



***INTELLISPEC™  
Series V+ Hard-  
ware Guide with  
Chromapulse Mod-  
ule***

SOFTWARE VERSION: 5.8 AND UP

MANUAL PART NUMBER: 81545 REV. 01

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# Chapter 1 Pressco Introduction

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Welcome!

Congratulations on your purchase of an Intellispec system! The Intellispec is a high-speed machine vision system designed specifically for product and online process monitoring. It is a powerful tool that provides inspection much more reliably than the human eye or sampling methods. The latest PC technology, powerful inspection algorithms, online adjustment capability, and inspection data storage allow the Intellispec to automatically inspect parts with extreme accuracy on high-speed lines.

The Intellispec will help you provide the highest quality of products shipped to your customers.

## About This Manual



**IMPORTANT:** *Keep this manual for future reference*

This book is considered an integral part of the system and should be kept handy for future reference as long as the system is being used in your plant.

The purpose of this manual is to describe the Intellispec Vision Processor and associated hardware. It is intended for trained users.

This manual:

- Is your responsibility to keep in good condition, in a dry place, and ready for consultation by the authorized users of the system.
- Contains the technology implemented at the time of selling and supplying the system and shall not be considered inadequate in case of technological enhancements in the machine or in the manual's illustrations.

Related books include:

- Intellispec Operator's Guide which has Operator-level user instructions, and is a good place to start if you are new to Intellispec
- Intellispec Software Guide which has Administrator-level user instructions

### ***The following types of alerts may appear in this guide:***



**DANGER!** - *Danger messages alert you to specific conditions that can cause serious or fatal personal injury. Danger messages give you important information which must be observed to prevent injury.*



**WARNING:** - *Warning messages indicate information which must be observed to prevent injury, data loss, or equipment damage.*



**CAUTION** - *Caution messages indicate important information which must be observed to prevent: loss of data, poor system performance, or equipment damage.*

*Note: Notes contain special information that warrants being set off from the body text as shown here.*



**IMPORTANT** - *Indicates prerequisites or information that must be observed to complete or understand a concept or task.*

**TIP:** *Provides helpful hints for completing a task.*

---

## Safety Considerations

Observe the following safety warnings when operating the system or working near it:



*WARNING - Potential for projectiles to strike persons and cause injury. Keep clear of reject devices.*



*WARNING - Sensitive electronics and High Voltages may be exposed. Keep Processor Cabinet/ Electrical Control Box door closed.*

---

## Static Discharge Protection



*Caution - Electronic components can be damaged by static electricity discharge.*

Always observe the following precautions before removing, installing or handling any electronic components within the Inspection System:

- Wear an anti-static wristband which is grounded to the Inspection System.
- Stand on an anti-static, grounded floor mat, and lay circuit boards on the mat during any board replacement.
- Keep circuit boards in static shield bags when storing and transporting. Ensure the bag is sealed.

## Chapter 2 Safety Information

This section contains operator safety information that must be read before operating or servicing the system.



*WARNING - This product contains no operator serviceable parts. Refer servicing to qualified personnel. To prevent electrical shock do not open cabinet doors whilst power is connected.*



*WARNING - Do not, under any circumstances, tamper with sealed machine parts or devices. This could result in the removal of protections that might create potentially hazardous conditions.*



*CAUTION - Possible hazardous optical radiation from LEDs. Do not stare at lamps.*

### Health Warning - Photosensitive Epilepsy



**WARNING: PHOTOSENSITIVE EPILEPSY/ SEIZURES**

A small percentage of individuals may experience epileptic symptoms or seizures when exposed to certain patterns or flashing lights. Exposure to the flashing lights in vision inspection systems may also trigger epileptic symptoms or seizures in these individuals. These flashing lights may trigger epileptic symptoms or seizures in persons who have no history of epileptic symptoms or seizures. If you, or anyone in your family has an epileptic condition or has had seizures of any kind, consult your physician before operating this machinery.

IMMEDIATELY DISCONTINUE use and consult your physician if you experience any of the following symptoms while operating this machinery:

- Dizziness
- Altered vision
- Eye or muscle twitches
- Loss of awareness
- Disorientation
- Seizures
- Any involuntary movement or convulsion

***Epileptic symptom or seizure triggers vary from person to person. Some common triggers are:***










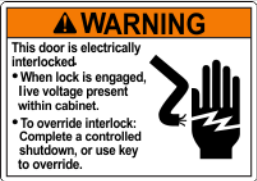
- Flashing lights used for vision inspection systems or fire alarms
- Certain video games or TV broadcasts containing rapid flashes or alternating patterns of different colors
- Bright, contrasting patterns such as white bars against a black background
- Flashing white light followed by darkness
- Stimulating images that take up your complete field of vision, such as being very close to a TV screen or computer monitor
- Certain colors, such as red and blue

**If you encounter something that might trigger epileptic symptoms or seizures without warning:**

- Do not close your eyes (this could cause a flicker effect)
- Do not look directly at the flashing lights or trigger source
- Do cover one eye with the palm of your hand immediately
- Do turn away from the flashing lights or trigger source

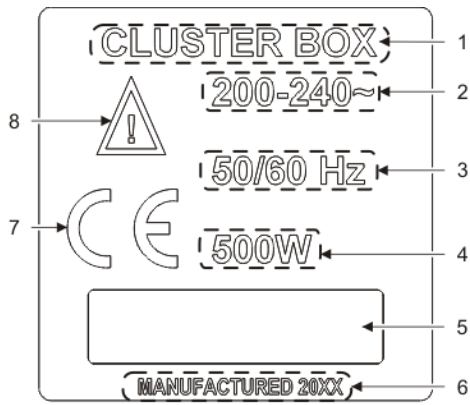
**Symbols Used With This System**

The following symbols are used on or near the Pressco system. Be aware of potential risk hazards.

Symbol	Meaning
	CAUTION: Risk of danger. Refer to accompanying user documentation before use.
	WARNING: Risk of electric shock
	WARNING: Risk of burns from hot surface
	WARNING: Hand crush hazard
	On (supply)
	Off (supply)
	Alternating current
	Protective conductor terminal
	Arc flash and shock hazard
	Electrical interlock

**Label Description - Intellispec**

The following illustration shows an example label that you will find on the Intellispec system components.



- 1) Name of component. NOTE: The Chromapulse model is listed on the front panel of the module.
- 2) Voltage range in Volts AC
- 3) Frequency range in Hertz (Hz)
- 4) Maximum rated power in watts (W) with all accessories or plug-in modules connected
- 5) Serial number is listed in this box
- 6) Year of manufacture
- 7) Component certification
- 8) Risk of danger. Refer to accompanying documentation before use.

---

## Warning Devices

The Pressco system has warning devices that indicate system failure or report excessive defects or warnings for your production line. These include an optional light tree, alarms and indicators on screen, and audible warnings (depending on system).

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## Light Tree

The optional light tree is mounted on a pole in a customer-specified location.



The light tree color segments represent each alarm or system condition. A color segment may appear for more than one alarm condition.

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## Residual Risk

The Pressco system has been designed to minimize any danger of personal injury. However, the system uses rejection devices to remove defective product from the production stream. Also, the electronics cabinets contain risk of shock if they are opened.

Observe the following safety warnings when operating the system or working near it:



**WARNING** - Potential for projectiles to strike persons and cause injury. Keep clear of reject devices.



**WARNING** - Sensitive electronics and High Voltages may be exposed. Keep Processor Cabinet/ Electrical Control Box door closed.

## Intended Use

**Type of Process** The Pressco system is intended to monitor container and other special manufacturing processes and identify non-conforming product.

**Intended Use** The Pressco system is designed and constructed for use in an indoor industrial environment, always sheltered from the weather.

**Space Required** The Pressco system and accompanying sensors must be installed in a place that will enable safe and easy installation, size changeover, user operation, and maintenance procedures.

## Prohibited Use



**WARNING** - If this instrument is not used as specified, the protection provided by the equipment could be impaired. This instrument must only be used in a normal condition (in which all means of protection are intact).



**Important** - The Pressco system should NOT be used for any purpose other than specifically indicated in the section titled "**Intended Use**" above.

The following uses are not intended:



Use in an explosive environment



Use in a flammable environment



Use in a damp, moist, or wet environment, except where specifically indicated

## Personal Protective Equipment



**Important** - Always follow the safety requirements of your plant in addition to the recommendations below.

We recommend, at minimum, use of the following Personal Protective Equipment (PPE):



Protective clothing



Protective gloves



Protective ear plugs or headphones



Protective eye wear



Protective foot wear

## Personnel Safety

The following rules are recommended to ensure the safety of personnel in charge of machine operation and maintenance.

### *During machine operation:*



Only one operator is needed to operate the machine. All others must keep at a safe distance.



Operators must be familiar with all machinery connected to the Pressco equipment and know how to use emergency stop devices.

Note: the emergency stop devices may not be connected directly to the Pressco equipment, but it is important to know how to use them.



Before putting the Pressco system online, the operator must ensure that all safety devices used with all connected machinery are in place and operational.

Do not operate with guards removed.



The operator must maintain maximum focus on his work and be alert throughout his shift. If this is not the case, immediately inform the shift supervisor.

### *When carrying out maintenance or repair work:*



Disconnect master switch. For switch locations, refer to the Power Up and Power Down section.



Before starting the machine, ensure that no person is close to the machine.



If maintenance or repair requires the disconnection or removal of safety or protection systems, this operation must be supervised by authorized personnel who must ensure the prevention of personal injury or damage to the machine. All machine movements must be performed with limited speed and limited movements.



Maintenance or repair work on electrical components must be carried out exclusively by authorized, trained personnel. When running tests with power connected, you must strictly comply with the rules provided.



Personnel working on higher parts of a machine must wear a harness and hook it on to the structure and must always move with extreme caution.



Never perform lubrication or maintenance procedures on mechanical parts with the machine running.

### *For your safety, do not:*








Open safety guards during machine operation




Perform maintenance and repair while the system is running

## Chapter 2

-  Lean on the machine
-  Sit on the machine components
-  Use the machine for purposes other than those listed in this manual
-  Modify parts of the machine
-  Allow unqualified personnel to operate or perform maintenance procedures on the machine


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### Lifting Heavy Objects

 **CAUTION** - Some components are heavy. Take proper precautions to prevent personal injury or damage to equipment. If you are not capable of lifting the object alone, ask a capable person to help lift the object, or use a mechanical lifting device

The components do not have handles to lift the equipment. Be sure to:

- Lift equipment from the bottom - do not use wires, brackets, nor other protrusions
- Keep fingers away from sensor lenses to keep the equipment clean
- Proceed slowly

 **WARNING**- The Pressco cabinets must NOT be lifted by one person. Use a mechanical lifting device, and ask another person to assist you.

 Do not twist your body when moving the load. Instead take small steps with your feet turning until you are in the correct position.

#### **To safely lift equipment:**

1. Stand close to the load and center yourself over it with your feet shoulder width apart.
2. Tighten your abdominal muscles.
3. Keeping your back straight, bend your knees and squat down to the floor.
4. Get a good grasp on the load with both hands.
5. Keeping the load close to your body, use your leg muscles to stand up lifting the load off the floor. Your back should remain straight throughout lifting, using only the muscles in the legs to lift the load.
6. To place the load in the appropriate spot, bend at the knees using only your leg muscles to lower the load.

---

### Authorized Users

Trained machine operators, mechanic and electrical maintenance staff, and plant managers are considered authorized users of the Pressco system. These users should carefully read the information contained in this manual. The plant manager must ensure that the safety recommendations included in this manual are observed.



**WARNING** - *Allowing workers who are unfamiliar with the production process to operate the Pressco system could result in hazard risk.*

If you are unclear about any part of this manual, contact Pressco Technical Support.



**Important** - *No worker should ever operate the system outside of his/ her own area of competence and responsibility.*

**Proper Operation:** Only one worker is to operate the system at any given time. The correct position for the operator is in front of the user interface monitor or control enclosure (if applicable).

**Repairs:** Any repair on the system shall be carried out exclusively by Pressco Technology Inc. service personnel or by other service expressly authorized by Pressco Technology Inc.

