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rev "A" 04/03



201 Series Refrigerated Air Dryer

Models UA201-10 through UA201-2000

Installation, Operating, & Maintenance Manual

Introduction

This manual contains information and recommendations for installing, operating, and servicing the Ultra Air Refrigerated Dryer. Ultra Air Refrigerated Dryers are the highest quality dryers available. We back this claim with one of the longest warranties available in the industry. All units are totally self-contained and have been fully tested and inspected by Ultra Air before shipment from the factory.

The information, specifications, and illustrations in this manual are in accordance with the information in effect at the time of printing. Ultra Air reserves the right to change design and specifications without notice and without incurring obligation.

Please read this manual carefully before locating and installing your dryer. Any questions or problems not covered herein may be directed to your Ultra-Air distributor or to Numatics Air Preparation Group, 3309 John Conley Drive, Lapeer, MI 48446, or by phone at (810)667-6800 or fax at (810)667-3902. Before calling, be sure to have the model and serial numbers available. The manufacturer will not be responsible for parts returned without proper authorization.

Warnings

Only persons experienced and licensed to work on electrical, refrigeration, and compressed air systems should install or operate this equipment.

This entire manual should be read and understood before starting installation or operation of this dryer. Before starting, installing, or performing maintenance procedures, the main power must be turned off and the dryer must be depressurized to 0 PSIG.

Do not remove, repair, or replace any item on this dryer while it is under pressure and/or the power is turned on. This dryer contains refrigerant R134A or R22. Service personnel must be certified to handle R134A and R22 and comply to all local, state, and federal regulations concerning refrigerant when performing maintenance or service on this dryer. Never operate this dryer above the maximum rated operating conditions. Operating above specified conditions will result in inferior performance and could damage the unit and/or cause personal injury.

Ultra Air Products, Inc. will not be held responsible for removal, reinstallation, down time costs, or consequential damages caused by the refrigerated air dryer even if the possibility of such incidental or consequential damages has been made known to Ultra Air Products, Inc.

Receiving and Inspection

Upon arrival, remove all packaging materials and inspect dryer carefully. Inspect cabinets for dents, inlet and outlet connections for damage, and skid for any oil due to refrigerant leaks. Inspect refrigerant gauges; they should read at least 40 PSIG and not be damaged. If they do not read at least 40 PSIG, do not start the dryer, instead, contact the factory immediately. If any damage is found, report it to the freight company immediately.

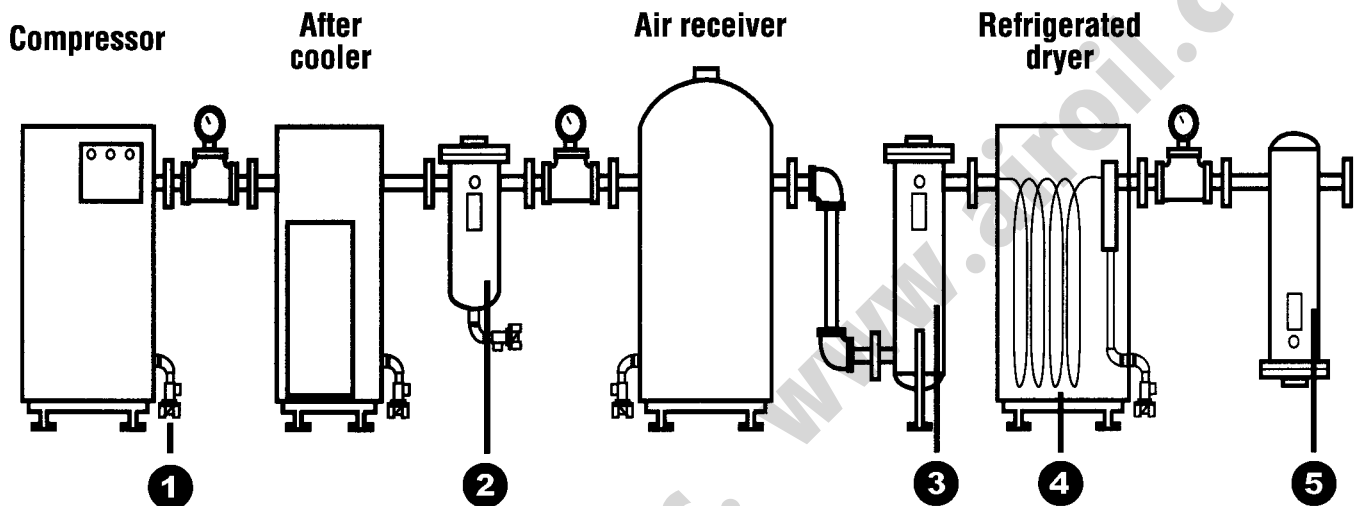
Installation

Allow three (3) feet on all sides of the dryer for service and proper air flow. The dryer should be installed in ambients where temperatures do not drop below 40°F or rise above 110°F. Dryers are normally installed downstream of the receiver tank to prevent undue surging. Unit should be sitting level. Always select an installation site where ample with ventilation, particularly for air-cooled condenser units. An adequate supply of outside air may be made available by using an exhaust system to avoid recirculation of room air. An area with a high ambient temperature will affect the efficiency of an air-cooled (continued)

Installation (continued)

condenser with a resulting increase in workload on the refrigeration compressor. This can conceivably reduce the life of the equipment and hinder its operation. Dryers operating in ambients lower than 40°F ambient must be ordered with a low ambient control option.

Recommended Installation



- 1) **Drain valve:** automatically expels water on timed sequence, eliminating the potential of water buildup.
- 2) **Water separator:** uses centrifugal action to spin large volumes of liquid out of the system. Use with drain valve is highly recommended.
- 3) **Heavy duty coalescer (1.0 micron):** removes bulk amounts of oil aerosols through impingement separation. Should have drain valve to prevent moisture collection. Protects refrigerated dryer from oil coating on interior walls, as oil acts as an insulator and reduces the efficiency of the dryer.
- 4) **UA201 Series refrigerated air dryer:** Lowers compressed air dewpoint.
- 5) **Heavy duty coalescer (1.0 micron)**

Drain Connections

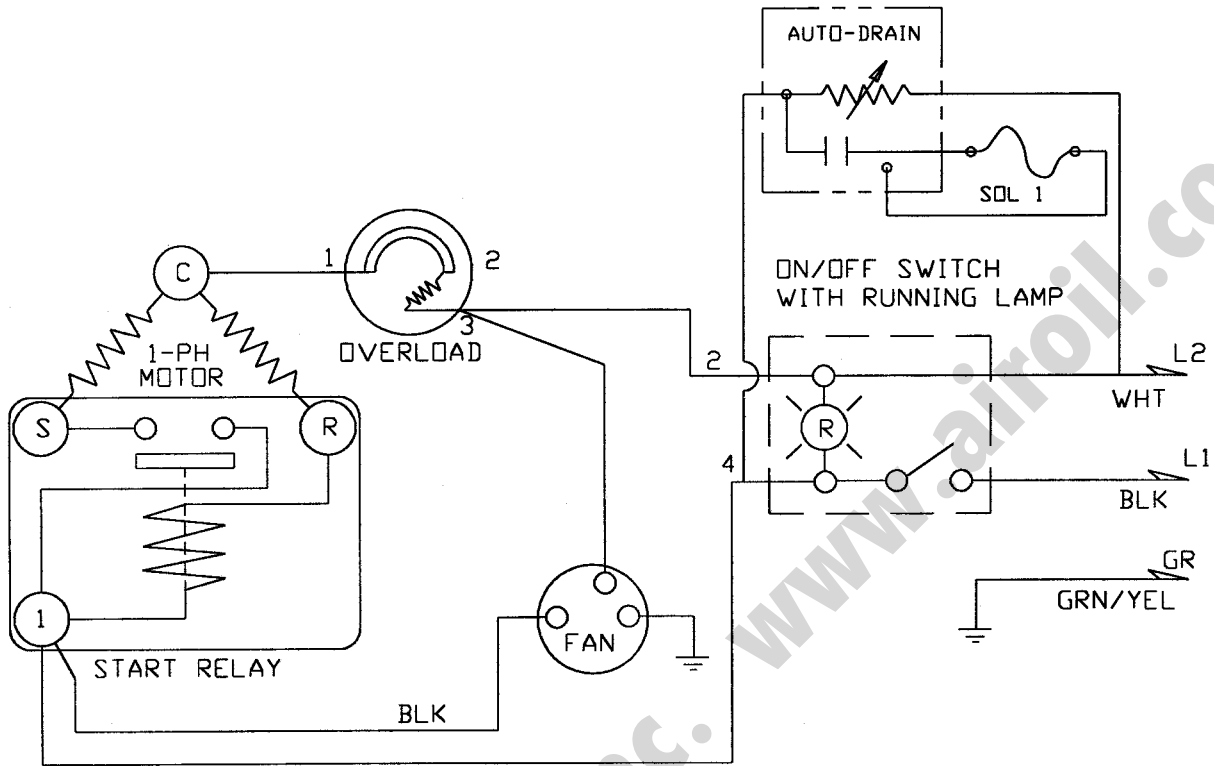
All separators on the UA201 models and prefilters on models UA201-125 and up are equipped with a timer actuated solenoid valve drain system. Prefilters on models UA201-10 through UA201-100 come standard with an automatic float drain. The drain line from the dryer should be sloped and emptied into a floor drain or connector that is lower than the bottom of the separator in the dryer so the condensate that is removed by the dryer can be drained by gravity.

