Versa-Pak V7

By PSI Waste Equipment Services, Inc.
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Auto Start Users
Please see Quick Start for Auto Operate on Page 2.

TEXT 352-309-1147 for the best support in the industry!
For support include any relevant pics of your install.
Please wire your Versa-Pak system according to the wiring diagram. If you have questions, we'll help but keep it neat. We can't support a sloppy install.

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Auto Operation Quick Start

Please read and understand the entire manual prior to your first install

It is assumed you are experienced in repairing trash compactors and have read and understand this manual and ANSI Z245.2.

All Types of Automatic Operation

For the compactor to run automatically (Auto Door Count, Auto Photo Eye, or Auto Timer) you must first set the [CLOCK] and [Auto Operate]. For Auto Door Count you must set [Door Count]. For Auto Photo Eye, hook photo eye up to I6. Auto Timer see pg15.

Set Clock

Clock must be set for Automatic Operation. From the main screen:
▼| ESC | Setup |OK | Clock | OK | Set Clock | OK (if you don't see "Clock" in this screen go to next section)
Set time (24hr format so 1pm is 13:00) then press ▶ to scroll to date. YY-MM-DD. Day of week is corrected. OK
Set S/W time. If the location of the install follows Daylight Savings Time, set S/W Time for US2. Otherwise, don't set.
Press ESC once to Setup menu and go down to Switch to OP and click OK. This locks others out of the PLC and prevents deletion of the program. To get back in Password is LOGO. ESC back to date screen and program messages will appear in a few seconds.

Set Clock from Operate Mode (if you don't see "Clock" in Setup screen)
Switch to ADMIN | OK | LOGO (use ▲ and ▶ to enter password) | OK | Setup | OK | Clock | OK
Set time (24hr format so 1pm is 13:00) then press ▶ to scroll to date. YY-MM-DD. Day of week is corrected. OK
Set S/W time. If the location of the install follows Daylight Savings Time, set S/W Time for US2. Otherwise, don't set.
Press ESC once to Setup menu and go down to Switch to OP and click OK. This locks others out of the PLC and prevents deletion of the program. To get back in Password is LOGO. ESC back to date screen and program messages will appear in a few seconds.

To get to Parameters after setting clock go to Program | OK | Set Parameter | OK
To get to Parameters from main screen– press ▼ then ESC | Program | OK | Set Parameter | OK

Set Auto Operate Parameter

Parameter Name	Parameter Default	Suggested setting to enable Auto Operation	Notes
Auto Operate	D1 = MTWTFSS ON1 =00:00 OFF1=00:00	Auto Operate 24/7 D1 = MTWTFSS ON1 =00:01 OFF1=00:00 Operate 6am-10pm D1 = MTWTFSS ON1 =06:00 OFF1=22:00	Enables Auto Operate during certain times and days. The default time will not allow auto operation of any kind because the days of the week are disabled. The alternative example is 6:00am – 10:00pm (24hr clock), 7 days a week. Compactor will run in auto from 6am-10pm every day. Setting ON1=00:01 and OFF1 to 00:00 will allow auto operation any time of the day. Count will be reset and not allowed during off time. Once Auto Operate is again enabled, Door Count will again be functional. Manual START is always enabled.
ANSI 20 sec	20:00s	With Light/Buzzer 20:00s Without warning light 00.00s	This version of Versa-Pak only has 1 output for a light/ horn. So, to limit the time the horn is on you must either buy the light/horn from us or provide a separate timer to shut the horn off after 5 seconds. Disable if not using warning light/buzzer (00.00s)

Auto Count- set Door Count parameter. See page 13 for more information on Auto Count

Parameter Name	Parameter Default	Suggested setting to enable Auto Operation	Notes
Door Count	900003	3	Sets number of door closes to initiate auto-count feature.

After setting parameters you can ESC back to date screen and program messages will appear in a few seconds.

Auto Eye - See page 14 for more information on Auto Eye
Auto Timer - See page 15 for more information on Auto Timer

Versa-Pak V7 Standard Features

Shifting and Compatibility	Automatic Operation
Works with most brands, bypass, or non-bypass cylinders, 1 or 2 coil valves, stationary, self-contained, apartment style or MPT style compactors. Must have 120VAC Outputs!	Auto Count (auto start when door closes)
	Photo Eye Operation
Timer Shift (default)	Auto Timer Operate with High and Low Volume Timers
Smart Shift feature shifts direction after deadhead for 2 secs	ANSI 20 second delay with Warning Light and Horn
Pressure Shift (optional)	Auto Operate Timer (Set time of day for Auto Operate)
Productivity and Fullness	Special Features
Multi Cycle	Mail-Box Operate (Ram shifts into REVERSE when door opens)
Many Cycles (press START 3x in 3 secs to run extra cycles)	Ram Stop Forward
Part Full Light (not compatible with Warning Light & Horn)	Hold to Run
100% Full Shut Off	Tech Features
Errors (Protects Equipment)	Operation Screens show errors, inputs, outputs, parameters
Run Too Long Timer	Error and Troubleshooting Screens
Pressure Too Long Timer	Forward and Reverse Timer Setting Assist
Photo Eye On Too Long Timer	Use PLC Buttons to START and STOP compactor
Low Oil Input (Closed when oil is full)	Front facing terminal blocks and disconnect terminal block.
Overload Tripped Input	Hour and Cycle Meter
All Errors show on screen so you know what's wrong	Smart Phone support- Talks, SMS, Email, Videos (coming soon)

Quick Start

Please read the entire manual.

Instruction Decal

Our control system PLC has a white decal on it with useful information for quick reference.

ESC + ◀ to START compactor | ESC + ▶ to Stop
Parameters - ▼ then ESC / Program / Set Parameter
From Parameters, press ESC repeatedly back to
Date Screen then wait or ▲ to get to Messages Screens
Press ESC + ▲ or ESC + ▼ to scroll screens
Versa-Pak V7 by PSI Waste
www.versa-pak.net
Text Support: 352-309-1147

Set Clock

Clock must be set for Automatic Operation. ▼| ESC | Setup |OK | Clock | OK | Set Clock | OK
Set time (24 hr format so 1pm is 13:00) then press ▶ to scroll to date. YY-MM-DD. Day of week is corrected. OK
Set S/W time. If the location of the install follows Daylight Savings Time, set S/W Time for US2. Otherwise, don't set.
Press ESC once to Setup menu and go down to Switch to OP and click OK. This locks others out of the PLC and prevents deletion of the program. Call for password in case you need it. We only give the password out to techs and owners of the machine. ESC back to date screen and program messages will appear in a few seconds.

Installation

See page 5 for basic installation instructions.

Set Parameters

See page 5 for navigation and tips and pages 9 and 10 for explanation of standard parameters

Enable Special Operation

Some applications require special features to be enabled. See Special Operation section in table of contents for location of Special Operation instructions.

***NOTE: This version does not yet work with an amp switch. We are working on this! ***

Introduction

- The purpose of this manual is to provide the installer and owner with the necessary information to install our Versa-Pak Control system. Refer to equipment manufacturer's manual for additional information.
- PSI Waste shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the features and options in the use of this product. The installer shall ensure, upon installation, the combination of features and options used are safe and appropriate for the application and operational environment.
- Installer and user shall read and understand ANSI Standard Z245.2 (Compactor Safety), OSHA 29 CFR, Part 1910.147 (Lock out/ Tag out), and the OEM compactor operation, maintenance, and installation manual.
- Must be installed by a qualified person.

Before installing

- Get familiar with the Versa-Pak system by studying the drawings and documentation included. It will not only save you time, but there are a lot of great features you'll want to use. Refer to it frequently.
- Words in [ ] are parameters.
- Words in ALL CAPS represent inputs (switches, etc.) and outputs (MOTOR STARTER, etc.)
- Clock & [Auto Operate] Must also be set for automatic operation. See pages regarding auto operation for info.
- Make sure your control panel has a transformer that provides 120V power. Most compactors do.
- Make sure your outputs (valve, STARTER, etc.) are 120VAC. This control system is NOT compatible with 24VDC.
- There are compactors out there with two stage pumps, additional valves, etc. that may NOT be compatible with our control system. If you are not sure, take a few pics and email us. We'll steer you I the right direction.
- Please leave all documentation in the control panel. There is nothing worse than getting to a site and not having the info you need to make a simple adjustment or troubleshoot a problem. If you need extra copies, you can download them or call us and we'll send you a set, free of charge.

Installation

Install- PLEASE, DON'T FORGET YOUR MANUAL!

