and protected against rain, water and impacts.

### 2. Storage after certain period of time of use;

- Air inlet and air outlet should be covered with blind plug.
- Cables should be wrapped. It should be stored in covered locations that are free of humidity on pallet as wrapped with shrink folio.

2.5. LAYOUT PLAN

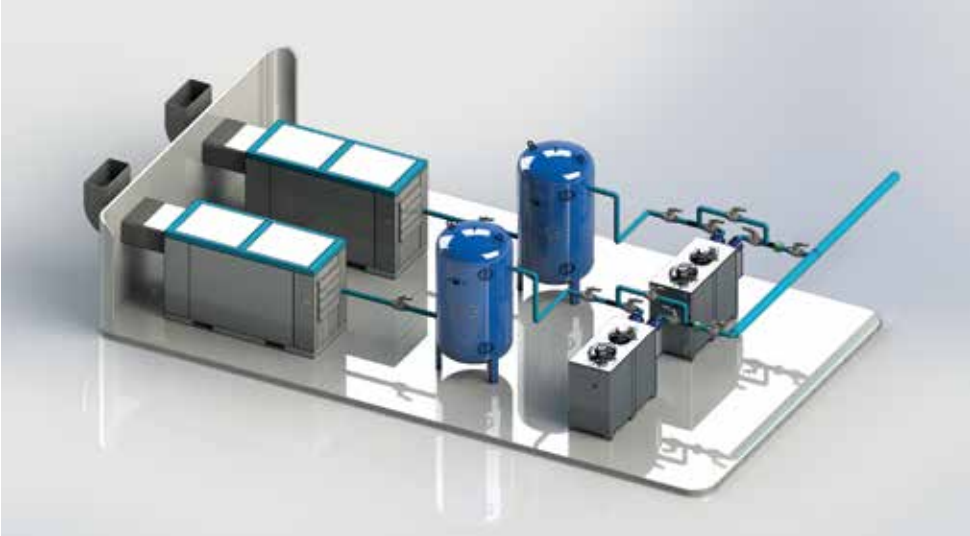


Figure 2



Figure 3



### 3. INSTALLATION INSTRUCTIONS

#### 3.1 BEFORE SET UP

1. Air dryer should be placed on hard and even ground.
2. When compressed air is connected, it should be controlled that there would not be any leakage.
3. 220 VAC main supply should be connected.
4. Main supply should be connected through an automatic fuse.
5. The system should be grounded.
6. Appropriate fuse and sockets should be used.
7. Diameters of pipes between the air dryer and the installation should be suitable to each other.
8. The voltage of the air dryer should be the same as the voltage of the field.

#### 3.2 INSTALLATION PROCESS

1. The air dryer should be kept away from flammable and corrosive materials and gasses.
2. The air dryer should not be left standing under direct sun rays nor under rain / water.
3. The air dryer should not be placed in dusty, rusty, contaminated environments when used externally
4. A space of minimum 50 cm should be left around the air dryer for maintenance purposes and for air circulation.
5. A space should be left between two or more air dryers for air circulation. Two or more of the air dryers should not be connected in parallel, they should be connected sequentially.
6. Electrical connection of the air dryer should not be made from a common panel that of the compressor or another equipment.
7. The air dryer should be grounded.
8. Air dryer should not be used with the voltage other than indicated on the label.
9. A fuse should be used on its mains supply for safe operation
10. Separate by-pass should be used for the air dryer and for the filter pipe line.
11. In this way, operation of the installation would not be obstructed during fault or maintenance

#### 3.3 CONNECTIONS

Appropriate filters should be used on inlet and outlet of the air dryer. Otherwise, the solenoid valve could malfunction. Use of different brand filters or use of filters that wear out in time will make the filter guarantee clause void. A valve should be added on the by-pass line by attaching a t-pipe on the by-pass line before the filter. **BY-PASS LINE SHOULD BE CLOSED DURING OPERATION. IT SHOULD ONLY BE USED DURING MAINTENANCE OR DURING DISTRIBUTION PROCESS.** Inlet filter should be connected on the air inlet point of the air dryer by using a removable union.

Outlet filter should also be connected on the outlet in the same manner. A valve should be connected after the outlet filter. Attention should be paid that the by-pass valve is close during the operation and the outlet valves of the inlet filter should be open. Valves of the bypass line should be opened so that maintenance can be performed on the dryer without interrupting pressurized air to the system.

##### 3.3.1. ASSEMBLY OF ZERO AIR LOSS (ZEROMAT) DRAIN:

In order to connect zero air loss drain unit on the second water drain connection available on the heat exchanger panel at the rear side of the equipment, the tap with filter belonging to the wait and drain unit with timer that is assembled as standard should be first be turned off. Following this, air inlet and outlet valve that enters the air dryer should be turned off and the air contained within the dryer should be discharged through bottom valves of the air filters. Following this, blind plug positioned on the spare exit connection should be removed and the ZEROMAT should be connected with use of ½ " nipple. After the ZEROMAT is connected, the tap with filter that operates with a timer and which is connected on to the drain valve should be kept at closed position. In this way the dryer will save energy by only discharging the water.



Figure 4

#### 4. OPERATING INSTRUCTIONS

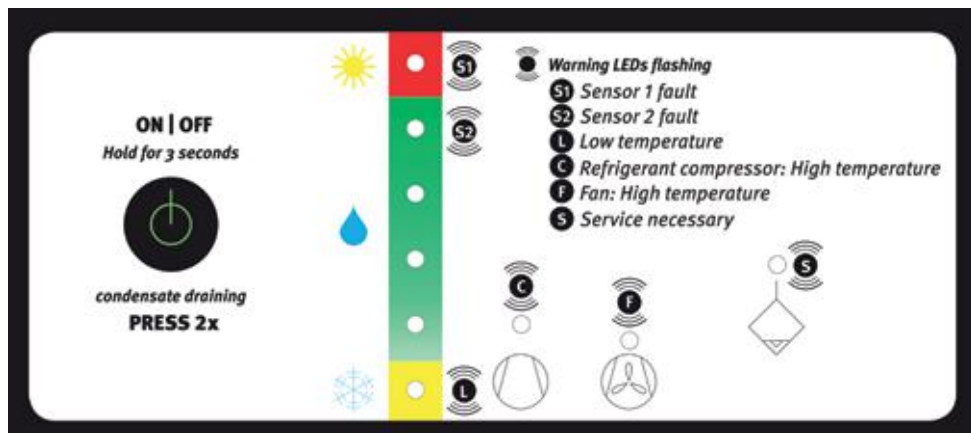


Figure 5

**S1** - SENSOR 1 FAULT

**L** - LOW TEMPERATURE

**F** - FAN: HIGH TEMPERATURE

**S2** - SENSOR FAULT

**C** - REFRIGERANT COMPRESSOR: HIGH TEMPERATURE

**S** - SERVICE NECESSARY



1. The on-off button should be pressed for 3 seconds to switch on the equipment.
2. All the LED lights on the front panel will flash in sequence when first switched on (Figure5).
3. Cooling compressor will start first and S1 LED will light on and other related LED lights will flash (Figure5-LED No1).
4. Depending on the model, the compressor fan will either start together with the cooling compressor or when the condenser pressure rises to the sufficient pressure level.
5. The cooling process is started and the operation of the system can be monitored over the LED panel.
6. Two different adjustments should be made for the drain solenoid valve. One for the draining time and the other for the waiting time. Water draining process could be set as required. Drain time could be monitored over the drain LED on the panel.

Waiting time: 1- 10minutes. Draining time: 1–15seconds.

## 5. INSTRUCTIONS FOR MAINTENANCE, REPAIRS AND CLEANING

Use of the air dryer under optimum conditions would result in provision of the maximum performance. When optimum operational conditions are provided and maintenance of the equipment is carried out on time, then the equipment would not require any servicing.

