80445521
Revision F
July 2019

Non-cycling Refrigerated Dryer 1000-2400 SCFM

Models D1700IN, D2040IN, D2720IN, D3400IN, D4080IN

Operator's Manual

- EN Operator's Manual
- ES Manual Del Operador
- FR Manuel De L'opérateur
- PT Manual do Operador

Save These Instructions

Ingersoll Rand®

1.0 CONTENTS

2.0 INTRODUCTION

Ingersoll Rand refrigerated air dryer removes moisture, oil vapor, and other contaminants from compressed air. These contaminants are detrimental to pneumatically operated appliances, controls, instruments, machinery and tools. This removal is accomplished by cooling the air with a refrigeration unit to a temperature at which moisture in the air is condensed and separated from the air stream. The temperature the air is cooled to, normally between 36 and 40°F (1° and 3°C), is known as dew point. This dryer can be easily installed into various pneumatic systems in which dry air is required or desired. Please refer to Principles of Operation for complete operating details.

3.0 WARRANTY

The Company warrants that the equipment manufactured by it and delivered hereunder will be free of defects in material and workmanship for a period of twelve months from the date of placing the Equipment in operation or eighteen months from the date of shipment from the factory, whichever shall first occur. The Purchaser shall be obligated to promptly report any failure to conform to this warranty, in writing to the Company in said period, whereupon the Company shall, at its option, correct such nonconformity, by suitable repair to such equipment or, furnish a replacement part F.O.B. point of shipment, provided the Purchaser has stored, installed, maintained and operated such Equipment in accordance with good industry practices and has complied with specific recommendations of the Company. Accessories or equipment furnished by the Company, but manufactured by others, shall carry whatever warranty the manufacturers have conveyed to the Company and which can be passed on to the Purchaser. The Company shall not be liable for any repairs, replacements, or adjustments to the Equipment or any costs of labor performed by the Purchaser or others without Company's prior written approval.

The effects of corrosion, erosion and normal wear and tear are specifically excluded. Performance warranties are limited to those specifically stated within the Company's proposal. Unless responsibility for meeting such performance warranties are limited to specified tests, the Company's obligation shall be to correct in the manner and for the period of time provided above.

THE COMPANY MAKES NO OTHER WARRANTY OR REPRESENTATION OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HERBY DISCLAIMED.

Correction by the Company of nonconformities whether patent or latent, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of the Company for such nonconformities whether based on contract, warranty negligence, indemnity, strict liability or otherwise with respect to or arising out of such Equipment.

The Purchaser shall not operate Equipment which is considered to be defective, without first notifying the Company in writing of its intention to do so. Any such use of Equipment will be at Purchaser's sole risk and liability.

Note that this is **Ingersoll Rand** standard warranty. Any warranty in force at the time of purchase of the equipment or negotiated as part of the purchase order may take precedence over this warranty.

4.0 REFRIGERATED DRYER NOMENCLATURE

DRYER	NOMINAL* FLOW (Nm^3/hr)	Ingersoll Rand NON-CYCLING	CONDENSER TYPE	POWER	RATING	CONVERSION CHART
D	1700 2040 2720 3400 4080	IN	A = AIR	4 = 460-3-60 5 = 230-3-60 6 = 575-3-60 D = 380-3-60	0 = NEMA 1	1700 Nm^3/hr = 1000 SCFM 2040 Nm^3/hr = 1200 SCFM 2720 Nm^3/hr = 1600 SCFM 3400 Nm^3/hr = 2000 SCFM 4080 Nm^3/hr = 2400 SCFM

* Nominal Flows indicated are for 100°F inlet temperature, 100°F ambient temperature and 100 psig compressed air pressure.

5.0 RECEIVING AND INSPECTION

5.1 INSPECTION

Upon receiving your **Ingersoll Rand** air dryer, please inspect the unit closely. If rough handling has been detected, please note it on your delivery receipt, especially if the dryer will not be immediately uncrated. Obtaining the delivery person's signed agreement to any noted damages will facilitate any insurance claims.

5.2 UNPACKING AND HANDLING

⚠ WARNING

Under no circumstances should any person attempt to lift heavy objects without proper lifting equipment (i.e., crane, hoist, slings or fork truck). Lifting any unit without proper lifting equipment, can cause serious injury.

To facilitate handling during shipment, all dryer packages have been mounted on a base that provides for forklifting between two base channels. Forks should extend all the way through forklift channels to reduce unnecessary forces to the dryer during moving. Slings can be used to lift the crates, but spreader bars must be used to prevent the slings from exerting a force against the sides of the crates or the dryer.

6.0 SAFETY AND OPERATION PRECAUTIONS

Because an air dryer is pressurized and contains rotating parts, the same precautions should be observed as with any piece of machinery of this type where carelessness in operation or maintenance could be hazardous to personnel. In addition to obvious safety rules that should be followed with this type of machinery, safety precautions as listed below must be observed:

1. Only qualified personnel shall be permitted to adjust, perform maintenance or repair this air dryer.
2. Read all instructions completely before operating unit.
3. Pull main electrical disconnect switch and disconnect any separate control lines, if used, before attempting to work or perform maintenance on the unit.
4. Do not attempt to service any part while machine is in an operational mode.
5. Do not attempt to remove any parts without first relieving the entire air system of pressure.
6. Do not attempt to remove any part of the refrigeration system without removing and containing refrigerant in accordance with the EPA and local regulations.
7. Do not operate the dryer at pressures in excess of its rating.
8. Do not operate the dryer without guards, shields and screen in place.
9. Inspect unit daily to observe and correct any unsafe operating conditions.

OSHA Heading Descriptions

⚠ WARNING

"Warning" is used to indicate a hazardous situation which has some probability of death or severe injury. Warning should not be considered for property damage accidents unless personal injury risk is present.

⚠ CAUTION

"Caution" is used to indicate a hazardous situation which may result in minor or moderate injury.

⚠ NOTICE

"Notice" is used to indicate a statement of company policy as the message relates directly or indirectly to the safety of personnel or protection of property. Notice should not be associated directly with a hazard or hazardous situation and must not be used in place of "Danger," "Warning," or "Caution."

⚠ NOTICE

The user of any air dryer manufactured by Ingersoll Rand, is hereby warned that failure to follow the above Safety and Operation Precautions may result in personal injury or equipment damage. However, Ingersoll Rand does not state as fact, nor does it mean to imply, that the preceding list of Safety and Operating Precautions is all inclusive, and further, that the observance of this list will prevent all personal injury or equipment damage.

6.0 SAFETY AND OPERATION PRECAUTIONS

WARNING

Air Under Pressure Will Cause
Injury, Death Or Property Damage.
- Do Not Exceed Pressure Rating.
- Relieve Press. Before Servicing.
- Do Not Modify/Repair/Rework ASME Coded Pressure Vessels As Insurance Rating Affected.

READ TECHNICAL MANUAL

WARNING

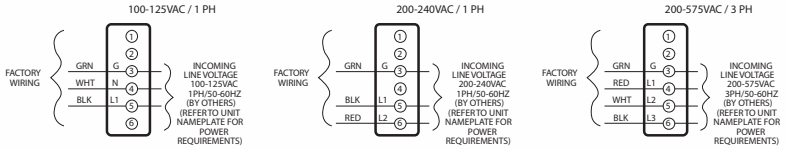
ELECTRICAL CONNECTION BOX
CONTAINS HIGH VOLTAGE

- Turn Off Power And Lock Out At ALL Sources Before Opening To Perform Service.
- Remote Alarm Contact Wiring Has Control Power From Separate Source.

READ TECHNICAL MANUAL

ELECTRICAL CONNECTION BOX

- All Customer Connections To Be Made At This Location.
- See Terminal Connection Diagrams, below.
- Be Certain To Follow All NEC, State, Local and Other Applicable Codes During Installation.



Alternate three-phase wiring may be black / black / black.

WARNING

Removing fuses will not disconnect power from dryer. Always disconnect power from ALL sources before performing service.

READ TECHNICAL MANUAL

WARNING

Air Under Pressure Will Cause
Injury, Death Or Property Damage.
- Relieve Press. Before Servicing.
- Condensate Drain Discharges Under Pressure.
- Drain Requires Periodic Cleaning (Service).

READ TECHNICAL MANUAL

WARNING

FAN MAY AUTOMATICALLY
START AT ANY TIME

WARNING

This unit is charged with
refrigerant under high pressure.

WARNING

HIGH VOLTAGE

7.0 PRINCIPLES OF OPERATION

7.1 INTRODUCTION

Ingersoll Rand non-cycling dryers remove moisture, oil vapor and other contaminants from compressed air by cooling the air temperature to 36 deg.F (2.2 deg.C). This cooling process condenses the contaminants into liquid droplets which can then be easily removed from the air. The major systems of the dryers that contribute to its operation are the following: Air System, Moisture Removal System, Refrigeration System and the Controls System. The following paragraphs describe each of the systems in greater detail.

7.2 AIR SYSTEM

This system consists of the dryer components which are in contact with the compressed air. Referring to Figure 1 and following the bold "AIR FLOW" path indication, hot saturated air from the air compressor enters the precooler/reheater where the air temperature is reduced prior to entering the chiller by the cool air exiting the air/moisture separator. This precooling allows for the use of a smaller refrigeration system. The air then goes into the chiller section where it is further cooled to the desired dew point through direct heat transfer with evaporating refrigerant. The air continues to the separator where the moisture is removed, thereby allowing the cool, dry air to return to the precooler/reheater. As the air passes through the precooler/reheater the air temperature is elevated by the warm, wet inlet air. The air exiting the reheater portion of the dryer should be approximately 15-20 deg.F lower than the inlet air temperature based on standard conditions at full rated flow.

