COMPRESSED AIR

REFRIGERATED AIR DRYER

OWNER'S MANUAL

CALIFORNIA AIR TOOLS

RD-91502

52 CFM 232 PSI
Dew Point: 2-10 Celsius (35.6-50 Fahrenheit)
Refrigerant R134A
3/4“ NPT
115V 60Hz 1-Phase

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INTRODUCTION

⚠WARNING

This manual contains important instructions for operating this product. For your safety, and the safety of others, be sure to read this manual thoroughly before operating the product.

Failure to properly follow all the instructions and precautions can cause you and others to be seriously hurt or killed.

Thank you for purchasing a California Air Tools, Inc. Compressed Air Refrigerated Dryer.

Please contact us if you have any questions:

Phone: 1-866-409-4581

Email: customerservice@californiaairtools.com

Record the model and serial numbers indicated on your refrigerated dryer nameplate:

Model No. _____

Serial No. _____

Date of Purchase: _____

Store/Dealer: _____

How to find a local service center:

Even quality built equipment might need service or repair parts. Contact the California Air Tools Customer Service Department:

Phone: 1-866-409-4581

Online: WWW.CALIFORNIAAIRTOOLS.COM

Please provide the information below:

Model number and Serial number and specifications shown on the name plate.

A brief description of the trouble with the refrigerated dryer.

Do not return your refrigerated dryer for service or parts to the store/dealer where purchased.

⚠DANGER

RISK OF CUTTING

Moving parts can cause severe trauma.

Keep hands and feet away from rotating parts, tie up long hair, remove jewelry, and DO NOT wear loose clothing.

IMPORTANT SAFETY INSTRUCTIONS

Safety Messages & Signal Words:

⚠ DANGER

Indicates an immediate hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

⚠WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

⚠CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

NOTICE

Indicates a situation which, if not avoided, may result in damage to product components or other property.

⚠DANGER

SHOCK

There is a danger of electric shock.

Use only undamaged electrical cords.

DO NOT touch bare wires or receptacles.

DO NOT operate air compressor in wet weather or in wet conditions.

DO NOT touch air compressor or cords if hands or feet are wet.

Ensure that all cords are free of damage before connecting to the power supply.

Ensure that you have a sufficient electrical supply for supporting the requirements of the motor.

Improper installation of the grounding plug is able to result in a risk of electric shock. When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat terminal. The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electrical shock by providing an escape wire for the electric current.

This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with the local codes and ordinances.

This product is for use on a nominal 120-V circuit and has a grounding plug similar to the plug illustrated in sketch A. Only connect the product to an outlet having the same configuration as the plug.

Do not use an adapter with this product.

I. Refrigerated Dryer Overview

The refrigerated dryer is dehydration equipment for compressed air that uses the principle of refrigeration to cool the compressed air according to the correspondence between the saturated vapor pressure and temperature of water, so that the water vapor in compressed air will be supersaturated and condensed at low temperature, and then the compressed air will be separated from the water.

Under normal conditions, the refrigerated dryer can reduce the dew point (under pressure) of air to 2 - 10℃, which typically satisfies requirements of most compressed air quality classes except for a few applications with special requirements for air quality.

The main content of this manual is to instruct the customer how to use this equipment correctly and to perform routine maintenance. The purpose of this manual is to extend the service life of the equipment, to reduce equipment failures and to ensure the quality of compressed air. This manual provides information about this equipment for reference. Before using this equipment, please read this manual and follow the instructions for operation and maintenance to avoid equipment failure.

II. Precautions for Safe Operation

1. The pressure of compressed air shall not exceed 1.6 MPa or 232 PSI (pounds per square inch).
2. The operating power supply must meet the requirements.
3. The equipment must be grounded for protection.
4. Before maintenance, the power supply must be removed (unplugged and/or disconnected from source).
5. Before maintenance or assembly/disassembly, make sure that there is no pressure in the system.

Note: Please follow the above precautions to prevent personnel harm or damage to equipment!