Electrical Requirements

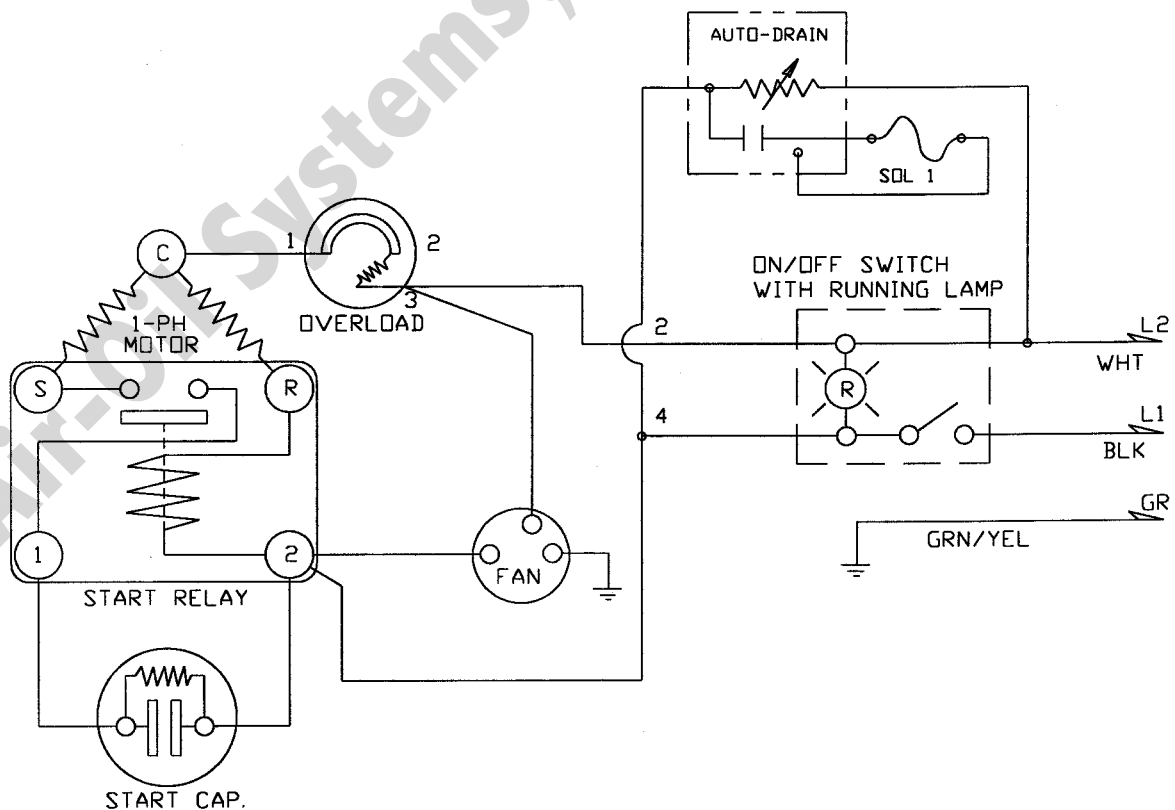
The nameplate on the instrument panel on each unit identifies the power supply requirements. A suitable wall-mounted disconnect switch in accordance with national and local code requirements is recommended.