- We have included a manual, schematic decal, motor data tag decal, wire ties, tie pads, screws, wire nuts etc. to ensure you can install the Versa-Pak system in a professional manner.
- Remove control system and terminal blocks. Leave only the transformer and starter.
- Remove all wires from contact blocks on the control buttons.
- START button and REVERSE button should have (1) N.O. contact block each. E-STOP should have (1) N.C. contact block.
- Install control system and wire according to diagrams and schematic included.
- Set PRESSURE SWITCH. We typically set the PRESSURE SWITCH 150-250psi below relief pressure.
- Set relief pressure. Most compactors are set at 1800psi or so for timer shifting units. But some are much lower and some higher. If your compactor was limit, amp, or pressure shifting, the relief is set too high for a timer shifting unit. Turn the pressure down.
- Set [Forward Time], [Reverse Time], and [Multi Cycle].
- Enable other features as required. Install included decals. Please leave manual in panel.

Setting Parameters

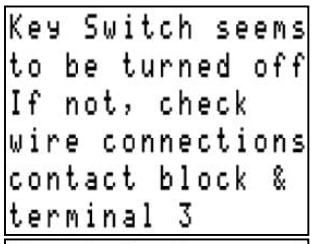
To get to Parameters from the main screen
Press ▼ then ESC / Program / Set Parameter
NOTE: If you get stuck on the screen that says "ESC+C… 9/9" and then has 4 arrows on it, press ▶ to get back to date screen.
You can press ◀ or ▶ to scroll through screens but they are mostly useless.
Each parameter is named for easy identification.
Use OK to enter the parameter, to indicate you want to change that parameter, and to save the new value.
Use ESC to get out of the parameter or if you change your mind after changing value but before you save with OK.
On Timers, you only set the T. Pay attention to the h (hours), m (minutes), and s (seconds) at the end of the times.
On Counters you only set the ON =
On Weekly Timers you would typically only set "D1 = [Days of Week]", "ON1 = [24hr time]" and "OFF1 = [24hr time]"
When done with Parameters ESC back to date screen, then wait or press ▲ to get to Messages Screens

Message Screens

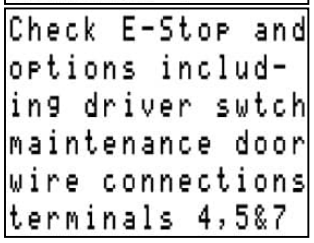
Message Screens help you understand what the compactor is doing and help you trouble-shoot issues. If the compactor is not wired according to the diagram provided, these messages may be inaccurate. Please carefully wire the compactor using our instructions, not your intuition. Tech support will be limited if not properly wired.

Screens- Normal Operation

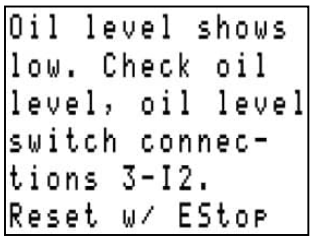
This message appears if I1, I2, I3 are all out at the same time. This would normally indicate the OFF/ON KEY SWITCH is off. If this message appears and the KEY SWITCH is turned on then check wiring, junction boxes, contact block, and all wire connections. Also, it may be that a maintenance door is open, DRIVER'S SWITCH is off, or E-STOP is pressed, and OIL IS LOW, and a FEED DOOR is open at the same time. (Or a connection to one of those switches)



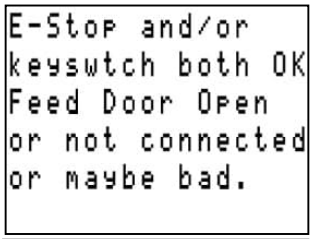
This message will appear if:
E-STOP is pressed,
OPTIONS installed between 3-4 or 4-5, are open. Check for power on those terminals. The device connected to the last terminal with power and the first terminal without power is the issue.
OFF/ON KEY SWITCH and/or DOOR SWITCH is wired in series with E-STOP it may be off.



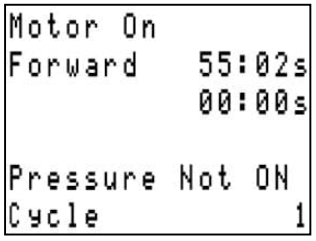
If oil level is low and an OIL LEVEL SWITCH is wired into I2, this message will appear. If the oil is full, check connections between the switch and 3 and I2. If connections are good, the switch may be set incorrectly or may be defective.



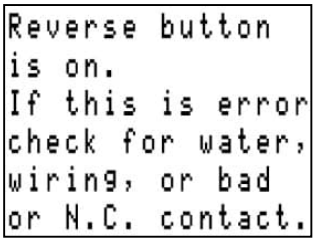
If this message shows, a FEED DOOR is open, or INTERLOCK CONNECTOR to compactor is not connected, or INTERLOCK is bad, or there is a bad connection.



Once the compactor is running this screen will appear. It shows status of the MOTOR, DIRECTIONAL VALVES, PRESSURE SWITCH, and current cycle count.

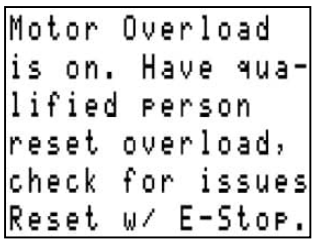


This screen is showing the REVERSE button is pressed, or water is causing a false input, or the REVERSE button has a normally closed contact or there is a wiring error.



Error Screens

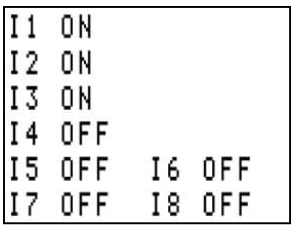
There are several error screens. This error shows the MOTOR OVERLOAD is tripped. Other errors are "Compactor is full or jammed", "Compactor ran too long", "Pressure switch was on too long", "Photo eye was on too long". See error section for more information. Once error is cleared the STOP BUTTON must be pushed and released to reset the PLC.



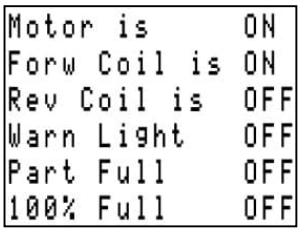
Other Screens

There are other screens that you can get to using the buttons on the front of the PLC. Press ESC and ▲ at the same time to scroll through the screens. You can scroll back down by pressing ESC and ▼ at the same time. These screens will stay on for 60 secs after the last time you press up or down. To get back to the Welcome screen just scroll all the way down. (Tip: Be sure to press ESC first when going down since ▼ by itself gets you out of the programmed screens. You can hold ESC and click ▲ and ▼ to scroll back and forth but if you hold it too long by itself, you'll get an error.)

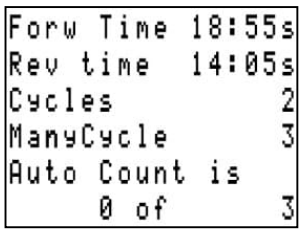
This screen shows which inputs are ON and OFF. I1, I2, and I3 must be on to start a cycle. This is a good screen to be on to set the PRESSURE SWITCH or just get a clear view of input status is you prefer a simple screen.



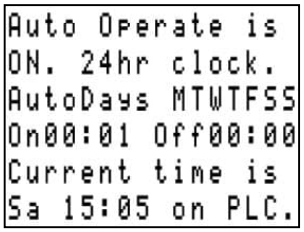
This screen shows which outputs are ON and OFF. It shows a clean view of output status and differentiates warning light/ horn, part full light, and 100% full status.



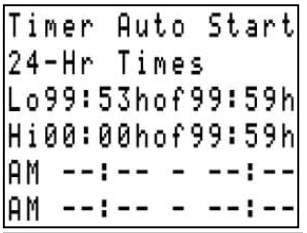
This screen shows the set values of basic parameters, Auto Operate status and current count value of Auto Door Count.



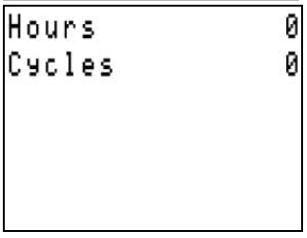
This screen shows the current settings of Auto Operate and the current time of day on the PLC. You'll want to check the accuracy of the time.



This screen shows the current settings of Auto Timer Start. It also shows the time left until the next time Auto Timer Start will start the compactor. These times are reset every time the compactor starts, and every day Auto Operate timer changes state. So, if the timer setting is 24 hours or more then the timer will never start the compactor because it will reset before starting.



This screen shows how many hours and cycles the compactor has run.