1. Condenser unit should be cleaned once a week with dry compressed air.
2. Filter elements should be replaced once every 3 to 6 months, depending on the contamination of the air compressor (please refer to us for compressed air filters)
3. The filter should be cleaned with the use of filter tap on the condensed water separator.

### Cleaning of the filter with the use of filter tap on the condensed water separator

- A- Disconnect the main supply from the socket. Open the top cover.
- B- Close the tap and remove the blind tap by unscrewing it anti-clock wise with the help of a screwdriver.
- C- Remove the filter inside and clean it by applying compressed air and replace it back again.
- D- Repeat the same operation after cleaning in order to assemble back the dryer.
- E- Open the tap with filter and check for any air leakages.

## 5.1. FAULT WARNING AND POSSIBLE REASONS

**Note:** Audible fault warning (buzzer) and fault output relay (12 VDC max 0.50 mA) is available for all the models on the electronic board which operates when there is a fault.

### OPERATING CONDITIONS OF MICROCHIP CONTROLLED COMPRESSED AIR DRYER EQUIPMENT:

1. Main supply should be; 220V/50Hz for models between between 900 and 6500 lt/min and 400V/50 Hz for models 8500 lt/min and above.
2. Main supply of the equipment should be protected with an automatic fuse.
3. The equipment should be grounded against leak currents and against electric shocks.
4. The equipment should not should not contact water such as rain etc. and should have direct grounding connection.
5. It should be controlled before operating the equipment that all the electrical connections were made correctly.

## **OPERATION OF MICROCHIP CONTROLLED COMPRESSED AIR DRYER EQUIPMENT AND OPERATING OF THE COMPRESSOR MOTOR:**

Start the equipment by pressing on the on-off switch on the front panel for 3 seconds.

The LED light for S1 will come on since there will be hot air entrance into the equipment at the start and the warning LED's for the condenser motor and for the compressor will come on indicating that these are also switched on ( for models of 900 lt/min and above, the condenser will switch on when the condenser reaches the required pressure)

Cooling process of the equipment has begun now and it will be possible to monitor the cooling process on the panel in degrees.

For models 8500 lt/min and above, the equipment will operate in cooling mode permanently at +2 °C and the fan motor will be switched on and off depending on the condenser pressure. Cooling compressor operates continuously.

The control of cooling process of the equipment is continuously controlled by the microchip as it sends 500 pulses per second to the compressor temperature sensor.

## **OPERATION OF THE CONDENSER FAN MOTOR:**

For models 900 lt/min and above, the fan will switch on when the pressure of the condenser reaches the suitable value and it switches off when the pressure drops.

## **OPERATION OF THE WATER DRAIN SOLENOID:**

Water drain can be operated at the required time intervals by setting two different timers on the water drain solenoids for waiting time and draining time and time and it is possible to monitor the drain process over the water drain LED available on the control panel.

**Manual Drain:** Manual drain can be operated by pressing on the on-off button positioned on the equipment twice simultaneously.

There is 1 unit of standard water drain output available on the microchip controlled electronic board.

## **TIME INTERVAL SETTING FOR WATER DRAIN SOLENOID:**

Waiting Time Interval: 1-10 minutes Operation Time Interval: 1-15 seconds

\* There is an audible fault output relay with free contact (12VDC, max 50 mA) is available on the electronic board of all models.

## **5.2. FAULT DIAGNOSIS**

### **1. S1 LED FLASHES**

If S1 light flashes, then the evaporator temperature sensor is at fault and the equipment protects itself against possible malfunctioning.

**PLEASE CONTACT OUR SERVICE DEPARTMENT**

### **2. S2 LED FLASHES**

If S1 light flashes, then the condenser fan temperature sensor is at fault and the equipment protects itself against possible malfunctioning.

**PLEASE CONTACT OUR SERVICE DEPARTMENT**

### **3. COMPRESSOR OPERATION LED FLASHES**

If the LED which indicates the operation of the compressor gives warning by flashing continuously, the equipment has operated for 30 minutes but could not carry out cooling process and protects itself against possible malfunctioning.

## REASONS

- a) Compressed air inlet temperature could be higher than +60 °C
- b) A dryer with small capacity has been selected for an high flow rate compressor,
- c) There could be problems on the cooling system.

**PLEASE CONTACT OUR SERVICE DEPARTMENT**

## 4. FAN OPERATION LED FLASHES

If the fan LED gives warning by flashing continuously, then the condenser fan temperature is higher than +70 °C and the equipment protects itself against possible malfunctioning.

## REASONS

- a) Condenser is blocked,
- b) Condenser fan motor is faulty.

**PLEASE CONTACT OUR SERVICE DEPARTMENT**

## 5. WATER DRAIN OPERATION LED FLASHES

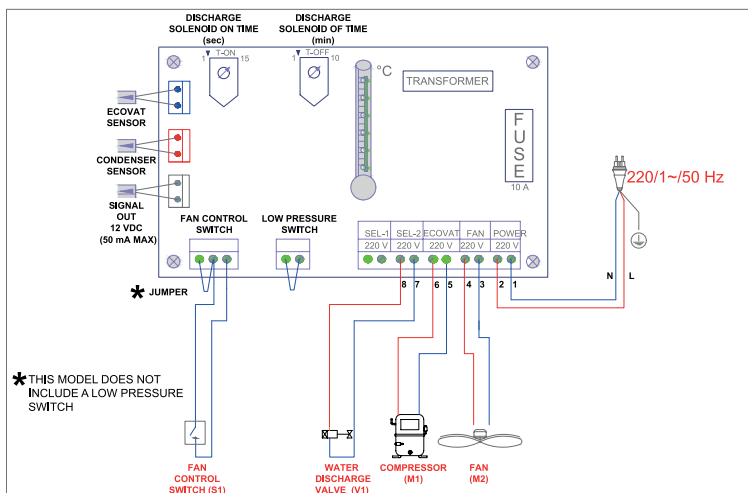
Operating time of filters have expired and the filter internal part should be replaced.  
To reset the equipment after replacement of the filter internal part, the on-off switch of the equipment should be kept pressed for 30 seconds while the equipment is operating and should be waited for the equipment to switch off and on again by itself and when the equipment starts to operate, then it resets itself and the equipment will start to count the maintenance period as adjusted by factory setting.

## 6. L- LED FLASHES

If the equipment measures for a period of 5 minutes that the temperature is at -5 °C and below, then the L-LED will flash and the equipment warns about freezing and the equipment protects itself against possible malfunctioning.

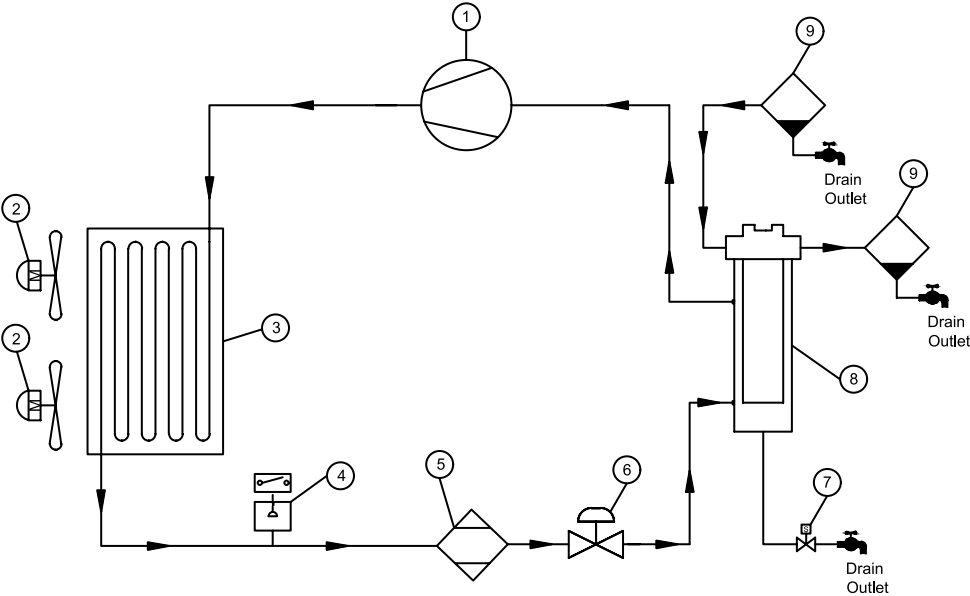
## 7. LPS (Low Pressure Switch) LED FLASHES

If the LPS LED positioned behind the electronic board flashes, this would mean that there is not any pressure on the gas line of the equipment. It could be that a gas leakage has taken place or low pressure switch is at fault.