Electrical Schematic

Models UA201-10 through UA201-20, 115V-1PH-60Hz

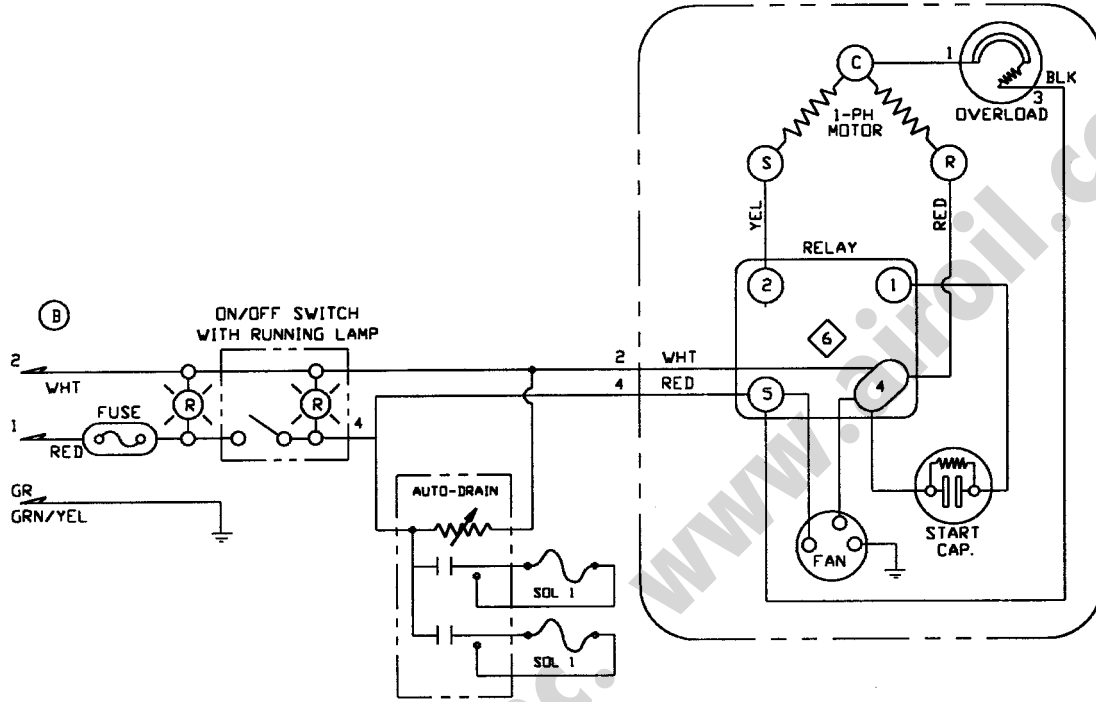


Models UA201-25 through UA201-100, 115V-1PH-60Hz

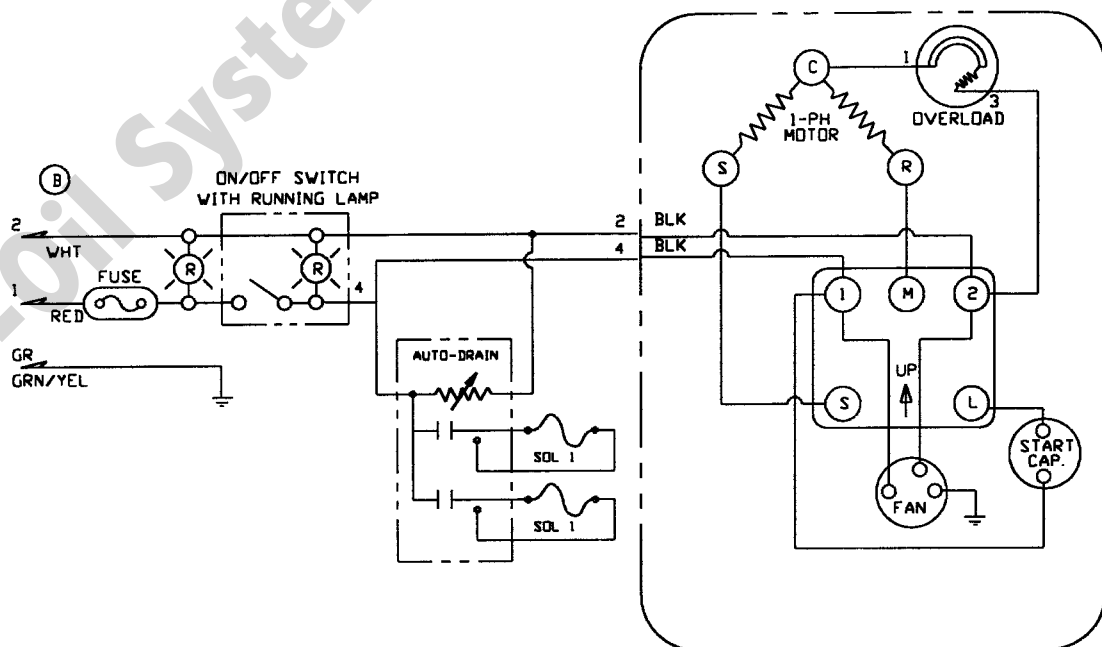


Electrical Schematic (continued)

Models UA201-125 & UA201-150, 115V-1PH-60Hz

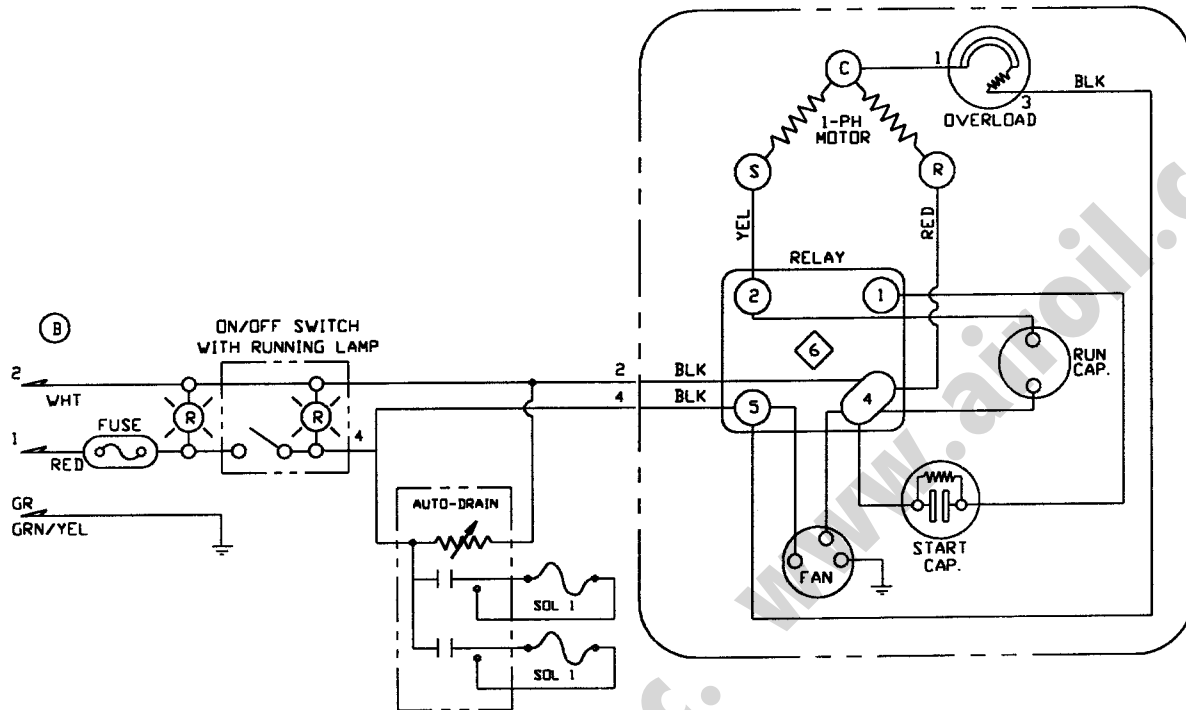


Models UA201-125 & UA201-150, 230V-1PH-60Hz



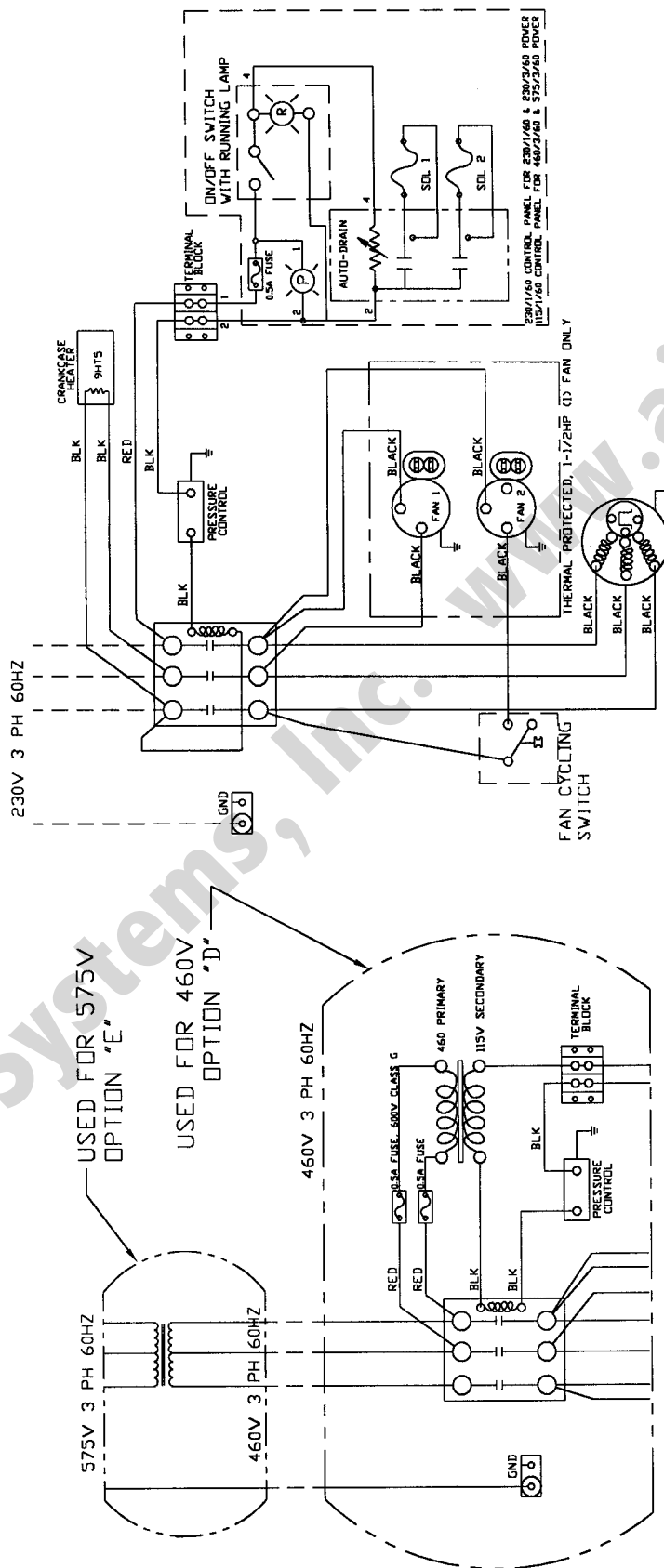
Electrical Schematic (continued)