Get Time Settings for Pressure Shifting Cylinders

If your cylinders are pressure shifting type (When the cylinder hits the end of the stroke you reach full pressure) you can easily get your exact [Forward Time] and [Reverse Time] by following the instructions below.

- Install the Versa-Pak V7 control system.
- Test controls for proper operation.
- Set PRESSURE SWITCH.
- Set relief valve.
- Make sure all air is out of hydraulic system.
- Run compactor a few times.
- Navigate to timer setting screen (See instructions in previous section).
- Record the times. If three digits format is X:XX. If 4 digits XX:XX.
- Navigate to parameters and enter times exactly as shown.
- Test run compactor. It should make a full stroke without deadhead.
- If you do this multiple times and get varying results (more than 0:10 for a self-contained unit) you may have air in the system or a mechanical issue. Check oil level, suction screen, suction pipe, bypassing cylinder(s), pump, relief valve, directional valve.

```
If presure Shift
cylinders, run
cycle test. Set
Forw Time      0
Rev  Time      0
in ss.ss format.
```

Inverters

If you will be using a contactor or relay to start the inverter:

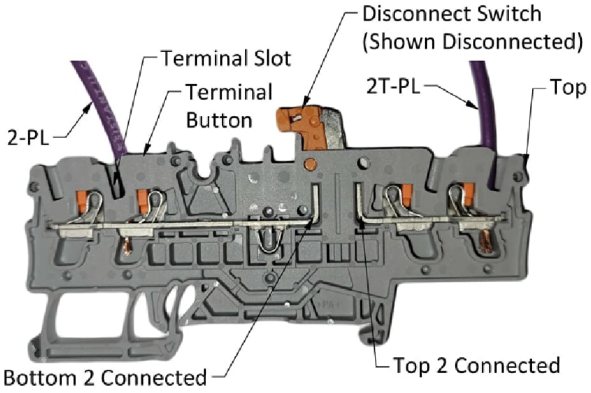
- Wire that relay as you would a STARTER using the brown wire from Q1 2 and white wire from 1.

If you are not using a separate contactor or relay:

- Remove jumper "Inverter" from Q1 1 to Control Power (I7)
- Put the two control wires coming from the inverter to Q1 1 and Q1 2.

NOTE: 7 and I8 Overload wires may be wired to alarm N.O. dry contact on inverter. Check inverter instructions.

Terminal Blocks



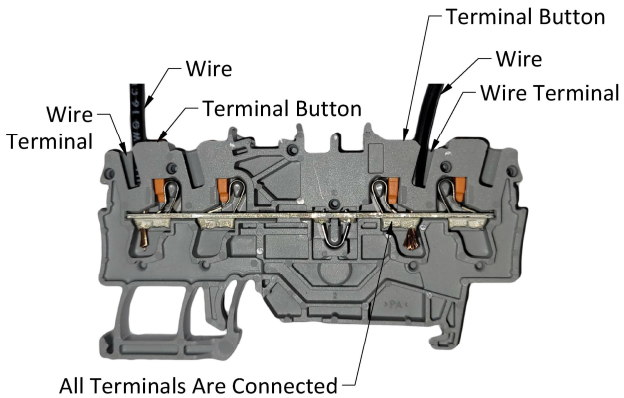
Terminal Block

The standard terminal blocks are connected top to bottom, so all four wire positions are all the same. Push the orange buttons to release the wire slot to insert or remove the wires. There are also 3 black jumpers from 2-3, 3-4, 4-5 in the center of the terminal strip. To remove these wires just pull on the jumper. The light gray bar jumpers stay put.

Terminal Block Disconnect

Terminal Block 2T & 2 (first hot terminal block that transformer and PLC hook to) has a switch to disconnect control power to terminal 2 and the rest of the terminals. This is useful if the power disconnect is not nearby. Only use this switch if the panel can be safely worked on with the main power on. Test terminals 2 + to make sure the power is disconnected. The top two terminals are the transformer and PLC so the PLC will stay lit. The message screen will show the KEY SWITCH is turned off.

NOTE: If someone wired the Transformer to a different terminal, this would not work! Never trust the guy before you!



Basic Parameters

Parameter Name	Parameter Default	Function	Notes
Forward Time	60:00s	Ends FORWARD stroke. Set for the time it takes the ram to go from all the way back to all the way forward.	For pressure shifting type cylinder, get times using above procedure. Timers can be set down to the 1/100th of a second so no need to bottom out. For bypass type cylinders allow the cylinders to bottom out for a fraction of a second.
Reverse Time	60.00s	Ends reverse stroke. Set for the time it takes the ram to go from all the way forward to all the way back.	
Multi Cycle	2	Causes compactor to run multiple cycles.	
Many Cycles	3	Causes compactor to run multiple cycles.	If START button is pressed 3 times within 3 seconds, compactor will run this many cycles. Useful for trash valet and cleaning up a lot of trash.

Fullness Timers

Feature Description	Parameter Default/ Suggested	Activate Feature	Notes
Part Full	90.50s | 00.50s	Flashes full light (Q4) (solid for V7.4 or earlier) but compactor continues to operate as usual. Light is reset by E-STOP, maintenance door, KEY SWITCH, or main power. Requires pressure switch. Set at least 150psi below relief setting.	Timer will ignore first stroke after cycle is interrupted. Part full feature flashes Full Light (Q4) but compactor will continue to operate normally. 100% Full feature will cause the full light to be solid and shuts down operation. Reset both with E-STOP, KEY SWITCH, etc. Not compatible with Warning light and buzzer (used with Auto Start). Both features will work but Auto Start and Full features both use Q4 for their lights and buzzer outputs. So both features' lights/ buzzer will be activated at the same time causing confusion.
PartFullCnt	1	Sets the number of times Part Full timer has to time out before turning on the Part Full light. Reduces false alarms.	
100% Full	92.00s | 02.00s	Turns on full light (Q4). Shuts down compactor immediately. Reset by E-STOP, maintenance door, KEY SWITCH, or main power. Requires PRESSURE SWITCH. Set at least 150psi below relief setting.	

Smart Shift Timers

Parameter Name	Parameter Default	Function	Notes
Smart Shift F	02.10	Shifts compactor from FORWARD to REVERSE if PRESSURE SWITCH detects pressure for time setting.	Important for pressure shifting compactors. Prevents excessive deadheading.
Smart Shift R	04.00	Shifts compactor from REVERSE to FORWARD if PRESSURE SWITCH detects pressure for time setting.	Important for pressure shifting compactors. Prevents excessive deadheading when packing out. This may cause an issue (especially in colder weather) if the back pressure is high in reverse. If so, you can shorten and/or oversize hoses. Or increase setting.

NOTE: You can make unit pressure shifting if desired. Set [Forward Time] and [Reverse Time] higher than forward and reverse strokes can take (with Hi Lo pump or regen, set them much higher). Set Smart Shift F and Smart Shift R to 00.25. Do not set below 00.25 (1/4 Sec) or it may cause a glitch. Also, set your full times .25 higher to account for this time.

Directional Valve Time Delay

Parameter Name	Parameter Default/ Alt	Function	Notes
Coil Delay F	00.10/01.00	Delays shift of forward solenoid at beginning of cycle and between REVERSE to FORWARD. Useful when running a unit with a forward/reverse starter instead of a directional valve.	Requires open or tandem center valve. Allows motor to start under a no-load condition. Ram Stop Forward- If [Stop R-9 F-0] is set at "0", this delays REVERSE coil at start and during cycle.
Coil Delay R	00.10/01.00	Delays shift of REVERSE solenoid when pressing REVERSE button. Useful when running a unit with a forward/reverse starter instead of a directional valve.	Requires open or tandem center valve. Allows motor to start under a no-load condition. Note: If moving FORWARD and the REVERSE button is pressed, valve will shift to center for time set before shifting to REVERSE. Ram Stop Forward- If [Stop R-9 F-0] is set at "0", this delays Forward coil when Forward button is pressed.
Delay F to R	00.10/01.00	Delays shift of REVERSE solenoid when shifting from FORWARD to REVERSE. Useful when running a unit with a forward/reverse starter instead of a directional valve.	Requires open or tandem center valve. Ram Stop Forward Mode- If [Stop R-9 F-0] is set at "0", this timer delays Forward coil when shifting from REVERSE to FORWARD.
Rev Coil Off	00.00/01.00	Delays the REVERSE coil after cycle stops.	Useful with bypass cylinders to prevent ram from creeping forward after cycle. Setting this time on pressure shifting cylinders will cause a pressure spike at the end of the cycle.