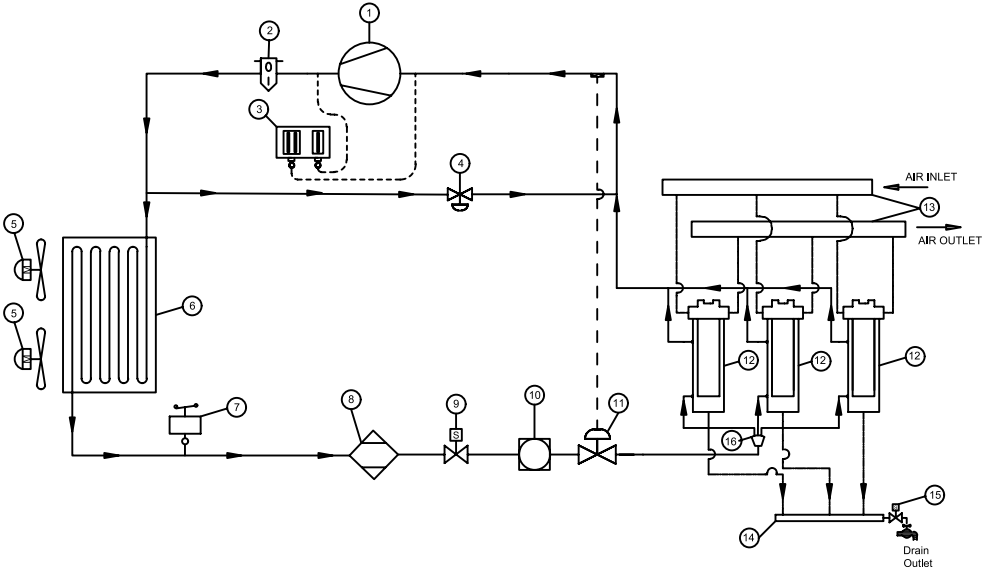


6. FLOW CHART

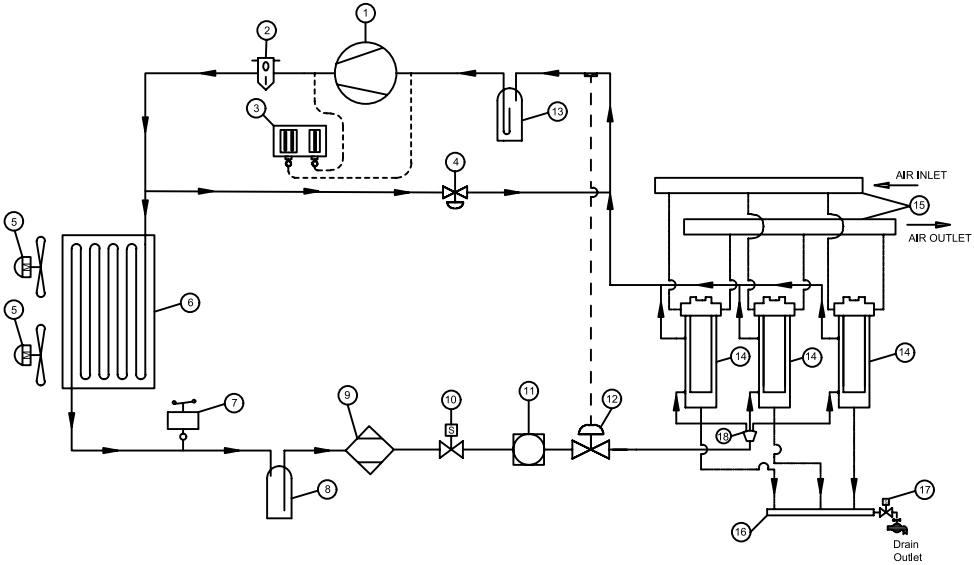
6.1. GAS CIRCUIT CHART FOR MODELS BETWEEN 900 AND 6.500 LT/MIN



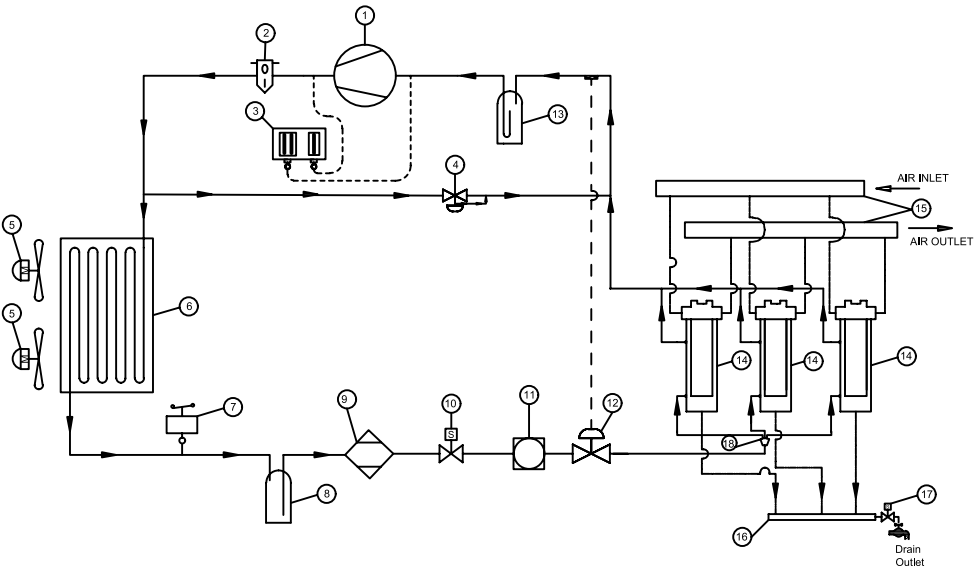
6.2. GAS CIRCUIT CHART FOR MODELS BETWEEN 8.500 AND 13.000 LT/MIN



6.3. GAS CIRCUIT CHART FOR MODELS BETWEEN 17.800 AND 40.000 LT/MIN



6.4. GAS CIRCUIT CHART FOR MODELS BETWEEN 45.000 AND 120.000 LT/MIN



## 7. LIST OF COMPONENTS ON REFRIGERATION AIR DRYER

### 7.1. LIST OF COMPONENTS BETWEEN MODELS 900 AND 6.500 LT/MIN

NO	COMPONENT
1	HERMETIC COMPRESSOR
2	FAN MOTOR
3	CONDENSER
4	FAN SWITCH
5	DRYER FILTER
6	EXPANSION VALVE
7	GENERAL PURPOSE SOLENOID VALVE
8	HEAT EXCHANGER
9	AIR INLET AND OUTLET FILTERS

### 7.2. LIST OF COMPONENTS BETWEEN MODELS 8.500 AND 13.000 LT/MIN

NO	COMPONENT
1	HERMETIC COMPRESSOR
2	OIL SEPARATOR
3	PRESSOSTATIC VALVE
4	BY PASS VALVE
5	FAN MOTOR
6	CONDENSER
7	FAN SWITCH
8	DRYER FILTER
9	CHILLER LIQUID SOLENOID VALVE
10	GLASS SCREEN
11	THERMOSTATIC EXPANSION VALVE
12	HEAT EXCHANGER
13	AIR SPREADING COLLECTOR
14	WATER DRAINING COLLECTOR
15	GENERAL PURPOSE SOLENOID VALVE



