DOD Technologies

SKYView

Toxic Gas Monitoring System

SkyView™ Toxic Gas Monitoring (SCADA) System

Operating Manual

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DODtec.com

EC DECLARATION OF CONFORMITY

Manufacturer:

DOD Technologies, Inc.
675 Industrial Drive
BLDG A
Cary, IL 60013
USA

Product: Skyview 16 Compact Controller
Power: 240 Vac, Single Phase, 50Hz + PE
Serial #: 47009
Description: Gas Detection Controller

We, as the manufacturer, hereby declare that the Products described above are in conformity with the applicable requirements in accordance with the following European Directive(s):

Low Voltage Directive 2014/35/EU
EMC Directive 2014/30/EU
RoHS Directive 2011/65/EU (2015/863)

The object of the declarations described above is in conformity with the relevant Union harmonization legislation. This declaration of conformity is issued under the sole responsibility of the manufacturer for the aforementioned product(s).

The following Harmonized Standard(s) and normative references were complied with -

EN ISO 12100:2010 – General principles for design - Risk assessment and risk reduction
EN IEC 55011: 2016+A2:2021 – EMC - Radiated and Conducted emissions
EN IEC 60204-1:2018 - Electrical equipment of machines Part 1: General requirements
EN IEC 61000-6-2:2019 – EMC - Electrostatic discharge immunity Testing
EN IEC 61000-6-3:2021 – EMC - Radiated Radio Frequency electromagnetic field immunity testing
EN IEC 61000-6-4:2019 – EMC - Electrical fast transient test
EN IEC 63000:2018 - Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

European Authorized Representative on behalf of the Manufacturer is:

Hold Tech Files: Dun Iseal, Newtown, Gaulsmills, Ferrybank, Waterford, X91F638, Republic of Ireland.

Signed for and on behalf of:

DOD Technologies Inc.
675 Industrial Drive
BLDG A
Cary, IL 60013
USA

Date: 5/12/2025

Name of signatory: Danny O'Donnell

Function/Position: Chief Technical Officer and Co-CEO

Signature: Danny O'Donnell

ORIGINAL DECLARATION OF CONFORMITY

A copy of this document can be obtained by clicking the image above or by visiting the following link:
https://dodtec.com/amfile/file/download/file/393/product/1079/

EC DECLARATION OF CONFORMITY

Manufacturer:

DOD Technologies, Inc.
675 Industrial Drive
BLDG A
Cary, IL 60013
USA

Product: Skyview 80 Controller
Power: 240 Vac, Single Phase, 50Hz + PE
Serial #: 47009
Description: Gas Detection Controller

We, as the manufacturer, hereby declare that the Products described above are in conformity with the applicable requirements in accordance with the following European Directive(s):

Low Voltage Directive 2014/35/EU
EMC Directive 2014/30/EU
RoHS Directive 2011/65/EU (2015/863)

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Table of Contents

Chapter 1 – Overview

1.1 Introduction

SkyView™ from DOD Technologies is a simple user-configurable SCADA system customized for the gas detection industry. The system is available in various hardware configurations and capable of communicating with analog, serial, or network-attached gas detection devices. In addition, the system can support a large array of digital inputs and programmable relay outputs with special configurations included for a variety of Stack Light configurations and operations.

WARNING : If the system is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

1.2 Basic Navigation

All SkyView systems are comprised of SkyView software and one or more hardware cabinets, remote I/O (RIO), stack lights, emergency stops, and various other hardware options.

The SkyView system can be accessed either directly on the touchscreen interface, using the remote Web Server, or via the TightVNC client (if enabled on the system). Regardless of how the system is being controlled the basic features are accessed through the menu accessible by touching/clicking the button on the top left.

NOTE: VNC server (TightVNC) is installed on the system but must be enabled and configured outside of the SkyView system for use. See Appendix A.

Chapter 2 – Features & Layout

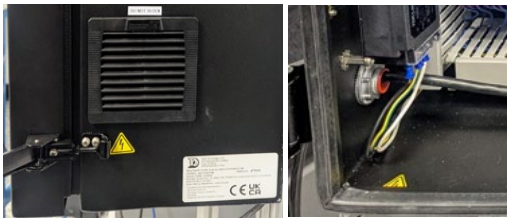
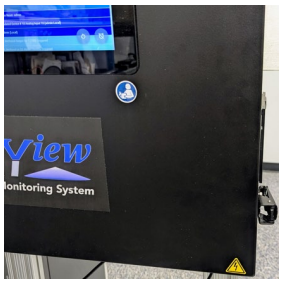
2.1 Features

2.1.1 Warning Labels, Descriptions, & Danger Zones

The table below references the warning labels (with descriptions) that may be encountered while operating and servicing the SkyView.

	**WARNING:** Electric Shock is possible, please use caution when accessing this zone.
	**WARNING:** Terminals interior to the enclosure contain hazardous live (voltage, current, or energy) Electric shock is possible, please use caution when accessing this zone.
	**WARNING:** Protective Earth Ground. Terminal intended for connection to the external conductor for protection against electric shock in case of fault.
	**WARNING:** Electrical Ground (Protective Conductor Terminals) interior to the enclosure contain electrical grounding, please use caution when accessing this zone.
	**ATTENTION:** Please refer to the operation manual for instructions for this system. If the manual is not in your desired language, request an updated manual before using the equipment.
	**ATTENTION:** Please refer to the operation manual for “Lifting & Handling" instructions under installation instructions.

Please be aware of the following danger zones on the SkyView system. Each zone contains warning labels for operator safety.

A		This danger zone is in the service access point of the unit. This danger zone refers to the inside of the unit. Users should be cautious of the potential electric shock.
B		This danger zone is the power in point of the unit. This danger zone refers to being cautious of the potential electric shock.
C		This danger zone is in the service access point of the unit. This danger zone refers to the inside of the unit. Users should be cautious of the potential electric shock.
D		This area warns of electrical shock and PE areas within the service door of the machine.
E		Do not block fan and fan filter inlet. Maintain spacing of 6” on both sides of enclosure.
F		This image is an example of the Nameplate on the unit's rear. The nameplate contains electrical criteria, approvals, and the EUAR.

2.1.2 Foreseeable Misuse

Do not use this equipment outdoors as it is not rated for outdoor use.
Do not use this equipment in a potentially explosive atmosphere as it is not designed, or rated, for this use.
Do not climb, step, sit or stand on the equipment, it is not designed for this purpose.
Do not operate the equipment unless trained to do so.
Follow proper operation as defined by this manual. There is a possibility of injury if the operator fails to follow proper installation and use of equipment.
Ensure that LOTO (Lock Out Tag Out) procedures are implemented before conducting any maintenance, repair, lubrication, or cleaning of the equipment.

2.1.3 Residual Risk

All options added should only be used per their intended design. Any modifications made or procedures taken outside the intended use may void the warranty and/or produce unexpected results. DOD product is considered process control equipment. Contact DOD Technologies for additional requests regarding SIL (Safety Integrity Level) rating.

2.1.4 Lifting and Handling Instructions

It is recommended that a 2-man lift be utilized to un-crate SkyView and locate it into its operational position.

2.1.5 Touch Screen Display

The SkyView features a 15” LCD color touchscreen with menu-driven options for a simplified operator interface. Access to menus and data entry can be performed by touching the appropriate areas on the screen – see “Basic Operation”.

2.1.6 Output Wiring Knockouts

There are knockouts available for output wiring located on side of the enclosure.

2.1.7 Enclosure Main Door Keyed Access

The door uses a key lock to restrict internal access. When service access is required internally, ensure personnel follow proper LOTO (Lock Out Tag Out) procedures.

2.1.8 A/C Power In

A/C power cable is connected to the side panel with a standard cable. A circuit breaker is located on the DIN rail in the lower area of the enclosure.
Ensure the power in cabling is terminated to the indicated locations as detailed in the interconnect diagrams (see appendices for diagrams). This includes the power source and protective earthing. A circuit breaker is internal to the enclosure and a wiring knockout cover is provided. Position the system to allow access to the display panel and enough room to open the door for servicing and PM.

IMPORTANT: The main door should remain closed, latched, and locked except when servicing the system. Under normal operation the door should remain closed while in Analysis.

2.1.9 Noise Level

The maximum corrected noise level recorded for this equipment was less than 36db(A).

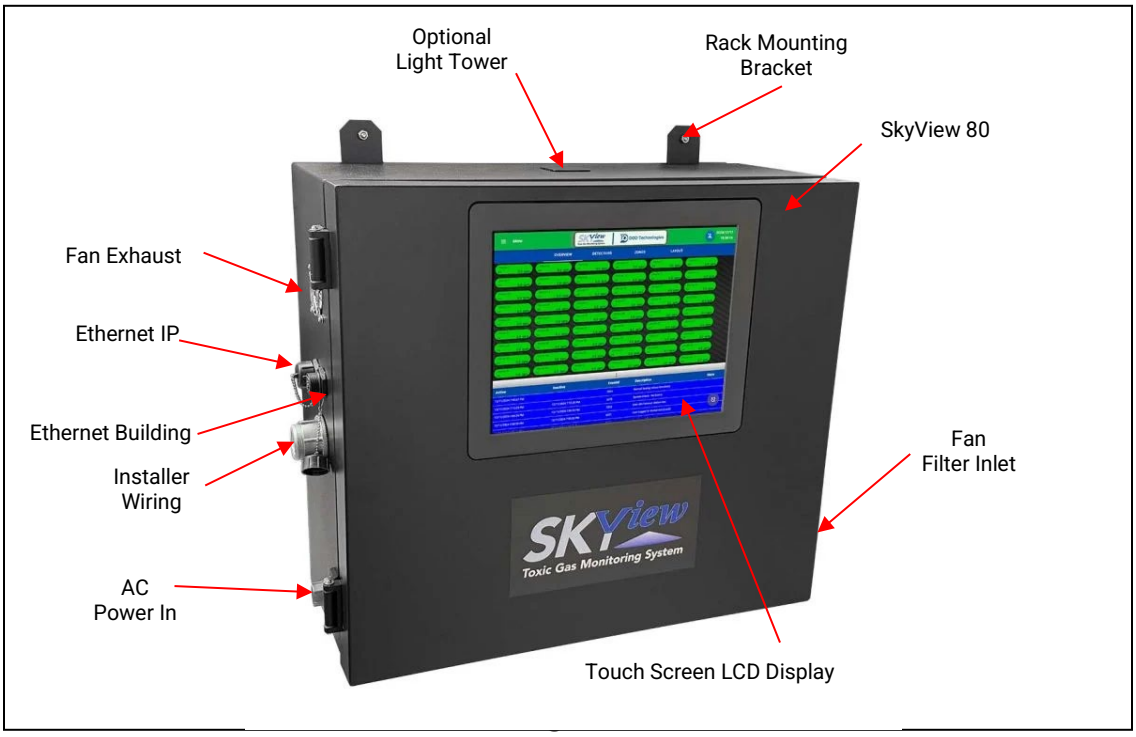
2.1.10 Cleaning Enclosure Exterior

Touchscreen display to be cleaned with non-abrasive micro-fiber cloth. Exterior enclosure metal surface to be cleaned with a general-purpose cleaning solution (enclosure surface is powder coated paint).

2.1.11 Installation And Setup Procedures

During installation and setup of Skyview, ensure installer/service personnel follow interconnect diagrams and software setup options to verify the intended operation of the configuration. Contact DOD Technologies for additional requests regarding installation and configuration of options.

2.2 External Layout



2.3 Internal Layout

2.3.1 Lock Out Tag Out (LOTO) Process

Internal access to the SkyView for installation and service is performed by unlocking the secured side latches. Figure 2.3 shows the internal layout of the SkyView with the front door open.

> **IMPORTANT:** The SkyView front door should remain closed and secured except when servicing critical components. Do not open the door while in Analysis Mode.

The front door should only be opened by trained service personnel. See Chapter 7 to contact us regarding service and support.

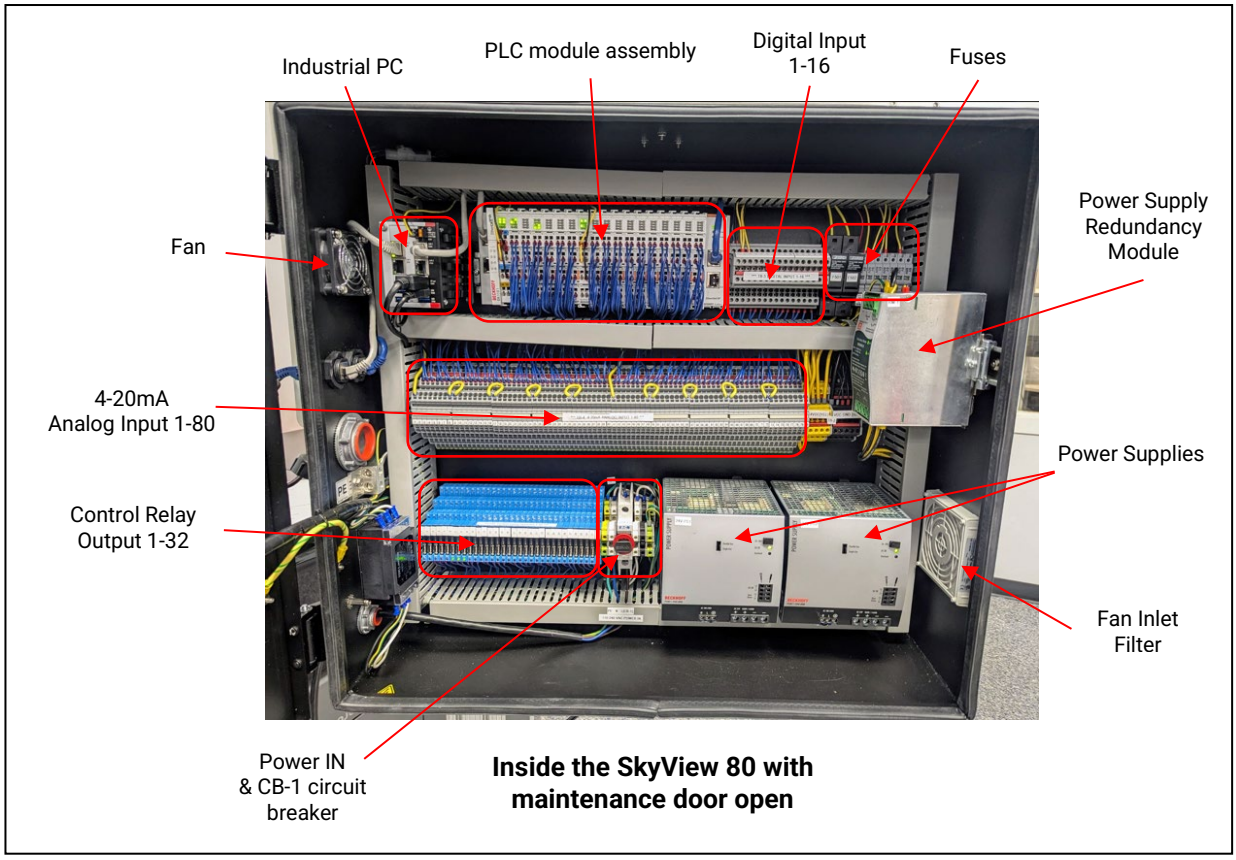
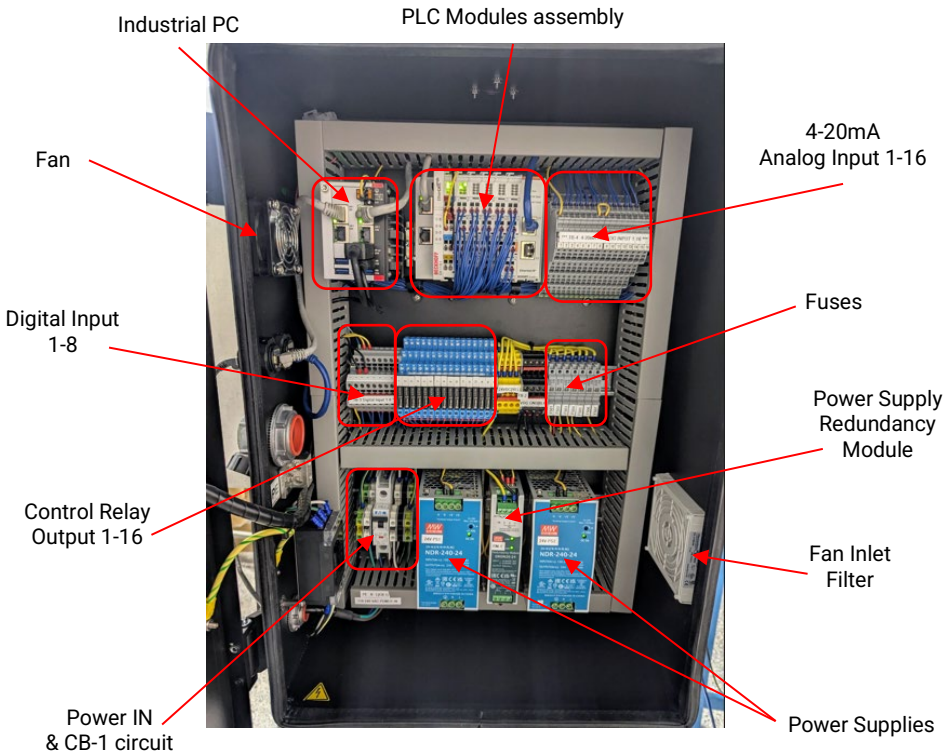


Figure 2.3



Inside the SkyView 16 with maintenance door open

Figure 2.4

Chapter 3 – SkyView Hardware Configurations

3.1 SkyView 16

The base SkyView 16 Controller system comes standard with (16) Analog Inputs, (16) Programmable Relays, and (5) Digital Inputs. The optional communication protocols (MODBUS/TCP, Ethernet/IP, etc.) allow the system to transmit digital information from the sensors to other network devices.

3.2 SkyView 80

The SkyView 80 Controller provides flexibility (or expansion) from 16 to up to 80 analog inputs and up to 24 Digital Input Signals along with up to 40 Programmable Relays. The optional communication protocols (MODBUS/TCP, Ethernet/IP, etc.) allow the system to pass digital information about the sensors along to other network devices.

3.3 Custom SkyView Configurations

In addition to standard SkyView Controller configurations, custom cabinet designs are available to fit needs beyond the 80-channel option.

Chapter 4 – System Setup & Configuration

4.1 User Accounts And Security

Configuration->Users

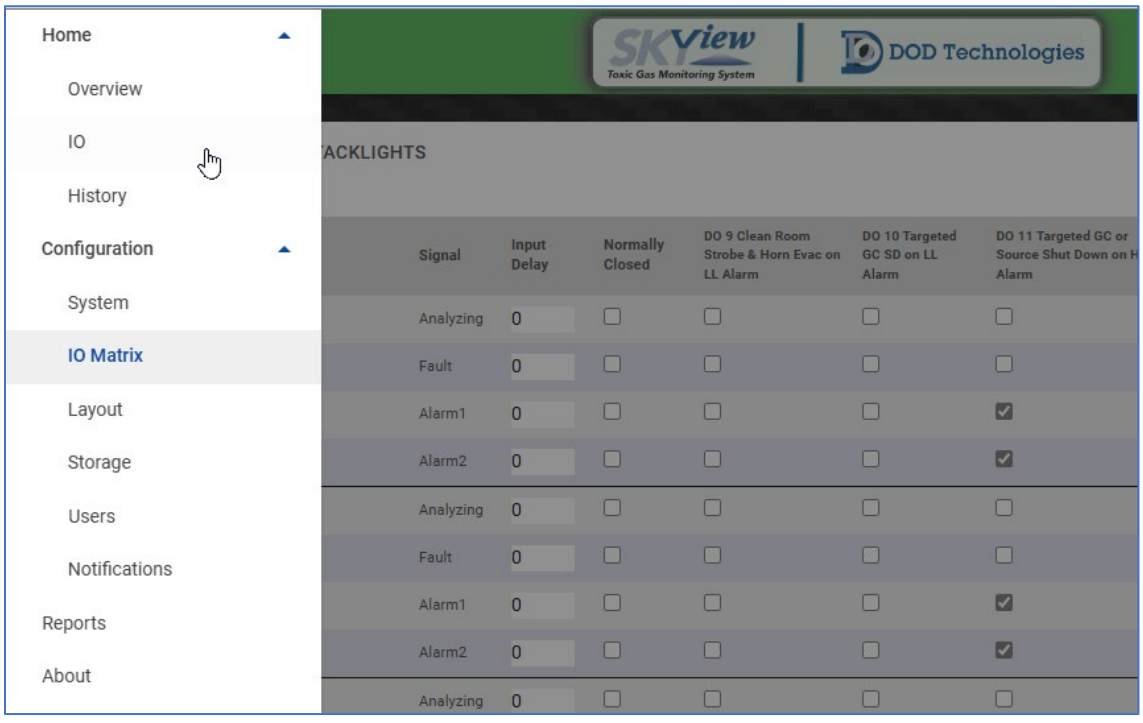
The system is accessed and configured through various security levels which are assigned to individual User logins. System Administrators can add / edit /delete users as needed and assign each user to the proper security level. In the base configuration the system allows access to viewing points, trending, and basic fault / event history without any required user login. If needed the system can be configured to require login for anyone to view the base pages. All user login and logout events are logged in the history and each security level has a predefined timeout if the user should forget to logout.

4.1.A Security Levels

There are three standard security levels available on the SkyView system.

- Viewer: By default, Viewer access is identical to having no security access (same as not logged in). However, the system can be configured so it is completely inaccessible without signing in (see Configuration) in which case Viewer will have only access as shown in the Menu Access table below.
- Operator: Operator Access allows viewing of the I/O configuration, testing Digital Outputs, Reset/Silence Faults/Alarms, and simulating concentrations/mA values on a device as shown in the Menu Access table below.
- Admin: Anyone with Admin access can access and edit all features of the system.

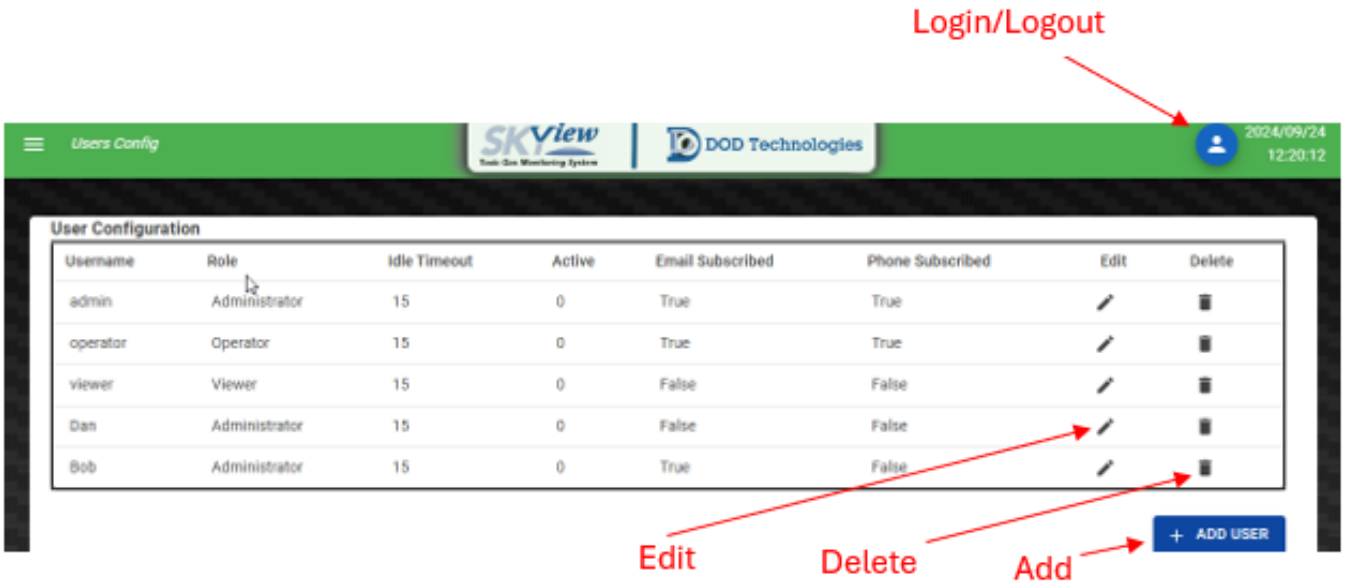
Users can log in directly via the touchscreen on the device, via VNC or using the included Web Server. Note that some features are restricted to local (touchscreen or VNC) users. The full menu list below is available when logged in as Administrator.



		Security ->	Admin	Operator	Viewer	No Login
Overview						
	Overview		Full Access			
		Point Detail	Full Access	Full Access	View Only	View Only
	IO		Full Access	Full Access	View Only	View Only
		Test	Full Access	Full Access	View Only	View Only
	History		Full Access	Full Access	View Only	View Only
Configuration						
	System		Full Access	None	None	None
		Devices	Full Access	None	None	None
		Zones	Full Access	None	None	None
		IO / Full Access / None / None		None		
		System	Full Access	None	None	None
		Network	Full Access	None	None	None
	IO Matrix		Full Access	None	None	None
	Layout		Full Access	None	None	None
	Storage		Full Access	None	None	None
	Users		Full Access	None	None	None
	Notifications		Full Access	None	None	None
Reports			Full Access	Full Access	None	None
About			Full Access	Full Access	Full Access	Full Access

4.1.B Modifying Users/User Settings

User settings can be modified when logged in as an Administrator by selecting the “Users” menu option. Once in the User Config page, the Administrator can add/edit/delete the user list. Each User is identified by a unique Username with an adjustable timeout if they should forget to log out.



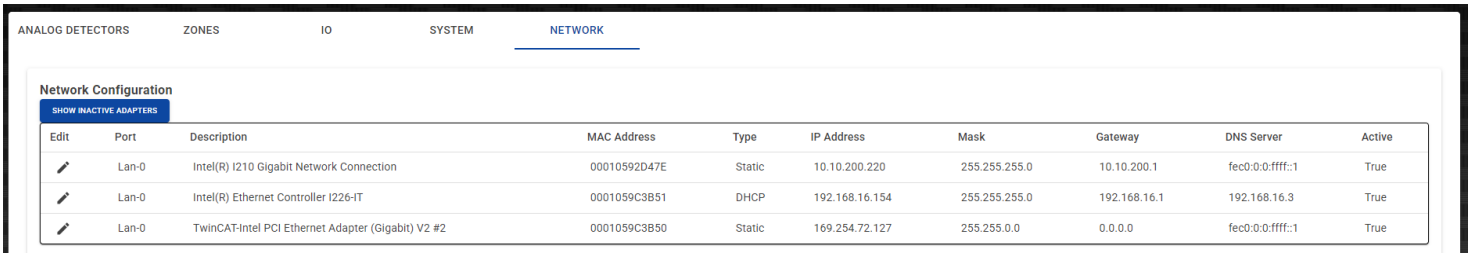
You can also configure email addresses and phone numbers for each user so that they can be notified of Alarms and Events along with receiving specific Reports available in the system. ***Message and data rates may apply***. See the section on Notifications below to configure users to receive messages.

4.2 Network Setup

4.2.A Configuring Network Ports

Configuration->System->Network(Tab)

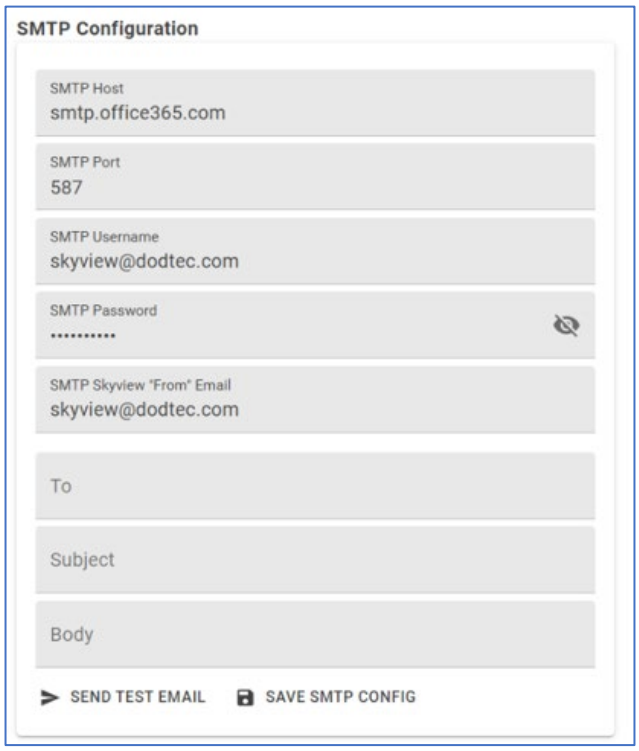
The IP configuration of the SkyView system can be done from the System Configuration page by an Administrator. The Administrator can select any of the three free ports and edit the IP address and related network settings. Note that one of the ports is reserved for internal I/O and should never be modified.



4.2.B SMTP

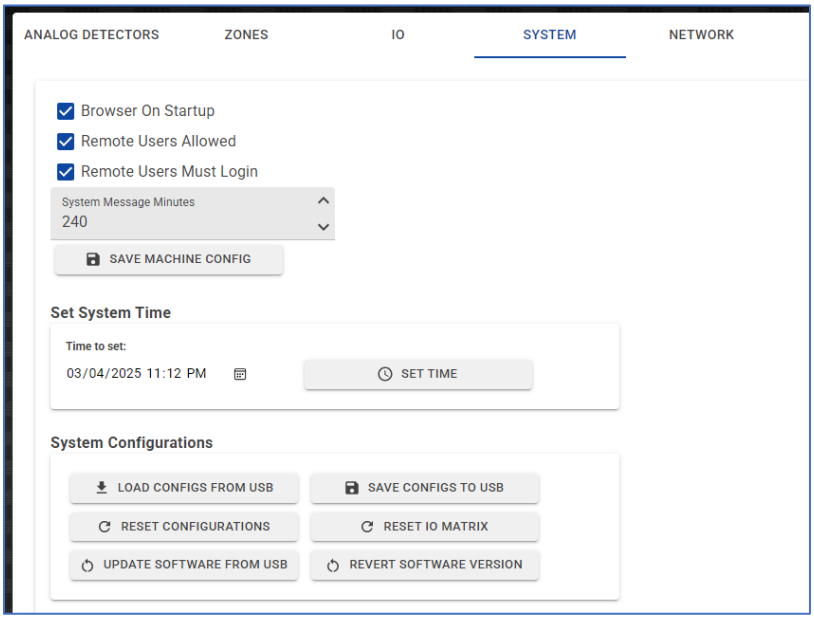
Configuration->System->Network(Tab)

SkyView uses SMTP settings to send email and text notifications along with system reports to configured users. After the SMTP settings are entered on the screen below, enter a valid email address, subject, and email message to test that the settings are working correctly.



4.3 Machine Configuration and Optional Settings

Configuration->Notifications

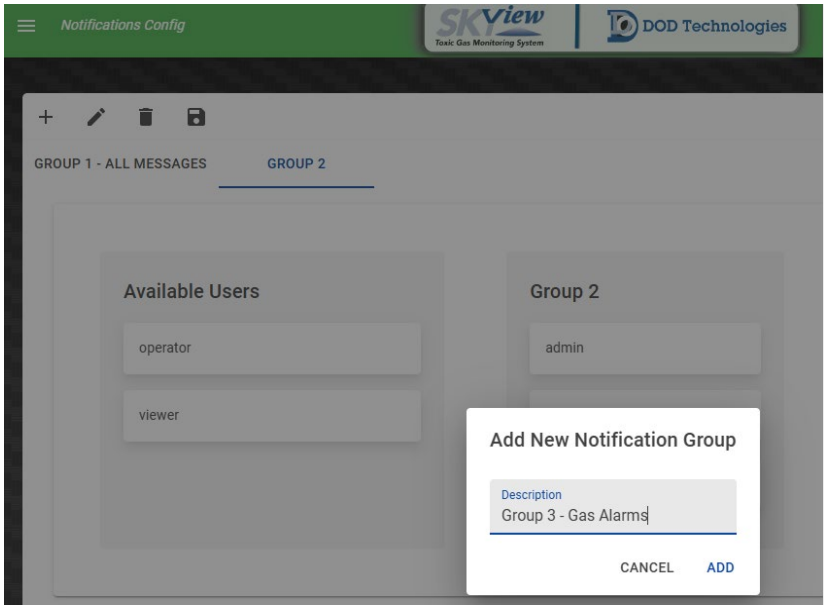


- Browse on Startup
- Remote Users Allowed
- Remote Users Must Login

4.4 Notifications

Configuration->Notifications

Notifications for faults and alarms on the SkyView system are done via Groups of users which are configured on the screen below. Users must first be configured with a valid phone number and cellular provider. The SkyView system then uses email relaying to send messages to the users assigned to each selected group. Administrators can add/edit/delete as many groups as needed. Each group can contain any number of users who will receive the notifications.



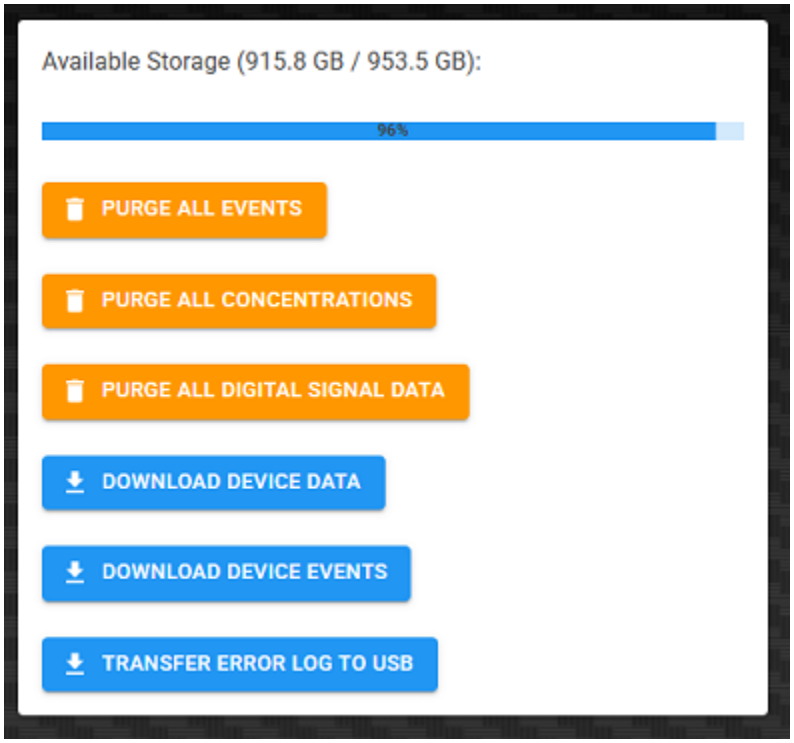
4.5 Software Options

Remote Users Allowed
Light Blink Rate
Require User Login
RAID Installed
Status Message Minutes

4.6 Data Storage

Configuration->Storage

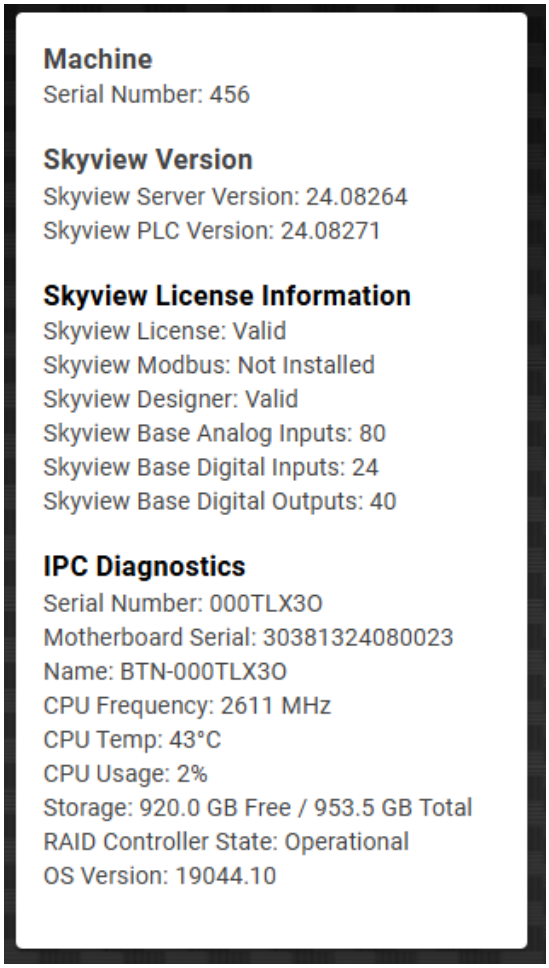
The Data Storage page holds information about the available storage on the drive as well as different functions regarding data stored by the system. A user with admin level privileges can purge logged events, purge logged device concentration data and download that device concentration data to an external USB.



4.7 About Screen Diagnostic & System Information

->About

System information and Diagnostics can be found on the about page. The About page has valuable information such as the software versions running on the PLC, the Licenses installed, and information about the systems' computer.