III. Technical Information

1. Rated working conditions of the refrigerated dryer:
   - ※ Ambient temperature: ≤ 40℃ (less than 104F Fahrenheit)
   - ※ Atmospheric pressure: 0.101325 MPa
   - ※ Relative humidity: 75%
   - ※ Pressure dew point: 2 - 10℃
   - ※ Air pressure drop: ≤ 0.035 MPa
2. For conditions of use and additional technical specifications refer to equipment nameplate.

IV. Principles of Operation

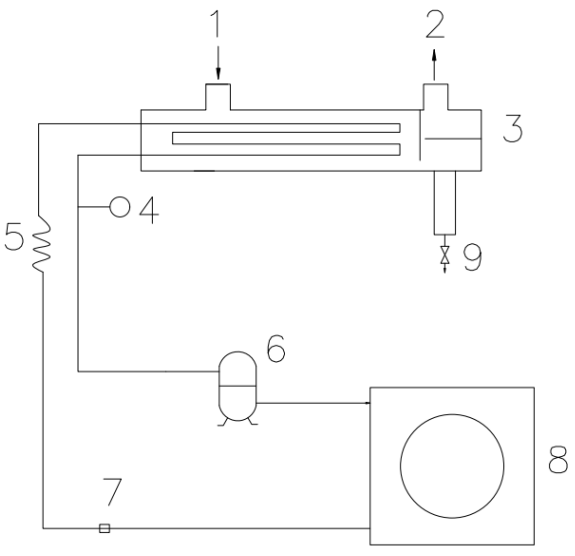
1. Compressed air flow:

The humid compressed air is first cooled by the pre-cooling reheater, and then enters the evaporator to exchange heat with the refrigerant, the temperature is further reduced, in which the water vapor condenses into water droplets, the air is separated from the water droplets by the air-water separator, and the water droplets are drained from the machine by the automatic drainer, and the air separated by water is then exchanged heat with the humid air at the inlet by the pre-cooling reheater, and the temperature rises and is drained from the outlet.

2. Refrigeration system flow:

The refrigerant compressed by the internal compressor generates high-temperature and high-pressure superheated steam, and then condenses and liquefies after cooling through the wind condenser. After throttling by the throttling device, the pressure and temperature are reduced, the refrigerant absorbs heat and vaporizes in the evaporator, and then turns into a low-pressure and low-temperature gaseous state, then enters the internal compressor to complete the refrigeration cycle.

3. Refrigerated dryer system flow chart:



1: Air inlet
2: Air outlet
3: Evaporator
4: Pressure gauge
5: Flow controllers
6: Compressor
7: Pressure Switch
8: Cooling fan
9: Drainage

V. Installation and Specifications

1. Installation requirements:

※ If the temperature of compressed air is higher than the temperature indicated on the nameplate, it shall be cooled with the rear cooler before entering the refrigerated dryer.

※ For piston compressor, it may be necessary to install an additional buffer air storage tank (auxiliary air vessel) between air compressor and refrigerated dryer, to help eliminate any airflow pulse vibrations.

※ In order to avoid the contamination of the heat exchange parts of the refrigerated dryer by solid impurities and oil in the upstream compressed air, it is recommended to install a main line filter (filtration accuracy: 3 um) before the refrigerated dryer.

※ A shut-off valve must be installed for the inlet and outlet of the refrigerated dryer, and a bypass valve shall be set when the working air flow cannot be cut off, which is convenient for maintenance and repair.

※ The ambient temperature of the installation location shall not exceed 100F (Fahrenheit) or 38C (Celsius).

※ It shall not be installed outdoors or in a high humidity and/or dusty place.

※ The installation location should be 2 feet away from the wall and 3 feet away from other machines for good ventilation, cleaning and maintenance of the condenser.

※ The installation location must be on a flat level, horizontal, surface to avoid affecting the drainage.

2. Piping requirements:

※ Ensure piping does not cause any vibration to the refrigerated dryer.

※ The diameter of the pipe shall not be less than the diameter of the inlet and outlet pipe, and avoid too long or too many elbows to prevent excessive pressure drop. Avoid bending or routing piping underground to help prevent water accumulation in the pipe.

3. Electrical Requirements:

※ A special switch must be installed on the power supply side of the dryer to protect it; refer to the relevant technical data for the switch specifications.

※ Do not use the same protection switch with other equipment.