### 7.3. LIST OF COMPONENTS BETWEEN MODELS 17.800 AND 40.000 LT/MIN

NO	COMPONENT
1	HERMETIC COMPRESSOR
2	OIL SEPARATOR
3	PRESSOSTATIC VALVE
4	BY PASS VALVE
5	FAN MOTOR
6	CONDENSER
7	FAN SWITCH
8	LIQUID TANK
9	DRYER FILTER
10	CHILLER LIQUID SOLENOID VALVE
11	GLASS SCREEN
12	THERMOSTATIC EXPANSION VALVE
13	LIQUID HOLDER
14	HEAT EXCHANGER
15	AIR SPREADING COLLECTOR
16	WATER DRAINING COLLECTOR
17	GENERAL PURPOSE SOLENOID VALVE
18	CHILLER LIQUID SPREADER

### 7.4. LIST OF COMPONENTS BETWEEN MODELS 45.000 AND 120.000 LT/MIN

NO	COMPONENT
1	HERMETIC COMPRESSOR
2	OIL SEPARATOR
3	PRESSOSTATIC VALVE
4	AUTOMATIC BY PASS VALVE
5	FAN MOTOR
6	CONDENSER
7	FAN SWITCH
8	LIQUID TANK
9	DRYER FILTER
10	CHILLER LIQUID SOLENOID VALVE
11	GLASS SCREEN
12	THERMOSTATIC EXPANSION VALVE
13	LIQUID HOLDER
14	HEAT EXCHANGER
15	AIR SPREADING COLLECTOR
16	WATER DRAINING COLLECTOR
17	GENERAL PURPOSE SOLENOID VALVE
18	CHILLER LIQUID SPREADER

8. TECHNICAL DRAWINGS AND SPARE PART LIST

Labels which include code numbers of parts and their definitions, are affixed on these parts of the dryer. Code numbers of electrical parts are also indicated on electrical circuit diagrams. In addition, cable connections have been numbered.

V1  
DISCHARGE  
SOLENOID  
VALVE

V2  
GAS  
SOLENOID  
VALVE

V3  
FILTER  
MECHANICAL  
VALVE

M2  
CONDENSER  
FAN  
MOTOR

M1  
COOLING  
COMPRESSOR

YA  
OIL  
SEPERATOR

DRY  
GAS FILTER  
DRYER

EXC  
HEAT  
EXCHANGER

EK  
ELECTRONIC  
CARD

CON  
CONDENSER

C1  
COMPRESSOR  
CONTACTOR

LD  
LIQUID GAS  
TANK

C2  
FAN  
CONTACTOR

T1  
CAPILLARY  
TUBE

EV  
EXPANSION  
VALVE

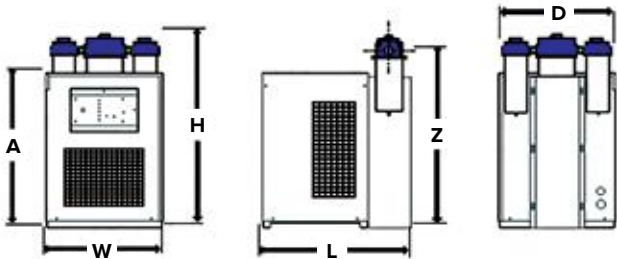
S3  
HIGH PRESSURE  
SWITCH

BV  
HOT GAS BY-PASS  
VALVE

SA  
SUCTION  
ACCUMULATOR

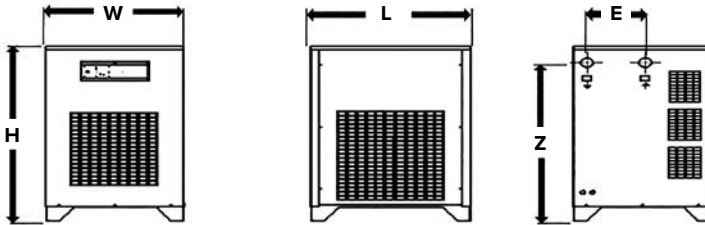
8.1. DIMENSION OF DRYERS (mm)

DIMENSION OF DRYERS BETWEEN 900 LT / MIN - 6500 LT / MIN (IN mm)											
MODEL	A	L	W	D	Z	H	RATE POW. hp	AIR FLOW RATE lt/min	KG	VOLTAGE	CONNECTION
900	472	415	330	325	505	540	1/5	900	30	220 V 50 HZ	1/2"
1200	472	415	330	325	575	625	1/5	1200	31	220 V 50 HZ	1/2"
1800	472	415	330	390	575	625	1/4	1800	32	220 V 50 HZ	3/4"
2200	472	415	330	390	620	870	1/4	2200	32	220 V 50 HZ	3/4"
2600	613	555	470	420	720	675	3/8	2600	44	220 V 50 HZ	1"
3100	613	555	470	420	720	675	3/8	3100	45	220 V 50 HZ	1"
3700	613	555	470	420	720	675	1/2	3700	47	220 V 50 HZ	1"
5500	750	720	505	425	985	940	3/4	5500	79	220 V 50 HZ	1"
6500	750	720	505	425	985	930	1	6500	83	220 V 50 HZ	1-1/2"



### DIMENSION OF DRYERS BETWEEN 8500 LT / MIN - 35500 LT / MIN (IN mm)

MODEL	H	W	L	Z	E	F	RATE POW. hp	AIR FLOW RATE lt/min	KG	VOLTAGE	CONNECTION
8500	1190	735	905	1075	295	-	2	8500	140	380 V 50 HZ	2"
11.000	1190	735	905	1075	295	-	2	11.000	140	380 V 50 HZ	2"
13.000	1190	735	905	1075	295	-	2 1/2	13.000	150	380 V 50 HZ	2"
17.800	1385	780	1145	1090	355	-	3	17.800	226	380 V 50 HZ	2-1/2"
20.000	1385	780	1145	1090	355	-	3	20.000	234	380 V 50 HZ	2-1/2"
25.500	1385	780	1145	1100	325	-	4	25.500	273	380 V 50 HZ	3"
30.000	1670	830	1450	1100	325	-	5	30.000	330	380 V 50 HZ	3"
35.500	1670	830	1450	1100	325	-	6	35.500	334	380 V 50 HZ	4"



### CORRECTION FACTORS

#### CORRECTION FACTORS FOR DIFFERENT WORKING PRESSURES

BAR	5	6	7	8	9	10	11	12	13	14	15	16
FE: 1	0,9	0,96	1,0	1,04	1,06	1,09	1,10	1,20	1,24	1,31	1,39	1,48

#### CORRECTION FACTORS FOR DIFFERENT AMBIENT TEMPERATURES

°C	20	25	30	35	40	45	50
FOS: 1	1,05	1	0,98	0,93	0,84	0,76	0,7

#### CORRECTION FACTORS FOR DIFFERENT INLET AIR TEMPERATURES

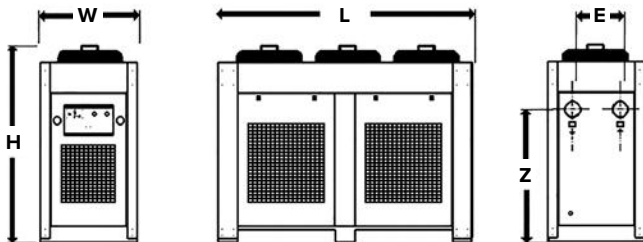
°C	30	35	40	45	50	55	60
AG: 1	1,29	1	0,92	0,78	0,65	0,52	0,45