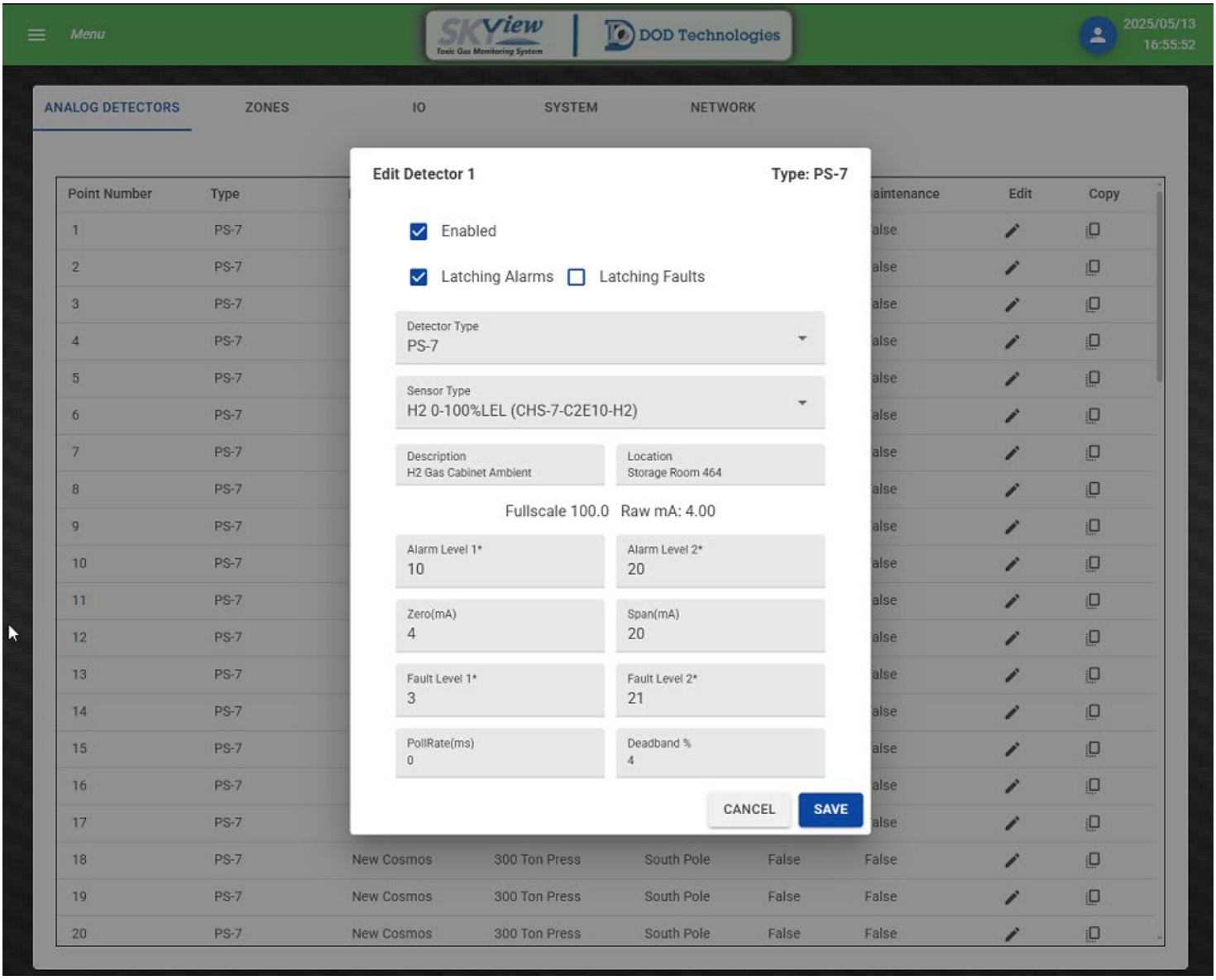


Chapter 5 – Configuring Detection Devices

Gas detection devices may be added and configured as analog input devices, network communication devices, and serial communication devices.

5.1 Analog Devices

SkyView is preconfigured to support a wide variety of E/C, Combustible and Oxygen sensors using an Analog Input connection. Sensors from New Cosmos and Gastron are pre-configured and selectable while other analog input devices can be easily added and configured.



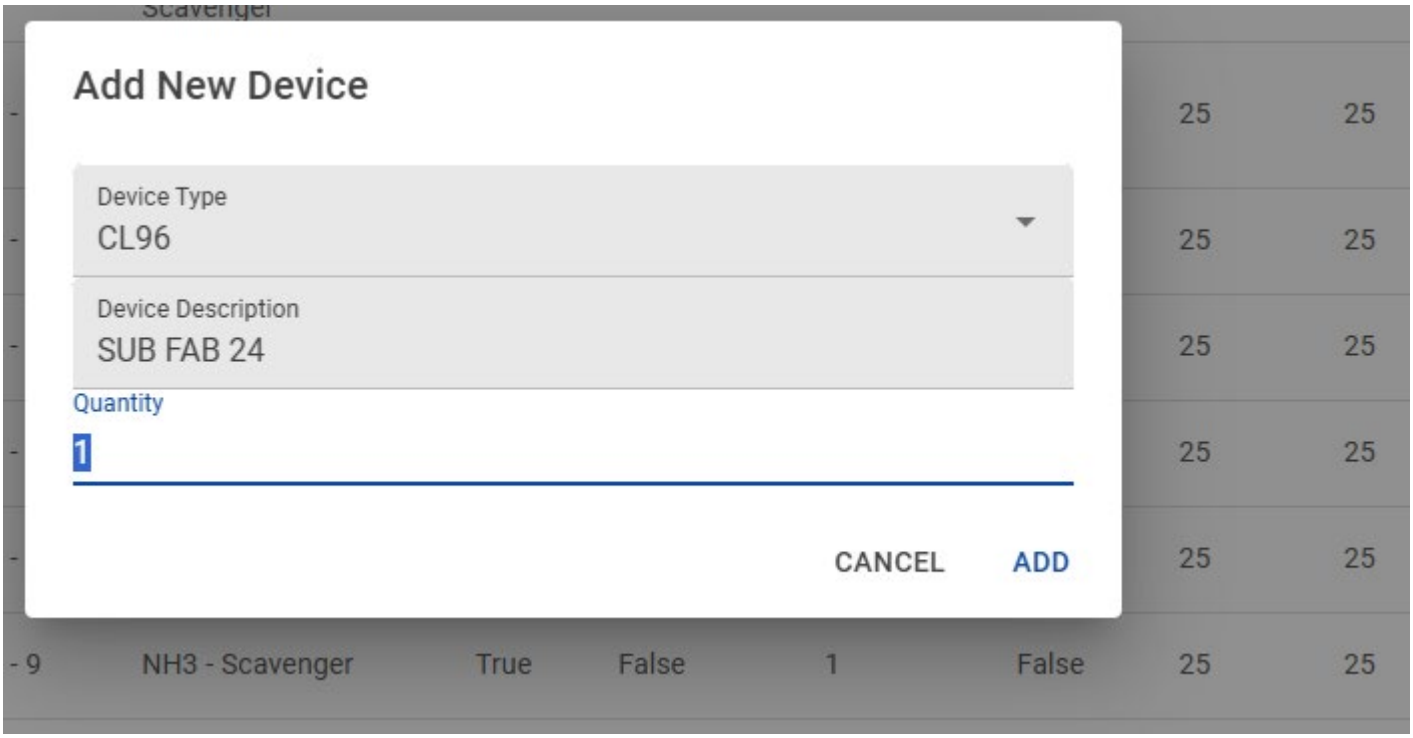
Save button must be pressed prior to leaving this window pop up for changes to take.

5.2 Network Communication Devices (MODBUS/TCP, Ethernet/IP,etc.)

SkyView supports a variety of industrial protocols allowing any supported device to be connected via standard network cables. All DOD Technologies fixed gas detection devices can be easily connected using MODBUS/TCP, Ethernet/IP, or other protocols. Contact DOD Technologies regarding configuring other manufacturers' equipment via Industrial Protocols.

5.2.A MODBUS/TCP

Adding Modbus devices that are designed and sold by DOD Technologies to the system configuration can be done by selecting the corresponding device from a dropdown menu, and then editing that device once it has been added to have the correct IP address.



5.3 Serial Devices

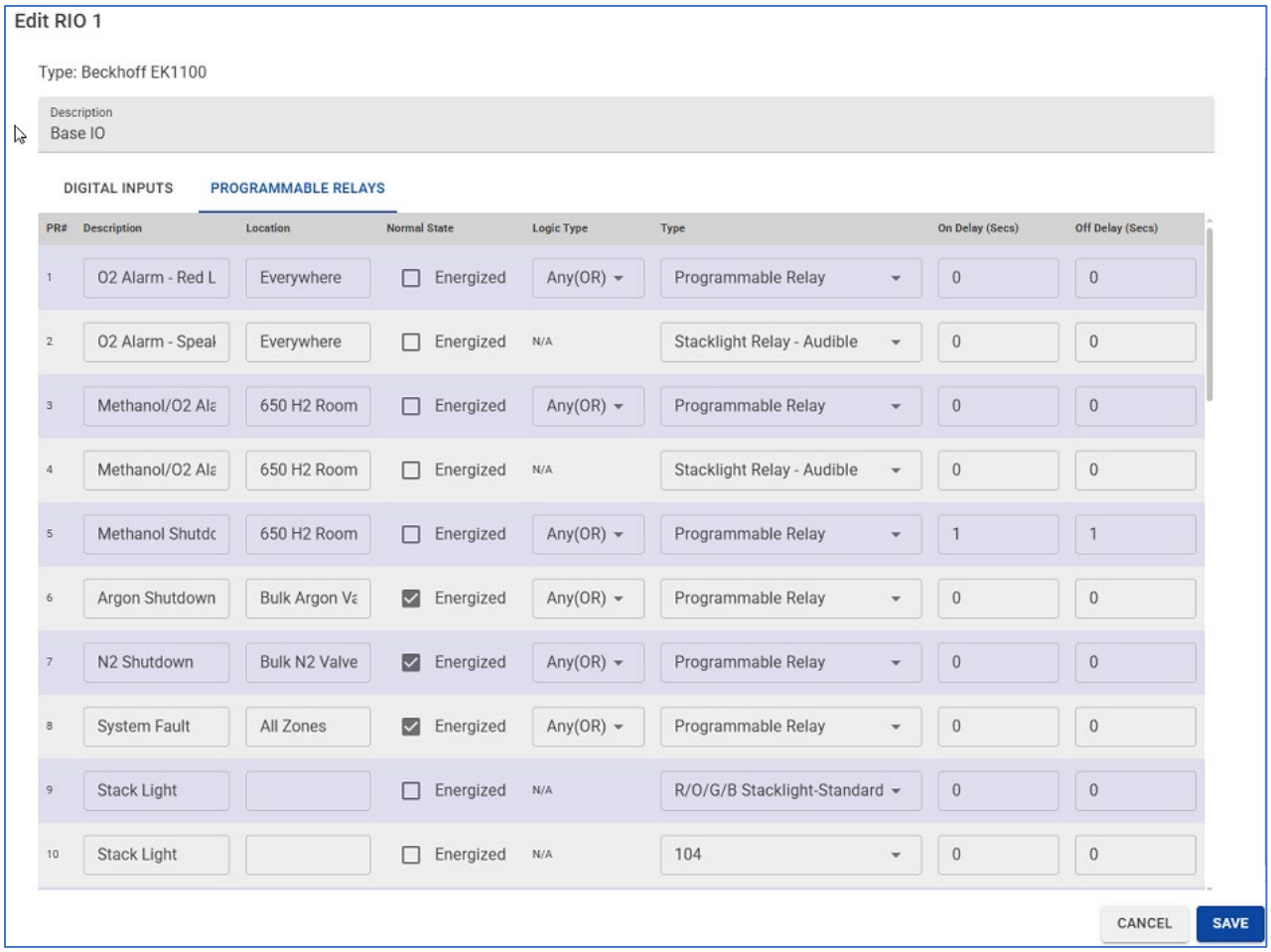
Other serial communication devices can be added as needed.

NOTE: Requires optional Serial Device Interface(s) and custom development fees.

Chapter 6 – Configuring Digital I/O

6.1 Digital Output Signals

Configuration->System->IO(Tab)>Edit>Programmable Relays



PR#	Description	Location	Normal State	Logic Type	Type	On Delay (Secs)	Off Delay (Secs)
1	O2 Alarm - Red L	Everywhere	☐ Energized	Any(OR)	Programmable Relay	0	0
2	O2 Alarm - Speal	Everywhere	☐ Energized	N/A	Stacklight Relay - Audible	0	0
3	Methanol/O2 Ala	650 H2 Room	☐ Energized	Any(OR)	Programmable Relay	0	0
4	Methanol/O2 Ala	650 H2 Room	☐ Energized	N/A	Stacklight Relay - Audible	0	0
5	Methanol Shutdc	650 H2 Room	☐ Energized	Any(OR)	Programmable Relay	1	1
6	Argon Shutdown	Bulk Argon Va	☑ Energized	Any(OR)	Programmable Relay	0	0
7	N2 Shutdown	Bulk N2 Valve	☑ Energized	Any(OR)	Programmable Relay	0	0
8	System Fault	All Zones	☑ Energized	Any(OR)	Programmable Relay	0	0
9	Stack Light		☐ Energized	N/A	R/O/G/B Stacklight-Standard	0	0
10	Stack Light		☐ Energized	N/A	104	0	0

SkyView is configured with a base I/O module that defines the digital output hardware and Licenses purchased for the system. To edit a digital output, press the Edit button and navigate to the desired digital output to configure it. A user-entered Description is required at this level to enable the configuration of the Programmable Relay at the IO Matrix level.

The digital outputs are Form C relay contacts rated for 6A @ 250VAC.

If Normal State is checked as Energized, the relay will be normally energized when the relay's trigger is not present and de-energize upon presence of the trigger. A normally energized digital output can be used for fail-safe scenarios as the relay would de-energize in a loss of power event. If Normal State remains unchecked, the relay will be normally de-energized when the relay's trigger is not present and energize upon the presence of the trigger.

Logic Type setting can be selected as Any(OR) or All(AND). A configuration of Any(OR) would result in the relay being triggered if *any* of the input triggers are present at the IO Matrix page. A configuration of All(AND) would result in the relay being triggered only when *all* the input triggers are present at the IO Matrix page.

The On Delay and Off Delay field entries can be used to delay activation and/or de-activation of relay outputs upon presence of the trigger configured at the IO Matrix page. The On Delay timer will begin once the relay trigger becomes present and once expired, the relay output will change states. The Off Delay timer is dependent on the Latch configuration of the input and will begin once the trigger condition clears AND a user has pressed Alarm Reset before allowing the relay output to return to Normal State.

Save button must be pressed prior to leaving this window pop up for changes to take.

6.1.A Programmable Relay

Configuring a Programmable Relay Type as Programmable Relay enables use of the Form C relay contact activation based on the trigger configuration made at the IO Matrix page.

6.1.B Custom Stack Light Attachments

Configuring a Programmable Relay Type as any of the Stacklight options enables use of the predefined stack light patterns available as a standard in SkyView software. Select the type of stack light that will be used for the first digital output that the stack light will be connected to. The stack light group will then be available on the IO Matrix page. See SkyView drawing set for wiring details. Using any of the predefined Stacklight patterns will require wiring the light colors in the order of the Stacklight pattern name (i.e., for R/O/G PRx=Red, PRx+1=Orange, PRx+2=Green, PRx+4=Speaker). All Stacklight patterns utilize the speaker wire at the end of the light order.

The predefined Stacklight patterns will deliver the below activation behaviors. Custom light-to-relay wiring and configuration remains possible by selecting Type as Programmable Relay if the predefined patterns are undesired, or a multi-tier stack light is not being used.

R / O / G Stacklight – Standard (Pattern 30)							
PR #	Light Wire	In Normal	In Fault	In AL1	In AL2	In AL1 + Fault	In AL2 + Fault
1	Red	Off	Off	On	Flash	On	Flash
2	Orange	Off	On	Off	Off	Off	Off
3	Green	On	Off	Off	Off	Off	Off
4	Speaker	Off	Off	On	On	On	On

R / O / G Stacklight – Standard (Pattern 50)							
PR #	Light Wire	In Normal	In Fault	In AL1	In AL2	In AL1 + Fault	In AL2 + Fault
1	Red	Off	Off	Off	Flash	Off	Flash
2	Orange	Off	On	Flash	Off	Flash	Off
3	Green	On	Flash	Off	Off	Flash	Flash
4	Speaker	Off	Off	On	On	On	On

6.1.C Timed Toggle

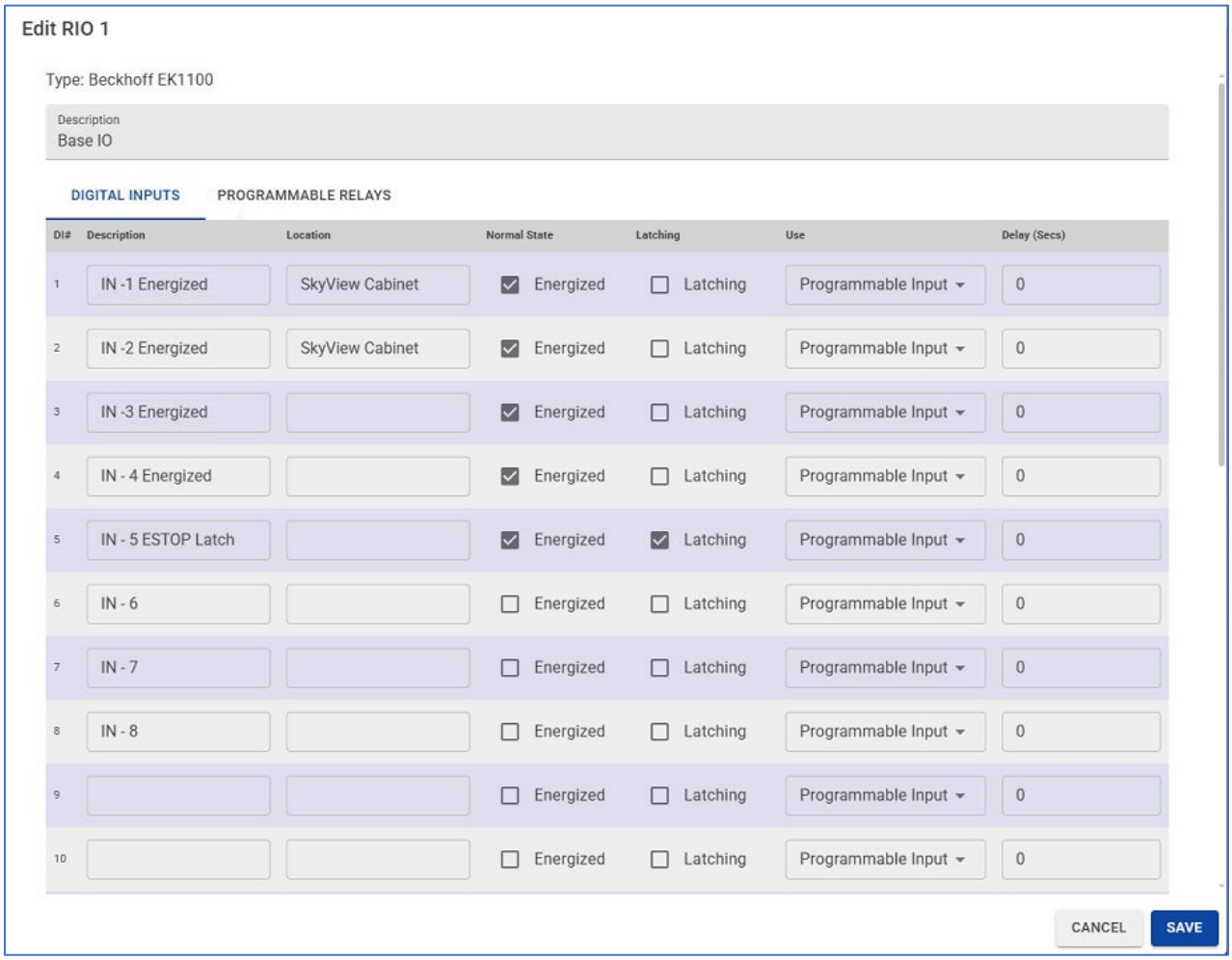
Configuring a Programmable Relay Type as Timed Toggle enables the On Delay and Off Delay fields. This can be used as a physical watchdog output.

6.1.D Stack Light Relay – Audible

Configuring a Programmable Relay Type as Stack Light Relay – Audible enables the Silence Alarm button available at the Overview screen during alarm events. When a speaker wire is connected to this relay and the alarm trigger is present, pressing the Silence Alarm button will de-activate this relay and silence the connected speaker output. Only audible sounding accessories should be wired to relays configured as Stack Light Relay – Audible.

6.2 Digital Input Signals

Configuration->System->IO(Tab)>Edit>Digital Inputs



SkyView is configured with a base I/O module that defines the digital input hardware and Licenses purchased for the system. To edit a digital input, press the Edit button and navigate to the desired digital input to configure it. A user-entered Description is required at this level to enable the configuration of the Digital Input at the IO Matrix level.

The digital inputs provide two connections intended for wiring to dry contacts. When these connections are closed, the digital input is on. When these connections are open, the digital input is off. When connecting a dry contact to the digital input, polarity does not matter for wire landing.

Only connect dry contacts to the digital input terminals to prevent damage to the PLC input! Never wire external voltage sources to the digital input terminals!

If Normal State is checked as Energized, the normal status of the digital input is on (closed contact) and relay activation (as configured at IO Matrix page) will occur when the digital input turns off (open contact). If Normal State is not checked as Energized, the normal status of the digital input is off (open contact) and relay activation (as configured at IO Matrix page) will occur when the digital input turns on (closed contact).

If Latching is checked, a change of the digital input status from its Normal State will require Alarm Reset to be pressed AND the digital input status return to its Normal State before any relay outputs triggered from the digital input status change can be reset. If Latching is unchecked, the system, and relay outputs, will reset at the same time the digital input status returns to its Normal State without having to press Alarm Reset.

Save button must be pressed prior to leaving this window pop up for changes to take.

6.2.A Programmable Input

Configuring a Digital Input Type as Programmable Input is used for connecting dry contacts to the digital input terminals and enables use of the Form C relay contact activation as configured at the IO Matrix page when the Normal State of the digital input changes. Common use of this digital input type selection would be for connecting E-Stops, fire panel inputs, seismic switches, temperature switches, flow switches, etc.

6.2.B Remote Reset Input

Configuring a Digital Input Type as Remote Reset allows for connecting a dry contact to the digital input terminals which will act as physical remote reset switch in the same manner as what's available at the Overview screen for Alarm Resetting.

6.2.C SkyView Internal Inputs

Configuration of a Digital Input type as 24V Power, Thermostat On or Fan Sense is used for monitoring the status of internal components within the SkyView cabinet. When these are configured from the factory, it is not recommended to change these settings as it will inhibit detection of a maintenance item internal to SkyView.

Chapter 7 – I/O Matrix Configuration

7.1 Relay Matrix Configuration

Any/All Detector signals or Digital Inputs can be configured to activate any Programmable Output Relay. Each signal can be configured to be Normally Open or Normally Closed and to have its active state delayed for a certain number of seconds to prevent false triggers.

Use the two sections below to configure triggers of the Programmable Relays from either the Gas Detection Devices or the Digital Inputs. First use sections 7.1.A to map Detector items to Programmable Relays and Section 7.1.B to map Digital Inputs to the Programmable Relays.

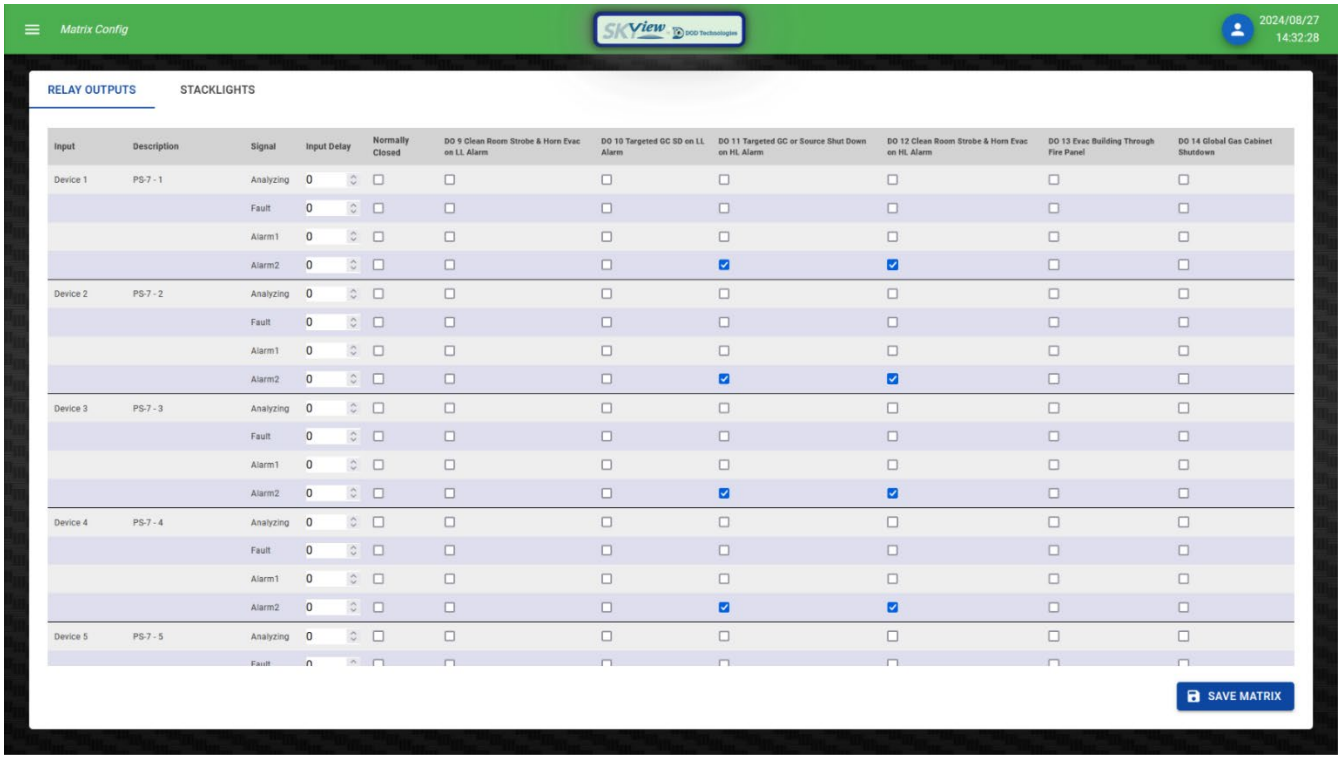
In a similar way Sections 6.2.A and 6.2.B are used to map devices and digital inputs to the Stack Lights (if installed).

7.1.A Detector Matrix Configuration

Configuration->IO Matrix>Relay Outputs(Tab)

On the matrix configuration page, all the defined detectors will be listed on the left with boxes for Alarm 1, Alarm 2, Fault, and Analyzing events for each. The detector list will be followed by the list of all enabled Digital Inputs. Across the top of the matrix is the list of all enabled Programmable Relays (Digital Outputs). All Programmable Relays with a Description other than those set for stack lights will be listed across the top.

First to configure the Programmable Relays check the boxes for each Detector Event that you would like tied to the output on the top. Make sure to press SAVE MATRIX when complete.



7.1.B Digital Input Matrix Configuration

To continue configuring the Programmable Relays check the boxes for each digital input that you would like tied to the output on the top. Make sure to press SAVE MATRIX when complete.

RELAY OUTPUTS STACKLIGHTS

Input	Description	Signal	Input Delay	Normally Closed	DO 9 Clean Room Strobe & Horn Evac on LL Alarm	DO 10 Targeted GC SD on LL Alarm	DO 11 Targeted GC or Source Shut Down on HL Alarm	DO 12 Clean Room Strobe & Horn Evac on HL Alarm	DO 13 Evac Building Through Fire Panel	DO 14 Global Gas Cabinet Shutdown
		Fault	1500	☐	☐	☐	☐	☐	☐	☐
		Alarm1	1500	☐	☑	☑	☐	☐	☐	☐
		Alarm2	1500	☐	☐	☐	☐	☐	☐	☐
DI 1	24VDC PWR SUPPLY #1 DC OK		0	☑	☑	☐	☐	☐	☐	☐
DI 2	24VDC PWR SUPPLY #2 DC OK		0	☑	☐	☑	☐	☐	☐	☐
DI 3	24VDC PWR SUPPLY #3 DC OK		0	☑	☐	☐	☑	☐	☐	☐
DI 4	LINE POWER OK		0	☑	☐	☐	☐	☑	☐	☐
DI 5	Input From Fire Panel		0	☐	☐	☐	☐	☐	☐	☐
DI 6	E-Stops in Series		0	☑	☐	☐	☐	☐	☐	☐
DI 7	Exhaust Flow		0	☐	☐	☐	☐	☐	☐	☐
DI 8			0	☐	☐	☐	☐	☐	☐	☐

7.2 Stack Light Group Configuration

Stack lights are controlled by a set of Programmable relay outputs which are considered a Stack Light Group since the relays may be tied to several Stack Lights in the plant which are controlled simultaneously through the same outputs.

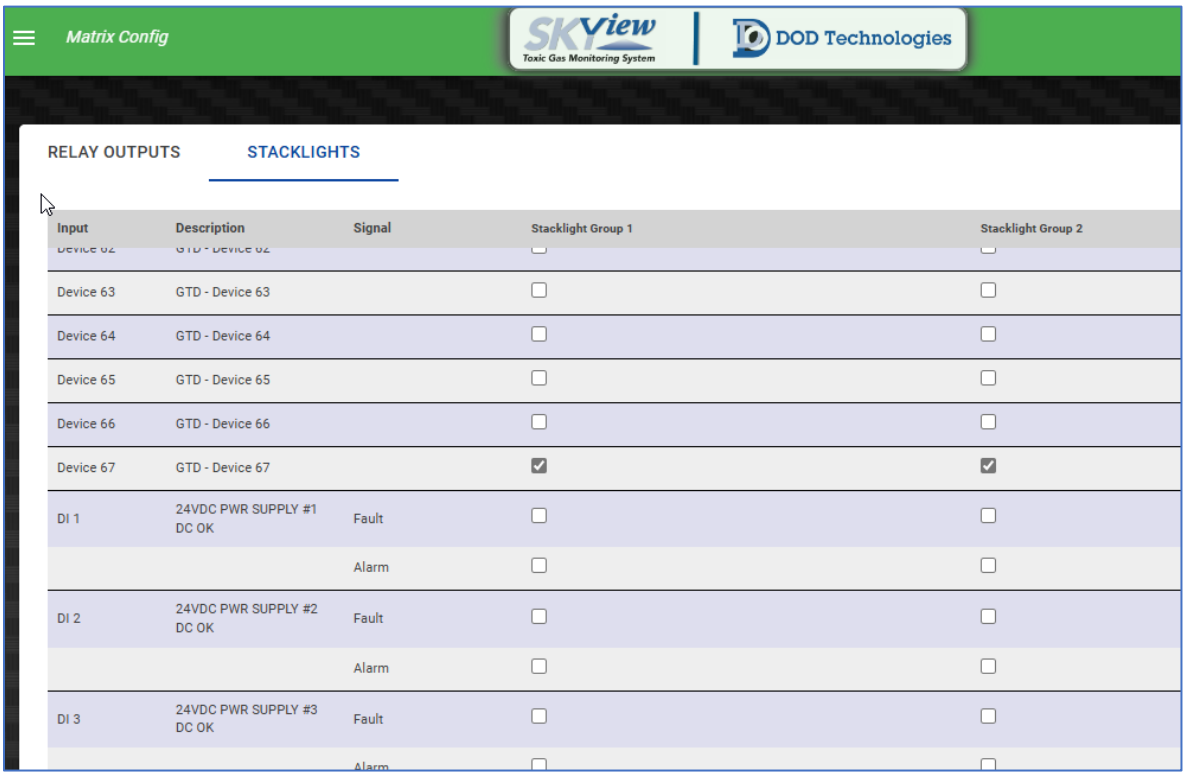
Use the two sections below to configure triggers for each defined Stack Light Group.

7.2.A Detector Stack light Matrix Configuration

Configuration->IO Matrix>StackLights(Tab)

On the matrix configuration page for Stack Lights all the defined detectors will be listed on the left followed by the list of all enabled Digital Inputs with two trigger events for each – Fault & Alarm. Across the top of the matrix is the list of the Stack Light Groups defined for the system.

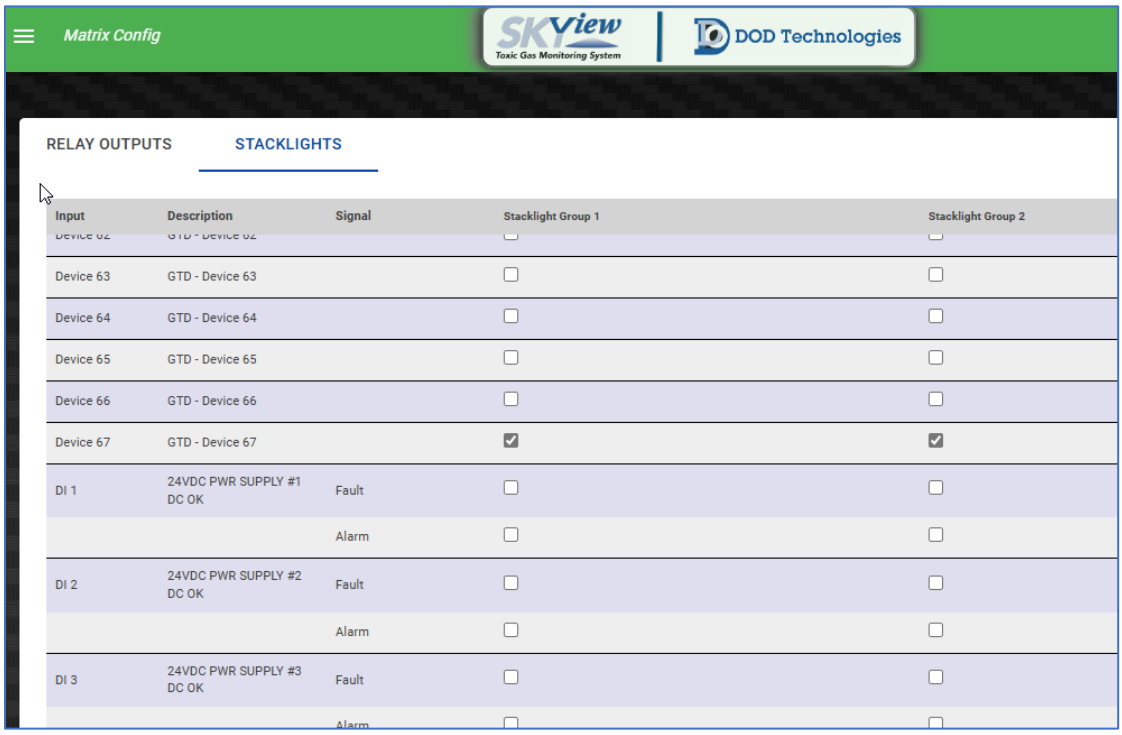
For each Detector select a Stack light Group to trigger if any of the detector's signals go active (fault, alarm, etc.)



7.2.B Digital Input Stack Light Matrix Configuration

Configuration->IO Matrix>StackLights(Tab)

For each Digital Input select a Stack Light group to trigger the fault or alarm color on the light.



Chapter 8 – Testing

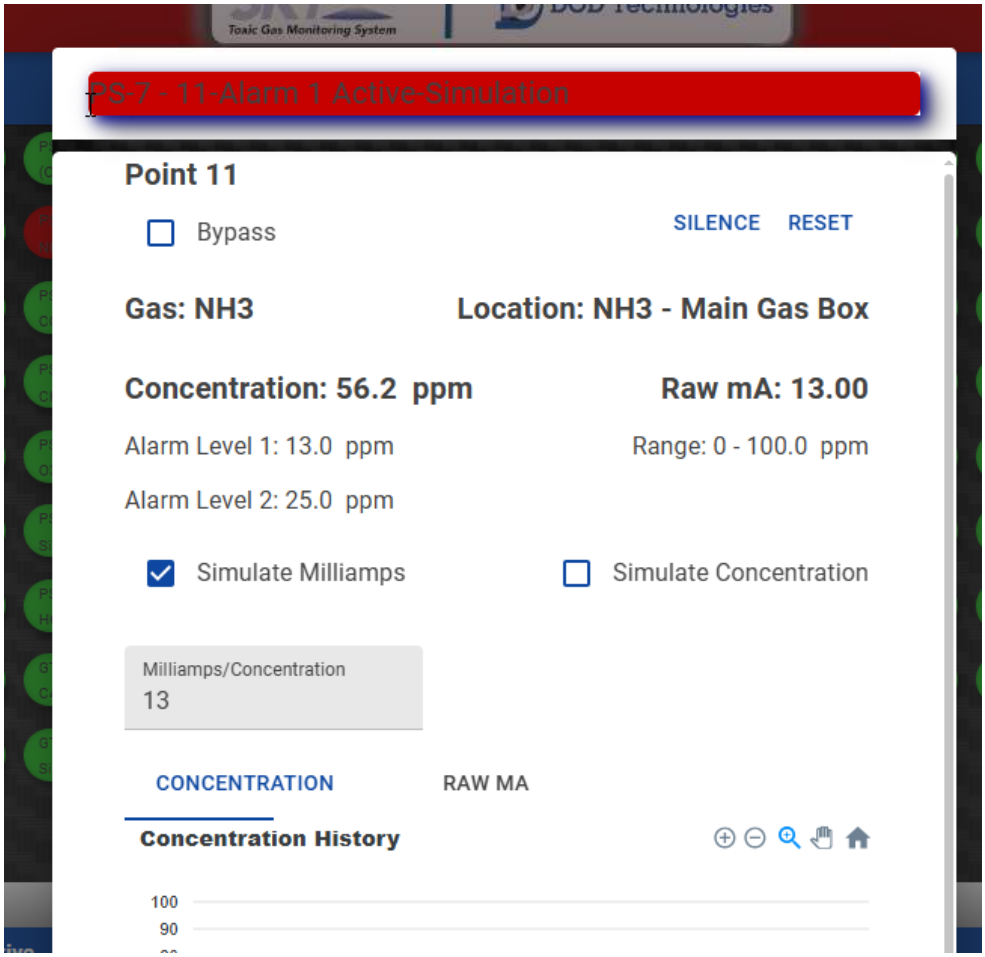
Testing must be performed at machine HMI directly. Testing features are not available from a remote HMI or remote web browser.

8.1 Detector Testing

MENU: Overview->Overview

WARNING: Simulating concentrations or mA signals will cause all associated outputs to trigger as configured including Stack Lights, Alarms, and programmable Relay outputs.