7.3 MOISTURE REMOVAL SYSTEM

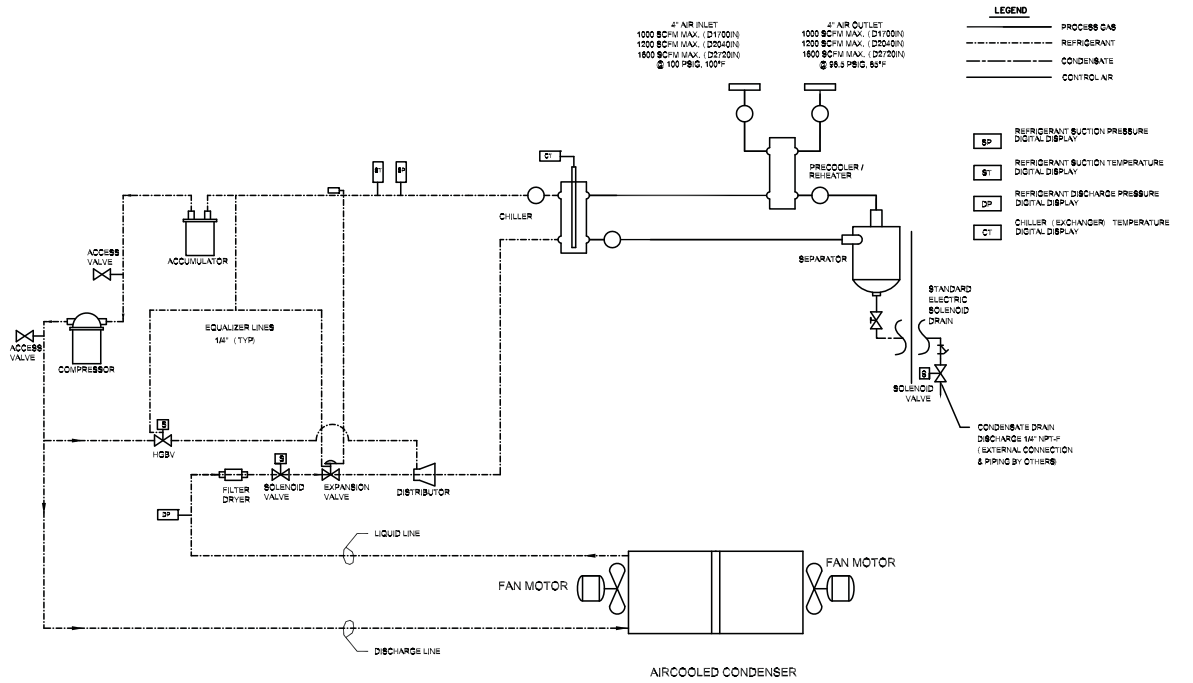
Liquid droplets are removed from the air stream in the separator. As the air and liquid mixture passes through the separator it spins, slows down and then changes direction. This causes condensate to fall out of the air stream and collect in the bottom of the separator. The collected liquid is removed from the separator by a solenoid valve that is controlled by the Controller. For adjustment please note the following:

- To obtain the optimum time values for operation of the electric drain valve, set the drain closed time to five minutes and the open time to five seconds. Refer to Section 7.5.4 for details.
- After running the unit under full rated flow for approximately 30 minutes, verify that when the solenoid drain opens, all of the accumulated liquid is discharged and then followed by a small burst of air.
- If a small amount of liquid and a large amount of air is discharged, decrease the on-time setting or increase the off-time setting. If there is all liquid and no air has been discharged, increase the on-time setting or decrease the off-time setting.
- The on/off-time settings will vary accordingly to seasonal conditions. During the summer when more moisture is present in the air system, a shorter on-time that increases the valve opening frequency is required. A longer off-time may be used during the winter months when moisture levels are lower.

7.4 REFRIGERATION SYSTEM

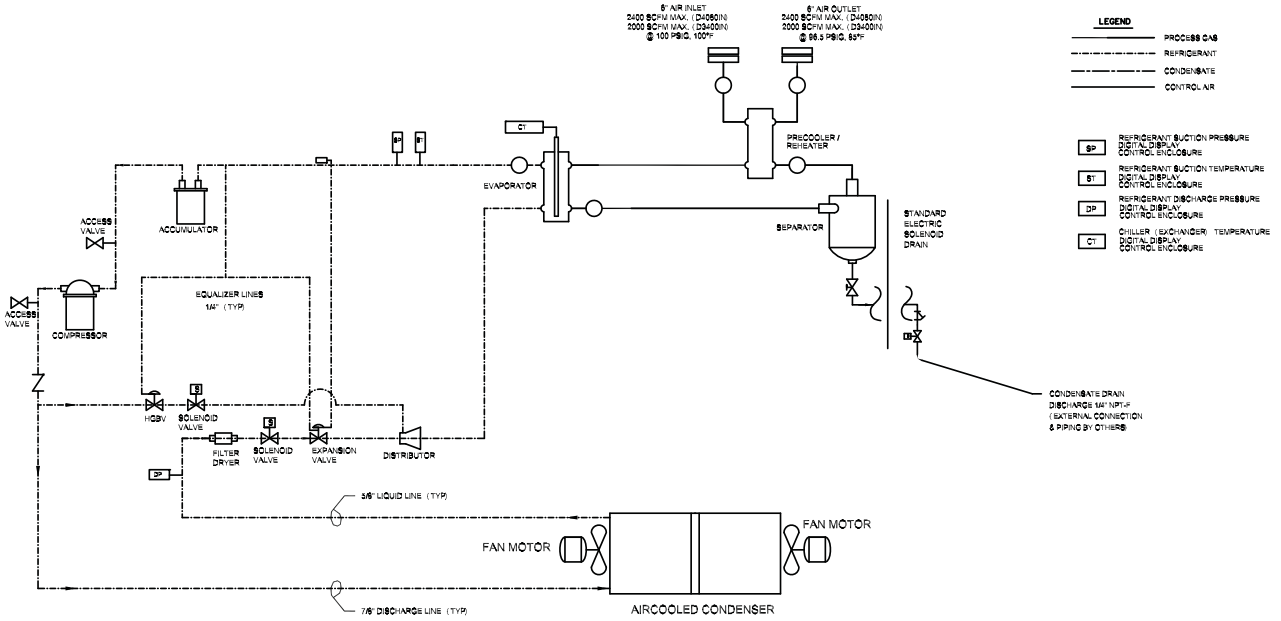
The Refrigeration System consists of all the components which handle refrigerant R-404A. This is a hermetically sealed closed-loop system. Referring to Figure 1 and following the dot-dash "REFRIGERANT" path indication, refrigerant is shown leaving the chiller evaporator section, which in the process of removing heat is changed from a low pressure liquid to a low pressure gas. This gas enters the suction side of the compressor where it is compressed into a high pressure gas. The high pressure gas is cooled in the condenser section becoming a high pressure liquid. It then goes through a permanent filter-dryer that ensures the refrigerant system is free of contaminants. A thermostatic expansion valve meters the refrigerant into the chiller's evaporator. The pressure is reduced upon entering the chiller evaporator where it removes heat from the air system. When there are low loads (low air flow rate or low inlet temperature), a hot gas valve by-passes the condenser and the thermostatic expansion valve . This valve maintains a minimum evaporator pressure of 76 psig, which corresponds to a chiller temperature of 34 °F, thus preventing freeze-up.

7.0 PRINCIPLES OF OPERATION



PROCESS AND INSTRUMENTATION DIAGRAM
D1700IN, D2040IN, D2720IN
AIRCOOLED
550142 - A

FIGURE 1



PROCESS AND INSTRUMENTATION DIAGRAM
D3400IN, D4080IN
AIRCOOLED
550143 - A

7.0 PRINCIPLES OF OPERATION

7.5 CONTROLS

Ingersoll Rand Refrigerated Compressed Air Dryers are equipped with a Microprocessor Controller. This advanced microprocessor-based Controller has been engineered by **Ingersoll Rand** for use with **Ingersoll Rand** Compressed Air Dryers.

For Non-Cycling dryers, the Controller displays the temperature of the air at the coldest point in the air stream, providing an indication of the outlet pressure dew point of the dryer. In addition, the Controller permits monitoring of dryer parameters and enunciation of alarm conditions.

The list below summarize the features the Controller:

- 2 X 16 Character Backlit LCD Display - Easy-to-read display provides continuous indication of dryer default parameter. Standard backlight permits viewing of critical information in low light environments.
- Electronic Drain with On/Off Time Adjustment: Included with dryer is a solenoid drain valve. Control of the open and close time of the valve is set via the Controller.
- Remote Start / Stop: The Controller offers a unique remote start / stop feature. This feature allows the dryer to be operated via a remote user-supplied switch.
- Remote Alarm Contact: Controller includes a remote alarm contact to provide indication of any of the dryers alarms described later in this manual. Contact rated for 2A / 120V max.

The Controller features three levels of access. The default level CUSTOMER MODE permits adjustment of dryer parameters to address seasonal variations for drain. A protected TECHNICIAN MODE permits access to and manipulation of additional parameters to address the initial machine set up. A password protected FACTORY MODE is also included for use by Factory Service Personnel for troubleshooting the dryer.

Ingersoll Rand non-cycling dryers include a Hot Gas By-Pass Valve to maintain suction pressure and temperature. Refer to Figures 2A and 2B. This valve is necessary during low load applications to prevent freeze-up in the chiller section. The normal suction pressure for no load conditions should never drop below 72 psig. This setting may need adjustment to match the load/ambient conditions encountered.

⚠ NOTICE

This adjustment is not a procedure covered under warranty as it is typically required for application-specific conditions.

For Hot Gas By-Pass Valve adjustment, note the following:

- Turning the adjustment screw clockwise raises suction pressure and exchanger temperature viewed from the top of the adjustment screw.
- Turning the adjustment screw counter-clockwise reduces suction pressure and exchanger temperature.
- All adjustments should be made without air flow (load) on the dryer.

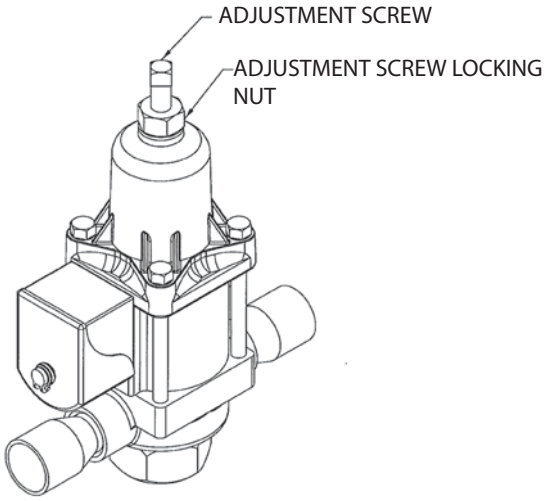


FIGURE 2 - HOT GAS BYPASS VALVE

⚠ CAUTION

Do not rotate Hot Gas By-Pass Valve adjustment fully clockwise. Full clockwise rotation may result in refrigerant compressor damage. Any suction pressure setting above 90 psig is not recommended.

Ingersoll Rand air cooled models utilize a microprocessor-controlled fan contactor to control the condensing temperature. This contactor controls the condensing temperature by cycling the fan based on refrigerant discharge pressure. When the unit reaches 275 psig, the microprocessor energizes the fan contactor that will run the primary fan until the discharge pressure is reduced to 195 psig. Should the discharge pressure continue to rise, the remaining fan(s) will energize at 335 psig and continue to operate until the discharge pressure has been reduced to 235 psig.

For water cooled models, a high pressure cut out switch is positioned near the water regulating valve. The switch is designed to open at 320 psig and close at 270 psig. The DPC™ controller includes a digital readout for monitoring the discharge pressure of the refrigerant gas exiting the compressor. This reading will vary depending upon condenser type as indicated below:

7.0 PRINCIPLES OF OPERATION

- Air Cooled condensers with ambient temperatures between 80°F and 100°F, the refrigerant discharge gauge should read between 230 - 355 psig.
- Water cooled condensers utilize a water regulating valve (Refer to Figure 3). The water regulating valve comes pre-adjusted from the factory at 260 psig discharge pressure. To compensate for water temperature variation, it may be necessary to adjust the water regulating valve to maintain a 260 psig discharge pressure. Adjustment can be done by rotating the adjusting screw counterclockwise for an increase in discharge pressure. For conditions where low water temperature and/or high water pressure are expected it is advisable to install a water pressure regulator ahead of the condenser.