#### CORRECTION FACTORS FOR DIFFERENT OUTLET AIR DEW POINT VALUES

°C	2	3	6	8	10
FÇİ: 1	0,8	1	1,14	1,25	1,36

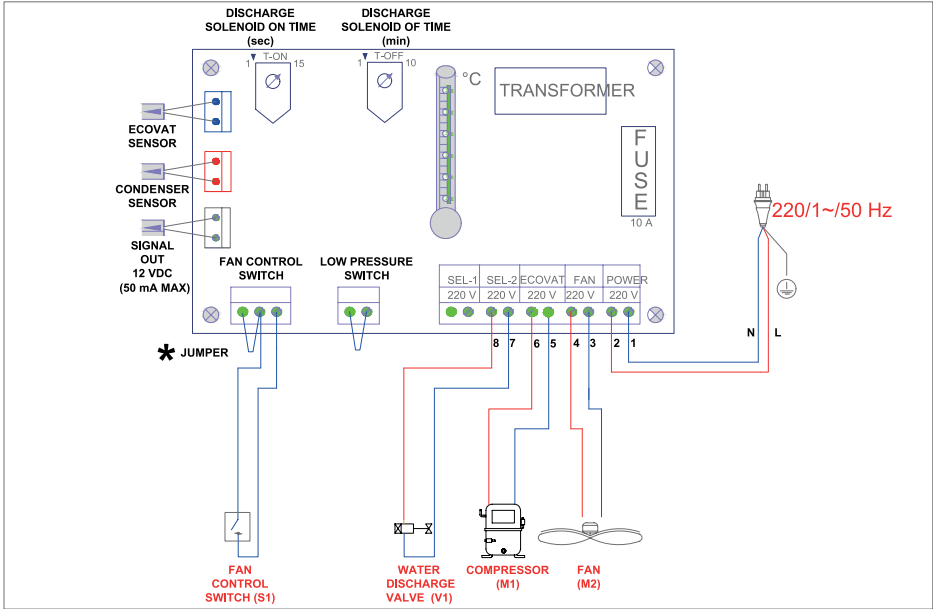
**DIMENSION OF DRYERS BETWEEN 40.000 LT / MIN - 140.000 LT / MIN (IN mm)**

MODEL	H	W	L	Z	E	F	RATE POW. hp	AIR FLOW RATE lt/min	KG	VOLTAGE	CONNECTION
40.000	1670	830	1450	1100	395	-	8	40.000	348	380 V 50 HZ	4"
45.000	1670	830	1450	1100	395	-	8	45.000	480	380 V 50 HZ	4"
50.000	1670	830	1450	1100	395	-	10	50.000	552	380 V 50 HZ	DN 150
60.000	1820	950	2020	1645	540	-	10	60.000	700	380 V 50 HZ	DN 150
71.000	2350	950	2290	1645	540	-	12	71.000	800	380 V 50 HZ	DN 150
80.000	2350	950	2290	1645	540	-	15,5	80.000	950	380 V 50 HZ	DN 150
90.000	2350	950	2290	1645	559	-	15,5	90.000	1250	380 V 50 HZ	DN 150
106.000	2350	1250	2800	1645	559	-	15,5	106.000	1380	380 V 50 HZ	DN 200
120.000	2350	1250	2800	1645	559	-	20	120.000	1500	380 V 50 HZ	DN 200

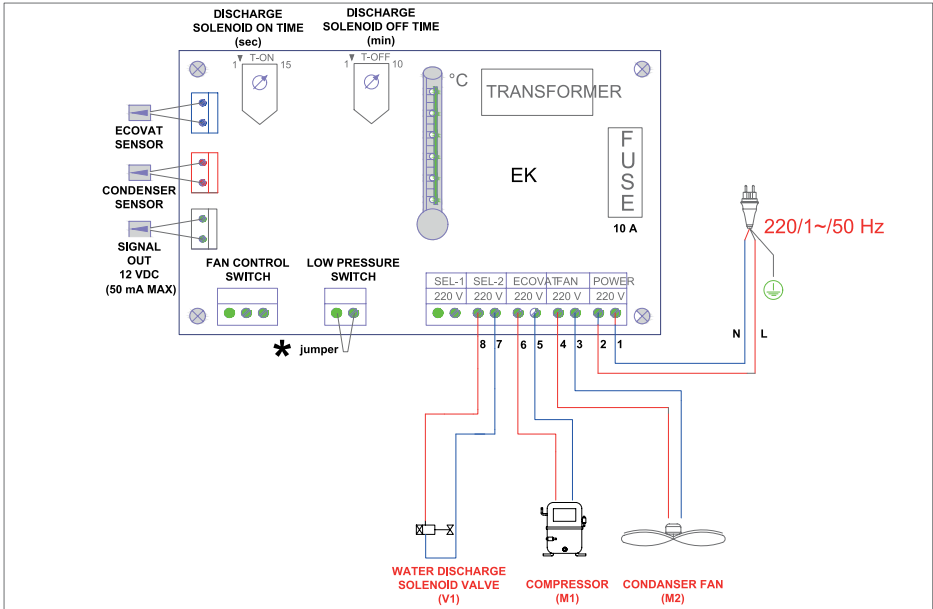


8.2 POWER AND CONTROL CIRCUIT CHARTS

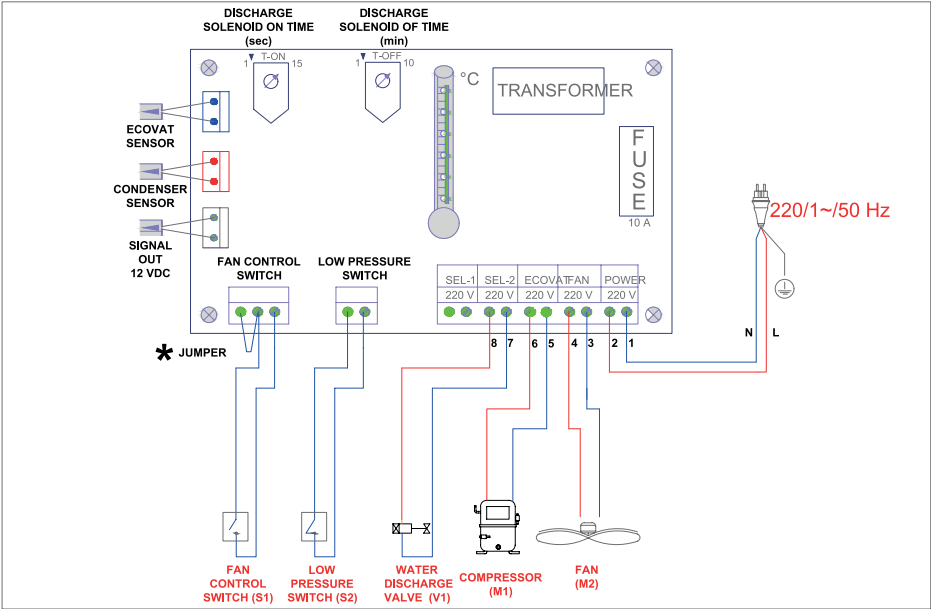
8.2.1 FOR MODELS BETWEEN 900 AND 2.200 LT/MIN



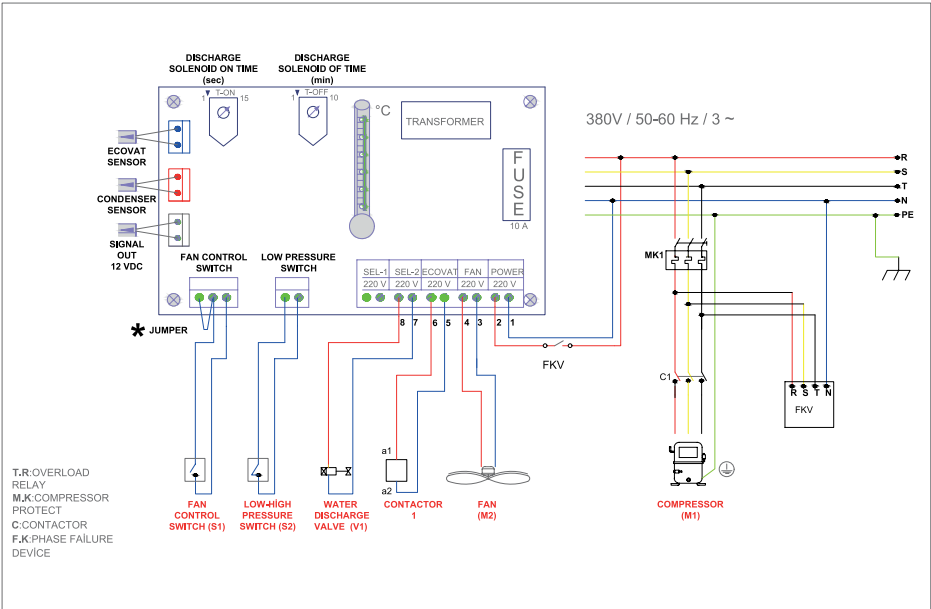
8.2.2 FOR MODELS BETWEEN 2.600 AND 3.700 LT/MIN