From the main Overview screen on the machine, log in as an Administrator and select one of the detector points by clicking or touching the point area to bring up the point detail screen. From here a concentration can be simulated, and if the detector is analog output type, a mA signal can be simulated. Click the appropriate checkbox and enter a value for the desired concentration or mA value.

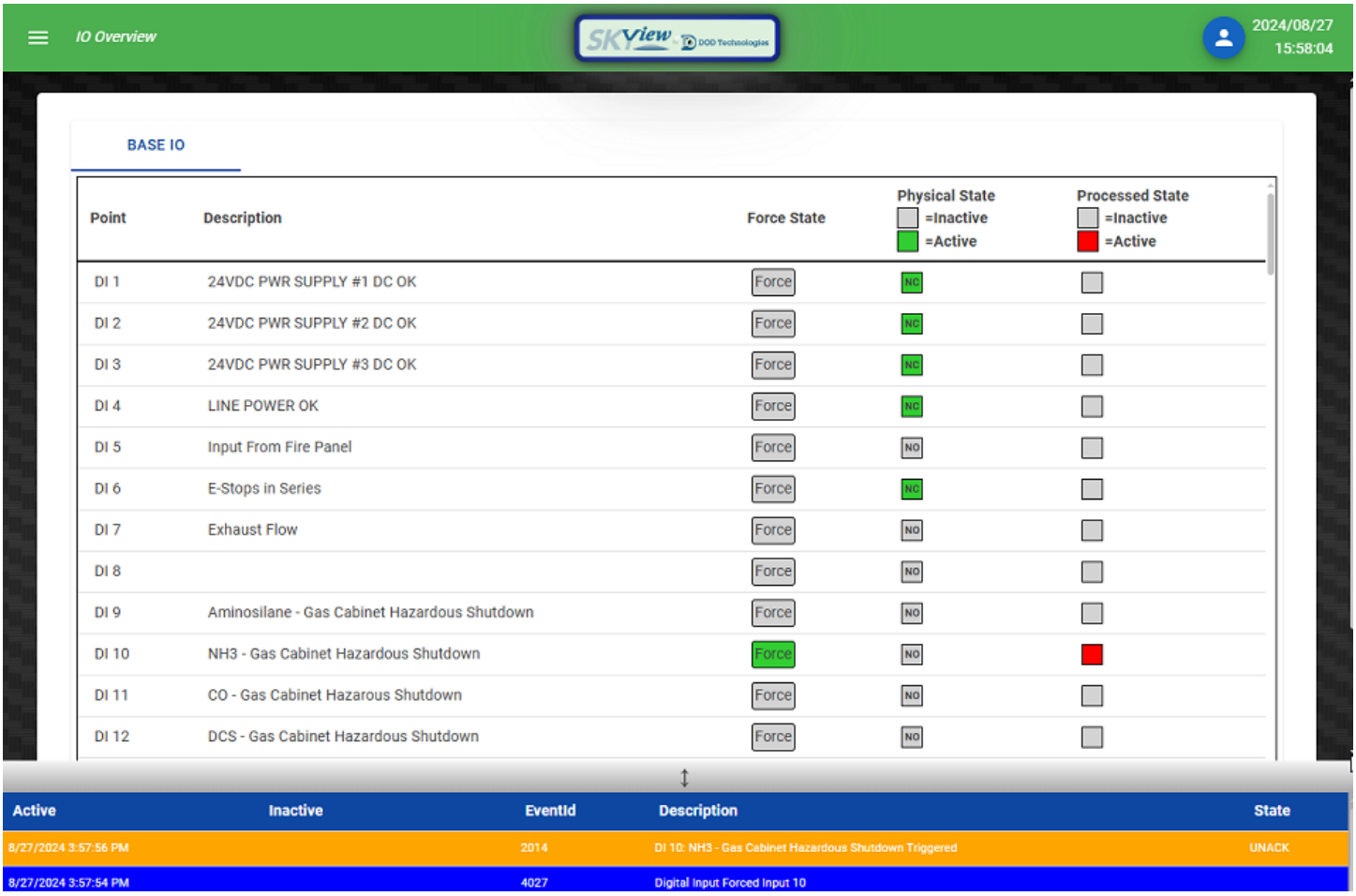


Raw mA values are converted to appropriate concentrations based on the Analog parameters as shown below.

8.2 Digital Input Testing

MENU: Overview->Overview

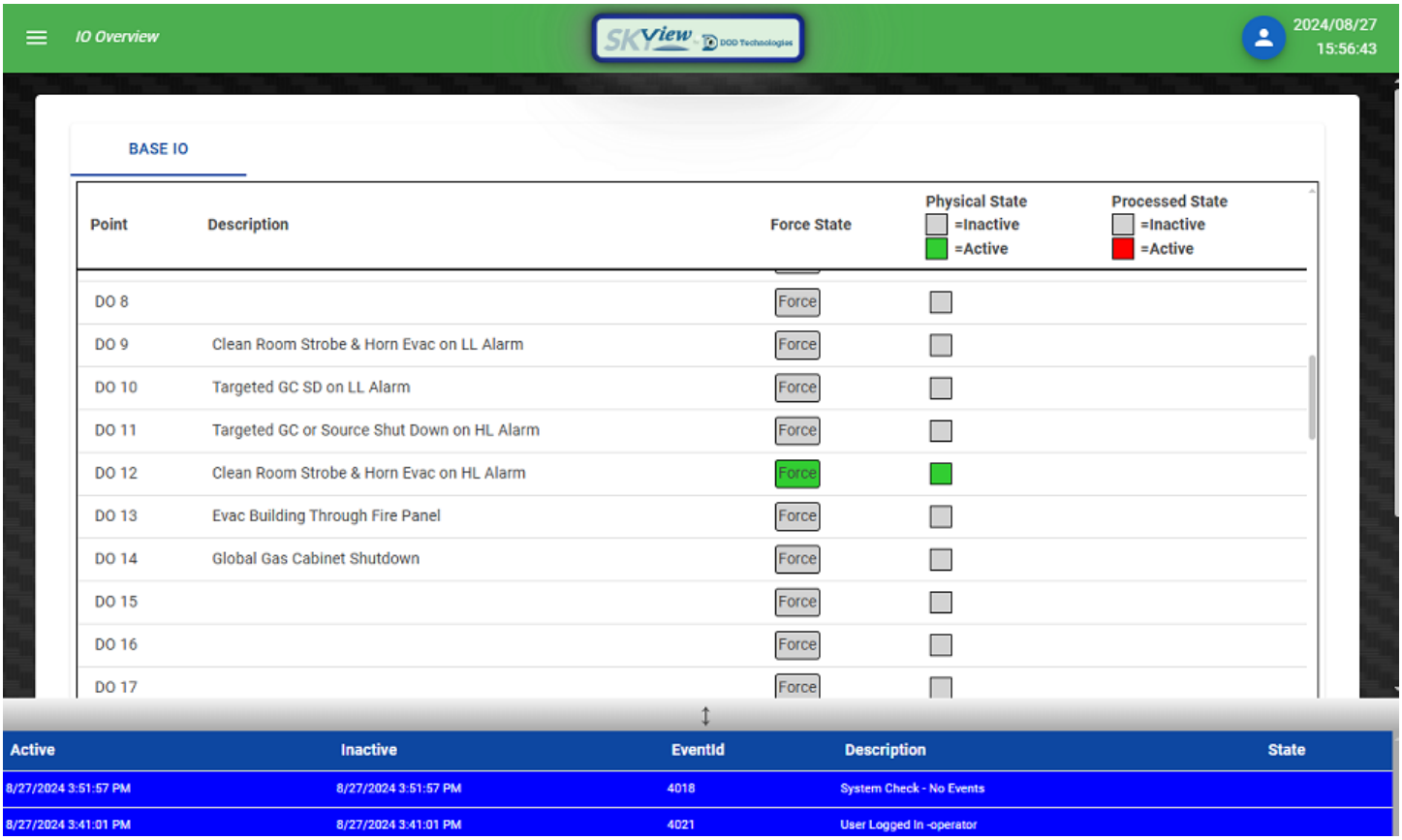
Log in as an administrator or operator and navigate to the IO test page. The physical state of each Digital Input can be viewed. The Processed State is the state of the digital input after the Matrix Relay Configuration is applied. If desired, the state of the digital input can be forced for testing. All force states will be cleared when leaving the IO page.



8.3 Digital Output Testing

MENU: Overview->IO->Base IO

Log in as an administrator or operator and navigate to the IO test page. The physical state of each Digital Output can be viewed. If desired, the state of the digital output can be forced for testing. All force states will be cleared when leaving the IO page.



Chapter 9 – Standard Operation

9.1 Overview

MENU: Overview->Overview

The main display of SkyView has three options for viewing live concentrations and faults/events : Overview, Detectors, and Layout (if installed). On any of the three views you can touch on any of the points and bring up the point detail screen for more information as shown below.

9.1.A Overview – Overview

The Overview page will display all configured detectors in a compact format. Press the touchscreen to select any point or use a mouse to click and view the detailed point information and trends (see Section 8.2)

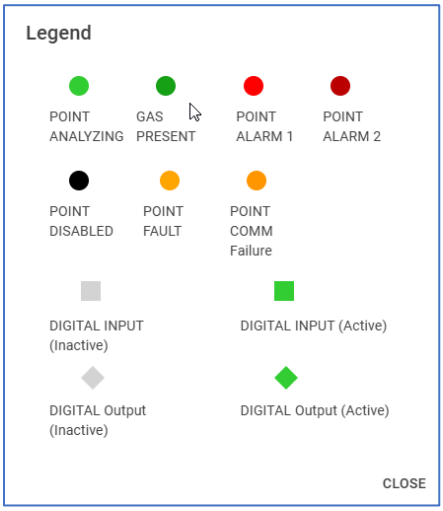
9.1.B Overview – Detectors

The Overview – Detectors page will display all configured detectors, sorted by device type. Select any point by pressing on the touchscreen or clicking with a mouse to view the detailed point information and trending (see Section 9.2)

9.1.C Overview – Layout

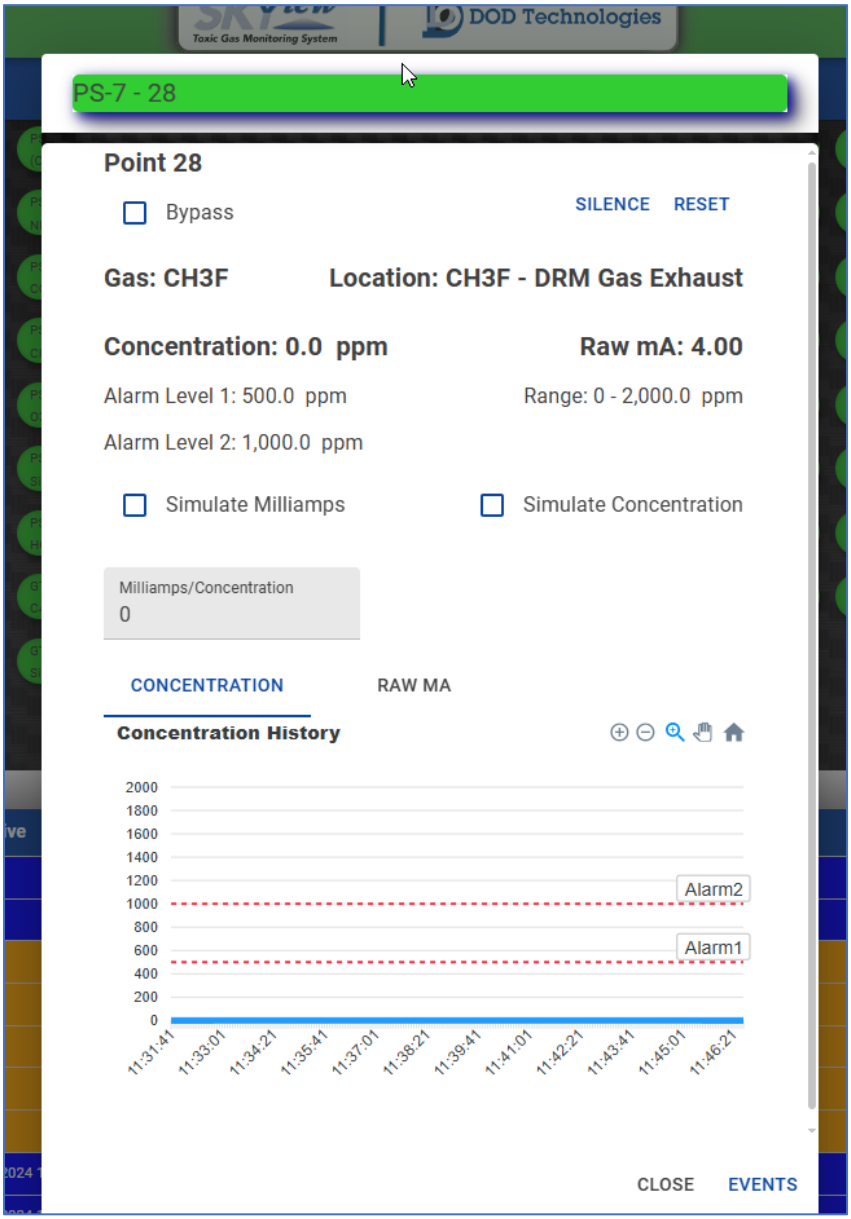
The Overview – Layout page will display the location of detectors on a facility layout page if configured. Each point will change color based on its state (see legend). Select any point by pressing on the touchscreen or clicking with a mouse to view the detailed point information and trending (see Section 8.2) Press the Legend button to display the legend on the screen as shown below.

As shown on the legend, circles are used for gas detection points and are color-coded based on the state of the point. Steady green indicates no concentration, blinking green when gas is detected below alarm levels, light red for Alarm Level 1 and blinking light and dark for Alarm Level 2. In addition, black indicates the point is currently disabled, solid orange for a fault and blinking orange for a communication failure. Digital inputs and Programmable Relays are either Gray (inactive) or Green (active).



9.2 Point Detail & Trending

Pressing or clicking on a point in any of the three modes above will display the Point Detail/Trending Screen with unique features depending on the security access level of the user.



- Bypass (Admin): Press/Click to temporarily disable all alarm and fault detection on the point.
- Silence (Admin/Operator): Press/Click to Silence audible sound on all stack lights.
- Reset (Admin/Operator): Press/Click to reset the alarm and/or fault on the point. If the alarm or fault is still present it will trigger again after reset.
- Simulate M/A and Simulate / Concentration (Admin / Operator): Selecting one of these checkboxes and entering a valid value in the Milliamps/Concentration box will display appropriate concentration and trigger all connected alarms, relays and stack lights.
- Trending can be viewed in Concentration OR Raw mA for Analog Inputs

Chapter 10 – Faults & Events

Faults and events can be viewed from any of the Overview tabs at the bottom of the window. The event list always shows any Active RED alarms first, active ORANGE/BLUE fault/info events second, followed by all inactive events remaining for that day in chronological order. Alarms and faults can be acknowledged from the history screen by logging in and pressing the event. The size of the Event window is adjustable by grabbing and dragging the gray area above the event window.

Event Level	Event Code	Event Message	Notes	Corrective Action
1 - Gas Alarm	1001	Device Alarm 1 Active		
1 - Gas Alarm	1002	Device Alarm 2 Active		
2 - Fault	2001	Skyview PLC Disconnected		
2 - Fault	2002	Device Comm Fault		
2 - Fault	2003	Device Fault		
2 - Fault	2004	Device Maintenance Required		
2 - Fault	2005	Machine Config Load Fault		
2 - Fault	2006	IPC RAID Storage Fault		
2 - Fault	2007	Invalid Device ID in Matrix	PLC Initiated	
2 - Fault	2008	Invalid Item ID in Matrix	PLC Initiated	
2 - Fault	2009	Full Scale Not Set On Device	PLC Initiated	
2 - Fault	2010	Duplicate Device ID in Device List	PLC Initiated	
2 - Fault	2011	Invalid Analog Input Number on Device Point	PLC Initiated	
2 - Fault	2012	IPC Fan Fault		
2 - Fault	2013	IPC CPU Temp High		
2 - Fault	2014	DI Active (Description)		
2 - Fault	2015	PLC Config Save Fault		
2 - Fault	2016	PLC Matrix Fault		
4 - Information	4001	Skyview Server Started		
4 - Information	4002	Skyview Server Shutdown		
4 - Information	4003	Skyview PLC Reconnected		
4 - Information	4004	All Events Purged		
4 - Information	4005	All Concentrations Purged		
4 - Information	4006	Device Added To Config		
4 - Information	4007	Device Deleted From Config		
4 - Information	4008	Device Config Updated		
4 - Information	4009	Device Enabled		
4 - Information	4010	Device Disabled		
4 - Information	4011	Device Analysis Active		
4 - Information	4012	Device Analysis Inactive		
4 - Information	4013	Device Status Code	PLC Initiated	
4 - Information	4014	Default Configuration Restored		
4 - Information	4015	Configurations Loaded from USB		
4 - Information	4016	Configurations Saved to USB		
4 - Information	4017	Software Updated from USB		
4 - Information	4018	System Status Message		
4 - Information	4019	Alarms/Faults Cleared		
4 - Information	4020	IO Matrix Updated		
4 - Information	4021	User Logged On		
4 - Information	4022	User Logged Off		
4 - Information	4023	User Idle Timeout		
4 - Information	4024	User Added		
4 - Information	4025	User Edited		
4 - Information	4026	User Deleted		
4 - Information	4027	Digital Input Forced		
4 - Information	4028	Digital Output Forced		
4 - Information	4029	Analog Input Simulated		
4 - Information	4030	Concentration Simulated		
4 - Information	4031	Alarms and Faults reset		
4 - Information	4032	Alarms and Faults Silenced		
4 - Information	4033	Alarms and Faults Reset		
4 - Information	4034	Analog Inputs Forced 4mA		

Chapter 11 – Optional Layout Designer

The layout designer allows facility mapping of all gas detection points, digital input, and programmable relays. One or more facility images can be customized as needed representing the facility. The system supports .jpg and .png formats from 200x200 to 10000x10000 pixels.

First, use the Layout Designer buttons described below to Add/Edit/Delete the layout(s) of the facility. Multiple layouts are allowed but each gas detection device point, digital input, and the programmable relay may only appear on a single layout. Be sure to press SAVE for each layout configured.

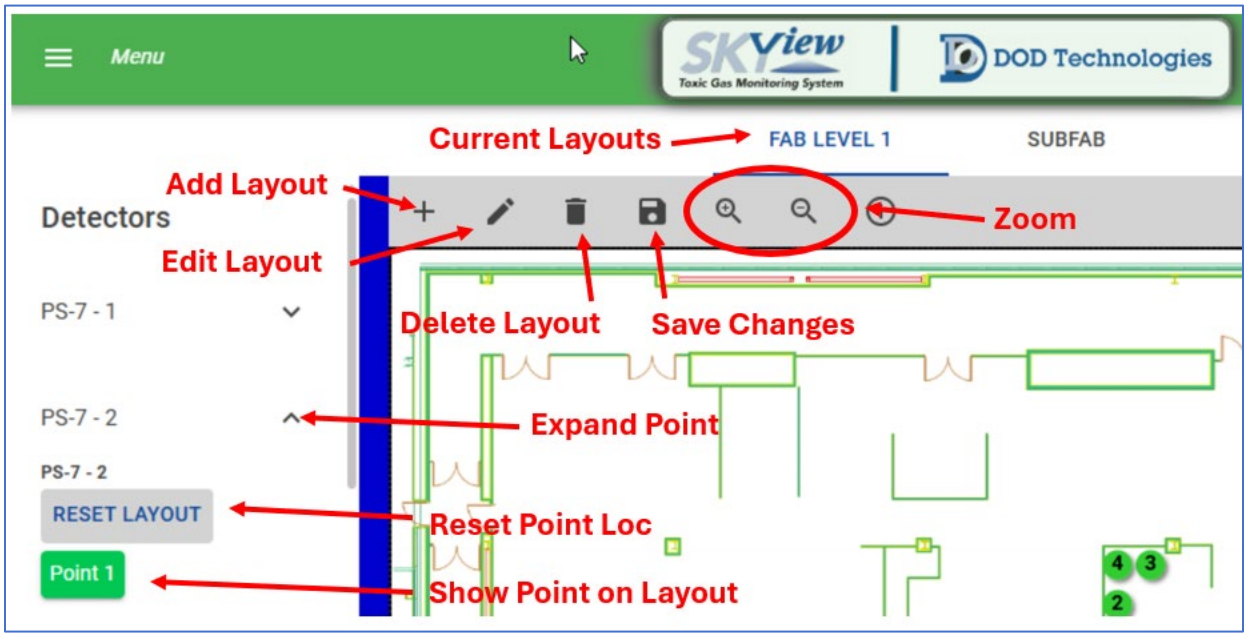
After a layout is configured and saved the gas detection points, digital inputs, and programmable relays are added and arranged on the layout as described in Section 11.2.

11.1 Layout Designer

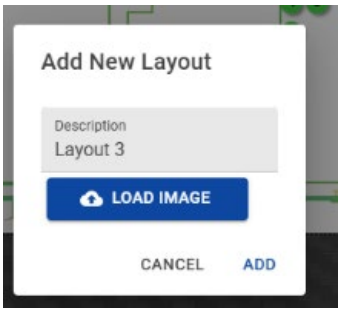
11.1.A Adding A Layout

First use the tools shown to add, edit, and delete layouts using your own images. Each layout is shown on the top of the layout screen with the tool buttons allowing you to add, edit, and delete layouts.

IMPORTANT: BE SURE TO CLICK THE SAVE BUTTON EACH TIME YOU MODIFY A LAYER.



Insert a USB drive containing .jpg or .png image(s) of the facility for each layout. Press the plus button to add a layout which will pull up a dialog allowing you to edit the description, press 'LOAD IMAGE" then navigate to the USB flash drive and select the image. Finally, press the Add button to add the facility layout.



11.1.B Edit A Layout

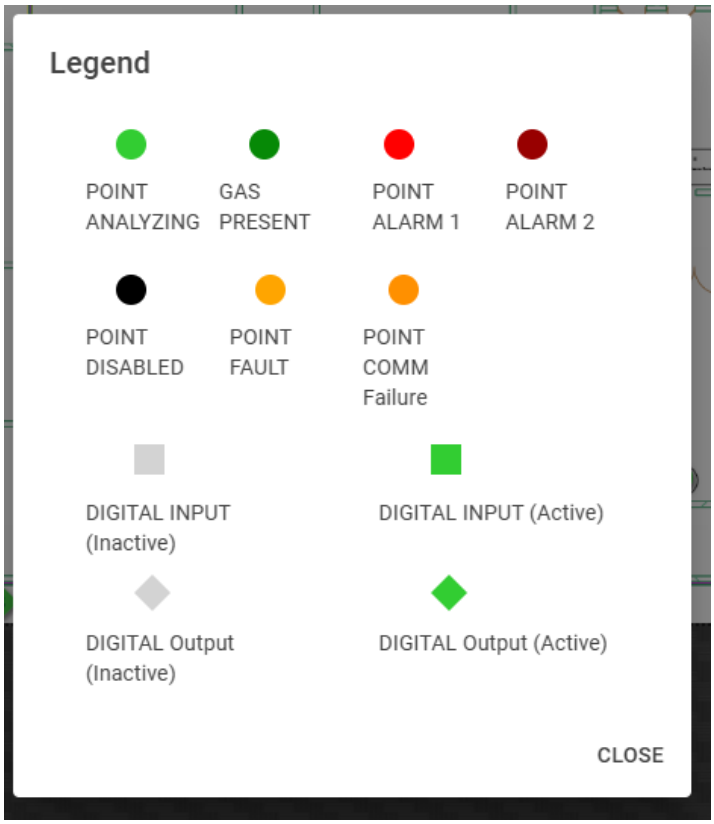
Use the EDIT button to change the layout description or load a different image button.

11.1.C Delete A Layout

Use the DELETE button to remove a layout from the system.

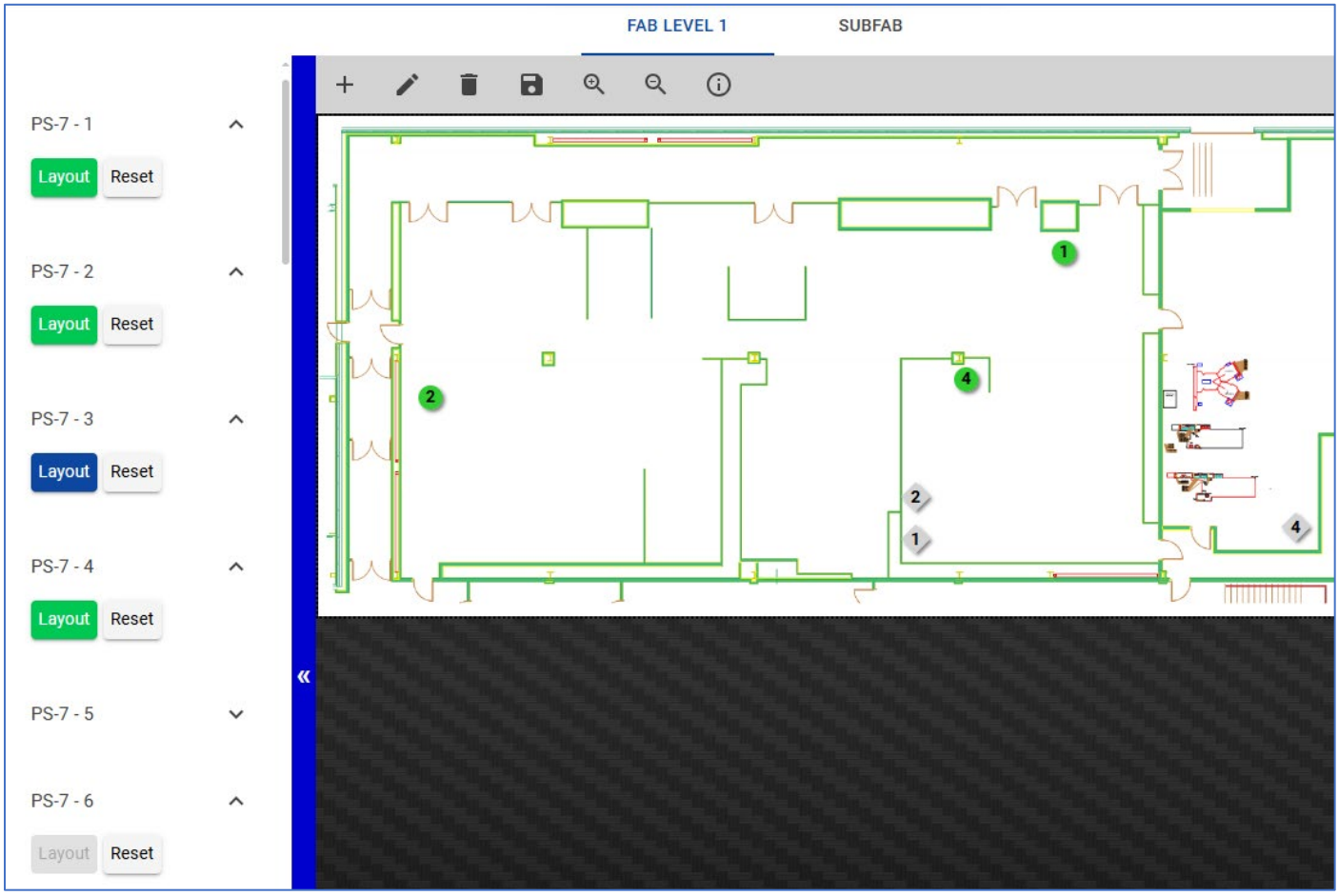
11.2 Configuring Layouts

After the layout is added you can add and remove all the defined gas detection points(circles), digital inputs(squares), and programmable relays(triangles) and position them on the layout. The available items for each will appear on the left side of the page. Click on the info (i) button for the legend shown below.



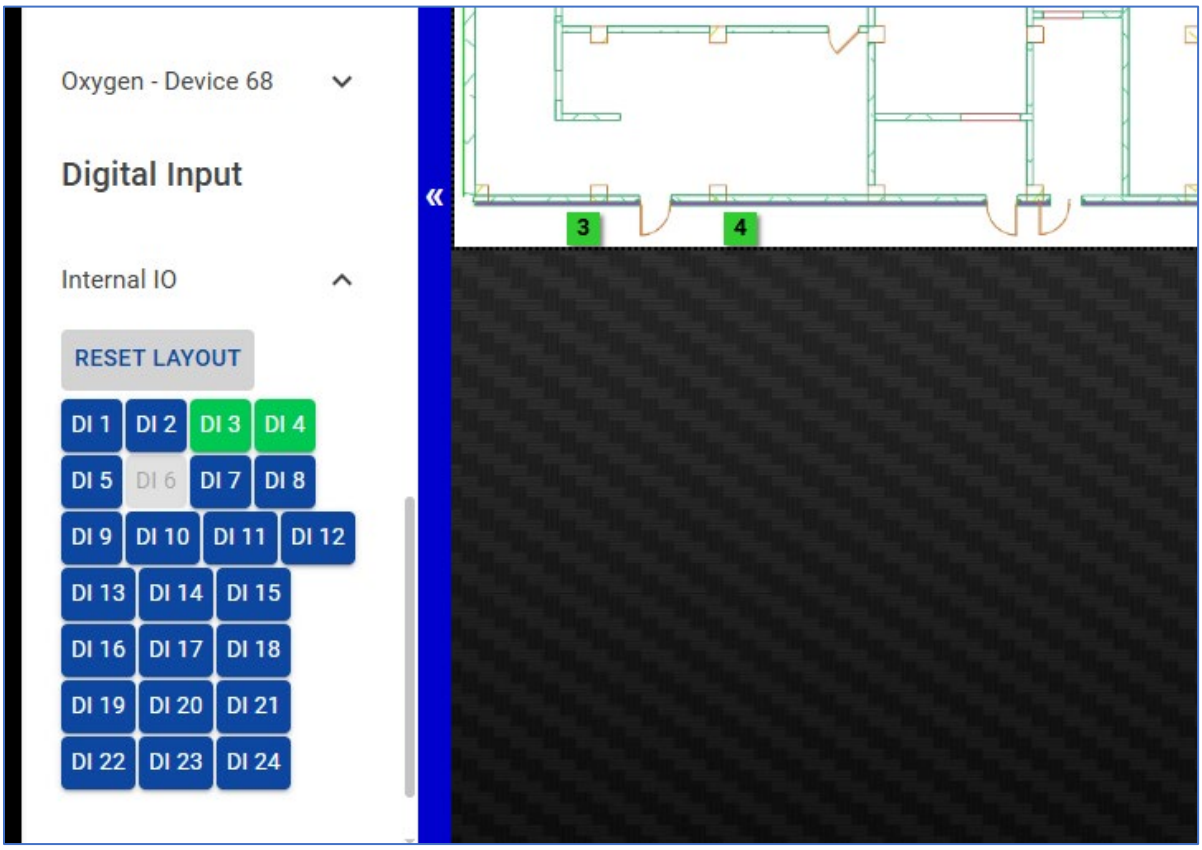
11.2.A Detection Points

Detection points are shown as circles on the layout. Each detection point is shown in BLUE (not on a layout), GREEN (on the currently selected layout), or GRAY (on a different layout). Press the BLUE or GREEN button to toggle it on / off the layout then drag the point to the desired location. The point number appears in the circle.



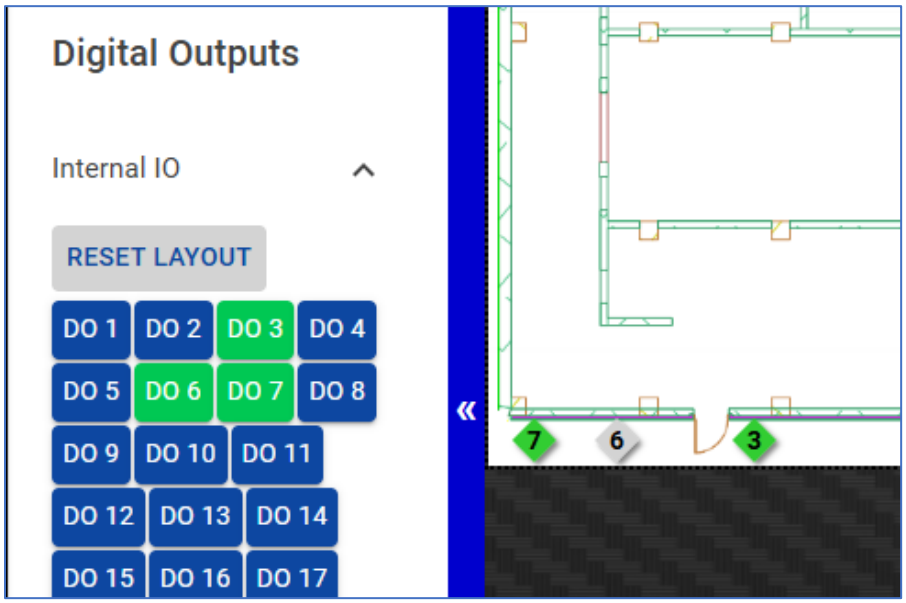
11.2.B Digital Inputs

Digital Input points are shown as squares on the layout. Each input is shown in BLUE (not on a layout), GREEN (on the currently selected layout), or GRAY (on a different layout). Press the BLUE or GREEN button to toggle it on / off the layout then drag the point to the desired location. The point number appears in the square.



11.2.C Programmable Relays

Programmable Relays are shown as triangles on the layout. Each relay is shown in BLUE (not on a layout), GREEN (on the currently selected layout), or GRAY (on a different layout). Press the BLUE or GREEN button to toggle it on / off the layout then drag the triangle to the desired location. The point number appears inside the triangle.



Chapter 12 – Service & Support

Contact DOD Technologies for product assistance and technical support:

Phone Support

M-F 8:30am – 5pm (Central Time Zone-U.S.A.)
815.788.5200

International Headquarters

675 Industrial Drive, Bldg. A.
Cary, IL 60013

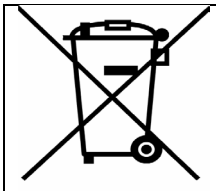
Visit our website:

DODtec.com

Decommissioning, Disposal & Recycling of the Electrical Equipment
Decommissioning, Disposal & Recycling of the Electrical Equipment When decommissioning, ensure the sample inlet and exhaust tubing is cut and removed. Power to the vacuum pump and power entry must also be cut and removed. Follow all local regulations when disposing of electrical components and systems.

For permanent discontinuation:
Discontinued units may be eligible for recycling. Please contact DOD Technologies for additional information and instructions for arranging safe return of your equipment.

RECYCLING WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (WEEE)
Systems manufactured for use in Europe must be disposed of at a designated collection point. Contact our European Representative for WEEE Directive disposal arrangements.



RECYCLING WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (WEEE)

Systems manufactured for use in Europe must be disposed of at a designated collection point. Contact our European Representative for WEEE Directive disposal arrangements.

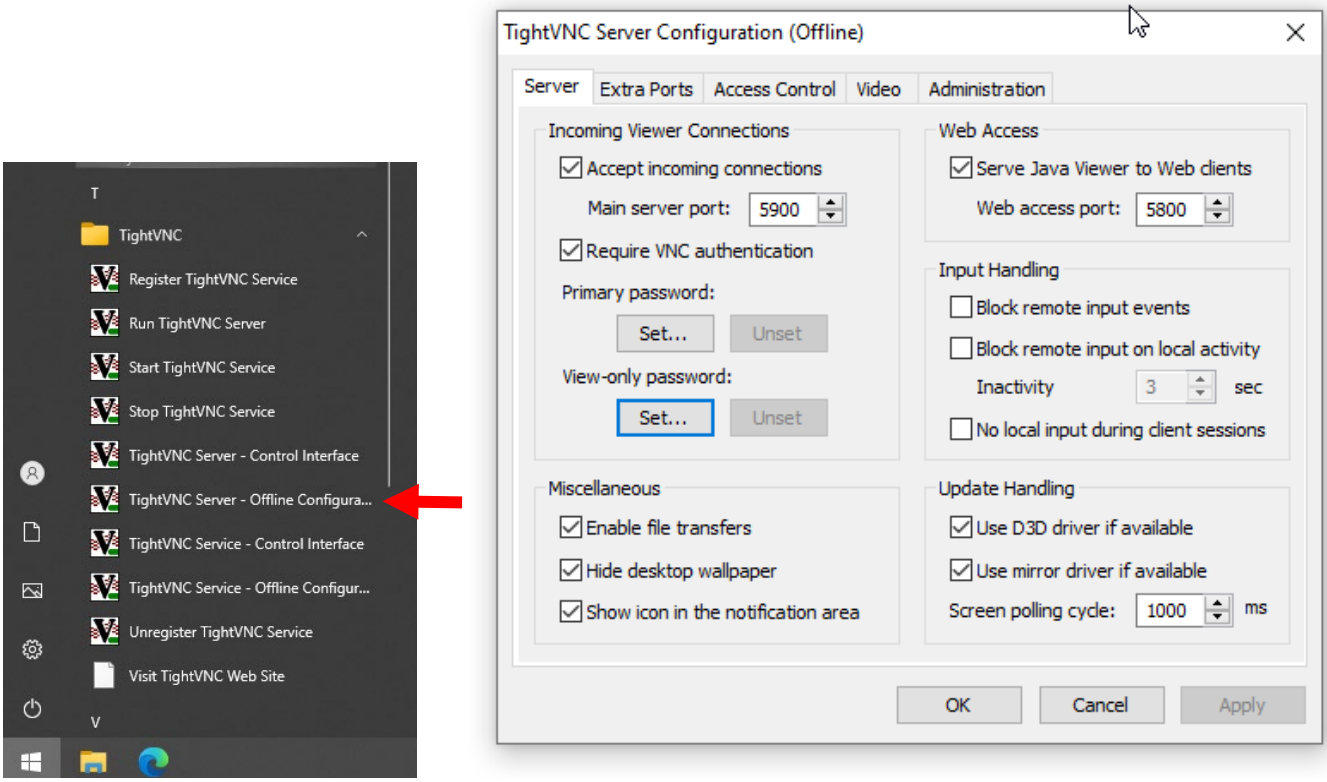
Appendix A – Tight VNC Configuration

TightVNC is an open source VNC solution that allows secure remote viewing and control of the SkyView system. To use TightVNC first configure the server on the SkyView system and then install the TightVNC Client program on any computer that will be used to access the system. Note that multiple computers can access the SkyView at the same time using TightVNC.