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## Spare Parts Usage

The following restrictions apply to replacing parts:



**WARNING** - *Using spare parts that are not designed to Pressco's specifications can compromise the safety and effectiveness of the Pressco system.*

- The use of parts that are not within Pressco's design specifications is prohibited. This prohibition applies in particular when the parts involved contain or are connected with safety devices.
- Before resuming production, make sure all safety devices are in working order.

Pressco Technology Inc. shall not be liable in any way if any of the above-described directions are not complied with.

To obtain a spare parts list, contact the customer service department at Pressco.

Pressco's technicians are available to help customers, in their own plant, to solve any problem that might arise during use and maintenance of the system.

## Chapter 3 System Specifications

This instrument has been designed and tested in accordance with Publication EN61010-1 (2010) Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use and has been supplied in a safe condition. The instruction documentation contains information and warnings which must be followed by the user to ensure safe operation and to maintain the instrument in a safe condition.

### Environmental Conditions

The Intellispec Series V system is designed to be safe in the following environmental conditions:

*Note: Please consult Pressco Technology Inc. if your environmental conditions are outside of those listed.*

Condition	Specifications
Indoor/ outdoor use	Indoor use only
Altitude	Up to 2000 meters
Operating Temperature	5 °C to 50 °C
Storage Temperature	0 °C to 70 °C
Humidity	Maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 50 °C
Mains supply	Voltage fluctuations up to $\pm 10$ % of the nominal voltage
Overvoltage protection rating	Transient overvoltage typically present on MAINS supply NOTE: the normal level of transient overvoltages is impulse withstand (over-voltage) category II of IEC 60364-4-443.
Rated pollution degree	This instrument is designed for use in Installation Category II and Pollution Degree 1 as per EN61010-1 and EN60664 respectively.



*Warning - This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.*

### Sound Pressure Level

The horn on the optional light tree has a maximum 105dB level at 1 meter distance in front of the horn. Use proper hearing protection as specified by your plant safety instructions.

### Specifications - Intellispec Series V Plus

The following sections contain electrical specifications and measurements for components of the Intellispec Series V+ system. Your system contains only the components necessary for your application.

## User Interface Electrical Specifications

Standard User Interface - No UPS included	
Voltage Range	100-240VAC
Frequency	50/60Hz
Current	5A @ 120VAC, 100% Load

User Interface with Optional 750VA UPS, 120VAC Nominal	
Voltage Range	100-132VAC
Frequency	50/60Hz
Current	6.3A @ 120VAC, 100% Load

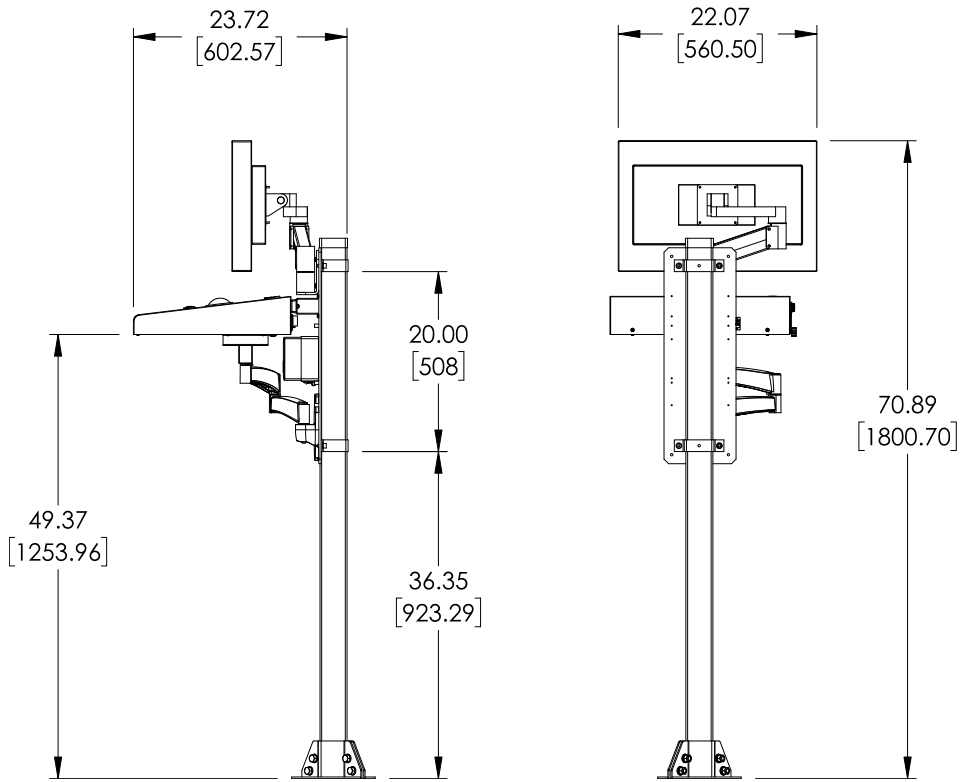
User Interface with Optional 1KVA UPS, 230VAC Nominal	
Voltage Range	200-240VAC
Frequency	50/60Hz
Current	4.3A @ 230VAC, 100% Load

## Series V Plus Electrical Specifications

115 VAC Unit	Series V Plus Vision Processor	Air Conditioner
Voltage Range	115 VAC	115 VAC
Frequency	50/60Hz	50/60Hz
Current	6A	10A @ 115VAC, 100% Load

230 VAC Unit	Series V Plus Vision Processor	Air Conditioner
Voltage Range	230 VAC	230 VAC
Frequency	50/60Hz	50/60Hz
Current	6A	6A @ 230VAC, 100% Load

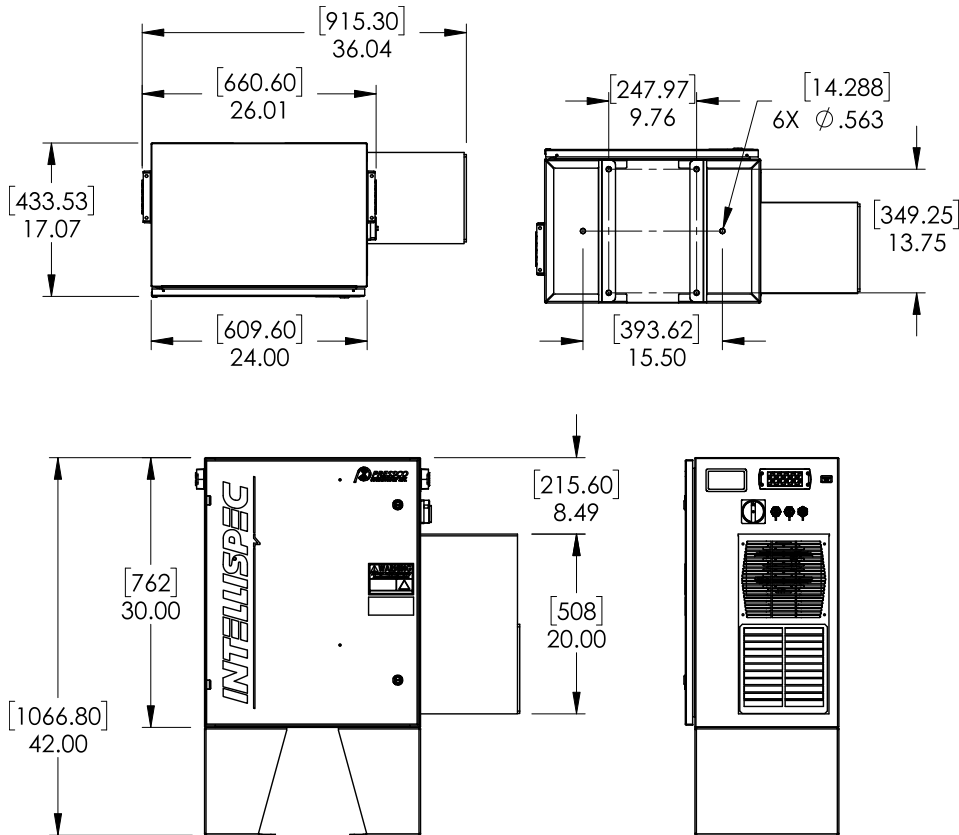
### User Interface Measurements Series V Plus



The measurements are in inches. The numbers in brackets are in millimeters.

## Series V Plus Vision Processor Measurements

Weight of the Vision Processor cabinet: 250lbs [114kg]



Measurements are shown in inches. The measurements in brackets are in millimeters for reference.

*Note: measurements do not include connectors*



**CAUTION** - This object is heavy. Review the section on lifting heavy objects before moving this object. ["Lifting Heavy Objects" on page 13](#)

## Integrated Tunnel Electrical Specifications

The following are electrical specifications for the integrated tunnel (an inspection module that contains cameras and part tracking in one unit, such as the CP/ EV series tunnels).

Standard - No UPS	
Voltage Range	100-240VAC
Frequency	50/60Hz
Current	6.2A @ 120VAC, 100% Load
Optional 500VA UPS, 120VAC Nominal	
Voltage Range	100-132VAC

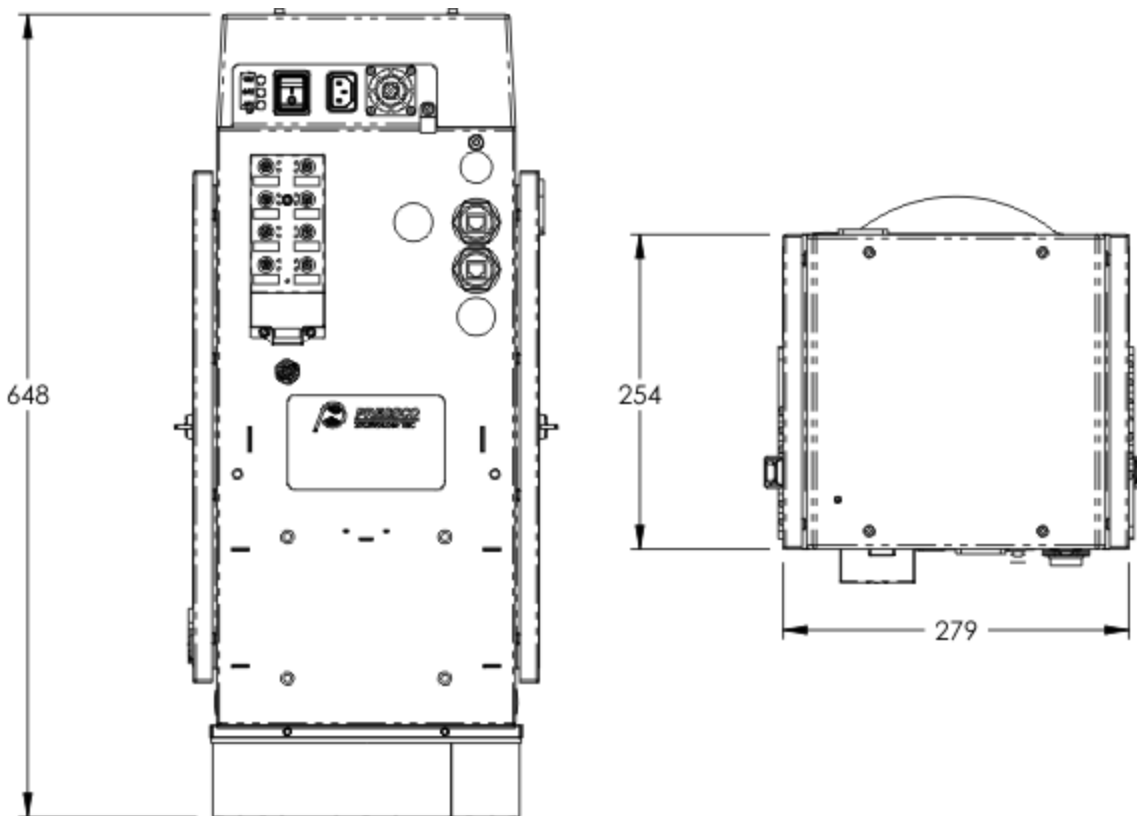
**Optional 500VA UPS, 120VAC Nominal**

Frequency	50/60Hz
Current	4.1 @ 120VAC, 100% Load

**Optional 500VA UPS, 230VAC Nominal**

Voltage Range	200-240VAC
Frequency	50/60Hz
Current	2.2A @ 230VAC, 100% Load

**CP-EV Tunnel Measurements**



Measurement	Value
Weight	16.4 Kg [36 lb]
Height	648 mm
Width	254 mm
Depth	279 mm

*Note: measurements do not include connectors*

**⚠ CAUTION** - This object is heavy. Review the section on lifting heavy objects before moving this object. *"Lifting Heavy Objects" on page 13*

## Declaration of Conformity - Series V Plus Vision Processor

Declaration	The machine detailed below, is in conformity with Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast).
Manufacturer	Pressco Technology Inc. 29200 Aurora Road Cleveland, Ohio 44139-1847 USA  This declaration of conformity is issued under the sole responsibility of the manufacturer.
Product Name	Series V+ Vision Processor Part number: 80609
Means of Conformity	The product is in conformity with Directive 2014/30/EU based on test results referencing harmonized standards and the use of a Technical File in accordance with Article 14 of the Directive and fulfilment of the essential requirements set out in Annex I has been demonstrated.
Technical File	EMC5383
Notified Body	The following EU Notified Body has assessed the Technical File for general construction, conformity procedures and EMC test rationale for in-situ testing to an approximation to the listed standards with respect to the essential protection requirements of Directive 2014/30/EU:  Hursley EMC Services, Ltd., Notified Body 2635  Trafalgar Close, Chandler's Ford  Eastleigh SO53 4BW, United Kingdom  Assessment Certificate Number: 180898
Standards Used	EN 61000-6-2:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments.  EN 55011:2009 +A1:2010 Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement.  2011/65/EU Restriction of Hazardous Substances in Electronic Equipment.