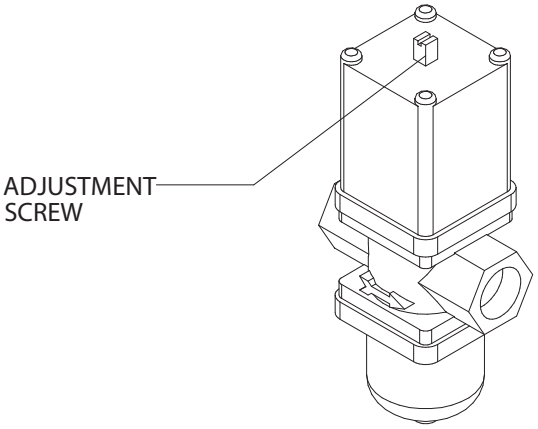


FIGURE 3 - WATER REGULATING VALVE

7.5.1 BASIC USER INTERFACE

The Microprocessor Control display provides the user with the operating parameters and their corresponding values. When power is supplied to the dryer, the Microprocessor Control will illuminate and default to the "Standby" mode, displaying the "Press ON" prompt.

The following illustration summarizes the keypad functions.

BUTTONS

- **ON**
  Places the dryer "On Line";
- **OFF**
  Places the dryer "Off Line"; Stops all automatic functions.
- **SELECT DISPLAY**
  Allows the user to cycle through the available displays. The last display selected will remain displayed as the default display.
- **+ / -**
  Allows user to modify set point values. Set point values cycle through a fixed range. Also allows entering negative numbers in FACTORY MODE.
- **TEST**
  Allows user to manually activate the drain valve.
- **RESET**
  Pressing once clears the local alarm indication and de-energizes the remote alarm contact. Should the alarm condition persist, the alarm will return after the alarm inhibit time has expired.
- **SET**
  Permits the adjustment of parameters in TECHNICIAN and FACTORY MODES. In CUSTOMER MODE, allows user to back through displays,
- **ENTER**
  Used to accept changed parameters and set point values.
- **i**
  Restricted Level access for factory use only. Not used for basic dryer functions. Not to be used by customer or service technician.

7.0 PRINCIPLES OF OPERATION

7.5.2 DISPLAY PARAMETERS

The Microprocessor Control is capable of displaying a number of system parameters. The following summarizes the parameters that can be accessed by the user from the Microprocessor Control:

- Chiller Temperature (CHLLR TEMP): The Chiller Temperature is the temperature, in degrees Fahrenheit, of the compressed air after the separator.
- Compressor Status (CMPRSSR): Displays whether the refrigeration compressor is "ON" or "OFF".
- Discharge Pressure (P disch): Displays the discharge pressure of the refrigeration system.
- Suction Temperature (T suction): Displays the suction temperature, in deg. F, of the refrigeration system. This value is useful in determining superheat of the refrigerant.
- Suction Pressure (P suction): Displays the suction pressure, in psig, of the refrigeration system.
- Drain Interval (DRN INT): Displays the length of time, in minutes, between operation of the solenoid drain.
- Drain On (DRN ON): Displays the length of time, in seconds, that the solenoid drain is open.
- Cumulative Dryer Hours (CUM DRYER HR): Displays the length of time, in hours, that the dryer has been operational.

Depressing the SELECT DISPLAY button repeatedly scrolls through the above non-adjustable displays. The Customer Set Points appear at the end of the list and may be adjusted by the end user to match seasonal refrigeration and drain operation. These settings are as follows:

- Drain Interval (DRN INT)
- Drain On (DRN ON)

7.5.3 DRYER SET POINTS AND ALARMS

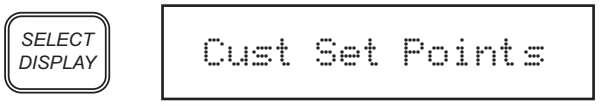
The Microprocessor Control has several user adjustable set points that are displayed at the end of the display parameter list. These set points allow the user to configure the dryer to operate according to site conditions. The controller is shipped from the factory with each parameter having its own default value. The following chart summarizes the parameters that may be adjusted by the user:

SETPOINT	Display Description	Parameter Range	Factory Setpoint
Chiller Off Temperature	CHLLR TEMP	32°F - 50°F; 1 °F increments	34°F

7.5.4 ADJUSTING SET POINTS

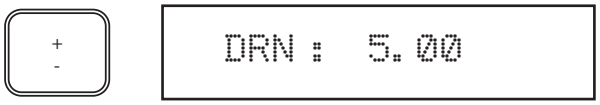
Accessing and manipulating each of the set points in the CUSTOMER MODE is accomplished as follows. The parameter is selected using the SELECT DISPLAY button. After scrolling through the displays, the "Cust Set Points" screen is displayed. The parameters after this screen may be adjusted by the user. Once the desired parameter is displayed, depressing the "+/-" button changes the set point. Once the new set point is displayed, depressing ENTER saves the set point. Exiting the Customer Set Point routine is accomplished by depressing the SELECT DISPLAY button until the END CUST SET PTS screen is displayed. The following example illustrates the keystrokes required to change the Drain Closed Time from the default value of 3 minutes to 5 minutes:

Pressing SELECT DISPLAY will increment the display through the available display parameters.



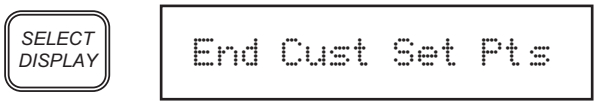
Continue pressing SELECT DISPLAY until the Customer Set point screen is displayed. The parameters that follow are the User Adjustable Parameters for the controller.

Press SELECT DISPLAY until "DRN INT" is displayed.



Depress " + / -" as required to change the DRN INT to 5 minutes.

Pressing "ENTER" saves the set point.



Press SELECT DISPLAY as necessary to display the End Customer Set points Screen.

Press SELECT DISPLAY as necessary to return the Microprocessor Control to the desired display parameter.

7.5.5 ALARMS AND THEIR FUNCTIONS

There are several alarms detected by the Microprocessor Control to alert the user of an out of tolerance condition. Once each alarm is detected, a description of the alarm will appear in the screen and the remote alarm contact will close. Note that during the alarm condition, the SELECT DISPLAY button may be depressed to scroll through the available parameters. After approximately 30 seconds, the alarm screen will reappear, provided the alarm condition persists.

The alarm names and a brief description of each are described in detail below.

Alarm	Display	Alarm Set Point
HIGH PRESSURE CUTOUT	HPCO ALARM	See Table 1
LOW PRESSURE CUTOUT	LPCO ALARM	See Table 1
HIGH TEMPERATURE ALARM	HITEMP ALRM	55 °F
LOW TEMPERATURE ALARM	LOTEMP ALRM	30 °F

HIGH TEMPERATURE ALARM (HITEMP ALARM)
When the exchanger temperature reaches the alarm set point, the alarm will be activated. This alarm condition may not necessarily damage the dryer when subjected to long-term exposure. It may, however, have a significant impact on downstream processes and thus should be investigated upon detection. Note that this alarm will not shut down the dryer. This alarm will activate the remote alarm contact and reset automatically once the alarm condition is rectified.

LOW TEMPERATURE SAFETY ALARM (LOWTEMP ALARM)
If the dryer chiller temperature falls to or below the factory set point and remains at or below this set point for the factory delay time, the alarm routine will activate. This alarm condition may cause damage to the dryer when subjected to continuous or long-term exposure. Note that this alarm will shut down the dryer after a response time delay. This alarm will activate the remote alarm contact and reset automatically once the alarm condition is rectified.

HIGH PRESSURE CUTOUT ALARM (HPCO ALARM)
If the discharge pressure of the refrigerant is determined to be above the set point, the alarm routine will activate. This alarm condition may cause damage to the dryer when subjected to continuous or long-term exposure. Note that this alarm will shut down the dryer after a response time delay. The operator must depress the RESET button in order to clear the alarm and restart the refrigeration system.

LOW PRESSURE CUTOUT ALARM (LO PRESS CO)
If the suction pressure of the refrigerant is determined to be below the set point of the LPCO alarm, the Microprocessor Control alarm routine will activate. This alarm condition may cause damage to the dryer when subjected to continuous or long-term exposure. Note that once cleared, the compressor will restart automatically. However, if two successive low pressure conditions are determined, this alarm will shut down the dryer after a response time delay and will display the alarm condition. The operator must depress the RESET button in order to reinstate the compressor.

Parameter	R-404A
FAN 1 ON	275 psig
FAN 1 OFF	195 psig
FAN 2 ON	335 psig
FAN 2 OFF	235 psig
HPCO (Air Cooled)	450 psig
HPCO (Water Cooled)	320 psig
LPCO	20 psig

7.5.6 START MODES

Ingersoll Rand dryers are capable of starting in one of three start modes. Note that to protect the refrigeration compressor from repeated rapid starts, the Microprocessor Control is equipped with an anti-short cycle (ASC) delay. The ASC delay will countdown from the factory set point. Only after the ASC delay has timed out will the refrigeration system operate. Below are brief descriptions of these various start modes.

7.5.6.1 Manual Mode

Ingersoll Rand dryers are shipped from the factory in the Manual Mode. After power is supplied to the dryer and once the Crankcase Heater Delay has timed out, the user will be presented with the ASC delay, followed by the "PRESS ON BUTTON" display. After the ASC delay has timed out, the dryer will only start once the ON button is depressed. In this configuration, to restart the dryer, the user must manually depress the ON button on the dryer's control panel.

7.5.6.2 Auto Restart Mode

After power is applied to the dryer, and once the Crankcase Heater and ASC delays have timed out, the dryer will start automatically. In addition, this mode of operation allows manual control of the dryer via the ON & OFF pushbuttons. This is useful for applications where automatic restarting of the dryer is desired after a power failure has occurred.

7.5.6.3 Remote Automatic Mode

This mode of operation allows the user to control the dryer remotely and requires the installation of a customer-supplied contact. With power applied to the dryer and once the Crankcase Heater and ASC delays have timed out, the dryer will start automatically once the switch is closed. In addition, this mode of operation allows manual control of the dryer via the ON & OFF pushbuttons. Note that the signal to the remote contact must be 24V.

8.0 INSTALLATION AND INITIAL START-UP

8.1 LOCATION AND MOUNTING

The dryer should not be located in an area where ambient temperature is likely to exceed 113°F (45°C) or be less than 50°F (10°C). The dryer must be located in an area that provides sufficient clearance from walls and other adjoining equipment to allow easy access for servicing and maintenance requirements. A minimum of 18 inches is required to allow free flow of air to the condenser inlet.

If loads fluctuate widely, the dryer should be positioned ahead of the receiver and sufficient storage capacity downstream is necessary to prevent excessive air flow through the dryer.

When installed after any compressor that causes significant vibration or air pulsation, such as reciprocating compressors, proper vibration isolation and pulsation dampening devices should be added to protect the dryer.

⚠ NOTICE

Failure to comply to the above instructions may result in equipment malfunction and will void warranty.

⚠ NOTICE

Always use a backup wrench when making any threaded connection to the dryer. Failure to use a backup wrench may result in damaged tubing and components internal to the cabinet.

8.2 PIPING AND VALVES

Install piping, fittings and accessories as required for specific site conditions and requirements. Figure 3 indicates a typical piping arrangement for a refrigerated dryer, including dryer and filter bypasses. This figure can be used as a guide for valve and accessory placement in the system.

Ingersoll Rand dryers come factory installed with a drain isolation valve (D). The isolation valve permits maintenance of the automatic drain without isolating air flow to the dryer. To operate dryer, all valves shown in Figure 3 are to be closed except valves (B), (C) and (D). Valve (A) is used for bypass purposes and valve (E) is for test and manual drain purposes.