See the following website for details and instructions, and to get the latest updates:

https://www.tightvnc.com/

Access the SkyView TightVNC Server Configuration in Windows on the Start menu. See the online information for configuration details. At a minimum set the Primary password and also set the Administrator password to protect from unauthorized access.



Appendix B – System Specifications

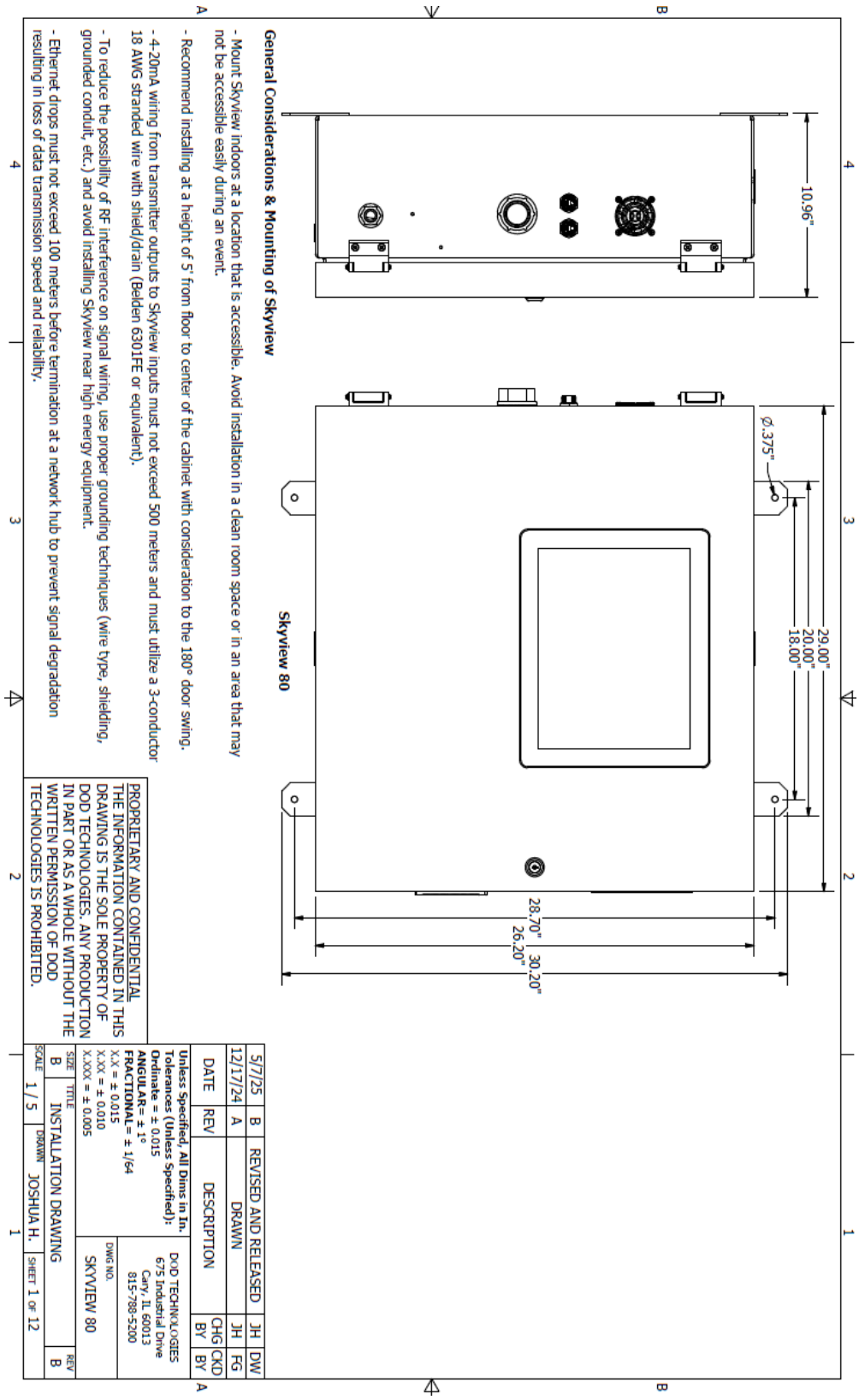
Model	SkyView 80 (80-Channel) / SkyView 16 (16-Channel) Controller
Input	Analog Input Impedance is 85 ohms. +24VDC power supply terminals provided. Standard base models include 16 analog inputs. SkyView 80 is expandable up to 80 total, in increments of 16.
Ethernet Ports	Modbus TCP Server and Ethernet/IP communication protocol options available. Web server (standard) remote access is available.
Alarm Relays	Form C output relay contacts are rated for up to 6A and up to 250VAC, 16 relays. Relays can be configured to energize on Fault or Analyzing and not limited to only alarms. SkyView 80 is expandable to 32 relays max.
Alarm Reset	Alarms can be silenced/reset from the HMI. Optional support in software for a remote pushbutton to silence/reset alarms if needed. Units are standard with 8 configurable digital inputs. Optional 8 additional (16 max) with SkyView 80.
Display	Touchscreen, LED Backlit, Diagonal 15", Aspect Ratio 4:3, Capacitive Single-touch and 10-touch
Ambient Temperature Range	32°F to 104°F (0°C to 40°C)
Relative Humidity	Should not exceed 50% at max temperature of 104˚F (40˚C). Higher RH is permitted at lower temperatures (i.e., 90% at 20˚C)
Noise Level	Maximum noise level for this equipment was less than 36db(A)
Power Supply	24 ~ 28VDC (24VDC nominal), 960-Watt max. (SkyView 80) or 480-Watt max. (SkyView 16)
Redundant Power Supply	This option includes redundancy module and secondary power supply: SkyView 80: 24 ~ 28VDC (24VDC nominal), 960 Watts max. When installed total system limitation 40A, 960W. SkyView 16: 24 ~ 28VDC (24VDC nominal), 480 Watts max. When installed total system limitation 20A, 480W.
System Power	SkyView 80: AC Input range, 100 ~ 240VAC; Frequency Range, 50/60Hz; 10.3A/10VAC; 4.3A/240VAC SkyView 16: AC Input range, 100 ~ 240VAC; Frequency Range, 50/60Hz; 45.5A/100VAC; 2.43A/240VAC
Enclosure	Power coated steel, IP30 equivalent
Dimensions	SkyView 80: 29” (736.6mm) W x 26.20” (665.5mm) H x 10.96” (278.4mm) D SkyView 16: 15.50” (393.7mm) W x 22.20” (563.9mm) H x 10.96” (278.4mm) D

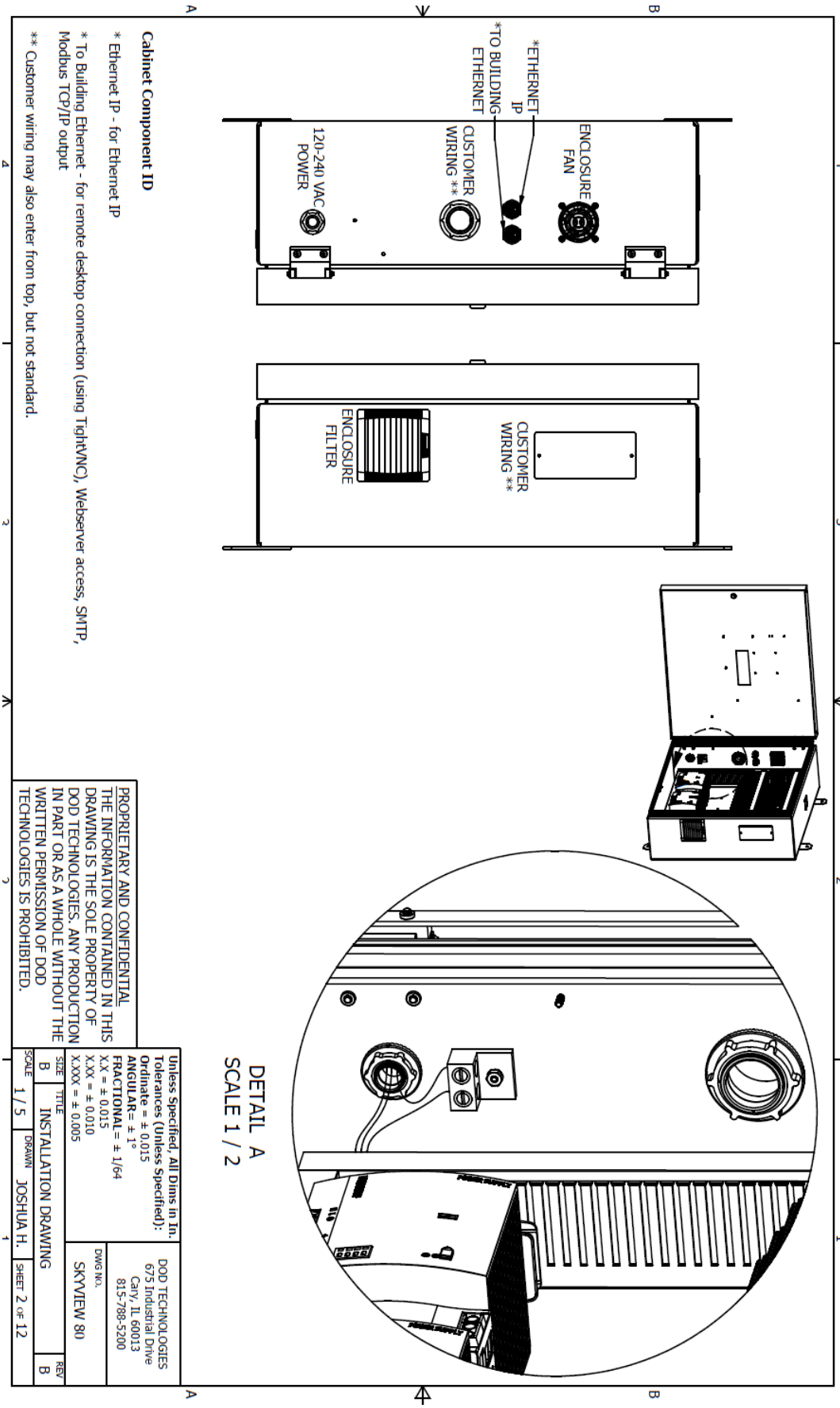
Appendix C – Parts & Accessories

Part #	Description
Optional	
2-200-294	Fuse 20A 1000 VDC (for SkyView 80)
2-200-402	AC/EMI Power Line Filter, 10A
2-9200-103	Skyview Computer
2-200-319	EK1101 - EtherCAT Coupler
2-200-207	EL1008 - EtherCAT Terminal, 8-Channel Digital Input, 24VDC
2-200-379	EL2008 - EtherCAT Terminal, 8-Channel Digital Output, 24 VDC
2-200-401	EL3048 - EtherCAT Terminal, 8-Channel Analog Input, 0-20mA
2-200-183	EL9410 - Power Supply Terminal E-bus (for SkyView 80)
4-100-109	EL6652-0010 - EtherCAT Terminal, 2-Port Communication Interface, EtherNet/IP
2-200-396	Fuse 1A
9-200-286	Power Supply 20A 24VDC Redundancy Module
2-200-416	Fuse 20A 1000 VDC (for SkyView 80)
2-200-408	AC/EMI Power Line Filter, 10A
2-200-403	Skyview Computer
2-200-070	EK1101 - EtherCAT Coupler
2-200-073	EL1008 - EtherCAT Terminal, 8-Channel Digital Input, 24VDC
2-200-067	EL2008 - EtherCAT Terminal, 8-Channel Digital Output, 24 VDC
2-200-387	EL3048 - EtherCAT Terminal, 8-Channel Analog Input, 0-20mA
2-200-141	EL9410 - Power Supply Terminal E-bus (for SkyView 80)
2-200-274	EL6652-0010 - EtherCAT Terminal, 2-Port Communication Interface, EtherNet/IP
9-000-008	Fuse 1A
2-200-330	Power Supply 20A 24VDC Redundancy Module

Appendix D – Installation Diagrams

D.1 SkyView 80 Controller





Cabinet Component ID

* Ethernet IP - for Ethernet IP

* To Building Ethernet - for remote desktop connection (using TightVNC), Webserver access, SMTP, Modbus TCP/IP output

** Customer wiring may also enter from top, but not standard.

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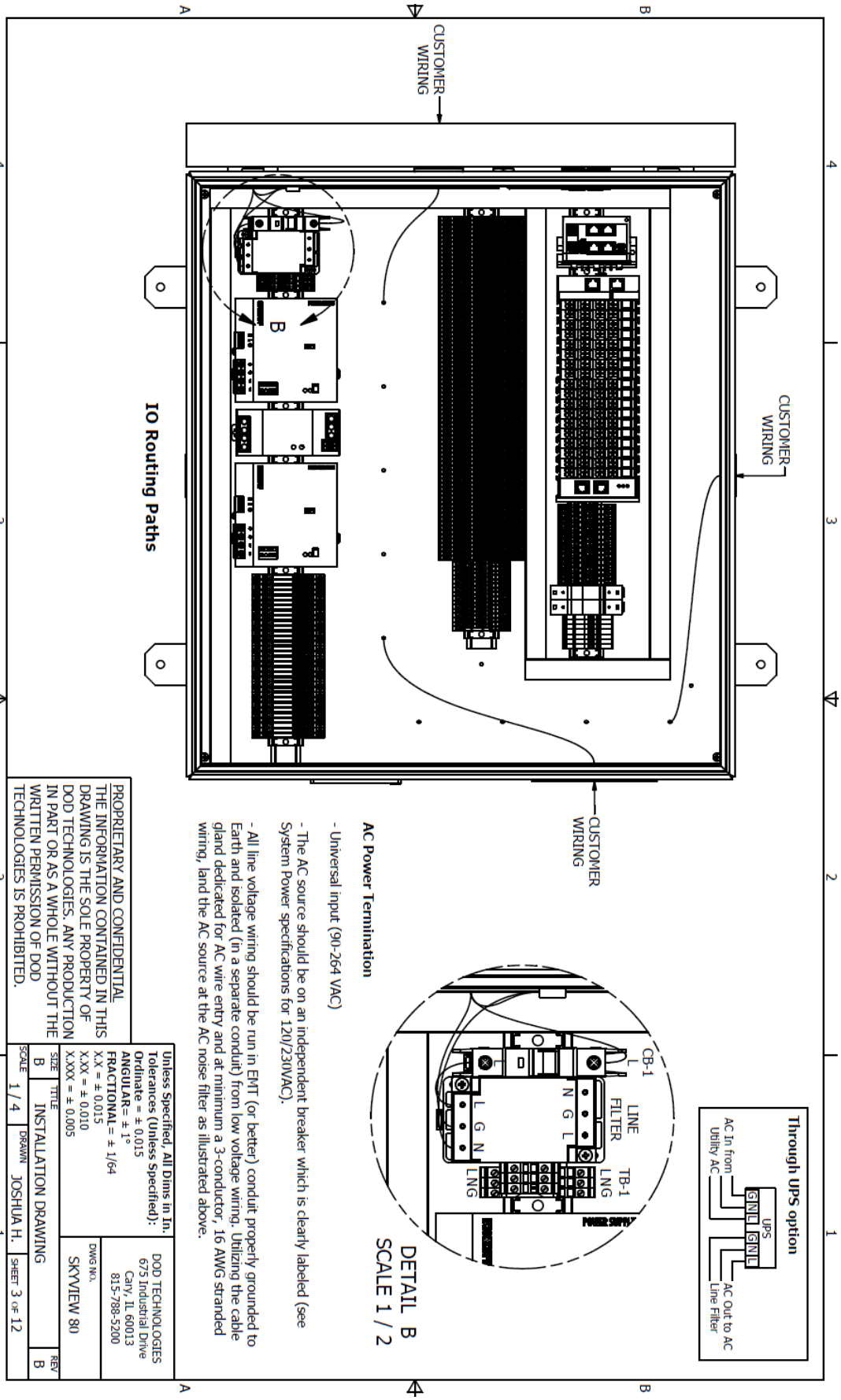
SIZE	TITLE	REV
B	INSTALLATION DRAWING	B
SCALE	DRAWN	SHEET
1 / 5	JOSHUA H.	2 OF 12

DWG NO. SKYVIEW 80


CUSTOMER WIRING
IO Routing Paths
CUSTOMER WIRING
CUSTOMER WIRING
Through UPS option
AC In from Utility AC
UPS
G N L
G N L
AC Out to AC Line Filter
DETAIL B
SCALE 1 / 2
CB-1
LINE FILTER
TB-1
L G N
N G L
LNG
LNG
AC Power Termination
- Universal input (90-264 VAC)
- The AC source should be on an independent breaker which is clearly labeled (see System Power specifications for 120/230VAC).
- All line voltage wiring should be run in EMT (or better) conduit properly grounded to Earth and isolated (in a separate conduit) from low voltage wiring. Utilizing the cable gland dedicated for AC wire entry and at minimum a 3-conductor, 16 AWG stranded wiring, land the AC source at the AC noise filter as illustrated above.
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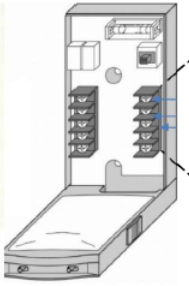
REV B
SCALE 1 / 4
DRAWN JOSHUA H.
SHEET 3 OF 12

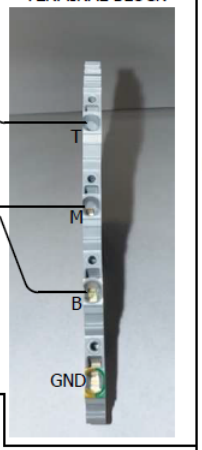
General Considerations & Mounting of Connected Devices



3 WIRE CABLE
BELDEN 6301FE
OR EQUIVALENT

+24V
0V
mA+

SKYVIEW 80
QUADRUPLE LEVEL
TERMINAL BLOCK



RECOMMENDED 4-5' ABOVE FLOOR

Sample Tubing & Duct Adapter

- Sample tubing type recommendation is 1/4" OD x 3/16" ID FEP Teflon for both inlet and exhaust.

-Sample tubing length specification varies by gas detector manufacturer and gas type detected (absorbent vs. nonabsorbent).

- Sample points connected to process exhausts should be terminated using duct adapters to ensure a quality seal is made around the duct penetration point. These points must have the exhaust tubing connected back to the duct using another duct adapter, downstream of the sample inlet. Up to four gas detectors (with 0.5 LPM flowrate) can have a common exhaust line back to the duct using 1/4" OD x 3/16" ID tubing. The ID of the tubing must be increased if more than four gas detectors are being connected to a common exhaust.

- When installing sample tubing for process exhaust detection (gas cabinet, VMBs, hoods, etc.) using duct adapters, the sample tubing must be inserted at a depth equal to half the diameter of the duct size.

- Sample points connected to process exhausts should be connected to the duct 2-4 duct diameters downstream from the exit of the gas cabinet, tool exhaust, etc.

- If the exhaust duct being sampled has a bend or elbow feature, connect the sample tubing 1 duct diameter upstream OR 2 duct diameters downstream of the feature to combat potential for flow turbulence in the duct near the feature and increase the likelihood of detection during a release.

- If the exhaust duct being sampled has a flow construction, connect the sample tubing 1 duct diameter upstream OR 6 duct diameters downstream of the feature to combat potential for flow turbulence in the duct near the feature and increase the likelihood of detection during a release.

- Sample points used for monitoring ambient locations do not need their sample exhausts ran to exhaust ducts.

- Sample points used for monitoring ambient locations must have sample lines ran to locations with consideration to their relative vapor density of the target gas.

- Correct sample line filters for target gas being detected must be installed as close to the end of sample line as possible. This is especially important for absorbent gases.

Single Point Transmitters

- Consideration as to whether the installation environment requires explosion proof detectors must be had.

- Mount detector as close to sample point as possible, approximately 4-5' from the floor with 1-2" of space between monitors so that they are accessible for maintenance without the need for a ladder.

- Label Belden 6301FE (or equivalent) wires accurately at both ends of the wire run and provide a breakdown of this labeling scheme to all installation technicians. This wire provides 24VDC to the transmitters and returns mA+ and 0VDC

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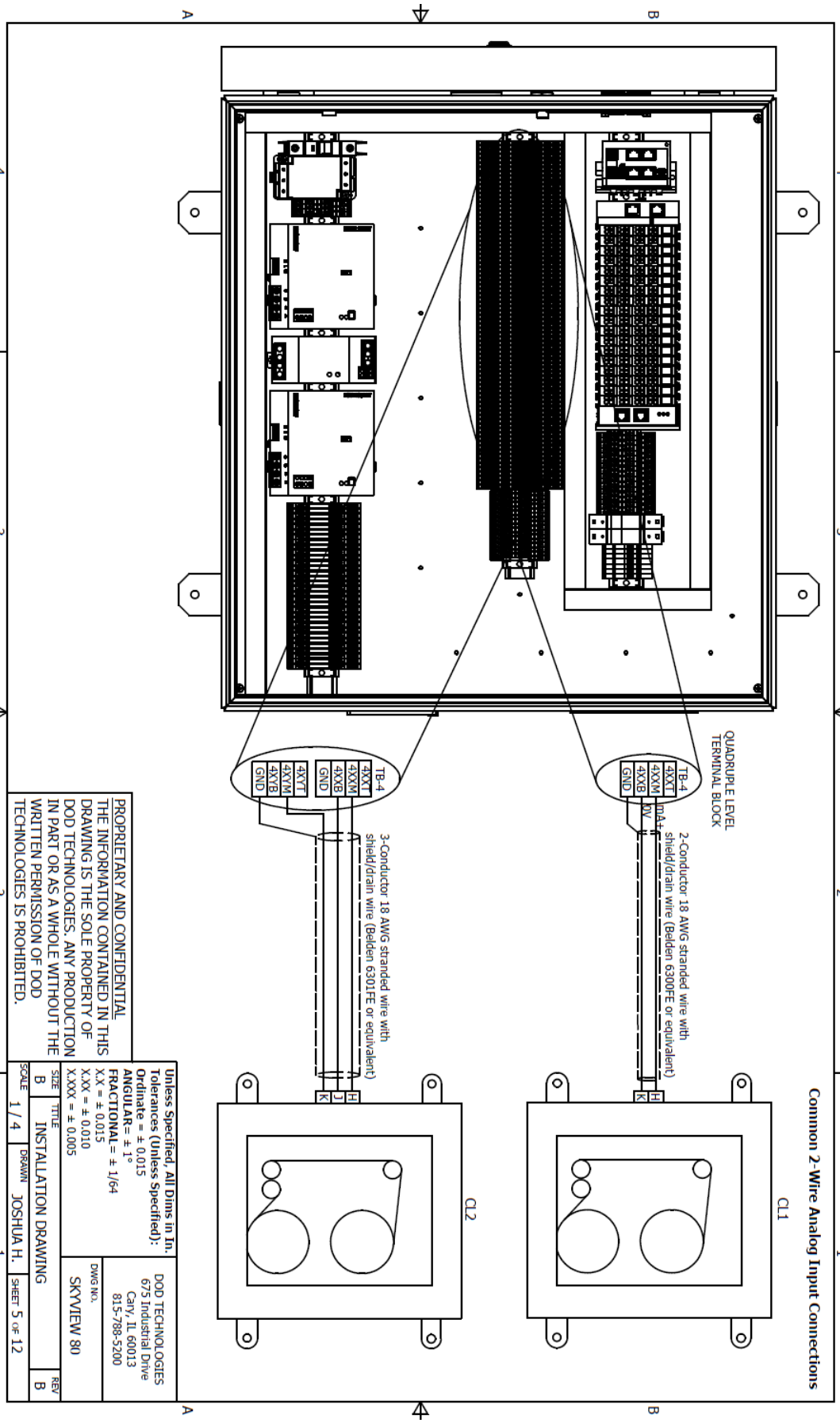
	DWG NO. SKYVIEW 80
SIZE B	TITLE INSTALLATION DRAWING — REV B
SCALE	DRAWN JOSHUA H. — SHEET 4 OF 12


Common 2-Wire Analog Input Connections
CL1
CL2
QUADRUPLE LEVEL TERMINAL BLOCK
TB-4
4XXT
4XXM
4XXB
GND
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
3-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6301FE or equivalent)
mA+
4XV
H
J
K
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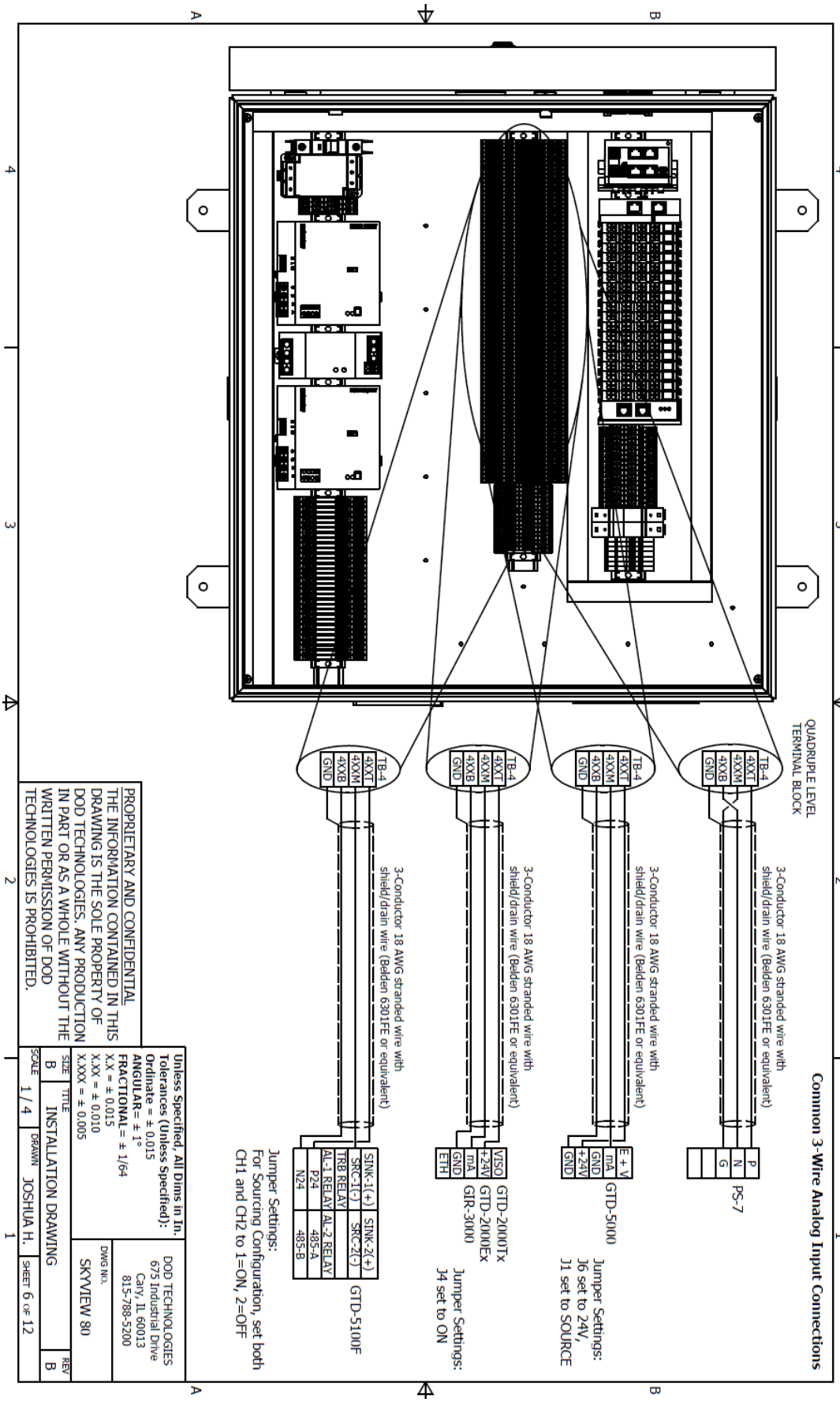
REV B
SCALE 1/4
DRAWN JOSHUA H.
SHEET 5 OF 12


Common 3-Wire Analog Input Connections
QUADRUPLE LEVEL TERMINAL BLOCK
TB-4
4XXT
4XXM
4XXB
GND
3-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6301FE or equivalent)
PS-7
P
N
G
GTD-5000
E + V
mA
GND
+24V
Jumper Settings:
J6 set to 24V,
J1 set to SOURCE
GTD-20000Tx
GTD-20000Ex
GTR-3000
VISO
+24V
mA
GND
ETH
Jumper Settings:
J4 set to ON
GTD-5100F
SINK-1(+)
SINK-2(+)
SRC-1(-)
SRC-2(-)
TRB RELAY
AL-1 RELAY
AL-2 RELAY
P24
N24
485-A
485-B
Jumper Settings:
For Sourcing Configuration, set both CH1 and CH2 to 1=ON, 2=OFF
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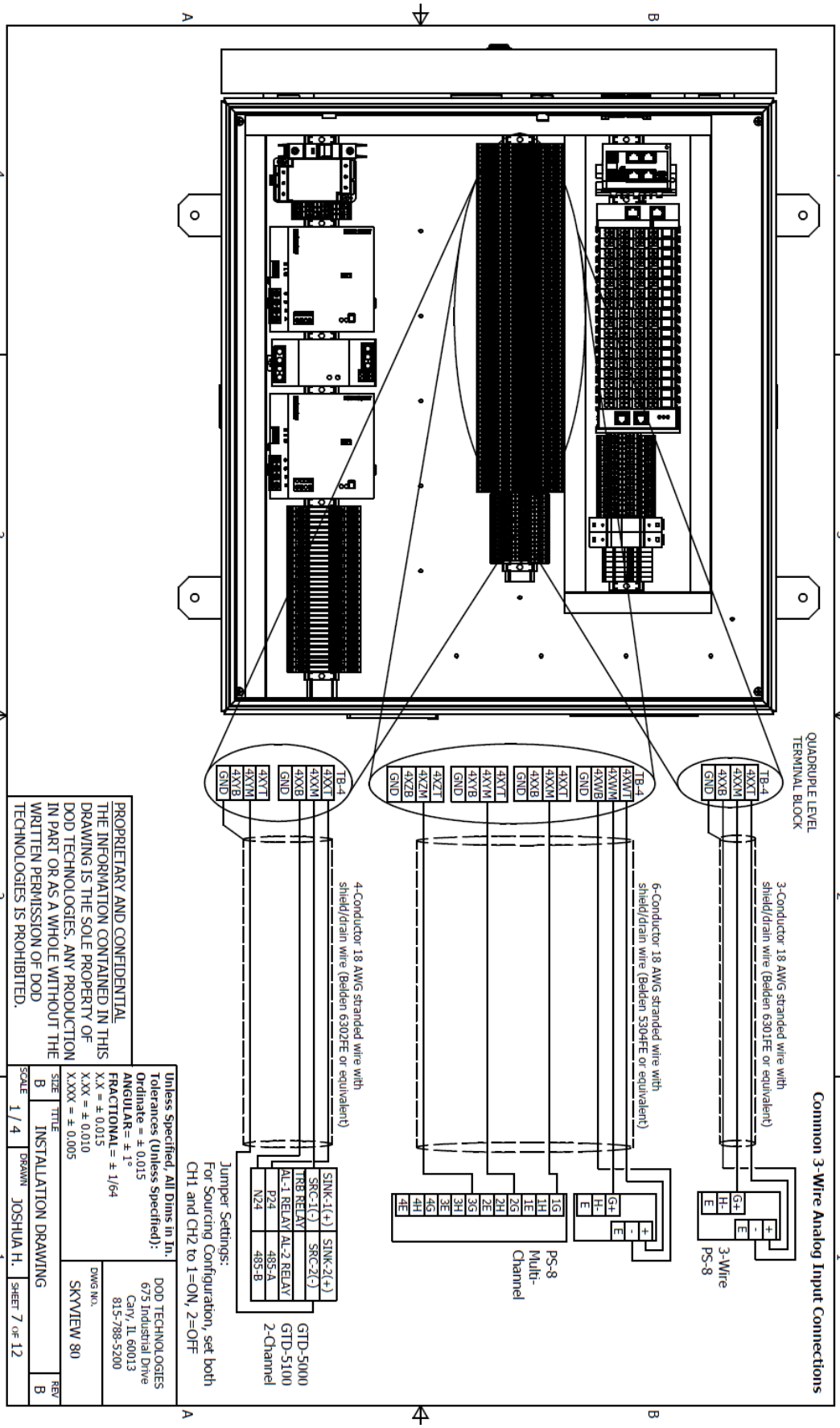
SCALE 1/4
DRAWN JOSHUA H.
SHEET 6 OF 12


Common 3-Wire Analog Input Connections
QUADRUPLE LEVEL TERMINAL BLOCK
3-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6301FE or equivalent)
6-Conductor 18 AWG stranded wire with shield/drain wire (Belden 5304FE or equivalent)
4-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6302FE or equivalent)
3-Wire PS-8
PS-8 Multi-Channel
GTD-5000 GTD-5100 2-Channel
Jumper Settings:
For Sourcing Configuration, set both CH1 and CH2 to 1=ON, 2=OFF
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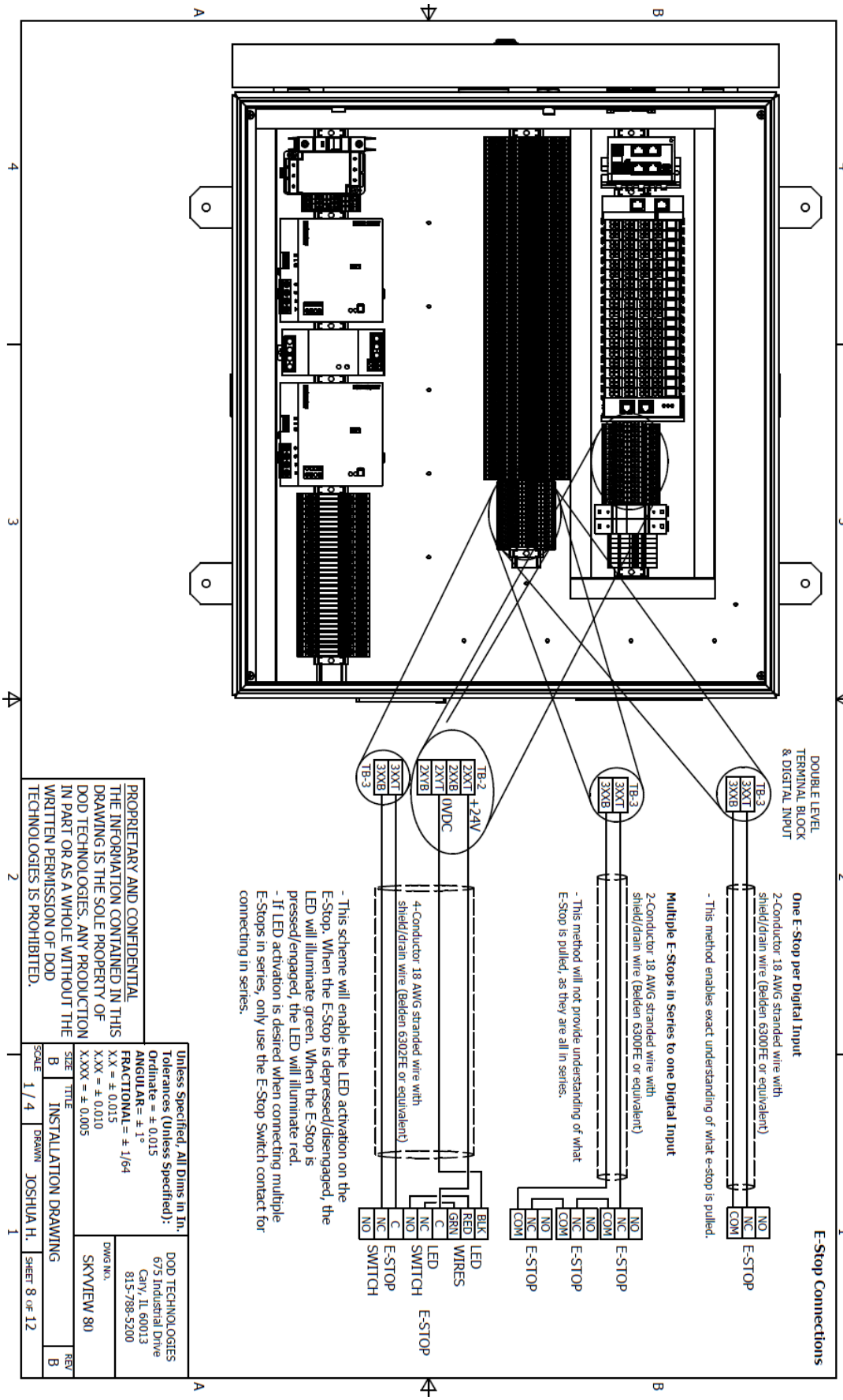
SHEET 7 OF 12