Signed for and on behalf of Pressco Technology Inc., 29200 Aurora Road, Cleveland, OH USA 44139:

  
\_\_\_\_\_

1/27/21

Fredrick F. Awig,  
VP, Engineering & Operations

Date

Signed: Fredrick F. Awig, VP of Engineering & Operations. Signed for and on behalf of Pressco Technology Inc.

Date: 27 January 2021

## Chapter 4 Installation

This section contains information about installation requirements and preparations that need to be complete before installing the system.

### Shipping and Handling

Pressco Technology Inc. ships unassembled components in packing cases designed to protect the contents during handling and from exposure to weather.

Unless otherwise specified in the contract with the machine order, the Customer shall supply Pressco Technology Inc. with the means and equipment necessary for the unloading, lifting, and handling of machine parts. Pressco Technology Inc. deems it important to have one of their technicians supervise the process of unloading, handling, and lifting the machine. The technician can give useful advice as to the logical sequence in which the components should be unpacked and positioned for ease of assembly.



**WARNING** - Only qualified personnel must be involved in the operation of unloading, handling, and lifting the machine. Pressco Technology Inc. shall not be liable for damage to components and/or personal injury resulting from the involvement of unauthorized personnel and/or failure to comply with the directions provided in this manual in relation to lifting and transport.



**Important** - The site supervisor will be responsible for ensuring that all the various mounting phases are carried out safely and in compliance with current regulations.

After the machine is delivered, check for any damage that might have occurred during shipping. In case of damage, contact Pressco Technology Inc.

In handling the machine, always keep it close to the ground.



We recommend using a forklift truck with adequate capacity and forks to suit the weight to be lifted (machine plus packaging).

The dimensions and weight of a crate are listed below. Note that this is the maximum size and weight. The size and weight of the crate may be less depending on your configuration. You may receive multiple crates depending on your configuration.

Size (full Intellispec system)	152.4 cm x 124.46 cm x 152.4 cm (60 x 49 x 60 inches)
Weight (full Intellispec system)	453.592 kg (1000 lbs.)

### Recommendations Prior to Installation

Before the machine is installed, the Pressco installer, together with the Customer (or representative) shall check the following criteria in the environment where the machine is to be installed:

- Work required by contract for the installation of the machine has been carried out
- The plant layout drawing that describes where the machine will be installed is the final drawing agreed to by Pressco Technology Inc.
- The space and height required for installation are actually available

- Only the components included in the installation layout are present in the area where the machine is to be mounted. Ensure no machines or components have been added at a later stage that might hinder mounting or make it more difficult. Should this be the case, immediately contact Pressco's Project Engineering personnel to arrange a suitable solution to the problem.

We recommend the following prior to machine installation:

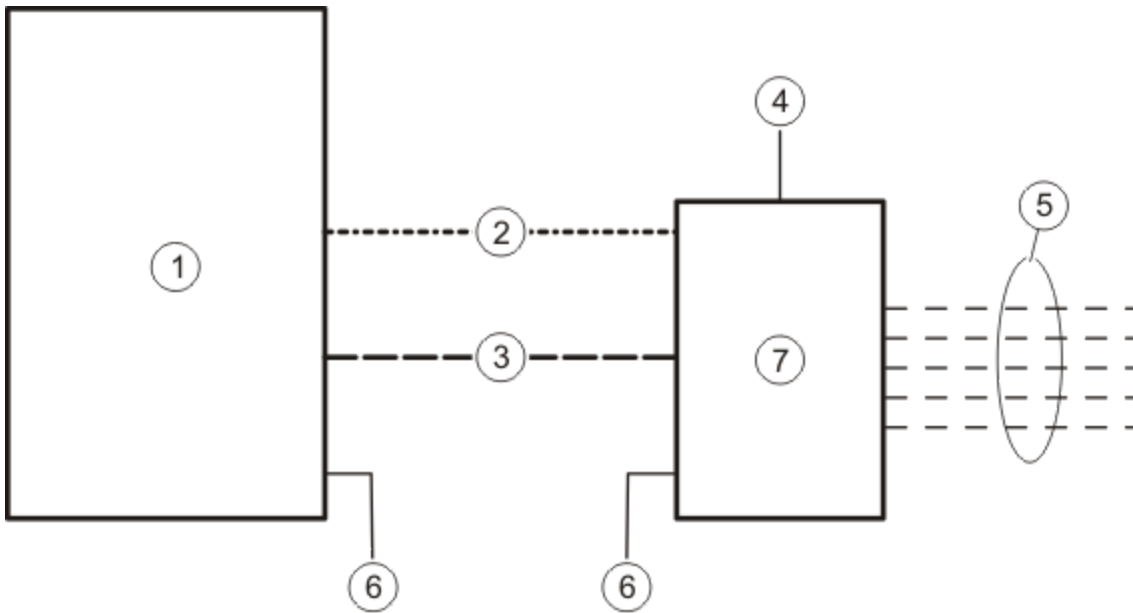
- Transport the machine in its packaging to the area where it will be installed to minimize possibility of damage
- Carefully remove the packaging material and check components for damage
- Check tightness of mechanical components, as they can loosen during transport
- Prepare the compressed air mains line. Before making final connections, ensure that the pipes are clean and free from any debris.

---

## System Block Diagram - Integrated Tunnel

Below is a basic block diagram for Series V Intellispec. This drawing shows the major components for the system. Your system will contain only the components required for your application. The numbered components are listed in the table below.

The drawing below shows a basic block diagram for a system with an integrated tunnel (with one camera).



- 1) User Interface (PC, monitor, and UPS)
- 2) PDN (Pressco Data Network) ethernet green cable
- 3) Inspection sensor/ camera ethernet blue cable
- 4) Light tree (optional)
- 5) Sensor cables (for part present sensor, encoder, machine part, pocket detect, reject confirm) For details: I/O connectors
- 6) AC power

## 7) Integrated tunnel (example: CP/EV inspection module)

---

## Utilities to be Supplied by Customer

The following utilities are required to operate the Pressco Intellispec system. Before making connection, make sure the utility matches the technical specifications. More than one connection of the utilities may be required depending on the number of modules installed. Refer to specific wiring diagrams.

Utility	Requirements
Air supply for rejection device	Pipe size must be such that there will be no pressure decrease during machine operation. Air must be dry and free of oil.
Electrical supply	Provide one each electrical socket to comply with: <ul style="list-style-type: none"> <li>• User interface electrical specifications (use the specifications that apply to your system)</li> <li>• Integrated tunnel electrical specifications (if applicable)</li> <li>• Cluster box electrical specifications (if applicable)</li> </ul>
Internet connection (optional)	Provide a shielded ethernet cable to use Pressco's remote support through the Internet.

---

## Protective Earthing

This product must be grounded (earthed). If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.



**DANGER** - Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service technician if you are in doubt as to whether the product is properly grounded.

### Cord Connected Equipment

The product will be equipped with a supply cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with local codes and ordinances.

Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

### Cable Direct

This product must be connected to a grounded metal, permanent wiring system, or an equipment grounding conductor must be run with the circuit conductors and be connected to the equipment grounding terminal.

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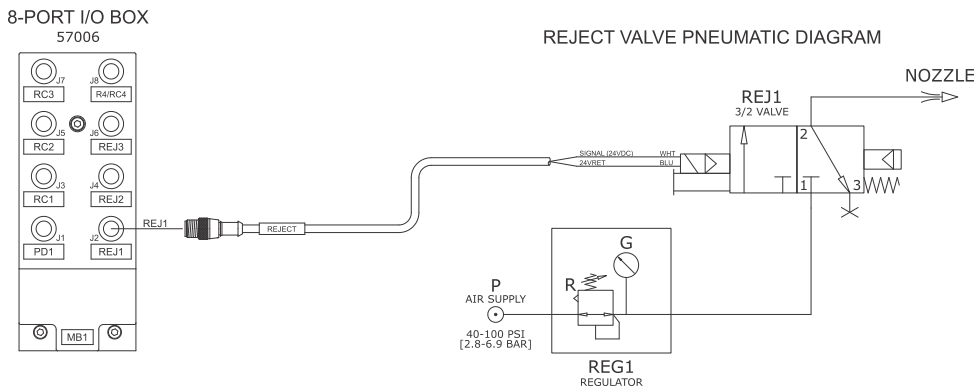
## Electrical Connection

Make sure that the power outlet voltage matches the voltage required by the machine. Refer to the electrical specifications and wiring diagrams for your system.

**⚠ WARNING - Power Switch is the power disconnect device. Do not position the equipment such that access to the disconnect switch is impaired. If not readily accessible (such as within a rack or mounting out of reach), an additional disconnect device should be installed that can isolate the Live and Neutral lines of the mains power supply, whilst leaving the protective earth intact.**

## Reject Valve Pneumatic Diagram

This diagram shows the reject device connection to the 8-port I/O box. This is for Intellispec systems.



## Installation

Pressco Technology Inc. recommends that the machine be installed and assembled by Pressco's specialized technicians. This is of vital importance for correct machine operation.

**⚠ WARNING - Pressco Technology Inc. shall not be liable in case of failures or damage to property and/or personal injury resulting from or connected with assembly if this has been carried out by unauthorized personnel, or is not in compliance with the indications given in this manual.**

To carry out production and cleaning/ servicing operations, it is important for the machine to have a minimum amount of space all around and away from walls.

## Ventilation

Place the Pressco Intellispec components in a position with adequate ventilation to allow proper air flow through the air filters.