※ The power supply voltage shall not exceed the rated voltage value (specified on the nameplate) ± 5%.

※ The specification of the power cord depends on the size of the current and the length of the line.

※ Ensure equipment is properly electrically grounded.

15 Amp
120 Volt

20 Amp
120 Volt

Before using the refrigerated dryer, refer to the serial label for voltage and amperage requirements. Make sure you have a sufficient electrical supply for supporting the equipment requirements.

Use a dedicated 15 Amp Circuit. 120 volts, 60 hz.

Low voltage and/or an overload circuit can cause the overload protection system and/or circuit breaker to trip.

4. Use in Areas with Clean Air

For proper operation and to maximize the longevity of the refrigerated dryer, it is very important that the air drawn into the dryer is clean. This could damage the dryer and impair proper operation.

⚠CAUTION

THIS EQUIPMENT INCORPORATES PARTS, SUCH AS SNAP SWITCHES, RECEPTACLES AND THE LIKE THAT TEND TO PRODUCE ARCS OR SPARKS, THERE, WHEN LOCATED IN A GARAGE, IT SHOULD BE IN A ROOM OR ENCLOSURE PROVIDED FOR THE PURPOSE, OR SHOULD BE 18 IN (45.7 CM) OR MORE ABOVE THE FLOOR.

⚠CAUTION

Use caution when using extension cords.

Use an extension cord which is no more than 25' (7.6 m) long and at least 14 gauge.

Using an excessively long or thin-wired extension cord will cause severe damage to the motor.

Use only a 3-wire extension cord that has a 3-blade grounding plug.

As undersized cord results in a drop in the line voltage and loss of power and overheating.

When in doubt, use a heavier gauge. The smaller the gauge the more current the cord can carry.

VI. Startup & Operations

1. Check before powering on:

※ Check whether the power supply voltage is normal (±5% of the voltage on the nameplate).

※ Check whether all indications on the computer board are in the normal range and whether the fault indicator is on (if it lights up, troubleshoot first).

※ Check whether the display on the computer board is normal (the displayed value is close to the ambient temperature in the power off state).

2. Power on:

※ Press the **ON** button/switch to start, the compressor indicator light will flash, and the compressor will start to work in three minutes, then this refrigerated dryer will enter the normal working state.

※ Check the following instrument displays and indicators:

(a) The operation light will be on, and the digital tube will display the current dew point temperature.

(b) The compressor light will be on, and the compressor will work normally.

(c) The drain indicator will light up intermittently (according to the set value of drain time), and the drain will work when it is on.

(d) The fan indicator will be on or light up intermittently (according to the current condensing temperature), and the fan will work when it is on.

※ After the dryer runs for three (3) minutes, open the outlet air valve, and then open the inlet air valve.

※ Check and record whether the air temperature and pressure at the inlet and outlet are normal.

3. Power off:

※ Normal power off: Press the **OFF** button/switch to stop the dryer compressor.

Note: Pay special attention to the following during normal operations:

※ Avoid no-load running for a long time.

※ Operations for powering on/off:

(a) Power on: Power on the air compressor or open the air valve only after the dryer has been running for 3 - 5 minutes.

(b) Power off: First power off the air compressor or close the air valve, and then power off the dryer.

Note: The above operations for powering on and off the dryer are to ensure that untreated compressed air does not enter the end of the pipeline.

※ It is better to use ball valves, as valves at the air inlet and outlet or bypass valves, to ensure that the middle bypass valves are not misused or not closed tightly to cause undesirable gas to enter the end of the pipeline.

※ The air pressure shall not exceed 1.0 MPa (145 PSI); the air temperature at the inlet shall not exceed 45℃ (113 degrees Fahrenheit); and the ambient temperature shall not exceed 38℃ (104 degrees Fahrenheit)

※ This dryer is fully protected with protection units/circuitry, and has the following features (for general operation, only use the start and stop button).

(a) Delay and balance the pressure on the high and low pressure side of the refrigeration system to facilitate the start of the compressor.

(b) Refrigerant over high pressure switch (HPS) for protection.

(c) Over-current protector (KR) to prevent the compressor from overloading.