8.3 FILTRATION

To protect the air dryer from gross contamination associated with compressor oil and debris and ensure maximum dryer performance, a pre-filter is recommended. Pre-filters and post-filters sized to your drying application can be provided by **Ingersoll Rand** and are available factory installed. Call your local distributor to select the filter that best suits your filtration requirements. In addition to air filtration, condensate discharge oil/water separators are also available to address stringent EPA regulations.

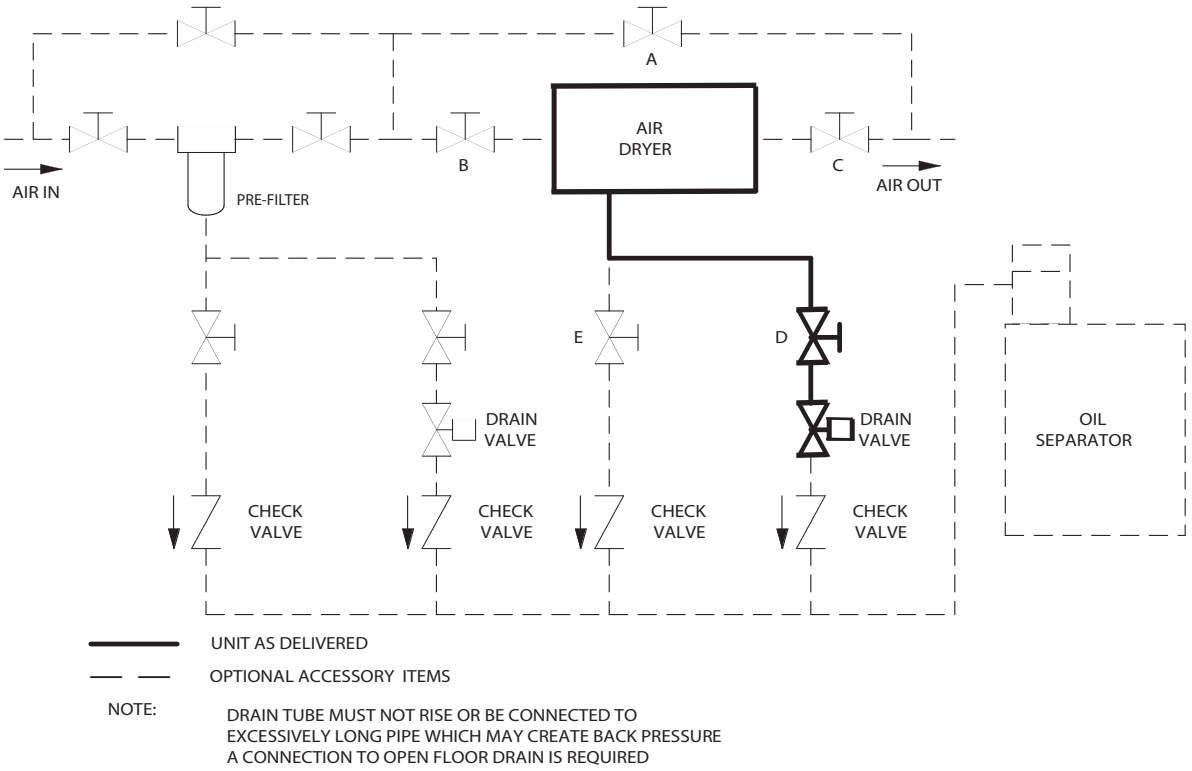


FIGURE 4 - TYPICAL PIPING ARRANGEMENT

8.0 INSTALLATION AND INITIAL START-UP

8.4 ELECTRICAL CONNECTION

Equipment is available in various electrical configurations. All customer connections can be made at the contactor located in the control panel. (Refer to General Arrangement and appropriate Wiring Diagrams.)

A suitable fused disconnect switch or circuit breaker, in accordance with national and local code requirements, is recommended for all **Ingersoll Rand** equipment. Refer to Section 15 for voltage requirements and load.

⚠ CAUTION

Never wire directly or connect any additional wires to the compressor junction box. This will cause severe system malfunction.

8.4.1 **Ingersoll Rand** dryers can be configured for three variations of start modes: Manual Mode, Automatic Mode and Remote Mode. Refer to Section 10 for instructions on how to change the dryer's start settings. The instructions below describe the methods to configure the dryer for a particular Start Mode.

A) Manual Mode (Factory Default) - No modification required to operate dryer in Manual Mode. Once power is applied, dryer can be started or stopped by depressing the local ON / OFF pushbuttons located on the front panel.

B) Auto Restart Mode - Auto Restart Mode permits the dryer to start after a brief delay once power is applied to the dryer. Note that the dryer's touch pad will still affect dryer operation. Depressing the OFF button will de-energize the refrigeration compressor and all other electrical components. After the OFF button has been depressed, the user must depress the ON button to permit the dryer to operate.

C) Remote Mode - Remote Mode allows the dryer to be turned ON or OFF via a remote switch supplied by the customer. This mode will work regardless of the setting for Auto Restart. The dryer must be powered on for this feature to take effect. To enable this feature:

- Install N.O. remote switch as indicated on the appropriate wiring diagram.
- Customer-supplied contact should be rated at 1A at 24V. To operate dryer, close switch or contact and allow dryer to start after an initial delay. The local On / OFF pushbuttons may also be used at any time after contact closure.

8.5 INITIAL START-UP

⚠ NOTICE

For water cooled models, the water valve must be manually opened to ensure that the condenser is full of water prior to start-up.

⚠ CAUTION

Allow 8 hours of warm-up time for the crankcase heater prior to start up. Crankcase heater is connected directly to the incoming power and is energized at all times.

8.5.1 START- UP SEQUENCE

- Apply power to dryer. LCD Panel will illuminate. The Anti-Short Cycle delay will commence counting down. Remaining time on the Crankcase heater will also countdown.

⚠ NOTICE

After installation or a prolonged shutdown, start the dryer with no air load (no air flow). This enables the dryer to reach its proper operating temperature in the shortest time possible.

- Start Dryer, using one of the following methods, depending on Start Mode setting:

  Manual Mode - Press the ON pushbutton.

  Auto Restart Mode - No additional action required

  Remote Automatic Mode - Close the remote contact.

- Anti-short cycle delay and crankcase heater delay have timed out, the refrigeration system will energize.

After the alarm delay, provided the Chiller Temperature is greater than the HIGH TEMPERATURE ALARM set point, the dryer will go into HIGH TEMPERATURE ALARM. The LCD panel will indicate the alarm and the refrigeration system will continue to operate. Pressing the SELECT DISPLAY button will permit viewing of the available dryer parameters during this alarm condition. Note that the alarm condition screen will reappear after approximately 30 seconds until the alarm condition is cleared.

The CHILLER TEMPERATURE will gradually drop as indicated on the display. Once the temperature falls below the HIGH TEMPERATURE ALARM set point, the alarm will reset and the LCD panel will return to its default display. Air flow may be slowly introduced to the dryer.

⚠ NOTICE

If power is removed from the dryer for less than two hours, the crankcase heater delay will be automatically bypassed. If, however, the power is removed from the dryer for more than two hours, the full crankcase heater delay must be observed.

9.0 SCHEDULED MAINTENANCE

9.1 INTRODUCTION

Ingersoll Rand noncycling refrigerated air dryers require little maintenance. These dryers utilize hermetically sealed compressors which do not require any lubrication. Fan motors require lubrication at both oil ports every six months. The condensate drain requires annual replacement of the service unit. **Ingersoll Rand** recommends component inspection and service at regular intervals to obtain maximum performance from your dryer.

9.2 REFRIGERANT CONDENSER

For standard dryers, regular inspection and cleaning of the condenser is recommended. **Ingersoll Rand** dryers may be equipped with an optional ambient air filter designed to protect the condenser from dirt and debris that can accumulate on the condenser. For proper operation with this option, it is imperative that this filter be inspected and cleaned on a regular basis. Annual replacement of the filter is recommended. For applications where excessive dirt, dust or debris is encountered, more frequent inspection and cleaning may be required.

9.3 CONDENSATE DISCHARGE SYSTEM

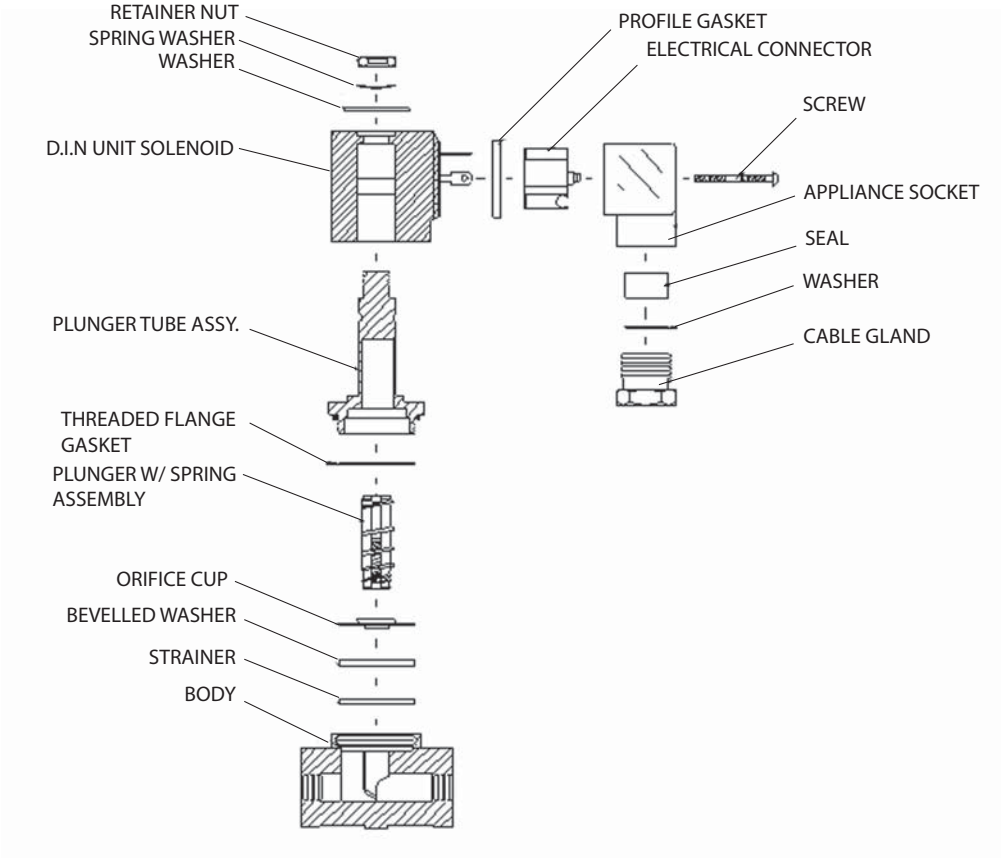
Maintenance recommendations

On a minimum of a monthly basis, the operation of the drain should be checked. Periodically, the drain should be removed and cleaned to ensure no debris from the system is trapped inside. **Ingersoll Rand** non-cycling dryers are equipped with a drain isolation valve, enabling the valves to be cleaned during dryer operation after the drain isolation valve has been manually closed. The drain valve is located near the solenoid valve and requires a quarter turn to isolate the drain from system pressure.

