Quincy COMPRESSOR

an EnPro Industries company

Control Panels

NFPA Compliant

Instruction Manual

This manual contains important safety information and must be carefully read in its entirety and understood prior to installation by all personnel who install, operate and/or maintain this product.

Manual No. 50333-100

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Contents

WARRANTY

Quincy NFPA Compressor Control Panels and related parts are warrantied for a period of one year in service, provided the panels and related parts are sold with or used in conjunction with existing Quincy Compressor compressor models. A 90 day in-service warranty applies to all other situations.

SAFETY

Safety First

At Quincy Compressor safety is not only a primary concern, but a faithfully performed practice. Beginning with the design stage, safety is built into "The World's Finest Compressor". It is the intention of this manual to pass along the "safety first" concept to you by providing safety precautions throughout its pages.

"DANGER !", **"WARNING !"**, and **"CAUTION !"** are displayed in large bold capital letters in the left hand column to call attention to areas of vital concern. They represent different degrees of hazard seriousness, as stated below. The safety precaution is spelled out in bold upper and lower case letters in the right hand column.

DANGER ! **Immediate hazards which will result in severe personal injury or death.**

WARNING ! **Hazards or unsafe practices that could result in personal injury or death.**

CAUTION ! **Hazards or unsafe practices which could result in minor personal injury, product or property damage.**

Each section of this instruction manual, as well as any instructions supplied with the compressor and by manufacturers of supporting equipment, should be read and understood prior to starting the compressor. If there are any questions regarding any part of the instructions, please call your local Quincy distributor, or the Quincy Compressor factory before creating a potentially hazardous situation. Life, limb, or equipment could be saved with a simple phone call.

Compressors are precision high speed mechanical equipment requiring caution in operation to minimize hazard to property and personnel. There are many obvious safety rules that must be observed in the operation of this type of equipment. Listed below are some additional safety precautions that must be observed.

•NFPA applications require installation per NFPA-99 guidelines.

•Transfer of toxic, dangerous, flammable or explosive substances using Quincy Compressor products is at the user's risk.

•Turn off and lockout/tagout (per OSHA regulation 1910.147) the main power disconnect switch before attempting to perform maintenance on any part of the unit.

•Do not attempt to service any part of the unit while it is operating.

•Allow ample time for the compressor to cool before performing service procedures. Some surface temperatures exceed 350°F when the compressor is operating.

•Per OSHA regulation 1910.147, relieve the system of all pressure before attempting to service any part of the unit.

•Do not operate the unit with any of its safety guards, shields, or screens removed.

•Do not remove or paint over any DANGER!, WARNING!, CAUTION!, or instructional materials attached to the compressor. Lack of information regarding hazardous conditions can cause property damage or personal injury.

•Periodically check all pressure relief valves for proper operation.

•Do not change the pressure setting of the pressure relief valve, restrict the function of the pressure relief valve, or replace the pressure relief valve with a plug.

•Do not install a shutoff valve in the compressor discharge line without first installing a pressure relief valve of proper size and design between the shutoff valve and the compressor.

•Do not use plastic pipe, rubber hose, or lead-tin soldered joints in any part of the compressed air system.

•Alterations must not be made to this compressor without Quincy Compressor's approval.

•Be sure that all tools, shipping and installation debris have been removed from the compressor and installation site prior to starting the compressor.

•Do not operate the compressor in excess of the ASME pressure vessel rating for the receiver or the service rating of the compressor, whichever is lower.

•Make a general overall inspection of the unit daily and correct any unsafe situations. All fasteners and fittings must be kept tight.

•Reckless behavior of any kind involving compressed air is dangerous and can cause very serious injury to the participants.

•Provisions should be made to have the instruction manual readily available to the operator and maintenance personnel. If for any reason any part of the manual becomes illegible or the manual is lost, have it replaced immediately. The instruction manual should be read periodically to refresh one's memory. It may prevent a serious or fatal accident.

•Never use a flammable or toxic solvent for cleaning the air filter or any parts.

DANGER !

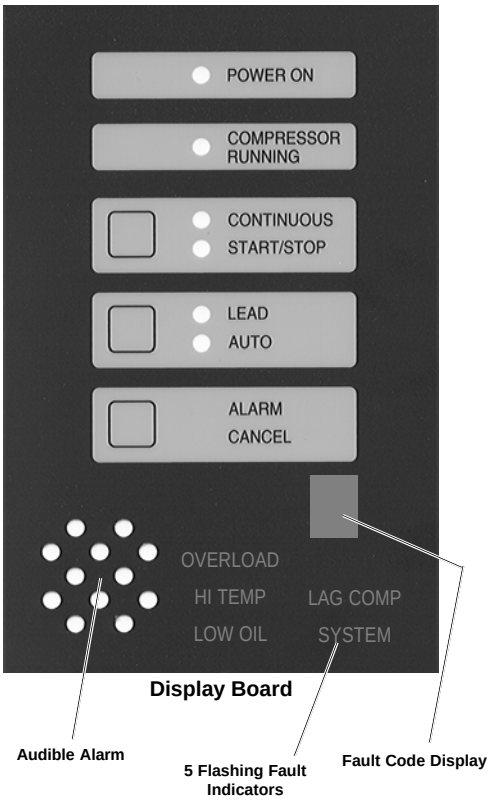
Air used for breathing or food processing must meet OSHA 29 CFR 1910.134 or FDA 21 CFR 178.3570 or NFPA 99 regulations. Failure to do so may cause severe injury or death.

The owner, lessor or operator of any compressor unit manufactured by Quincy Compressor is hereby warned that failure to observe the safety precautions and procedures outlined in this manual may result in serious personal injury, damage to property, and may void your warranty. Quincy Compressor must authorize all warranty service. Before contacting your distributor or the factory, check the maintenance requirements and the troubleshooting guide for your compressor. Most warranty issues can be resolved by following proper maintenance procedures.

Quincy Compressor neither states as fact, nor in any way implies that the above list of safety precautions is an all inclusive list, the observance of which will prevent all damage to property or injury to personnel.

Every effort has been taken to ensure that complete and correct instructions have been included in this manual. However, possible product updates and changes may have occurred since this printing. Quincy Compressor reserves the right to change specifications without incurring any obligation for equipment previously or subsequently sold.

Description & Application



Quincy NFPA-99 compressor control panels are designed in accordance with NFPA-99 standards to control the operation of multiple air compressors feeding into one tank. These control panels provide the ability to define a mode of operation or starting sequence in which the compressors operate and/or manually disable one or more compressors. They detect potential equipment damaging conditions such as high temperature, low oil pressure or level, and motor overloads. The control panels are also designed to recognize faulty components within the control system.

Quincy NFPA-99 control panels are available in duplex, triplex and quadraplex configurations. Each control panel is equipped with fused disconnect switches (one for each compressor), and one non-fused disconnect switch which controls in-coming power to the transformer for the CO / dew point monitor. Independent controls for each compressor are mounted in the control panel enclosure. If a control fails, or the compressor is manually turned off and disconnected, the remaining controls will continue to operate independently of each other.

Each control panel is equipped with 2 or more display boards. The display boards have 2 LED indicators that indicate operational mode, 2 LED indicators that indicate starting sequence, a “POWER ON” LED, a “COMPRESSOR RUNNING” LED, 1 push button for selecting the modes of operation, 1 push button for selecting the starting sequence, 1 push button for canceling the audible alarm, a fault code display, an audible alarm, and 5 flashing fault indicators.

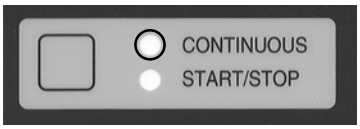
Auto Restart After Power Failure

Operating modes selected using the push buttons are saved in non-volatile memory, so if there is a power outage or sag, the compressors will restart automatically and resume service without requiring the compressors to be manually reset. Display boards are connected with a communication cable that identifies the position of each control in the system.

Modes of Operation

Quincy NFPA-99 control panels provide 3 modes of operation for compressed air systems: Continuous, Start / Stop, and a combination of Continuous and Start / Stop.

Continuous



Continuous mode allows all the compressors in a compressed air system to run continuously, with the compressors loading and unloading in response to the demand for compressed air detected by the lead pressure switch. The letter “F” appears in the fault code display of each display board and indicates that the lag compressor alarm is disabled.

This control mode should be selected whenever the compressors must start more than 6 times per hour, or when the demand for compressed air exceeds one half or more of the compressor's capacity.

Start / Stop (NFPA Recommended Mode)

A compressor set to run in the "START / STOP" mode of operation will start when its pressure switch (set to a predetermined level) detects a demand for compressed air (air pressure in the air tank falls to the predetermined level). The compressor will run until the demand for compressed air is satisfied (the contacts of the pressure switch open and the compressor stops when the air pressure in the tank rises to a predetermined level).

Continuous & Start / Stop (Combination)

Multiple compressors can be run in a combination of operational modes. For example, one compressor can be set to run in the "CONTINUOUS" mode, and all other compressors in the system set to run in the "START / STOP" mode. In this scenario, the compressor set to run in "CONTINUOUS" mode is the "lead" (see ***Starting Sequences***) compressor. The lead compressor always starts first and will attempt to satisfy the demand for compressed air. If the lead compressor cannot satisfy the demand, one of the remaining compressors set to run in "START / STOP" mode will start and run until the demand is satisfied. The compressors set to run in "START / STOP" mode can be programmed to start alternately (see ***Starting Sequences*, Auto**).

Starting Sequences

Lead

A compressor designated as the "LEAD" compressor is controlled by the lead pressure switch and always starts first when there is a demand for compressed air. Other compressors in the system are controlled sequentially by their dedicated pressure switches. The compressor that starts last in a system is the lag compressor.

A compressor set to run in the "CONTINUOUS" mode of operation is automatically (by default) designated as the "LEAD" compressor in the system. All other compressors in the system (set to "START / STOP" mode) will start and stop in "AUTO" sequence (by default).

Auto (NFPA Recommended Starting Sequence)

When all compressors are set to operate in the "AUTO" starting sequence, the controls alternate, turning on a different compressor each time the lead pressure switch detects a demand for compressed air. For instance, a compressor that's running turns off when the demand is met (pressure switch contacts open). The next time there is a demand for compressed air, the lead pressure switch detects the demand, pressure switch contacts close, and an alternate compressor in the system starts and runs until the demand is met. The controls continue to select an alternate compressor to operate when the next demand for compressed air occurs.

Examples of Control Configurations

The following scenarios are included here as examples of how the different modes of operation and starting sequences can work together. There are many different combinations that can be used to control multiple compressors, these are only three:

Scenario A

Duplex compressor configuration with both compressors set to operate in "START / STOP" mode of operation

Compressor # 2 designated as "LEAD" compressor (Start Sequence)

Compressor # 1 defaults to "AUTO" Start Sequence

Compressor # 2 starts when the demand for compressed air is detected. It runs until the demand is met, or Compressor # 1 will start and run if the demand cannot be met by Compressor # 2. Both compressors will stop when the demand is met. This procedure repeats itself when another demand occurs.

Scenario B

Triplex compressor configuration

Compressor # 3 set to operate in "CONTINUOUS" mode of operation and designated as "LEAD" compressor (Start Sequence) by default

Compressors # 1 & 2 set to run in "START / STOP" mode of operation with "AUTO" start sequence (by default)

Compressor # 3 runs continuous and loads / unloads responding to the demand for compressed air. Compressor # 1 and/or Compressor # 2 will start whenever Compressor # 3 cannot supply enough compressed air to meet the demand. The "back up" compressor(s) will run until the demand is met. When the demand is met, the back up compressor(s) stops and Compressor #3 continues to run unloaded until the next demand arrises. Compressors # 1 and 2 alternate starting in response to demands not met by Compressor # 3.

Scenario C

Quadraplex compressor configuration with all compressors set to operate in "CONTINUOUS" mode of operation

All 4 compressors run continuously, loading and unloading at the same time, in response to the demand for compressed air detected by the lead pressure switch.

Alarm Fault Shutdown Conditions

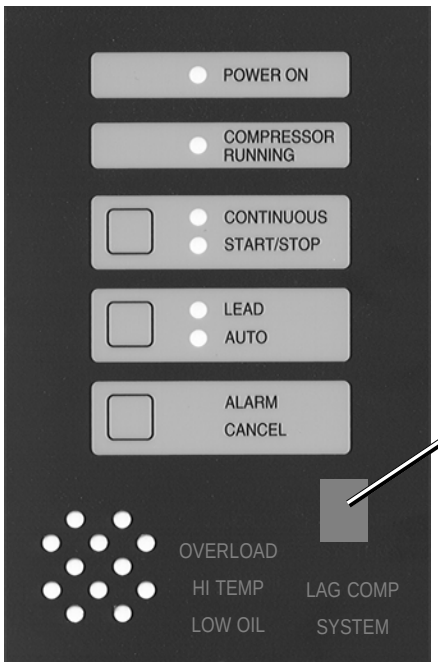
Each compressor in the system can be equipped with sensors that detect the following alarm fault shutdown conditions: motor overloads, high air temperature, and low oil level or pressure. In the event of an alarm fault shutdown condition, the affected compressor is shutdown, the audible alarm sounds, the "OVERLOAD", "HI TEMP" or "LOW OIL" fault indicator on the display board flashes (indicating the type of condition), the system alarm SPDT dry contacts on the I/O board actuate and the compressor next in line starts.

The controls of a compressor that has been shutdown because of an alarm fault shutdown condition will not detect subsequent conditions and must be reset before the compressor can be restarted (see **SECTION 4, *Resetting Controls***).