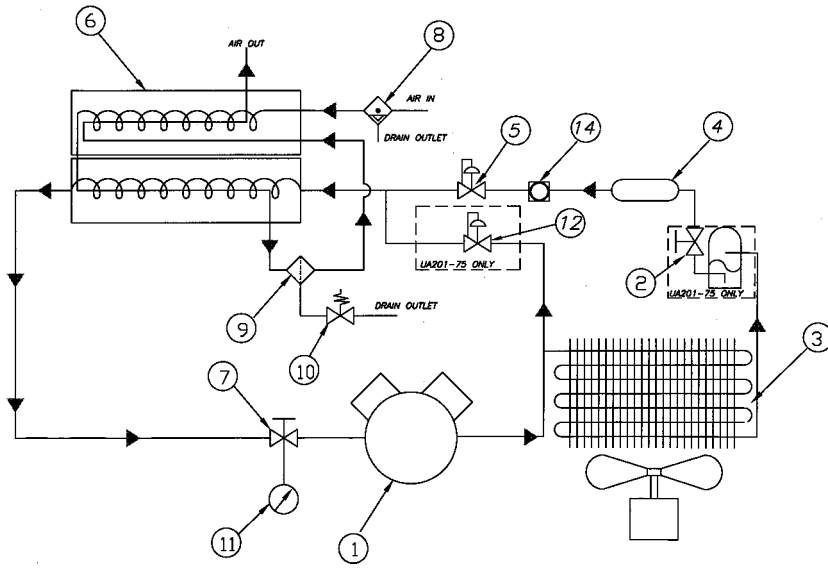
Model UA201-200, 230V-1PH-60Hz



Electrical Schematic (continued)

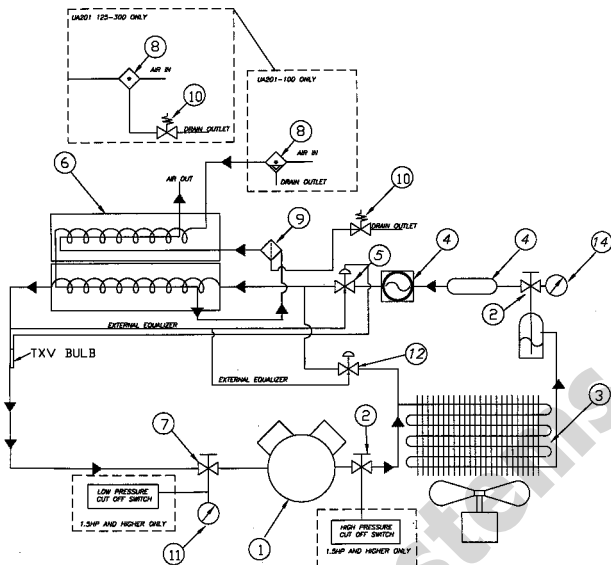
Models UA201-250 through UA201-2000, 230V through 575V-3PH-60Hz





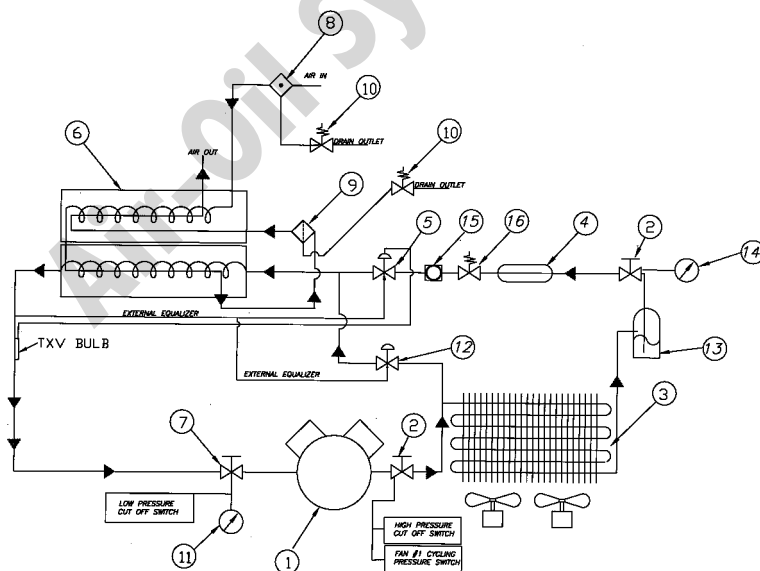
**UA201-10 through UA201-75
Air and refrigerant flow diagram**

- 1 Compressor
- 2 Discharge roto lock valve
- 3 Air cooled condenser
- 4 Liquid line filter
- 5 Automatic expansion valve
- 6 Heat exchanger
- 7 Suction line roto lock valve
- 8 Coalescing filter with auto drain
- 9 Separator
- 10 Electronic drain valve
- 11 Suction line pressure gauge
- 12 Hot gas bypass valve
- 13 Receiver (UA201-75 only)
- 14 Liquid sight glass



**UA201-100 through UA201-300
Air and refrigerant flow diagram**

- 1 Compressor
- 2 Roto lock valve (2)
- 3 Air cooled condenser
- 4 Liquid line filter
- 5 Thermo expansion valve
- 6 Heat exchanger
- 7 Suction line roto lock valve
- 8 Coalescing filter
- 9 Separator
- 10 Electronic drain valve
- 11 Suction line pressure gauge
- 12 Hot gas bypass valve
- 13 Receiver
- 14 Discharge pressure gauge
- 15 Liquid sight glass



**UA201-400 through UA201-2000
Air and refrigerant flow diagram**

- 1 Compressor
- 2 Discharge roto lock valve (2)
- 3 Air cooled condenser
- 4 Liquid line filter
- 5 Thermo expansion valve
- 6 Heat exchanger
- 7 Suction line roto lock valve
- 8 Coalescing filter
- 9 Separator
- 10 Electronic drain valve (2)
- 11 Suction line pressure gauge
- 12 Hot gas bypass valve
- 13 Receiver
- 14 Discharge pressure gauge
- 15 Liquid sight glass
- 16 Liquid solenoid valve

201 Dryer Circuit Flow Diagram

There are two (2) basic sections, commonly referred to as the high and low pressure sections, in a refrigeration circuit. The high side begins at the refrigerant compressor discharge port and ends at the expansion valve. The circuit leaving the expansion valve through the air to refrigerant heat exchanger and up to the compressor suction port is known as the low pressure circuit.

The compressor takes in low pressure refrigerant gas and compresses it to a high pressure and high temperature gas. The high temperature gas passes into the refrigerant condenser where it is cooled and liquefied. The refrigerant then passes through the filter dryer where moisture and any foreign particles are removed.

The refrigerant then passes through an expansion valve where the liquid refrigerant is throttled and a temperature drop will occur as part of the liquid turns into gas. The cold refrigerant gas and liquid then enters the refrigerant-to-air heat exchanger where it absorbs the heat from the compressed air as it evaporates. The low pressure refrigerant gas returns to the compressor for repetition of the process.