9.3.1 CLEANING INSTRUCTIONS - SOLENOID DRAIN

- Be sure dryer is depressurized or isolation valve is closed.
- Disconnect drain body from filter stop.
- Loosen connector screw to allow the electrical connector assembly to be removed from the D.I.N. unit solenoid.
- Remove retainer nut and separate the valve body from the D.I.N. unit solenoid.
- Unthread the plunger tube assembly in a counter-clockwise direction until plunger separates from valve body.
- Clean beveled washer, thread gasket, spring assembly and strainer with soap and water. Do NOT use solvents of any kind, as failure to the seals will occur. Be especially careful to clean the center brass orifice and the rubber gasket orifice on the orifice cup with a straight pin.
- Reassemble all drain components after the drain has been cleaned and inspected. Reposition the orifice hole on the rubber gasket of the orifice cup in the line and closest to the arrow indicated on the valve body.
- Reassemble valve and install in reverse order as described above.

9.0 SCHEDULED MAINTENANCE



SOLENOID VALVE DETAIL

10.0 TECHNICIAN MODE

The Microprocessor Control provides a protected TECHNICIAN MODE to manipulate several parameters not accessible by the typical operator. This mode also permits viewing of the factory settings to aid in troubleshooting of the dryer. Below is a list of parameters that can be accessed and manipulated by the technician in the TECHNICIAN MODE:

Parameter	Display	Set Point
NO-LOSS DRAIN VALVE ENABLE	DRAIN ENABLE	ON (or OFF)
CRANKCASE HEATER DELAY	CCH DLY	8 (or 0,2,4,12 hours)
AUTO RESTART ENABLE	AUTO RESTART	N (or Y)

In TECHNICIAN MODE, the following parameters can be viewed but not changed:

Parameter	Display	Set Point
CONFIGURATION (# of sensors)	CONFIG #:	1, 2, 4, 8
OPERATING MODE	OP MODE:	HS or NC
REFRIGERANT	REFRIG:	22 or 404 or 407
CONDENSER TYPE	COND:	AC OR WC
OPERATING TEMPERATURE DIFFERENTIAL	T OP DIFF:	4
SHORT CYCLE DELAY	SHT CYC DLY:	3
HIGH PRESSURE CUTOUT	HPCO:	See Table-1
HIGH PRESSURE CUTOUT DELAY	HPCO DLY:	10
LOW PRESSURE CUTOUT	LPCO:	See Table-1
LOW PRESSURE CUTOUT DELAY	LPCO DLY:	00:10
HIGH TEMPERATURE ALARM	HITEMP ALRM:	55
LOW TEMPERATURE ALARM	LOWTEMP ALRM:	30
LOW TEMPERATURE ALARM DELAY	LOTEMP DLY:	2:00
FAN 1 ON PRESSURE	FAN1 ON:	See Table-1
FAN 1 OFF PRESSURE	FAN1 OFF:	See Table-1
FAN 2 ON PRESSURE	FAN2 ON:	See Table-1
FAN 2 OFF PRESSURE	FAN2 OFF:	See Table-1
ALARM LIST	BEGIN ALARM LIST	N/A

10.1 ENTERING TECHNICIAN MODE

⚠ WARNING

TECHNICIAN MODE should only be entered by qualified service personnel. Altering the set points in TECHNICIAN MODE will have a significant effect on the operation of the dryer. Incorrect set points may damage dryer and cause potential serious injury.

To enter the TECHNICIAN MODE, perform the following keystrokes:

Pressing the "2" and "3" buttons simultaneously enters the TECHNICIAN MODE.

Depressing SELECT DISPLAY scrolls through the available parameters. The first three parameters viewed are adjustable in TECHNICIAN MODE.

The DRAIN ENABLE parameter determines whether the Microprocessor Control shall control an electronic no-loss drain valve. A value of "ON" will permit the Microprocessor Control to control the drain valve. A value of "OFF" will disable this feature.

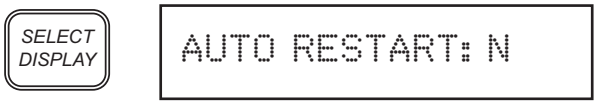
Depressing the SELECT DISPLAY button advances to the next adjustable parameter for the Crankcase Heater Delay. This parameter must not be altered unless instructed by **Ingersoll Rand** Service personnel.

⚠ NOTICE

The Crankcase Heater Delay set point must not be altered unless directed by Ingersoll Rand Service Personnel. Improperly altering the set point may result in damage to the dryer. Contact Ingersoll Rand before altering the default set point.

10.0 TECHNICIAN MODE

The AUTO RESTART feature permits the dryer to operate once power is applied to the dryer without requiring operator intervention. This would be desirable should the user wish to have the dryer restart automatically after a power outage. Note that the dryer will energize once the ASC or CCH delay times out. To change the AUTO RESTART set point from "N" (NO) to "Y" (YES), perform the following. Otherwise, depress the SELECT DISPLAY button to advance to the next display:

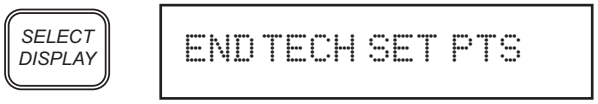


Depressing the SELECT DISPLAY button advances to the next adjustable parameter for the Auto Restart feature.

Depressing the SET button changes the AUTO RESTART parameter from "N" to "Y".

⚠ WARNING

Changing the AUTO RESTART feature to "Y" will permit the dryer to operate automatically once power is applied and after a brief delay. Proper warning signs should be affixed to the dryer to alert users and service personnel that dryer may start without warning. Failure to do so may result in serious injury.



Depressing the SELECT DISPLAY button displays the END TECH SET PTS display.

The remaining non-adjustable parameters may be viewed by depressing the SELECT DISPLAY button as required to arrive at the desired display.

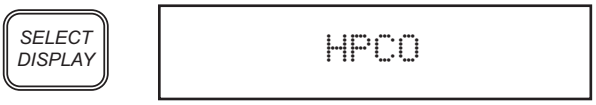
⚠ NOTICE

To exit the TECHNICIAN MODE at any time, depress the "⇦" button located above the SET button to return to the CUSTOMER MODE.

10.2 ALARM LIST

At the end of the list of non-adjustable parameters, the Microprocessor Control displays a list of the most recent 20 alarm conditions. This list can facilitate troubleshooting the dryer.

At the end of the list of parameters, depressing the SELECT DISPLAY button displays the beginning of the ALARM LIST.



Depressing the SELECT DISPLAY button displays the alarms that the dryer has experienced, with the most recent alarm displayed first. The actual display will depend on the most recent alarm detected by the Microprocessor Control.

The list of alarms can be scrolled by depressing the SELECT DISPLAY button as needed. At the end of the alarm list, the END ALARM LIST screen is displayed.

Depressing the SELECT DISPLAY list displays the ALARM LIST screen at the top of the ALARM LIST.

The Alarm List will repeat as many times as the SELECT DISPLAY button is depressed. To EXIT the ALARM LIST, perform the following:

Depressing the "⇦" button (located above the SET button) returns the controller to the top of the TECHNICIAN MODE.

Depressing the "⇦" button again returns the controller to the default display of the CUSTOMER MODE.

11.0 TROUBLESHOOTING

11.1 INTRODUCTION

Ingersoll Rand dryers are designed for reliable, trouble-free operation. In the event of any dryer malfunction, the guide below has been developed to facilitate problem identification and corrective actions.

⚠ WARNING

An air dryer always operates under pressure. Any maintenance procedure that involves disassembly of pipe fittings, valves or any other components requires the dryer be isolated from the compressed air stream and fully depressurized.

⚠ WARNING

Prior to working on the unit, make sure that all circuit breakers or disconnected switches are tagged "Out of Service."

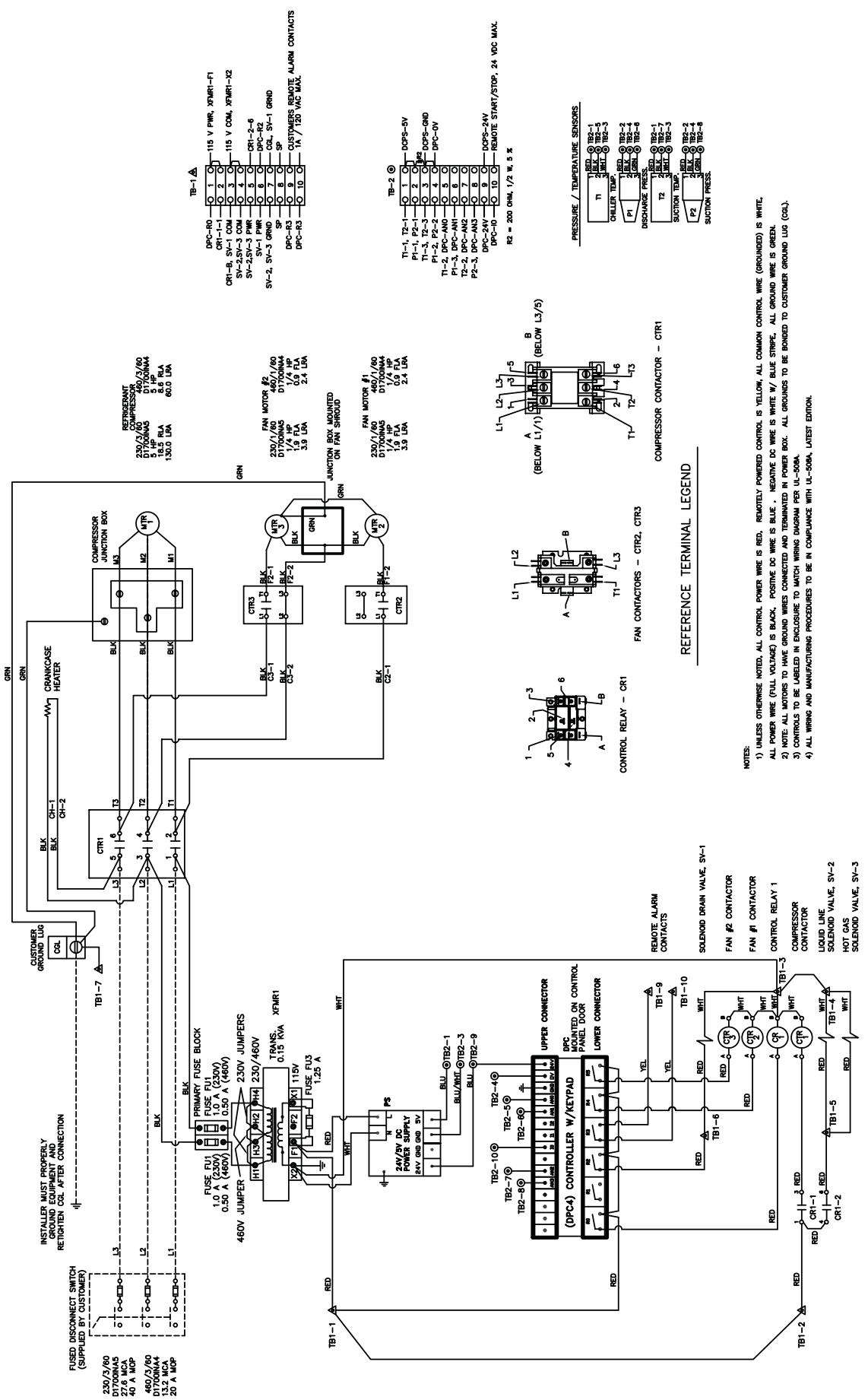
11.2 PROBLEM / ACTION GUIDE

PROBLEM	SYMPTOM(S)	POSSIBLE CAUSE	CORRECTIVE ACTION
Moisture down stream	Dryer is properly cooling air stream (Check Chiller. Temp on controller)	Condensate drain failure	Repair / replace Drain
		Excessive flow	Check inlet and outlet pressure and system design capacity. Correct cause of excessive flow.
		Dryer by-pass valve not closed	Close by-pass valve
	Inlet and outlet temperatures are the same.	No power to the dryer	Check power supply and fuses/circuit breakers
		High suction pressure	Check and clean condenser.
		Refrigerant leak	Check suction pressure gauge if reading is 0 psig, turn dryer off and contact your distributor
		Compressor not running and fan is running	Check and clean condenser.
			Check ambient temperature and reduce below 113°F
Moisture down stream	Inlet and outlet temperatures are the same.	Compressor and fan not running.	Check Exchanger Temperature
			Check MAIN CONTROL fuse.
		Compressor and fan not running. Controller indicates compressor is ON.	Compressor relay may be bad, replace relay
			Check for loose wire connections at contactor or loss of power at control board
			Defective control board - replace as necessary
			Contact your local distributor for further assistance.