Lag Compressor Alarm

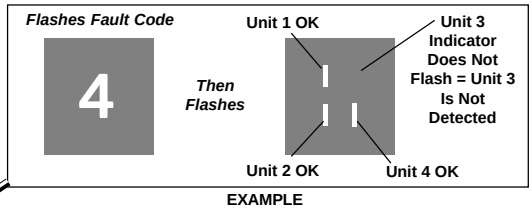
When the lag compressor starts, an alarm fault indicator labeled "LAG COMP", located on the display board, flashes and the audible alarm sounds. The lag alarm contacts, located on the I/O board of compressor # 1, activate. The contacts, flashing LED and audible alarm remain activated until the demand for compressed air is met or they are manually reset.

System Alarm Fault



Display Board

System alarm faults indicate a breakdown in the communication system of the control panel. In the event of a system alarm fault, the "SYSTEM" LED flashes on the display board of all compressors. The audible alarm sounds, the "SYSTEM" alarm contacts actuate, and a fault code and flashing bars appear (alternating) in the small display window of the display board. They indicate the type of fault that has occurred.



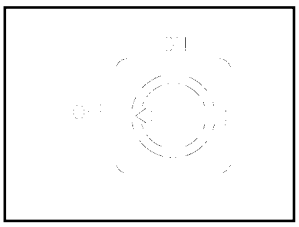
EXAMPLE

The "SYSTEM" alarm contacts and audible alarm can be manually cancelled and reset at any time by pressing the "ALARM CANCEL" button on the display board of the affected compressor. However, the "SYSTEM" LED continues to flash until the fault has been corrected (refer to **SECTION 6, TROUBLESHOOTING**). Once they have been reset, they will respond to new faults.

System Components

Compressor Disconnect Switches

Disconnect switches, mounted on the inside of the control panel, with corresponding OFF / ON knobs located on the front of the door, control in-coming electrical current to the control panel. A switch is provided for each compressor in the system. The control panel is disconnected from in-coming electrical current whenever the switch knob is in the "OFF" position, and connected to the in-coming current when in the "ON" position.



Disconnect Switch

Normally, the LED's in the control panels will blink momentarily when the disconnect switches are turned to the "ON" position. Operating mode LED's ("COMPRESSOR RUNNING", "CONTINUOUS", "START / STOP", "LEAD", "AUTO") light up shortly (within 10 seconds) after the disconnect switches are turned to the "ON" position. The "POWER ON" LED in the display board remains lit as long as electrical current is supplied to the control panel.

CO / Dewpoint Monitor Disconnect Switch & Power On Pilot Light

Disconnect switch, mounted on the inside of the control panel, with corresponding OFF / ON knob located on the front of the door, controls in-coming electrical current for the transformer that powers the CO / dewpoint monitor.

Display Board

The display board allows the operator to set the compressor to desired settings and indicates the operating conditions. It consists of a printed circuit board located on the control panel door.

Elapsed Time Meter

The elapsed time meter records the operating hours for each compressor and is mounted on the control panel door.

I/O Board

Connects sensor inputs and alarm outputs. Consists of a printed circuit board located inside the control panel.

High Air Temperature Probe (NFPA-99 Requirement)

Temperature sensor located in each cylinder head of the compressors.

Low Oil Level Switch (Optional Equipment)

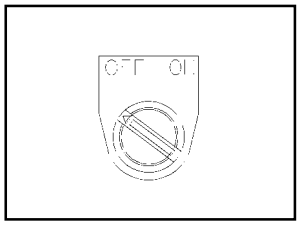
Detects low oil level conditions in the crankcase of an oil lubricated compressor. The switch is wired to the I/O board.

Low Oil Pressure Switch (Optional Equipment)

Detects low oil pressure condition in a pressure lubricated system. The switch is located inside the control panel and wired to the I/O board of each compressor. A tube is connected between the low oil pressure switch and an oil pressure port on each compressor. The control panel must be mounted no more than 15 feet from the compressor and 3/8" copper tube must be used with no 90° bends or vertical runs.

Motor Starter

A device equipped with electrical contacts, located inside the control panel. When power is applied to the motor starter, its electrical contacts close and the compressor's motor starts.



OFF / ON Switch

Compressor OFF / ON Switch

Two position selector switch on the control panel door that turns the compressor control for each compressor on and off.

Compressor OFF / ON switches control incoming electrical current supplied to each display board. Electrical current is shut off from the display board when the switch knob is turned to the "OFF" position, and restored to the display board when turned to the "ON" position (provided the disconnect switch for said compressor is in "ON" position). Operating compressors can be shut down (turned off) by turning the compressor OFF / ON switch to the "OFF" position.

Overload Relay

Monitors the compressor motor electrical current and turns the compressor motor off when an overload is sensed. It is mounted on the bottom of the motor starter. The overload relay is designed for motors with a 1.15 service factor. The overload relay setting should be adjusted to the motor nameplate amp rating. If the motor has a service factor rating other than 1.15, the overload relay setting must be adjusted to compensate. Contact your Quincy distributor for assistance.

Pressure Switch

Lead (Pressure Switch 1) starts the lead compressor.

Lag No.1 (Pressure Switch 2) starts the second compressor.

Lag No.2 (Pressure Switch 3) starts the third compressor in a triplex or quadraplex panel.

Lag No.3 (Pressure Switch 4) starts the fourth compressor in a quadraplex panel.

Solenoid Valve (Discharge)

This is a three-way normally-open valve that bleeds air pressure from the

discharge line of each compressor to allow loadless starting. Discharge line solenoid valves are activated and deactivated individually as the corresponding compressors are started and stopped.

Solenoid Valve (Unload)

An unload solenoid valve is a three-way normally-open valve that applies air pressure to the head unloaders. Unload solenoid valves are activated after a 7 second time-delay whenever the contacts close on the lead pressure switch, and deactivated whenever they open.

Electrical Supply Requirements

The electrical installation of this unit must be performed by a qualified electrician with knowledge of the National Electrical Code (NEC), OSHA code and/or any local or state codes having precedence. **Note: This unit must be grounded.**

WARNING ! **Each compressor must be labeled to indicate which disconnect switch it is controlled by.**

Before installation, the electrical supply must be checked for adequate wire size and transformer capacity. A suitable circuit breaker or fused disconnect switch must be provided. When a 3 phase motor is used to drive a compressor, any unreasonable voltage imbalance between the legs must be eliminated and any low voltage corrected to prevent excessive current draw. **NOTE: If voltage drops below 207 volts, use a 200 volt motor. Do not substitute with a triple voltage (208/230-460) 3 phase motor.**

CAUTION ! **Verify all wires are secure and fasteners are torqued before connecting power to the unit.**

The installation, electric motor, wiring, and all electrical controls must be in accordance with NFPA 70 National Electric Code, National Electric Safety Code, state and local codes. Failure to abide by the national, state and local codes may result in physical harm and/or property damage.

DANGER ! **High voltage may cause personal injury or death. Disconnect and lockout/tagout per OSHA regulation 1910.147 all electrical power supplies before opening the electrical enclosure or servicing.**

WARNING ! **Never assume a compressor is safe to work on just because it is not operating. It could restart at any time. Follow all safety precautions outlined in SECTION 5, *Stopping For Maintenance.***

CAUTION ! **NEMA electrical enclosures and components must be appropriate to the area installed.**

CAUTION ! **Overload relays are designed to protect the motor from damage due to motor overload. If the overload relay trips persistently, DO NOT CONTINUE TO PUSH THE RESET BUTTON! Contact your local Quincy distributor for assistance.**

Electrical Specifications

Enclosure Type

NEMA-12

Models by Horsepower

2,3,5,7.5,10,15,20,25 and 30

Models by Voltage

Single-Phase: 120, 208 and 230 (2 through 5 h.p. models only)

Three-Phase: 208 (2 through 20 h.p. models only)

Three-Phase: 230 (2 through 25 h.p. models only)

Three-Phase: 460 and 575 (2 through 30 h.p. models only)

Input Voltage

200 VA Control Power Transformers @ 208, 230, 460, 575 VAC 50/60 HZ. Fused primary and a 120 VAC fused secondary

100 VA Control Power Transformers @ 208, 230, 460, 575 VAC 50/60 HZ. Fused primary and a 120 VAC fused secondary

I/O Board Inputs

1 Pressure Switch Input. Nominal 120 VAC. Closed contacts start compressor. Each successive compressor starts on a 2 second delay to prevent all compressors from starting simultaneously on power-up.

3 Alarm Input Switches (high air temperature, motor overload & low oil level or pressure). Nominal 120 VAC

The opening of the high air temperature probe contacts, or closing of the motor overload relay contacts will initiate an alarm after a preset delay of 3 seconds. Opening of the low oil level switch or pressure switch will initiate an alarm after a preset delay of 12 seconds. Closure of the high air temperature probe contacts, low oil level switch or opening of the motor overload relay contacts during this delay will reset the delay and will not create an alarm condition. The alarm inputs are not active when the compressor is not running.

I/O Board Outputs:

1 Motor Starter: 120 VAC @ 85 VA sealed (1185 VA inrush)

1 Unload Solenoid Valve: 120 VAC @ 18 watts, 40 VA sealed (70 VA inrush). This valve is controlled by the lead pressure switch. Whenever the lead pressure switch contacts close, the unload solenoid valve coil is activated after a 7 second time-delay, and whenever the lead pressure switch contacts open, the solenoid valve coil is de-activated.

1 Discharge Solenoid Valve: 120 VAC @ 18 watts, 40 VA sealed (70 VA inrush). This valve is activated whenever the motor starter is activated.

1 Elapsed Time Meter: 120 VAC at 8 VA whenever the corresponding starter is on. This device is activated whenever the motor starter is activated.

1 System Alarm Output: single pole double throw dry contact. 10 amp. resistive at 120/240 VAC. Contacts actuate when any of these fault conditions occur: OVERLOAD, HI TEMP. LOW OIL, or SYSTEM.

1 Lag Compressor Alarm Contacts: single pole double throw dry contacts. 10 amp. resistive at 120/240 VAC. Contacts actuate when lag compressor starts.

Motor Starter Auxiliary Contacts

1 normally open for each motor starter pre-wired to terminal strip

Operating Temperature

0° to 50°C (32° to 120°F)

Storage Temperature

-40° to 70°C (-40° to 158°F)

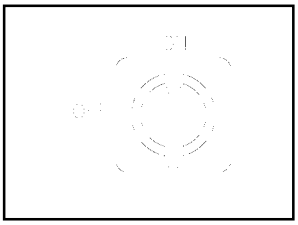
Starting the Compressor

This instruction manual, as well as any instructions supplied with the compressor and by manufacturers of supporting equipment, should be read and understood prior to starting the compressor. If there are any questions regarding any part of the instructions, please call your local Quincy distributor, or the Quincy Compressor factory.

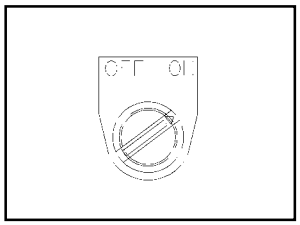
WARNING !

Never assume a compressor is safe to work on just because it is not operating. It could restart at any time. Follow all safety precautions outlined in SECTION 5, *Stopping For Maintenance.*

Refer to the compressor manual for pre-starting instructions.



Disconnect Switch



OFF / ON Switch

Step 1 Turn disconnect switches to "ON" position. ("POWER ON" LED will light, other LED's will blink momentarily, then control mode LED's will light.)

Step 2 Select the mode of operation by pressing the "CONTINUOUS - START / STOP" button on the display board of compressor #1. The "CONTINUOUS" or "START / STOP" operating mode LED will indicate which mode has been selected. (Press multiple times to alternate selection options.)

Step 3 Select starting sequence by pressing the "LEAD - AUTO" button on the display board of compressor #1. The "LEAD" or "AUTO" starting sequence LED will indicate which sequence has been selected. (Press multiple times to alternate selection options.)

Step 4 Jog the compressor OFF / ON switch to check the rotational direction of the compressor flywheel. It should agree with the rotation arrow on the compressor. **Each compressor must be checked for proper flywheel rotation!**

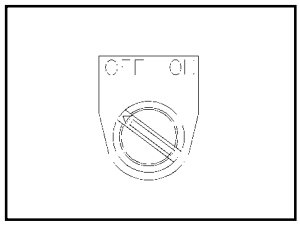
Step 5 Start the compressors by turning the OFF / ON switches to the "ON" position. The compressors will start in sequence after a 2 second time delay.

Step 6 Watch and listen for excessive vibration and strange noises. If either exist, stop the compressors. Refer to the compressor instruction manual for help in determining the cause of such problems.

Step 7 Check the air receiver pressure gauge or system pressure gauges for proper readings. If inadequate or excessive air pressure conditions exist, refer to the compressor instruction manual.

When starting the compressor for the first time, observe compressor operation closely for the first hour of operation and then frequently for the next seven hours. After the first eight hours, monitor the compressor at least once every eight hours.

Disabling Compressor Units

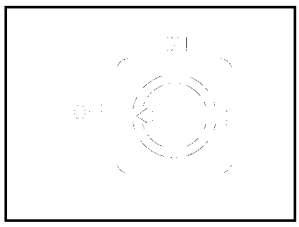


OFF / ON Switch

One or more compressors can be manually disabled (for performing maintenance or service to the unit) while allowing the other compressor(s) in the system to continue to operate and satisfy the demand for compressed air.

Step 1 Turn the OFF / ON switch of the compressor to be disabled to the "OFF" position.

Step 2 Turn the disconnect switch of the compressor to be disabled to the "OFF" position.