(d) There are throttle valves, hot-gas bypass valves, condensing temperature control, etc. in the refrigerant system, which can automatically compensate the inlet air characteristics in the normal operating range.

※ The control of this dryer adopts the automatic control of the computer board, and the temperature of each place can be viewed at any time during the operation.

Note: Check and record the temperature regularly.

1. Avoid no-load running for a long time.

2. After powering off, wait for three minutes and power it on again to avoid continuous switching, which may cause the compressor to trip.

VII. Daily Maintenance

1. The ideal ambient temperature of the refrigerated dryer should not be lower than 10℃ (50 degrees Fahrenheit) in order to prevent the compressor being burnt due to lack of oil (insufficient flow) caused by the condensation of the refrigerating oil and the delayed filling.

2. Pay attention to whether the inlet temperature of the dryer exceeds the rated value: check daily whether the indications of the computer board are normal.

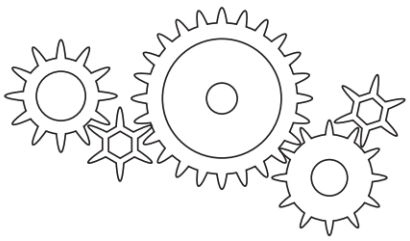
3. Check the automatic drainer daily to avoid blocking and drainage problems. If it is blocked, close the ball valve at the front of the solenoid valve and remove the solenoid valve for cleaning.

4.Check the surface of the blades of the air condenser for dirt accumulation every month; sweep and clean it regularly.

5. Listen to whether the compressor is running smoothly without noise.

6. The air bypass valve must be kept in fully closed position during normal use.

7. Check all electrical contacts for looseness every month.



VIII. Troubleshooting

Refrigerated dryer failures and causes, including external factors, may include:

1. The pressure drop is too high.

Failure	Cause	Troubleshooting
Piping system error	The pipeline valve is not fully opened.	Open the valve fully.
	The diameter of the pipe is too small.	Increase the pipe diameter.
	The pipe is too long, with too many elbows and connections.	Redesign the pipeline system.
	The filter in the pipeline is blocked.	Clean the filter or replace the filter element.
	Too many air leaks in the pipe connection.	Check the elbows and connections.
The air flow exceeds the rated value.	The flow exceeds the rated flow rate of the refrigerated dryer, so that the pressure drop increases naturally.	1. Replace the refrigerated dryer with a larger capacity. 2. Reduce the air flow.
The condensate in the evaporator freezes.	The pressure switch is malfunctioning.	Replace it with a new one, check the whole pipeline and correct the switch.
	The expansion valve or hot-gas bypass valve is malfunctioning.	Replace it with a new one, check whether the pipeline is blocked and correct the switch.

2. The dewatering effect of the refrigerated dryer is faulty.

Failure	Cause	Troubleshooting
Piping system error	The bypass valve is not fully opened.	Close the bypass valve tightly.
	The air cannot pass through the dryer.	Close the bypass valve tightly and open the inlet and outlet valves of the dryer.
	The dryer is not placed horizontally.	Place it horizontally.
	The automatic drain tilts.	Place it horizontally.
	The drain line is higher than the automatic drain.	Redesign the drain line.
The air flow is too much.	The heat load is too high.	Redesign the air source.
The drainage system is abnormal.	The drainer is malfunctioning.	Clean or replace it with a new one.
The indication of the dew point temperature is abnormal	The dew point temperature is too low or too high.	Adjust the pressure switch, water flow adjustment valve, expansion valve and hot-gas bypass valve.
	The ambient or inlet temperature is too low.	Not a critical error; you may continue to use this dryer.
	The inlet temperature is too high.	Add a rear cooler or improve the inlet air temperature.
	The refrigerant leaks and the cooling effect is poor.	Repair the leaks and fill the refrigerant.