Errors

Versa-Pak V7 shuts down the compactor if it detects certain errors. In this event the error will be displayed on screen of the PLC. Read the screen before clearing the error and correct the issue before continuing to operate compactor. To clear error either press the E-STOP, turn KEY SWITCH off, or turn power off to the unit and back on.

Error	Common Causes	Possible Solution
Oil Level Low	Oil level is low OIL LEVEL SWITCH is out of adjustment OIL LEVEL SWITCH is bad Bad connection between Terminal Block 3 and I2	Top off oil, check for and repair leaks. Adjust OIL LEVEL SWITCH Replace OIL LEVEL SWITCH Repair wiring
Motor Overload	This error is caused by the overload relay on the STARTER tripping Overload setting is wrong	Check Motor issues section of this manual for solutions Set overload setting correctly
100% Full/ Jam	The compactor is full Something is blocking the ram in the charge box. Timers are set incorrectly	Empty compactor Clear the hopper and watch the ram cycle. Set timers correctly
Ran Too Long (11:00m)	Multi Cycle is set too high Run Too Long is set too low PHOTO EYE is dirty or is out of adjustment START button contacts have moisture START wire shorted to power	Correct timer setting Correct timer setting Clean and adjust PHOTO EYE, reflector Change out contact, resolve moisture issue. Repair short
PSI Too Long (60:00s)	PRESSURE SWITCH has been on too long during the run time. Compactor was run with hoses disconnected QD's are bad PRESSURE SWITCH is out of adjustment PRESSURE SWITCH is bad Oil is too thick or too cold Hoses are too long	Check time setting. Should be 60.00s Connect hoses Replace QD's Adjust PRESSURE SWITCH Replace PRESSURE SWITCH Use thinner oil or let oil warm up Use larger diameter hoses or shorten them in length.
Eye Too Long (10:00m)	See PHOTO EYE Section	

Other Errors and Issues

Start Button- The START button must be released by the end of the cycle or the compactor will not cycle again. So, if the start button contact has water in it the compactor may not start until the issue is rectified.

"False inputs"- It is possible for the program to see an input but not indicate so or vice versa. In this case a voltage meter may show very low, or even zero voltage when testing. Often, in this case, using a voltage meter from terminal block 1 to the input in question will clear the error allowing normal operation. This is often caused by water in a contact block or junction box. Often, using a water displacement spray will correct the issue.

Two wire proximity switches or amp switches- Two wire prox switches may cause a constant false input. Amp switches (like the ones we sell for the older versions of Versa-Pak) will cause a false input when the amperage gets near the set value. We do not recommend using these. These issues are due to the switch needing power to operate, unlike most switches used on a trash compactor. The power needed to operate the switch exceeds the power needed to turn on the input.

Hold to Run

"Dead Man" or "Hold-to-Run" is a safety feature for a compactor with to guarding. The operator must hold the START Button to keep the compactor running. At the end of the cycle the compactor will stop and will not start again until the START Button is release and pushed again. This prevents someone from tampering with the controls to bypass the safety feature.

Parameter Name	Parameter Default	Parameter Setting to enable Function
Norm-9Hold-0	90:00h	00:00h
Multi Cycle	2	1

Ram Stop Forward Operation

Ram Stop Forward is preferred by some locations as a safety feature especially when it is possible for someone to fall into the charge chamber. Also, it's a security feature for stores with chutes.

Parameter Name	Parameter Default	Parameter Setting to enable Function	Notes
Stop 9-R 0-F	90:00h	00:00h	Setting [Stop 9-R 0-F] to 00:00h causes ram to stop in the forward position. If this is set to Ram Stop Forward the REVERSE button will become the FORWARD button and the compactor will start in REVERSE.

Mail-Box Operation

Mail-box operation is useful in chute applications with interlocked doors. In these applications bridging of the trash over the charge-box is common. Mail-box operation causes the ram to shift into REVERSE when the door is opened during the cycle. This will allow trash to fall into the void caused by the ram movement. If the door is shut before a. [Reverse Time] times out or b. the ram deadheads back and triggers the PRESSURE SWITCH, and [Multi Cycle] has not reached its count, the compactor will continue to cycle. If the [Reverse Time] times out or the ram deadheads in REVERSE and triggers the PRESSURE SWITCH, the cycle will be complete.

Safety Considerations

- Ensure site is safe and appropriate for Mail-Box operation.
- Feed door must meet the 84" rule.
    - Feed height is minimum 42"
    - From feed height, the closest moving part must be at least (84" minus [feed height]") away.
      This rule generally means the ram cannot be touched by an average height man standing flat-footed at the feed area.

Parameter Name	Parameter Default	Parameter Setting to enable Function	Notes
Norm-90 MB-0	90:00h	00:00h	Causes the ram to shift into REVERSE when the door is opened.

Start in Reverse after cycle is interrupted

To cause the compactor to start in reverse if the cycle is interrupted you can set the following parameter. If the cycle is interrupted in any way the compactor will start in reverse the next time it starts regardless of the means of starting (pressing the START button or automatically starting or using the PLC BUTTONS). Starting the compactor after a full cycle was completed successfully will cause the compactor to start forward.

NOTE: During repairs, such as a cylinder change, a tech may find it useful to change the parameter back to 90.00h for better control of the ram. After repairs, be sure to change it back to 00.00h.

Parameter Name	Parameter Default	Parameter Setting to enable Function	Notes
StrtRv 9N 0Y	90:00h	00:00h	Causes the compactor to start in reverse after an interruption.

Auto Door Count

[Door Count] starts the compactor automatically when the FEED DOOR (wired 3-6, and 6-I3) is opened and closed the number of times set on the parameter [Door Count] ON= line. Loss of CONTROL PANEL, KEY SWITCH, E-STOP, REVERSE and START all reset the current count value to 0.

Safety Precautions

- Ensure a minimum feet height of 42"
- Ensure site is safe and appropriate for Auto Count operation.
- Access to the charge box should be limited and must be interlocked.
- With few exceptions that rarely apply- YOU MUST INSTALL A WARNING LIGHT AND BUZZER and delay start for 20secs according to ANSI standards!
- Install E-STOPS at every point of entry.
- Install all safety decals including "This Machine Starts Automatically!"

Enable Auto Count

- Install light and horn to terminals 1 (Neutral) and Q4 (Incompatible with Fullness Features)
- Clock must be set for Automatic Operation. ▼| ESC | Setup |OK | Clock | OK | Set Clock | OK
- Set S/W time. If the location of the install follows Daylight Savings Time, set S/W Time for US2.
- Set [Auto Operate] including days of the week
- Make sure your FEED DOOR is wired as "Feed Door". DO NOT wire in series to the E-STOP. See drawing.
- Check [ANSI 20sec] to ensure proper setting.
- Set [DOOR COUNT]. See "Setting Parameters" section of this manual.
- Set additional options as desired.

Parameter Name	Parameter Default	Suggested setting to enable Auto Operation	Notes
Auto Operate	D1 = MTWTFSS ON1 =00:00 OFF1=00:00	Auto Operate 24/7 D1 = MTWTFSS ON1 =00:01 OFF1=00:00 Operate 6am-10pm D1 = MTWTFSS ON1 =06:00 OFF1=22:00	Enables Auto Operate during certain times and days. The default time will not allow auto operation of any kind because the days of the week are disabled. The alternative example is 6:00am – 10:00pm (24hr clock), 7 days a week. Compactor will run in auto from 6am-10pm every day. Setting ON1=00:01 and OFF1 to 00:00 will allow auto operation any time of the day. Count will be reset and not allowed during off time. Once Auto Operate is again enabled, Door Count will again be functional. Manual START is always enabled.
Door Count	900003	3	Sets number of door closes to initiate auto-count feature.
ANSI 20 sec	20:00s	With Light/Buzzer 20:00s Without warning light 00.00s	This version of Versa-Pak only has 1 output for a light/ horn. So, to limit the time the horn is on you must either buy the light/horn from us or provide a separate timer to shut the horn off after 5 seconds. Disable if not using warning light/buzzer (00.00s)

Note: If compactor has no power for more than 15 days or so, you may have to reset clock.
Note: Though not recommended, if you choose not to use the warning light and buzzer you should set [ANSI 20sec] to "00.00" and [Warn 0-Y 9-N] to "9". This ensures someone is at the compactor when it starts.
Note: To disable Auto Door Count, set [Auto Operate On1 and Off1] to "00:00". After disabling [Auto Operate], Set [Door Count] to 900002. (The only thing that matters is the first 9)

Auto Photo Eye

Safety Precautions

- Photo eyes are not desirable in most situations. They are best used in applications where access to the charge chamber is limited (like in an apt style unit with limited access and a small door).
- Ensure a minimum feed height of 42"
- Ensure site is safe and appropriate for PHOTO EYE operation.
- Access to the charge box should be limited and must be interlocked.
- YOU MUST INSTALL A WARNING LIGHT AND BUZZER and delay start for 20secs according to ANSI standards!
- Use only Maintained (Push/Pull) Emergency Stop buttons. Install E-STOPs at every point of entry.
- Install all safety decals including "This Machine Starts Automatically!"
- We recommend using our V7X system and the ANSI Auto Mode input for safe operation.