Disconnect Switch

Electrical power is no longer supplied to the disabled compressor. Alternating flashing bars and the number "4" display in the fault code display on the display board of the compressors still in operation. The flashing bars and number "4" indicate a communication fault. The controls of the disabled compressor are no longer communicating with the controls of the operating compressors *(refer to* **SECTION 6, *Fault Code Chart***).

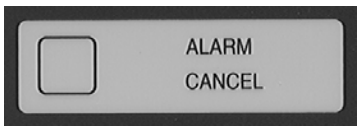
The "SYSTEM" fault indicator on the display boards of the operating compressors flashes, the audible alarms sound, and the system alarm contacts actuate simultaneously.

Step 3 Press the "ALARM CANCEL" button on the display boards to silence the audible alarm and reset the alarm contacts. **(Note: The "ALARM CANCEL" LED continues to flash.)**

The operating compressors will respond to the demand for compressed air according to their individual pressure switches.

Refer to **SECTION 3, *Starting the Compressor*** to restart a compressor after servicing or maintenance.

Resetting Controls (After an Alarm Fault Shutdown Condition)



Step 1 Press the "ALARM CANCEL" button on the display board (of the disabled compressor) to turn off the audible alarm and reset the system alarm contacts.

Step 2 Turn the OFF / ON switch of the disabled compressor to the "OFF" position.

Step 3 Turn the disconnect switch of the disabled compressor to the "OFF" position.

Step 4 Correct the fault condition *(refer to* **SECTION 6, *Troubleshooting Chart***).

Step 5 Turn the disconnect switch of the disabled compressor to the "ON" position.

Step 6 Turn the OFF / ON switch of the disabled compressor to the "ON" position to start the compressor.

Stopping for Maintenance

The following procedures should be followed when stopping the compressor for maintenance or service:

Step 1 Per OSHA regulation 1910.147: The Control of Hazardous Energy Source (Lockout/Tagout), disconnect and lockout the main power source. Display a sign in clear view at the main power switch stating that the compressor is being serviced.

WARNING ! **Never assume a compressor is safe to work on just because it is not operating. It may be in the AUTO mode and may restart any time.**

Step 2 Isolate the compressor from the compressed air supply by closing a manual shutoff valve downstream from the compressor. Display a sign in clear view at the shutoff valve stating that the compressor is being serviced.

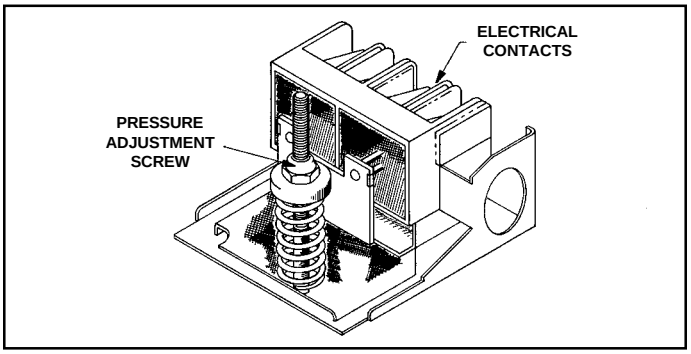
Step 3 Open a pressure relief valve within the pressurized system to allow the system to be completely depressurized. **NEVER** remove a plug to relieve the pressure!

Step 4 Open all manual drain valves within the area to be serviced.

Step 5 Wait for the unit to cool before starting to service. (Temperatures of 125°F can burn skin. Some surface temperatures exceed 350°F when the compressor is operating.)

Pressure Switch Adjustment

Pressure switches provided by Quincy Compressor are preset at the factory and usually do not require adjustment.



Pressure Switch Pix 1067

The following procedures can be performed by a qualified electrician to adjust the pressure switch. While the compressor is running, screw the spring loaded adjustment screw in (clockwise) to increase the amount of air pressure required to open the switch and stop the unit. Screw the spring loaded adjustment screw out (counterclockwise) to decrease the amount of air pressure required to open the switch and stop the unit.

Standard pressure switches supplied by Quincy Compressor are equipped with a fixed 20 PSIG (approx.) differential. Optional switches include both pressure and differential adjustment capabilities. Pressure switch settings are staggered (i.e. Pressure Switch #1 set @ 80-100 PSIG, Pressure Switch #2 set @ 75-95 PSIG, Pressure Switch #3 set @ 70-90 PSIG and Pressure Switch #4 set @ 65-85 PSIG). If the switches are not staggered, the controls will not operate properly and system alarm conditions may occur.

WARNING ! **Electric power always exists inside the pressure switch whenever the compressor package is connected to a power supply. Be careful not to touch any electrical contacts when setting the pressure switch.**

WARNING ! **Never exceed the design pressure for the system or overload the motor beyond its Maximum Amp Draw.**

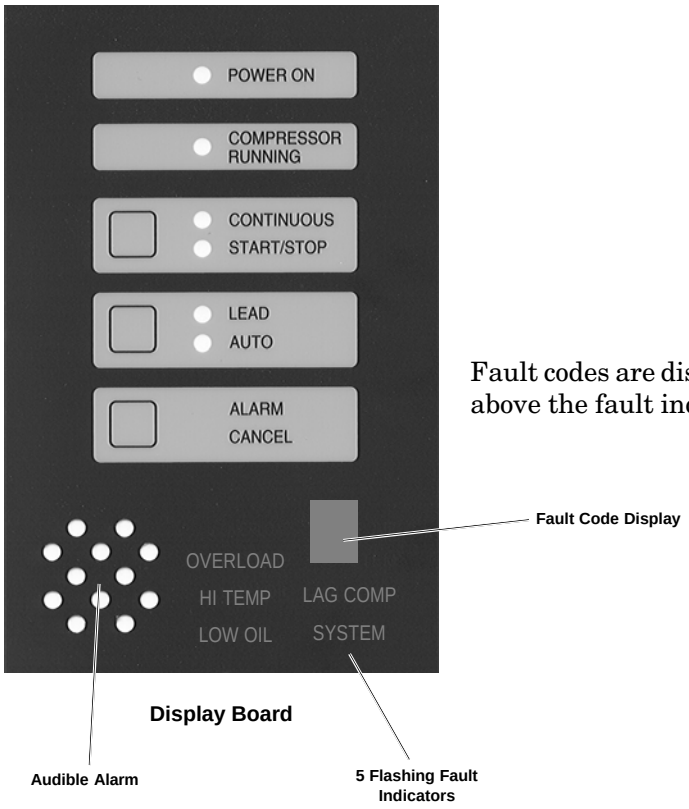
* Full Load Amps x Service Factor = Maximum Amp Draw

**Full Load Amps (FLA) & Service Factor can usually be found on the motor nameplate.*

Troubleshooting Chart

Refer to this chart when troubleshooting and diagnosing fault conditions.

FAULT CONDITION	REACTION	CORRECTIVE ACTION
HI TEMP	1. Compressor shuts down. 2. Flashing fault indicator on display board. 3. System alarm (SPDT dry contact) actuates on I/O board. 4. Audible alarm sounds.	1. Press ALARM CANCEL button on display board to silence audible alarm and reset dry contact. 2. Turn OFF/ON switch & disconnect switch for affected compressor to "OFF" position. 3. Check for loose wire on HAT probe or terminal block. Tighten. 4. Check for defective HAT probe. Replace. 5. Check for defective basic compressor. Repair or replace. 6. Turn disconnect switch & OFF/ON switch to "ON" position to reset.
LOW OIL	1. Compressor shuts down. 2. Flashing fault indicator on display board. 3. System alarm (SPDT dry contact) actuates on I/O board. 4. Audible alarm sounds.	1. Press ALARM CANCEL button on display board to silence audible alarm and reset dry contact. 2. Turn OFF/ON switch & disconnect switch for affected compressor to "OFF" position. 3. Check for low oil level/pressure. Add oil or adjust pressure. 4. Check for loose wire on low oil level switch or terminal block. Tighten. 5.Check for plugged oil line to low oil switch. Clear the line. 6. Turn disconnect switch & OFF/ON switch to "ON" position to reset.
OVERLOAD	1. Compressor shuts down. 2. Flashing fault indicator on display board. 3. System alarm (SPDT dry contact) actuates on I/O board. 4. Audible alarm sounds.	1. Press ALARM CANCEL button on display board to silence audible alarm and reset dry contact. 2. Turn OFF/ON switch & disconnect switch for affected compressor to "OFF" position. 3. Check overload relay for proper setting. 4.Check for loose wire on overload relay or motor terminals. Tighten. 5. Ambient temperature above 104°F. Reduce ambient temperature. 6. Motor drawing high amps. Check compressor speed & motor. 7. Motor lead wires too small. Replace with properly sized wires. 8. Reset the overload relay inside the control panel for affected compressor control. If condition persists, DO NOT CONTINUE TO PUSH THE RESET BUTTON! Contact your local Quincy distributor for assistance. 9. Turn disconnect switch & OFF/ON switch to "ON" position to reset.
LAG COMP	1. Flashing fault indicator on compressor #1 display board. 2. Lag alarm (SPDT dry contact) actuates on I/O board.	1. Press alarm cancel button on display board to silence audible alarm and reset dry contact. 2. Check system for air leaks. 3. Check compressor(s) for proper operation. 4. Check for increased air demand.
SYSTEM	1. Flashing fault indicator on all display boards. 2. System alarm (SPDT Dry Contact) actuates on I/O board. 3. Fault code appears in fault code display.	1. Press ALARM CANCEL button on display board to silence audible alarm and reset dry contact. 2. Refer to System Fault Code Chart.

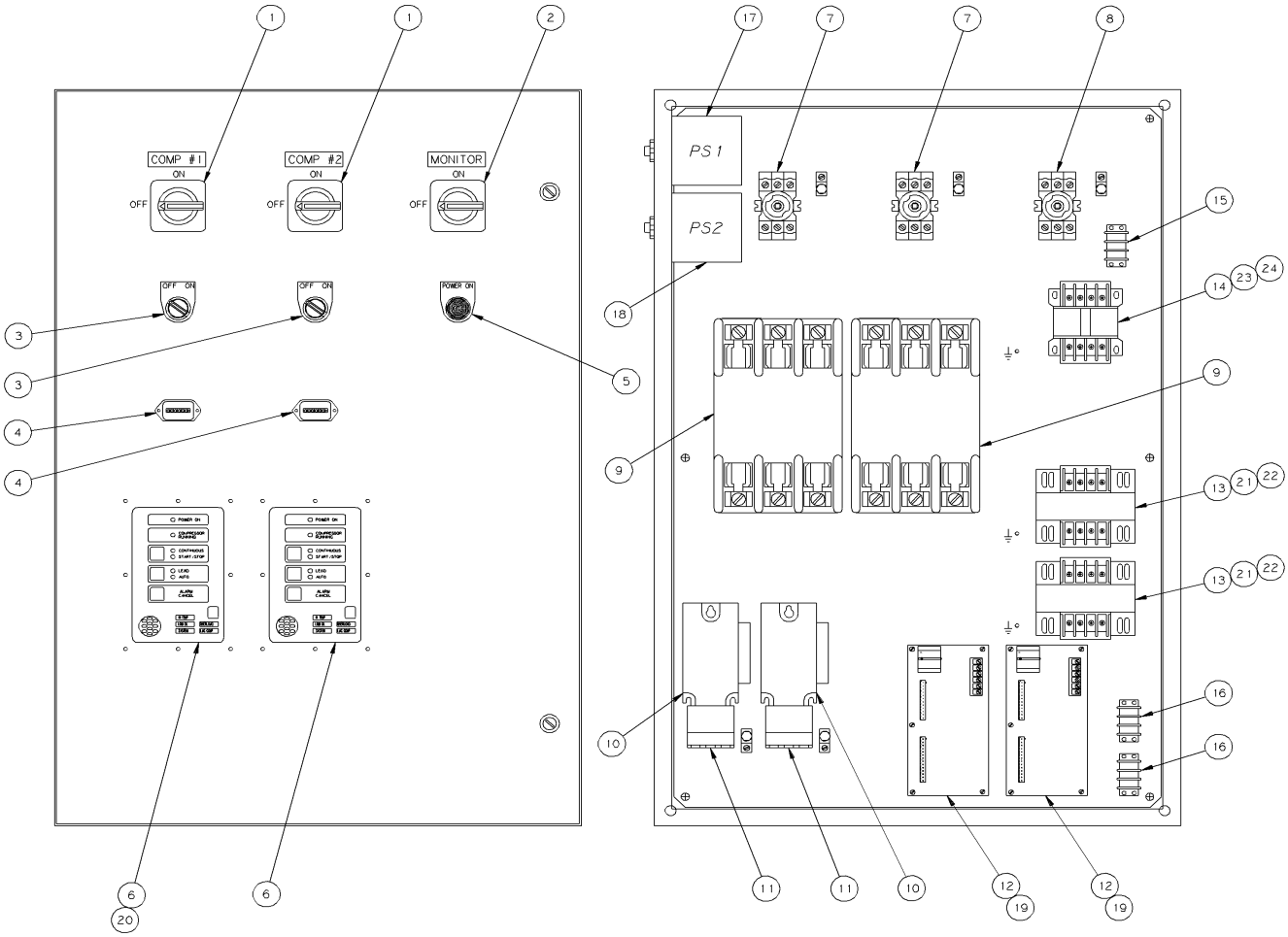


Fault codes are displayed in a window located on the display board just above the fault indicators.

