



START-UP & TROUBLESHOOTING

# 1. Prior to Arrival

- a. Inform DenTech of start-up schedule
- b. Locate and understand the drawings
- c. Locate IOM and Job Number
- d. Identify field wiring devices and function
- e. Find specified airflow requirements

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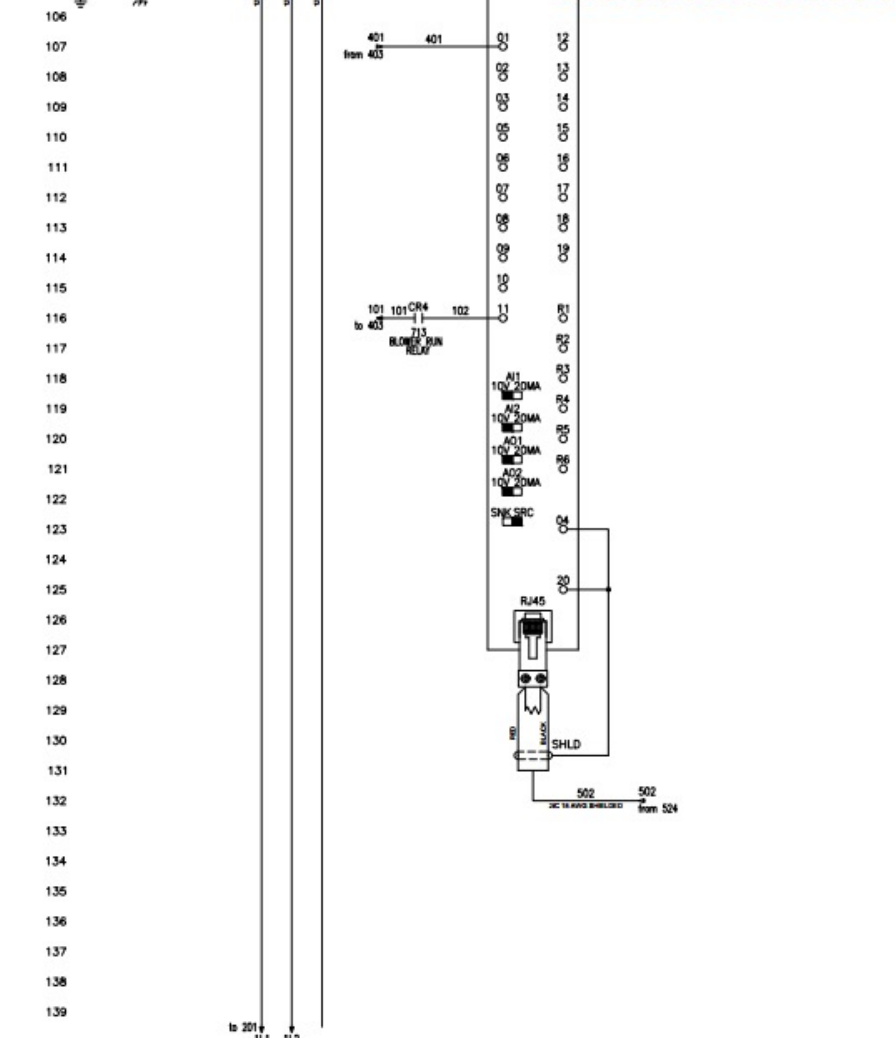
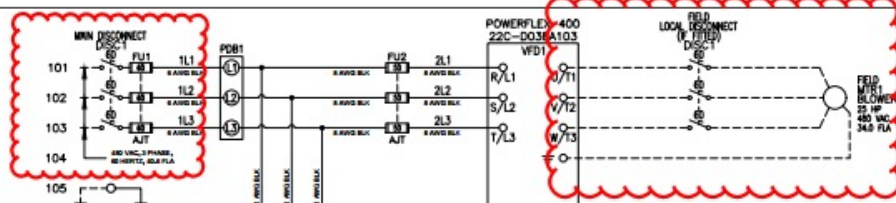
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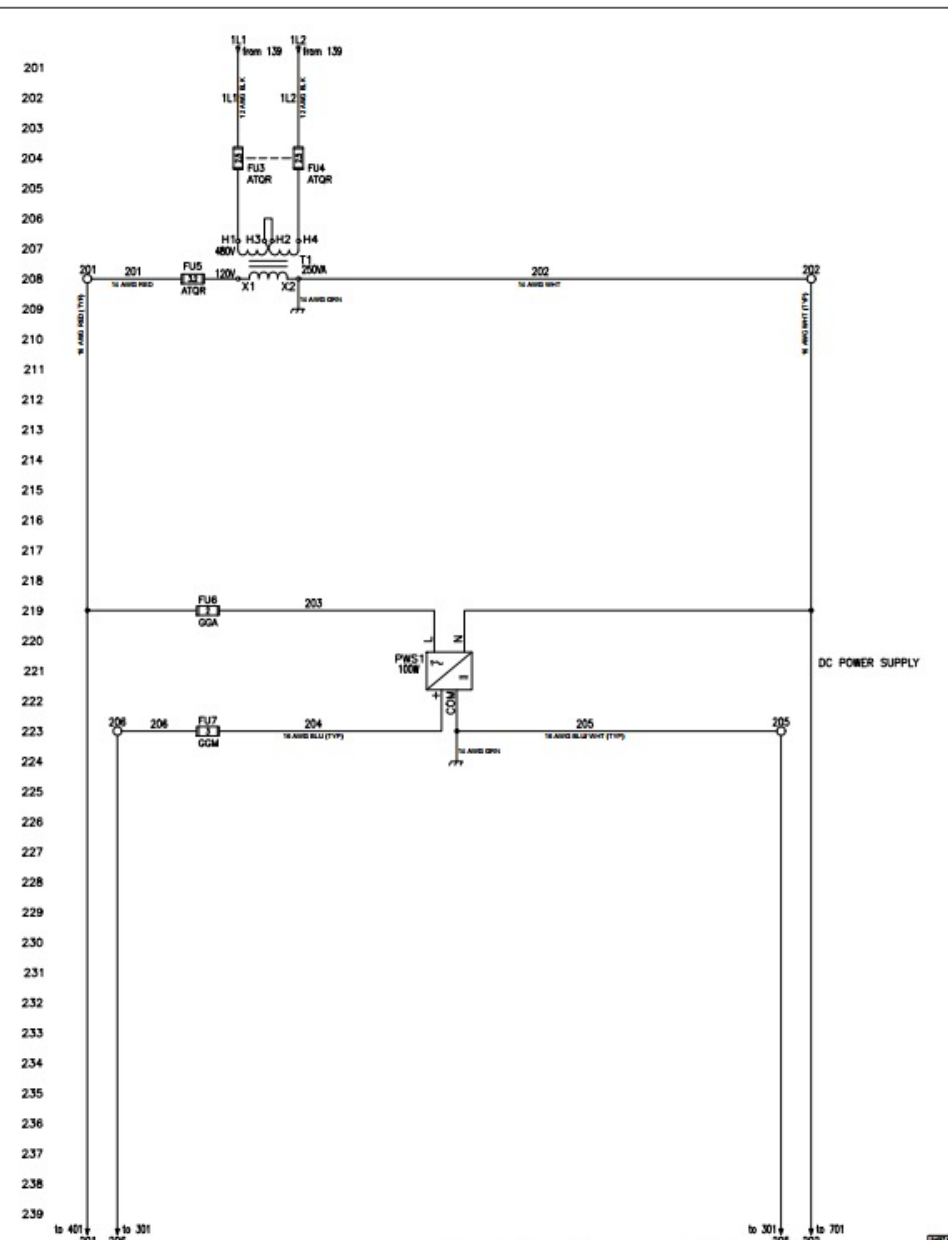
# 1. Prior to Arrival