Installing Eye

NOTE: We suggest buying an electric eye from us so that we can support you better. If you buy one on your own, we will not be able to fully support the install of the eye. We'll help you if we can though.

- Install warning light and buzzer to terminals 1 (common) and Q4. (Incompatible with Fullness Lights)
- Make sure [ANSI 20secs] is set at "20:00" (Factory setting, ANSI delay start)
- Clock must be set for Automatic Operation. ▼| ESC | Setup |OK | Clock | OK | Set Clock | OK
- Set S/W time. If the location of the install follows Daylight Savings Time, set S/W Time for US2.
- Wire the N.O. PHOTO EYE contact to #7 and I6 (see schematic)
- Wire the PHOTO EYE power to terminal blocks #7 (hot) and #1 (common)
- If you bought a Banner Eye from PSI Waste- Brown goes to #7, Blue goes to #1, Yellow goes to #7, Black goes to I6, White gets a wire nut.

Parameter Name	Parameter Default	Suggested setting to enable Auto Operation	Function	Notes
Auto Operate	D1 = MTWTFSS ON1 =00:00 OFF1=00:00	Auto Operate 24/7 D1 = MTWTFSS ON1 =00:01 OFF1=00:00 Operate 6am-10pm D1 = MTWTFSS ON1 =06:00 OFF1=22:00	Enables Auto Operate during certain times and days. The default time will not allow auto operation of any kind because the days of the week are disable. The alternative example is 6:00am – 10:00pm (24hr clock), 7 days a week. Compactor will run in auto from 6am-10pm every day. Setting ON1=00:01 and OFF1 to 00:00 will allow auto operation any time of the day. Manual START is always enabled.	
Eye Delay	05:00s	05:00s	Delays starting compactor when eye is blocked.	Prevents compactor from starting every time trash passes eye.
ANSI Delay	20:00s	20:00s	Delays start for ANSI required 20 secs.	This version of Versa-Pak only has 1 output for a light/ horn. So, to limit the time the horn is on you must either buy the light/horn from us or provide a separate timer to shut the horn off after 5 seconds.
Eye Too Long	10:00m	10:00m	Shuts compactor down if it runs too long.	Set higher than eye is likely to be blocked. Reset with E-STOP, KEY SWITCH, or main power.

Note: If compactor has no power for more than 15 days or so, you may have to reset clock.
Note: To cancel Photo Eye START, disconnect PHOTO EYE.

Auto Timer Start

Auto Timer starts the compactor on interval [LoVolumTimer] during [Auto Operate] time period. If [Hi Volume AM] and/or [Hi Volume PM] are set, then compactor will start at interval [HiVolumTimer] during that period. At the beginning of each start the WARNING LIGHT/ HORN output will come on to warn the compactor is about to start.

Safety Precautions

- Ensure a minimum feed height of 42"
- Ensure site is safe and appropriate for Timer Auto Operation.
- Access to the charge box should be limited and must be interlocked.
- With few exceptions that rarely apply- YOU MUST INSTALL A WARNING LIGHT AND BUZZER and delay start for 20secs according to ANSI standards!
- Use only Maintained (Push/Pull) Emergency Stop buttons. Install E-STOPs at every point of entry.
- Install all safety decals including "This Machine Starts Automatically!"
- Make sure [ANSI 20sec] is set at 20:00 (Factory setting, ANSI delay start)
- We recommend using our V7X system and the ANSI Auto Mode input for safe operation.

Enable Auto Timer

- Clock must be set for Automatic Operation. ▼| ESC | Setup |OK | Clock | OK | Set Clock | OK
- Set S/W time. If the location of the install follows Daylight Savings Time, set S/W Time for US2.

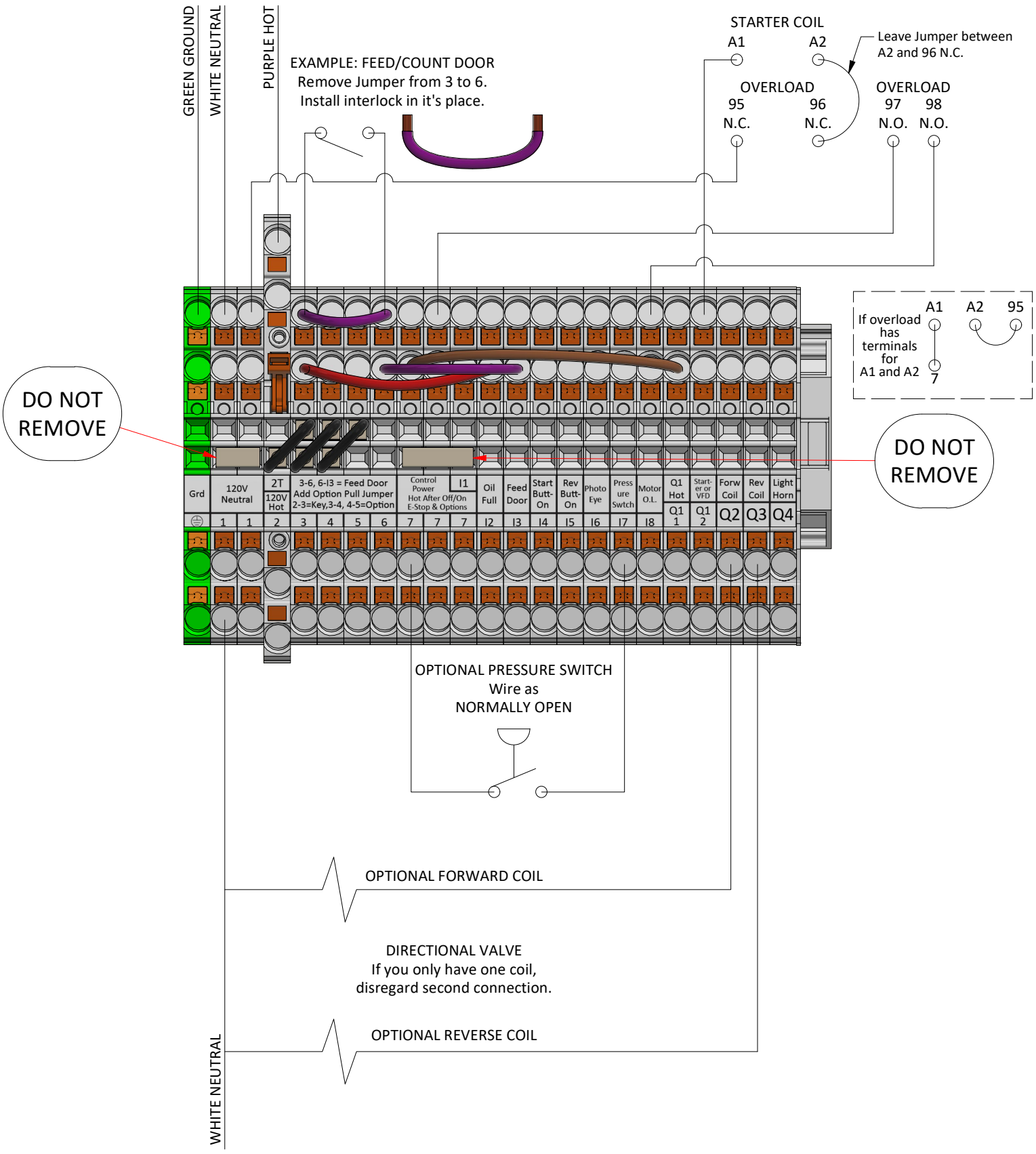
Parameter Name	Parameter Default	Suggested setting to enable Auto Operation	Notes
Auto Operate	D1 = MTWTFSS ON1 =00:00 OFF1=00:00	Auto Operate 24/7 D1 = MTWTFSS ON1 =00:01 OFF1=00:00 Operate 6am-10pm D1 = MTWTFSS ON1 =06:00 OFF1=22:00	Enables Auto Operate during certain times and days. The default time will not allow auto operation of any kind because the days of the week are. The alternative example is 6:00am – 10:00pm (24hr clock), 7 days a week. Compactor will run in auto from 6am-10pm every day. Setting ON1=00:01 and OFF1 to 00:00 will allow auto operation any time of the day. Note that the "ON1=" time is when the timer starts timing. So, if [LoVolumTimer] was set for 30:00m the compactor will not start until 06:30. Manual START is always enabled.
LoVolumTimer	T=99.59h	T=60:00m	This time represents how often the compactor will run from the time [Auto Operate] is enabled until compactor starts or from the time the compactor stops to the time it starts again during the [Auto Operate] period.
Hi Volume AM	D1 = MTWTFSS ON1 =00:00 OFF1=00:00	D1 = MTWTFSS ON1 =06:00 OFF1=10:00	If a compactor has high volume and low volume times during the day, such as an apartment complex, you can set the compactor to cycle more often during those times. [HiVolumTimer] will be enabled during these time periods.
Hi Volume PM	D1 = MTWTFSS ON1 =00:00 OFF1=00:00	D1 = MTWTFSS ON1 =17:00 OFF1=19:00	
HiVolumTimer	T=99.59h	T=30:00m	This time represents how often the compactor will run from the time [Hi Volume AM or PM] is enabled until compactor starts or from the time the compactor stops to the time it starts again during the [Hi Volume AM or PM] periods.
ANSI Delay	20:00s	20:00s	Delays start for ANSI required 20 secs. This version of Versa-Pak only has 1 output for a light/ horn. So, to limit the time the horn is on you must either buy the light/horn from us or provide a separate timer to shut the horn off after 5 seconds.