System Fault Code Chart

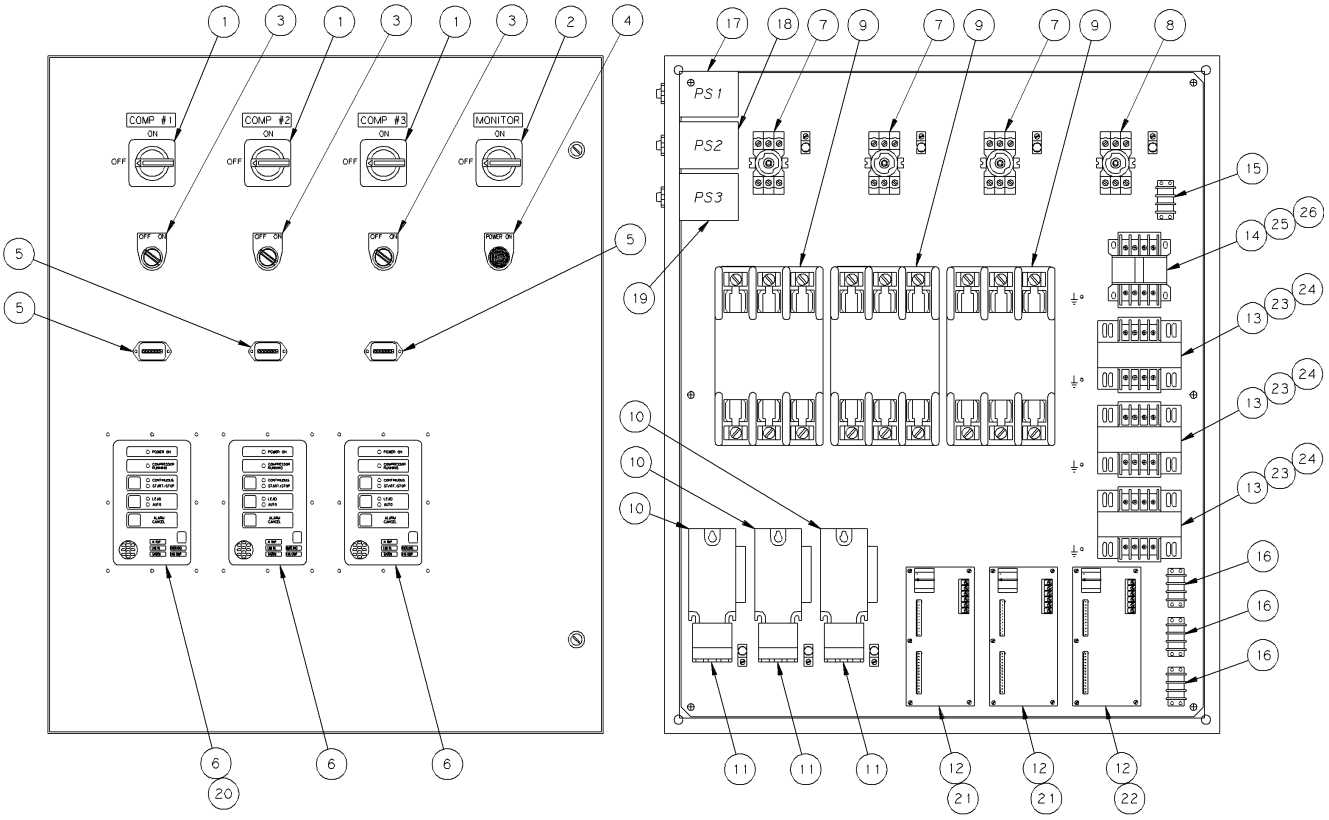
FAULT CODE	FAULT DESCRIPTION	CORRECTIVE ACTION
2	EEPROM This fault occurs when the system configuration is different than what is saved in memory. Occurs the first time units are installed (they have no settings in memory). Also occurs if there is a failure in the display board or communication harness.	1. Turn the OFF / ON and disconnect switches off, and then back on. Call a Quincy Compressor distributor if further assistance is needed.
4	System Fault Indicates that there is breakdown in communication between the controls of one or more compressors. The number 4 will alternate with a series of bars in the fault code display. A missing bar indicates which unit is not communicating. (Note: The unit causing the fault indicates that it is communicating even though it is not).	1. Check all fuses. If one fuse fails, replace all fuses with the same size and type. 2. Check for defective communication harness. Replace.
6	Multiple Lead Fault Occurs when the operating designated lead compressor is turned off and disconnected, a subsequent compressor is set as the lead compressor and then the originally designated lead compressor is turned back on.	1. Turn the OFF / ON and disconnect switches for all compressors off and then back on. Select new operating modes and starting sequences.
A	Pressure Switch # 1 Defective (All Panels) Occurs when the lag pressure switch (#2) contacts close and the lead pressure switch (#1) contacts are still open.	1. Check pressure switches for proper settings (see **SECTION 5**). 2. Replace the lead pressure switch (#1).
b	Pressure Switch # 2 Defective (Triplex or Quadraplex Panels) Occurs when the lead pressure switch (#1) and lag pressure switch (#3) contacts close and the lag pressure switch (#2) contacts remain open.	1. Check pressure switches for proper settings (see **SECTION 5**). 2. Replace the lag pressure switch (#2).
C	Pressure Switch # 3 Defective (Quadraplex Panel Only) Occurs when the lead pressure switch (#1) and the lag pressure switches (#2 & #4) contacts close and the lag pressure switch (#3) contacts remain open.	1. Check pressure switches for proper settings (see **SECTION 5**). 2. Replace the lag pressure switch (#3).
F	All units are functioning in "CONTINUOUS" operating mode and the lag compressor alarm is disabled.	**NORMAL FUNCTION; NO CORRECTIVE ACTION REQUIRED.**

Component Drawings



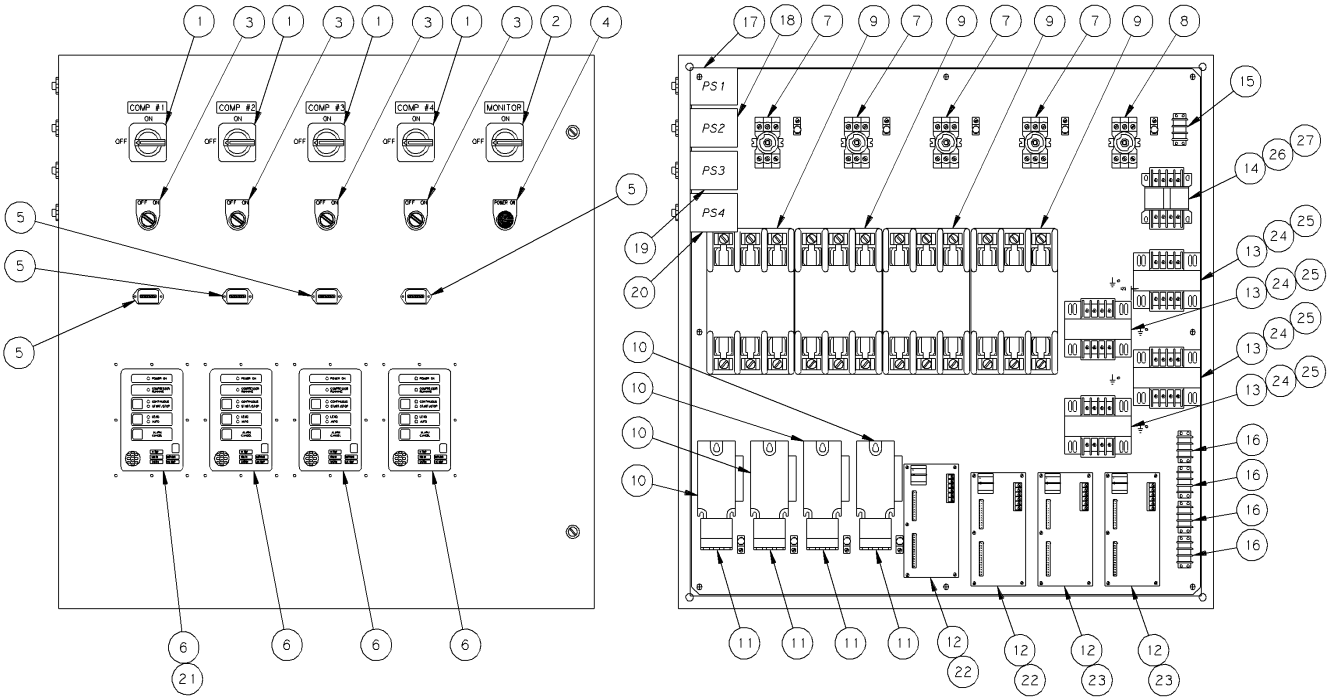
NFPA Duplex Compressor Control Panel

#	Description	Qty.	Part Number
1	Disconnect Switch Handle	2	
2	Disconnect Switch Handle, CO / Dew Point Monitor	1	
3	OFF / ON Selector Switch	2	
4	Elapsed Time Meter	2	
5	Power ON Pilot Light, CO / Dew Point Monitor	1	
6	Display Board	2	115390
7	Disconnect Switch	2	
8	Disconnect Switch, CO / Dew Point Monitor	1	
9	Motor Branch-Circuit Fuses	6	
10	Motor Starter Contactor	2	
11	Motor Starter Overload Relay	2	
12	I/O Board	2	115389
13	Control Power Transformer (200VA)	2	
14	Control Power Transformer, CO / Dew Point Monitor (100VA)	1	
15	Power Connection Terminals, CO / Dew Point Monitor	1	
16	Motor Starter Auxiliary Contact Field Connection Terminal	2	
17	Lead Pressure Switch (PS1)	1	8698-100
18	Lag Pressure Switch (PS2)	1	8698-90
19	Interface Harness	2	115394
20	Communication Harness	1	115391
	- FUSES -		
21	Fuse, Primary - 200VA Control Power Transformer (200V / 230V)	4	128857-012
21	Fuse, Primary - 200VA Control Power Transformer (460V / 575V)	4	128857-002
22	Fuse, Secondary - 200VA Control Power Transformer (200V thru 575V)	2	22209
23	Fuse, Primary - 100VA CO / Dew Point Monitor Transformer (200V / 230V)	2	128857-011
23	Fuse, Primary - 100VA CO / Dew Point Monitor Transformer (460V / 575V)	2	128857-002
24	Fuse, Secondary - 100VA CO / Dew Point Monitor Transformer (200V thru 575V)	1	22253