Load Control

The expansion of the refrigerant is controlled by a thermal expansion valve. The expansion valve responds to the suction temperature; As the suction line temperature increases, the expansion valve is opened to allow more liquid refrigerant to feed into the evaporator. This increased volume of liquid causes a greater cooling effect. The suction temperature drops and the valve throttles back. In addition, the circuit incorporates a hot gas bypass valve. This valve feeds a small amount of high temperature gas from the high side directly into the air refrigerant heat exchanger to enable easier control of the dryer at light or no load conditions. As the load increases, the evaporator temperature and pressure begin to rise. The increase of temperature causes the expansion to open and let more refrigerant into the evaporator. As this occurs, the increased pressure causes the hot gas valve to close. This will continue until the dryer is operating at full load at which time the expansion valve has full control and the hot gas valve is closed.

General Information

The Ultra Air 201 Series Refrigerated Air Dryer is a constantly running, non-cycling type with a hermetic type refrigeration compressor and is available with a water cooled or air cooled condenser.

The following are the five phases that take place in the drying process:

Phase 1 - Precooling

Warm, saturated air enters the air to air heat exchanger, where it is cooled by outgoing cooled air flowing in the opposite direction.

Phase 2 - Preseparation

As the air is precooled, some of the moisture condenses. During this phase, all condensed moisture and oil is separated from the compressed air.

Phase 3 - Chiller

The air then enters and is further cooled in the refrigeration chiller. The air stream is cooled to 35-39°F (1.6-3.8°C), reducing its dewpoint to the same temperature.

Phase 4 - Separation

As the air is cooled in the chiller, the moisture condenses into a liquid. At this point, all liquid, via the separator is removed from the air stream and drained away with an electronic draining device.

Phase 5 - Reheating

The cold, dry air is reheated by incoming warm air as it passes back through the air to air heat exchanger.



Controls

A. High-low refrigerant cut-out switch (models 100-2000)

High side setting: R22 - 350 cut-out, Low side setting: R22 - 50 cut-out

Cut out switch senses high and low refrigerant pressure at refrigerant compressor inlet and outlet ports.

B. Liquid line dryer/filter

Filters refrigerant of moisture and any foreign particles. Must be replaced if refrigerant system has maintenance performed on it.

C. Sight glass

Located in the liquid line, indicating liquid refrigerant levels and moisture content.

D. Expansion valve

Senses "low side" (or suction) pressure (temperature). Meters refrigerant flow in the evaporator.

E. Water-regulating valve (water cooled units only)

Senses compressor discharge pressure, regulates water flow to maintain an average 105°F (40.5°C) condensing temperature. Setting is reflected.

F. Electronic drain valve

An electric drain valve is programmed to open and close to automatically drain away condensate.

G. Crank case heater

A safety device which prevents refrigerant migration back to the compressor during shutdown.

H. Hot gas bypass valve

Passes high side gas to low side to maintain a constant suction pressure.

Panel Mounted Gauges

A. Refrigerant suction pressure

Indicates pressure on low side of refrigerant compressor. R134a units normally indicate between 28-32 PSIG (1.9-2.2 bar). R22 units normally indicate between 56-62 PSIG (3.8-4.2 bar).

B. Refrigerant discharge pressure (units UA201-125 through UA201-2000)

Indicates pressure on the high side of the refrigeration circuit. R22 units normally indicate 175-275 PSIG (12-18.9 bar). R134a air cooled units indicate 100-185 PSIG (6.9-12.7 bar).

Water Cooled Models

Cooling water is required for water cooled shell and tube refrigerant condensers. The user is responsible for piping the water to and from the condenser.

The required water flow depends on the water temperature (refer to Table 2). A valve supplied with the dryer automatically adjusts the flow to compensate for variations in water temperature, water pressure, and dryer air load.

Cooling water pressures below or temperatures above those listed in Table 2 may reduce drying capacity. The refrigerant discharge pressure control will shut down the refrigerant compressor if cooling is inadequate.

If the cooling water is dirty, install a strainer ahead of the condenser inlet. Install shut-off valves so that the strainer can be drained and cleaned at regular intervals.

Table 2

Model	H.P.	Water connect.	Water reg., GPM	
			City (75°F)	Tower (85°F)
200	1	3/8 FPT	3.2	6.3
250	1 1/2	3/8 FPT	2	5
300	1 1/2	3/8 FPT	2	5
400	2	3/8 FPT	3.5	8
500	2 1/2	1/2 FPT	4	10
625	3	1/2 FPT	5.5	14
800	4	3/4 FPT	5.5	14
1000	5	3/4 FPT	8.5	22
1200	6	3/4 FPT	8.5	22
1600	9	1 FPT	14	35
1750	9	1 FPT	14	35
2000	9	1 FPT	14	35

Air cooled models

Cooling air flows from the front to the back of the dryer. Air must be drawn from a clean source in order to reduce dust and dirt accumulation on the condenser coils. Air temperature should not exceed 110°F (43°C).

Fan motor rotation check (this check applies only to air cooled models)

Locate the rotation decals. These may be on each motor or on the condenser. Observe the refrigerant compressor cooling fans. Rotation should be in accordance with the fan rotation shown on the decals. Cooling air should exhaust through the condenser coils away from the fan motors.

WARNING

Disconnect electrical services from the unit whenever it is necessary to make adjustments on timers or when servicing drain valves.

Initial Startup Procedures

The following procedure must be followed. Failure to do so could damage your dryer and invalidate the warranty. Before starting...

1. Be sure dryer 'on/off' switch is in the 'off' position and disconnect all power to dryer.
2. If refrigerant gauges read below 40 PSIG (2.75 bar), do not start the dryer. Contact your Ultra Air distributor or the factory directly.
3. Make sure the air inlet and outlet piping is piped correctly and piping is supported correctly. Do not use the dryer in and out connections as supports.
4. Make sure condensate lines are run properly and to the correct locations.
5. Set drain 'on' and 'off' times. During periods of high humidity it is recommended that 'off' time is decreased and 'on' time is increased. During periods of low humidity, increase 'off' time and decrease 'on' time.
6. Check that there is adequate ventilation on all air cooled units.
7. For water cooled units, make sure cooling water is being supplied to the unit.
8. Confirm proper inlet air pressure, temperature, and flow to the dryer.
9. Connect power to dryer. This will energize crankcase heater(s). Allow the unit to stand for 24 hours before continuing (3 phase only).
10. Check lights. The 'power on' lights should be lit.
11. Pressurize the unit by opening an air inlet valve with the bypass valve open and the air outlet valve closed (3 valve bypass is option offered by Ultra-Air).
12. Press the rocker switch to "on" position. The 'dryer on' light will illuminate and the compressor will start. Shortly after startup, the suction press gauge will read 56-62 PSIG on R22 units or 28-32 PSIG for R134a units.
13. Open the optional air outlet valve to pass through dryer and close the bypass valve.

Shutdown Procedures

1. Press the rocker button to the 'off' position.
2. 10-15 minutes after the unit shuts down, cooling water can be shut down (water cooled units only).
3. Turn off main disconnect if necessary.



Air Cooled Condenser Maintenance Procedures

Air cooled condensers may be cleaned by blowing clean with a compressed air blow gun or by low pressure steam cleaning. Steam cleaning may be necessary for heavy deposits. Do not use wire brushes as this may bend the fins, causing leaks. Straighten any bent fins and fan blades.

Recommended service interval is 1000 hours of operation. More frequent service may be required if dryer is located in a dusty or dirty area.

Ambient air filters are required for dryers located in an excessively dusty or dirty environment.

Water Cooled Condenser Maintenance Procedures

The tube and tube condensers used on the 201 Series water cooled dryers are designed for easy cleaning. Calgon Corporation, a division of Merck & Company, manufactures a scale disolver which can be pumped through the water tubes. It may be necessary to use a combination of acid and scale disolver.

For optimal performance, it is important that the water cooled condenser be cleaned regularly, ideally every 2000 hours of operation.