Note: If compactor has no power for more than 15 days or so, you may have to reset the clock. This may require a password to get into ADMIN. Call us for Password.

Note: To cancel Timer Auto Operate: Set [Auto Operate On1 and Off1] to "00:00" and Lo and Hi Volume AM/PM to "ON1=00:00" and "OFF1 = 00:00". Set [LoVolumTimer] and [HiVolumTimer] to 99.59h.

INSTALL DIAGRAM

When removing the wires from the transformer and starter, cut the wires leaving them attached to the terminals. This will make it easy to identify where the new wires go during the install. Connect new wires from Versa-Pak to each component as previously connected. Versa-Pak does not use auxiliary contacts on the starter. These wires can be removed.



EXPLANATION OF JUMPERS

Jumpers are used to complete the control circuit when options are not needed. They can be removed only when replacing with the appropriate component.

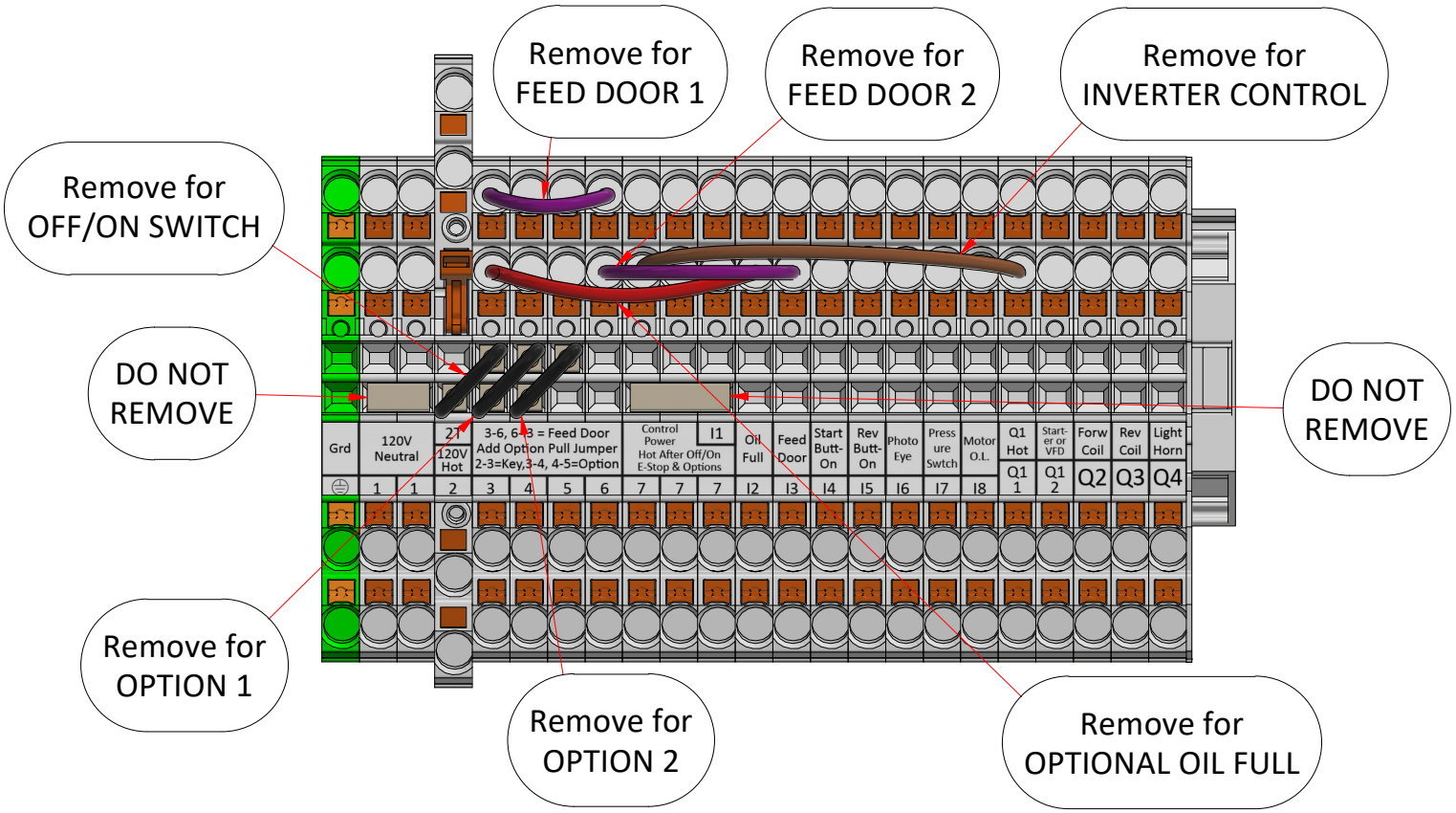
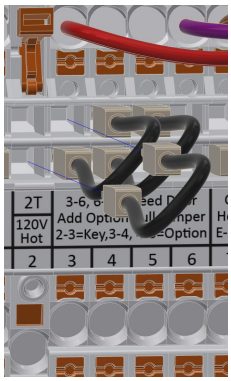


Fig. A



EXAMPLE
INSTALLING OFF/ ON SWITCH

For instance, if you were wiring in an Off/ On switch, you would remove the jumper from 2 and 3A and replace it with the wires coming from the normally opened contact of the switch.
See Fig A. and Fig. B.
Other jumpers work the same.

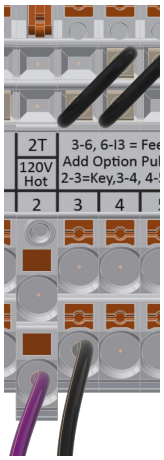
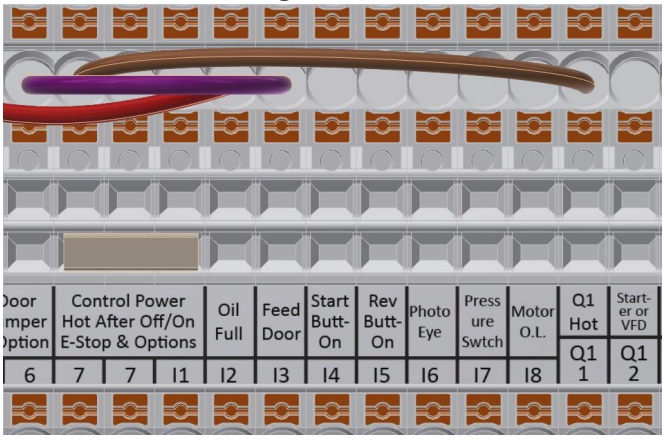


Fig. B

Fig. C

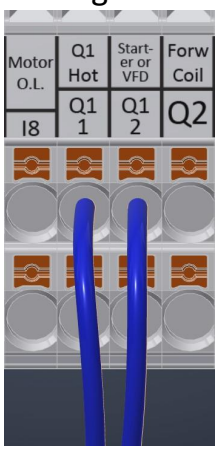


EXAMPLE
IF INSTALLING VERSA_PAK WITH A MOTOR (VECTOR) DRIVE

Jumper 7 to Q1 1 (Fig. C). This jumper is removed ONLY when wiring in an inverter. In this instance, the jumper will be removed, BUT the inverter control wires will wire into Q1 1 and Q1 2 (Fig. D).