## TOOLS REQUIRED:

- a. Manometer w/ Pitot tube
- b. Basic tool set including
  - Controls screwdriver 1/8" & 3/32"
  - Adjustable wrench
  - Drill with bits
  - Speed screws
- c. Standard Digital Multi Meter (DMM)
  - To measure AC and DC volts, continuity and an amp clamp
- d. Allen wrench set
- e. Tape measure
- f. Wire strippers
- g. Scrap 16ga wire about 10'



- NOTES:
1. WELDING MUST BE COPPER, RATED AT LEAST 70°C, AND BE CLASS 1 TYPE.
  2. REPLACE FUSES WITH MANUFACTURER'S PART NUMBER SHOWN.
  3. CONSULT WIRING MANUAL, LIST FOR EXCESS ENCLOSURE ENVIRONMENTAL RATINGS.
  4. INTERNALLY BAY WIRING MUST BE INSTALLED PER NEC ARTICLE 312.
  5. IF SYSTEM IS FIBER/OPTIC PROTECTED, USE FIBERSAFE FIBER/OPTIC TUBING.

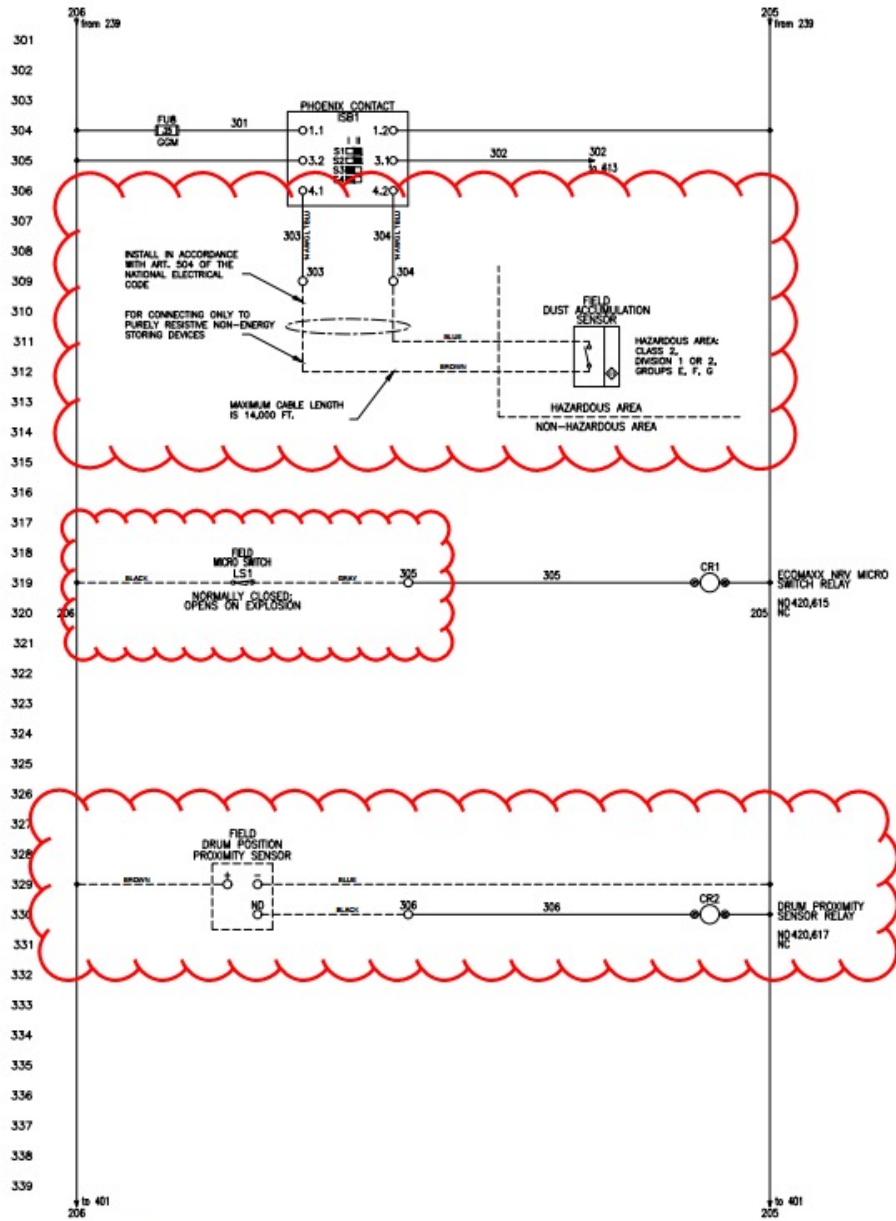


REVISION BY	DATE	CHECKED BY	DATE
JCH	06/03		

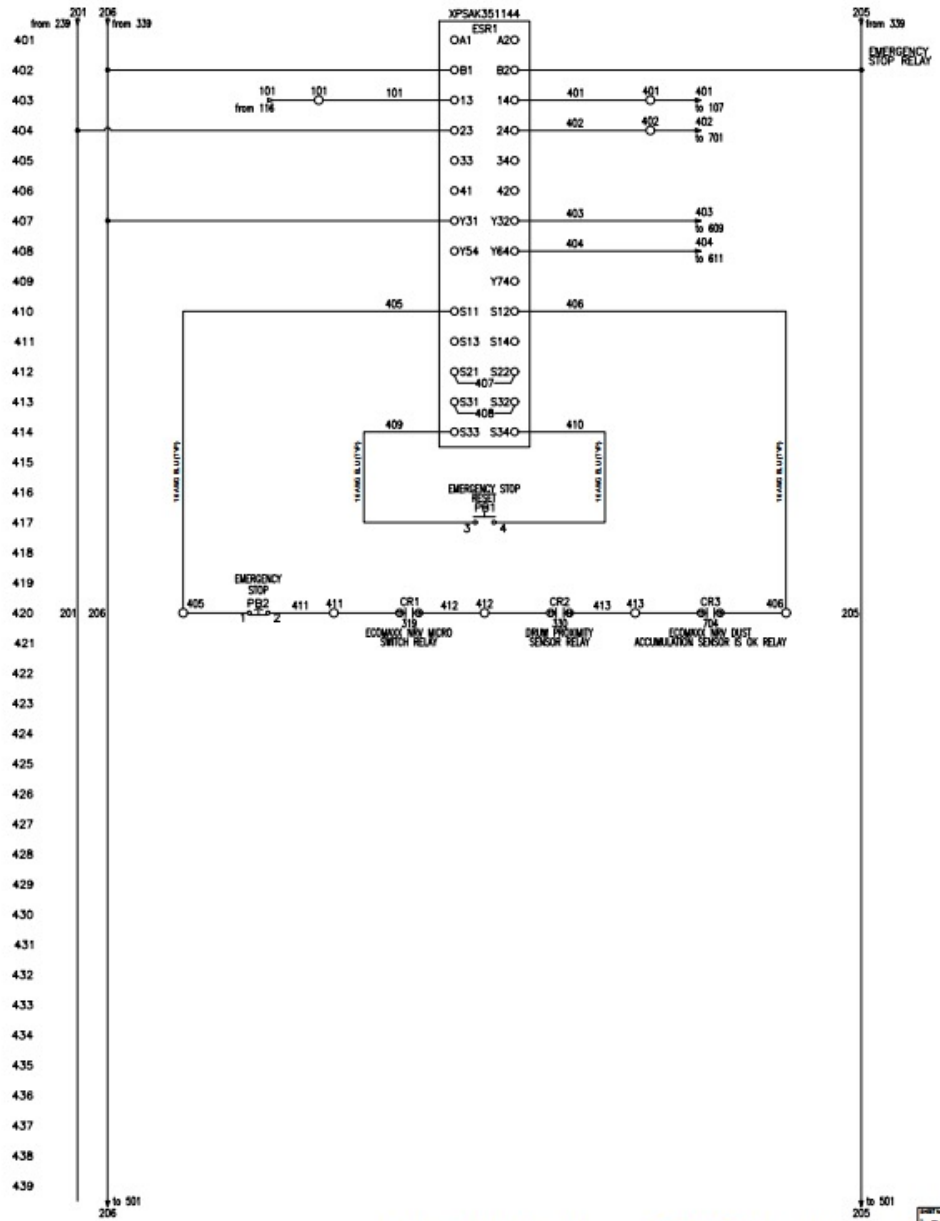


INDIATECH INDUSTRIAL  
 1075 NORTH RAILROAD RD.  
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PROJECT: 117054-5-02A  
 SHEET: 1 OF 5  
 DATE: 11/20/24