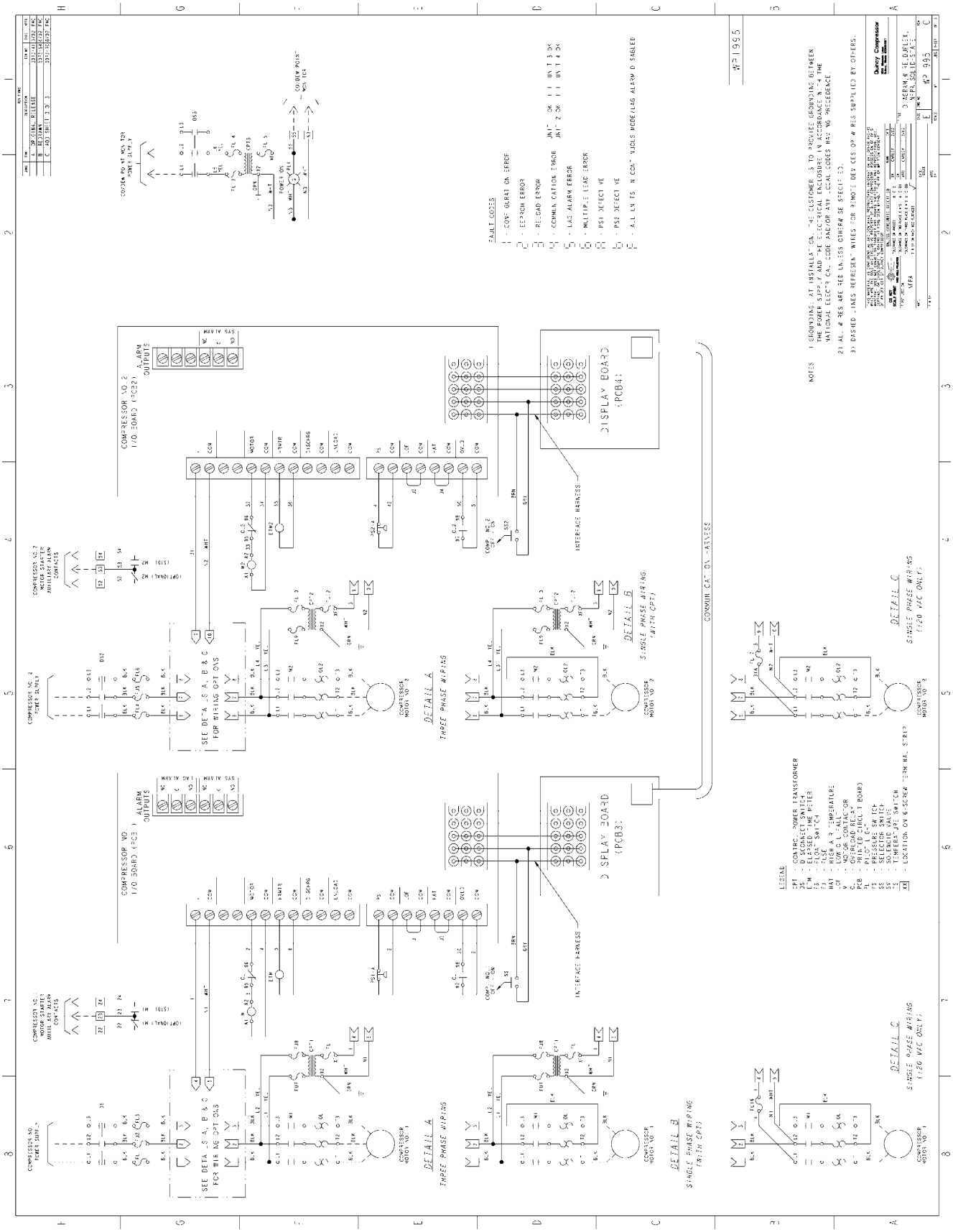
NFPA Triplex Compressor Control Panel

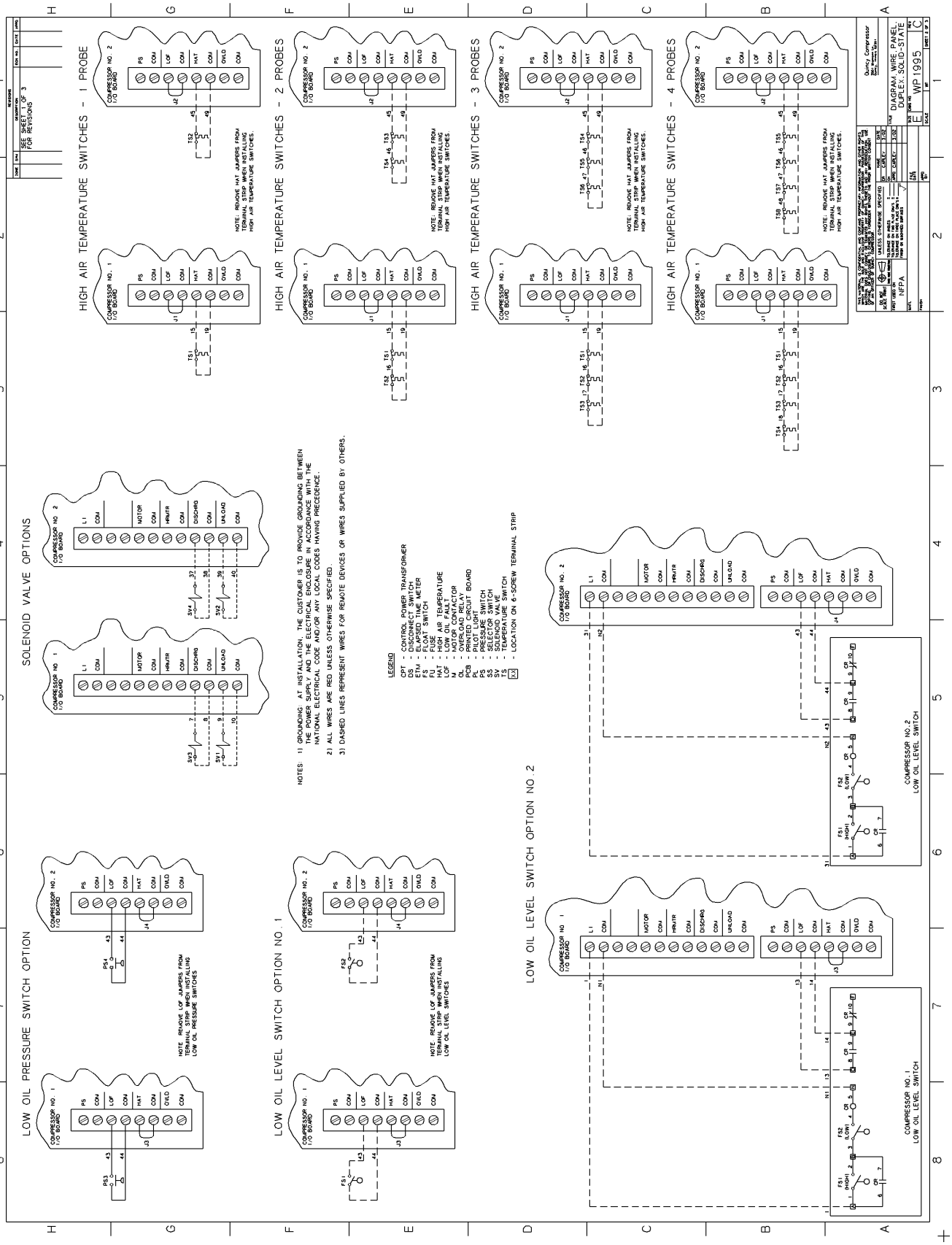
#	Description	Qty.	Part Number
1	Disconnect Switch Handle	3	
2	Disconnect Switch Handle, CO / Dew Point Monitor	1	
3	OFF / ON Selector Switch	3	
4	Power ON Pilot Light, CO / Dew Point Monitor	1	
5	Elapsed Time Meter	3	
6	Display Board	3	115390
7	Disconnect Switch	3	
8	Disconnect Switch, CO / Dew Point Monitor	1	
9	Motor Branch-Circuit Fuses	9	
10	Motor Starter Contactor	3	
11	Motor Starter Overload Relay	3	
12	I/O Board	3	115389
13	Control Power Transformer (200VA)	3	
14	Control Power Transformer, CO / Dew Point Monitor (100VA)	1	
15	Power Connection Terminals, CO / Dew Point Monitor	1	
16	Motor Starter Auxiliary Contact Field Connection Terminal	3	
17	Lead Pressure Switch (PS1)	1	8698-100
18	Lag Pressure Switch (PS2)	1	8698-100
19	Lag Pressure Switch (PS3)	1	8698-90
20	Communication Harness	1	115392
21	Interface Harness	2	115394
22	Interface Harness	1	115395
	- FUSES -		
23	Fuse, Primary - 200VA Control Power Transformer (200V / 230V)	6	128857-012
23	Fuse, Primary - 200VA Control Power Transformer (460V / 575V)	6	128857-011
24	Fuse, Secondary - 200VA Control Power Transformer (200V thru 575V)	3	22209
25	Fuse, Primary - 100VA CO / Dew Point Monitor Transformer (200V / 230V)	2	128857-011
25	Fuse, Primary - 100VA CO / Dew Point Monitor Transformer (460V / 575V)	2	128857-002
26	Fuse, Secondary - 100VA CO / Dew Point Monitor Transformer (200V thru 575V)	1	22453

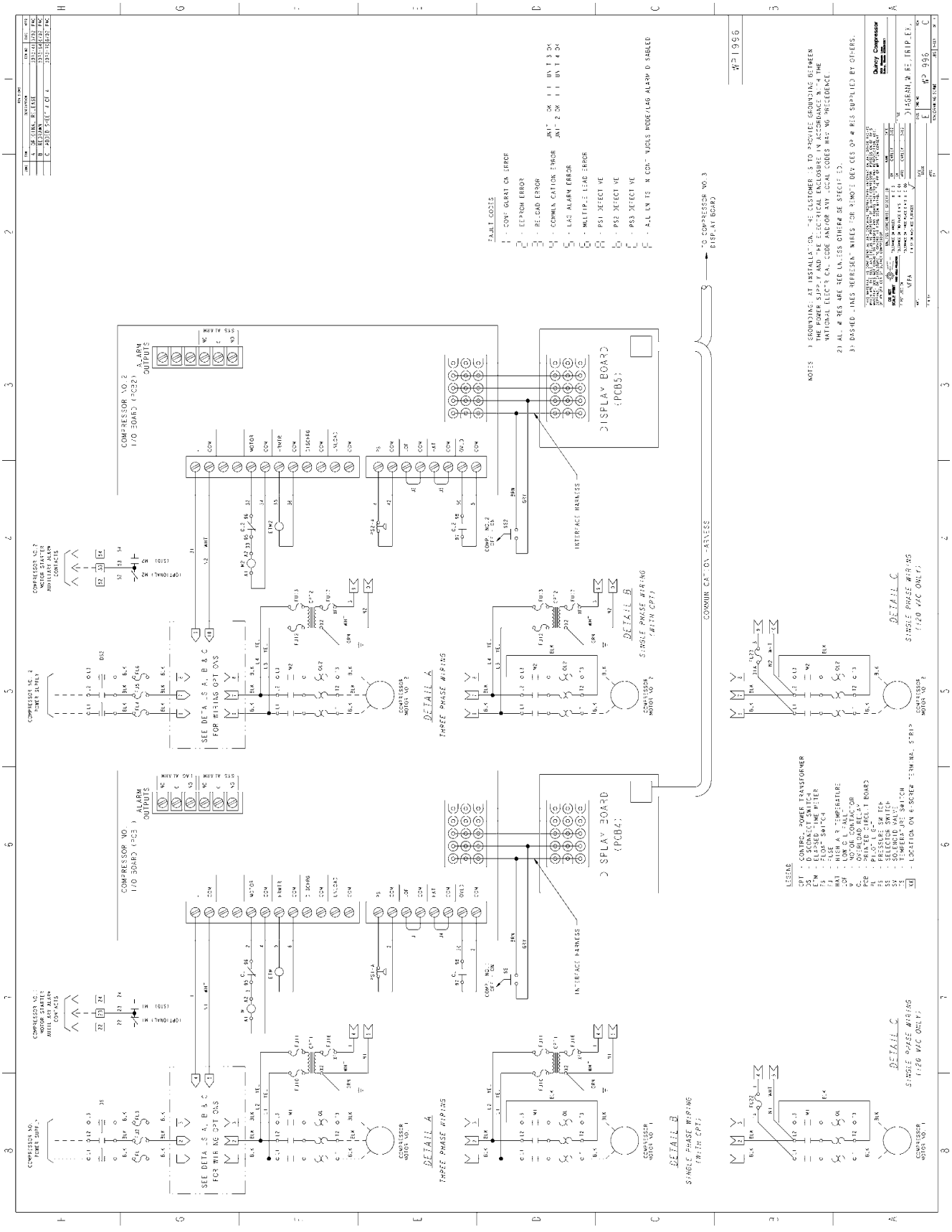


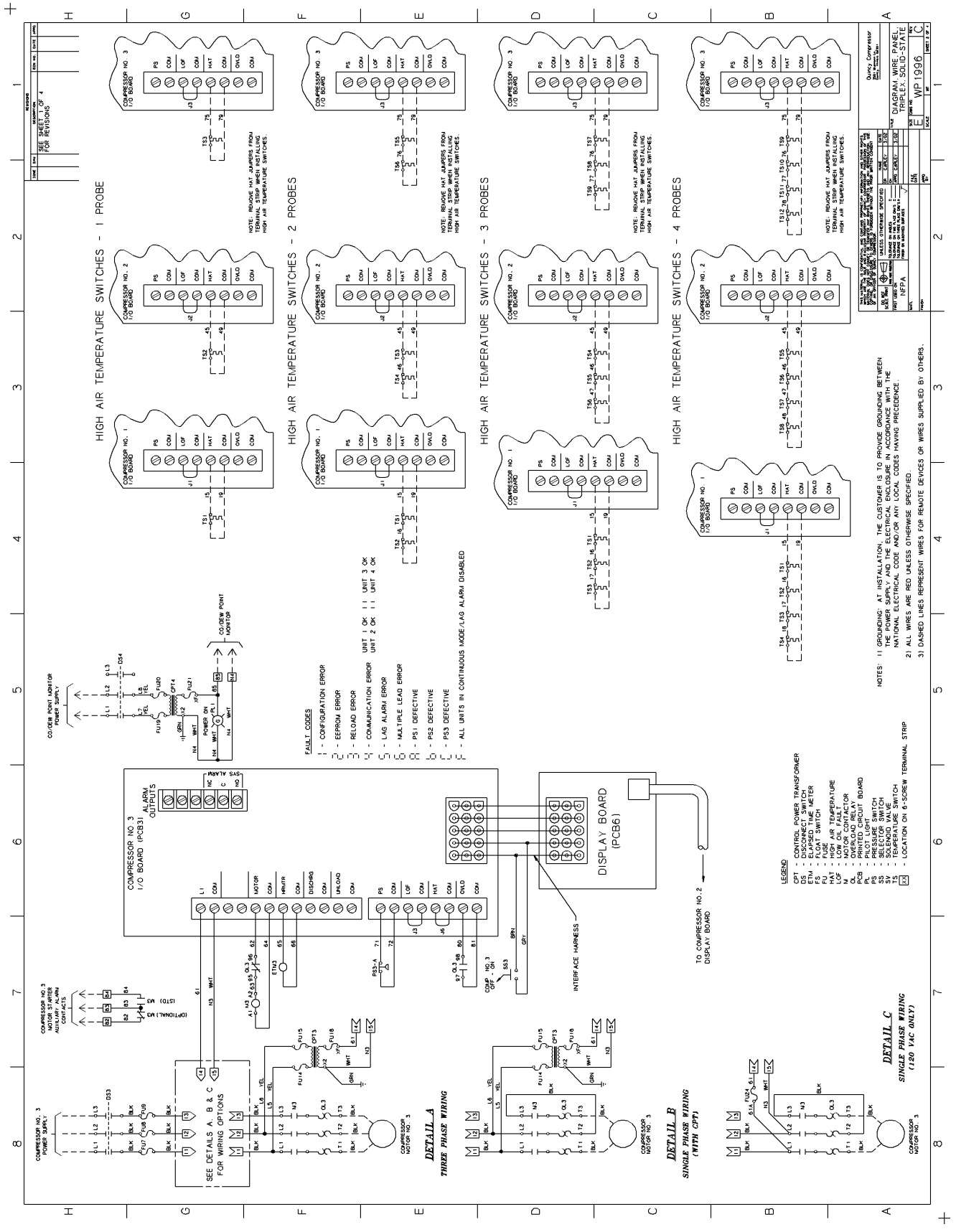
NFPA Quadraplex Compressor Control Panel