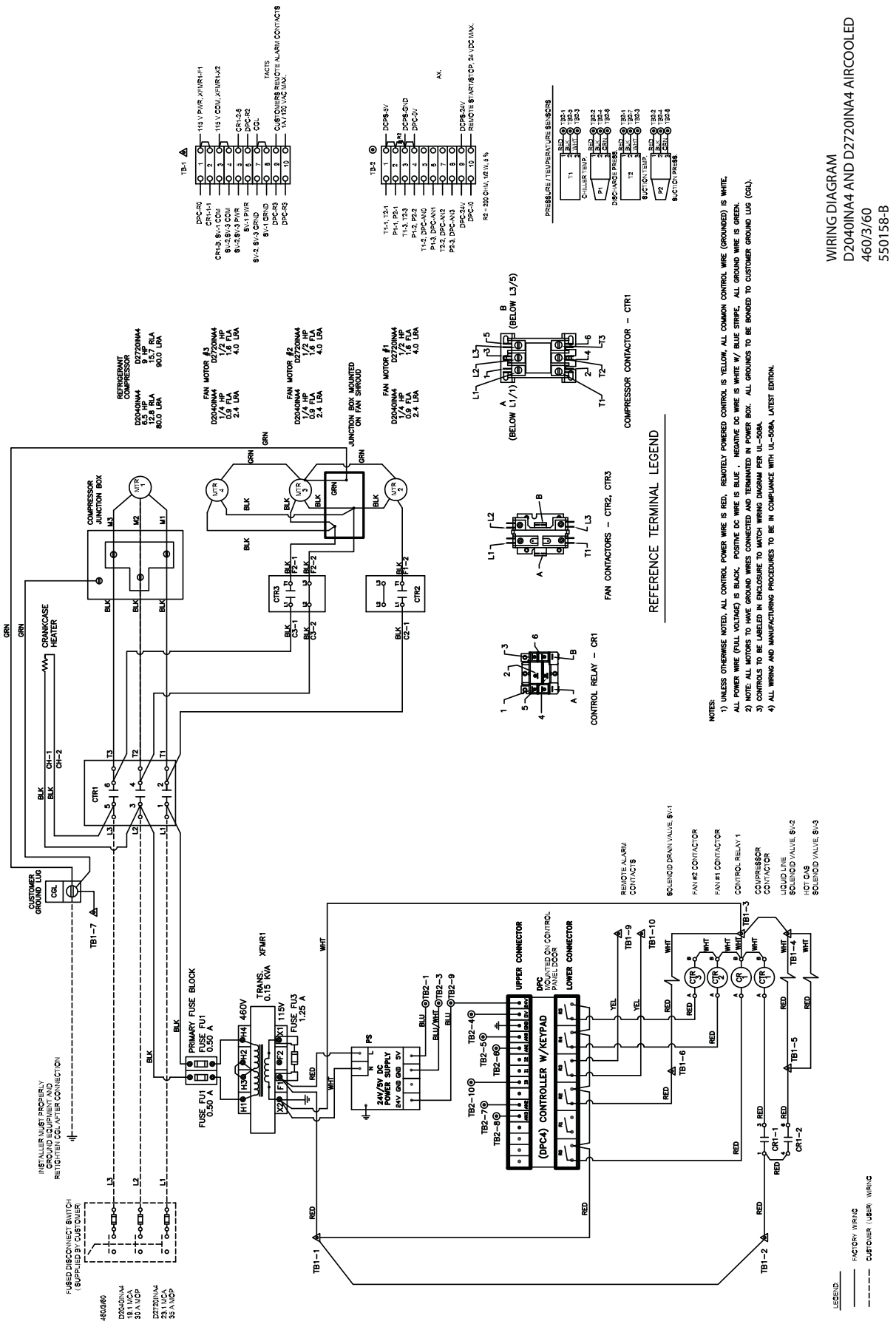
11.0 TROUBLESHOOTING

PROBLEM	SYMPTOM(S)	POSSIBLE CAUSE	CORRECTIVE ACTION
Apparent controller display malfunction	Display Blank	Blown Fuse	Check Fuses
		Board Failure	Contact your local distributor for further assistance.
	Unrealistic temperature displayed	Probe loose, off connection or defective probe	Inspect probe cable and terminal connection Replace probe
	Erratic or inaccurate temperature readings	Probe not completely in thermal well	Inspect probe and check readings against independent source (eg. temperature analyzer/pyrometer/ice bath) both in temperature well and to ambient
		Defective probe	Replace probe
	Unrealistic pressure displayed	Transducer loose, off connection or defective transducer	Inspect transducer cable and terminal connection
			Replace transducer
High pressure drop across dryer	Outlet pressure substantially lower than inlet pressure System operating temperature is above 32°F	Inlet and outlet valves not completely open	Open valves
		Inlet and outlet filters blocked up	Change filter elements
	Outlet pressure substantially lower than inlet pressure System operating temperature is below 32°F	Compressor relay / contactor stuck.	Replace relay / contactor.
		Microprocessor Control relay bad	Replace relay
		Probe not completely in thermal well	Inspect probe and check readings against independent source (eg. temperature analyzer/pyrometer/ice bath) both in exchanger well and to ambient
		Problem persists	Turn dryer off and consult your local distributor for further assistance