DO NOT REMOVE 7 to Q1 1 JUMPER UNLESS YOU ARE USING AN INVERTER

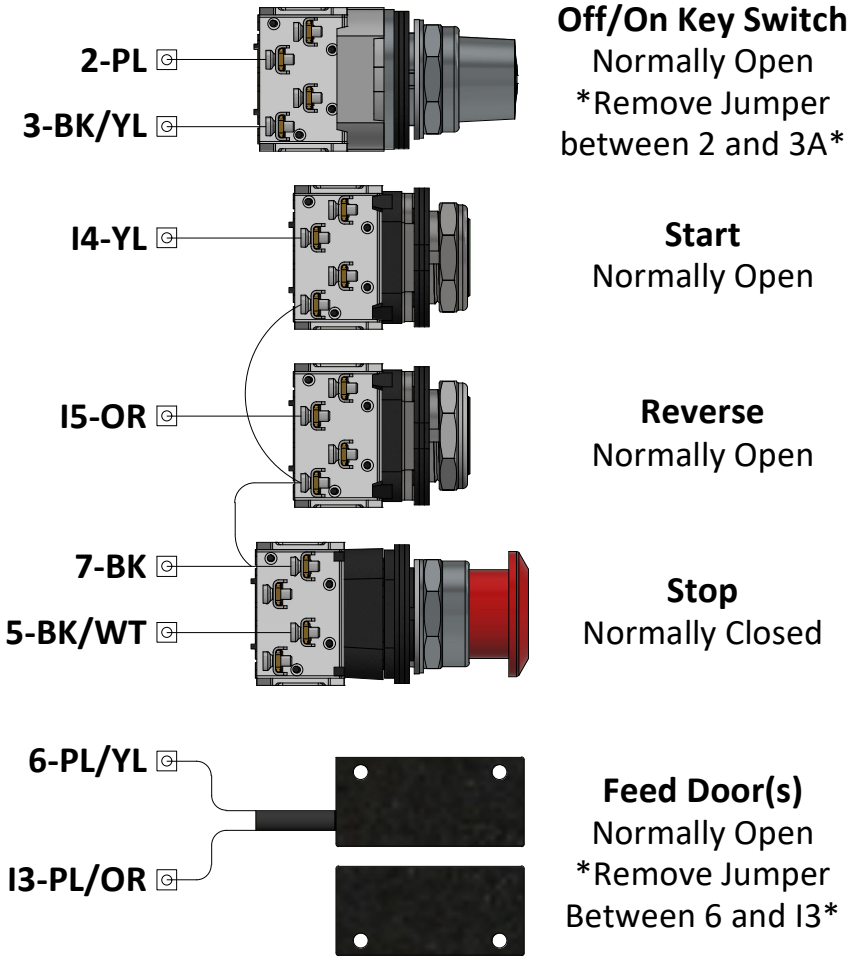
Fig. D



Typical Controls Wiring

Check schematic for more options.

Off/On, Start, Reverse, Stop



Off/On Key Switch
Normally Open
Remove Jumper between 2 and 3A

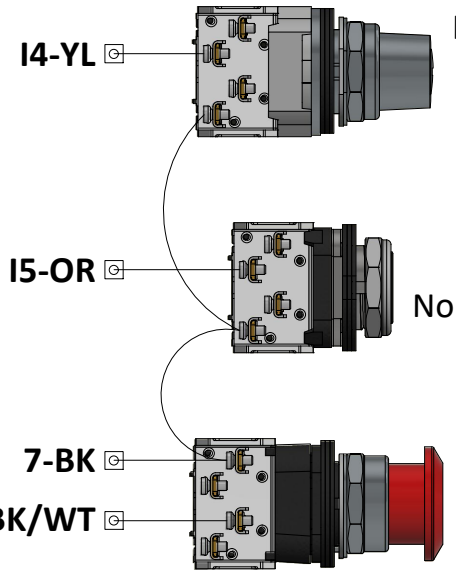
Start
Normally Open

Reverse
Normally Open

Stop
Normally Closed

Feed Door(s)
Normally Open
Remove Jumper Between 6 and I3

Start, Reverse, Stop

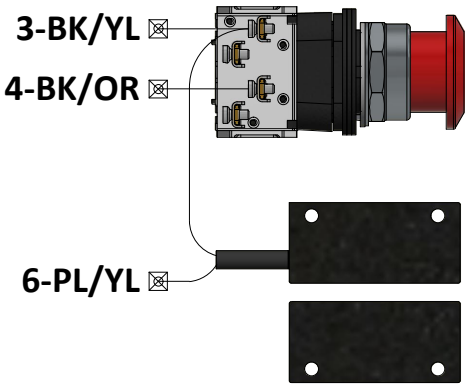


Key Start
Normally Open

Reverse
Normally Open

Stop
Normally Closed

Additional Stop w/ Feed Door

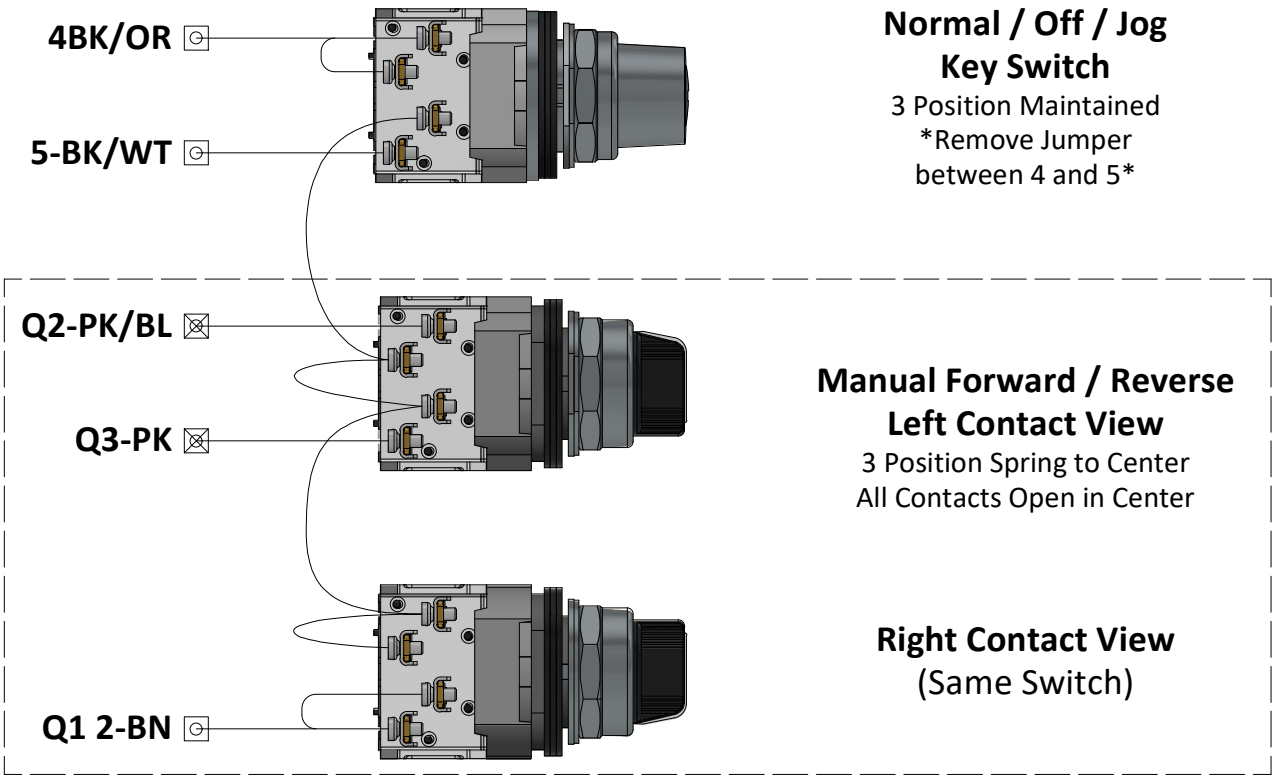


Stop
Normally Closed
Remove Jumper between 3 and 4

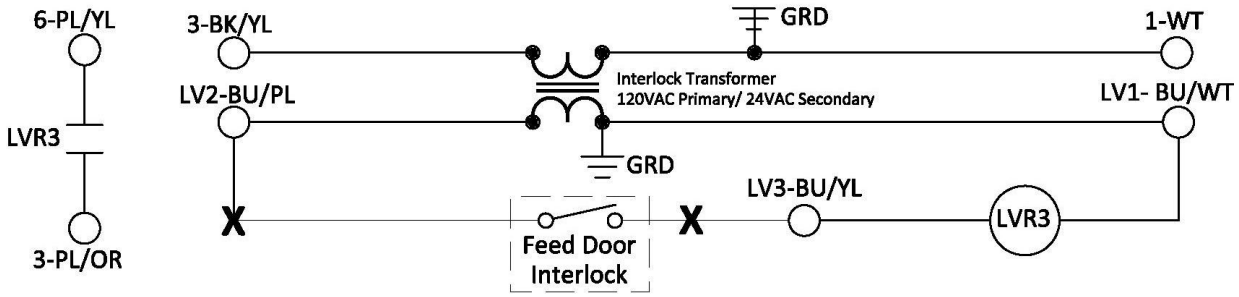
Feed Door(s)
Normally Open
Remove Jumper between 3 and 6