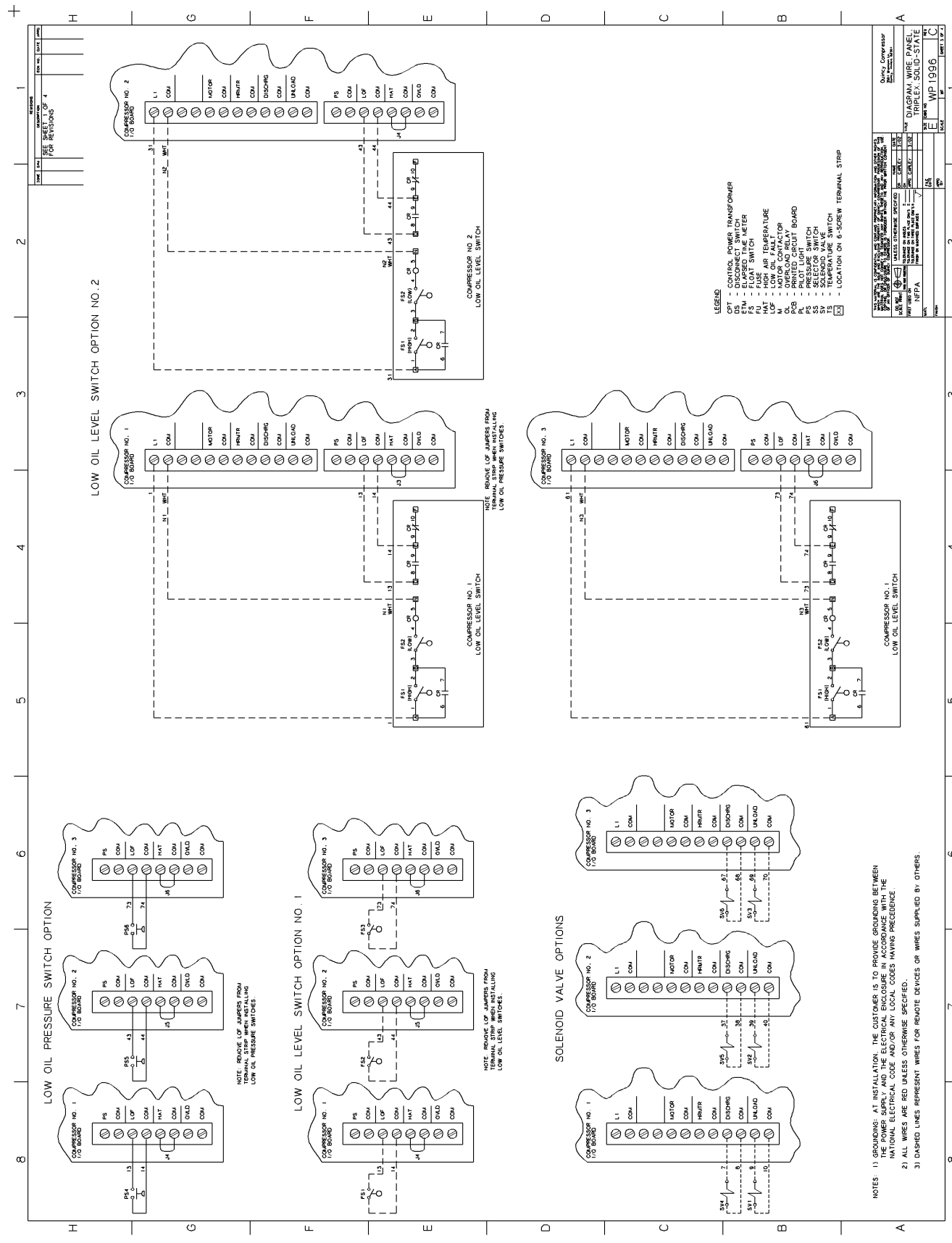
#	Description	Qty.	Part Number
1	Disconnect Switch Handle	4	
2	Disconnect Switch Handle, CO / Dew Point Monitor	1	
3	OFF / ON Selector Switch	4	
4	Power ON Pilot Light, CO / Dew Point Monitor	4	
5	Elapsed Time Meter	4	
6	Display Board	4	115390
7	Disconnect Switch	4	
8	Disconnect Switch, CO / Dew Point Monitor	1	
9	Motor Branch-Circuit Fuses	12	
10	Motor Starter Contactor	4	
11	Motor Starter Overload Relay	4	
12	I/O Board	4	115389
13	Control Power Transformer (200VA)	4	
14	Control Power Transformer, CO / Dew Point Monitor (100VA)	1	
15	Power Connection Terminals, CO / Dew Point Monitor	1	
16	Motor Starter Auxiliary Contact Field Connection Terminal	4	
17	Lead Pressure Switch (PS1)	1	8698-100
18	Lag Pressure Switch (PS2)	1	8698-100
19	Lag Pressure Switch (PS3)	1	8698-90
20	Lag Pressure Switch (PS4)	1	8698-90
21	Communication Harness	1	115393
22	Interface Harness	2	115395
23	Interface Harness	2	115396
	- FUSES -		
24	Fuse, Primary - 200VA Control Power Transformer (200V / 230V)	8	128857-012
24	Fuse, Primary - 200VA Control Power Transformer (460V / 575V)	8	128857-011
25	Fuse, Secondary - 200VA Control Power Transformer (200V thru 575V)	4	22209
26	Fuse, Primary - 100VA CO / Dew Point Monitor Transformer (200V / 230V)	2	128857-011
26	Fuse, Primary - 100VA CO / Dew Point Monitor Transformer (460V / 575V)	2	128857-002
27	Fuse, Secondary -100VA CO / Dew Point Monitor Transformer (200V thru 575V)	1	22453

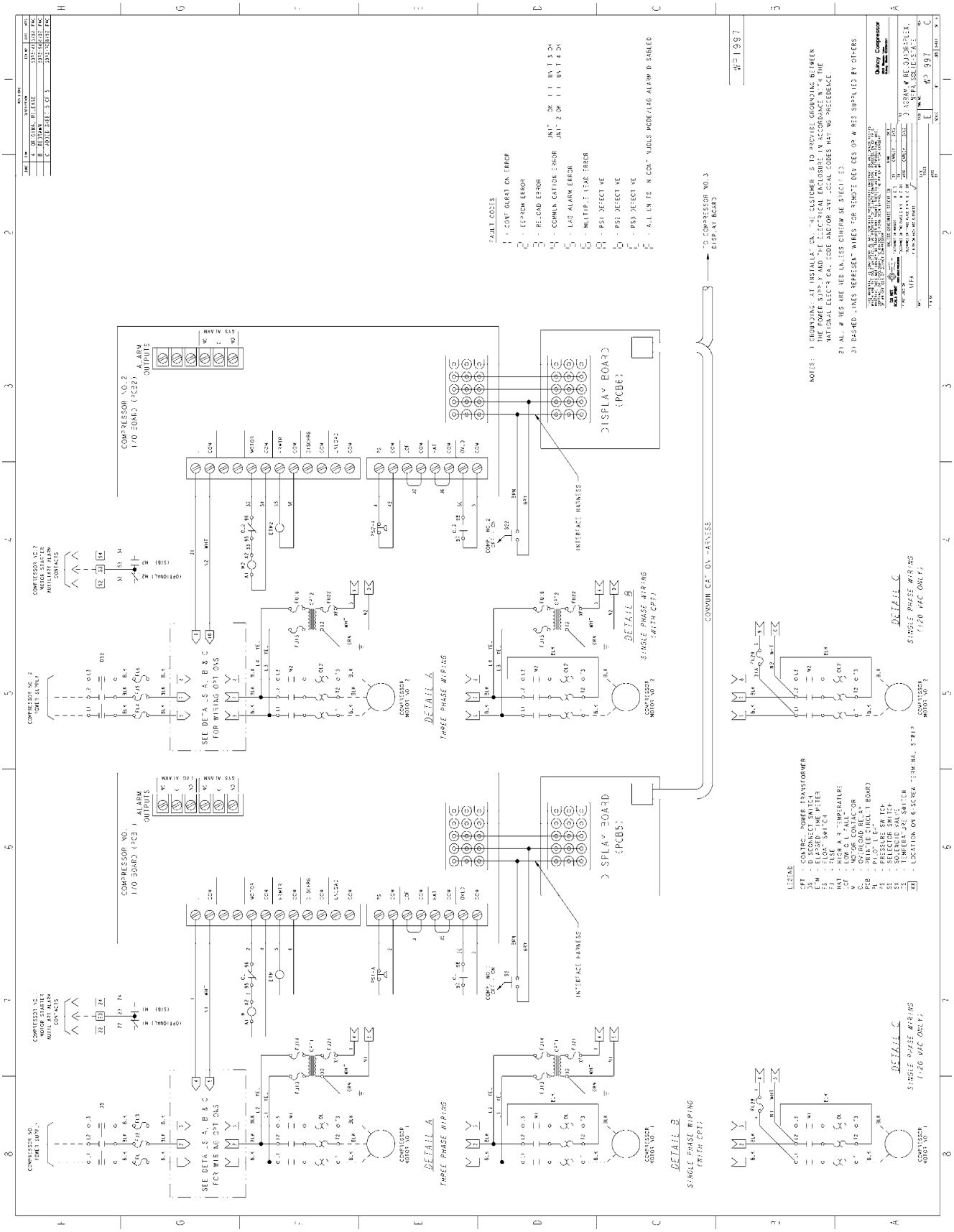


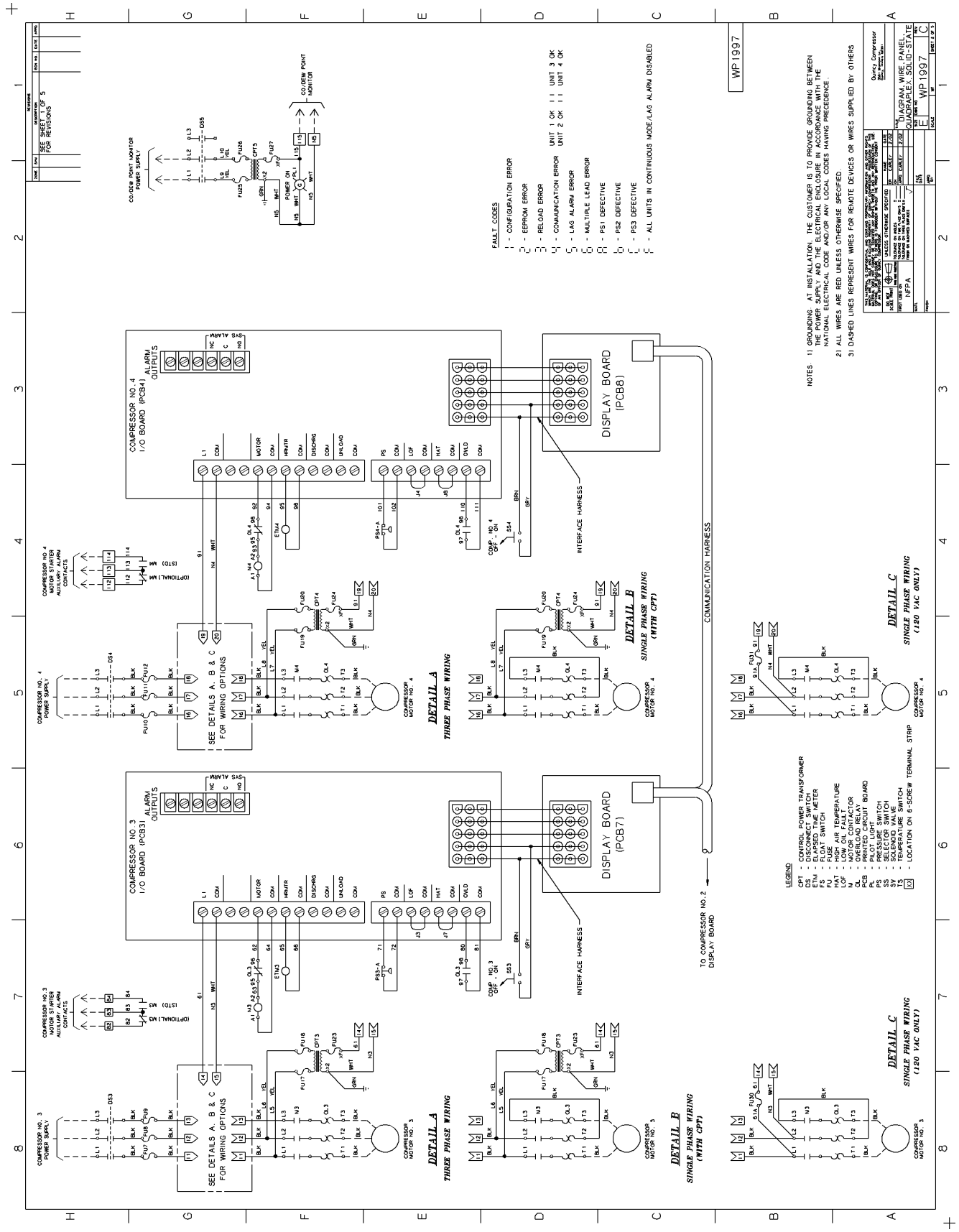

HIGH AIR TEMPERATURE SWITCHES - 1 PROBE
HIGH AIR TEMPERATURE SWITCHES - 2 PROBES
HIGH AIR TEMPERATURE SWITCHES - 3 PROBES
HIGH AIR TEMPERATURE SWITCHES - 4 PROBES
SOLENOID VALVE OPTIONS
LOW OIL PRESSURE SWITCH OPTION
LOW OIL LEVEL SWITCH OPTION NO. 1
LOW OIL LEVEL SWITCH OPTION NO. 2
NOTES 1) GROUNDING AT INSTALLATION, THE CUSTOMER IS TO PROVIDE GROUNDING BETWEEN THE POWER SOURCE AND THE ELECTRICAL ENCLOSURE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND/OR ANY LOCAL CODES HAVING PRECEDENCE.
2) ALL WIRES ARE RED UNLESS OTHERWISE SPECIFIED.
3) DASHED LINES REPRESENT WIRES FOR REMOTE DEVICES OR WIRES SUPPLIED BY OTHERS.
LEGEND
CPT - CONTROL POWER TRANSFORMER
DPT - DISCHARGE PRESSURE TRANSMITTER
EHM - ELAPSED HOUR METER
FS - FLOAT SWITCH
FU - FUSE
HAT - HIGH AIR TEMPERATURE
LOF - LOW OIL FAULT
M - MOTOR CONTACTOR
OL - OVERLOAD RELAY
PCB - PRINTED CIRCUIT BOARD
PL - PILOT LIGHT
PS - PRESSURE SWITCH
SS - SELECTOR SWITCH
SV - SOLENOID VALVE
TS - TEMPERATURE SWITCH
[X] - LOCATION ON 6-SCREW TERMINAL STRIP
NFPA
WP 1995
DIAGRAM, WIRE, PANEL; DUPLEX, SOLID-STATE