E-Stop Connections
One E-Stop per Digital Input
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
- This method enables exact understanding of what e-stop is pulled.
Multiple E-Stops in Series to one Digital Input
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
- This method will not provide understanding of what E-Stop is pulled, as they are all in series.
4-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6302FE or equivalent)
- This scheme will enable the LED activation on the E-Stop. When the E-Stop is depressed/disengaged, the LED will illuminate green. When the E-Stop is pressed/engaged, the LED will illuminate red.
- If LED activation is desired when connecting multiple E-Stops in series, only use the E-Stop Switch contact for connecting in series.
DOUBLE LEVEL TERMINAL BLOCK & DIGITAL INPUT
TB-3 3XXT 3XXB
TB-2 2XXT 2XXB 2XYT 2XYB +24V 0VDC
E-STOP
E-STOP SWITCH
LED SWITCH
LED WIRES
BLK RED GRN
NO NC COM C
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SCALE 1/4
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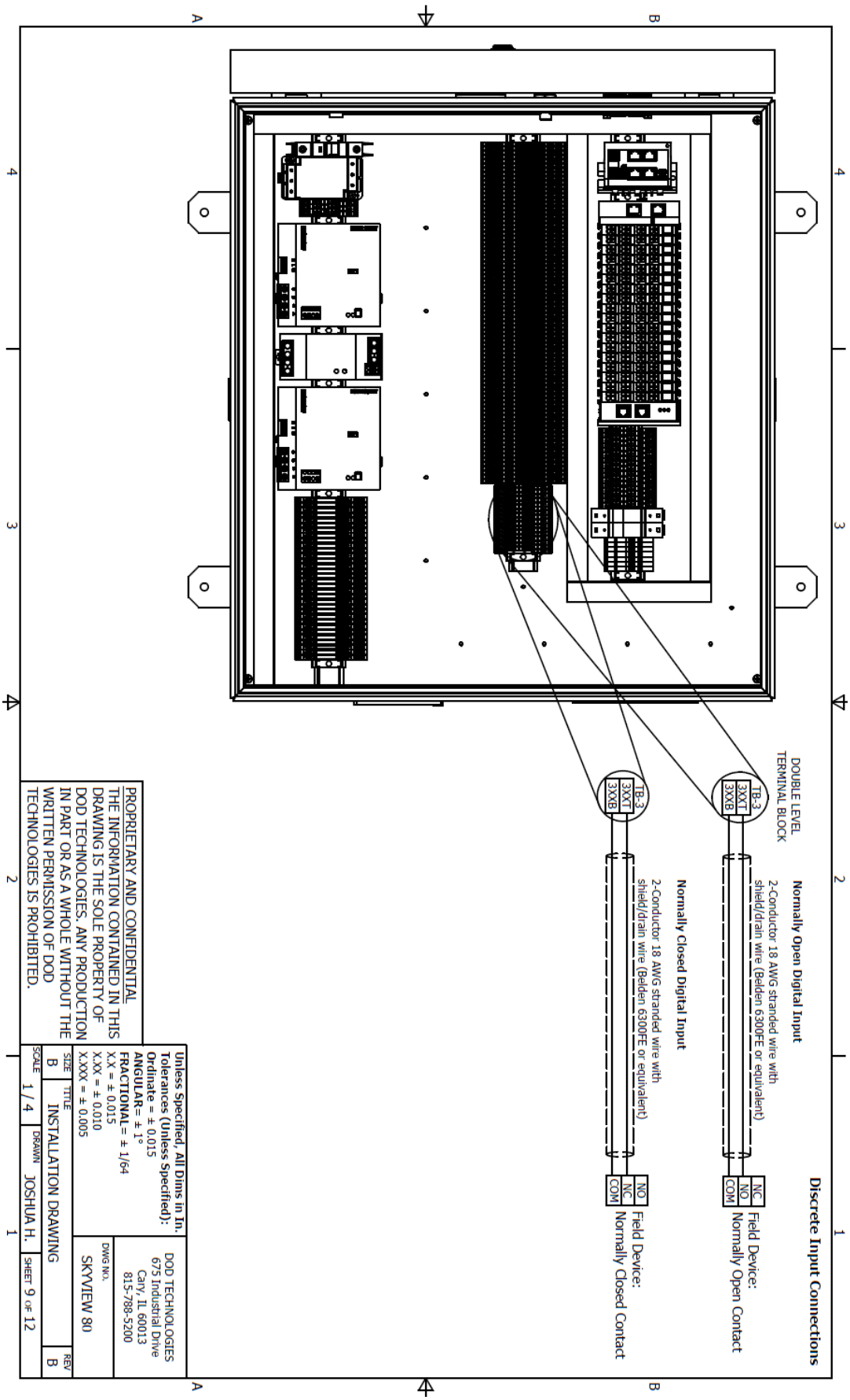
Discrete Input Connections
Normally Open Digital Input
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
DOUBLE LEVEL TERMINAL BLOCK
TB-3
3XXT
3XXB
NC
NO
COM
Field Device:
Normally Open Contact
Normally Closed Digital Input
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
Field Device:
Normally Closed Contact
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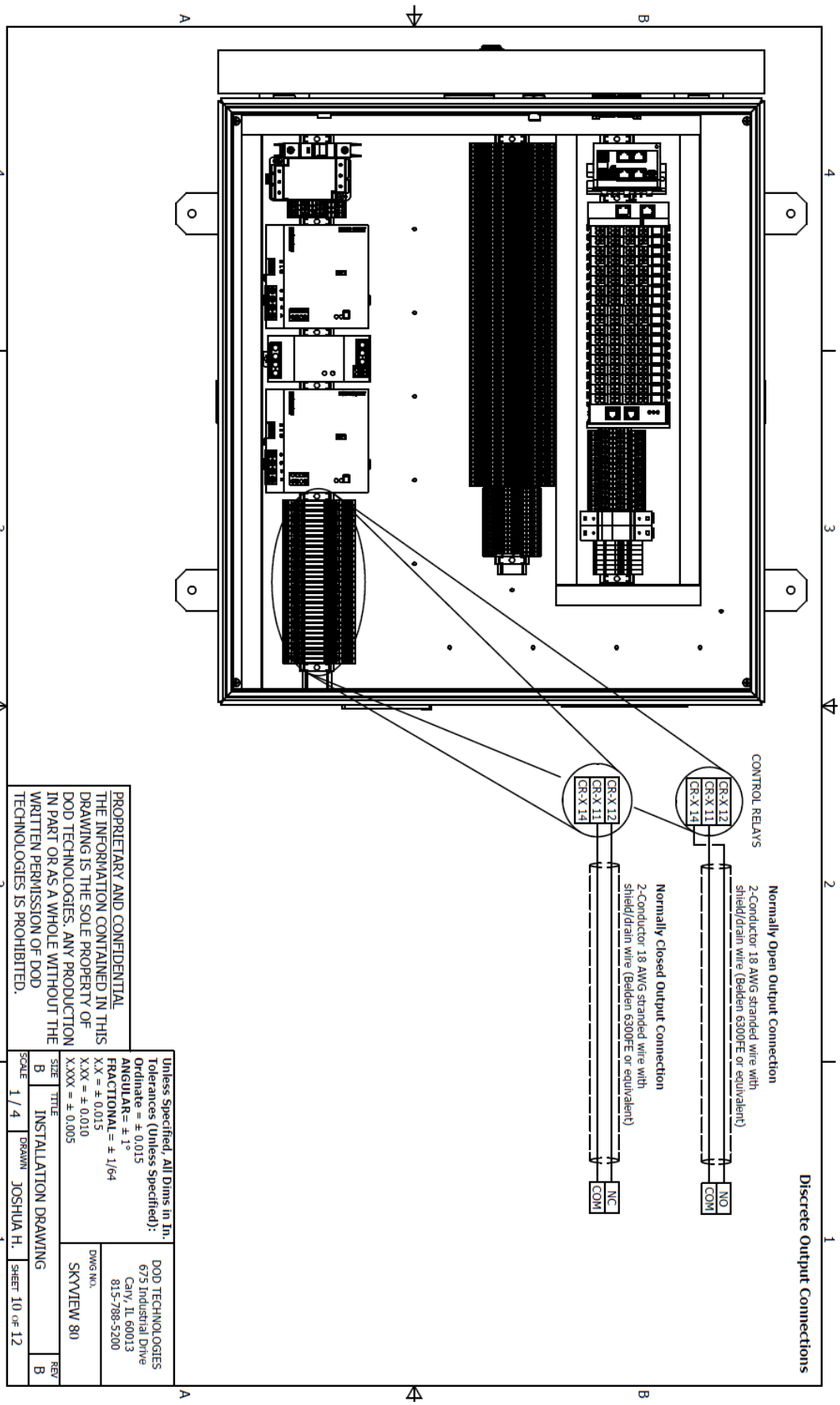
SHEET 9 OF 12


Discrete Output Connections
Normally Open Output Connection
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
CONTROL RELAYS
CR-X 12
CR-X 11
CR-X 14
NO
COM
Normally Closed Output Connection
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
CR-X 12
CR-X 11
CR-X 14
NC
COM
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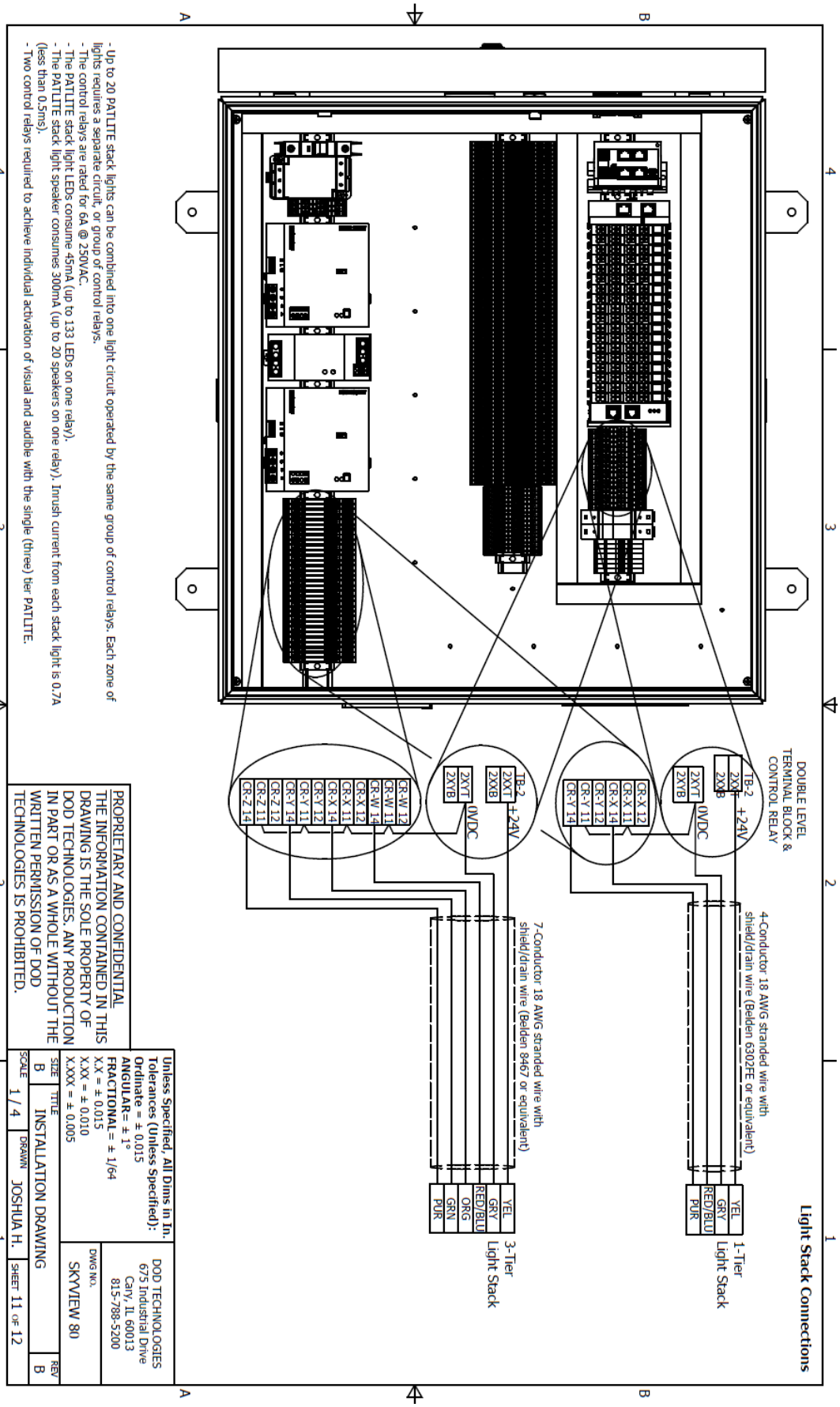
Light Stack Connections
DOUBLE LEVEL TERMINAL BLOCK & CONTROL RELAY
TB-2
2XT
2XB
+24V
0VDC
4-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6302FE or equivalent)
YEL
GRY
RED/BLU
PUR
1-Tier Light Stack
7-Conductor 18 AWG stranded wire with shield/drain wire (Belden 8467 or equivalent)
YEL
GRY
RED/BLU
ORG
GRN
PUR
3-Tier Light Stack
CR-X 12
CR-W 11
CR-X 11
CR-Y 14
CR-Y 12
CR-Y 11
CR-W 12
CR-W 14
CR-X 14
CR-Z 12
CR-Z 11
CR-Z 14
- Up to 20 PATLITE stack lights can be combined into one light circuit operated by the same group of control relays. Each zone of lights requires a separate circuit, or group of control relays.
- The control relays are rated for 6A @ 250VAC.
- The PATLITE stack light LEDs consume 45mA (up to 133 LEDs on one relay).
- The PATLITE stack light speaker consumes 300mA (up to 20 speakers on one relay). Inrush current from each stack light is 0.7A (less than 0.5ms).
- Two control relays required to achieve individual activation of visual and audible with the single (three) tier PATLITE.
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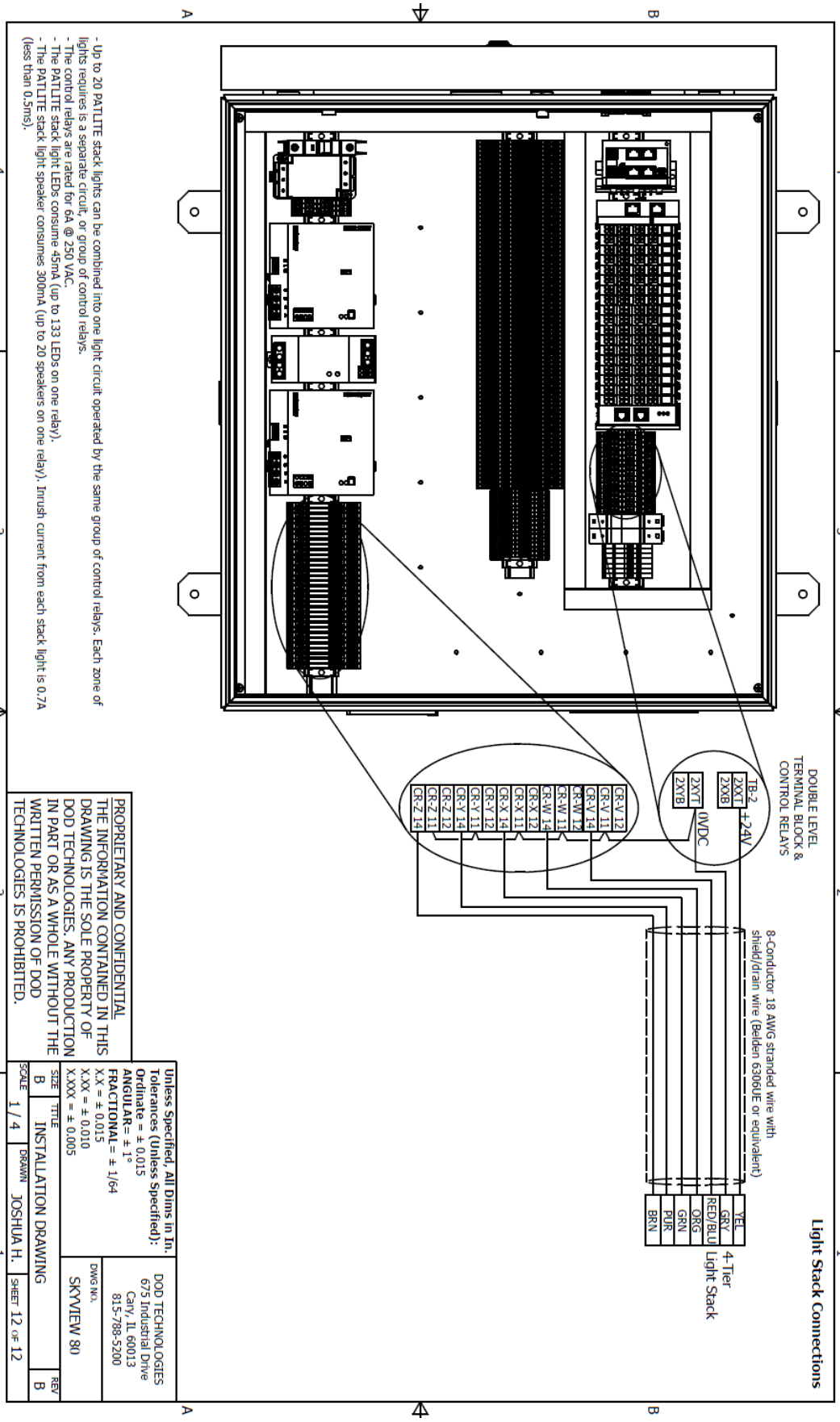
SHEET 11 OF 12


Light Stack Connections
DOUBLE LEVEL
TERMINAL BLOCK &
CONTROL RELAYS
TB-2
2XXT
2XXB
+24V
2XYT
2XYB
0VDC
CR-V 12
CR-V 11
CR-V 14
CR-W 13
CR-W 14
CR-X 12
CR-X 11
CR-X 14
CR-Y 12
CR-Y 11
CR-Y 14
CR-Z 12
CR-Z 11
CR-Z 14
8-Conductor 18 AWG stranded wire with
shield/drain wire (Belden 6306UE or equivalent)
YEL
GRY
RED/BLU
ORG
GRN
PUR
BRN
4 Tier
Light Stack
- Up to 20 PATLITE stack lights can be combined into one light circuit operated by the same group of control relays. Each zone of lights requires is a separate circuit, or group of control relays.
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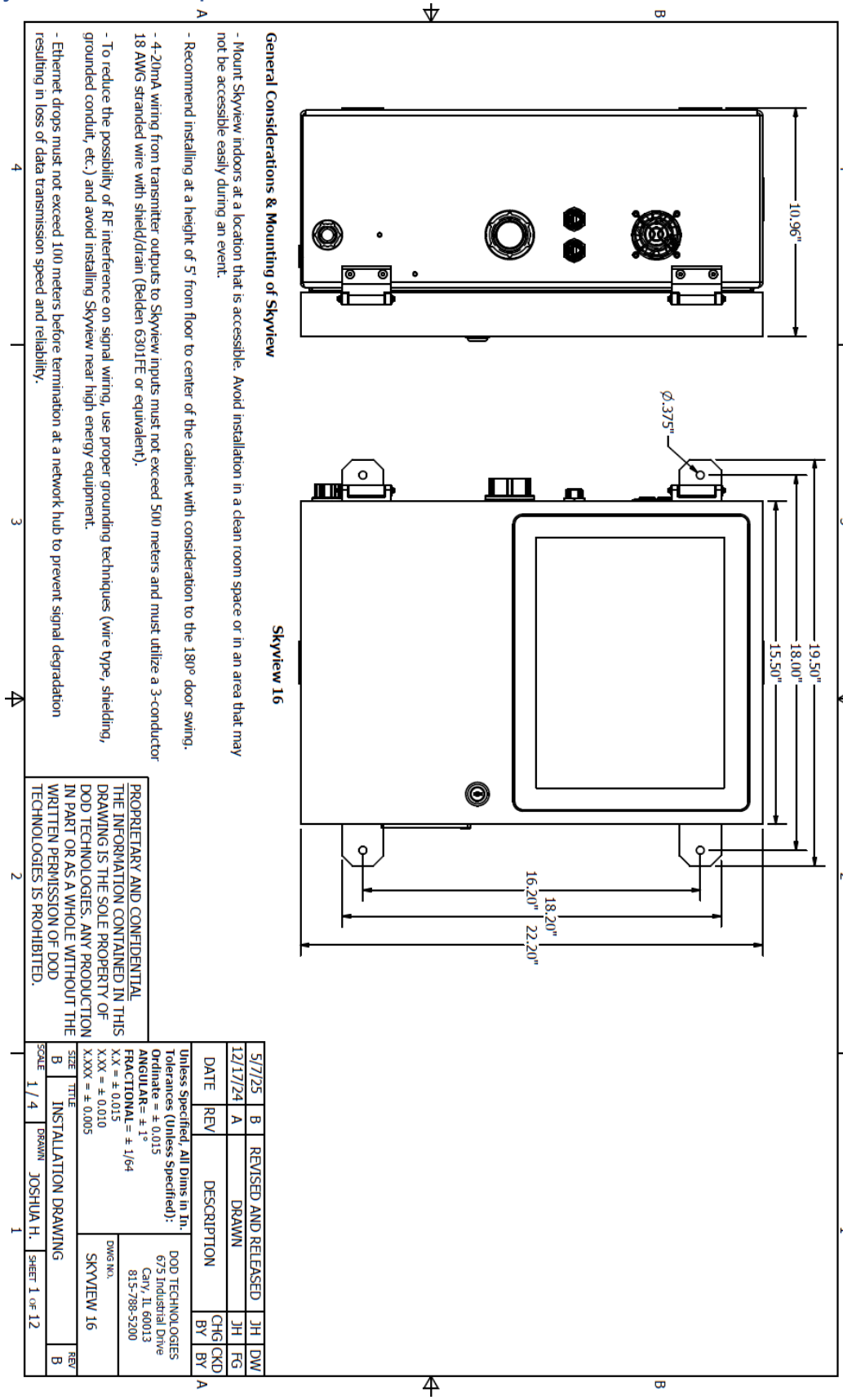
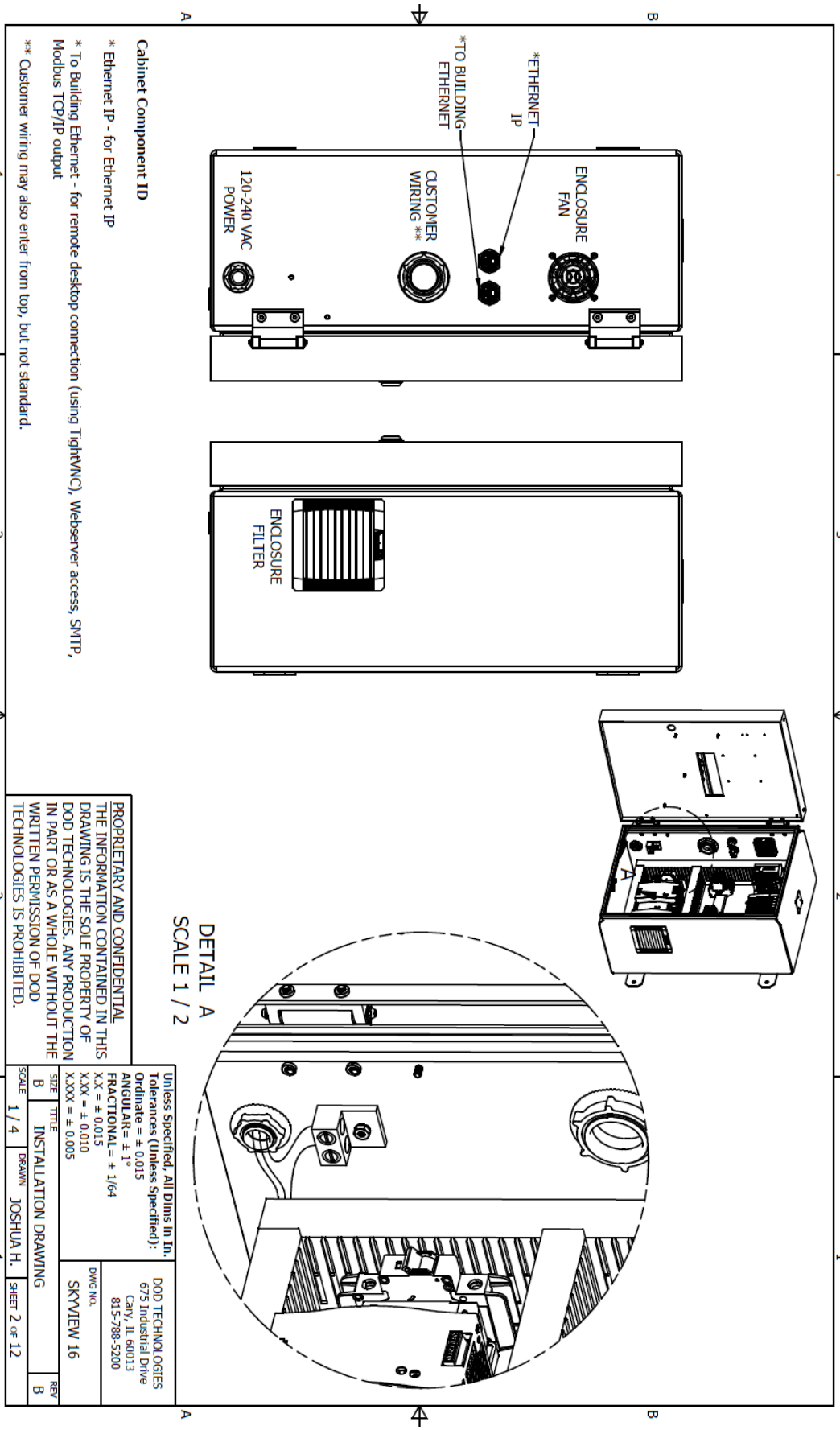
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 80
REV B
SCALE 1/4
DRAWN JOSHUA H.
SHEET 12 OF 12

D.2 SkyView 16 Compact Controller





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SIZE	TITLE	DWG NO.	REV
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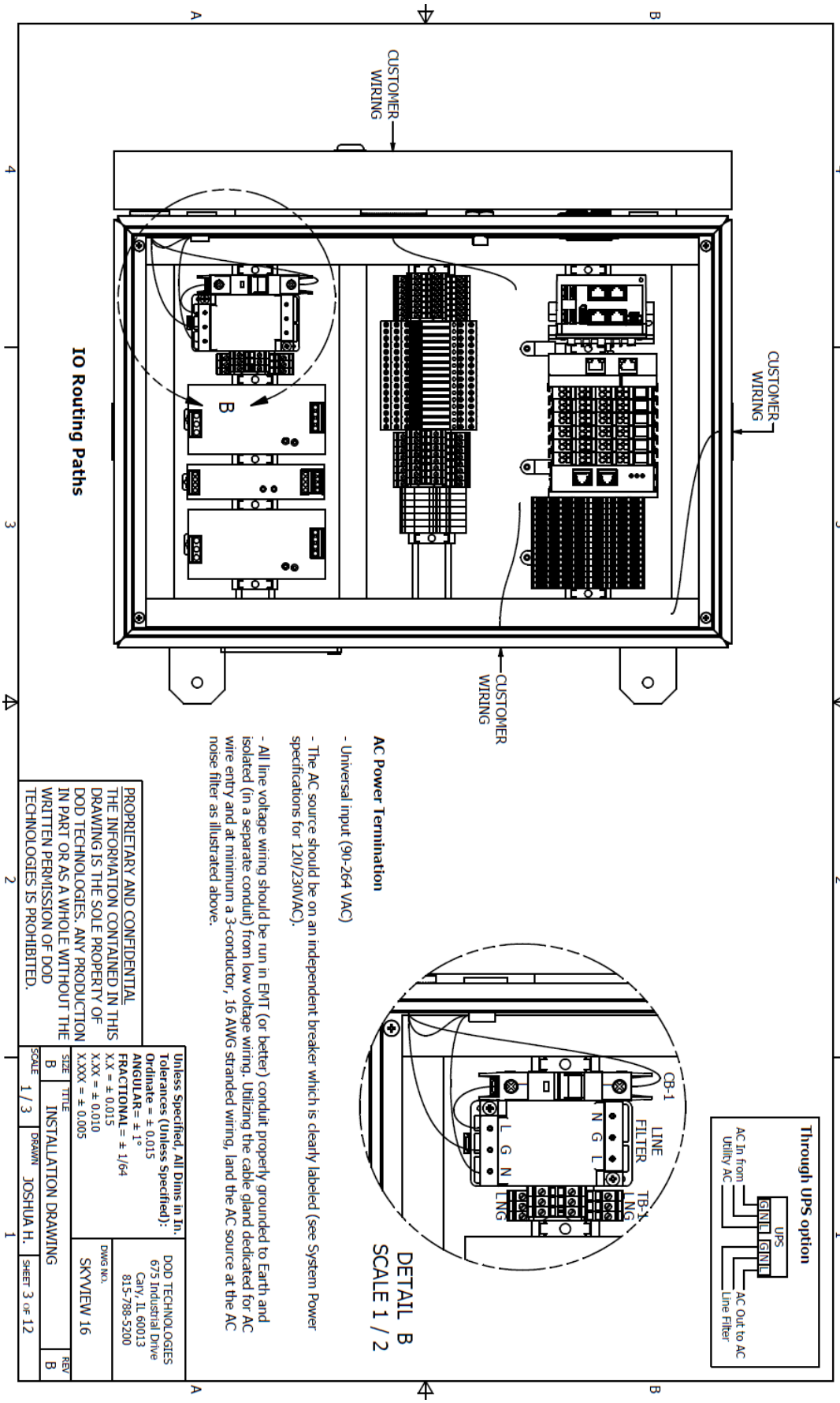
SCALE 1/4	DRAWN JOSHUA H.	SHEET 2 OF 12	


CUSTOMER WIRING
CUSTOMER WIRING
CUSTOMER WIRING
IO Routing Paths
B
Through UPS option
AC In from Utility AC
UPS
GND L GND
AC Out to AC Line Filter
CB-1
LINE FILTER
TB-1
L G N
N G L
LNG
LNG
DETAIL B
SCALE 1 / 2
AC Power Termination
- Universal input (90-264 VAC)
- The AC source should be on an independent breaker which is clearly labeled (see System Power specifications for 120/230VAC).
- All line voltage wiring should be run in EMT (or better) conduit properly grounded to Earth and isolated (in a separate conduit) from low voltage wiring. Utilizing the cable gland dedicated for AC wire entry and at minimum a 3-conductor, 16 AWG stranded wiring, land the AC source at the AC noise filter as illustrated above.
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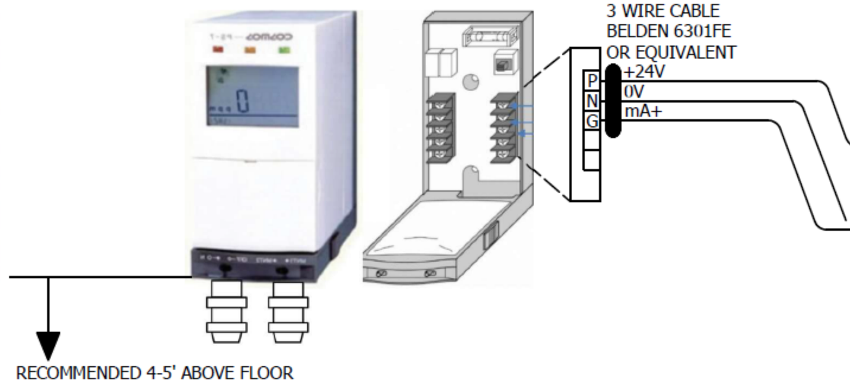
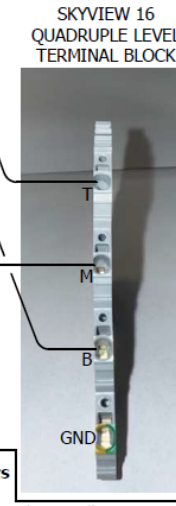
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
SCALE 1 / 3
DRAWN JOSHUA H.
SHEET 3 OF 12

DOD Technologies

General Considerations & Mounting of Connected Devices





Sample Tubing & Duct Adapter

- Sample tubing type recommendation is 1/4" OD x 3/16" ID FEP Teflon for both inlet and exhaust.

-Sample tubing length specification varies by gas detector manufacturer and gas type detected (absorbent vs. nonabsorbent).

- Sample points connected to process exhausts should be terminated using duct adapters to ensure a quality seal is made around the duct penetration point. These points must have the exhaust tubing connected back to the duct using another duct adapter, downstream of the sample inlet. Up to four gas detectors (with 0.5 LPM flowrate) can have a common exhaust line back to the duct using 1/4" OD x 3/16" ID tubing. The ID of the tubing must be increased if more than four gas detectors are being connected to a common exhaust.

- When installing sample tubing for process exhaust detection (gas cabinet, VMBs, hoods, etc.) using duct adapters, the sample tubing must be inserted at a depth equal to half the diameter of the duct size.

- Sample points connected to process exhausts should be connected to the duct 2-4 duct diameters downstream from the exit of the gas cabinet, tool exhaust, etc.

- If the exhaust duct being sampled has a bend or elbow feature, connect the sample tubing 1 duct diameter upstream OR 2 duct diameters downstream of the feature to combat potential for flow turbulence in the duct near the feature and increase the likelihood of detection during a release.

- If the exhaust duct being sampled has a flow construction, connect the sample tubing 1 duct diameter upstream OR 6 duct diameters downstream of the feature to combat potential for flow turbulence in the duct near the feature and increase the likelihood of detection during a release.

- Sample points used for monitoring ambient locations do not need their sample exhausts ran to exhaust ducts.

- Sample points used for monitoring ambient locations must have sample lines ran to locations with consideration to their relative vapor density of the target gas.

- Correct sample line filters for target gas being detected must be installed as close to the end of sample line as possible. This is especially important for absorbent gases.

Single Point Transmitters

- Consideration as to whether the installation environment requires explosion proof detectors must be had.

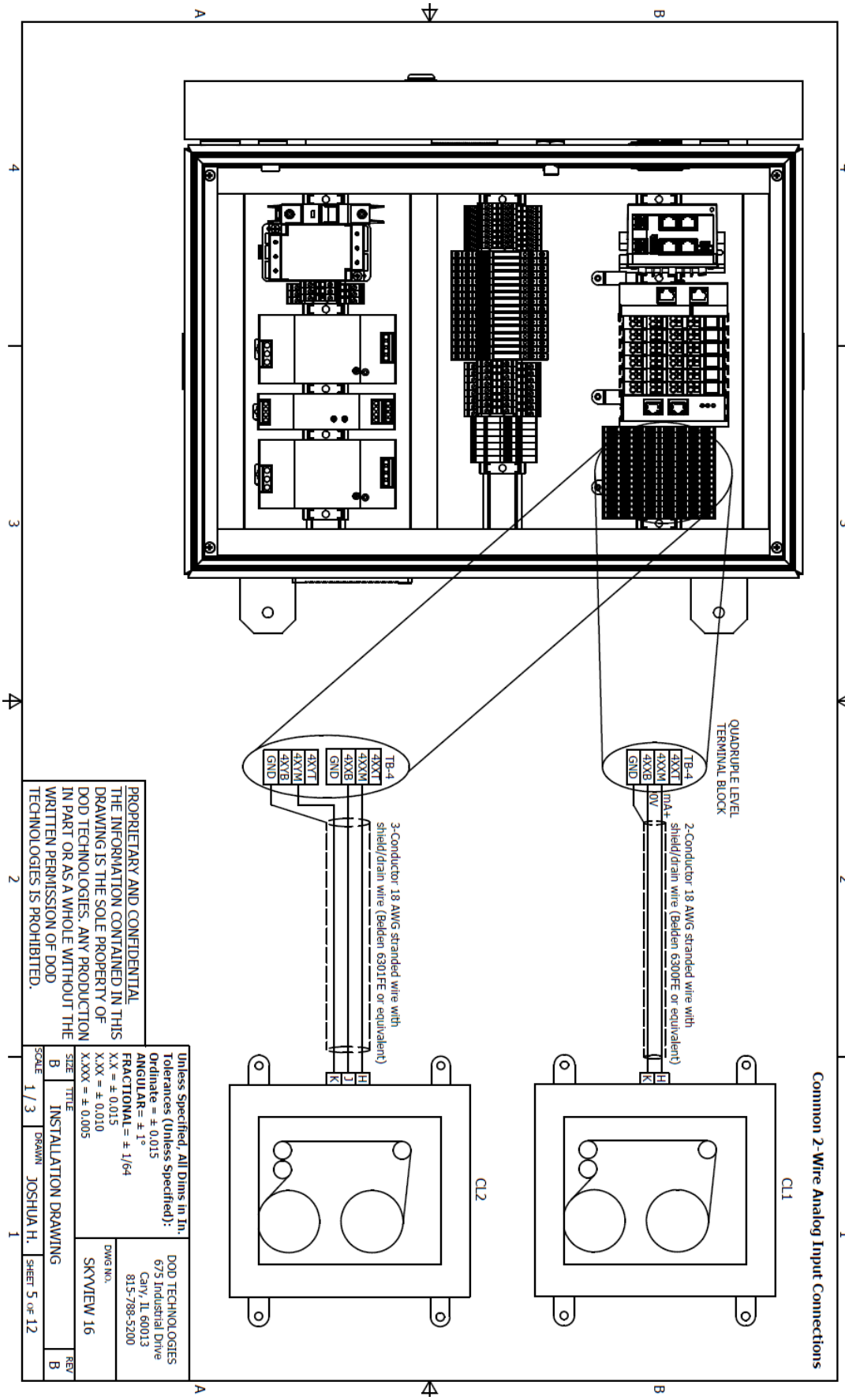
- Mount detector as close to sample point as possible, approximately 4-5' from the floor with 1-2" of space between monitors so that they are accessible for maintenance without the need for a ladder.

- Label Belden 6301FE (or equivalent) wires accurately at both ends of the wire run and provide a breakdown of this labeling scheme to all installation technicians. This wire provides 24VDC to the transmitters and returns mA+ and 0VDC.