WARNING

Dryer failure resulting from a dirty condenser is not covered under warranty.

Auto Drain Information

All UA 201 Series dryers (125-2000 models) are equipped with two electronic auto drain valves. One is connected to the prefilter, the other is connected to the separator. The open and close time on the drains can be adjusted using the drain open and closed buttons on the control panel. For the UA Series models 10-100, the prefilter is equipped with an automatic and the separator with an electronic drain.

Maintaining the auto drain

1. Turn dryer on/off switch to 'off' position
2. Disconnect power supply to the dryer
3. Lockout and tag power supply in accordance with OSHA regulations
4. If applicable, switch dryer to bypass mode
5. Remove filter strainer and clean
6. Disassemble the solenoid valve, and clean or replace all parts necessary
7. Check electrical continuity across coil
8. Reassemble valve and test, using the test button on the electronic control panel
9. Repressurize system and test drain by using the test button on the control panel

Troubleshooting

Problem: Liquid moisture downstream of dryer

Symptom	Possible cause	Solution
Inlet air temperature too high	<ol style="list-style-type: none"> 1. Aftercooler failure 2. Aftercooler outlet temperature above 120°F (49°C) 	<ol style="list-style-type: none"> 1. Clean/repair aftercooler 2. Check size and capacity against actual conditions
Drain not draining condensate	<ol style="list-style-type: none"> 1. Drain valve not opening 	<ol style="list-style-type: none"> 1. Check drain electrical connections, make sure timer is working properly and if valve is receiving signal, check valve for clogging 2. Clean valve, replace timer, replace valve if needed
High air flow through dryer	<ol style="list-style-type: none"> 1. Undersized dryer 	<ol style="list-style-type: none"> 1. Reduce airflow 2. Replace with larger dryer
High pressure drop across dryer	<ol style="list-style-type: none"> 1. Too much air flowing through dryer 2. Air freezing in air-to-refrigerant heat exchanger 	<ol style="list-style-type: none"> 1. Reduce airflow 2. Replace with larger dryer 3. Adjust hot gas bypass valve
Refrigerant compressor off from high refrigerant discharge pressure	<ol style="list-style-type: none"> 1. Condenser coils clogged or flattened 2. Fan motor failure 3. Aftercooler air discharge blowing on condenser 4. Inlet compressed air temp. too high 5. Air in refrigerant system 6. Ambient temp. too high for aircooled condenser 	<ol style="list-style-type: none"> 1. Clean coils and straighten fins 2. Replace fan motor 3. Change aftercooler air flow 4. Reduce dryer inlet temp. to 120°F (49°C) max. 5. Contact certified refrigeration mechanic to repair leak 6. Improve ventilation in compressor room
Compressor cuts out; short cycles on internal overload	<ol style="list-style-type: none"> 1. Refrigeration leak 2. Refrigeration control valves need adjusting 3. Improper ventilation for aircooled condenser 4. Improper cooling water flow or temp. to condenser 5. Low voltage 	<ol style="list-style-type: none"> 1. Contact certified refrigeration mechanic to repair leak 2. Contact certified refrigeration mechanic to adj. valve 3. Improve ventilation and/or clean condenser. Compressor should restart automatically 4. Improve and ensure proper water flow and temp. 5. Contact electrician for repair.
Compressor will not start	<ol style="list-style-type: none"> 1. Compressor windings opened or shortened 2. Compressor burned out 3. Internal mechanical failure 	<ol style="list-style-type: none"> 1. Contact certified refrigeration mechanic for repair 2. Replace compressor 3. Contact certified refrigeration mechanic for repair
High evaporator temperature refrigerant suction gauge on "0" PSIG	<ol style="list-style-type: none"> 1. Refrigeration leak 2. Hot gas bypass valve out of adjustment 	<ol style="list-style-type: none"> 1. Contact certified refrigeration mechanic to repair leak 2. Adjust hot gas bypass valve by turning clockwise 1/2 turn until suction pressure is between within appropriate operating range stated on control panel (R134a reference)
Refrigeration suction temp. above operating range	<ol style="list-style-type: none"> 1. Inlet air temp. higher than 120°F (49°C) 2. Hot gas bypass valve out of adjustment 3. Refrigerant leak 	<ol style="list-style-type: none"> 1. Check aftercooler operation 2. Adjust hot gas bypass valve by turning clockwise 1/2 turn until suction temp. lowers to 28°F (-2°C) 3. Contact certified refrigeration mechanic to repair leak
Refrigeration discharge temp. lower than operating range	<ol style="list-style-type: none"> 1. Dryer located in a low ambient environment 2. Refrigerant leak 	<ol style="list-style-type: none"> 1. Contact your local distributor 2. Contact certified refrigeration mechanic to repair leak
Refrigerant discharge temp above operating range	<ol style="list-style-type: none"> 1. Dryer located in a high ambient environment 2. Inlet air temperature too high 3. Fan motor failure 4. Fan motor not running 	<ol style="list-style-type: none"> 1. Contact your local distributor 2. Reduce temp. to design conditions 3. Contact certified refrigeration mechanic for repair 4. Check fan cycling switches

Problem: Drain valve not discharging moisture

Symptom	Possible cause	Solution
Valve continuously purges compressed air	<ol style="list-style-type: none"> 1. Clogged valve 2. Timer board failure 3. Solenoid valve failure 	<ol style="list-style-type: none"> 1. Clean valve 2. Replace timer board 3. Replace solenoid valve
Valve not opening	<ol style="list-style-type: none"> 1. No power 2. Timer board failure 3. Solenoid valve failure 	<ol style="list-style-type: none"> 1. Check power supply and connections 2. Replace timer board 3. Replace solenoid valve

Problem: Drain valve not discharging moisture (continued)

Symptom
No response to drain test button

Possible cause
1. No electrical power
2. Timer board malfunction

Solution
1. Check power supply and connections
2. Replace timer board

Problem: Float drain will not seal

Symptom
Constant air flow through drain tube

Possible cause
1. Clogged or defective float

Solution
1. Clean or replace float

Problem: Dryer blows fuses

Symptom
Fuses blow at startup

Possible cause
1. Loose or defective wiring

Solution
1. Contact electrician to inspect and repair

Problem: Digital readout not working

Symptom
Readout shows "ERR" for temperature reading

Possible cause
1. Corresponding temperature probe is opened or shorted

Solution
1. Check probe connections or replace probe

Display blank or erratic

1. No power to board or blown T-630 mA fuse
2. Defective control board

1. Check power supply to control board and replace fuse if needed
2. Replace control board

Warranty

All UA201 Series standard refrigerated air dryers, model UA201-10 through UA201-2000, manufactured by Ultra Air Products, Inc are warranted to be free from defective materials and workmanship for a period of two years from date of shipment from Ultra Air's factory. Said warranty covers all parts and labor (this excludes routine preventative maintenance and adjustments). In addition to the standard two year warranty, an extended three years on all original parts will be covered on a prorated basis (excludes labor and prefilter element):

Year	% of Part Covered
3	60%
4	40%
5	20%

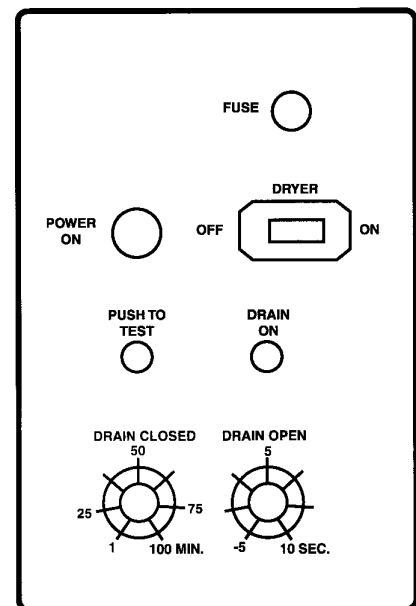
The equipment must be properly maintained and used in accordance with instructions or all warranty is void.