Component	Spacing
User Interface	Leave 1 meter [39 inches] clear around machine
Cluster box (not used on all systems)	Leave 100 mm clear in front of the fan and vent

## Commissioning

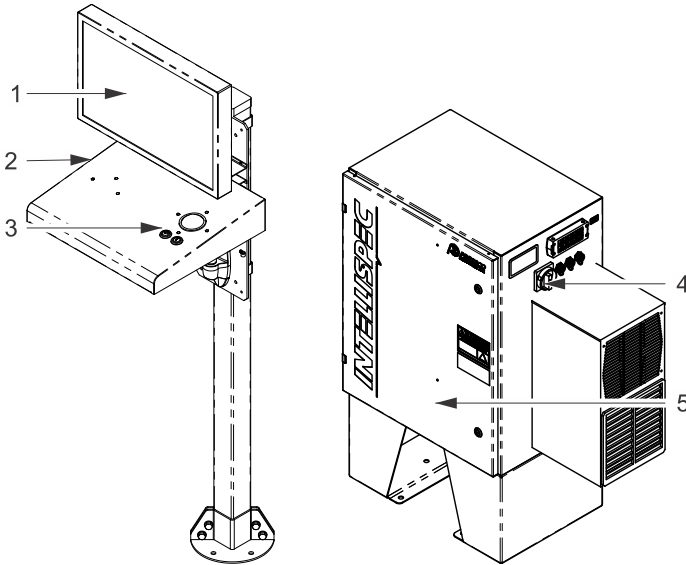
Before placing the machine into operation, make sure the following checks are completed:

Completed	Yes	No
Positioning and leveling of the unit		
Connection of compressed air line to connection points		
Connection of power supply to vision processor cabinet		

## Chapter 4



Completed	Yes	No
Connection of power supply to cluster box (if applicable)		
Connection of power supply to integrated inspection module(s) if applicable		
Proper wiring from user interface cabinet to sensor module(s) and cluster box (if applicable) using the wiring diagrams		

# Chapter 5 Intellispec Series V Plus Cabinet and User Interface



1) 24" Diagonal color LCD with optional touch screen. An on-screen keyboard (OSK) is displayed when needed.

2) USB convenience port is mounted on the side of the user interface.

3)  Use the left button to select and activate objects on the screen.  Use the right button to call up a context-sensitive menu related to the area or object clicked. A second set of each button type is located on the left side of the podium for two-handed operation.

4) Vision processor on/off switch.

5) Inside the cabinet: Ethernet switches, Vision processor, Mechanical keyboard (MKB)

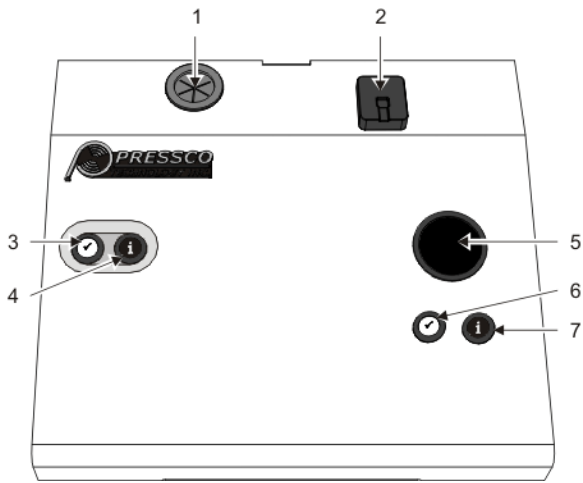
## User Interface Input Devices

The following devices are available to input information to the Intellispec system:

- Trackball and buttons ["How To Select Menu Items" on the next page](#)
- Touch Screen monitor (optional)
- Temporarily connected conventional Mechanical Keyboard (MKB) ["Mechanical Keyboard \(MKB\)" on page 28](#)
- ["USB Ports" on page 28](#)
- Optional ["Biometric Login Device" on page 28](#)

## User Interface Selection Devices



The user interface hardware consists of several buttons and selection devices:







- 1) (not a button) Grommet for user interface equipment cords.
- 2) Optional Biometric Identification login device
- 3 and 4) Secondary set of buttons, used with track ball. See also items 6 and 7.
- 5) Track Ball
- 6) Button (left-click) to select and activate objects on screen
- 7) Button (right-click) to call up a context-sensitive menu about the selected object on screen

## How To Select Menu Items

Use the track ball to select, interact, and change active objects on the screen. The track ball will be required for all inspection editing tasks.

-  Use the left button to select and activate objects on the screen.
-  Use the right button to call up a context-sensitive menu related to the area or object clicked.
- A second set of each button type is located on the left side of the podium for two-handed operation.

*Note: Swapping the button assignments is not supported. The second set of buttons is to accommodate left-handed users.*

Action	Result
Point (move pointer with the track ball)	Display Tool Tip when hovered over active object
 Click (Left-click)	A click initiates various actions. Nothing happens when the pointer is clicked on a disabled object.
 -  Double-click	A double-click initiates various actions. For example, edit an inspection.
 Right-click	Display a context-sensitive menu when you click on an enabled object. The context-sensitive menu often contains functions that are also available in a menu bar or other screens. (Example, add a point to a polygon)

Action	Result
Drag (hold the left button while moving the track ball)	Examples: move a selected Region of Interest (ROI) around an image or move an inspection in a Tree View to change the order of execution.

## Mechanical Keyboard (MKB)

The system supports the temporary connection of a conventional mechanical keyboard using one of the available USB ports. This keyboard will mostly be used for system level tasks such as BIOS configuration, Network configuration, and System level setup.



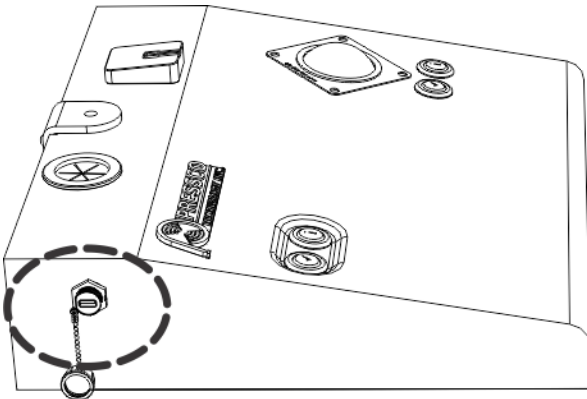
The keyboard:

- Is primarily used by Pressco Field Service Engineers
- Is stored inside the Vision PC chassis
- Requires a stable location when in use

## USB Ports

There are USB ports available to back up or transfer data, and also to connect the optional mechanical keyboard. One is mounted on the side of the user interface pedestal.

Some touch screen monitors have additional USB connectors on the side of the monitor.



## Biometric Login Device

The Biometric Identification login device is used to log in and out of the Pressco system. This device is optional and must be purchased with the system.



To log in with this device, press your finger to the device. The following are conditions for use:

- You must use the same finger as initially set up by your administrator
- If you do not know how your account was set up (or which finger you used), contact your administrator
- If, after three tries, the Pressco does not recognize your finger print, you must log in using the On Screen Keyboard (OSK)
- If, after three tries, the Pressco does not recognize your finger print, you must log in using the On Screen Keyboard (OSK)

## Chapter 6 System Hardware Information

This section shows wiring diagrams and pinouts, and lists signals of various Intellispec system components.

*Note: some sections are only included in books pertaining to specific applications. This book may not contain all of the sections below.*

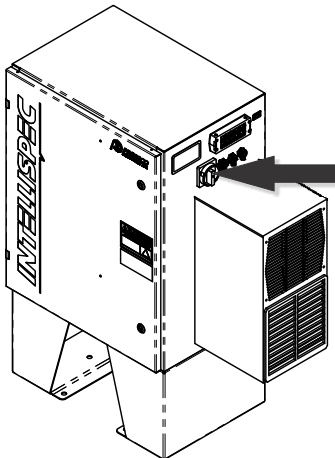
Related sections include:

- Cluster Box (if applicable)
- Inspection Module Adjustments
- Extended I/O
- Maintenance Frequency

### Power Up the Intellispec Series V Plus

Intellispec Series V systems have multiple power switches. Make sure the power switches are turned on for:

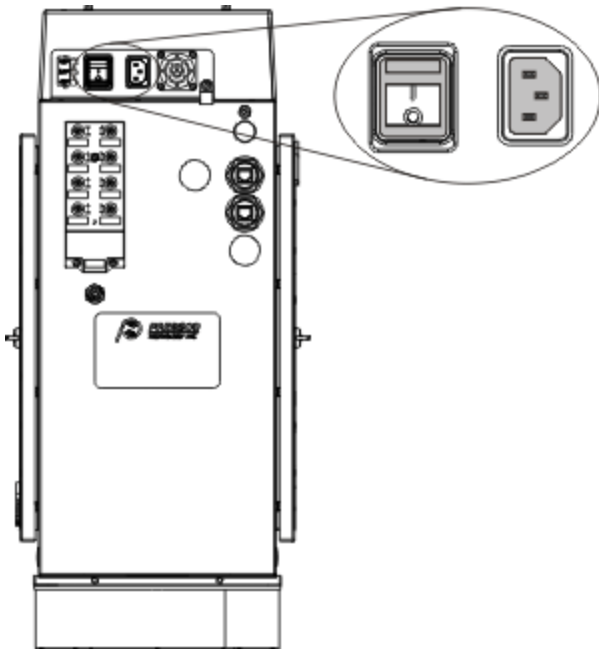
1. The vision processor,



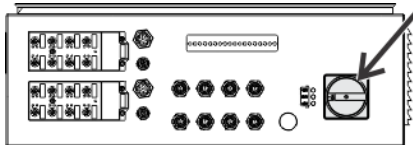
2. Each camera module, and
3. Cluster box (if applicable).

See the illustrations below for power switch locations.

Each integrated camera module (for example the CPV series of inspection tunnels) has its own power on/off switch.



In system configurations that have a cluster box:



- if the cluster box has a UPS, open the cluster box door and switch on the UPS, then
- turn the external on/off switch to power all camera modules connected to the cluster box.

## Power Down the Intellispec

To completely power down all components of the Intellispec, make sure the following power switches are turned off:

- Vision processor cabinet and user interface
- Integrated inspection modules (if applicable)
- Cluster box (if applicable)
- UPS inside the Cluster box (if applicable). Open the Cluster box door to switch off the UPS.

The vision processor, user interface, inspection modules, and cluster box are all independent of each other. Therefore, if you need to service any of the above modules, any one can be turned off by itself.

**!** *Important - If you re-start the computer, turn off the User Interface power and leave it off for about 40 seconds before turning it back on. This allows the electronic components to correctly reset.*

## Servicing the User Interface

This warning applies to the vision processor if your system's components are separate.

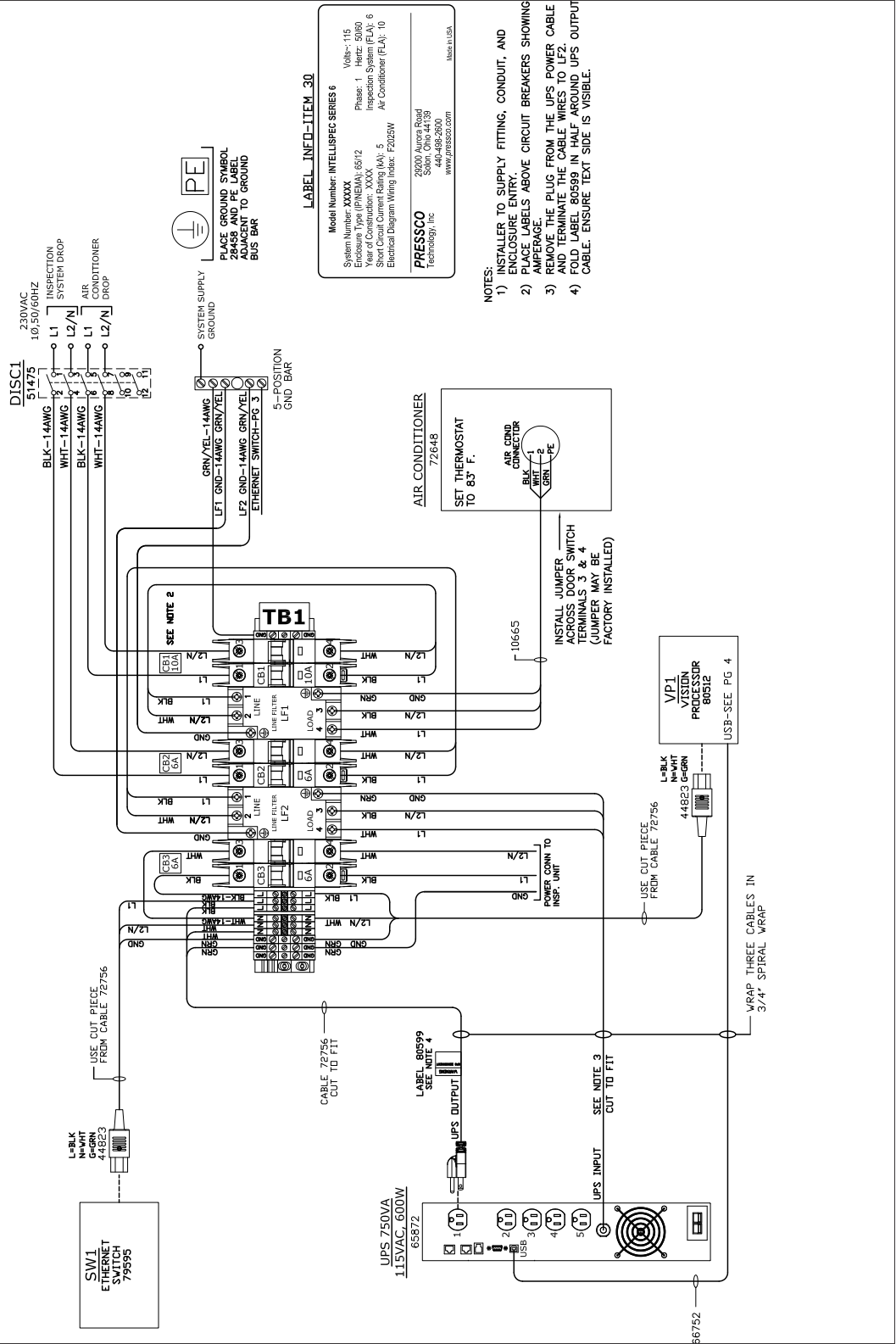
**⚡** *Warning - Potential hazardous voltage from the UPS. Use caution when servicing.*