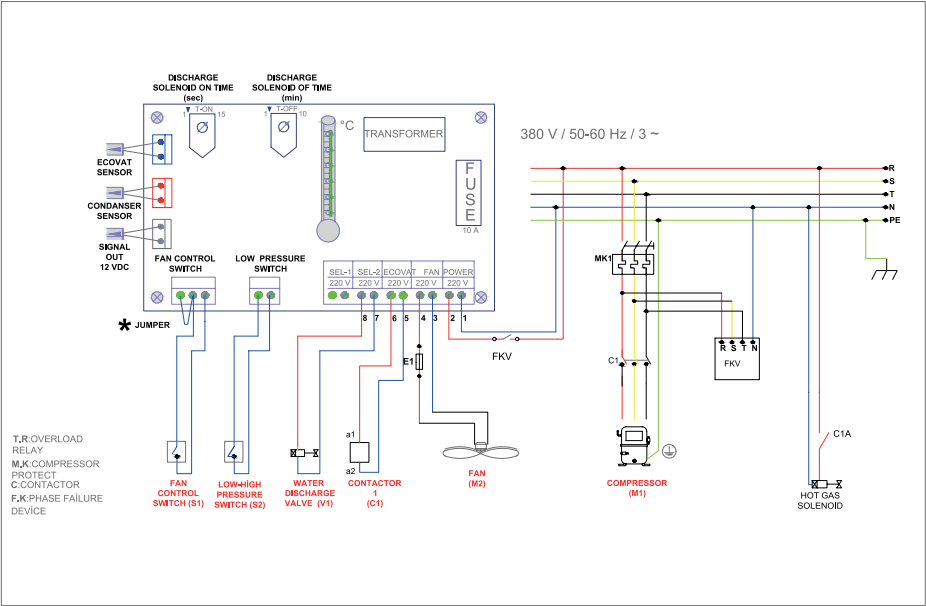
8.2.3. FOR MODELS BETWEEN 5.500 AND 6.500 LT/MIN



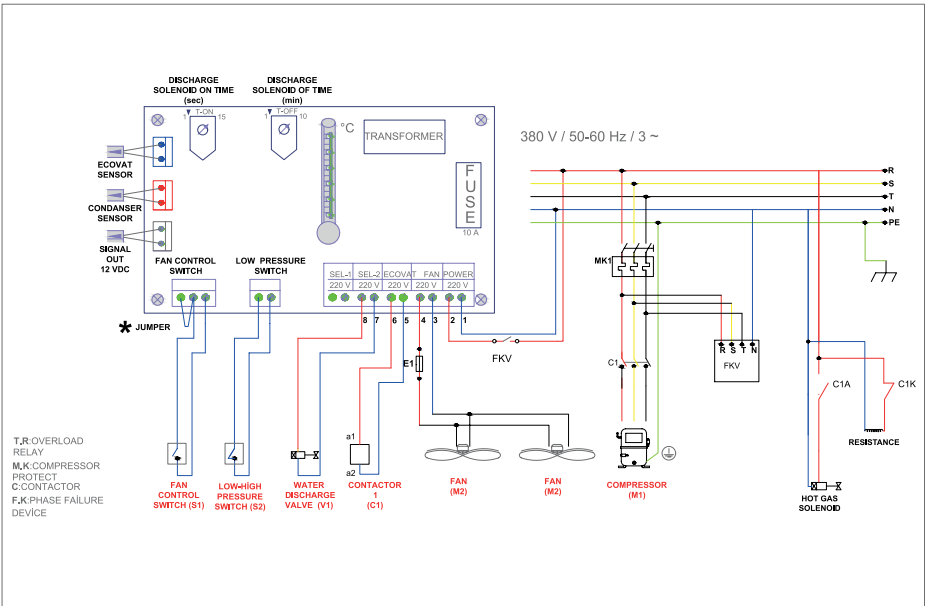
8.2.4. FOR MODELS BETWEEN 8.500 AND 13.000 LT/MIN