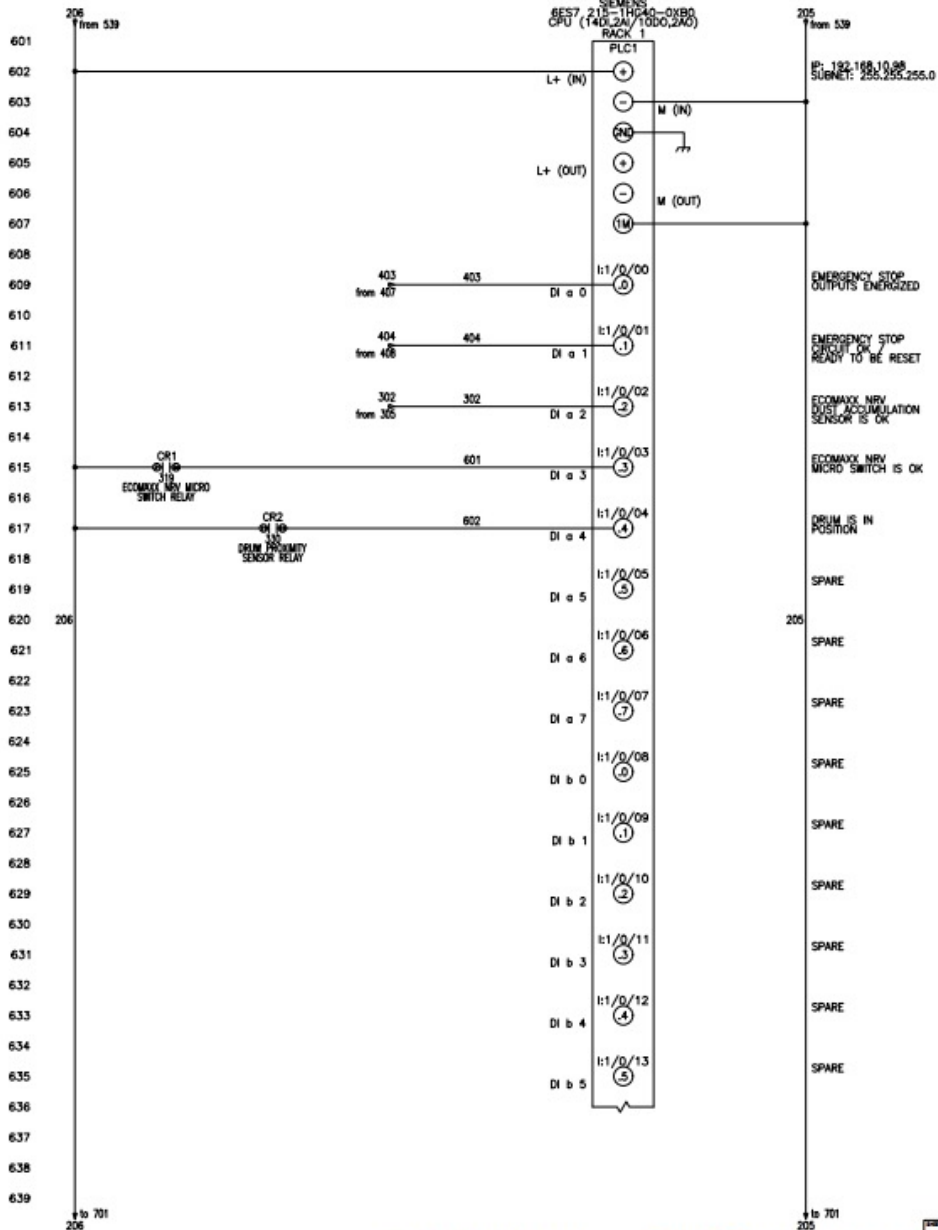
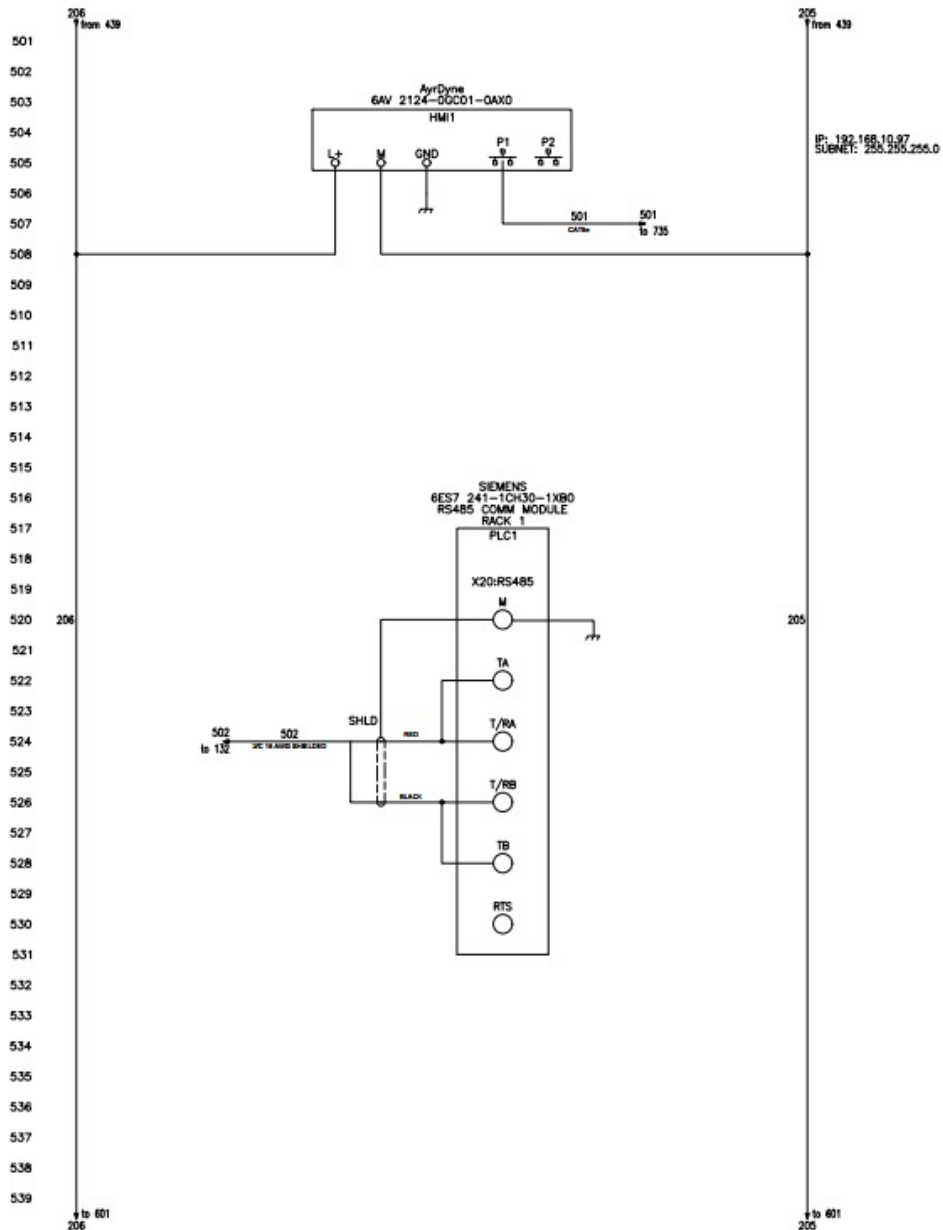