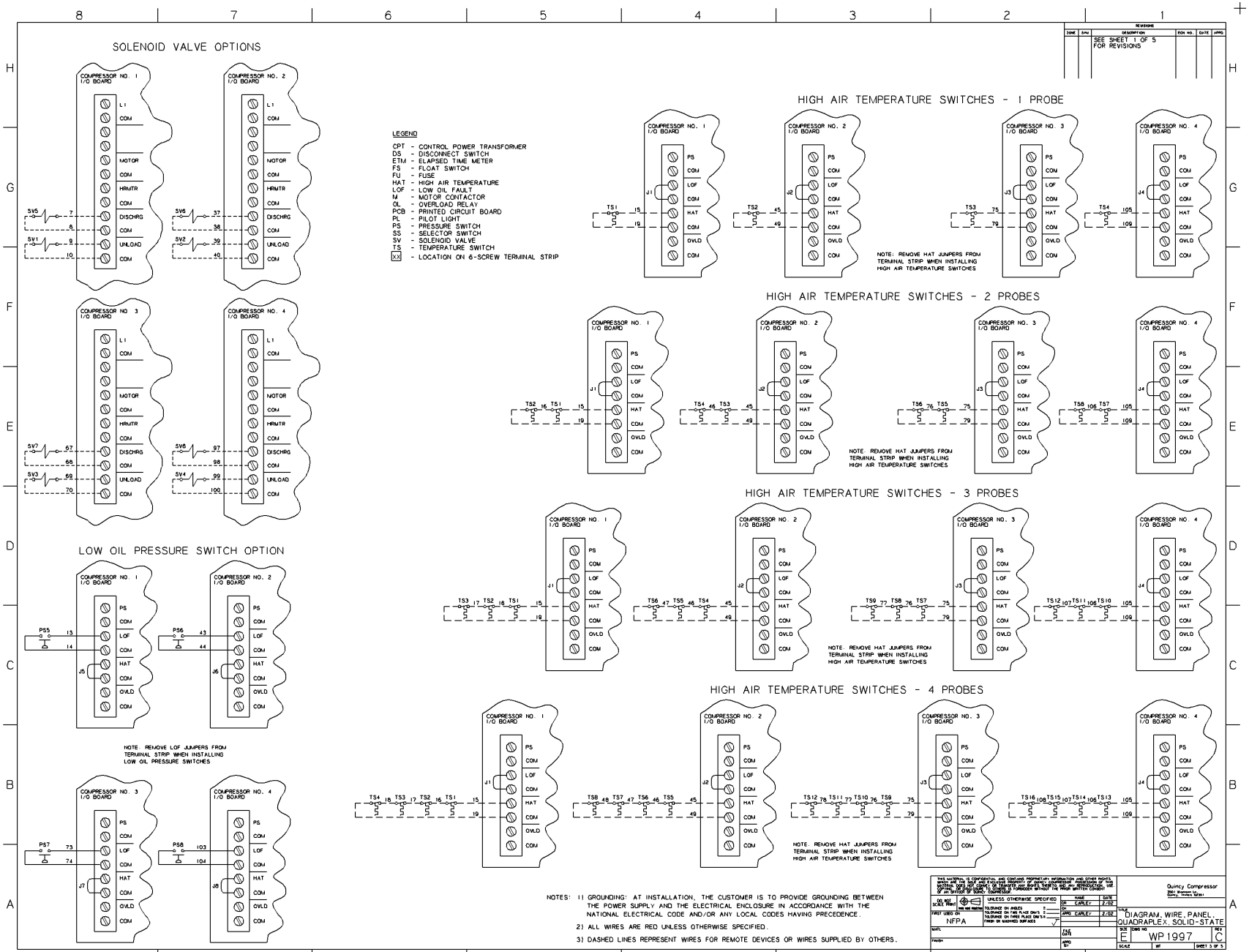


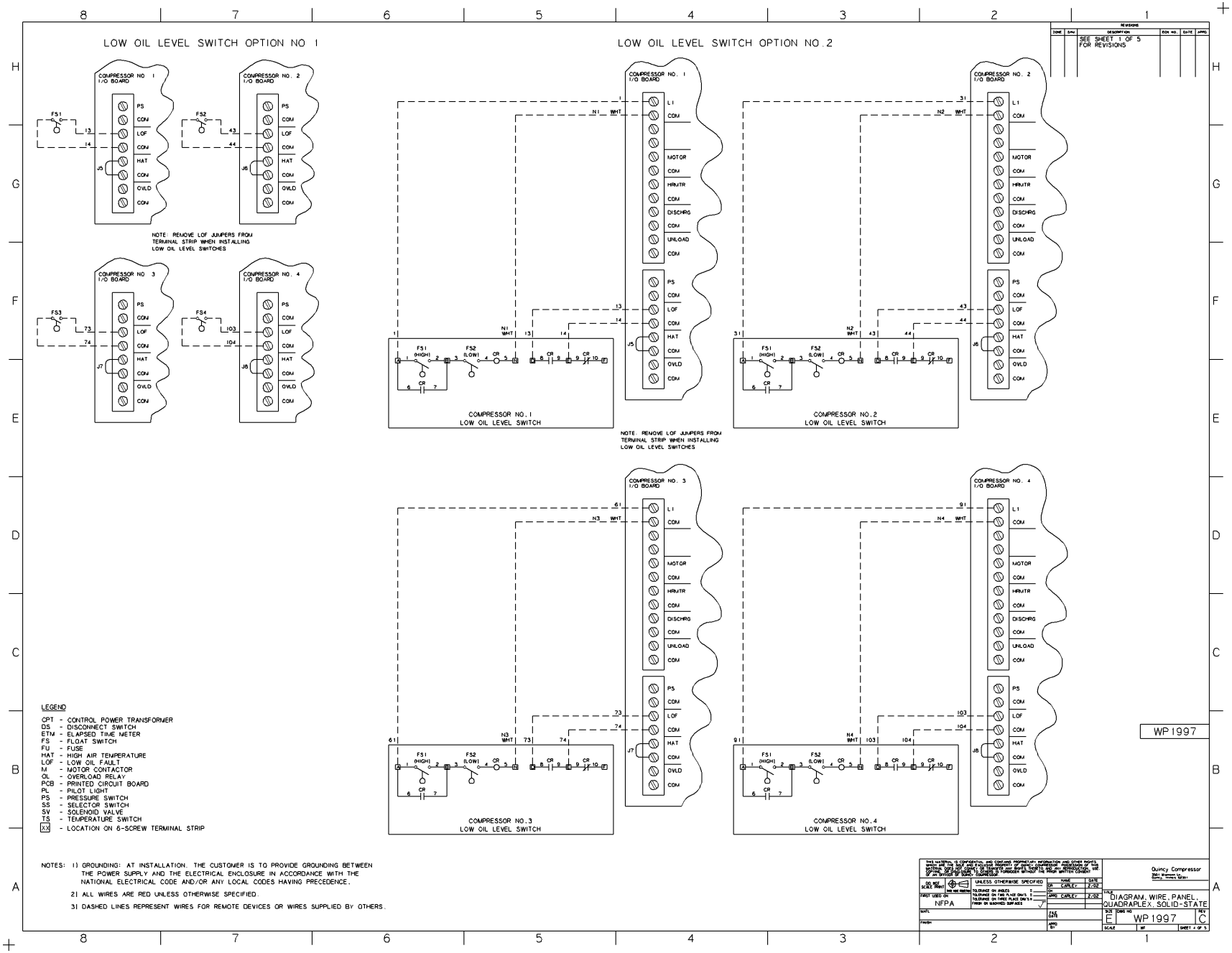

HIGH AIR TEMPERATURE SWITCHES - 1 PROBE
HIGH AIR TEMPERATURE SWITCHES - 2 PROBES
HIGH AIR TEMPERATURE SWITCHES - 3 PROBES
HIGH AIR TEMPERATURE SWITCHES - 4 PROBES
FAULT CODES
1 - CONFIGURATION ERROR
2 - EEPROM ERROR
3 - RELOAD ERROR
4 - COMMUNICATION ERROR
5 - LAG ALARM ERROR
6 - MULTIPLE LEAD ERROR
A - PS1 DEFECTIVE
b - PS2 DEFECTIVE
C - PS3 DEFECTIVE
F - ALL UNITS IN CONTINUOUS MODE/LAG ALARM DISABLED
UNIT 1 OK
UNIT 2 OK
UNIT 3 OK
UNIT 4 OK
DISPLAY BOARD (PCB6)
COMPRESSOR NO. 3 I/O BOARD (PCB3)
INTERFACE HARNESS
TO COMPRESSOR NO. 2 DISPLAY BOARD
LEGEND
CPT - CONTROL POWER TRANSFORMER
DPS - DISCHARGE PRESSURE SWITCH
ETM - ELAPSED TIME METER
FS - FLOAT SWITCH
FU - FUSE
HAT - HIGH AIR TEMPERATURE
LOF - LOW OIL FAULT
M - MOTOR CONTACTOR
OL - OVERLOAD RELAY
PCB - PRINTED CIRCUIT BOARD
PL - PILOT LIGHT
PS - PRESSURE SWITCH
SS - SELECTOR SWITCH
SV - SOLENOID VALVE
TS - TEMPERATURE SWITCH
X - LOCATION ON 6-SCREW TERMINAL STRIP
NOTES: 1) GROUNDING: AT INSTALLATION, THE CUSTOMER IS TO PROVIDE GROUNDING BETWEEN THE POWER SUPPLY AND THE ELECTRICAL ENCLOSURE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND/OR ANY LOCAL CODES HAVING PRECEDENCE.
2) ALL WIRES ARE RED UNLESS OTHERWISE SPECIFIED.
3) DASHED LINES REPRESENT WIRES FOR REMOTE DEVICES OR WIRES SUPPLIED BY OTHERS.
DETAIL A
THREE PHASE WIRING
DETAIL B
SINGLE PHASE WIRING (WITH CPT)
DETAIL C
SINGLE PHASE WIRING (120 VAC ONLY)
DIAGRAM WIRE PANEL TRIPLEX, SOLID STATE
WP1996


LOW OIL LEVEL SWITCH OPTION NO. 2
LOW OIL PRESSURE SWITCH OPTION
LOW OIL LEVEL SWITCH OPTION NO. 1
SOLENOID VALVE OPTIONS
LEGEND
CPT - CONTROL POWER TRANSFORMER
DS - DISCONNECT SWITCH
ETM - ELAPSED TIME METER
FS - FLOAT SWITCH
FU - FUSE
HAT - HIGH AIR TEMPERATURE
LC - LOW OIL CONTACTOR
OL - OVERLOAD RELAY
PCB - PRINTED CIRCUIT BOARD
PL - PILOT LIGHT
PS - PRESSURE SWITCH
SS - SELECTOR SWITCH
SV - SOLENOID VALVE
TS - TEMPERATURE SWITCH
[X] - LOCATION ON 6-SCREW TERMINAL STRIP
NOTES 1) GROUNDING: AT INSTALLATION, THE CUSTOMER IS TO PROVIDE GROUNDING BETWEEN THE COMPRESSOR AND THE ELECTRICAL ENCLOSURE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND/OR ANY LOCAL CODES HAVING PRECEDENCE.
2) ALL WIRES ARE RED UNLESS OTHERWISE SPECIFIED.
3) DASHED LINES REPRESENT WIRES FOR REMOTE DEVICES OR WIRES SUPPLIED BY OTHERS.
DIAGRAM, WIRE, PANEL, TRIPLEX, SOLID-STATE
WP 1996
Quincy Compressor