3. Refrigerated Dryer Fails to Start or Function.

Failure	Cause	Troubleshooting
The power supply cannot be supplied normally.	The fuse is blown or it trips due to no fuse.	Confirm whether the power supply is under-phase disconnected or grounded, and check whether the fuse switch is damaged.
	The wire is broken.	Find out where the wire is broken and repair it.
The power supply is well supplied, but it still cannot be started.	The control switch is malfunctioning.	Replace it with a new one.
	The voltage is abnormal.	Please refer to the rated voltage indication on the nameplate, with the tolerance range of ± 5%.
	The AC contactor or thermal relay is malfunctioning.	Replace it with a new one.
	The high-/low-pressure switch is malfunctioning.	Replace it with a new one.
	The compressor is malfunctioning.	Replace it with a new one.
All the switches are normal, but it still cannot be started.	It is not reset after the high-/low-pressure tripping, and the electromagnetic switch is not reset.	Find out the reason of tripping, then reset it.
	The wire is loose.	Find out where the wire is not locked and tighten it.
	The compressor is malfunctioning.	Replace it with a new one.

4. Post Start Failure Issues.

Failure	Cause	Troubleshooting
The power supply is abnormal.	The wire is short-circuited shortly after starting, and then produces a burning smell	Set the lines and switches again to find out the cause of abnormalities.
The high-voltage trip has been reset, but it still cannot be started.	The high-voltage trip switch is malfunctioning.	Replace the switch with a new one.
	Overload tripping	Connect a relay.
	The dirt on air condenser blades is too much.	Sweep and clean it.
Overload trip	Continuous starting	Each start must be separated by more than 3 minutes.
	Under-phase of power supply	The contact of fuse or power switch is not good.
	The compressor is overloaded.	The dryer is overloaded, please reduce air flow.
	The inlet temperature of the dryer is too high.	Add a rear cooler or improve the cooling conditions of the air compressor.
	The setting value of the thermal relay is too low.	Adjust the set value.
	Power supply electrical connectivity, including wiring, may be poor or faulty.	Clean or replace it with a new one.
	The contactor is malfunctioning, or the electrical connectivity is insufficient.	Clean or replace it with a new one.
Overload trip	The pressure switch is malfunctioning.	Replace it with a new one.
	The fan motor is malfunctioning.	Replace it with a new one.
	The fan blade is stuck or loose.	Repair to make it run normally.

5. Dryer is operating, but output values are incorrect.

Failure	Cause	Troubleshooting
The indication of the dew point temperature is too low.	The temperature sensor is damaged.	Replace it with a new one.
	The throttle or hot-gas bypass valve is malfunctioning.	Replace it with a new one.
	The refrigeration system leaks.	Repair the leaks and fill the refrigerant.
	The refrigerant filling line is blocked.	Change the desiccant and re-evacuate it, then fill the refrigerant.
	The setting of condensing temperature is improper.	Set the condensing temperature to 42℃.
	The ambient temperature is too low.	The ambient temperature shall not be lower than 10℃.
The indication of the dew point temperature is too high.	The inlet temperature is too high (over 45 ℃ or 113 Farenheit)	Add a rear cooler or improve the cooling conditions of the air compressor.
	The expansion valve or hot-gas bypass valve is malfunctioning.	Replace it with a new one.
	The dirt on air condenser blades is too much.	Sweep and clean it.
	The ambient temperature is too high or the ventilation is not good.	Improve the cooling conditions and ventilate the room.
	The air flow is too much and the pressure is below 0.4 Mpa.	Control the air outlet.
	The setting of condensing temperature is improper.	Adjust the set value.
	The sensor is malfunctioning.	Replace it with a new one.
	The fan blade is stuck or loose.	Repair to make it run normally.

6. The automatic drainage system is not functioning correctly.

Failure	Cause	Troubleshooting
The drainage is not performing correctly.	The used pressure is below 1.5 kg/cm^2.	The pressure for automatic drain shall be in the range of 2-10 kg/cm^2.
	The drain valve is damaged or not fully opened.	Replace it with a new one or open the valve.
	The drainer is blocked.	Clean it.

IX. Working conditions:

9.1. Working voltage: 120VAC ± 10% 60Hz.
9.2. Output relay contact capacity: 15 A / 120 VAC.
9.3. Working internal ambient temperature: -5 - 60℃; working relative humidity: 10 - 90% non-condensation.
9.4. Storage temperature: -25 - 75 ℃.

X. Specifications and Size:

10.1. Size of the whole machine: L 85. 0 * H 35.0 * D 63. 8 (mm).
10.2. Installation size: L 71 * W 29 (mm).
10.3. Length of the sensor bus: 1 m (including the length of the probe).