Standard Control Panel

UA 201 Dryers come standard with a control panel that allows you to control the following operations and gives the following indications:

1. Dryer on/off
2. Power on light
3. Dryer on light
4. Drain open light
5. Drain push to test button
6. Drain closed adj. time 1-100 minutes
7. Drain open adj. time .5-10 seconds
8. Control circuit fuse

The optional electronic control panel provides additional temperature readouts and adjustments (see page 14).



Electronic Control Panel

The electronic control panel displays four different temperatures, allows the user to set and monitor the timing of the drain valves, and controls the on/off operation of the compressor. The control panel operates on 10V AC

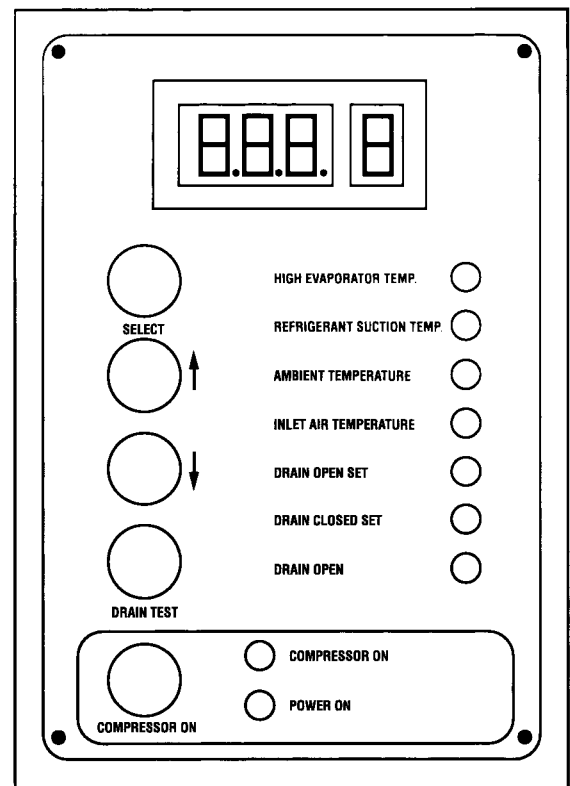
The displayable temperatures are evaporator temp., refrigeration suction temp., ambient temp., and inlet air temp. The displayed temperature can be changed by pushing the select switch, causing the corresponding indicator light to illuminate. The temperatures can be displayed in degrees Fahrenheit or degrees Celsius (a Celsius readout is achieved by turning on switch 1, located on the back of the panel; a Fahrenheit readout is achieved by turning it off). The evaporator temperature is only displayed for 18 seconds at a time. The panel also monitors the evaporator temperature and activates an alarm if it exceeds 70°F (21°C) or if the evaporator temperature is not being displayed, at which point the alarm light flashes. When the evaporator temperature is displayed, the indicator light will be on continuously, regardless of whether or not the evaporator alarm temperature is exceeded. When a sensor becomes defective (open or shorted) or a temperature is out of range, the corresponding display for that temperature will read “Err”.

Each temperature can be calibrated individually. When switch 2 (located on the back of the board) is turned on, it puts the dryer in calibrate mode, causing the temperature display to flicker. The mode select switch is used to select the temperature to be calibrated, using the up and down arrows to select the designated temperature. After calibration is complete, turn off switch 2. The select switch is then used to select the drain open set time, between .5 and 20 seconds. The drain open select time is displayed for 18 second at a time after the time has been selected or after the up or down switch is released.

Use the select switch to select the drain closed set time. The time can be set from 1 minute to 2 hours using the up and down buttons. The drain closed select time can only be displayed for 18 seconds at a time after the time has been selected or after the up and down switch has been released.

The compressor on switch is used to turn the compressor on and off. The compressor light turns on and the compressor relay activates when the compressor turns on. When the compressor is turned off, the compressor light turns off and the compressor relay is deactivated.

The drain test switch activates the drain relay for the drain open set period. The drain open light turns on when the drain relay is activated.



REV. DATE: 2-26-03

Part Description	201 Series Refrigerated Dryer Model Numbers								
	UA201-10A	UA201-20A	UA201-25A	UA201-45A	UA201-55A	UA201-75A	UA201-75B	UA201-100A	UA201-100B
	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	230/1/60	115/1/60	230/1/60
Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
Condensing Unit	SUB-CU-31-85-R8I	SUB-CU-32-85-R8I	SUB-CU-4-85-R8I	SUB-CU-4-85-R8I	SUB-CU-33-85-R8I	SUB-CU-7-85-3RI	SUB-CU-7-60-3R	SUB-CU-7-85-3RI	SUB-CU-7-60-R8
Liquid Line Filter	FIL-LQ-31-4-RF	FIL-LQ-31-4-RF	FIL-LQ-31-4-RF	FIL-LQ-31-4-RF	FIL-LQ-33-7-RF	FIL-LQ-33-7-RF	FIL-LQ-33-7-RF	FIL-LQ-5-R4	FIL-LQ-5-R4
Expansion Valve	VAL-RB-4-5-R3	VAL-RB-4-5-R3	VAL-RB-4-5-R3	VAL-RB-4-5-R3	VAL-RB-4-5-R3	VAL-RB-4-5-R3	VAL-RB-4-5-R3	VAL-TH-7-11-R3	VAL-TH-7-11-R3
Hot Gas Bypass	N/A	N/A	N/A	N/A	N/A	VAL-RB-4-5-R3	VAL-RB-4-5-R3	VAL-HG-7-R5	VAL-HG-7-R5
Inlet Filter	FI-UF22C-03AM	FI-UF22C-04AM	FI-UF32C-04AM	FI-UF32C-04AM	FI-F900H-06AG	FI-F900H-06AG	FI-F900H-06AG	FI-F900H-06AG	FI-F900H-06AG
Inlet Filter Element	FRL-EKF22C	FRL-EKF22C	FRL-EKF32C	FRL-EKF32C	FRL-EKF9008H	FRL-EKF9008H	FRL-EKF9008H	FRL-EKF9008H	FRL-EKF9008H
Float Drain	FRL-AKF00	FRL-AKF00	FRL-AKF00	FRL-AKF00	FRL-AKF60	FRL-AKF60	FRL-AKF60	FRL-AKF60	FRL-AKF60
On/Off Switch	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI
Ref. Suction Gauge	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2
Separator	FI-F22B-03MS03	FI-F22B-04MS03	FI-F32B-04MS03	FI-F32B-06MS03	FI-F32B-06MS03	FI-F32B-06MS03	FI-F32B-06MS03	FI-F900X-06	FI-F900X-06
Separator Element	FRL-EKF22B	FRL-EKF22B	FRL-EKF32B	FRL-EKF32B	FRL-EKF32B	FRL-EKF32B	FRL-EKF32B	N/A	N/A
Drain/Timer	DR-MD50-5-30	DR-MD50-5-30	DR-MD50-5-30	DR-MD50-5-30	DR-MD50-5-30	DR-MD50-5-30	DR-MD50-60-5-30	DR-MD50-5-30	DR-MD50-60-5-30
Heat Exchanger	HEX-CD-117-AD	HEX-CD-125-AD	HEX-CD-125-AD	HEX-CD-145-AD	HEX-CD-226-AD	HEX-CD-234-AD	HEX-CD-234-AD	HEX-CD-234-AD	HEX-CD-234-AD