Unless Specified, All Dims in In.
Tolerances (Unless Specified):
Ordinate = ± 0.015
ANGULAR= ± 1°
FRACTIONAL= ± 1/64
X.X = ± 0.015
X.XX = ± 0.010
X.XXX = ± 0.005

DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200

DWG NO. SKYVIEW 16			
SIZE B	TITLE INSTALLATION DRAWING		REV B
SCALE	DRAWN JOSHUA H.	SHEET 4 OF 12	


Common 2-Wire Analog Input Connections
CL1
CL2
QUADRUPLE LEVEL TERMINAL BLOCK
TB-4
4XXT
4XXM
4XXB
GND
mA+
0V
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
3-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6301FE or equivalent)
H
J
K
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X.XXX = ± 0.005
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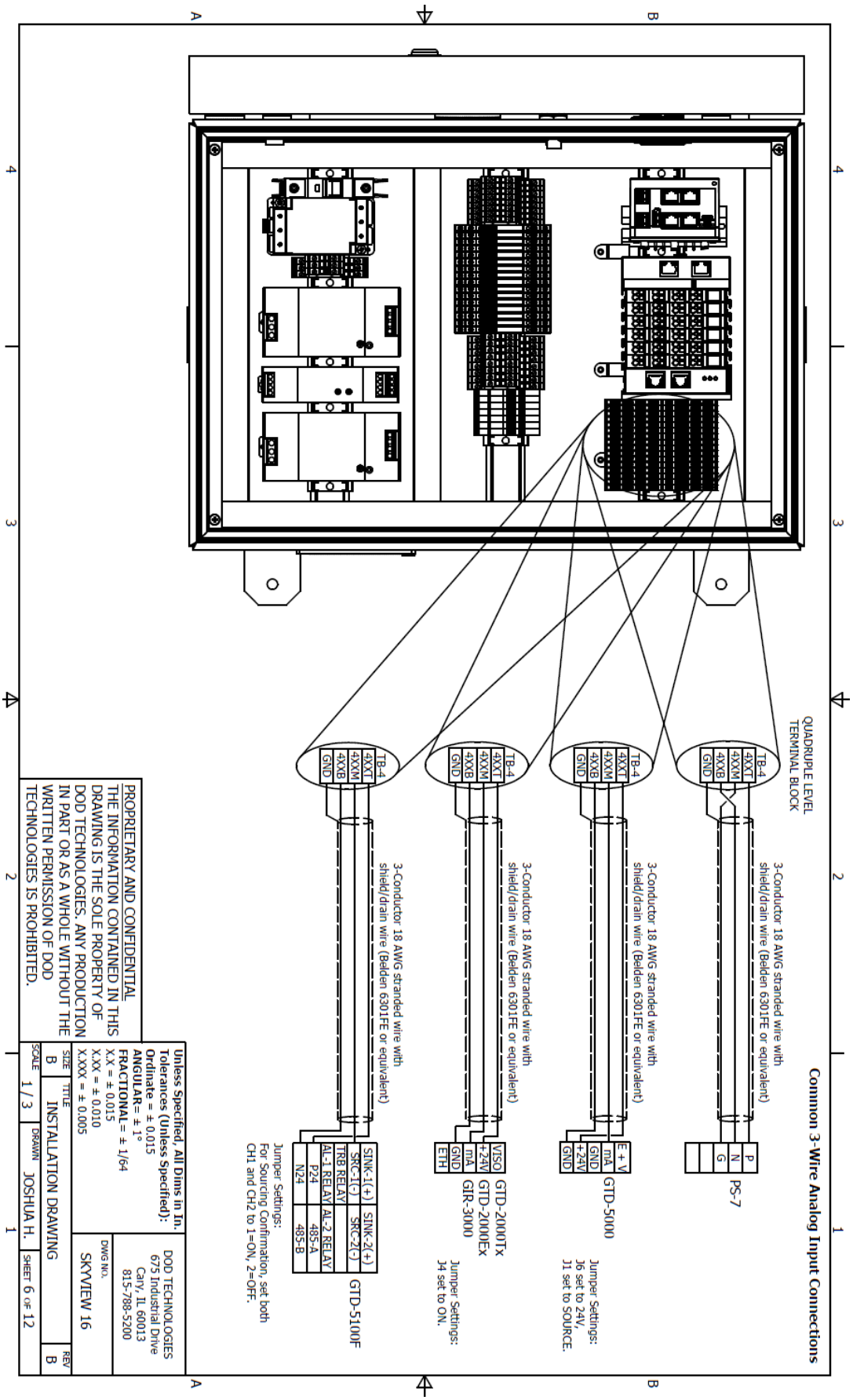
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
SCALE 1 / 3
DRAWN JOSHUA H.
SHEET 5 OF 12


Common 3-Wire Analog Input Connections
QUADRUPLE LEVEL TERMINAL BLOCK
TB-4
4XXT
4XXM
4XXB
GND
3-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6301FE or equivalent)
P
N
G
PS-7
E + V
mA
GND
+24V
GTD-5000
Jumper Settings:
J6 set to 24V.
J1 set to SOURCE.
VISO
+24V
mA
GND
ETH
GTD-2000Tx
GTD-2000Ex
GIR-3000
Jumper Settings:
J4 set to ON.
SINK-1(+)
SINK-2(+)
SRC-1(-)
SRC-2(-)
TRB RELAY
AL-1 RELAY
AL-2 RELAY
P24
N24
485-A
485-B
GTD-5100F
Jumper Settings:
For Sourcing Confirmation, set both CH1 and CH2 to 1=ON, 2=OFF.
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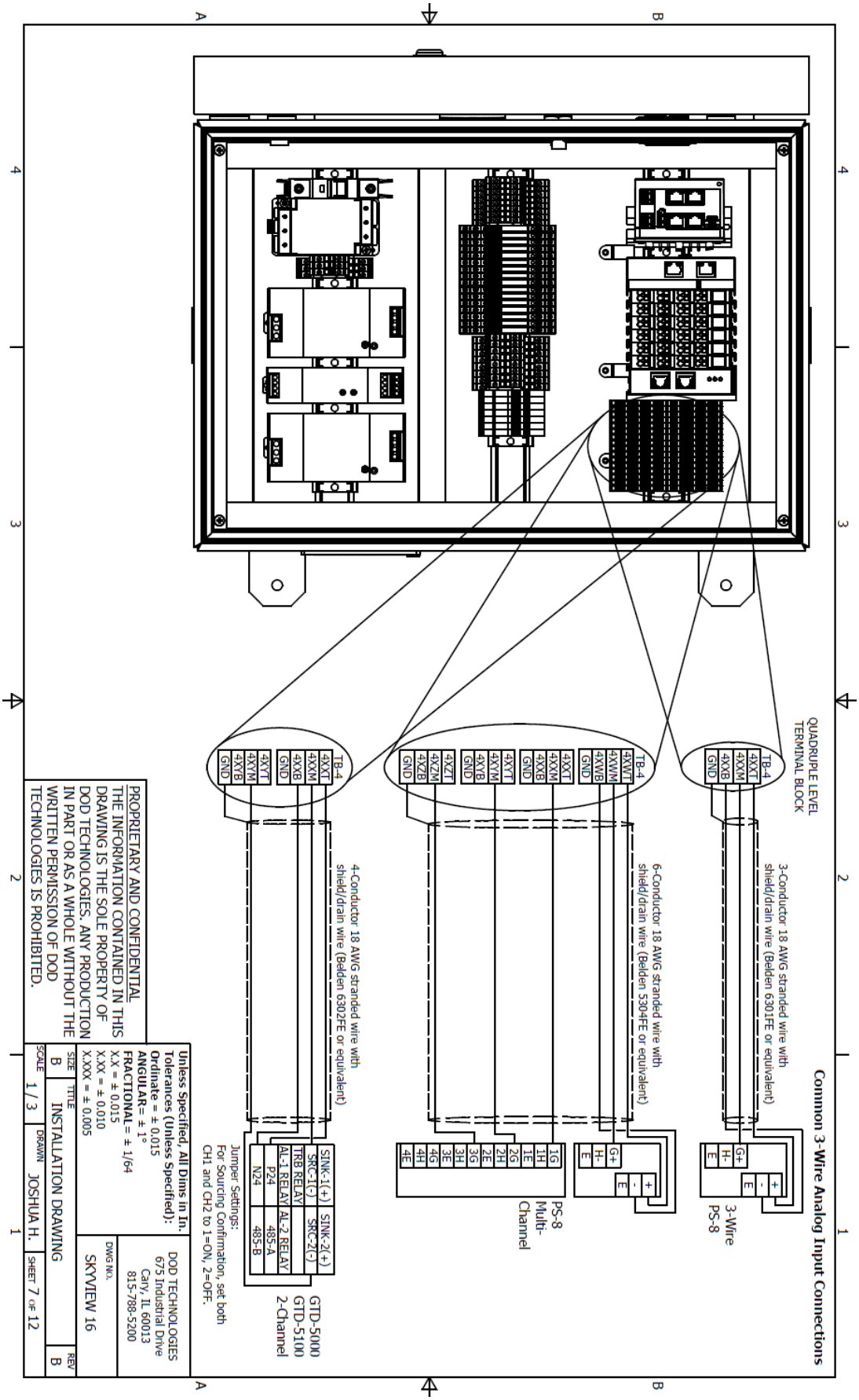
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
SCALE 1/3
DRAWN JOSHUA H.
SHEET 6 OF 12


Common 3-Wire Analog Input Connections
QUADRUPLE LEVEL TERMINAL BLOCK
TB-4
4GND
4XWB
4XXM
4XXT
3-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6301FE or equivalent)
3-Wire PS-8
6-Conductor 18 AWG stranded wire with shield/drain wire (Belden 5304FE or equivalent)
PS-8 Multi-Channel
4-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6302FE or equivalent)
GTD-5000 GTD-5100 2-Channel
Jumper Settings:
For Sourcing Confirmation, set both CH1 and CH2 to 1=ON, 2=OFF.
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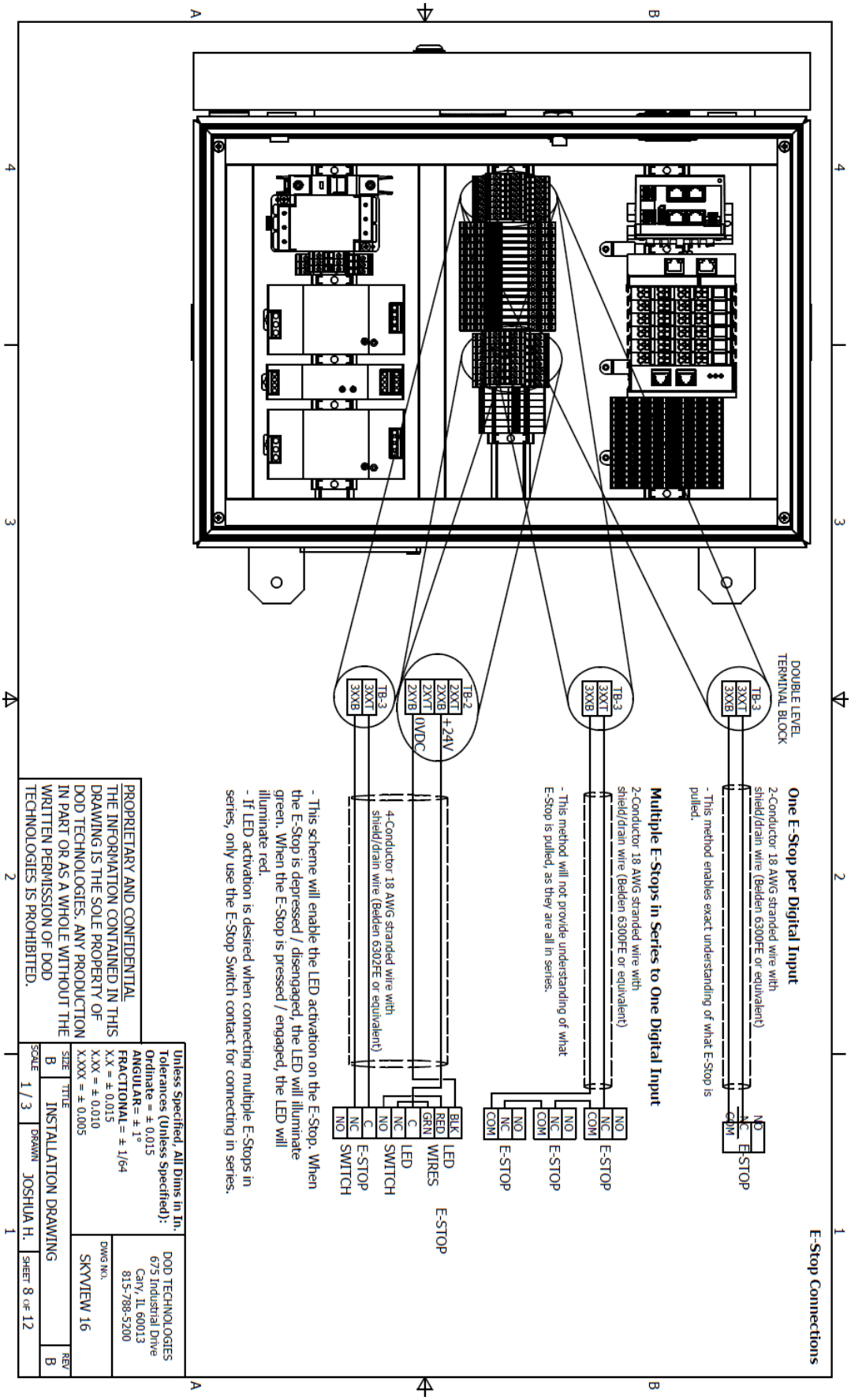
SCALE 1 / 3
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
DRAWN JOSHUA H.
SHEET 7 OF 12


E-Stop Connections
One E-Stop per Digital Input
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
- This method enables exact understanding of what E-Stop is pulled.
Multiple E-Stops in Series to One Digital Input
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
- This method will not provide understanding of what E-Stop is pulled, as they are all in series.
4-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6302FE or equivalent)
- This scheme will enable the LED activation on the E-Stop. When the E-Stop is depressed / disengaged, the LED will illuminate green. When the E-Stop is pressed / engaged, the LED will illuminate red.
- If LED activation is desired when connecting multiple E-Stops in series, only use the E-Stop Switch contact for connecting in series.
DOUBLE LEVEL TERMINAL BLOCK
TB-3
3XT1
3XTB
TB-2
2XT1
2XXB
2XYT
2XYB
+24V
0VDC
E-STOP
NO
NC
COM
LED WIRES
BLK
RED
GRN
LED SWITCH
E-STOP SWITCH
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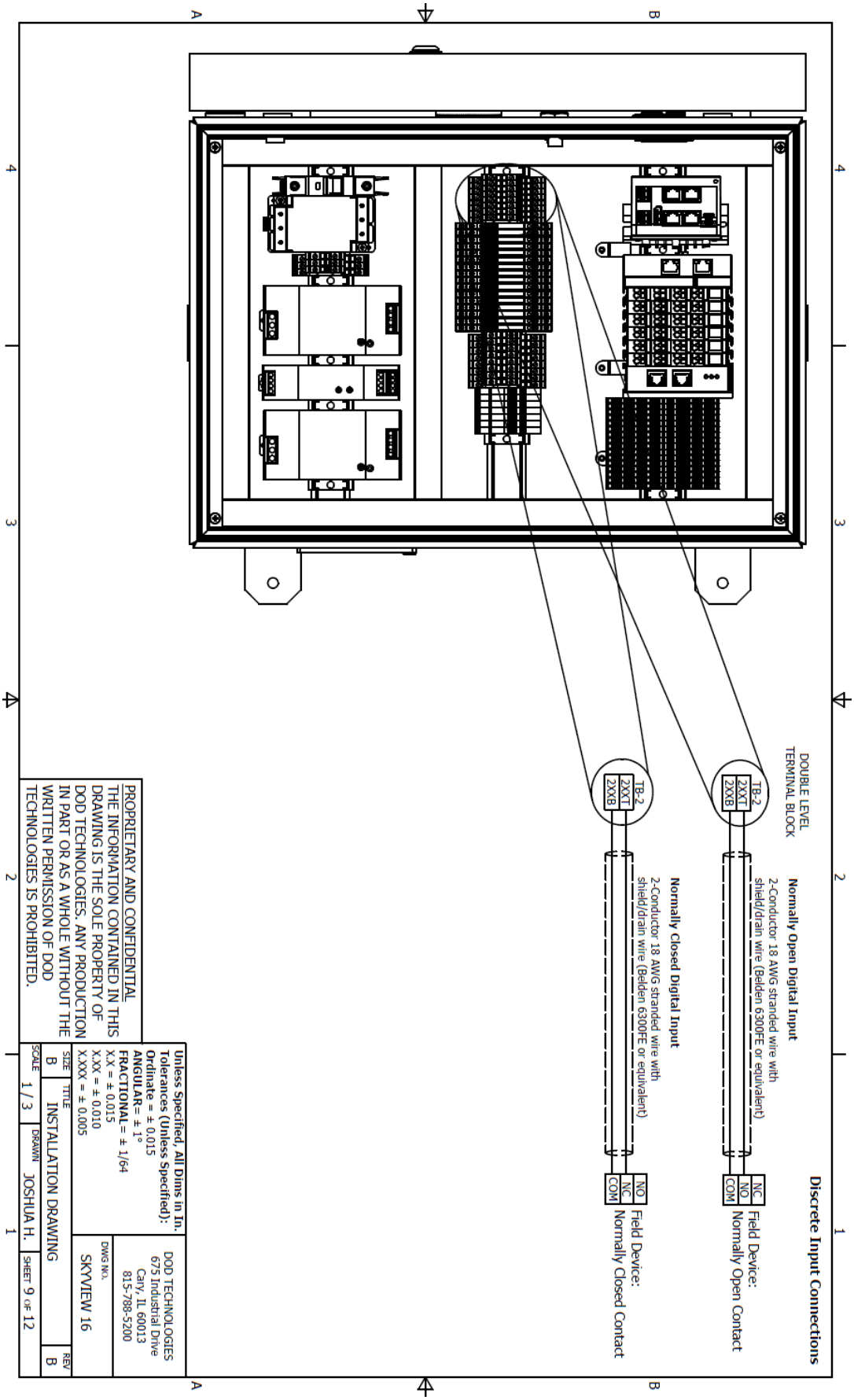
815-788-5200
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
SCALE 1/3
DRAWN JOSHUA H.
SHEET 8 OF 12


Discrete Input Connections
Normally Open Digital Input
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
TB-2
2XXT
2XXB
NC
NO
COM
Field Device:
Normally Open Contact
Normally Closed Digital Input
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
TB-2
2XXT
2XXB
NO
NC
COM
Field Device:
Normally Closed Contact
DOUBLE LEVEL TERMINAL BLOCK
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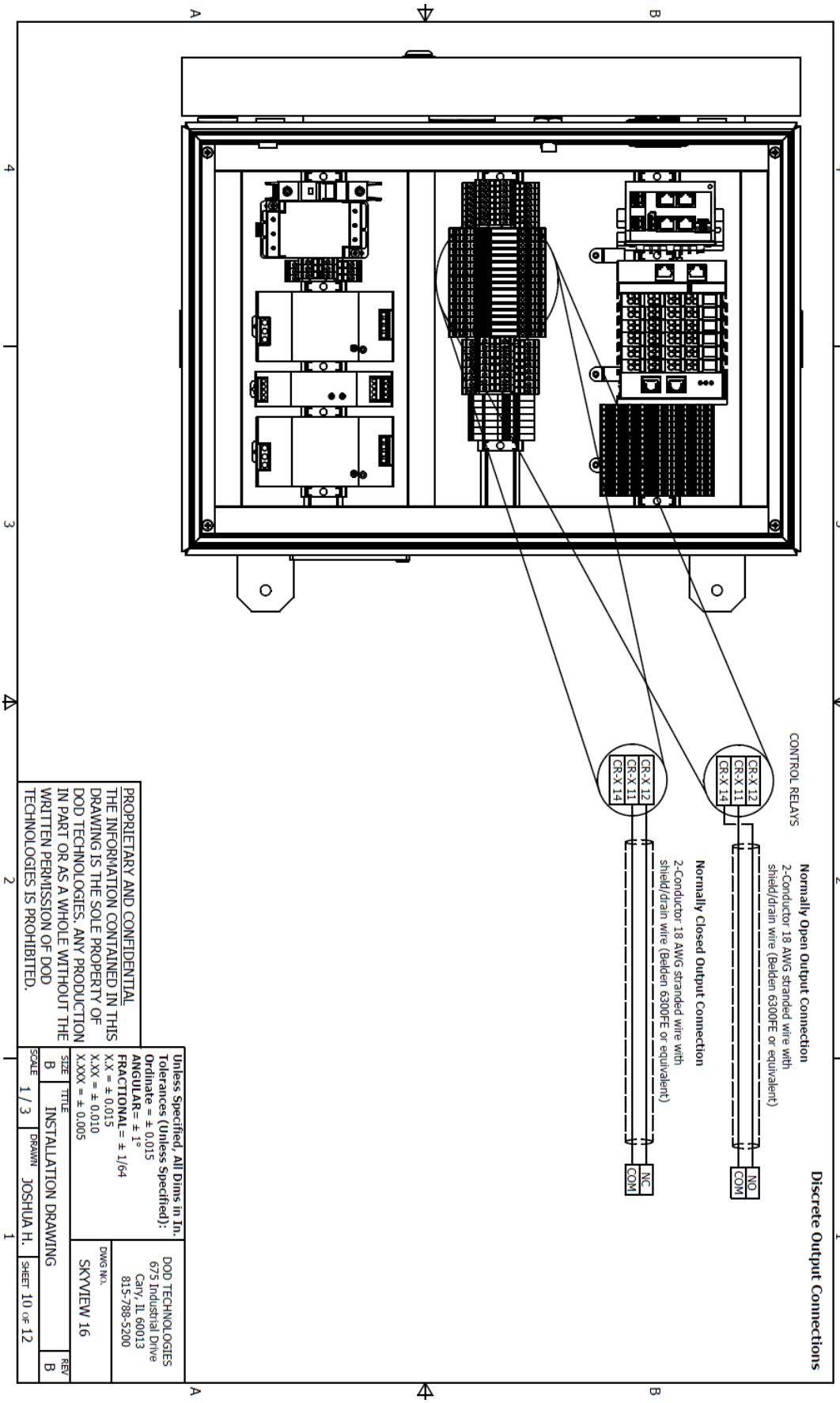
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SCALE 1 / 3
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
DRAWN JOSHUA H.
SHEET 9 OF 12


Discrete Output Connections
CONTROL RELAYS
Normally Open Output Connection
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
CR-X 12
CR-X 11
CR-X 14
NO
COM
Normally Closed Output Connection
2-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6300FE or equivalent)
CR-X 12
CR-X 11
CR-X 14
NC
COM
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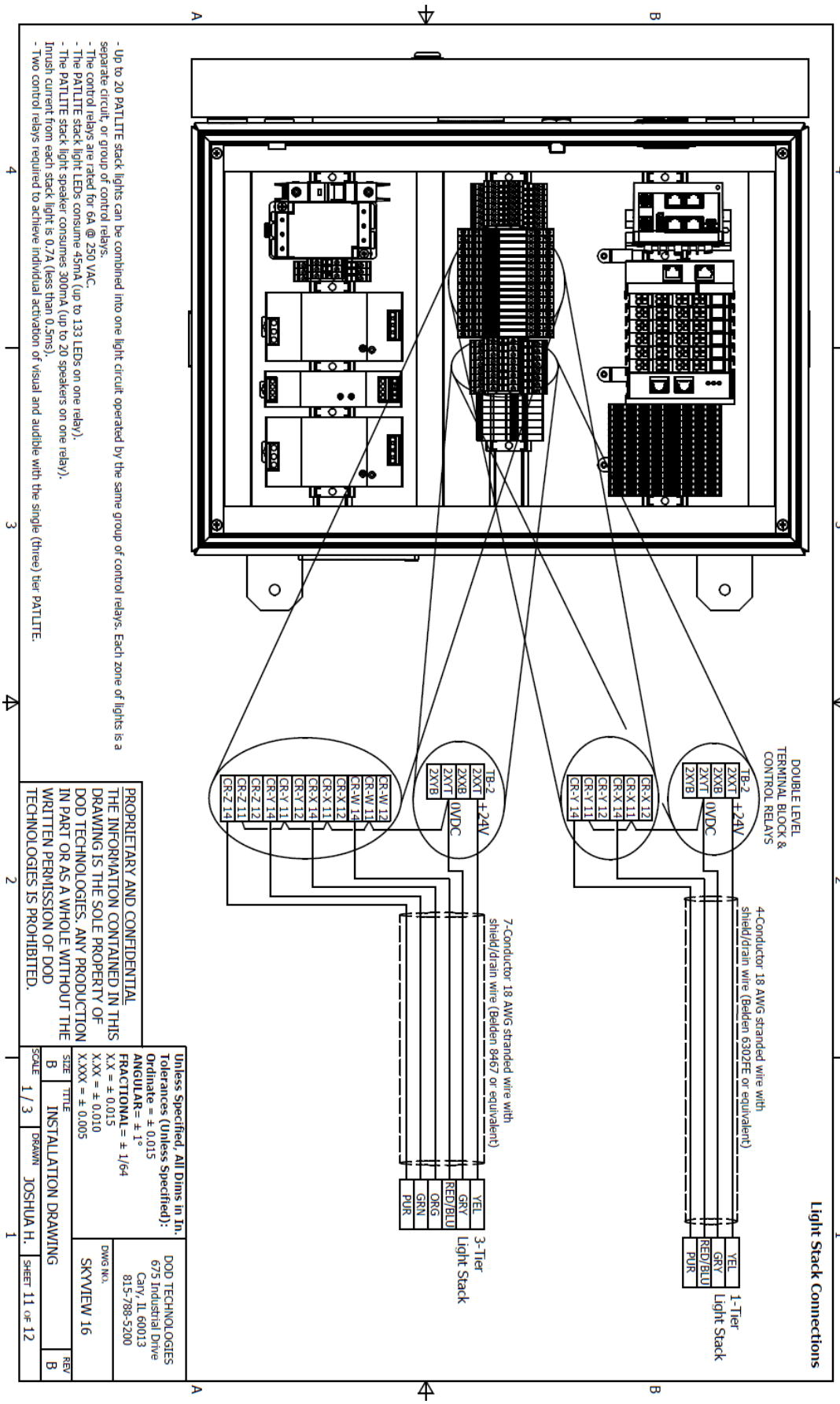
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
SCALE 1/3
DRAWN JOSHUA H.
SHEET 10 OF 12


Light Stack Connections
DOUBLE LEVEL TERMINAL BLOCK & CONTROL RELAYS
TB-2
2XXT +24V
2XXB 0VDC
2XYT
2XYB
CR-X 12
CR-X 11
CR-X 14
CR-Y 12
CR-Y 11
CR-Y 14
CR-W 12
CR-W 11
CR-W 14
CR-Z 14
CR-Z 11
CR-Z 12
CR-Y 14
CR-Y 11
CR-Y 12
CR-X 14
CR-X 11
CR-X 12
4-Conductor 18 AWG stranded wire with shield/drain wire (Belden 6302FE or equivalent)
YEL
GRY
RED/BLU
PUR
1-Tier Light Stack
7-Conductor 18 AWG stranded wire with shield/drain wire (Belden 8467 or equivalent)
YEL
GRY
RED/BLU
ORG
GRN
PUR
3-Tier Light Stack
- Up to 20 PATLITE stack lights can be combined into one light circuit operated by the same group of control relays. Each zone of lights is a separate circuit, or group of control relays.
- The control relays are rated for 6A @ 250 VAC.
- The PATLITE stack light LEDs consume 45mA (up to 133 LEDs on one relay).
- The PATLITE stack light speaker consumes 300mA (up to 20 speakers on one relay).
Inrush current from each stack light is 0.7A (less than 0.5ms).
- Two control relays required to achieve individual activation of visual and audible with the single (three) tier PATLITE.
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X.XXX = ± 0.005
DOD TECHNOLOGIES
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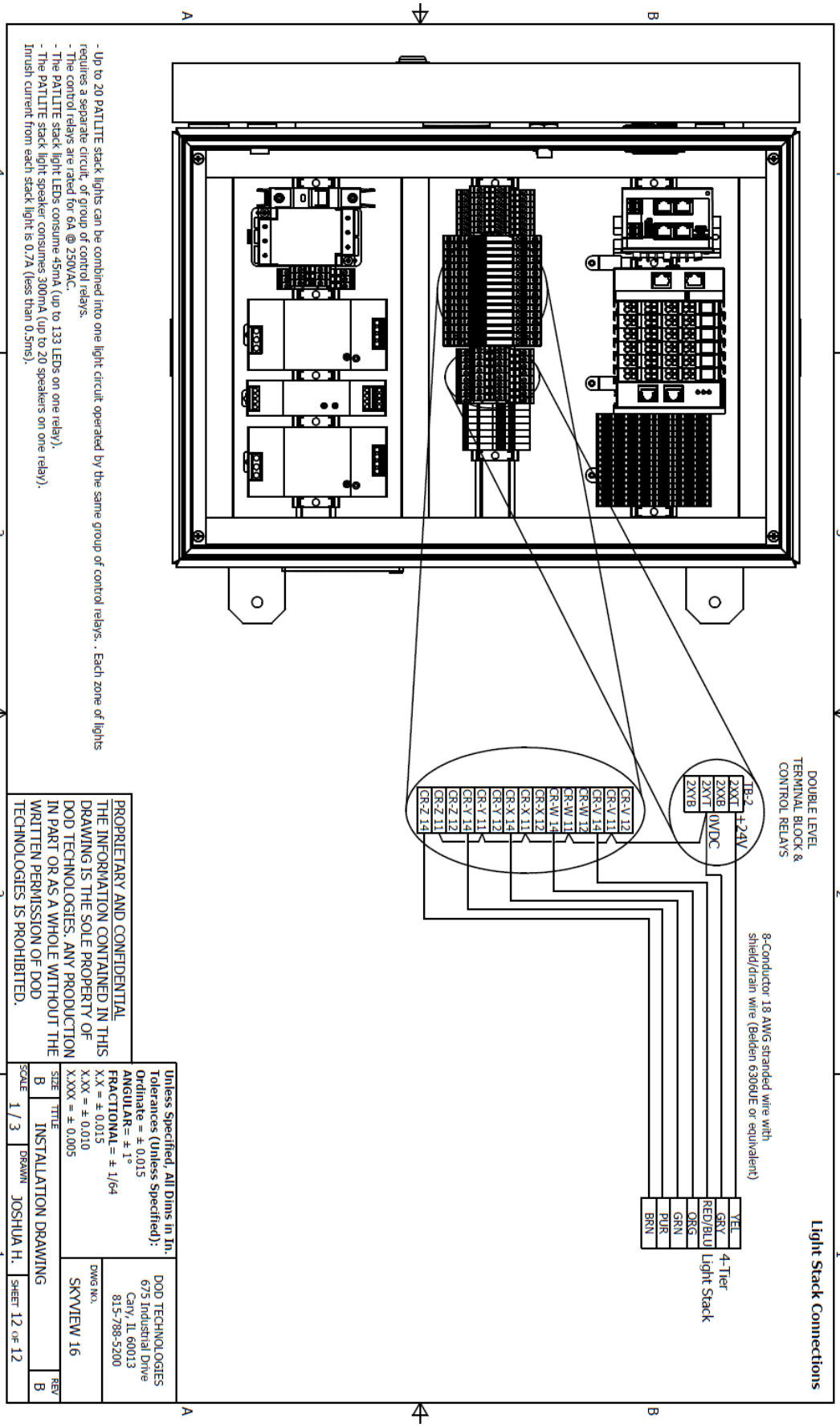
815-788-5200
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
SCALE 1/3
DRAWN JOSHUA H.
SHEET 11 OF 12


Light Stack Connections
DOUBLE LEVEL
TERMINAL BLOCK &
CONTROL RELAYS
TB-2
2XXT +24V
2XXB
2XYT 0VDC
2XYB
8-Conductor 18 AWG stranded wire with
shield/drain wire (Belden 6306UE or equivalent)
YEL
GRY
RED/BLU
ORG
GRN
PUR
BRN
4-Tier
Light Stack
- Up to 20 PATLITE stack lights can be combined into one light circuit operated by the same group of control relays. . Each zone of lights requires a separate circuit, of group of control relays.
- The control relays are rated for 6A @ 250VAC.
- The PATLITE stack light LEDs consume 45mA (up to 133 LEDs on one relay).
- The PATLITE stack light speaker consumes 300mA (up to 20 speakers on one relay). Inrush current from each stack light is 0.7A (less than 0.5ms).
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X.XX = ± 0.010
X.XXX = ± 0.005
DOD TECHNOLOGIES
675 Industrial Drive
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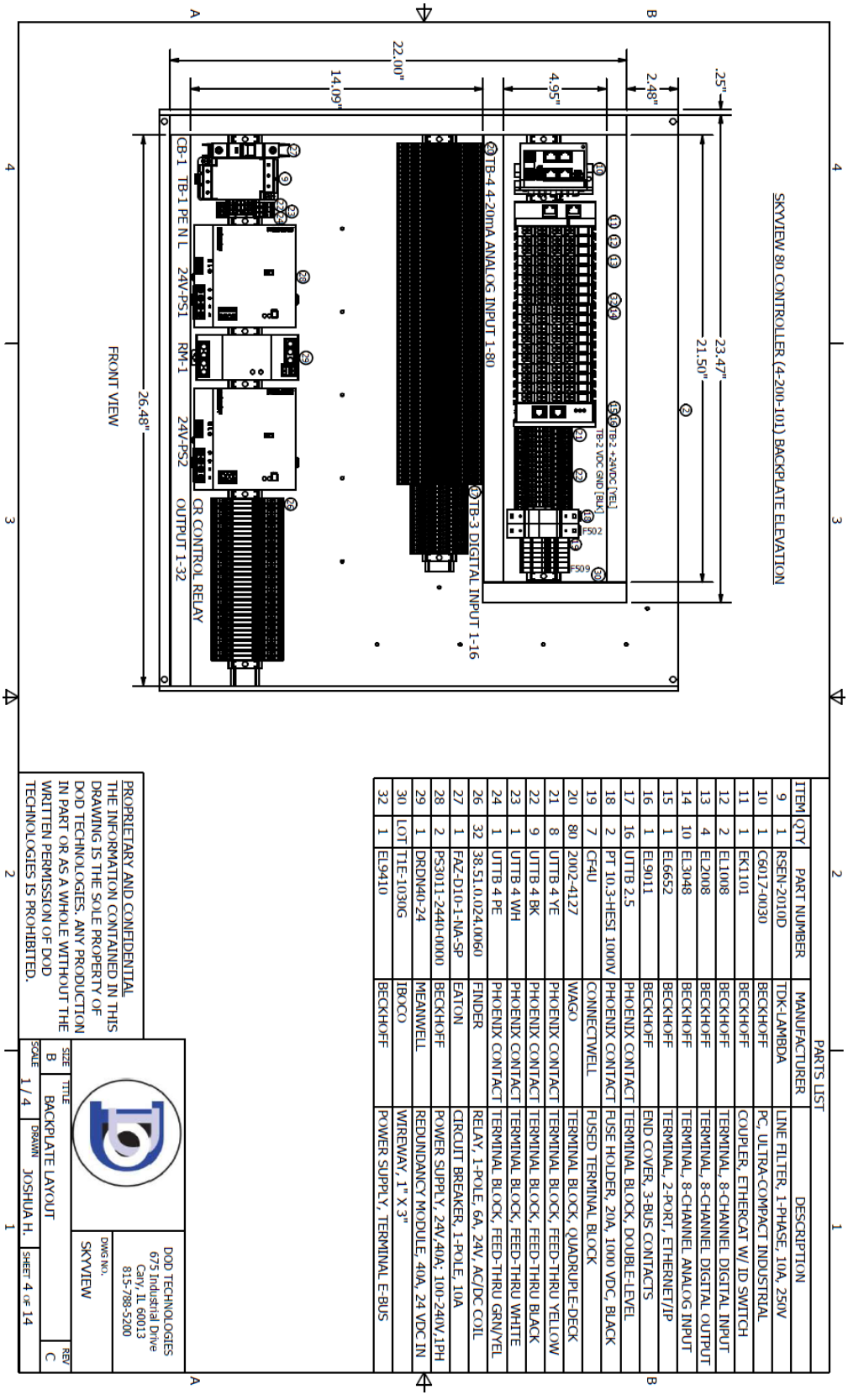
815-788-5200
SIZE B
TITLE INSTALLATION DRAWING
DWG NO. SKYVIEW 16
REV B
SCALE 1/3
DRAWN JOSHUA H.
SHEET 12 OF 12

Appendix E – Wiring Diagrams

E.1 SkyView 80 Controller



ITEM	QTY	PART NUMBER	MANUFACTURER	DESCRIPTION
9	1	RSEN-2010D	TDK-LAMBDA	LINE FILTER, 1-PHASE, 10A, 250V
10	1	C6017-0030	BECKHOFF	PC, ULTRA-COMPACT INDUSTRIAL
11	1	EK1101	BECKHOFF	COUPLER, ETHERCAT W/ ID SWITCH
12	2	EL1008	BECKHOFF	TERMINAL, 8-CHANNEL DIGITAL INPUT
13	4	EL2008	BECKHOFF	TERMINAL, 8-CHANNEL DIGITAL OUTPUT
14	10	EL3048	BECKHOFF	TERMINAL, 8-CHANNEL ANALOG INPUT
15	1	EL6652	BECKHOFF	TERMINAL, 2-PORT, ETHERNET/IP
16	1	EL9011	BECKHOFF	END COVER, 3-BUS CONTACTS
17	16	UTTB 2.5	PHOENIX CONTACT	TERMINAL BLOCK, DOUBLE-LEVEL
18	2	PT 10.3-HESI 1000V	PHOENIX CONTACT	FUSE HOLDER, 20A, 1000 VDC, BLACK
19	7	CF4U	CONNECTWELL	FUSED TERMINAL BLOCK
20	80	2002-4127	WAGO	TERMINAL BLOCK, QUADRUPLE-DECK
21	8	UTTB 4 YE	PHOENIX CONTACT	TERMINAL BLOCK, FEED-THRU YELLOW
22	9	UTTB 4 BK	PHOENIX CONTACT	TERMINAL BLOCK, FEED-THRU BLACK
23	1	UTTB 4 WH	PHOENIX CONTACT	TERMINAL BLOCK, FEED-THRU WHITE
24	1	UTTB 4 PE	PHOENIX CONTACT	TERMINAL BLOCK, FEED-THRU GRN/YEL
26	32	38.51.0.024.0060	FINDER	RELAY, 1-POLE, 6A, 24V, AC/DC COIL
27	1	FAZ-D10-1-NA-SP	EATON	CIRCUIT BREAKER, 1-POLE, 10A
28	2	PS3011-2440-0000	BECKHOFF	POWER SUPPLY, 24V,40A; 100-240V,1PH
29	1	DRDN40-24	MEANWELL	REDUNDANCY MODULE, 40A, 24 VDC IN
30	LOT	T1E-1030G	IBOCO	WIREWAY, 1" X 3"
32	1	EL9410	BECKHOFF	POWER SUPPLY, TERMINAL E-BUS