# Wiring Diagrams

## Series V Plus Wiring Sheet 1 of 4

### 115VAC POWER DISTRIBUTION

(SEE PAGE 2 FOR 230VAC SYSTEMS)



**LABEL INEED-ITEM\_30**

Model Number: INTELLISPEC SERIES 6  
 Volts: 115  
 Phase: 1  
 Hertz: 50/60  
 Enclosure Type (IP/NEMA): 65/12  
 Inspection System (FLA): 6  
 Year of Construction: XXXX  
 Short Circuit Current Rating (kA): 5  
 Air Conditioner (FLA): 10  
 Electrical Diagram Wiring Index: F2025W

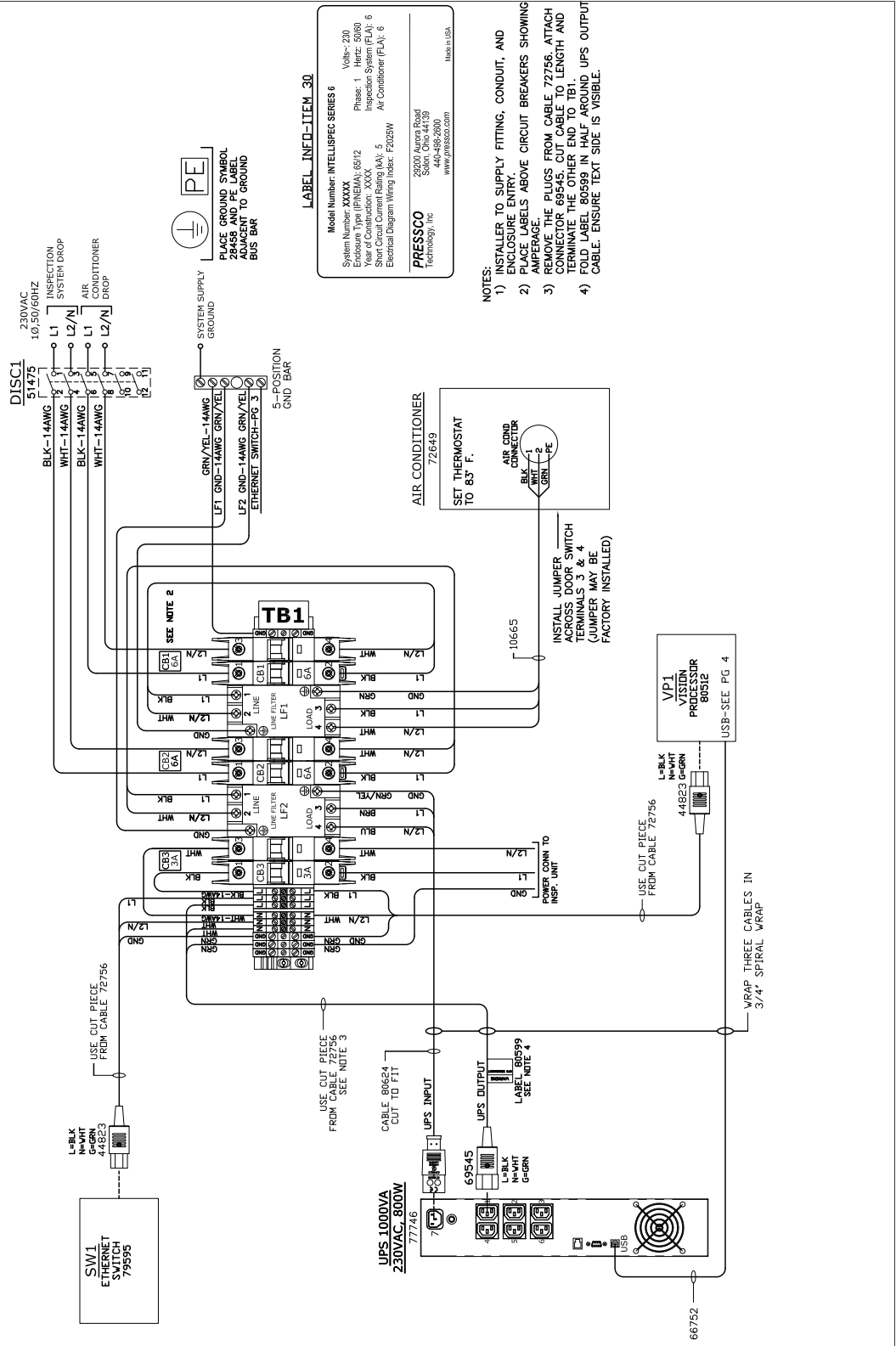
**PRESSCO**  
 Technology, Inc.  
 29038 Avoca Road  
 Salem, Ohio 44139  
 440-688-2600  
 www.pressco.com  
 Made in USA

- NOTES:**
- 1) INSTALLER TO SUPPLY FITTING, CONDUIT, AND PROTECTIVE ENTANGLEMENT.
  - 2) PLACE LABELS ABOVE CIRCUIT BREAKERS SHOWING AMPERAGE.
  - 3) REMOVE THE PLUG FROM THE UPS POWER CABLE AND TERMINATE THE CABLE WIRES TO LF2.
  - 4) FOLD LABEL 80599 IN HALF AROUND UPS OUTPUT CABLE. ENSURE TEXT SIDE IS VISIBLE.

# Series V Plus Wiring Sheet 2 of 4

## 230VAC POWER DISTRIBUTION

(SEE PAGE 1 FOR 115VAC SYSTEMS)



**LABEL INFO-ITEM\_30**

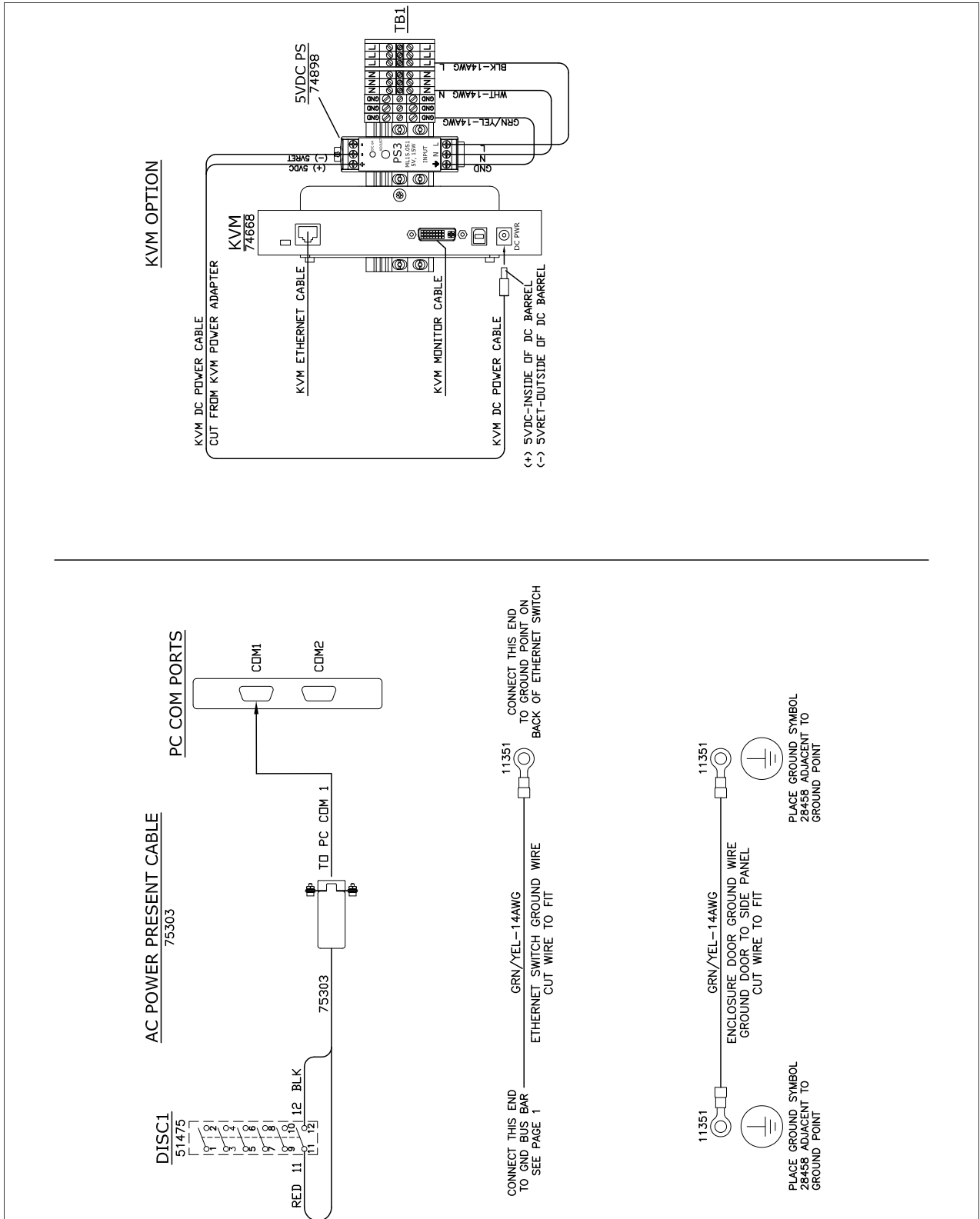
Model Number: INTELLISPEC SERIES 6  
 System Number: XXXXX  
 Enclosure Type: (IP)NEMA: 6912  
 Year of Construction: XXXX  
 Short Circuit Current Rating (MVA): 5  
 Electrical Diagram Wiring Index: F: 22029V

Volts: 230  
 Phase: 1  
 Hertz: 50/60  
 Inspection System (FLA): 6  
 Air Conditioner (FLA): 6