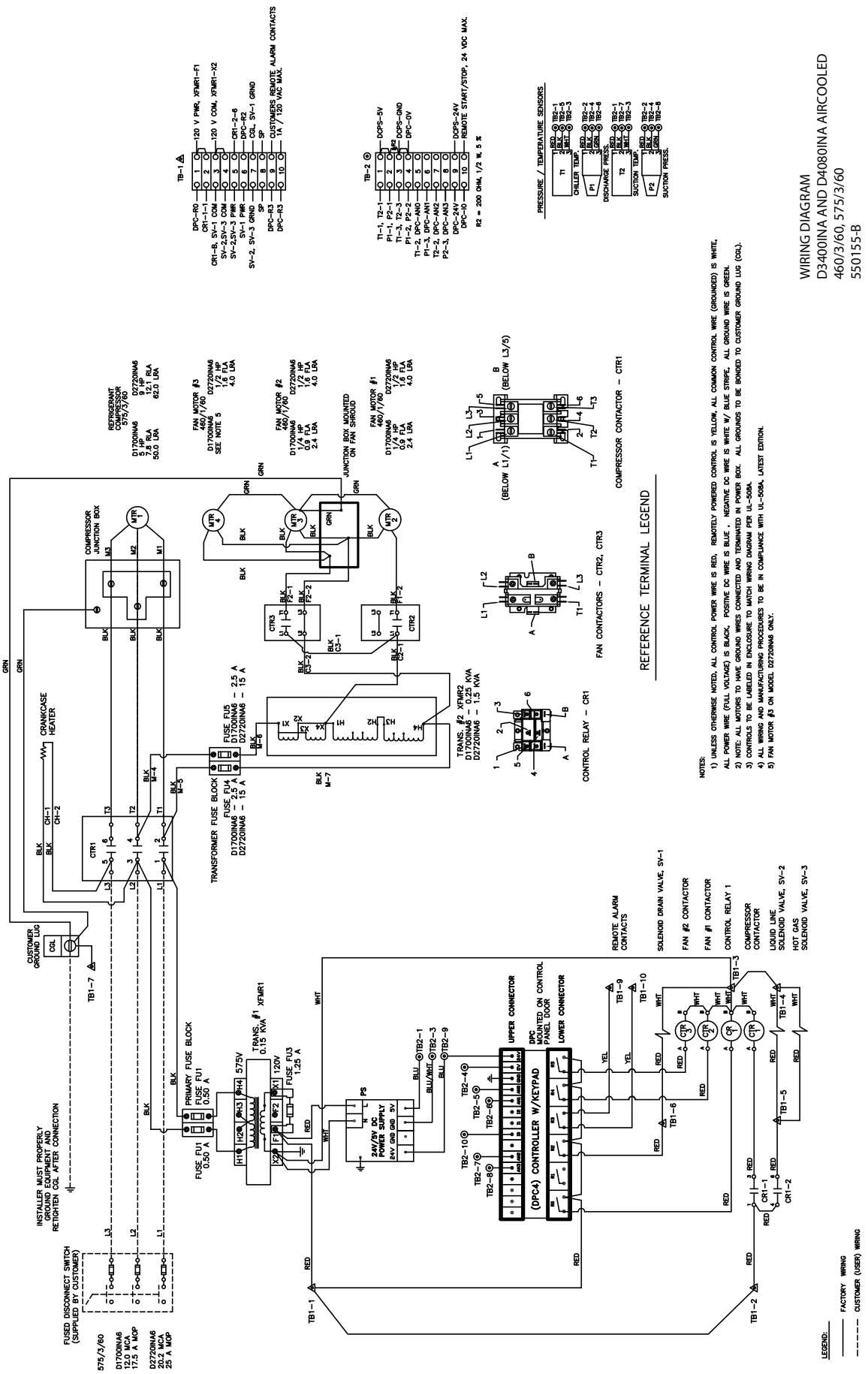
12.0 WIRING DIAGRAM



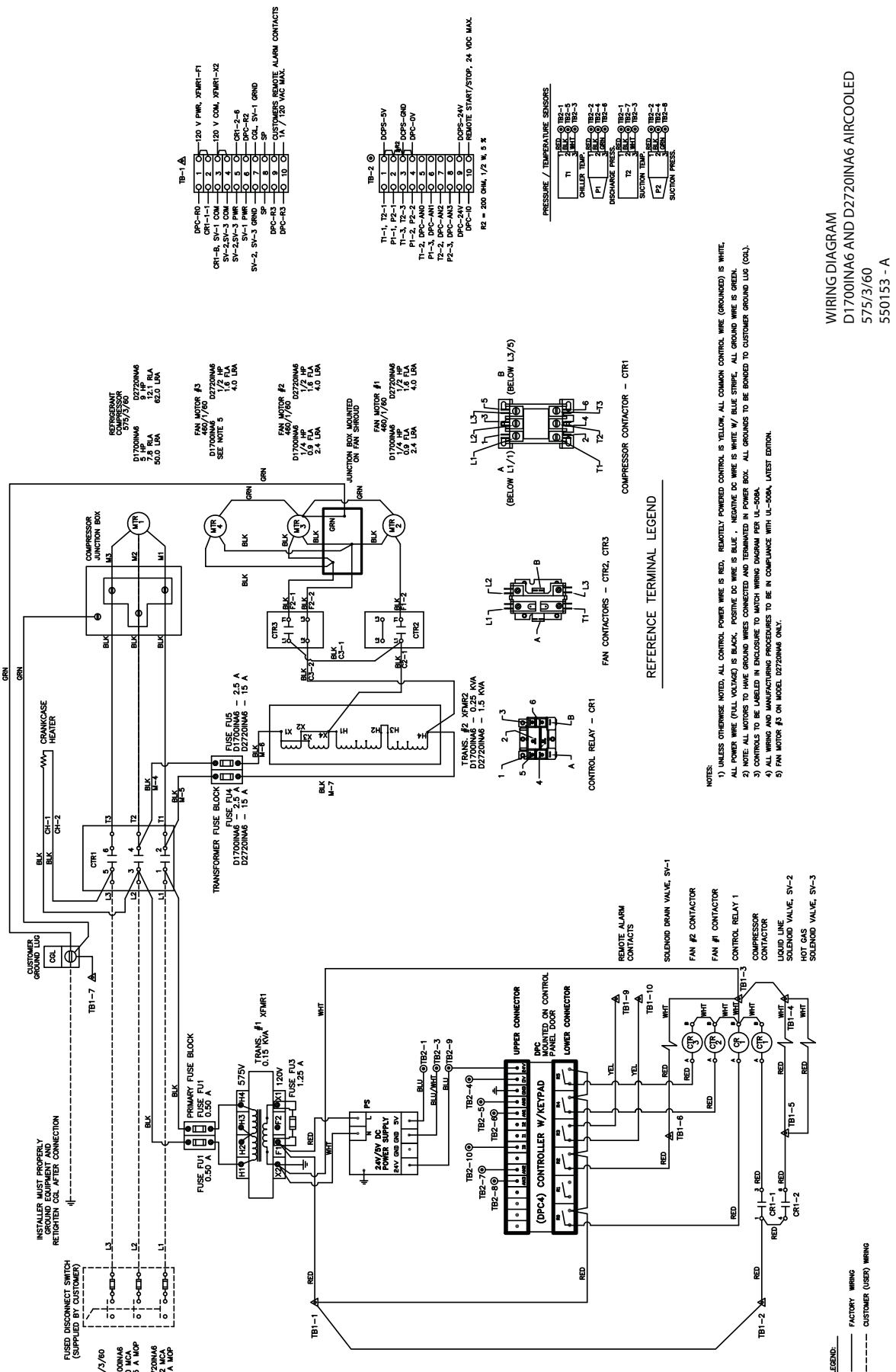
12.0 WIRING DIAGRAM



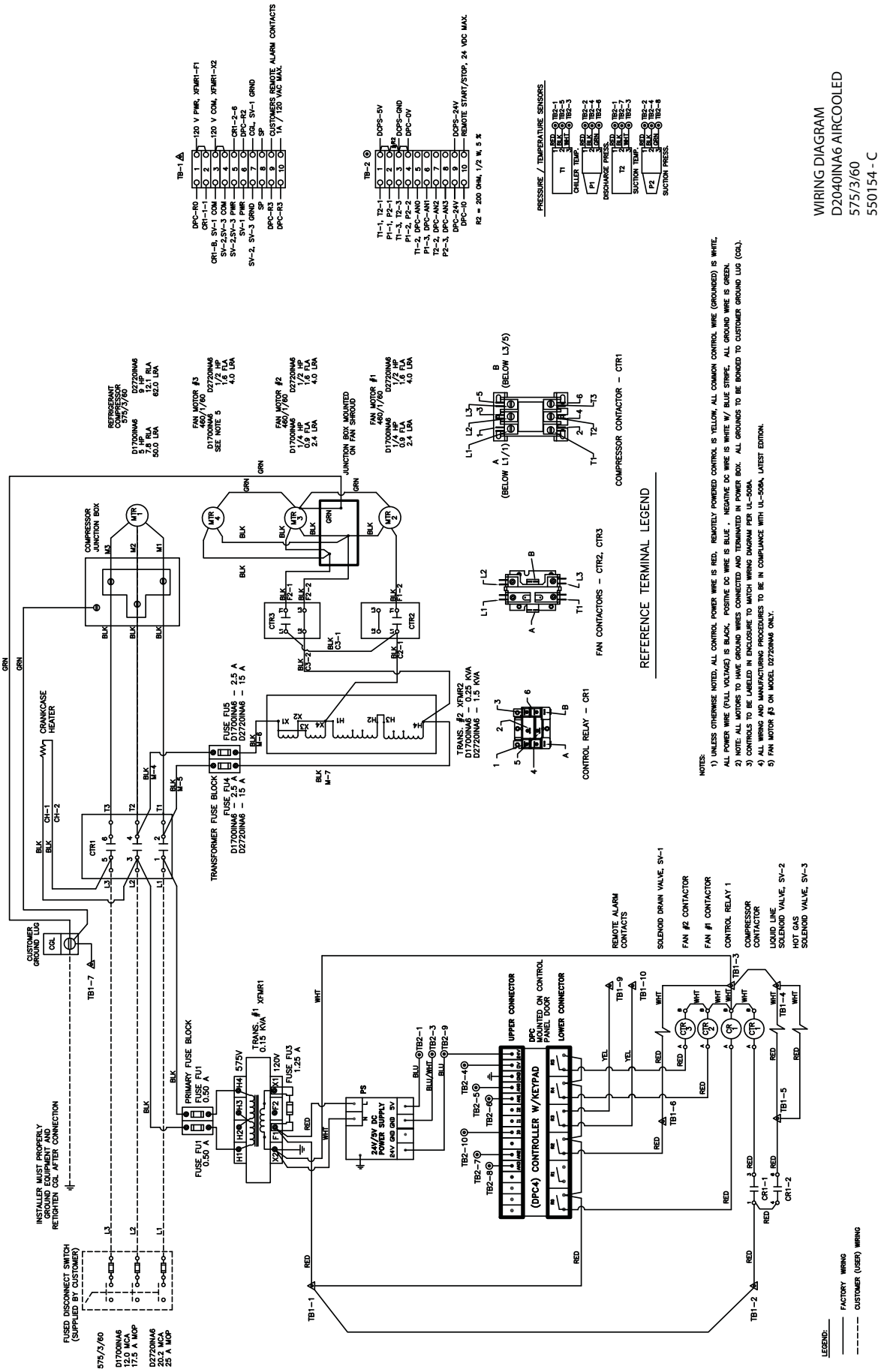
12.0 WIRING DIAGRAM



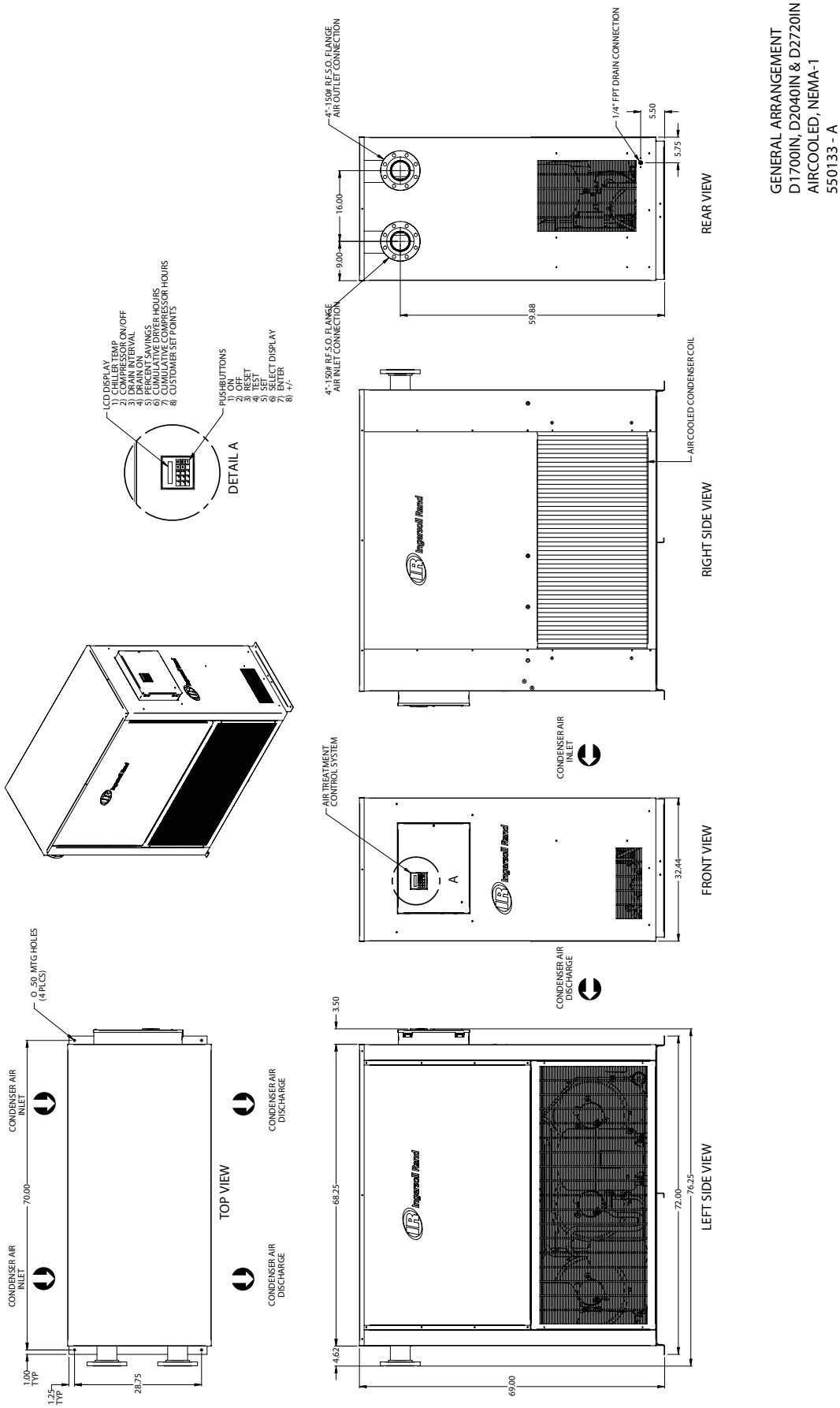
12.0 WIRING DIAGRAM



12.0 WIRING DIAGRAM



13.0 GENERAL ARRANGEMENT



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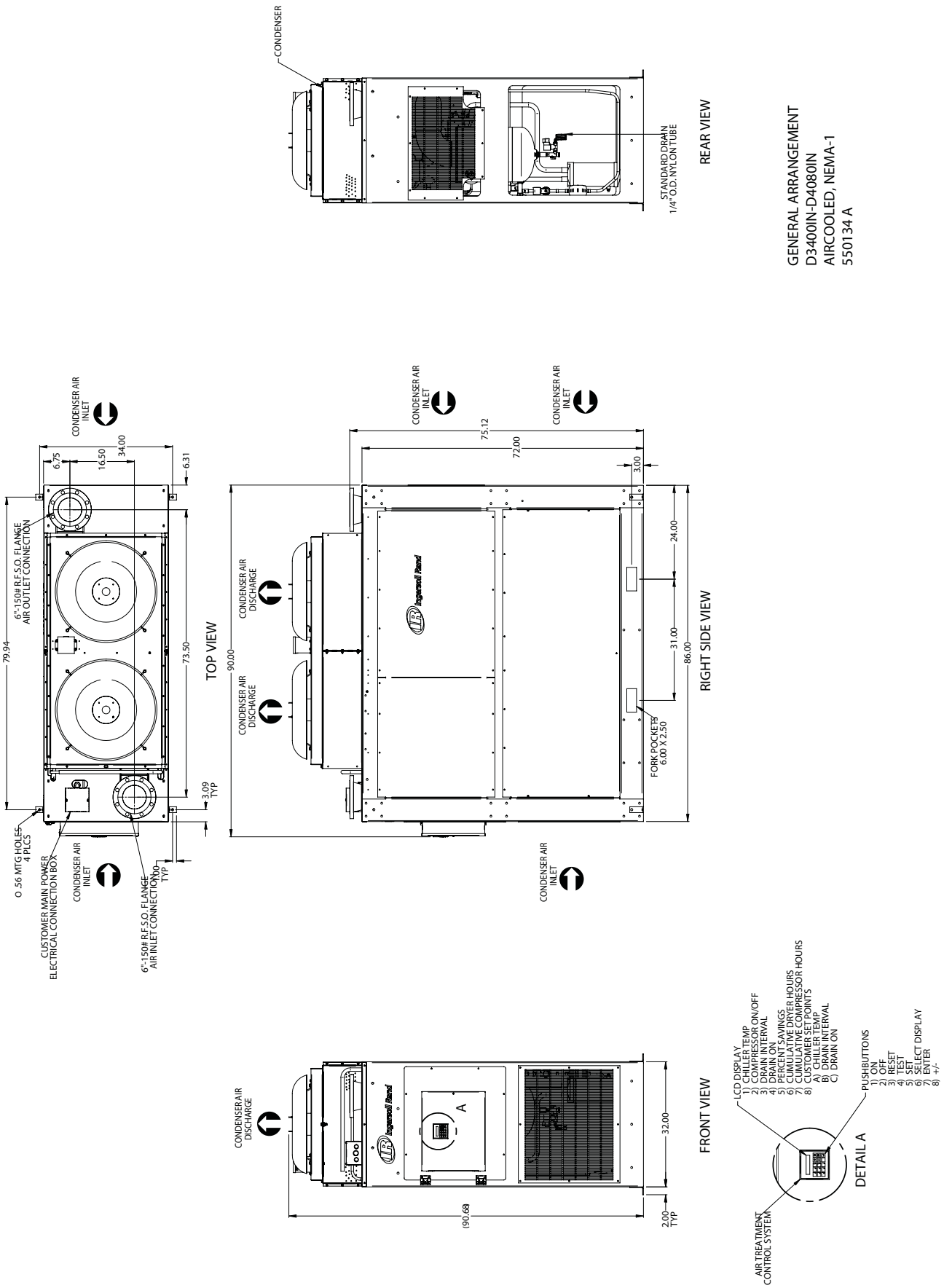

14.0 REPLACEMENT PARTS

MISCELLANEOUS PARTS

Models D1700IN - D2720IN					
PART #	DESCRIPTION	QTY /UNIT	SPARES		
			1	2	3
38052429	CABLE, TRANSDUCER 10 FT LEAD	2			
38052718	CONTACTOR, COMPRESSOR 3P 600V (D1700IN, D2040IN)	1	1	1	1
38054201	CONTACTOR, COMPRESSOR 3P 600V (D2720IN)	1	1	1	1
38052858	CONTACTOR, CONDENSER FAN	2	2	2	2
24331803	CONTROLLER, DRYER (Dryer model and serial number must be provided with order to ensure proper configuration.)	1	1	1	1
22612931	DRAIN, CONDENSATE VALVE	1			
38052023	DRYER, REFRIGERANT FILTER (D1700IN)	1			
38052031	DRYER, REFRIGERANT FILTER (D2040IN, D2720IN)	1			
38054268	FUSE, TRANSFORMER PRIMARY 0.50A 600V	2	2	2	4
23273287	FUSE, TRANSFORMER SECONDARY 1.25A 250V	1	1	1	2
38052213	HEATER, COMPRESSOR CRANKCASE (D1700IN)	1			
24244261	HEATER, COMPRESSOR CRANKCASE (D2040IN)	1			
24201378	HEATER, COMPRESSOR CRANKCASE (D2720IN)	1			
683956-SP	POWER SUPPLY 24V DC	1			
38052908	PROBE, EXCHANGER / SUCTION TEMPERATURE	2	2	2	2
38054151	RESISTOR, CONTROL PANEL DUMMY LOAD 200 OHM 0.5W 250 VAC	1			
23141278	STRAINER, CONDENSATE DRAIN	1			
38052403	TRANSDUCER, REFRIGERANT DISCHARGE PRESSURE 0-500 PSIA	1	1	1	1
38052395	TRANSDUCER, REFRIGERANT SUCTION PRESSURE 0-300 PSIA	1	1	1	1
38053252	TRANSFORMER, CONTROL 0.15 KVA	1			
23569718	VALVE, HOT GAS BY-PASS (D1700IN, D2040IN)	1			
24158438	VALVE, HOT GAS BY-PASS (D2720IN)	1			
23273584	VALVE, REFRIGERANT EXPANSION	1			
38052601	VALVE, REFRIGERANT LIQUID LINE (D1700IN)	1			
38052486	VALVE, REFRIGERANT LIQUID LINE (D2040IN, D2720IN)	1			

Spare. Quantities under this heading reflect the number of each item which we recommend be kept on hand for maintenance or repair.

The appropriate quantity for your application will depend on how critical interruptions in service are to your operation.

Class	Quantity	Suggested for
1	Minimum	Domestic service where interruptions in service are acceptable.
2	Average	Domestic service where some interruptions in service are acceptable.
3	Maximum	Export service or for domestic service where interruptions in service are unacceptable.

Note: D1700IN and D2720IN AIRCOOLED HAVE AUTO TRANSFORMER.

GROUP FOR FANS ONLY:

MODEL	PART #
D1700INA600 -	23623804
D2720INA600 -	38054839

14.0 REPLACEMENT PARTS

AIR COOLED PARTS

IN MODEL	CONDENSERS	NEMA 1 FAN MOTORS	
		460V	575V
D1700IN	23390800	38052734	38052734
D2040IN	23390800	38052734	38052734
D2720IN	47663902001	23390834	23390834

COMPRESSORS

IN MODEL	460/3/60	575/3/60	230/3/60
D1700IN	38052312	23323041	23422603
D2040IN	23407836	23296361	N/A
D2720IN	23380660	23323066	N/A

MISCELLANEOUS PARTS

Models D3400IN - D4080IN					
PART #	DESCRIPTION	QTY /UNIT	SPARES		
			1	2	3