SIZE	B
TITLE	BACKPLATE LAYOUT
SCALE	1/4
DRAWN	JOSHUA H.
SHEET	4 OF 14
REV	C
DWG NO.	SKYVIEW

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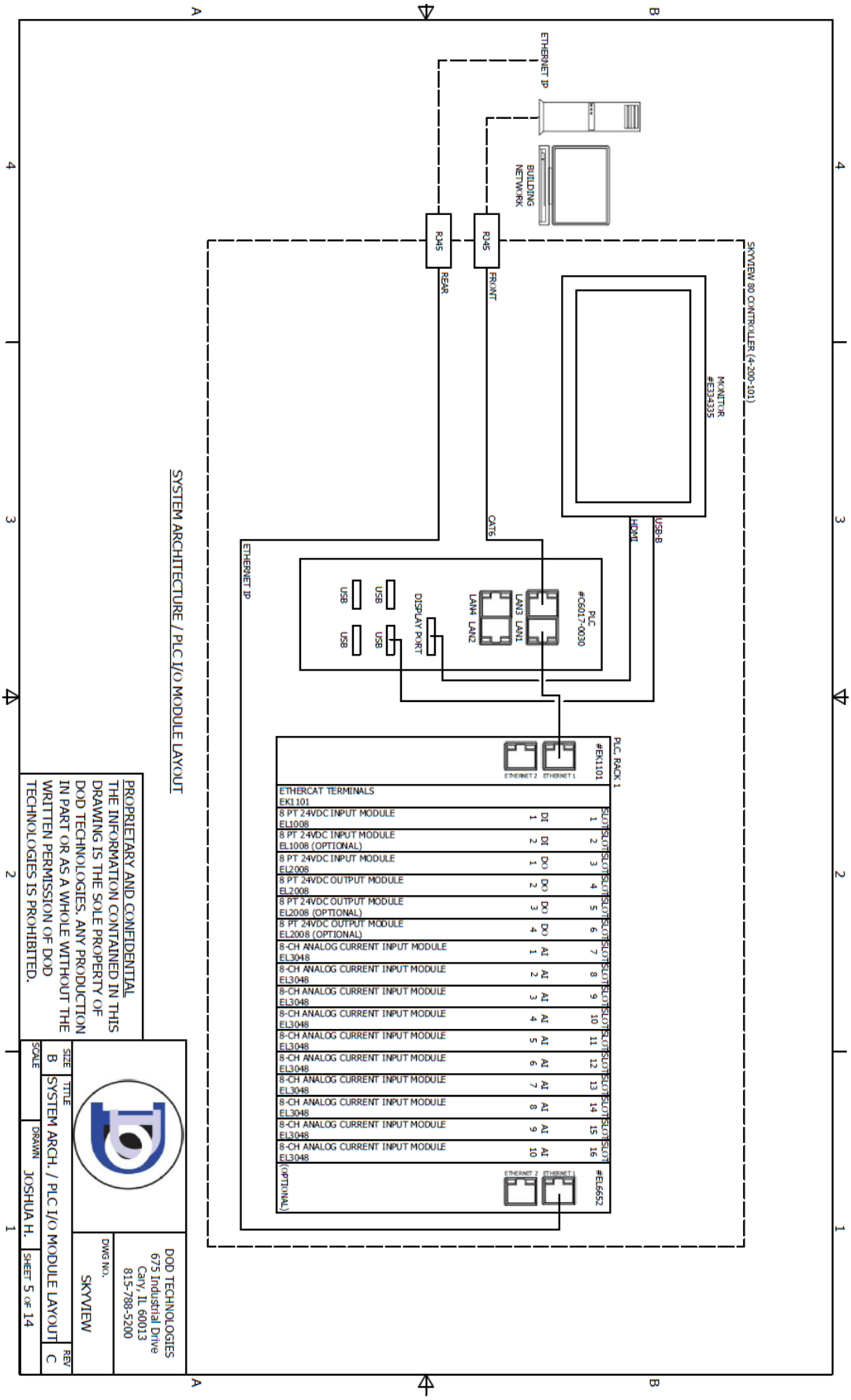
SYSTEM ARCHITECTURE / PLC I/O MODULE LAYOUT
ETHERNET IP
BUILDING NETWORK
RJ45
REAR
RJ45
FRONT
CAT6
SKYVIEW 80 CONTROLLER (4-200-101)
MONITOR #E3343335
HDMI
USB-B
ETHERNET IP
USB
USB
USB
USB
DISPLAY PORT
LAN4 LAN2
LAN3 LAN1
PLC #C6017-0030
PLC RACK 1
#EK1101
ETHERCAT TERMINALS EK1101
8 PT 24VDC INPUT MODULE EL1008
8 PT 24VDC INPUT MODULE EL1008 (OPTIONAL)
8 PT 24VDC INPUT MODULE EL2008
8 PT 24VDC OUTPUT MODULE EL2008
8 PT 24VDC OUTPUT MODULE EL2008 (OPTIONAL)
8 PT 24VDC OUTPUT MODULE EL2008 (OPTIONAL)
8-CH ANALOG CURRENT INPUT MODULE EL3048
#EL6652
(OPTIONAL)
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SIZE B
TITLE SYSTEM ARCH. / PLC I/O MODULE LAYOUT
DRAWN JOSHUA H.
SHEET 5 OF 14
REV C
SCALE
DWG NO. SKYVIEW
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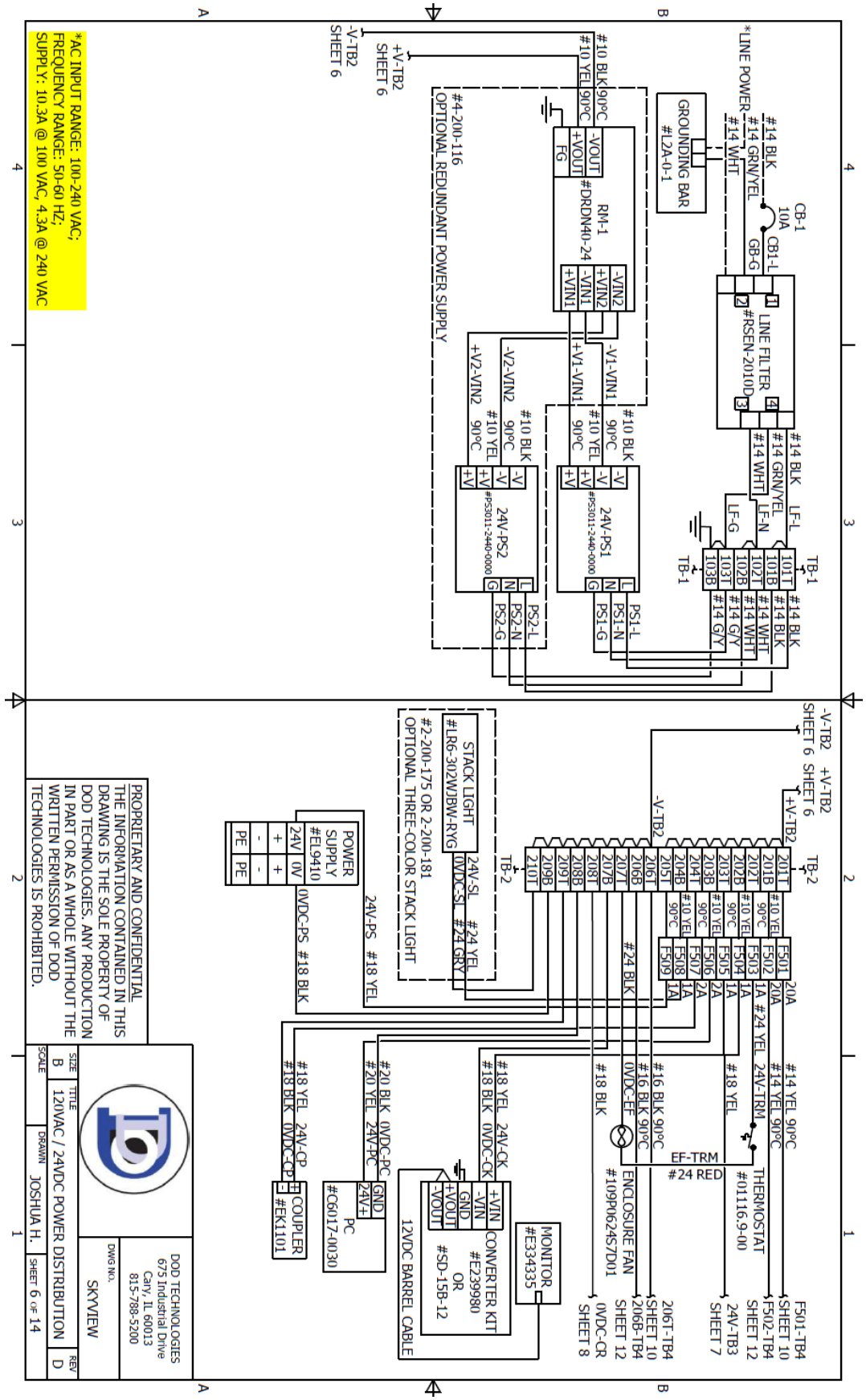
*AC INPUT RANGE: 100-240 VAC;
FREQUENCY RANGE: 50-60 HZ;
SUPPLY: 10.3A @ 100 VAC, 4.3A @ 240 VAC
*LINE POWER
#14 BLK
#14 GRN/YEL
#14 WHT
GROUNDING BAR
#L2A-0-1
CB-1
10A
CB1-L
GB-G
LINE FILTER
#RSEN-2010D
LF-L
LF-N
LF-G
TB-1
#14 BLK
#14 GRN/YEL
#14 WHT
#14 GY
RM-1
#DRDN40-24
-VOUT
+VOUT
FG
-VIN2
+VIN2
-VIN1
+VIN1
#10 BLK 90°C
#10 YEL 90°C
-V2-VIN2
+V2-VIN2
-V1-VIN1
+V1-VIN1
24V-PS2
24V-PS1
#PS3011-2440-0000
PS2-L
PS2-N
PS2-G
PS1-L
PS1-N
PS1-G
#4-200-116
OPTIONAL REDUNDANT POWER SUPPLY
-V-TB2
SHEET 6
+V-TB2
SHEET 6
TB-2
STACK LIGHT
#LR6-302WJBW-RYG
24V-SL
0VDC-SL
#24 YEL
#24 GRY
#2-200-175 OR 2-200-181
OPTIONAL THREE-COLOR STACK LIGHT
POWER SUPPLY
#EL9410
24V
0V
0VDC-PS
#18 BLK
24V-PS
#18 YEL
F501
F502
F503
F504
F505
F506
F507
F508
F509
20A
1A
2A
#24 BLK
#18 BLK
#14 YEL 90°C
#16 BLK 90°C
#18 YEL
#24 YEL
24V-TRM
0VDC-EF
EF-TRM
#24 RED
THERMOSTAT
#01116.9-00
ENCLOSURE FAN
#109P062457D01
MONITOR
#E334335
CONVERTER KIT
#E239980
OR
#SD-15B-12
12VDC BARREL CABLE
#18 YEL 24V-CK
#18 BLK 0VDC-CK
#20 BLK 0VDC-PC
#20 YEL 24V-PC
PC
#C6017-0030
#18 YEL 24V-CP
#18 BLK 0VDC-CP
COUPLER
#EK1101
F501-TB4
SHEET 10
F502-TB4
SHEET 12
24V-TB3
SHEET 7
206T-TB4
SHEET 10
206B-TB4
SHEET 12
0VDC-CR
SHEET 8
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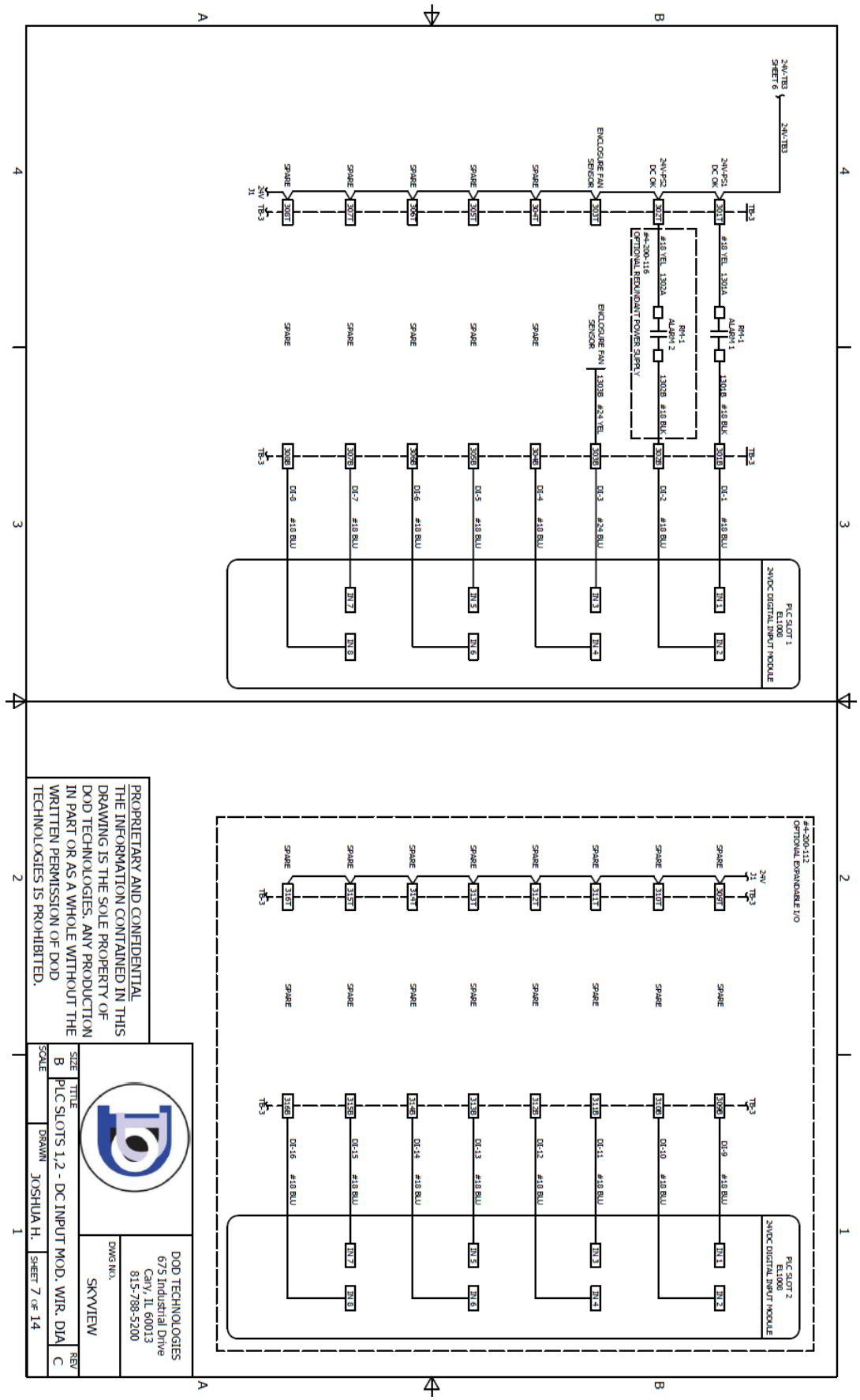
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE 120VAC / 24VDC POWER DISTRIBUTION
DWG NO. SKYVIEW
REV D
SCALE
DRAWN JOSHUA H.
SHEET 6 OF 14


PLC SLOT 1
EL1008
24VDC DIGITAL INPUT MODULE
PLC SLOT 2
EL1008
24VDC DIGITAL INPUT MODULE
OPTIONAL EXPANDABLE I/O
OPTIONAL REDUNDANT POWER SUPPLY
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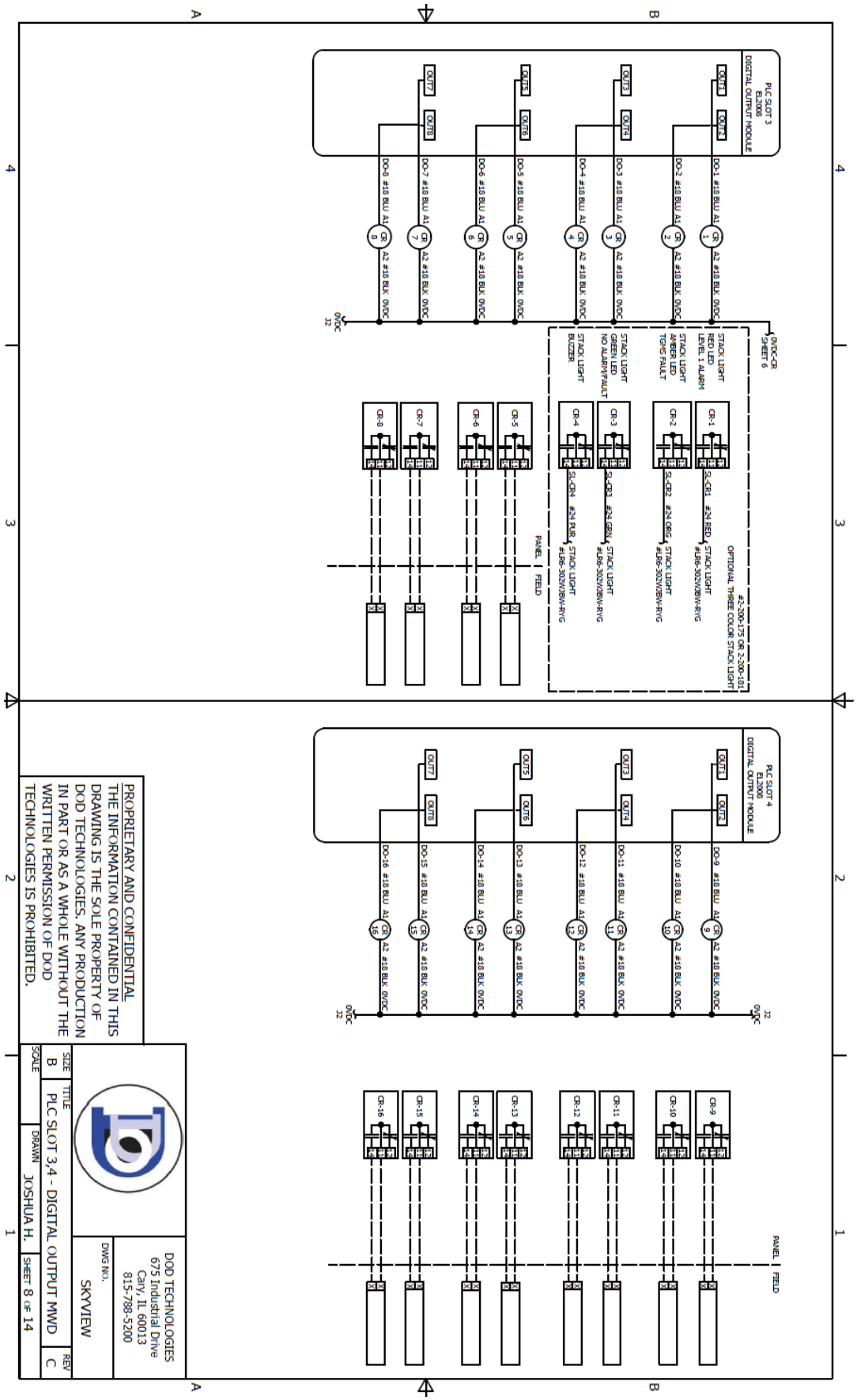
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE PLC SLOTS 1,2 - DC INPUT MOD. WIR. DIA
DWG NO. SKYVIEW
REV C
SCALE
DRAWN JOSHUA H.
SHEET 7 OF 14


PLC SLOT 3
EL2008
DIGITAL OUTPUT MODULE
PLC SLOT 4
EL2008
DIGITAL OUTPUT MODULE
STACK LIGHT
RED LED
LEVEL 1 ALARM
STACK LIGHT
AMBER LED
TGMS FAULT
STACK LIGHT
GREEN LED
NO ALARM/FAULT
STACK LIGHT
BUZZER
OPTIONAL THREE COLOR STACK LIGHT
#2-200-175 OR 2-200-181
0VDC-CR
SHEET 6
PANEL
FIELD
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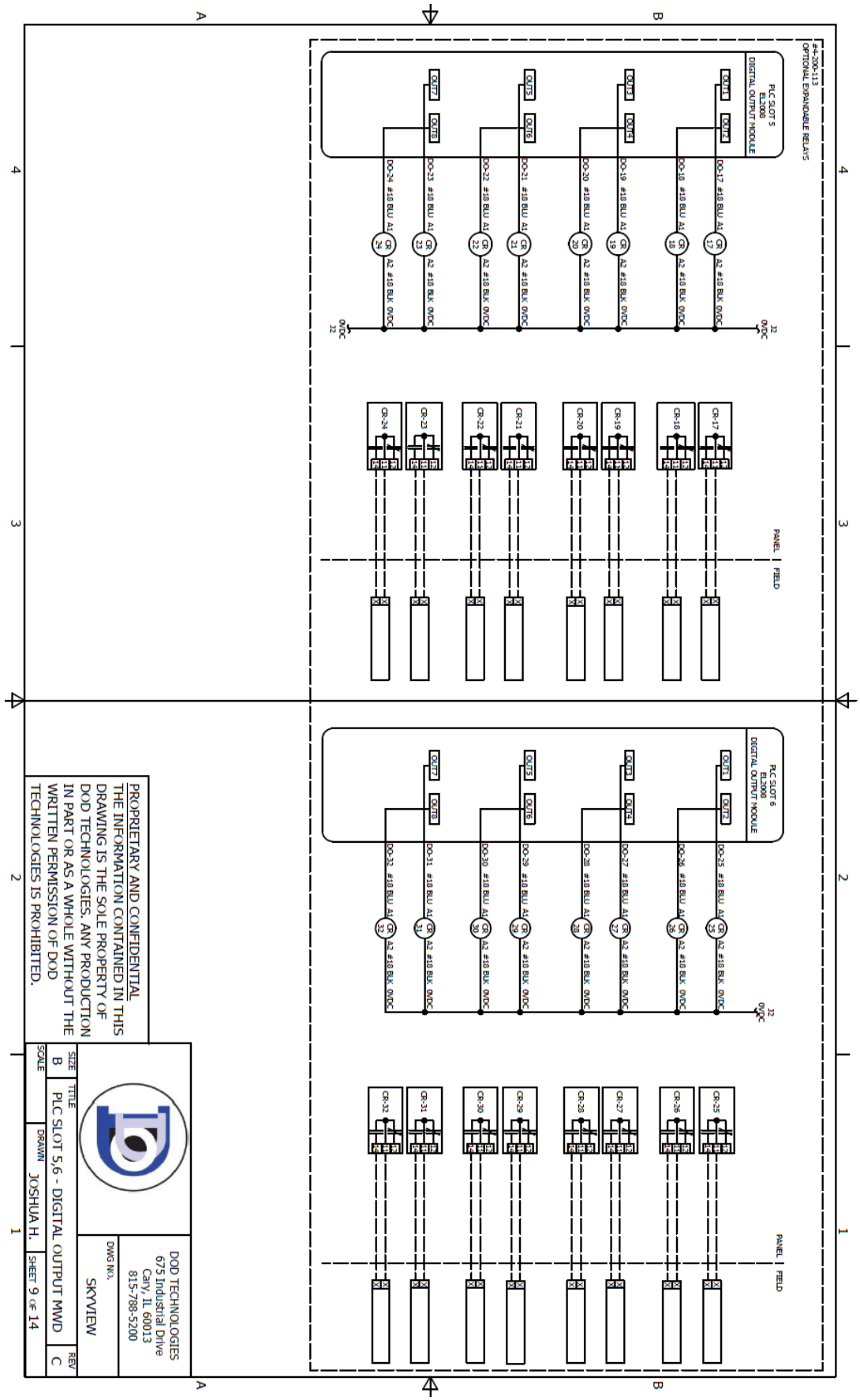
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE
B
TITLE
PLC SLOT 3,4 - DIGITAL OUTPUT MWD
DWG NO.
SKYVIEW
REV
C
SCALE
DRAWN
JOSHUA H.
SHEET 8 OF 14


PLC SLOT 5
EL2008
DIGITAL OUTPUT MODULE
#4-2001-113
OPTIONAL EXPANDABLE RELAYS
PLC SLOT 6
EL2008
DIGITAL OUTPUT MODULE
PANEL
FIELD
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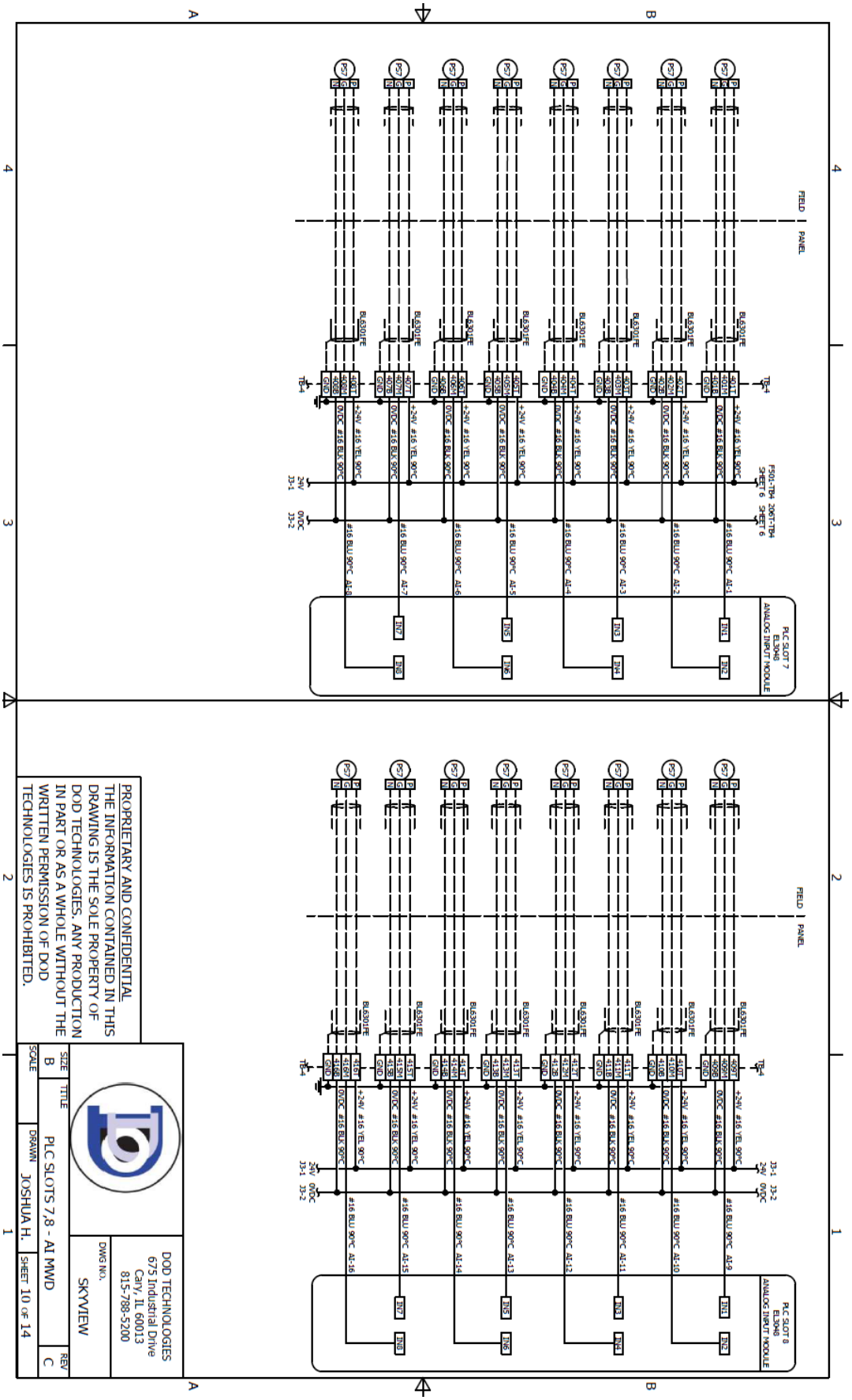
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE
B
TITLE
PLC SLOT 5,6 - DIGITAL OUTPUT MWD
DWG NO.
SKYVIEW
REV
C
SCALE
DRAWN
JOSHUA H.
SHEET 9 OF 14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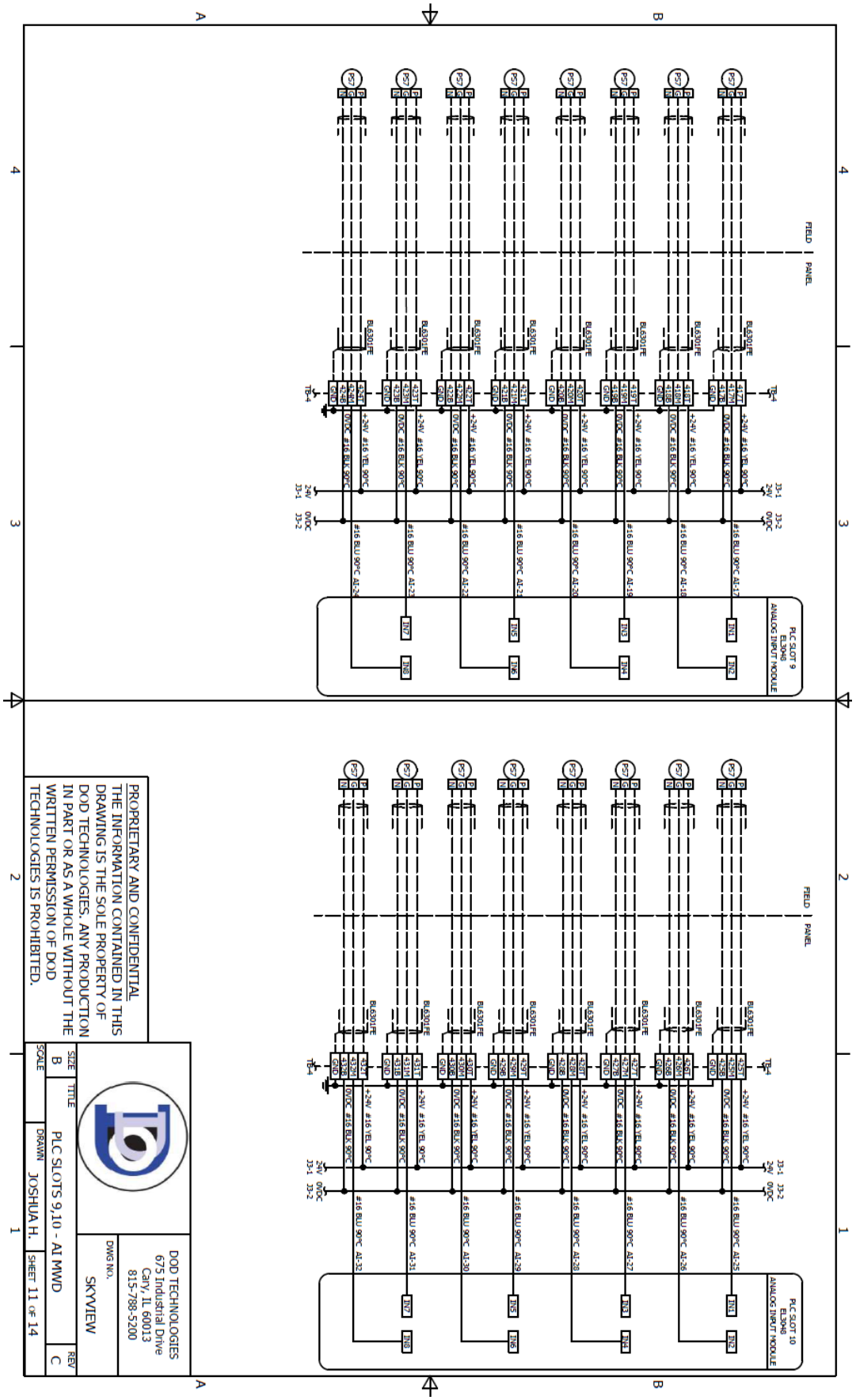
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE PLC SLOTS 7,8 - AI MWD
DWG NO. SKYVIEW
REV C
SCALE
DRAWN JOSHUA H.
SHEET 10 OF 14
PLC SLOT 7
PLC-5/40
ANALOG INPUT MODULE
PLC SLOT 8
PLC-5/40
ANALOG INPUT MODULE
FIELD
PANEL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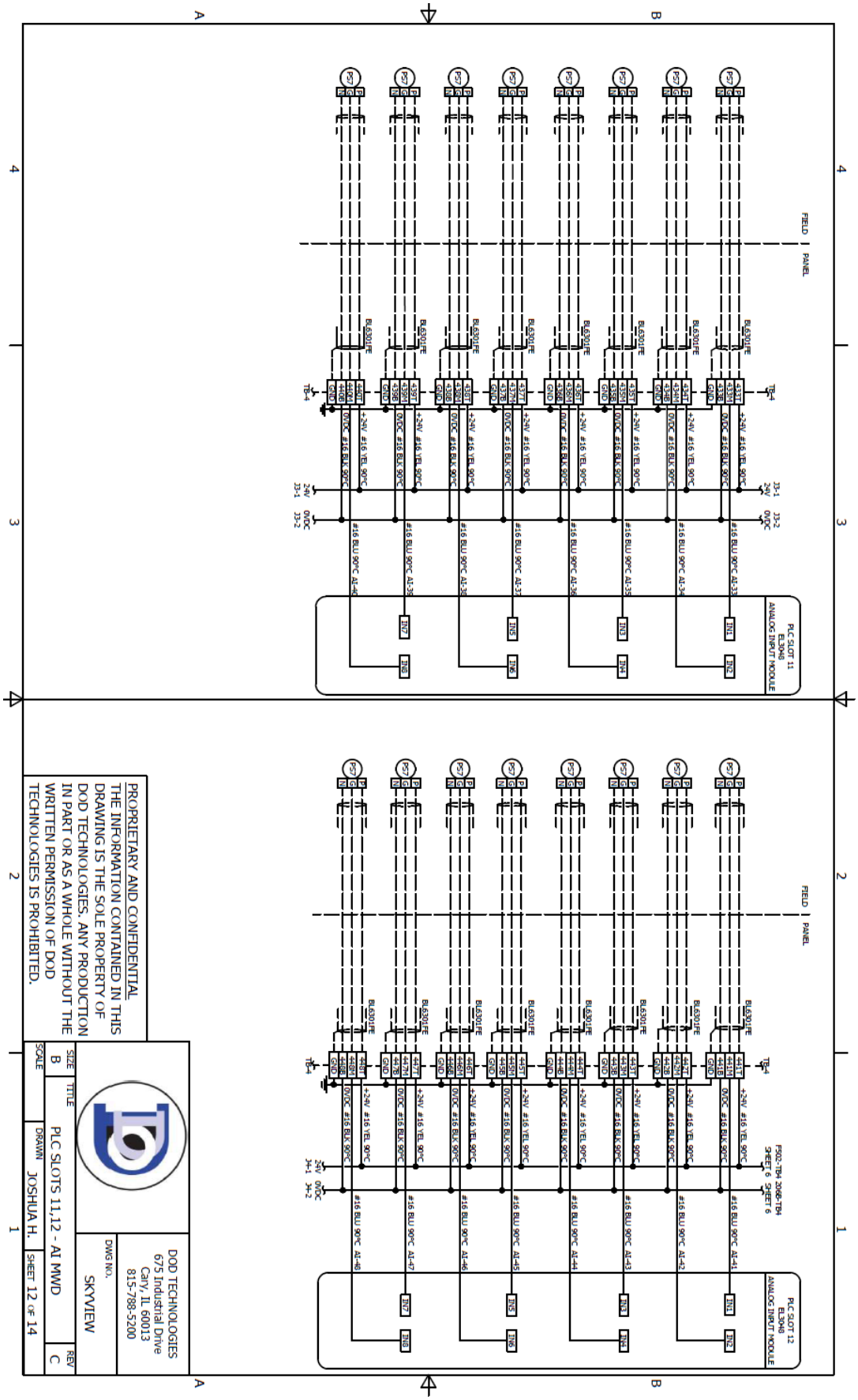
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE PLC SLOTS 9,10 - AI MWD
DWG NO. SKYVIEW
REV C
SCALE
DRAWN JOSHUA H.
SHEET 11 OF 14
FIELD
PANEL
PLC SLOT 9 EL3048 ANALOG INPUT MODULE
PLC SLOT 10 EL3048 ANALOG INPUT MODULE