WP1997
DISPLAY BOARD (PCB8)
DISPLAY BOARD (PCB7)
COMPRESSOR NO.4 I/O BOARD (PCB4)
COMPRESSOR NO.3 I/O BOARD (PCB3)
ALARM OUTPUTS
INTERFACE HARNESS
COMMUNICATION HARNESS
TO COMPRESSOR NO.2 DISPLAY BOARD
SEE DETAILS A, B & C FOR WIRING OPTIONS
DETAIL A THREE PHASE WIRING
DETAIL B SINGLE PHASE WIRING (WITH CPT)
DETAIL C SINGLE PHASE WIRING (120 VAC ONLY)
FAULT CODES
1 - CONFIGURATION ERROR
2 - EEPROM ERROR
3 - RELOAD ERROR
4 - COMMUNICATION ERROR UNIT 1 OK | | UNIT 3 OK UNIT 2 OK | | UNIT 4 OK
5 - LAG ALARM ERROR
6 - MULTIPLE LEAD ERROR
7 - PS1 DEFECTIVE
8 - PS2 DEFECTIVE
9 - PS3 DEFECTIVE
A - ALL UNITS IN CONTINUOUS MODE/LAG ALARM DISABLED
NOTES 1) GROUNDING: AT INSTALLATION, THE CUSTOMER IS TO PROVIDE GROUNDING BETWEEN THE POWER SUPPLY AND THE ELECTRICAL ENCLOSURE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND/OR ANY LOCAL CODES HAVING PRECEDENCE.
2) ALL WIRES ARE RED UNLESS OTHERWISE SPECIFIED.
3) DASHED LINES REPRESENT WIRES FOR REMOTE DEVICES OR WIRES SUPPLIED BY OTHERS
LEGEND
CPT - CONTROL POWER TRANSFORMER
DS - DISCONNECT SWITCH
ETM - ELAPSED TIME METER
FLS - FLOAT SWITCH
FU - FUSE
HAT - HIGH AIR TEMPERATURE
LOF - LOW OIL FAULT
M - MOTOR CONTACTOR
OL - OVERLOAD RELAY
PCB - PRINTED CIRCUIT BOARD
PL - PILOT LIGHT
PS - PRESSURE SWITCH
SS - SELECTOR SWITCH
SV - SOLENOID VALVE
TS - TEMPERATURE SWITCH
(X) - LOCATION ON 6-SCREW TERMINAL STRIP
NFPA
DIAGRAM, WIRE, PANEL, QUADRAPLEX, SOLID-STATE
Quincy Compressor
WP1997


SOLENOID VALVE OPTIONS
COMPRESSOR NO. 1 I/O BOARD
COMPRESSOR NO. 2 I/O BOARD
COMPRESSOR NO. 3 I/O BOARD
COMPRESSOR NO. 4 I/O BOARD
L1
COM
MOTOR
HRMTR
DISCHRG
UNLOAD
SV5
SV1
SV6
SV2
SV7
SV3
SV8
SV4
LOW OIL PRESSURE SWITCH OPTION
PS5
PS6
PS7
PS8
NOTE: REMOVE LOF JUMPERS FROM TERMINAL STRIP WHEN INSTALLING LOW OIL PRESSURE SWITCHES
LEGEND
CPT - CONTROL POWER TRANSFORMER
DS - DISCONNECT SWITCH
ETM - ELAPSED TIME METER
FS - FLOAT SWITCH
FU - FUSE
HAT - HIGH AIR TEMPERATURE
LOF - LOW OIL FAULT
M - MOTOR CONTACTOR
OL - OVERLOAD RELAY
PCB - PRINTED CIRCUIT BOARD
PL - PILOT LIGHT
PS - PRESSURE SWITCH
SS - SELECTOR SWITCH
SV - SOLENOID VALVE
TS - TEMPERATURE SWITCH
XX - LOCATION ON 6-SCREW TERMINAL STRIP
HIGH AIR TEMPERATURE SWITCHES - 1 PROBE
PS
COM
LOF
HAT
OVLD
J1
J2
J3
J4
TS1
TS2
TS3
TS4
NOTE: REMOVE HAT JUMPERS FROM TERMINAL STRIP WHEN INSTALLING HIGH AIR TEMPERATURE SWITCHES
HIGH AIR TEMPERATURE SWITCHES - 2 PROBES
TS5
TS6
TS7
TS8
HIGH AIR TEMPERATURE SWITCHES - 3 PROBES
TS9
TS10
TS11
TS12
HIGH AIR TEMPERATURE SWITCHES - 4 PROBES
TS13
TS14
TS15
TS16
NOTES: 1) GROUNDING: AT INSTALLATION, THE CUSTOMER IS TO PROVIDE GROUNDING BETWEEN THE POWER SUPPLY AND THE ELECTRICAL ENCLOSURE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND/OR ANY LOCAL CODES HAVING PRECEDENCE.
2) ALL WIRES ARE RED UNLESS OTHERWISE SPECIFIED.
3) DASHED LINES REPRESENT WIRES FOR REMOTE DEVICES OR WIRES SUPPLIED BY OTHERS.
REVISIONS
SEE SHEET 1 OF 5 FOR REVISIONS
UNLESS OTHERWISE SPECIFIED
DO NOT SCALE PRINT
FIRST USED ON
NFPA
DR CARLEY 2/02
CH
APPD CARLEY 2/02
Quincy Compressor
DIAGRAM, WIRE, PANEL, QUADRAPLEX, SOLID-STATE
SIZE DWG NO REV
C WP1997
SCALE WT SHEET 5 OF 5


LOW OIL LEVEL SWITCH OPTION NO. 1
LOW OIL LEVEL SWITCH OPTION NO. 2
COMPRESSOR NO. 1 I/O BOARD
COMPRESSOR NO. 2 I/O BOARD
COMPRESSOR NO. 3 I/O BOARD
COMPRESSOR NO. 4 I/O BOARD
NOTE: REMOVE LOF JUMPERS FROM TERMINAL STRIP WHEN INSTALLING LOW OIL LEVEL SWITCHES
COMPRESSOR NO. 1 LOW OIL LEVEL SWITCH
COMPRESSOR NO. 2 LOW OIL LEVEL SWITCH
COMPRESSOR NO. 3 LOW OIL LEVEL SWITCH
COMPRESSOR NO. 4 LOW OIL LEVEL SWITCH
REVISIONS
SEE SHEET 1 OF 5 FOR REVISIONS
LEGEND
CPT - CONTROL POWER TRANSFORMER
DS - DISCONNECT SWITCH
ETM - ELAPSED TIME METER
FS - FLOAT SWITCH
FU - FUSE
HAT - HIGH AIR TEMPERATURE
LOF - LOW OIL FAULT
M - MOTOR CONTACTOR
OL - OVERLOAD RELAY
PCB - PRINTED CIRCUIT BOARD
PL - PILOT LIGHT
PS - PRESSURE SWITCH
SS - SELECTOR SWITCH
SV - SOLENOID VALVE
TS - TEMPERATURE SWITCH
XX - LOCATION ON 6-SCREW TERMINAL STRIP
NOTES: 1) GROUNDING: AT INSTALLATION, THE CUSTOMER IS TO PROVIDE GROUNDING BETWEEN THE POWER SUPPLY AND THE ELECTRICAL ENCLOSURE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND/OR ANY LOCAL CODES HAVING PRECEDENCE.
2) ALL WIRES ARE RED UNLESS OTHERWISE SPECIFIED.
3) DASHED LINES REPRESENT WIRES FOR REMOTE DEVICES OR WIRES SUPPLIED BY OTHERS.
Quincy Compressor
DIAGRAM, WIRE, PANEL, QUADRAPLEX, SOLID-STATE
WP1997

QUINCY COMPRESSOR
STANDARD TERMS AND CONDITIONS

LEGAL EFFECT: Except as expressly otherwise agreed to in writing by an authorized representative of Seller, the following terms and conditions shall apply to and form a part of this order and any additional and/or different terms of Buyer's purchase order or other form of acceptance are rejected in advance and shall not become a part of this order.

The rights of Buyer hereunder shall be neither assignable nor transferable except with the written consent of Seller.

This order may not be canceled or altered except with the written consent of Seller and upon terms which will indemnify Seller against all loss occasioned thereby. All additional costs incurred by Seller due to changes in design or specifications, modification of this order or revision of product must be paid for by Buyer.

In addition to the rights and remedies conferred upon Seller by this order, Seller shall have all rights and remedies conferred at law and in equity and shall not be required to proceed with the performance of this order if Buyer is in default in the performance of such order or of any other contract or order with seller.

TERMS OF PAYMENT: Unless otherwise specified in the order acknowledgment, the terms of payment shall be 1% 15, net forty-five (45) days after shipment. These terms shall apply to partial as well as complete shipments. If any proceeding be initiated by or against Buyer under any bankruptcy or insolvency law, or in the judgment of Seller the financial condition of Buyer, at the time the equipment is ready for shipment, does not justify the terms of payment specified, Seller reserves the right to require full payment in cash prior to making shipment. If such payment is not received within fifteen (15) days after notification of readiness for shipment, Seller may cancel the order as to any unshipped item and require payment of its reasonable cancellation charges.

If Buyer delays shipment, payments based on date of shipment shall become due as of the date when ready for shipment. If Buyer delays completion of manufacture, Seller may elect to require payment according to percentage of completion. Equipment held for Buyer shall be at Buyer's risk and storage charges may be applied at the discretion of Seller.

Accounts past due shall bare interest at the highest rate lawful to contract for but if there is no limit set by law, such interest shall be eighteen percent (18%). Buyer shall pay all cost and expenses, including reasonable attorney's fees, incurred in collecting the same, and no claim, except claims within Seller's warranty of material or workmanship, as stated below, will be recognized unless delivered in writing to Seller within thirty (30) days after date of shipment.

TAXES: All prices exclude present and future sales, use, occupation, license, excise, and other taxes in respect of manufacture, sales or delivery, all of which shall be paid by Buyer unless included in the purchase price at the proper rate or a proper exemption certificate is furnished.

ACCEPTANCE: All offers to purchase, quotations and contracts of sales are subject to final acceptance by an authorized representative at Seller's plant.

DELIVERY: Except as otherwise specified in this quotation, delivery will be F. O. B. point of shipment. In the absence of exact shipping instruction, Seller will use its discretion regarding best means of insured shipment. No liability will be accepted by Seller for so doing. All transportation charges are at Buyer's expense. Time of delivery is an estimate only and is based upon the receipt of all information and necessary approvals. The shipping schedule shall not be construed to limit seller in making commitments for materials or in fabricating articles under this order in accordance with Seller's normal and reasonable production schedules.

Seller shall in no event be liable for delays caused by fires, acts of God, strikes, labor difficulties, acts of governmental or military authorities, delays in transportation or procuring materials, or causes of any kind beyond Seller's control. No provision for liquidated damages for any cause shall apply under this order. Buyer shall accept delivery within thirty (30) days after receipt of notification of readiness for shipment. Claims for shortages will be deemed to have been waived if not made in writing with ten (10) days after the receipt of the material in respect of which any such shortage is claimed. Seller is not responsible for loss or damage in transit after having received "In Good Order" receipt from the carrier. All claims for loss or damage in transit should be made to the carrier.

TITLE & LIEN RIGHTS: The equipment shall remain personal property, regardless of how affixed to any realty or structure. Until the price (including any notes given therefore) of the equipment has been fully paid in cash, Seller shall, in the event of Buyer's default, have the right to repossess such equipment.

PATENT INFRINGMENT: If properly notified and given an opportunity to do so with friendly assistance, Seller will defend Buyer and the ultimate user of the equipment from any actual or alleged infringement of any published United States patent by the equipment or any part thereof furnished pursuant hereto (other than parts of special design, construction, or manufacture specified by and originating with Buyer), and will pay all damages and costs awarded by competent court in any suit thus defended or of which it may have had notice and opportunity to defend as aforesaid.

STANDARD WARRANTY: Seller warrants that products of its own manufacture will be free from defects in workmanship and materials under normal use and service for the period specified in the product instruction manual. Warranty for service parts will be Ninety (90) days from date of factory shipment. Electric Motors, gasoline and diesel engines, electrical apparatus and all other accessories, components and parts not manufactured by Seller are warranted only to the extent of the original manufacturer's warranty.

Notice of the alleged defect must be given to the Seller, in writing with all identifying details including serial number, type of equipment and date of purchase within thirty (30) days of the discovery of the same during the warranty period.

Seller's sole obligation on this warranty shall be, at its option, to repair or replace or refund the purchase price of any product or part thereof which proves to be defective. If requested by Seller, such product or part thereof must be promptly returned to seller, freight prepaid, for inspection.

Seller warrants repaired or replaced parts of its own manufacture against defects in materials and workmanship under normal use and service for ninety (90) days or for the remainder of the warranty on the product being repaired.

This warranty shall not apply and Seller shall not be responsible or liable for:

(a) Consequential, collateral or special losses or damages;

(b) Equipment conditions caused by fair wear and tear, abnormal conditions of use, accident, neglect or misuse of equipment, improper storage or damage resulting during shipping;

(c) Deviation from operating instructions, specifications or other special terms of sale;

(d) Labor charges, loss or damage resulting from improper operation, maintenance or repairs made by person(s) other than Seller or Seller's authorized service station.

In no event shall Seller be liable for any claims whether arising from breach of contract or warranty or claims of negligence or negligent manufacture in excess of the purchase price.

THIS WARRANTY IS THE SOLE WARRANTY OF SELLERS AND ANY OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED IN LAW OR IMPLIED IN FACT, INCLUDING ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR USE ARE HEREBY SPECIFICALLY EXCLUDED.

LIABILITY LIMITATIONS: Under no circumstances shall the Seller have any liability for liquidated damages or for collateral, consequential or special damages or for loss of profits, or for actual losses or for loss of production or progress of construction, whether resulting from delays in delivery or performance, breach of warranty, negligent manufacture or otherwise.

ENVIROMENTAL AND OSHA REQUIREMENTS: At the time of shipment of the equipment from the factory, Quincy Compressor / Ortman Fluid Power will comply with the various Federal, State and local laws and regulations concerning occupational health and safety and pollution. However, in the installation and operation of the equipment and other matters over which the seller has no control, the Seller assumes no responsibility for compliance with those laws and regulations, whether by the way of indemnity, warranty or otherwise.

June 30, 2003

Quincy COMPRESSOR

an EnPro Industries company

Reciprocating / Systems: 217.222.7700
Air Master 217.277.0270
E-mail: info@quincycompressor.com
Website: quincycompressor.com
quincyairmaster.com

MEMBER COMPRESSED AIR AND GAS INSTITUTE CAGI

KNOW PRESSURE COMPRESSED AIR CHALLENGE

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