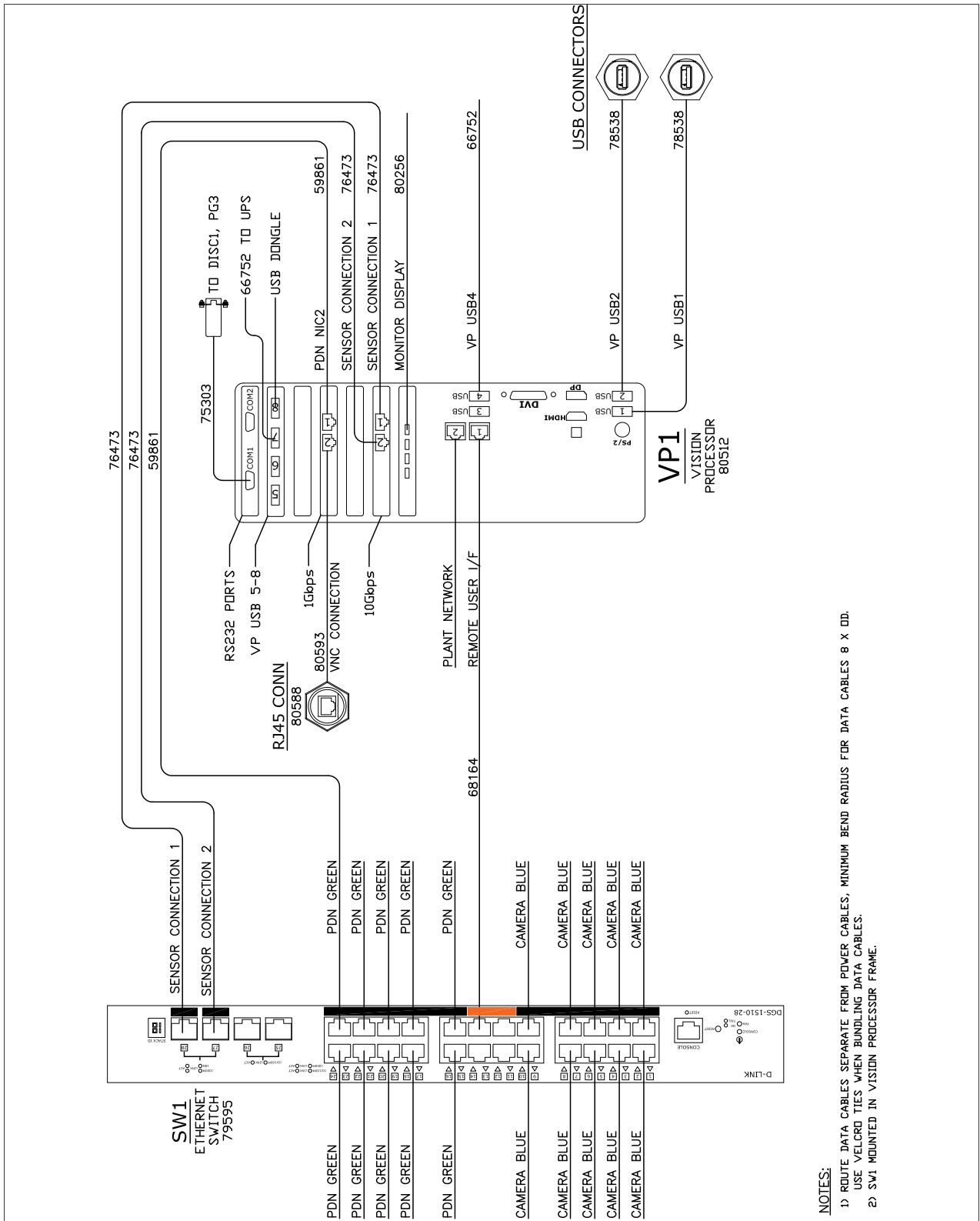
**PRESSCO**  
 Technology, Inc.  
 29029 North Road  
 Salem, Ohio 44139  
 440-488-8000  
 www.pressco.com  
 Made in USA

- NOTES:**
- 1) INSTALLED TO SUPPLY FITTING, CONDUIT, AND ENCLOSURE ENTRY.
  - 2) PLACE LABELS ABOVE CIRCUIT BREAKERS SHOWING AMPERAGE.
  - 3) REMOVE THE PLUGS FROM CABLE 72756. ATTACH CONNECTOR 69545. CUT CABLE TO LENGTH AND TERMINATE THE OTHER END TO TB1.
  - 4) FOLD LABEL 80599 IN HALF AROUND UPS OUTPUT CABLE. ENSURE TEXT SIDE IS VISIBLE.

# Series V Plus Wiring Sheet 3 of 4



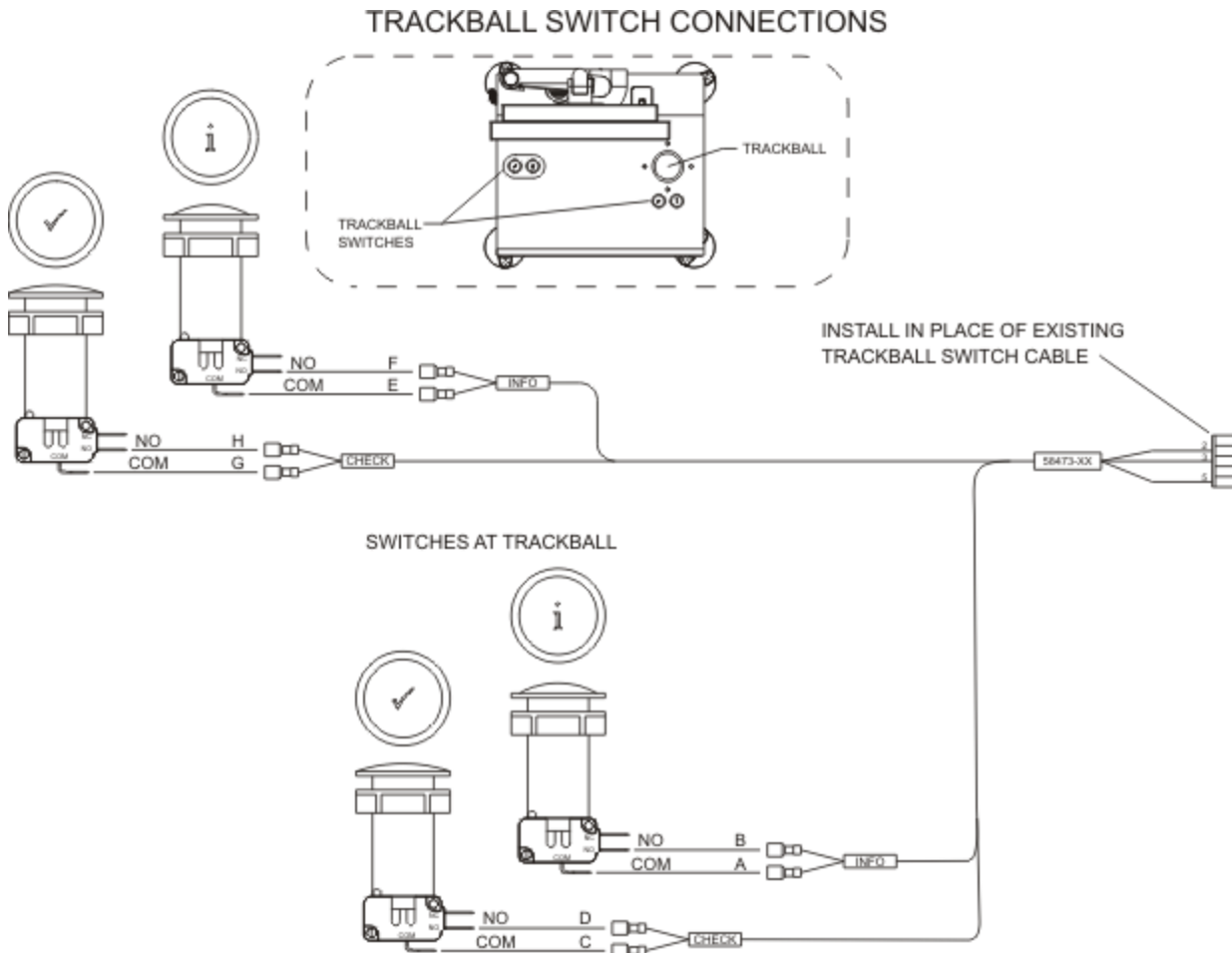
# Series V Plus Wiring Sheet 4 of 4



**NOTES:**

- 1) ROUTE DATA CABLES SEPARATE FROM POWER CABLES, MINIMUM BEND RADIUS FOR DATA CABLES 8 X DD.
- USE VELCRO TIES WHEN BUNDLING DATA CABLES.
- 2) SW1 MOUNTED IN VISION PROCESSOR FRAME.

## Wiring Diagram - Trackball - for servicing



### Rebooting the Intellispec System

You may need to reboot the entire system if power or communication has been lost between the Vision Processor and the Cluster Box.

Symptoms may include that the inspection module light has stopped flashing, and the system is no longer taking pictures. Rebooting the system will reconnect the Vision Processor with the Part Tracker in the cluster box.



*Note: if the power to both the Vision Processor UPS and the Cluster box is interrupted for more than two minutes, the software will automatically shut itself down and then shut down the Vision Processor PC. The software will restart. You will just need to log in and put the system back online.*

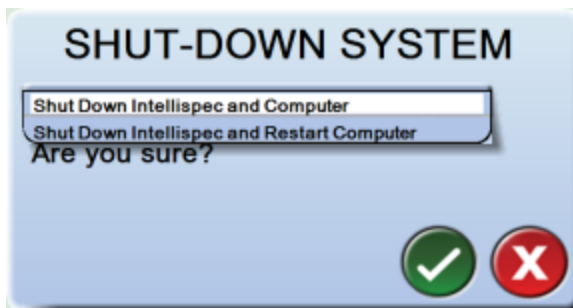
It may not be necessary to completely reboot the system each time the power to cluster box is interrupted. Try restarting the application.


### Restarting the Application

You must have proper user permissions to exit the software. This prevents unauthorized system shut-downs. Contact your system administrator if you need user permissions.

**To exit Intellispec software:**

1. Log in.
2. Select Home  | Tools  | Exit System.
3. Select an option.



4. Select the OK  button. The Intellispec software and/or computer shuts down (and restarts if applicable).
5. Connect the Mechanical keyboard (MKB).
6. Press Ctrl + Alt + Delete on the mechanical keyboard.
7. Use the Log Off option to log off of Intellispec.
8. At the Windows Login Prompt, enter “pypass“ as the password for the Intellispec user account. Once login is complete the Series V application software will be launched.

## Rebooting the entire system



If restarting the application does not clear the errors, try rebooting the entire system. This involves shutting down the software, the processor cabinet, and the cluster box (if applicable).

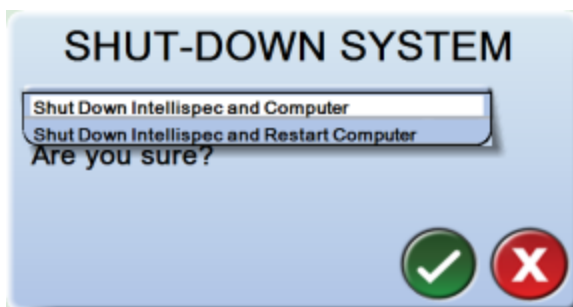
*Note: The system reboot takes several minutes to complete.*


### Processor Cabinet Shutdown

You must have proper user permissions to exit the software. This prevents unauthorized system shut-downs. Contact your system administrator if you need user permissions.

#### To exit Intellispec software:

1. Log in.
2. Select Home  | Tools  | Exit System.
3. Select an option.



4. Select the OK  button. The Intellispec software and/or computer shuts down (and restarts if applicable).

#### **To shut down the Processor Cabinet:**

1. Connect the Mechanical keyboard (MKB).
2. Press Ctrl + Alt + Delete on the mechanical keyboard.
3. Use the Shutdown option to shut down the PC.
4. Once the PC has shut down, turn off the Processor Cabinet ON/OFF switch.

*Note: The Processor Cabinet ON/OFF switch must be off for approximately 40 seconds before turning it back on for proper restart.*

#### **Cluster Box Shutdown**

1. Shut off the cluster box external rotary power switch. For location of the power switch, see the illustration of the cluster box in the Power Up section.
2. If you have a UPS inside the cluster box, open the cluster box and shut off the UPS. Shutting off the UPS will conserve battery power.
3. Wait at least one minute for all Pressco Devices to fully power down.

#### **Cluster Box Power Up**

1. If you have a UPS inside the cluster box, open the cluster box to turn ON the UPS.
2. Turn ON the cluster box external rotary power switch.
3. Verify the 12VDC, 24VDC, and 48VDC power status indicators of the cluster box turn ON.
4. Wait at least one minute for all Pressco Devices to fully power up.

#### **Processor Cabinet Power Up**

1. Turn ON the Processor Cabinet ON/OFF switch. The system will launch the Intellispec software.
2. Log in to the system and begin using the system.