Auto / Off / Jog, Manual Forward/ Reverse

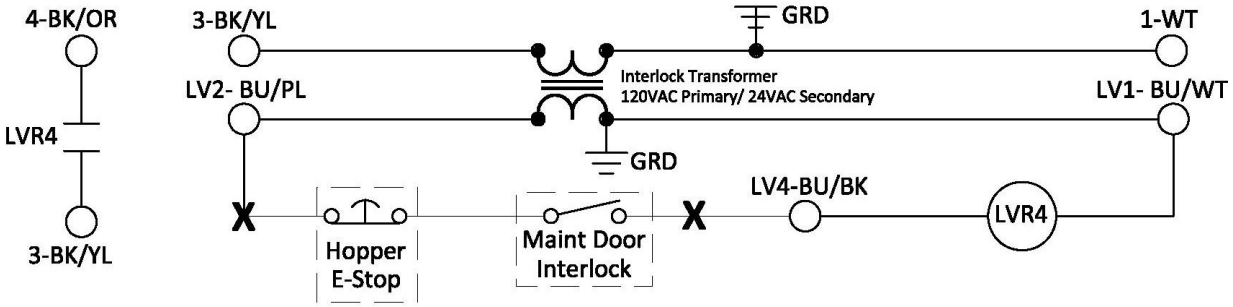
When switch is in Jog, all E-Stops/ Interlocks will be bypassed.
Forward and Reverse switch will Start motor and Jog ram.
(*NOT for Inverter*)



LOW VOLTAGE FEED DOOR INTERLOCK



LOW VOLTAGE E-STOP OR MAINTENANCE DOOR



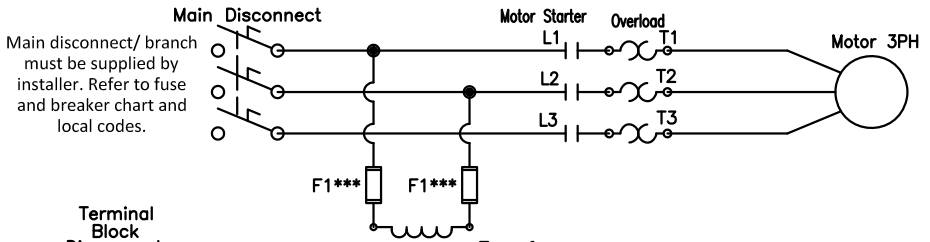
"X" indicates interlock plug. "LV_" are additional low voltage terminal blocks.
Call PSI Waste if you need LV terminal blocks at no charge.
"LVR3" and "LVR4" are 24VAC relays(not provided).

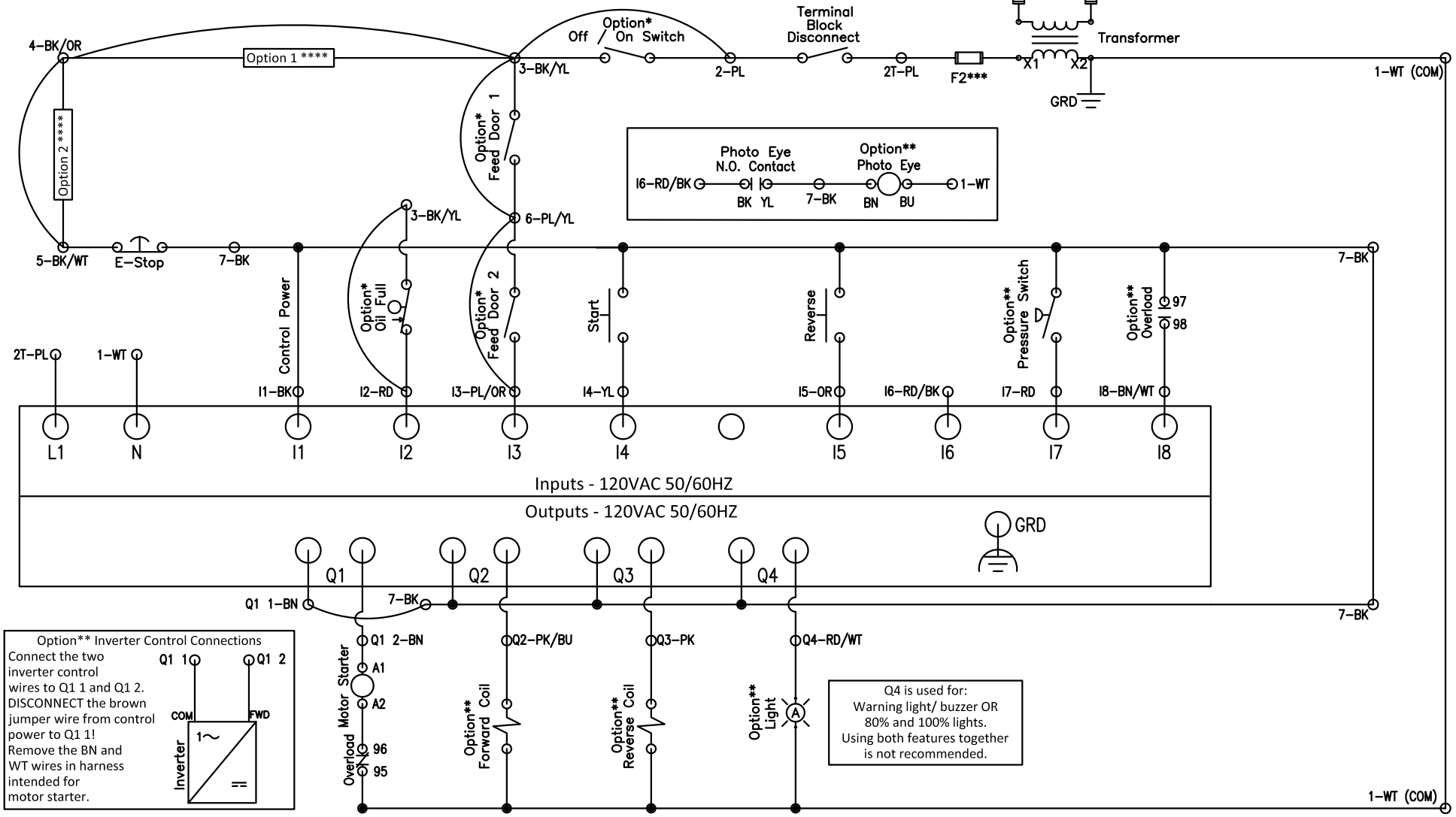
* Indicates optional components. If option is installed, remove the corresponding jumper from the center jumper rail.
** Indicates optional components. Omit connections if not installed.
*** CAUTION: To reduce the risk of fire, replace only with UL listed fuses of the same type and rating.
**** Use for options such as driver's switch, maintenance doors, or additional E-Stop. If option is installed, remove the corresponding jumper from the center jumper rail.

Field Wiring: Use copper wire only.

Scan for Support

Main disconnect/ branch must be supplied by installer. Refer to fuse and breaker chart and local codes.





Option** Inverter Control Connections

Connect the two inverter control wires to Q1 1 and Q1 2. DISCONNECT the brown jumper wire from control power to Q1 1! Remove the BN and WT wires in harness intended for motor starter.

Color Code:
GR - Green | WT - White | PL - Purple | BK - Black | BN - Brown
PK - Pink | BU - Blue | YL - Yellow | OR - Orange | RD - Red

Title: VP701	Date: 8/31/21
DWG #: VP701	Drawn: CB

Panel Manufactured by PSI Waste Equipment Services, Inc. 31130 Industry Drive, A, Tavares, FL 32778 Support, downloads, and videos: www.versa-pak.net or call 352-742-4774 Opt 4