NOTES:  
 1. FIELD WIRING MUST BE COPPER, RATED AT LEAST 90°C, AND BE CLASS 1 TYPE.  
 2. REPLACE FUSES WITH MANUFACTURER'S PART NUMBER SHOWN.  
 3. CONDUIT FITTINGS SHALL MEET OR EXCEED ALL APPLICABLE ENVIRONMENTAL RATING.  
 4. ALL WIRING MUST BE INSTALLED PER NEC ARTICLE 300.  
 5. ALL SYSTEMS BY PASADENA PROTECTIVES.  
 6. PASADENA SAFETY PROGRAM: 17019



REVISION	DATE	BY	DESCRIPTION

117854-5	117854-5	117854-5-Q2A	D
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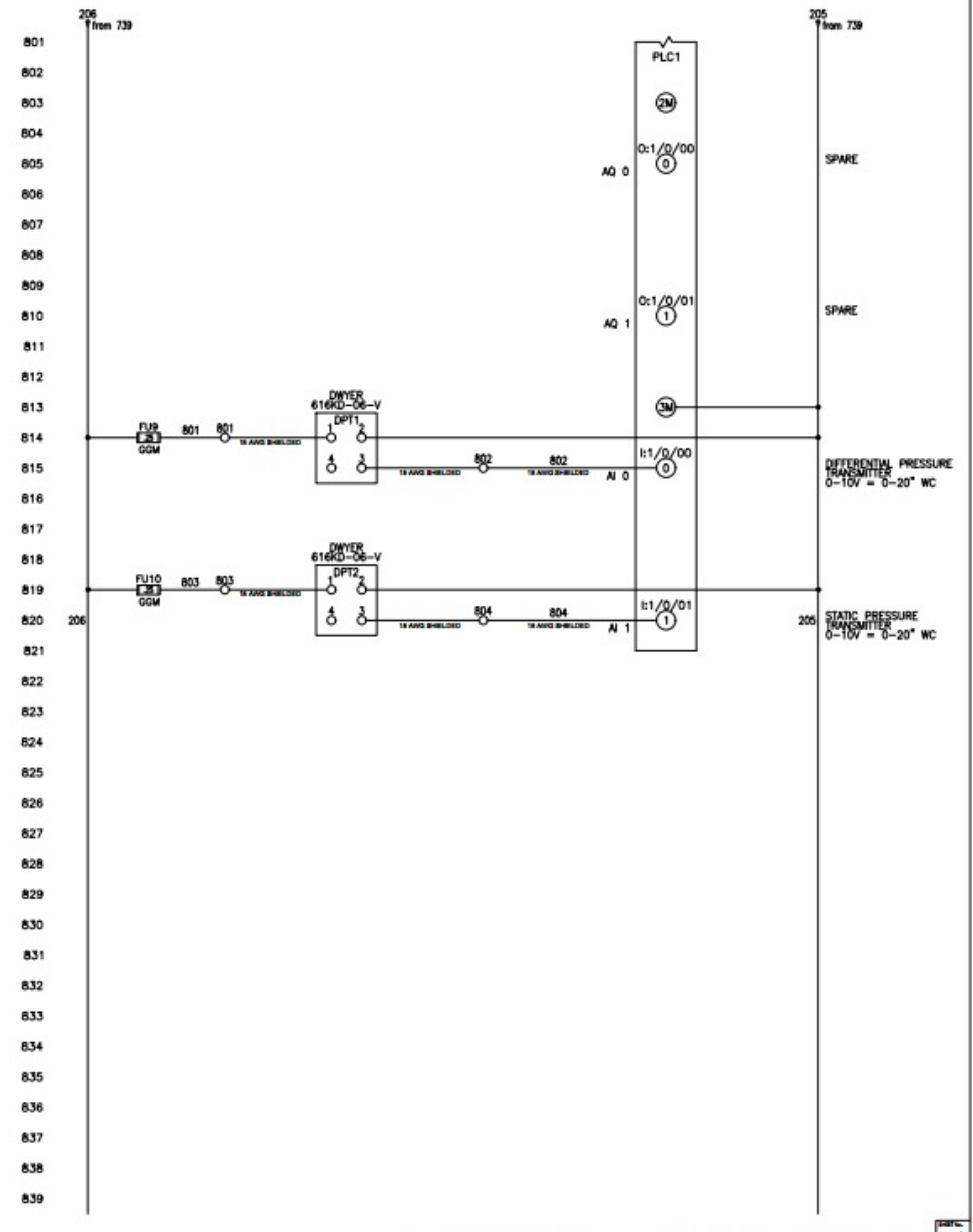
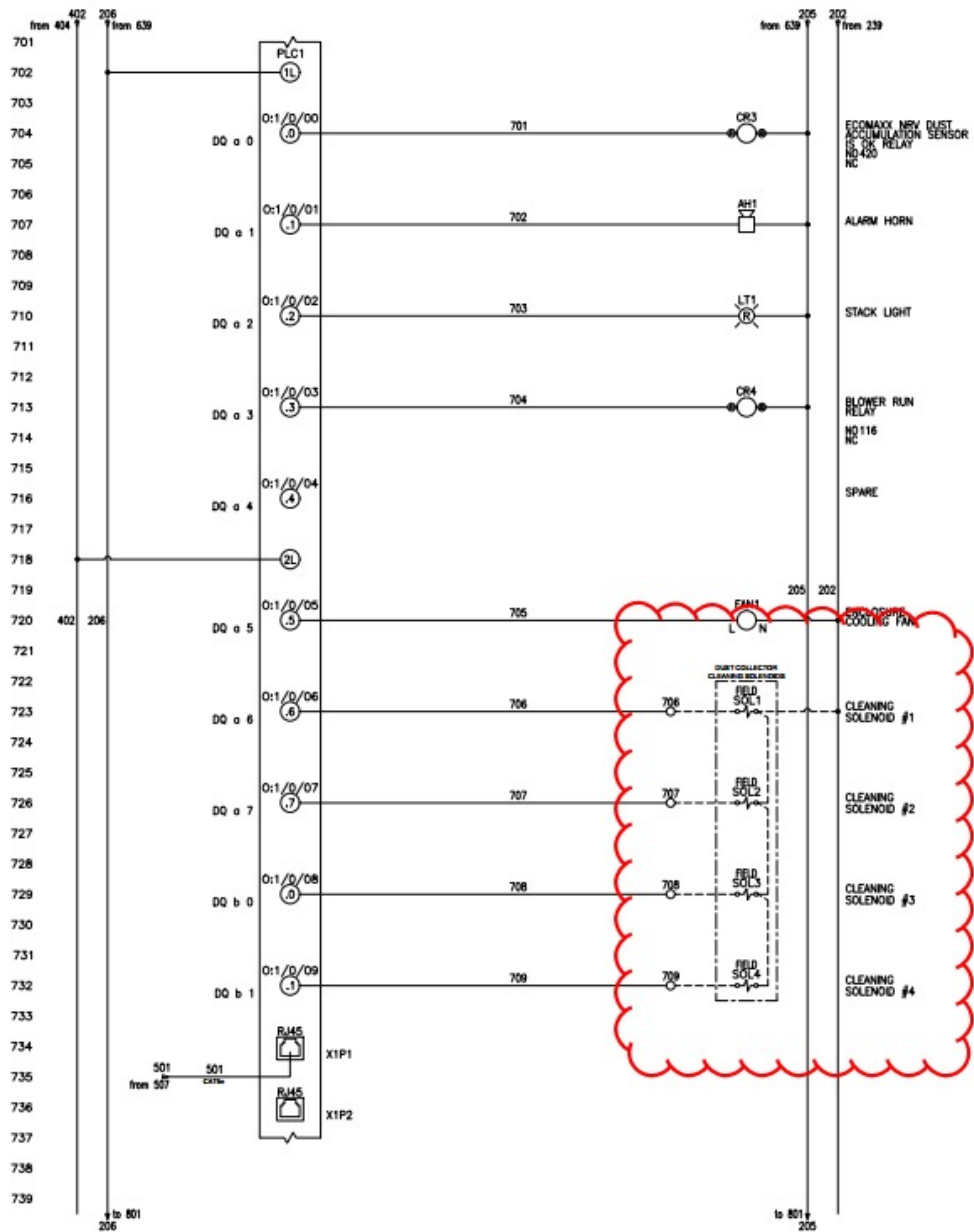