PLC SLOT 11
EL3048
ANALOG INPUT MODULE
PLC SLOT 12
EL3048
ANALOG INPUT MODULE
FIELD
PANEL
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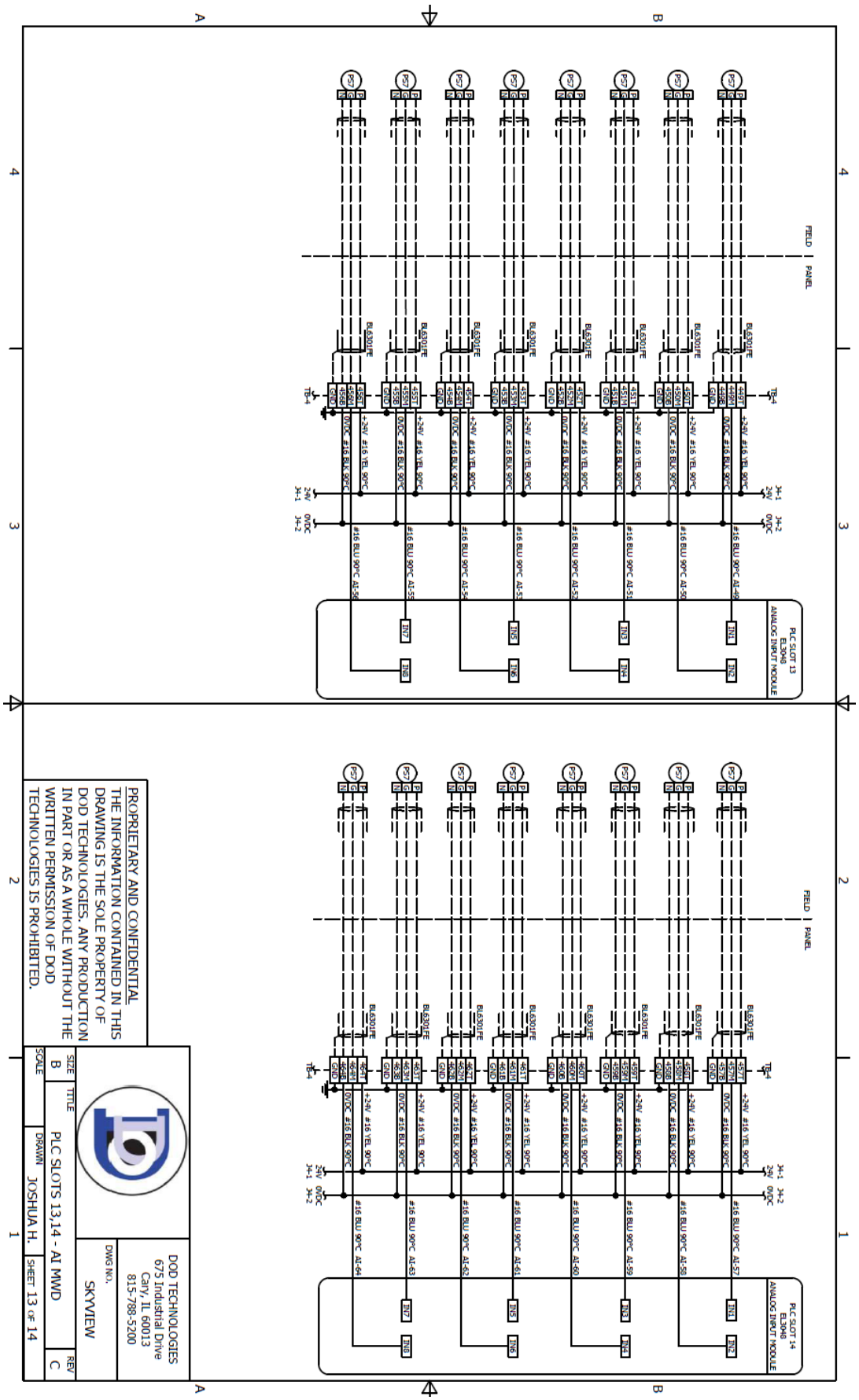
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE
PLC SLOTS 11,12 - AI MWD
DWG NO. SKYVIEW
REV C
SCALE
DRAWN JOSHUA H.
SHEET 12 OF 14


PLC SLOT 13
EL3048
ANALOG INPUT MODULE
PLC SLOT 14
EL3048
ANALOG INPUT MODULE
FIELD
PANEL
PROPRIETARY AND CONFIDENTIAL
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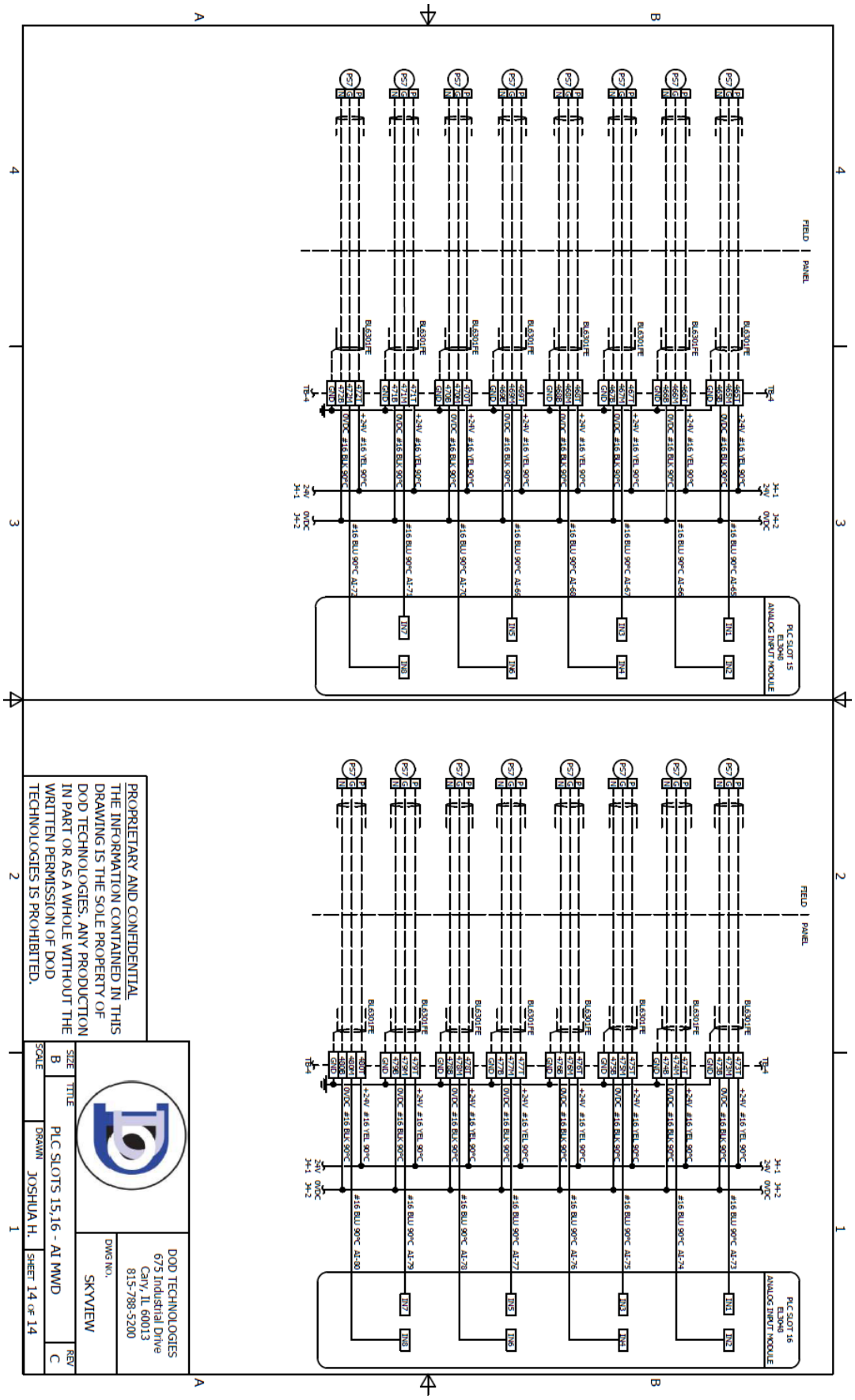
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE PLC SLOTS 13,14 - AI MWD
DWG NO. SKYVIEW
REV C
SCALE
DRAWN JOSHUA H.
SHEET 13 OF 14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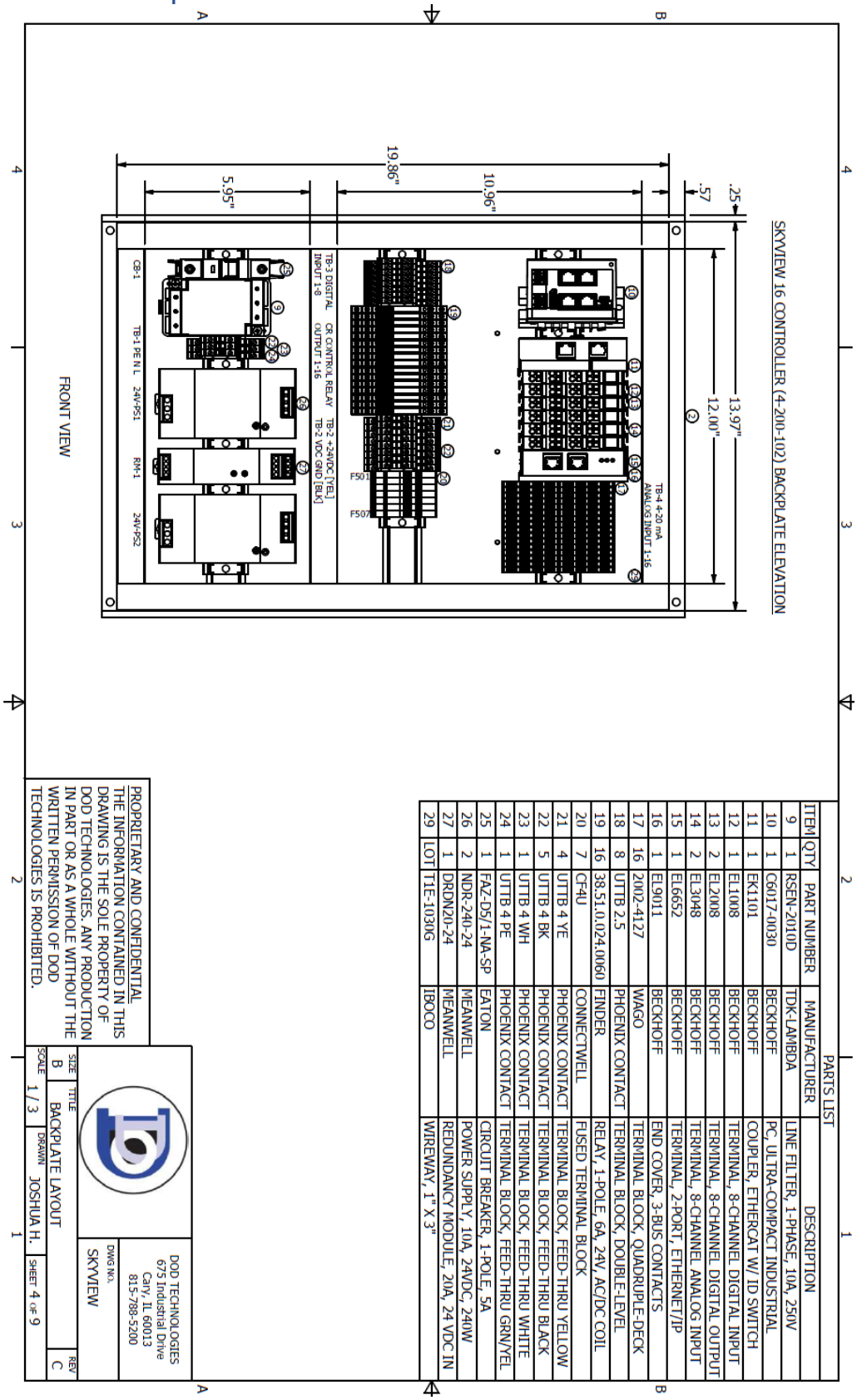
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE PLC SLOTS 15,16 - AI MWD
DWG NO. SKYVIEW
REV C
SCALE
DRAWN JOSHUA H.
SHEET 14 OF 14
FIELD
PANEL
PLC SLOT 15
EL3048
ANALOG INPUT MODULE
PLC SLOT 16
EL3048
ANALOG INPUT MODULE

E.2 SkyView 16 Compact Controller

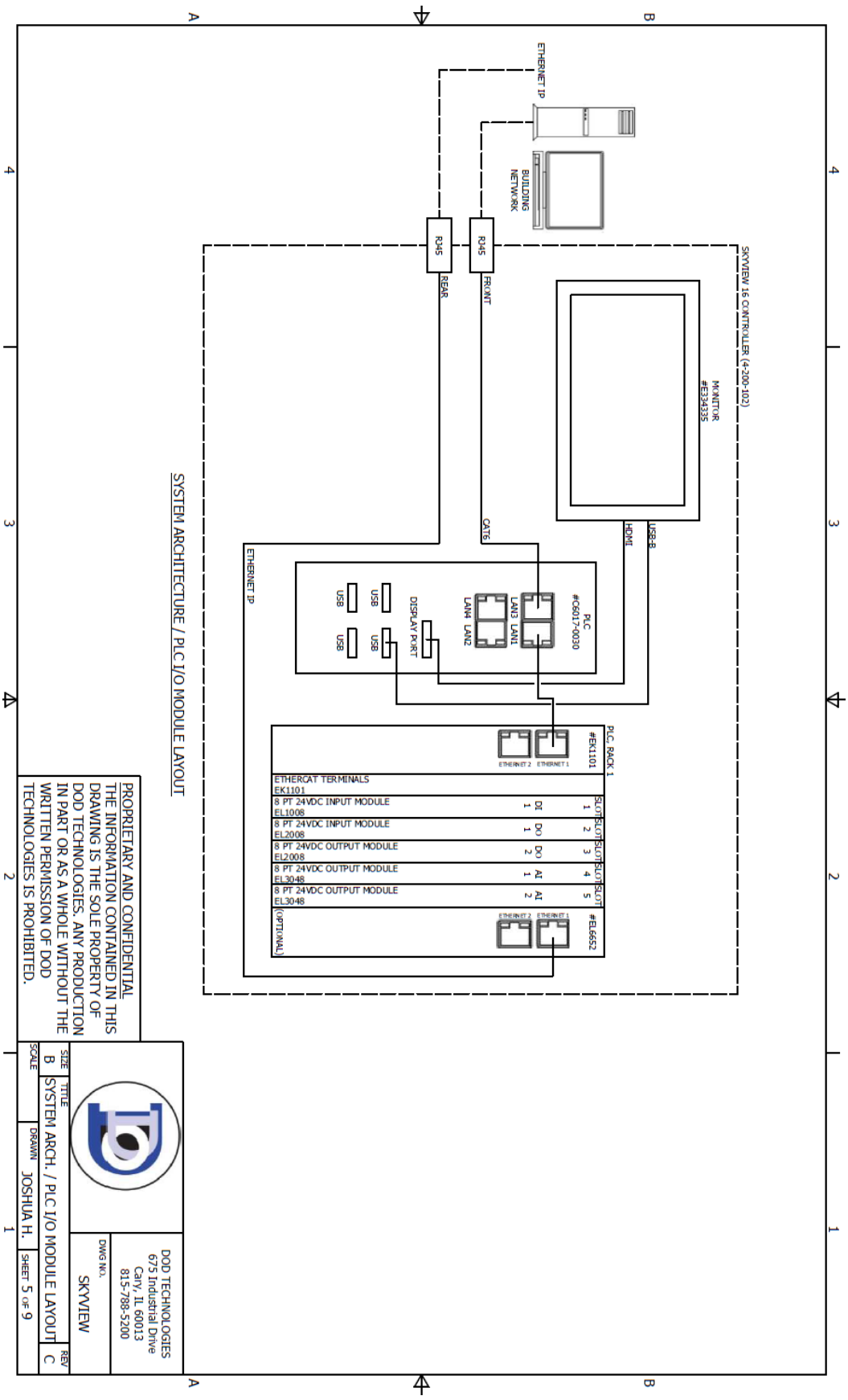


PARTS LIST

ITEM	QTY	PART NUMBER	MANUFACTURER	DESCRIPTION
9	1	RSEN-2010D	TDK-LAMBDA	LINE FILTER, 1-PHASE, 10A, 250V
10	1	C6017-0030	BECKHOFF	PC, ULTRA-COMPACT INDUSTRIAL
11	1	EK1101	BECKHOFF	COUPLER, ETHERCAT W/ ID SWITCH
12	1	EL1008	BECKHOFF	TERMINAL, 8-CHANNEL DIGITAL INPUT
13	2	EL2008	BECKHOFF	TERMINAL, 8-CHANNEL DIGITAL OUTPUT
14	2	EL3048	BECKHOFF	TERMINAL, 8-CHANNEL ANALOG INPUT
15	1	EL6652	BECKHOFF	TERMINAL, 2-PORT, ETHERNET/IP
16	1	EL9011	BECKHOFF	END COVER, 3-BUS CONTACTS
17	16	2002-4127	WAGO	TERMINAL BLOCK, QUADRUPLE-DECK
18	8	UTTB 2.5	PHOENIX CONTACT	TERMINAL BLOCK, DOUBLE-LEVEL
19	16	38.51.0.024.0060	FINDER	RELAY, 1-POLE, 6A, 24V, AC/DC COIL
20	7	CF4U	CONNECTWELL	FUSED TERMINAL BLOCK
21	4	UTTB 4 YE	PHOENIX CONTACT	TERMINAL BLOCK, FEED-THRU YELLOW
22	5	UTTB 4 BK	PHOENIX CONTACT	TERMINAL BLOCK, FEED-THRU BLACK
23	1	UTTB 4 WH	PHOENIX CONTACT	TERMINAL BLOCK, FEED-THRU WHITE
24	1	UTTB 4 PE	PHOENIX CONTACT	TERMINAL BLOCK, FEED-THRU GRN/YEL
25	1	FAZ-D5/1-NA-SP	EATON	CIRCUIT BREAKER, 1-POLE, 5A
26	2	NDR-240-24	MEANWELL	POWER SUPPLY, 10A, 24VDC, 240W
27	1	DRDN20-24	MEANWELL	REDUNDANCY MODULE, 20A, 24 VDC IN
29	LOT	T1E-1030G	IBOCO	WIREWAY, 1" X 3"

DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200

SIZE	TITLE	REV
B	BACKPLATE LAYOUT	C
SCALE 1 / 3	DRAWN JOSHUA H.	SHEET 4 OF 9
	DWG NO. SKYVIEW	


SYSTEM ARCHITECTURE / PLC I/O MODULE LAYOUT
ETHERNET IP
BUILDING NETWORK
RJ45
REAR
RJ45
FRONT
CAT6
SKYVIEW 16 CONTROLLER (4-200-102)
MONITOR #E334335
HDMI
USB-B
ETHERNET IP
USB
USB
USB
USB
DISPLAY PORT
LAN4 LAN2
LAN3 LAN1
PLC #C6017-0030
PLC RACK 1
#EK1101
ETHERNET 2
ETHERNET 1
ETHERCAT TERMINALS
EK1101
8 PT 24VDC INPUT MODULE
EL1008
DI
SLOT 1
8 PT 24VDC INPUT MODULE
EL2008
DO
SLOT 2
8 PT 24VDC OUTPUT MODULE
EL2008
DO
SLOT 3
8 PT 24VDC OUTPUT MODULE
EL3048
AI
SLOT 4
8 PT 24VDC OUTPUT MODULE
EL3048
AI
SLOT 5
(OPTIONAL)
ETHERNET 2
ETHERNET 1
#EL6652
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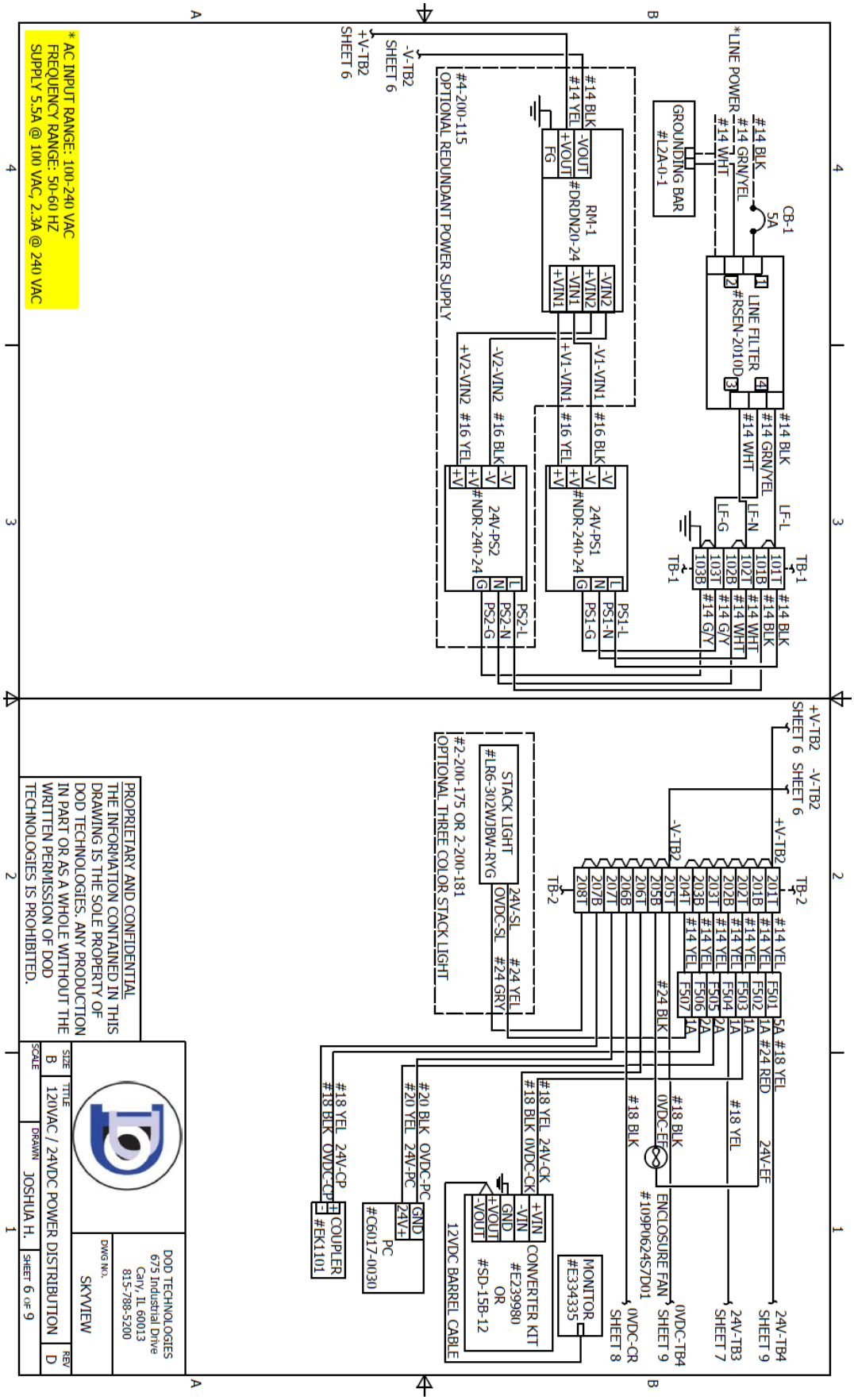
SIZE B
TITLE SYSTEM ARCH. / PLC I/O MODULE LAYOUT
REV C
SCALE
DRAWN JOSHUA H.
SHEET 5 OF 9
DWG NO. SKYVIEW
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200


* AC INPUT RANGE: 100-240 VAC
FREQUENCY RANGE: 50-60 HZ
SUPPLY 5.5A @ 100 VAC, 2.3A @ 240 VAC
*LINE POWER
#14 WHT
#14 GRN/YEL
#14 BLK
GROUNDING BAR
#LZA-0-1
CB-1
5A
LINE FILTER
#RSEN-2010D
LF-L
LF-N
LF-G
TB-1
#14 BLK
#14 WHT
#14 GRN/YEL
#14 G/Y
RM-1
#DRDN20-24
-VOUT
+VOUT
FG
-VIN2
+VIN2
-VIN1
+VIN1
#14 BLK
#14 YEL
#4-200-115
OPTIONAL REDUNDANT POWER SUPPLY
24V-PS1
#NDR-240-24
24V-PS2
#NDR-240-24
#16 BLK
#16 YEL
-V1-VIN1
+V1-VIN1
-V2-VIN2
+V2-VIN2
PS1-L
PS1-N
PS1-G
PS2-L
PS2-N
PS2-G
-V-TB2
SHEET 6
+V-TB2
SHEET 6
TB-2
#14 YEL
#24 RED
#24 BLK
#18 YEL
#18 BLK
#18 YEL 24V-CK
#18 BLK 0VDC-CK
#20 BLK 0VDC-PC
#20 YEL 24V-PC
#18 YEL 24V-CP
#18 BLK 0VDC-CP
24V-EF
0VDC-EF
ENCLOSURE FAN
#109P0624S7D01
MONITOR
#E334335
CONVERTER KIT
#E239980
OR
#SD-15B-12
12VDC BARREL CABLE
PC
#C6017-0030
COUPLER
#EK1101
STACK LIGHT
#LR6-302WJBW-RYG
#2-200-175 OR 2-200-181
OPTIONAL THREE COLOR STACK LIGHT
24V-SL
0VDC-SL
#24 YEL
#24 GRY
24V-TB4
SHEET 9
24V-TB3
SHEET 7
0VDC-TB4
SHEET 9
0VDC-CR
SHEET 8
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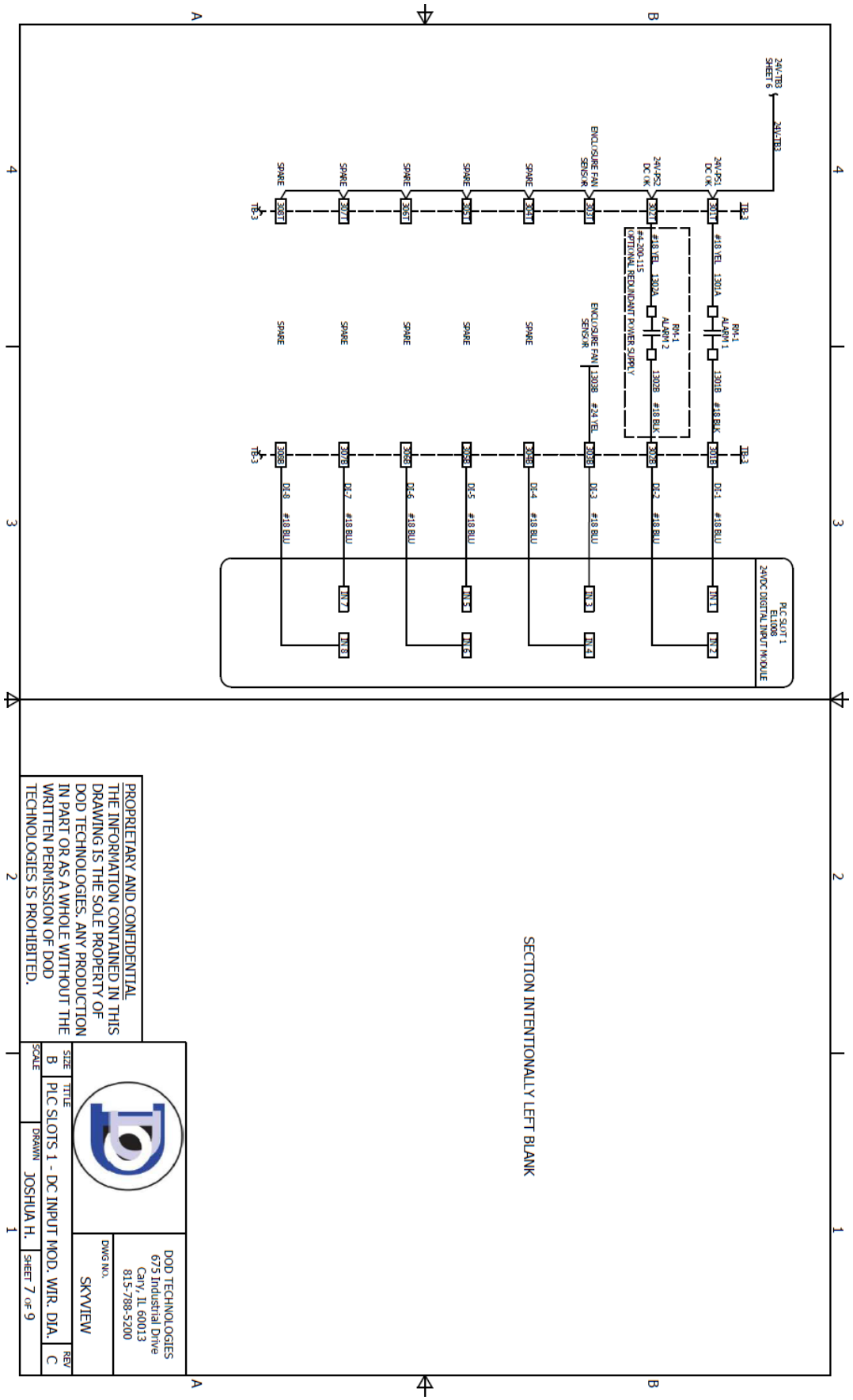
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE 120VAC / 24VDC POWER DISTRIBUTION
DWG NO. SKYVIEW
REV D
SCALE
DRAWN JOSHUA H.
SHEET 6 OF 9


240-TB3
SHEET 6
240-TB3
240-PS1
DC OK
240-PS2
DC OK
ENCLOSURE FAN
SENSOR
SPARE
TB-3
#18 YEL
#18 BLK
#18 BLU
#24 YEL
#4-200-115
OPTIONAL REDUNDANT POWER SUPPLY
RM-1
ALARM 1
ALARM 2
PLC SLOT 1
EL1008
24VDC DIGITAL INPUT MODULE
SECTION INTENTIONALLY LEFT BLANK
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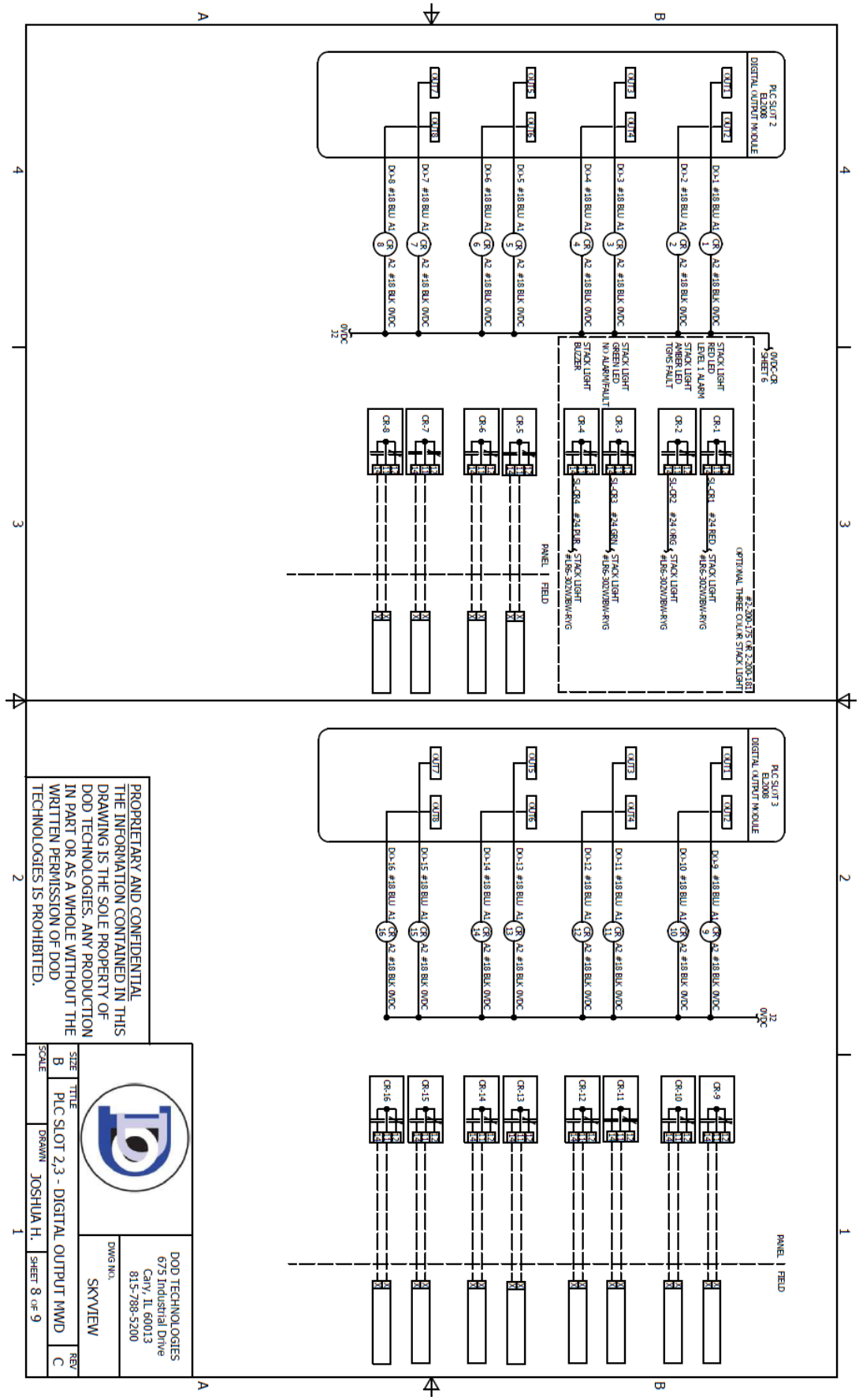
DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE PLC SLOTS 1 - DC INPUT MOD. WIR. DIA.
DWG NO. SKYVIEW
REV C
SCALE
DRAWN JOSHUA H.
SHEET 7 OF 9


PLC SLOT 2
EL2008
DIGITAL OUTPUT MODULE
PLC SLOT 3
EL2008
DIGITAL OUTPUT MODULE
PANEL | FIELD
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675 Industrial Drive
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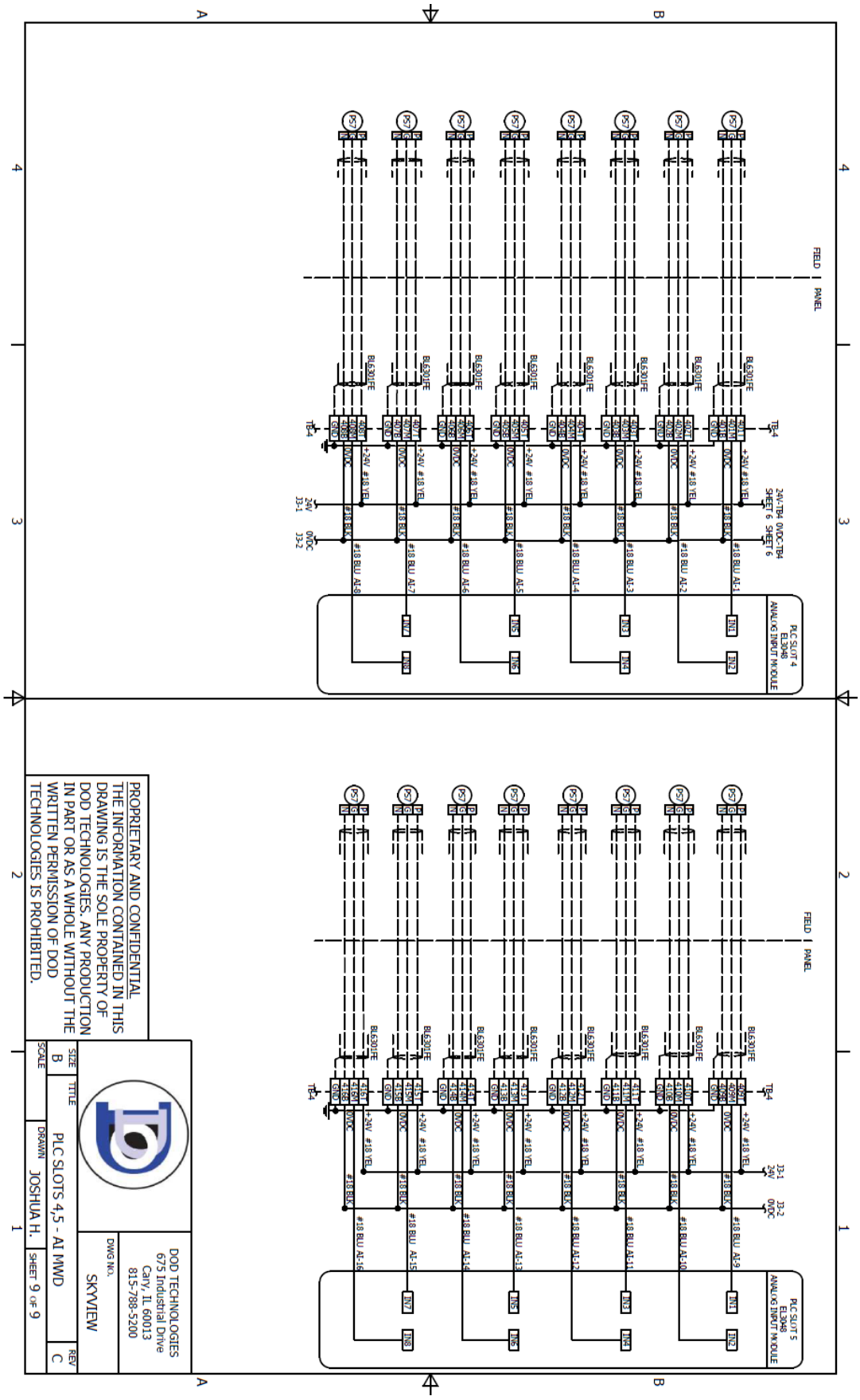
SIZE B
TITLE PLC SLOT 2,3 - DIGITAL OUTPUT MWD
DRAWN JOSHUA H.
SHEET 8 OF 9
REV C
SCALE
DWG NO. SKYVIEW


FIELD
PANEL
PLC SLOT 4
EL3048
ANALOG INPUT MODULE
PLC SLOT 5
EL3048
ANALOG INPUT MODULE
24V-TB4 0VDC-TB4
SHEET 6 SHEET 6
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DOD TECHNOLOGIES
675 Industrial Drive
Cary, IL 60013
815-788-5200
SIZE B
TITLE
PLC SLOTS 4,5 - AI MWD
DWG NO.
SKYVIEW
REV C
SCALE
DRAWN JOSHUA H.
SHEET 9 OF 9