XI. Functions and Technical Parameters:

11.1. Temperature control range: -20 - 120℃.
11.2. Temperature measurement range: -20 - 145℃.
11.3. Display accuracy: 1℃ (-20℃ - -10℃/100℃ - 145℃)/0.1℃(-10℃ - 100℃).
11.4. For -20℃ - 120℃, ±1℃±0.5; for others, ±2℃.
11.5. Sensor type: NTC (10 kΩ/25℃, Heat-sensitive electrical resistance: 3435K).

XII. Display Panel Operations

(1) Operation of the display panel
The display panel can display three numbers, two status indicators (button lock, fan), and two parameter names (power-on temperature, power-off temperature).
In the normal running, all the parameter names will not light up; when entering the menu setting, the corresponding parameter names will light up. When there is output in the normal running, the "ON" character will light up; in the process of powering off, the "OFF" character will light up.

(2) Working indicator description

Name	Symbol	Status	Description
Lock symbol		Off	Non-locked
		On	Locked
Output symbol	Power on	Off	Fan output stopped
		On	Fan output working
Fan symbol		Off	Fan stopped
		Flashing	Fan delayed
		On	Fan working

(3) Button description
There are six buttons on the controller:
: Unlock/OK;
: Reset; "Power-on temperature"; "Power-off temperature";
: temperature +;
: temperature -.

XIII. Control Board Programming

13.1. Unlock and lock the controller

Press and hold "Unlock/OK" for 5 seconds in the locked state of the controller, "0" will be displayed now; then enter the password "-15" and press "Unlock/OK", the "🔒" symbol will go out, which indicates that the controller is successful unlocked and now you can enter the parameter setting. If the password is wrong, it will return to the normal interface. The controller will lock automatically after 10 seconds without pressing any button.

13.2. User menu setting

In the normal running and unlocked state, press "Power-on temperature" (or "Power-off temperature"), the corresponding parameter name will light up and the display window will display the "Power-on temperature" (or "Power-off temperature"), which indicates that you have entered the "Power-on temperature" (or "Power-off temperature") menu. The parameters can be adjusted by " ∧ " or " ∨ ", press and hold " ∧ " or " ∨ " to adjust the parameter quickly. In the setting state, the parameters will be saved and the setting state will be exited after 5 seconds without pressing any button.

Parameter name	Description	Setting range	Factory setting	Remark
"Power-on temperature" ON	Power-on temperature	Power-off temperature - +145℃	35.0℃	The temperature of the fan control sensor is higher than the power-on temperature when the fan starts.
"Power-off temperature" OFF	Power-off temperature	-20℃ - Power-on temperature	34.5℃	The temperature of the fan control sensor is lower than the power-off temperature when the fan stops.

13.3. System menu setting

In the normal running and the unlocked state, press and hold "Unlock/OK" for more than 3 seconds until the parameter code "F0" is displayed in the temperature display, which indicates that you have entered the system menu setting. Press " ∧ " or " ∨ " to switch the parameter code item; press "Unlock/OK" to display the corresponding parameter value, press " ∧ " or " ∨ " to adjust the parameter, press and hold " ∧ " or " ∨ " to adjust the parameter quickly; in the system menu setting state, the adjusted parameter will be saved, the system menu setting state will be exited and it will return to the normal interface after 5 seconds without pressing any button. Press " ❄ " in the normal running to view the fan control temperature, and after 6 seconds, it will return to the normal interface.

XIV. Parameter Table

Parameter	Description	Setting range	Factory setting	Remark
F0	Fan start delay	0-120 minutes	0 minutes	
F1	Upper limit of the fan control temperature alarm	Lower limit of the fan control temperature alarm - 145 ℃	120℃	H1
F2	Lower limit of the fan control temperature alarm	-20℃ - Upper limit of the fan control temperature alarm	-10℃	LA1

F3	Upper limit of the storage temperature alarm	Lower limit of the storage temperature alarm - 145 ℃	30℃	H2
F4	Lower limit of the storage temperature alarm	-20℃ - Upper limit of the storage temperature alarm	-10℃	LA2
F5	Storage temperature sensor correction	-10.0 – 10.0℃	-1.0℃	
F6	Fan control sensor correction	-10.0 – 10.0℃	0.0℃	

(1) Power-on temperature
When the fan control temperature is higher than the set value, the output will be turned on.