NOTES:  
 1. FIELD WIRING MUST BE COPPER, RATED AT LEAST 75°C, AND BE CLASS 1 TYPE.  
 2. REPLACE FUSES WITH MANUFACTURER'S PART NUMBER & RATING.  
 3. CONDUIT FITTINGS SHALL MEET OR EXCEED ENCL0009.  
 4. ENVIRONMENTAL PROTECTIVE.  
 5. ELECTRICALLY SENSITIVE WIRING MUST BE INSTALLED PER IEC ARTICLE 618.  
 6. ALL SYSTEMS ARE PROTECTED PROTECTED.  
 7. UNIFORMITY. MARK: PASSENGER: 1207

REVISION BY	DATE	CHECKED BY	DATE
JCH	5/20/09		



Author	JCH	DATE	5/20/09	Revision	001
ELECTRICAL CONTROL PANEL WIRING DIAGRAM					
DRUM OPERATOR DUST COLLECTOR					
Project	INTECH NORTH BRANCH, INC.				
Drawn	JCH				
Checked					
Scale					
Notes					
Sheet	117054-6	117054-5-02A		D A	

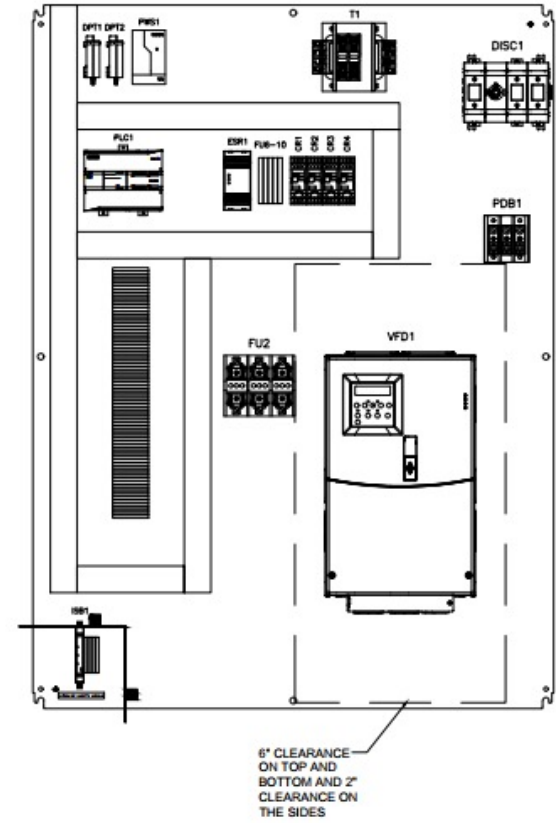
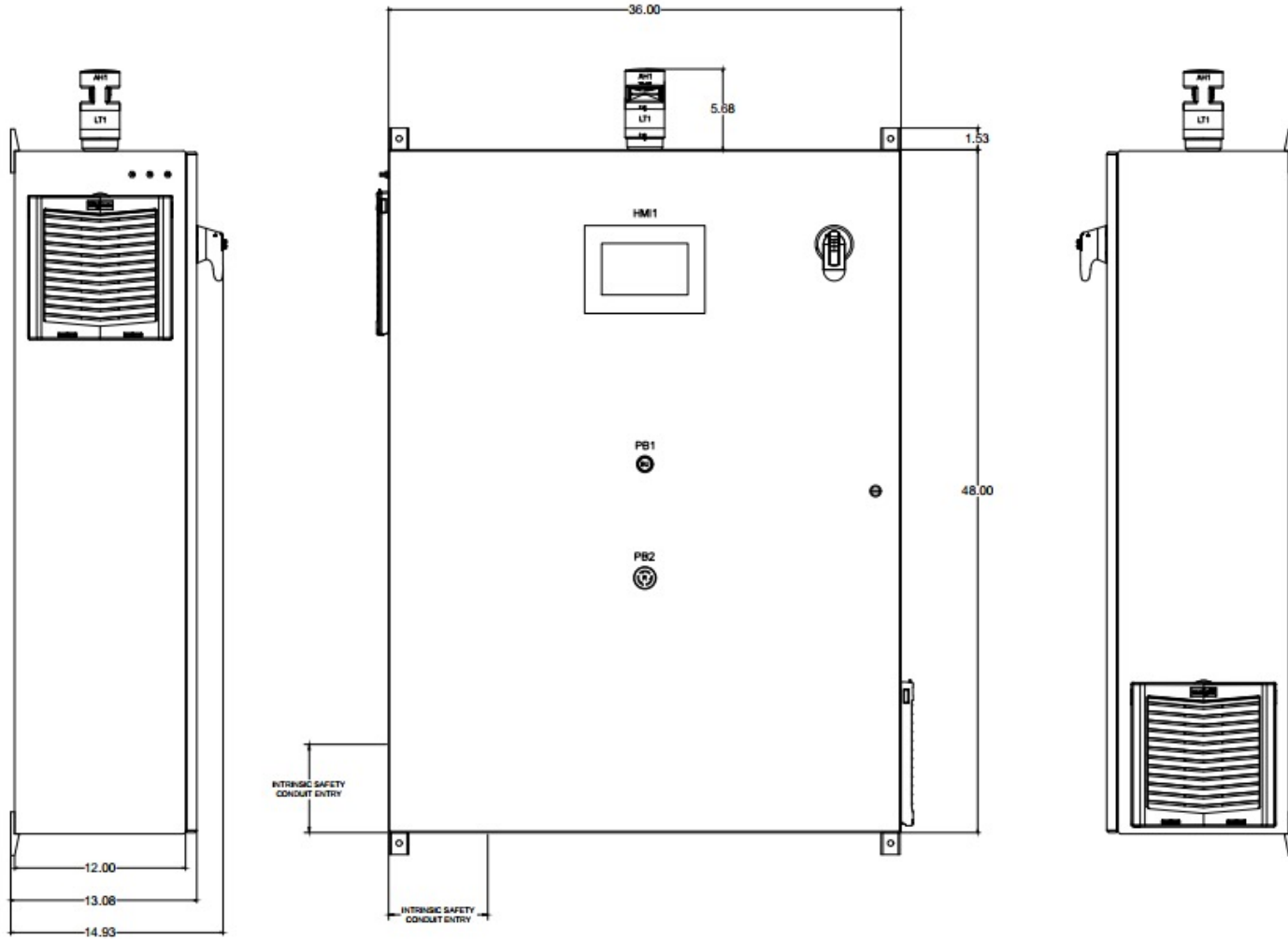


NOTES:  
 1. FIELD WIRING MUST BE COPPER, RATED AT LEAST 75°C, AND BE CLASS 1 TYPE.  
 2. REPLACE FUSES WITH MANUFACTURER'S PART NUMBER IN BOX.  
 3. CONNECT FITTINGS SHALL BEET OR EXCEED INCLUSIVE ENVIRONMENTAL RATING.  
 4. ELECTRICALLY SENSITIVE WIRING MUST BE INSTALLED PER IEC ARTICLE 504.  
 5. ALL SYSTEMS BE PROPERLY PROTECTED.  
 6. WIRING: MARKET PREFERRED 110V

REVISION BY	DATE	CHECKED BY	DATE
JCH	06/08		

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**DONALDSON COMPANY, INC.**  
 Model: 3817-31919  
 ELECTRICAL CONTROL PANEL WIRING DIAGRAM  
 DWYER DPT 24 DUST COLLECTOR  
 117854-5  
 117854-5-02A



NOTES:  
 1. ALL DIMENSIONS ARE APPROXIMATE AND MAY BE SUBJECT TO CHANGE.  
 2. ENCLOSURE HAS A NEMA TYPE 12 RATING. INDOOR INSTALLATION ONLY.

REVISION	DATE	CHECKED BY	DATE