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Part Description	201 Series Refrigerated Dryer Model Numbers						
	UA201-125A	UA201-125B	UA201-150A	UA201-150B	UA201-200B	UA201-250B	UA201-250C
	115/1/60	230/1/60	115/1/60	230/1/60	230/1/60	230/1/60	230/3/60
Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
Condensing Unit	SUB-CU-9-85-3R	SUB-CU-9-60-3R	SUB-CU-9-85-3R	SUB-CU-9-60-3R	SUB-CU-11-60-R3	SUB-CU-18-1-2R	SUB-CU-18-3-2R
Liquid Line Filter	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4
Expansion Valve	VAL-TH-7-11-R3	VAL-TH-7-11-R3	VAL-TH-7-11-R3	VAL-TH-7-11-R3	VAL-TH-11-R3	VAL-TH-9-15-R4	VAL-TH-9-15-R4
Hot Gas Bypass	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5
Drain Timer/Control Board	ELE-TB-85-CB	ELE-TB-60-CB	ELE-TB-85-CB	ELE-TB-60-CB	ELE-TB-60-CB	ELE-TB-60-CB	ELE-TB-60-CB
Inlet Filter	FI-F900H-08G	FI-F900H-08G	FI-F900H-08G	FI-F900H-08G	FI-F900H-12G	FI-F900H-12G	FI-F900H-12G
Inlet Filter Element	FRL-EKF9008H	FRL-EKF9008H	FRL-EKF9008H	FRL-EKF9008H	FRL-EKF9012H	FRL-EKF9012H	FRL-EKF9012H
On/Off Switch	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI
Ref. Discharge Gauge	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1
Ref. Suction Gauge	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2
Separator	FI-F900X-08	FI-F900X-08	FI-F900X-08	FI-F900X-08	FI-F900X-12	FI-F900X-12	FI-F900X-12
Solenoid Valves (drain) (2)	VAL-SO-4-59-N8	VAL-SO-4-59-NC	VAL-SO-4-59-N8	VAL-SO-4-59-NC	VAL-SO-4-59-N8	VAL-SO-4-59-NC	VAL-SO-4-59-NC
Heat Exchanger	HEX-CD-242-AD	HEX-CD-242-AD	HEX-CD-250-AD	HEX-CD-250-AD	HEX-CD-281-AD	HEX-CD-2113-AD	HEX-CD-2113-AD

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Part Description	201 Series Refrigerated Dryer Model Numbers							
	UA201-250D 460/3/60	UA201-250E 575/3/60	UA201-300B 230/1/60	UA201-300C 230/3/60	UA201-300D 460/3/60	UA201-300E 575/3/60	UA201-400B 230/1/60	UA201-400C 230/3/60
	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
Condensing Unit	SUB-CU-18-4-2R	SUB-CU-18-4-2R	SUB-CU-18-1-2R	SUB-CU-18-3-2R	SUB-CU-18-4-2R	SUB-CU-18-4-2R	SUB-CU-22-1-2R	SUB-CU-22-3-2R
Liquid Line Filter	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4
Expansion Valve	VAL-TH-9-15-R4	VAL-TH-9-15-R4	VAL-TH-9-15-R4	VAL-TH-9-15-R4	VAL-TH-9-15-R4	VAL-TH-9-15-R4	VAL-TH-18-24-R4	VAL-TH-18-24-R4
Hot Gas Bypass	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5
Drain Timer/Control Board	ELE-TB-85-CB	ELE-TB-85-CB	ELE-TB-60-CB	ELE-TB-60-CB	ELE-TB-85-CB	ELE-TB-85-CB	ELE-TB-60-CB	ELE-TB-60-CB
Inlet Filter	FI-F900H-12G	FI-F900H-12G	FI-F900H-12G	FI-F900H-12G	FI-F900H-12G	FI-F900H-12G	FI-F900H-16G	FI-F900H-16G
Inlet Filter Element	FRL-EKF9012H	FRL-EKF9012H	FRL-EKF9012H	FRL-EKF9012H	FRL-EKF9012H	FRL-EKF9012H	FRL-EKF9016H	FRL-EKF9016H
On/Off Switch	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI
Ref. Discharge Guage	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1
Ref. Suction Gauge	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2
Separator	FI-F900X-12	FI-F900X-12	FI-F900X-12	FI-F900X-12	FI-F900X-12	FI-F900X-12	FI-F900X-16	FI-F900X-16
Solenoid Valves (drain) (2)	VAL-SO-4-59-N8	VAL-SO-4-59-N8	VAL-SO-4-59-NC	VAL-SO-4-59-NC	VAL-SO-4-59-N8	VAL-SO-4-59-N8	VAL-SO-4-59-NC	VAL-SO-4-59-NC
Transformer (POWER) (2)	N/A	ELE-TR-11-V9	N/A	N/A	N/A	ELE-TR-11-V9	N/A	N/A
Heat Exchanger	HEX-CD-2113-AD	HEX-CD-2113-AD	HEX-CD-334-AD	HEX-CD-334-AD	HEX-CD-334-AD	HEX-CD-334-AD	HEX-CD-346-AD	HEX-CD-346-AD

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Part Description	201 Series Refrigerated Dryer Model Numbers							
	UA201-400D 460/3/60	UA201-400E 575/3/60	UA201-500B 230/1/60	UA201-500C 230/3/60	UA201-500D 460/3/60	UA201-500E 575/3/60	UA201-625B 230/1/60	UA201-625C 230/3/60
	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
Condensing Unit	SUB-CU-22-4-2R	SUB-CU-22-4-2R	SUB-CU-28-1-2R	SUB-CU-28-3-2R	SUB-CU-28-4-2R	SUB-CU-28-4-2R	SUB-CU-36-1-2R	SUB-CU-36-3-2R
Liquid Line Filter	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4	FIL-LQ-5-R4
Expansion Valve	VAL-TH-18-24-R4	VAL-TH-18-24-R4	VAL-TH-18-24-R4	VAL-TH-18-24-R4	VAL-TH-18-24-R4	VAL-TH-18-24-R4	VAL-TH-18-24-R4	VAL-TH-18-24-R4
Hot Gas Bypass	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5	VAL-HG-7-R5
Drain Timer/Control Board	ELE-TB-85-CB	ELE-TB-85-CB	ELE-TB-60-CB	ELE-TB-60-CB	ELE-TB-85-CB	ELE-TB-85-CB	ELE-TB-60-CB	ELE-TB-60-CB
Inlet Filter	FI-F900H-16G	FI-F900H-16G	FI-F900H-16G	FI-F900H-16G	FI-F900H-16G	FI-F900H-16G	FI-F900H-16G	FI-F900H-16G
Inlet Filter Element	FRL-EKF9016H	FRL-EKF9016H	FRL-EKF9016H	FRL-EKF9016H	FRL-EKF9016H	FRL-EKF9016H	FRL-EKF9016H	FRL-EKF9016H
On/Off Switch	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI	ELE-SI-65-88-PI
Ref. Discharge Guage	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1	GAG-PR-21-4-P1
Ref. Suction Gauge	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2	GAG-PR-21-4-P2
Separator	FI-F900X-16	FI-F900X-16	FI-F900X-16	FI-F900X-16	FI-F900X-16	FI-F900X-16	FI-F900X-16	FI-F900X-16
Solenoid Valve (drain) (2)	VAL-SO-4-59-N8	VAL-SO-4-59-N8	VAL-SO-4-59-NC	VAL-SO-4-59-NC	VAL-SO-4-59-N8	VAL-SO-4-59-N8	VAL-SO-4-59-NC	VAL-SO-4-59-NC
Liquid line solenoid valve	VAL-SO-5-RF	VAL-SO-5-RF	VAL-SO-5-RF	VAL-SO-5-RF	VAL-SO-5-RF	VAL-SO-5-RF	VAL-SO-5-RF	VAL-SO-5-RF
Transformer (POWER) (2)	N/A	ELE-TR-11-V9	N/A	N/A	N/A	ELE-TR-11-V9	N/A	N/A
Heat Exchanger	HEX-CD-346-AD	HEX-CD-346-AD	HEX-CD-358-AD	HEX-CD-358-AD	HEX-CD-358-AD	HEX-CD-358-AD	HEX-CD-370-AD	HEX-CD-370-AD

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