38052429	CABLE, TRANSDUCER 10 FT LEAD	2			
38052536	CAPACITOR, CONDENSER FAN MOTOR	1			
38054201	CONTACTOR, COMPRESSOR 3P 600V	1	1	1	1
38052858	CONTACTOR, CONDENSER FAN	2	1	1	1
24331803	CONTROLLER, DRYER (Dryer Model and serial number must be provided with order to ensure proper configuration.)	1	1	1	1
22612931	DRAIN, CONDENSATE VALVE	1			
38052031	DRYER, REFRIGERANT FILTER	1			
38054268	FUSE, TRANSFORMER PRIMARY 0.50A 600V	2	2	2	4
23273287	FUSE, TRANSFORMER SECONDARY 1.25A 250V	1	1	1	2
24201378	HEATER, COMPRESSOR CRANKCASE	1			
683956-SP	POWER SUPPLY 24V DC	1	1	1	1
38052908	PROBE, EXCHANGER / SUCTION TEMPERATURE	2	2	2	2
38054151	RESISTOR, CONTROL PANEL DUMMY LOAD 200 OHM 0.5W 250VAC	1			
23141278	STRAINER, CONDENSATE DRAIN	1			
38052403	TRANSDUCER, REFRIGERANT DISCHARGE PRESSURE 0-500 PSIA	1	1	1	1
38052395	TRANSDUCER, REFRIGERANT SUCTION PRESSURE 0-300 PSIA	1	1	1	1
38053252	TRANSFORMER, CONTROL 0.15 KVA	1			
24158438	VALVE, HOT GAS BY-PASS	1			
23273550	VALVE, REFRIGERANT EXPANSION	1			
38052486	VALVE, REFRIGERANT LIQUID LINE	1			

Spare. Quantities under this heading reflect the number of each item which we recommend be kept on hand for maintenance or repair.

The appropriate quantity for your application will depend on how critical interruptions in service are to your operation.

Class	Quantity	Suggested for
1	Minimum	Domestic service where interruptions in service are acceptable.
2	Average	Domestic service where some interruptions in service are acceptable.
3	Maximum	Export service or for domestic service where interruptions in service are unacceptable.

14.0 REPLACEMENT PARTS

AIR COOLED PARTS

IN MODEL	CONDENSERS	NEMA 1 FAN MOTORS	
		460V	575V
D3400IN	23421340	38052528	23440241
D4080IN	23421340	38052528	23440241

COMPRESSORS

IN MODEL	460/3/60	575/3/60
D3400IN	23397383	23323108
D4080IN	22229710	23422231

15.0 ENGINEERING SPECIFICATIONS

AIR COOLED CONDENSERS

MODEL NO.	VOLTS/ PH/HZ	WEIGHT		R-404A		MAX. FUSE	MIN. CIRCUIT	COMPRESSOR RATINGS			FAN RATINGS			
		LBS.	KG.	LB-OZ	KG.	SIZE	AMPACITY	HP	RLA	LRA	QTY	HP	RLA	LRA
D1700IN	460/3/60	1700	771	16-0	7.25	20	13.2	5	8.6	60	2	1/4	0.95	2.4
D1700IN	230/3/60	1700	771	16-0	7.25	40	27.6	5	18.5	130	2	1/4	1.9	3.9
D1700IN	575/3/60	1725	782	16-0	7.25	17.5	12	5	7.8	50	2	1/4	0.95	2.4
D2040IN	460/3/60	1725	782	18-0	8.16	30	19.1	6.5	12.8	80	3	1/4	0.95	2.4
D2040IN	575/3/60	1775	805	18-0	8.16	25	15.3	6.5	12.8	80	3	1/4	0.95	2.4
D2720IN	460/3/60	1800	816	22-0	10.00	35	23.1	9	15.7	90	3	1/2	1.6	4
D2720IN	575/3/60	1820	825	22-0	10.00	25	20.2	9	12.1	62	3	1/2	1.6	4
D3400IN	460/3/60	2450	1111	24-0	10.80	45	27.2	10.5	19.2	105	2	1/2	1.4	10
D3400IN	575/3/60	2475	1122	24-0	10.80	35	22.7	10.5	15.7	75	2	1/2	1.1	3.8
D4080IN	460/3/60	2500	1133	26-0	11.80	50	29.8	12	21.4	115	2	1/2	1.4	10
D4080IN	575/3/60	2525	1145	26-0	11.80	40	25.4	12	17.8	90	2	1/2	1.1	3.8

NOTE: Maximum allowable operating pressure 220 psig.

* D2040IN 575/3/60 has auto transformer for entire dryer, all other 575 volt models have auto transformers for fans only.

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