(2) Power-off temperature
When the fan control temperature is lower than the set value, the output will be turned off.

(3) P0 - Fan start delay
It needs to go through the set delay time before it starts normally.

(4) F1 - Upper limit of the fan control temperature alarm
When the temperature of the fan control sensor (PB1) is higher than the upper limit of the fan control temperature alarm, the thermostat will display alarm H1 and the buzzer will beep.

(5) P2 - Lower limit of the fan control temperature alarm
When the temperature of the fan control sensor (PB1) is lower than the lower limit of the fan control temperature alarm, the thermostat will display alarm LA1 and the buzzer will beep.

(6) P3 - Upper limit of the storage temperature alarm
When the temperature of the storage temperature sensor (PB2) is higher than the upper limit of the storage temperature alarm, the thermostat will display alarm H2 and the buzzer will beep.

(7) F4 - Lower limit of the storage temperature alarm
When the temperature of the storage temperature sensor (PB2) is lower than the lower limit of the storage temperature alarm, the thermostat will display alarm LA1 and the buzzer will beep.

8) F5 - Storage temperature sensor correction
When there is an error in the measured storage temperature, the temperature can be corrected by adding or subtracting this parameter.

(9) F6 - Fan control sensor correction
When there is an error in the fan control temperature, the temperature can be corrected by adding or subtracting this parameter.

(10) Error code
When the sensor is malfunctioning, there will be a corresponding alarm code, please quickly detect whether the sensor is shorted, or measured beyond the range. E1 will be displayed for PB1 and E2 for PB2.

9. Eliminate buzzer alarm
Press any button to eliminate the sound of the buzzer alarm, but the alarm indicator will not go out until after the

alarm is lifted.

10. One-key restore the factory settings

When the thermostat is just powered on, within 5 seconds, press and hold " ❄ " for more than 5 seconds, the thermostat parameters will be restored, and then "end" will be displayed.

11. Self-check for controller output

Press and hold " ⌃ " for more than 2 seconds within 2 seconds of power on, the controller will display from 111 to 888. Within 10 seconds after displaying 888, press the "Power-on temperature", " ❄ " and "Power-off temperature" respectively, the corresponding symbol will light up. Press " ⌃ " and "Unlock/OK" respectively, the relay and buzzer will output.

Note: This self-check function of controller output is only for quick test of the product, and it is strictly forbidden to use this function on the final product.

12. Fan control

Fan start conditions (while meeting all the following conditions):

- The fan delay times out.
- The storage temperature of the fan control is higher than the power-on temperature.

Compressor power-off conditions (while meeting any of the following conditions):

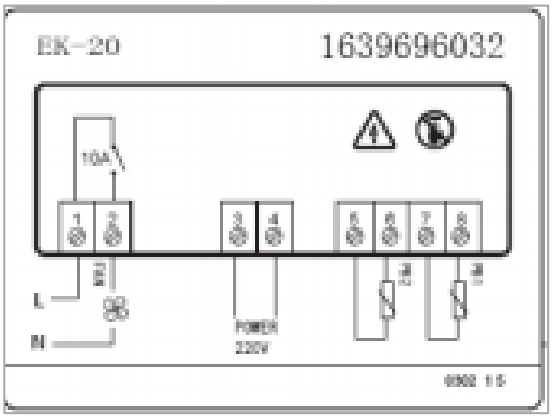
- The storage temperature of the fan control is lower than the power-off temperature.
- The temperature sensor of the fan control is malfunctioning.

13. Alarm output

The controller has a buzzer alarm output. In the running state, the buzzer will beep when the following situations occur.

- When PB1 probe is malfunctioning, the temperature display window will display the error code E1; when PB2 probe is malfunctioning, the temperature display window will display the error code E2.

14. Wiring schematic



15.1. Precautions for chip production

★ Prevent the burning port from blocking by tin!