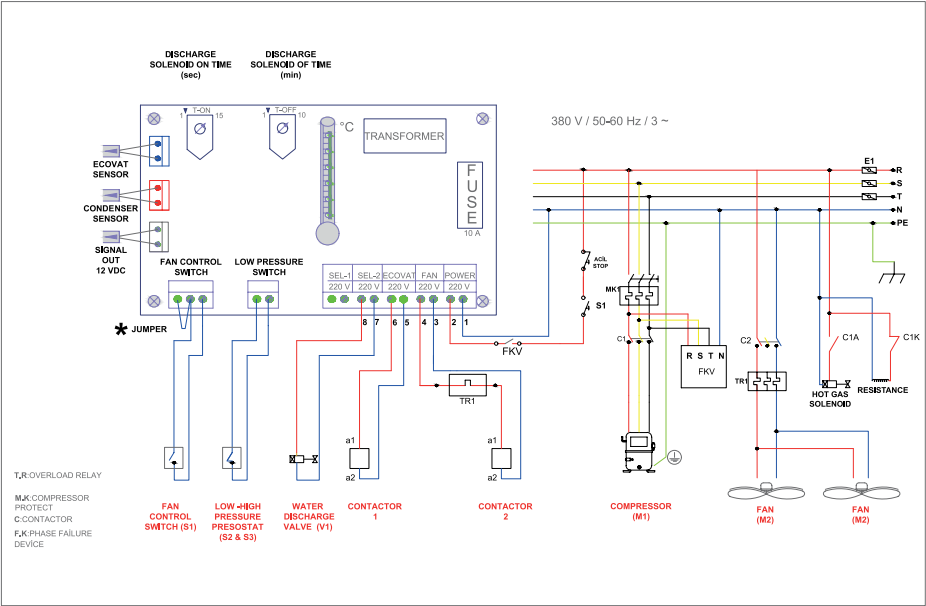
8.2.5. FOR MODEL 17.800 LT/MIN



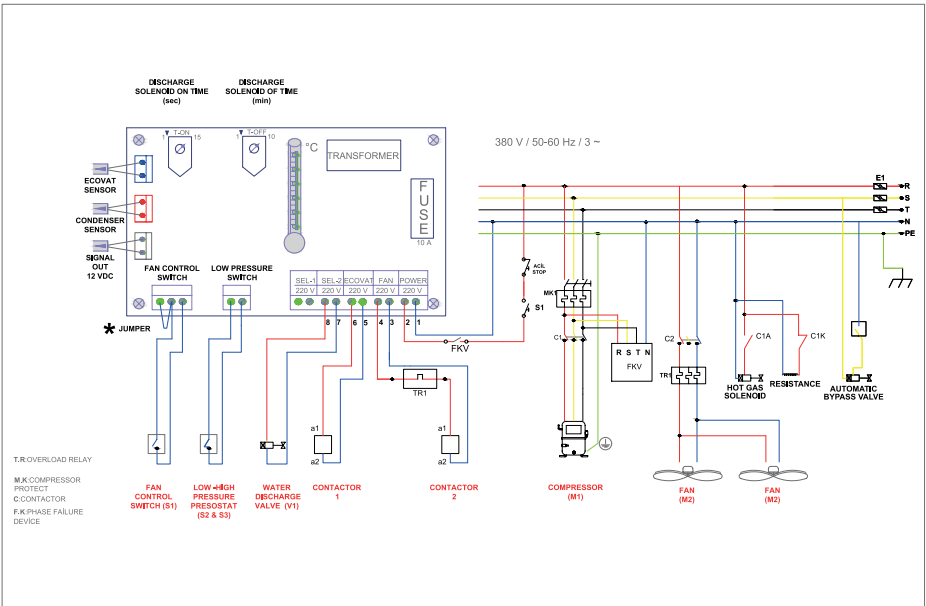
8.2.6. FOR MODEL 20.000 LT/MIN



8.2.7. FOR MODELS BETWEEN 25.000 AND 40.000 LT/MIN

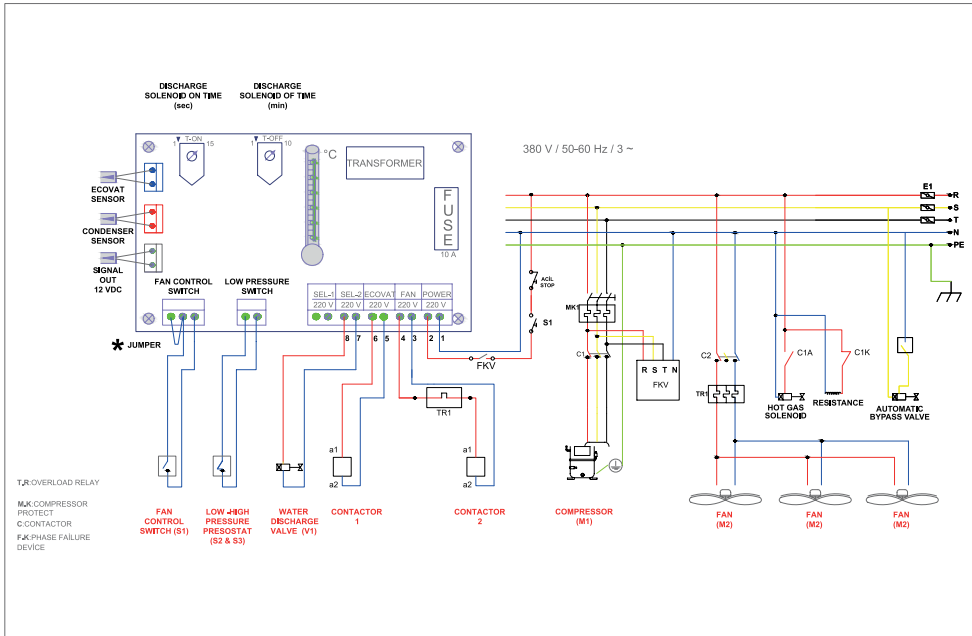


8.2.8. FOR MODELS BETWEEN 45.000 AND 60.000 LT/MIN





### 8.2.9. FOR MODELS BETWEEN 70.000 AND 120.000 LT/MIN

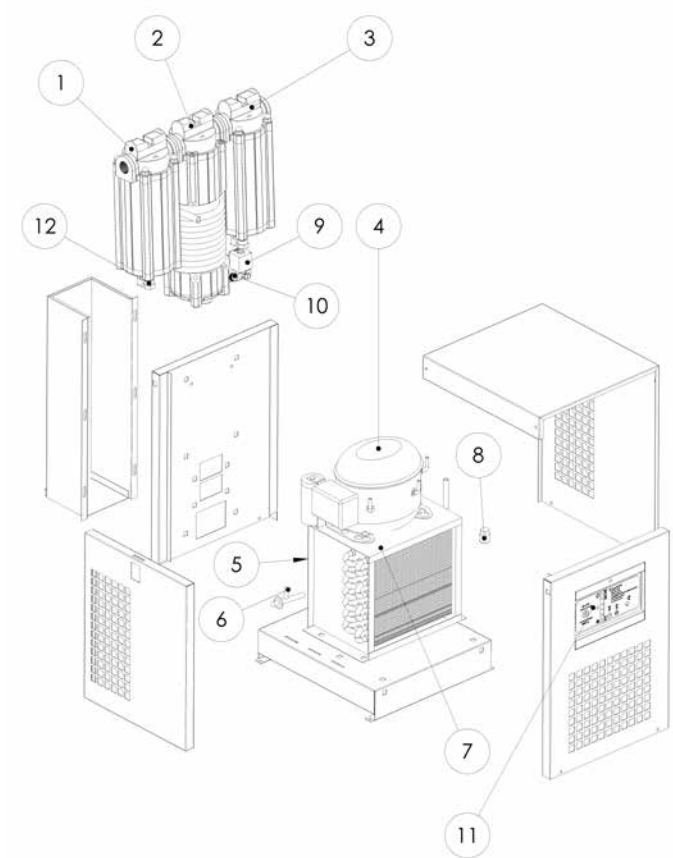


### 8.3 SPARE PARTS LIST

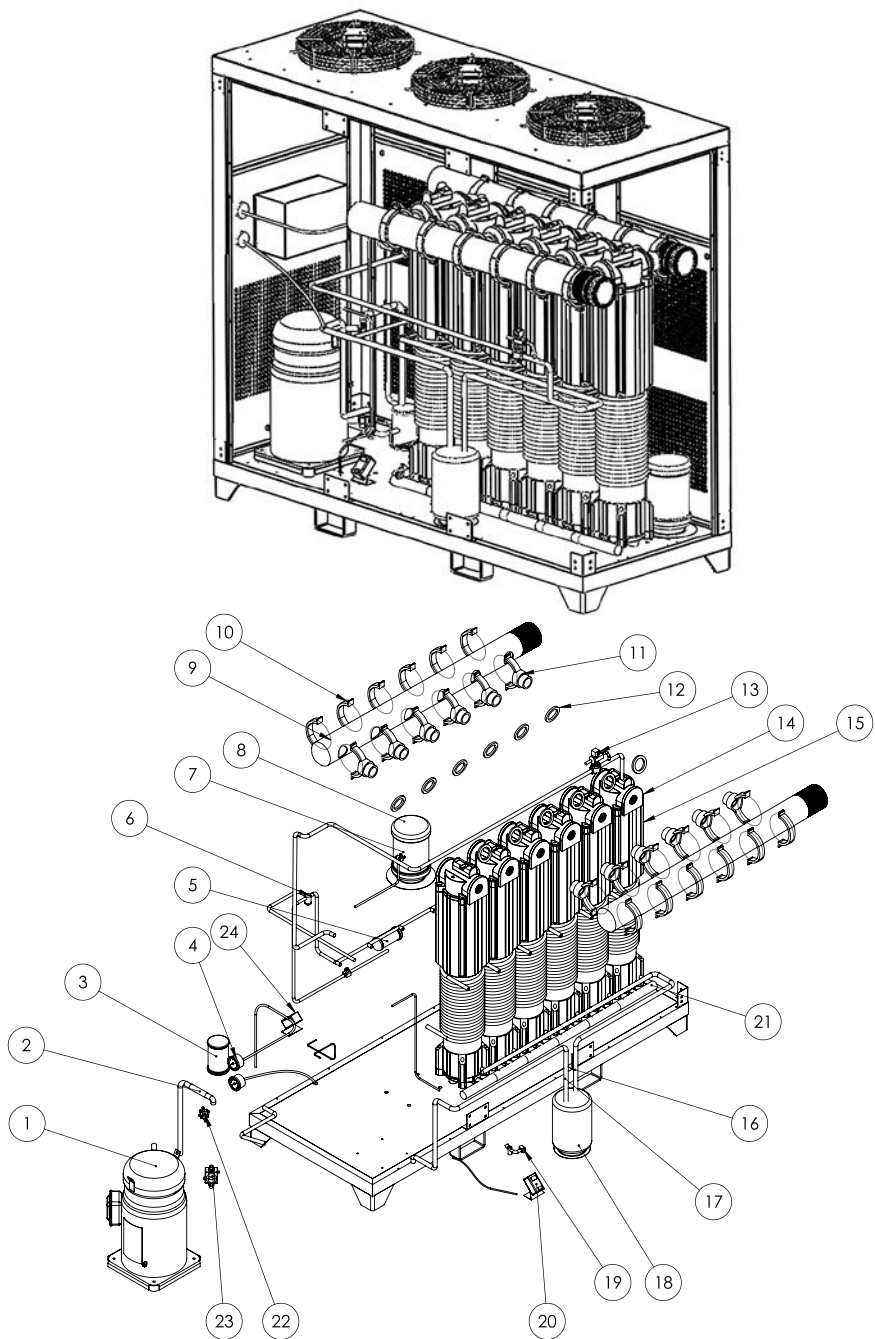
TYPE OF PART	TECHNICAL SPECIFICATION
COMPRESSOR	For models between 900-6500; 220 v / 50/Hz Hermetic R-134a gas; For models between 8500-40.000; 400 v /50Hz Hermetic R-407c gas; For models between 40.000-140.000; scroll or semi-hermetic; 400v/50/Hz/
FAN MOTOR	220v/50-60Hz/suction
DRAIN SOLENOID VALVE	For models between 900 - 11.000; with 1/4” connection, NK220v/50Hz; For models between 11.000 140.000; 1/2” connection, Nk 220v/50Hz
GAS SOLENOID VALVE	220V/50/Hz/NK
EXPANSION VALVE	R407-c Gas compatible internal balance
DRYER	Connected with unions or welded
CONTACTOR	220V /50-60/Hz bobbin 9VE18A
ELECTRONIC BOARD	220V /50-60/Hz, with microprocessor control