001	02/28		

**INDUSTRIAL**  
 CONTROL TECH  
 1875 NORTH BRACKEN RD.  
 DENVER, CO 80202  
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117854-6  
 ELECTRICAL CONTROL PANEL LAYOUT DRAWING  
 2000, 02/28 2000 COLLECTOR  
 117854-6 117054-5-Q2A



## 2. Upon Arrival

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- a. Site Safety – Electrical and Mechanical
- b. Verify wiring
  - i. Check that all terminals with dashed lines have wires landed

# 3. After Power Up

- a. Identify faults
  - i. Address each fault one at a time
  - ii. End with "E-Stop" and "VFD" faults
- b. Enter Motor Data
  - i. VFD Settings Page
- c. Bump Motor(s)
  - i. Identify correct direction
  - ii. Verify actual direction
- d. Pulse Cleaning Solenoids
  - i. Use manual pulse screen

- e. Test Field Devices
  - i. Common things we see

# 3. After Power Up *[ Continued ]*

The screenshot displays the AYRDYNE control interface. At the top left, a green bar indicates the system is 'Running'. To the right, there is a 'Maint' icon, the time '10:09:30 AM', the date '04/15/2021', and the 'AYRDYNE' logo. The main content area is divided into three columns: 'Drive Status', 'Drive Settings', and 'Motor Nameplate Data'. Each column contains several data points with corresponding input fields. At the bottom, there are 'START' and 'STOP' buttons, followed by tabs for 'Airflow Settings', 'VFD Settings', and 'Maintenance'. The 'VFD Settings' tab is currently selected, showing sub-sections for 'System', 'Filters', 'Airflow', 'Discharge', and 'Safety'.