15.2. Safety precautions

★ Power supply board: The back is brushed with Three-Proof paint to enhance the electrical isolation performance. And manually re-lay the tin to full on the relay circuit.

★ Display board: When assembling, the small touch circuit board must be installed close to the front panel to prevent an air gap. If the button does not work in the debugging stage, there may be a problem when assembling the small touch circuit board, please readjust it.

XIV. California Air Tools Inc. Limited Warranty

This warranty is limited to Refrigerated Dryers distributed by: California Air Tools, Inc.
8560 Siempre Viva Road
San Diego, CA 92154

Limited Warranty

California Air Tools Inc. will repair or replace, free of charge to the original retail customer who purchased a California Air Tools, Inc. Refrigerated Dryer from California Air Tools or from an authorized dealer, distributor or distributor's dealer in North America.

This warranty does not transfer to subsequent owners.

California Air Tools Inc. will repair or replace, at its option, any parts of the refrigerated dryer that are proven by an authorized service center to be defective in material or workmanship under normal use during the applicable warranty time period as stated below. This limited warranty covers the cost of the replacement parts and labor for all defects when installed by an authorized service center. Transportation charges are the responsibility of the customer. Any part replaced under warranty becomes the property of California Air Tools Inc.
All parts replaced under warranty will be considered as part of original product, and any warranty on those parts will expire coincident with the original product warranty.

Limited Warranty Periods

Non-commercial / Non-rental (personal use by a retail customer):

1 year parts and labor Commercial / Rental (usage for income, business use):
1 year parts and labor

The limited warranty period begins on the date of retail purchase by the original purchaser.

Disclaimers, Limitations of Remedies & Exclusions

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

Disclaimer of Other Warranties

To the fullest extent permitted by applicable law, this limited warranty is exclusive and expressly in lieu of any and all other warranties, including, without limitation, any implied warranties of merchantability or fitness for a particular purpose or any other implied warranties that may arise from the course of dealing or usage of the trade. California Air Tools Inc. hereby declaims and excludes all other warranties. To the extent that California Air Tools Inc. products are consumer products under applicable federal and state law with respect to any customer, the duration of any implied warranties (including but not limited to implied warranties of merchantability or fitness for a particular purpose) are limited to the shortest duration permitted by applicable law or the Limited Warranty period provided herein, whichever is longer.

Limitations of Remedies

California Air Tools Inc. shall not be liable to customer, or anyone claiming under customer, for any other obligations or liabilities, including but not limited to, obligations or liabilities airing out of breach of contract or warranty, negligence or other tort or any theory of strict liability, with respect to the air compressor or California Air Tools Inc. acts or omissions or otherwise. To the fullest extent permitted by applicable law, California Air Tools Inc. shall not in any event be liable for incidental, compensatory, punitive, consequential, indirect, special or other damages, including but not limited to loss of use, loss of income, loss of time, loss of sales, injury to personal property, or liability customer incurs with respect to any other person, or any other type or form of consequential damage or economic loss.

Exclusions

In addition to the foregoing disclaimers, limitations and terms, this limited warranty shall not apply to and does not cover accessories, nor does it cover products that are in any way subject to any of the following:

1. Improper setup, installation or storage.
2. Lack of proper maintenance and service.
3. Accident, damage, abuse or misuse.
4. Abnormal operating conditions or applications.
5. Repair or modification by customer or any third party without written consent of California Air Tools Inc.
6. Use under operating conditions or in applications not recommended by California Air Tools Inc.
7. Normal wear.
8. The use of accessories or attachments not recommended by California Air Tools Inc.
9. Acts of God.

The application of these exclusions will be determined at the sole discretion of California Air Tools Inc.

Maintenance & Troubleshooting Guide

California Air Tools provides Maintenance & Troubleshooting Guide on our website

WWW.CALIFORNIAAIRTOOLS.COM.

Valuable information regarding set-up, operation and maintenance.

Please visit our website and view support videos for beneficial information.

Service or Parts

Warranty is also available by keeping and showing your original receipt from the date of purchase to an Authorized California Air Tools Service Center.

For all customer service inquiries call 1-866-409-4581 or visit

WWW.CALIFORNIAAIRTOOLS.COM

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