#### **Notes**


- If power to the cluster box is interrupted on a cluster box that does not come equipped with a UPS, the following prompt will be displayed: "Part Tracker Exception: the Part Tracker has closed its communication port on Lane n. Reset the Part Tracker and restart the application."
- This message is an indication that the Part Tracker and the Application software communication link has been broken for an extended period of time.

---

## **Light Tree**

The lights on the optional light tree will turn on, off, or blink depending on status of certain hardware. Each lane has its own light tree.

*Note: the light tree on your system may look different than the picture shown*

	Light color	Condition	What it means
	Red	On - steady	Alarm condition
	Red	On - blinking	Part tracker board lost communication with the host PC or has an error and needs to initiate an alarm
	Red	Off	No alarm (OK)
	Amber	On	Warning alarm condition
	Amber	Off	No warning (OK)
	Amber	0.5 second flash	System automatically resets Asynchronous Correlation FIFO (not used in all systems)
	Green	On	Lane is online
	Green	Off	Lane is offline
	Blue	On	Part tracker board has power (OK)
	Blue	Off	Part tracker board has no power

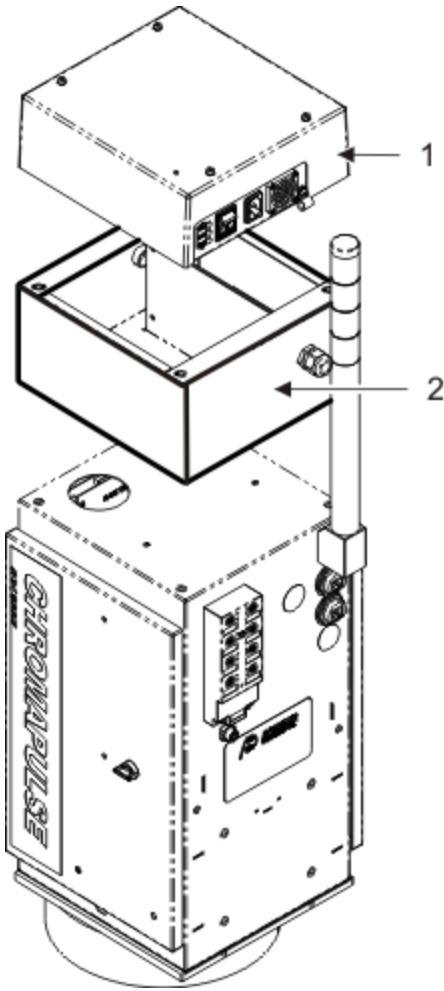
## Chapter 7 Extended I-O (Optional)

This section contains information about the optional Extended I/O board.

*Note: In some systems, such as FHCP 3X inspection systems, the Extended I/O board is always included (not optional).*

### Extended I-O in Inspection Modules

The Extended I/O kit (optional) is installed within Chromapulse inspection modules as shown below.



1) power cap

2) Extended I/O kit

### Extended I-O Board

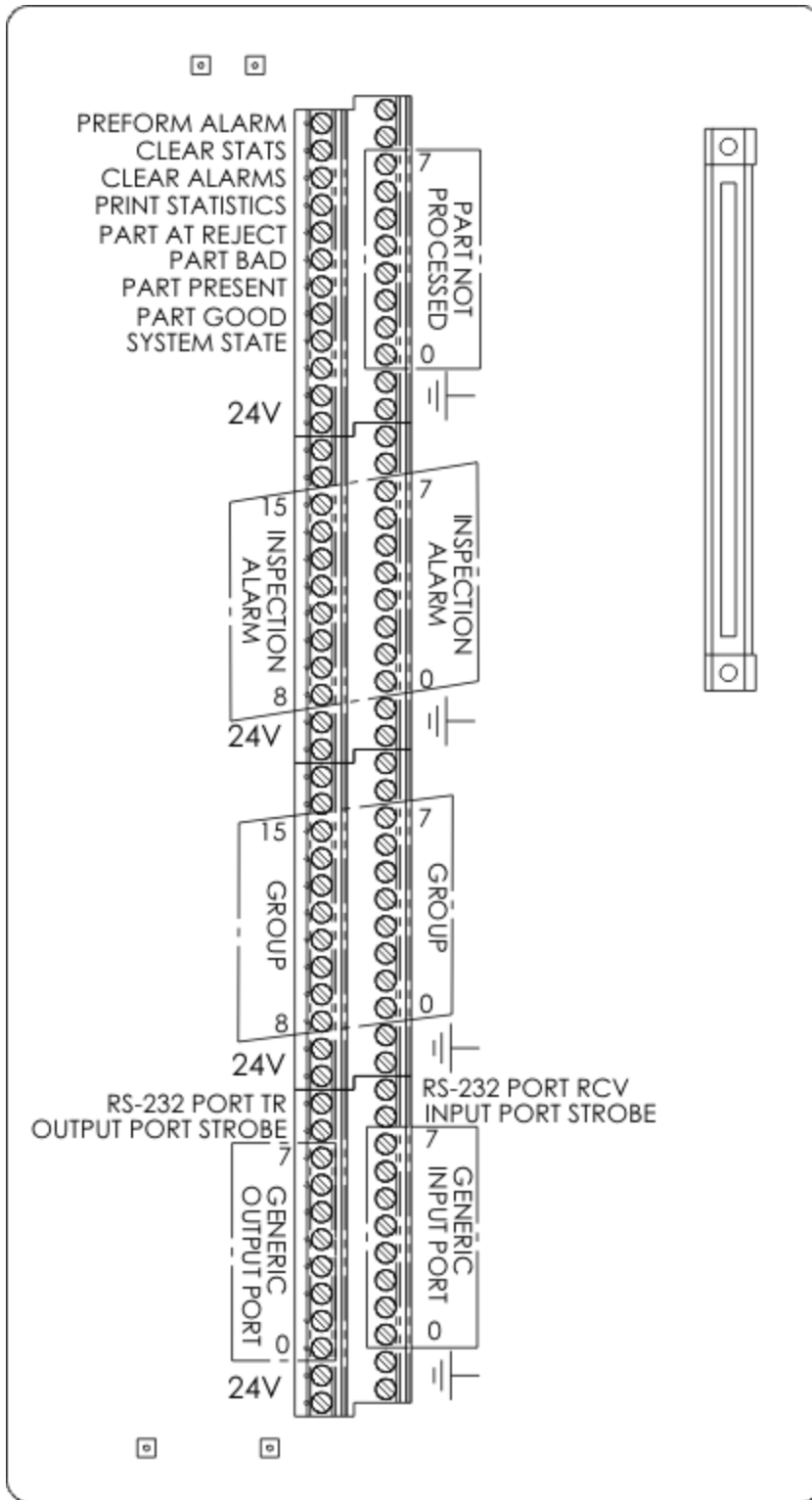
This optional module provides additional input and output ports for communicating with the Intellispec Series V system. The board may be installed within a cluster box or within an inspection module. The board is connected to the lane's Part Tracker board via a ribbon cable.

*Note: Each Extended I/O board handles only one lane.*

*Note: Extended I/O is not available with an Embedded Cluster Box.*

Some signals must be enabled in the software through the Extended I/O Configuration.

Below is the basic layout for the Extended I/O module.



## Extended I-O Signals

*Note: this topic applies to systems with firmware versions 260 and later*

## Chapter 7

The Series V Extended I/O signals are listed in the table below. For the location on the Extended I/O board, refer to the Extended I/O terminal block reference.

Corresponding firmware/ software versions:

- 5.5 – F(250 – 274)
- 5.6 – F(275 – 299)
- 5.7 – F(300 – 324)

*Note: some signals are not currently used*

All Extended I/O inputs are PNP. Outputs are selectable to be either open collector or open emitter. However, that selection applies to ALL output signals.

The input and power LEDs are visual indicators. The output LEDs illuminate if the current reaches 40mA or higher, which is approaching maximum current. The maximum current output is 50mA. See also information about Extended I/O circuits.

\*The signals marked with an asterisk must be enabled through Extended I/O Configuration in the software.

Signal - firmware F260 and later	I/O	Connector	Indicator LED	Comments/ Reference
Clear Stats*	I	J4-P23	D2	Clears the lane statistics
Clear Alarms*	I	J4-P22	D3	Clears the lane alarms
Print Statistics*	I	J4-P21	D4	Prints the lane statistics to currently configured printer or file

### Schedule Reports

Preform Alarm	I	J4-P24	D1	Used only in special applications. Activated by the Preform Material Handling system.
System State*	O	J4-P16	D11	Indicates whether the lane is online or offline. Online = active. Offline = inactive.
Part Present (Part Detect)*	O	J4-P18	D9	Pulses for 12 ms when the part present sensor detects a part
Part Good*				
(Group A)	O	J4-P17	D7	Pulses for 12 ms for each part declared good by the inspection
Part Bad* (Group A)	O	J4-P19	D5	Pulses for 12 ms for each part declared bad by the inspection
Part at Reject* (Group A)	O	J4-P20	D13	Pulses for 12 ms for each part that crosses the reject point (online mode only)
Part Not Processed: (Rejector 0)	O	J4-P3	D109	Pulses for 12 ms when a part is not processed due to a system malfunction (online mode only)

Signal - firmware F260 and later	I/O	Connector	Indicator LED	Comments/ Reference
Part Not Processed: (Rejector 1)	O	J4-P4	D113	
Part Not Processed: (Rejector 2)	O	J4-P5	D117	
Part Good (Group B)*	O	J4-P6	D121	Group B outputs
Part Bad (Group B)*	O	J4-P7	D107	
Part at Reject (Group B)*	O	J4-P8	D111	
Reject Confirm Sensor blocked	O	J4-P9	D115	Reject confirm sensor signal pulse width exceeding programmed limit
System OK	O	J4-P10	D119	Host is NOT lost, and system is ONLINE
Inspection Alarm 0	O	J3-P3	D59	
Inspection Alarm 1	O	J3-P4	D67	
Inspection Alarm 2	O	J3-P5	D75	
Inspection Alarm 3	O	J3-P6	D83	Set when the associated alarm condition occurs and stays active until the alarm is cleared
Inspection Alarm 4	O	J3-P7	D57	
Inspection Alarm 5	O	J3-P8	D65	Lane Alarm Configuration and
Inspection Alarm 6	O	J3-P9	D73	
Inspection Alarm 7	O	J3-P10	D81	Sensor Alarm Configuration
Inspection Alarm 8	O	J3-P15	D63	
Inspection Alarm 9	O	J3-P16	D71	Note: bit 15 is not seen in the Alarms dialog – the number of available bits is limited to 15 (0 – 14). Bit 15 has a specialized function (“host lost” on the part tracker side).
Inspection Alarm 10	O	J3-P17	D79	
Inspection Alarm 11	O	J3-P18	D87	
Inspection Alarm 12	O	J3-P19	D61	
Inspection Alarm 13	O	J3-P20	D69	
Inspection Alarm 14	O	J3-P21	D77	
Inspection Alarm 15	O	J3-P22	D85	

Signal - firmware F260 and later	I/O	Connector	Indicator LED	Comments/ Reference
Group 0	O	J2-P3	D17	Pulses for 12 ms when an inspection fails in the user-defined group (online mode only) Walk By Setup
Group 1	O	J2-P4	D25	
Group 2	O	J2-P5	D33	
Group 3	O	J2-P6	D41	
Group 4	O	J2-P7	D15	
Group 5	O	J2-P8	D23	
Group 6	O	J2-P9	D31	
Group 7	O	J2-P10	D39	
Group 8	O	J2-P15	D21	
Group 9	O	J2-P16	D29	
Group 10	O	J2-P17	D37	
Group 11	O	J2-P18	D45	
Group 12	O	J2-P19	D19	
Group 13	O	J2-P20	D27	
Group 14	O	J2-P21	D35	
Group 15	O	J2-P22	D43	
Generic Input Port 0	I	J1-P3	D48	Port 0 and Port 1 used in Remote Part Program Switching These bits may be used for Auto-Learn or Alternate Part Processing
Generic Input Port 1	I	J1-P4	D50	
Generic Input Port 2	I	J1-P5	D51	
Generic Input Port 3	I	J1-P6	D52	
Generic Input Port 4	I	J1-P7	D55	
Generic Input Port 5	I	J1-P8	D56	
Generic Input Port 6	I	J1-P9	D47	
Generic Input Port 7	I	J1-P10	D49	
Input Port Strobe	I	J1-P11	D53	
Generic Output Port 0	O	J1-P15	D91	
Generic Output Port 1	O	J1-P16	D95	
Generic Output Port 2	O	J1-P17	D101	
Generic Output Port 3	O	J1-P18	D105	
Generic Output Port 4	O	J1-P19	D89	
Generic Output Port 5	O	J1-P20	D93	
Generic Output Port 6	O	J1-P21	D99	
Generic Output Port 7	O	J1-P22	D103	
Output Port Strobe	O	J1-P23	D97	Pulsed When data of Generic Out-