Section	Parameter	Value
Drive Status	DC Link Voltage [VDC]	600.00
	Output Frequency [Hz]	45.0
	Output Current [A]	18.5
	Active Fault	00000000
	Active Warning	00000000
Drive Settings	Acceleration Rate [s]	10.00
	Deceleration Rate [s]	10.00
	Parameter Number	000.000
	Parameter Value	0000000000
	Commanded Frequency [Hz]	1.00
Motor Nameplate Data	Motor Nominal Current [A]	27.0
	Motor Nominal Voltage [VAC]	460
	Motor Nominal Frequency [Hz]	60.0
	Motor Nominal Speed [RPM]	1800
	Motor Nominal Power [hp]	20.0

# 3. After Power Up *[ Continued 2 ]*

The screenshot displays the AYRDYNE control interface. At the top left, a green bar indicates the system is 'Running'. To the right, there is a 'Maint' icon, the time '10:09:30 AM', the date '01/01/2021', and the 'AYRDYNE' logo. The central part of the screen features a numeric keypad with 20 buttons arranged in a 5x4 grid. Buttons 1 and 2 are highlighted with a blue and orange border, respectively. Below the keypad is a navigation bar with several tabs: 'START' (grey), 'STOP' (red), 'Primary Info' (grey), 'Primary Settings' (grey), 'Primary Solenoids' (active, blue underline), and 'Secondary Info' (grey). Underneath these tabs are sub-sections: 'System' (under Primary Info), 'Filters' (under Primary Settings), 'Airflow' (under Primary Solenoids), 'Discharge' (under Primary Solenoids), and 'Safety' (under Secondary Info).



# 4. Airflow Settings

## a. Find suitable measurement location

- a. 8.5+ duct diameter downstream from turns
- b. 1.5+ duct diameter upstream from turns
- c. Reference Dwyer for complete procedure

<https://www.dwyer-inst.com/ApplicationGuides/?ID=16>

## b. Manually adjust VFD speed to meet requirements

- a. Use Manual Mode to control VFD

## c. Enter process set point

- a. Based on measured static pressure
- b. No longer minimum and maximum

## d. Set Initialization speed

- a. Based on running frequency

# 4. Airflow Settings *[ Continued ]*

The screenshot displays the AYRDYNE control interface. At the top, a green bar indicates the system is 'Running'. The status bar includes a 'Maint' icon, the time '10:09:30 AM', and the date '04/15/2021'. The main interface is divided into two primary sections: 'Airflow Control' and 'Controller Tuning'. The 'Airflow Control' section shows a current reading of 10.0 in WC and 48.6 Hz, with corresponding progress bars. It includes buttons for 'Zero', 'Auto', and 'Manual', and input fields for 'Process Setpoint [in WC]' (10.0) and 'Manual Blower Speed [Hz]' (48.6). The 'Controller Tuning' section features a graph with two curves (green and blue) and input fields for 'Controller Gain [Kc]' (1.00) and 'Reset Time [Ti]' (5.00). At the bottom, there are 'START' and 'STOP' buttons, and a navigation menu with tabs for 'Airflow Control', 'VFD Settings', and 'Maintenance'. The 'Airflow Control' tab is active, showing sub-tabs for 'System', 'Filters', 'Airflow', 'Discharge', and 'Safety'.

**Running** | Maint | 10:09:30 AM 04/15/2021 | AYRDYNE

### Airflow Control

10.0 in WC | 48.6 Hz

Press To Zero Transmitter | Zero | **Auto** | Manual

Process Setpoint [in WC] | 10.0 | Manual Blower Speed [Hz] | 48.6

### Controller Tuning

Controller Gain [Kc] | 1.00

Reset Time [Ti] | 5.00

START | STOP | Airflow Control | VFD Settings | Maintenance

System | Filters | Airflow | Discharge | Safety

# 5. Filter Settings

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- a. Usually will not need to be adjusted
- b. Downtime
- c. Downtime cycles

# 5. Filter Settings

**Running** | **Maint** | 10:09:30 AM 04/15/2021 | **AYRDYNE**

### Primary Filter Cleaning Settings

Mode [Auto]  Off  Auto  Hand  
*Off: No cleaning*  
*Auto: Clean based on Filter DP*  
*Hand: Cleans constantly*

Compressed Air Saver [On]  On  
*Air Saver: Increments setpoints when Auto Clean has been active for 8 consecutive hours*

Downtime Delay [0 s]   
*Set a delay between blower stop and downtime clean start*

Pulses per solenoid [5]   
*Set total pulses for each solenoid during downtime clean*

Downtime Blower Speed [0 Hz]   
*Set >0 to run blower*  
*Blower speed limited by VFD*

### Solenoid Pulse Settings

Pulse Duration [100 ms]

Pulse Spacing [10 s]

Secondary Pulse [On]  On  
*Secondary Pulse: Pulses another solenoid on a different manifold to reduce downtime cleaning time without affecting air recovery*

**START** **STOP** | Primary Info | **Primary Settings** | Primary Solenoids | Secondary Info

System | **Filters** | Airflow | Discharge | Safety



# 6. Service Reminders

The screenshot displays two main sections: 'Primary Filter DP [inWC]' and 'Primary Filter Life'. The DP section shows a current reading of 2.35, a color-coded progress bar (green to yellow), and a 'Zero' button. It also lists alarm setpoints: Alarm Setpoint [6.0 in WC], Auto Clean Start [2.4 in WC], and Auto Clean Stop [1.2 in WC]. A line graph shows the DP trend from 1:05:00 PM on 4/19/20 to 1:05:00 PM on 4/20/20. The Filter Life section shows a circular gauge at 70% and a 'Reset' button with the date 5/3/2021. At the bottom, there are tabs for 'Day', 'Week', '1 Month', '2 Months', and '3 Months', and a row of buttons for 'Off', 'Hours', and 'Date'.

Parameter	Value
Primary Filter DP [inWC]	2.35
Alarm Setpoint [in WC]	6.00
Auto Clean Start [in WC]	2.40
Auto Clean Stop [in WC]	1.20
Primary Filter Life (%)	70
Reset Date	5/3/2021

# 7. Frequently Asked Questions

- a. I cannot reset the E-stop
  - a. Look for remote e-stop
- b. How do I get more airflow?
- c. I have an Accumulation Fault
- d. Where do I land these wires?
- e. What wire and circuit breaker should I use?



QUESTIONS?