## 8.4 SMALLER MODELS EXPLODED VIEW AND LIST OF COMPONENTS

NO	NAME
1	INLET FILTER
2	EVAPORATOR
3	OUTLET FILTER
4	GAS COMPRESSOR
5	REFRIGERATOR FILTER
6	EXPANSION VALVE
7	CONDENSER
8	FAN SWITCH </td
9	DRAIN SOLENOID VALVE
10	DRAIN VALVE
11	ELECTRONIC CARD BOARD
12	FILTER DRAIN VALVE



8.5 LARGER MODELS EXPLODED VIEW AND LIST OF COMPONENTS



NO	NAME
1	COMPRESSOR
2	VIBRATION SENSOR
3	OIL SEPARATOR
4	MANOMETER
5	FILTER
6	EXTENSION VALVE
7	LIQUID TANK VALVE
8	LIQUID TANK
9	COLLECTOR
10	COLLECTOR CONNECTION PART-1
11	COLLECTOR CONNECTION PART-2
12	HEAT EXCHANGER CONNECTION PARTS
13	HOT GAS BYPASS VALVE
14	HEAT EXCHANGER
15	HEAT EXCHANGER BODY
16	RECEIVER OUTLET
17	RECEIVER INLET
18	RECEIVER
19	DUST KEEPER
20	PRESSURE COMBINER
21	WATER DRAIN COLLECTOR
22	PRESSURE LINE VALVE
23	VACUUM LINE VALVE
24	LOW PRESSURE PRESSURESTAT

## 9. SERVICING FORM

Document No: FRM_SRV_01	Issue Date: 28.06.2009	Revision No: 00	Revision Date: 29.05.2012
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# SERVICING

## 1/1

Customer Details		Product Details	
Current Code: CH50001 Current Title : Specimen Company City : District: Address :  Telephone : Fax : Tax Office : Taxation No :		Product Code: Product Name: Brand: Model: Serial No: Manufacturing Date:	

**Information about the Fault**

Fault Notified by the Customer:-  
 Fault Determined: -

**General Information**

Under Guarantee <input type="checkbox"/>	Outside Guarantee <input type="checkbox"/>	Repair Onsite <input type="checkbox"/>	Delivery to Plant <input type="checkbox"/>	Inappropriate Operational Conditions <input type="checkbox"/>
Condenser Blocked <input type="checkbox"/>	Incorrect Selection <input type="checkbox"/>	Faulty Assembly <input type="checkbox"/>	Grounding Unavailable <input type="checkbox"/>	

**Information About Ambient/Environment**

Dusty <input type="checkbox"/>	Excessively Hot <input type="checkbox"/>	Inappropriate Ventilation <input type="checkbox"/>
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**Compressed Air Details**

Stops Very Seldom <input type="checkbox"/>	Compressor Operating Continuously <input type="checkbox"/>	Inlet Temperature Excessively High <input type="checkbox"/>
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**Filter Details**

Brand of Filter	Model of Filter
Filter Element Blocked <input type="checkbox"/> Contamination Indication <input type="checkbox"/>	Water Drain Manual <input type="checkbox"/> Automatic <input type="checkbox"/>

**Compressor Details**

Brand of Compressor	Type of Compressor
Rated Power (HP)	Pressure (bar)

Stock Code	Stock Name	No of Items	Unit Price	Amount	Discount	VAT	Total
ST000779	General Maintenance and Labour Charges	1,00	ADET	0,00	0,00	0,00	0,00

## 10. ISSUES TO BE CONSIDERED WITH REGARDS TO THE EQUIPMENT

**For dismantling of the equipment that has come to end of its operational life;**

- Electrical parts should be removed,
- All of the piping system of the air system and its air inlet connection should be dismantled.

**Parts of the equipment could be classified as the following;**

- Electronic waste (electronic boards cables)
- Plastic parts
- Steel parts
- Aluminum
- Non-steel metals



Equipment and its parts should be disposed in line with the legal principles set out by local authorities.

## 11. GUARANTEE CLAUSES

### ISSUES RELATED TO THE GUARANTEE CERTIFICATE

- 1- It could be possible that there would be faults, mistakes of operators or damages might arise from them .
- 2- Damages might take place during loading and unloading of the equipment when the equipment is delivered to the customer and after.
- 3- Faults or damages might take place on the electrical parts when the equipment is operated under low voltage or at different voltage conditions as compared to the voltage stated on the label.
- 4- Faults or damages might take place on the equipment due to the lighting used or due to a fire.
- 5- Faults or damages might take place on the equipment when it is operated in ways contrary to the conditions indicated in the instruction manual.
- 6- Faults or damages might take place on the equipment when it is operated by using different model inlet and outlet filters.
- 7- Expenses related to delivery and transport of the equipment covered under guarantee scope will be limited by the access of the servicing technician for the guaranteed equipment.

**ELIMINATION OF FAULTS INDICATED ABOVE WILL BE SUBJECT TO A CHARGE.**

# AIR DRYER GUARANTEE CERTIFICATE

## REFRIGERANT PRESSURIZED AIR DRYER

With this certificate, we declare that when your device is installed as it was instructed in the manual and it does not receive any maintenance or interference from anyone not authorized by AAG, against all manufacture faults, it is GUARANTEED FOR 1 (ONE) YEAR.

For all interventions within the scope of guarantee, no payment will be requested such as labor, spare parts or by any other name. Any time spent for maintenance within the guarantee period will extend the period. Repair time will be one month maximum. This period will start upon arrival of the machine at an authorized repair station or when that is not available in your region, upon arrival at an authorized retailer or our factory. Inclusion of the fault into the scope of guarantee and of the necessary spare parts to change will all be determined by our company.

In case when the device breaks down and is not repaired within the guarantee period, the machine will be replaced by the authorized maintenance center or authorized retailer, authorized regional representative or by our company after it is determined that the fault is unrepairable.

DATE OF DELIVERY :  
SERIAL NUMBER :  
DATE OF SALE :  
DATE OF MANUFACTURE:

SELLING COMPANY, NAME :  
TEL-FAX :  
SELLING COMPANY :  
(STAMP AND SIGNATURE)