Signal - firmware F260 and later	I/O	Connector	Indicator LED	Comments/ Reference
				put Port (0-7) is set
RS-232 Port TR	O	J1-P24	D202	Reserved for future use
RS-232 Port RCV	I	J1-P12	D200	Reserved for future use

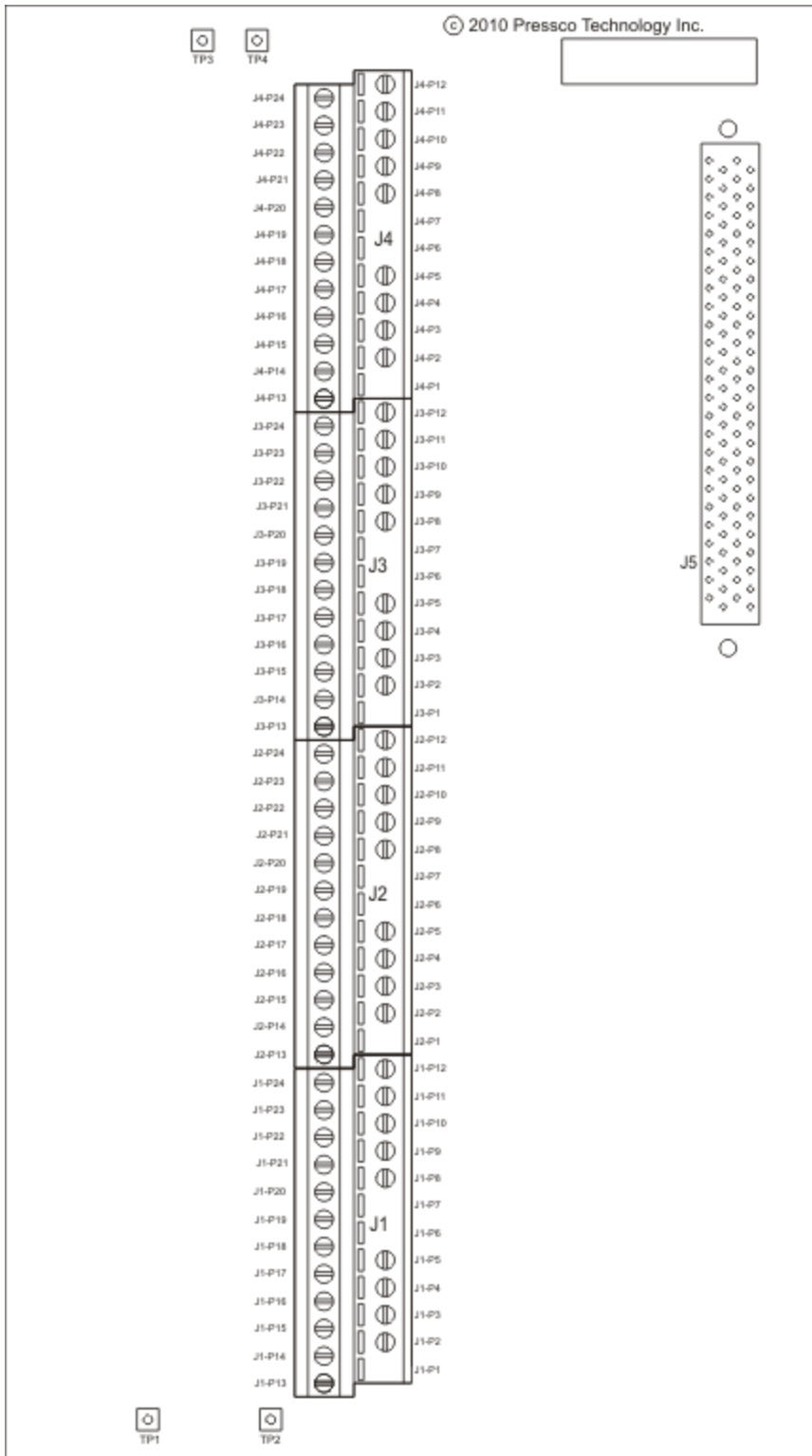
## All Connectors

Function	Pin			
Isolated ground	J1-P1, J1-P2	J2-P1, J2-P2	J3-P1, J3-P2	J4-P1, J4-P2
24 V (isolated)	J1-P13, J1-P14	J2-P13, J2-P14	J3-P13, J3-P14	J4-P13, J4-P14

## Test Points

Function	Test Point
24 V	TP2
24 V Gnd	TP3
3.3 V	TP1
3.3 V Gnd.	TP4

# Extended I-O Terminal Block Reference



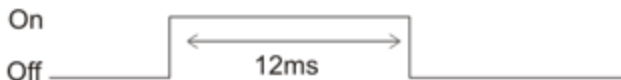
## Extended I-O Circuits

The following illustrations show typical input and output circuits you can use to communicate with your plant's PLC, or to connect external LEDs or light trees.

Specifications:

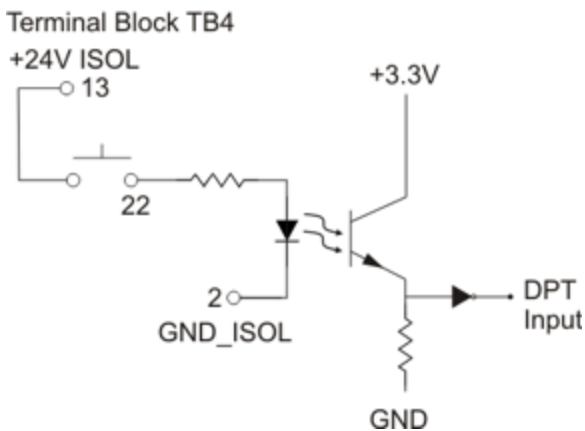
- Minimum dwell time of the input device is 1.1 ms
- Maximum output load is 50 mA
- Default value of output pulse is 12ms. Some output signals, such as alarms, must be cleared on the Intellispec before they turn off.

### Default timing of pulsed output



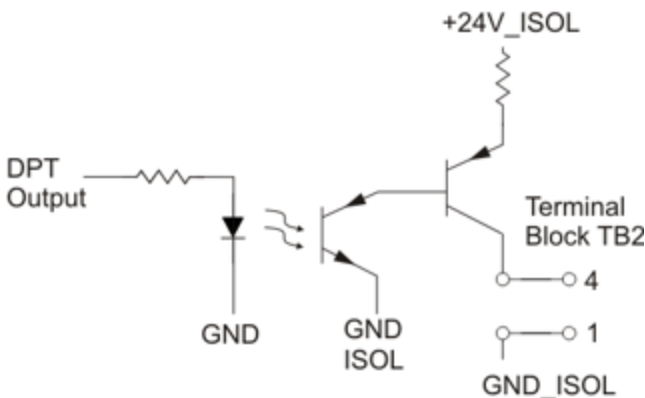
The following illustration shows a typical circuit that can be used to clear alarms.

### CLEAR ALARMS - INPUT



The following illustration shows a typical circuit that can be used for a group output.

### GROUP 1 - OUTPUT



## Extended I-O Configuration

Enable input or output signals to perform a function on the Intellispec system or monitor the production lane in your plant. These settings must be done for each Extended I/O board for each lane.

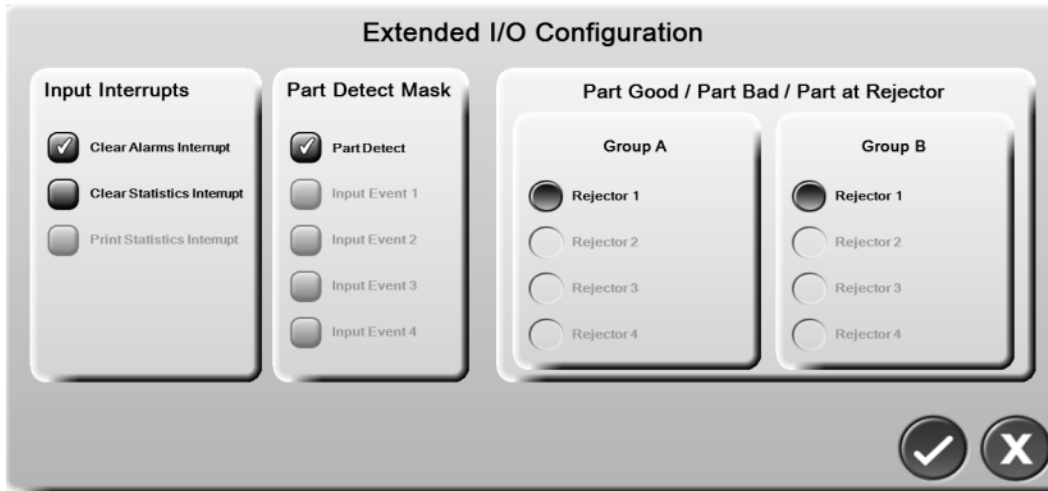
See also the sections about Extended I/O and Extended I/O Signals in the Intellispec Hardware Guide.



To get to this screen: From Lane or Sensor Overview mode, select Tools | Hardware Setup | Extended I/O Configuration.

This screen displays some of the inputs and outputs on the optional extended I/O board.

If one of the extended I/O ports is used it must be enabled here in the software, and the hardware must be connected appropriately.



**Input Interrupts**

These signals produce an input pulse to the Intellispec to perform the following functions.

**Clear Alarms Interrupt** Clear the lane alarms.

**Clear Statistics Interrupt** Clear the lane statistics.

**Print Statistics Interrupt** Print the lane statistics to the currently configured printer or file. See also Schedule Reports.

**Part Detect Mask**

Choose which Part Detect or other input events to trigger the Part Present output on the Extended I/O board. This is an OR function. Any enabled Part Detect signal or Input Event that goes active will activate the Extended I/O Part Present output.

**Part Detect** The signal goes active when the sensor detects a part.

**Input Event N** The Part Tracker board accepts up to five\* input events (Part detectors or other sensors). Part tracking is always controlled by the Part Detect signal (Input Event 0). You might use other input events (1 - 4) in your system to trigger the Part Present output signal. \*Only if your system has an 8-channel Part Tracker board. If your system has a 2-channel Part Tracker board, then only one Part Detect signal is used. The other input events are not available.

### ***Part Good/ Part Bad/ Part at Rejector***

Choose which rejector signal to activate the Part Good, Part Bad, and Part at Rejector signals on the Extended I/O board. After a part is inspected, the system determines whether the part is good or bad. As the part passes by Rejector 1, 2, 3, or 4, the Part Good/ Part Bad/ and Part at Rejector signals are activated on the Extended I/O board. There are two groups of Part Good/ Part Bad/ and Part at Rejector signals - Group A and Group B. You choose which rejector is associated with Group A and/or Group B. You can have both groups associated with the same rejector, if desired. See Extended I/O signals in the Intellispec hardware guide

Note: If your system has a 2-channel Part Tracker board, then the lane has up to two rejectors. If your system has an 8-channel Part Tracker board, then the lane has up to four rejectors.

#### **Example 1 below**

Group A is triggered when the part passes Rejector 2, and Group B is triggered when the part passes Rejector 4. The illustration below shows a basic block diagram with a conveyor with four rejectors. Those rejectors output a signal to the Extended I/O board, based on the Extended I/O configuration.

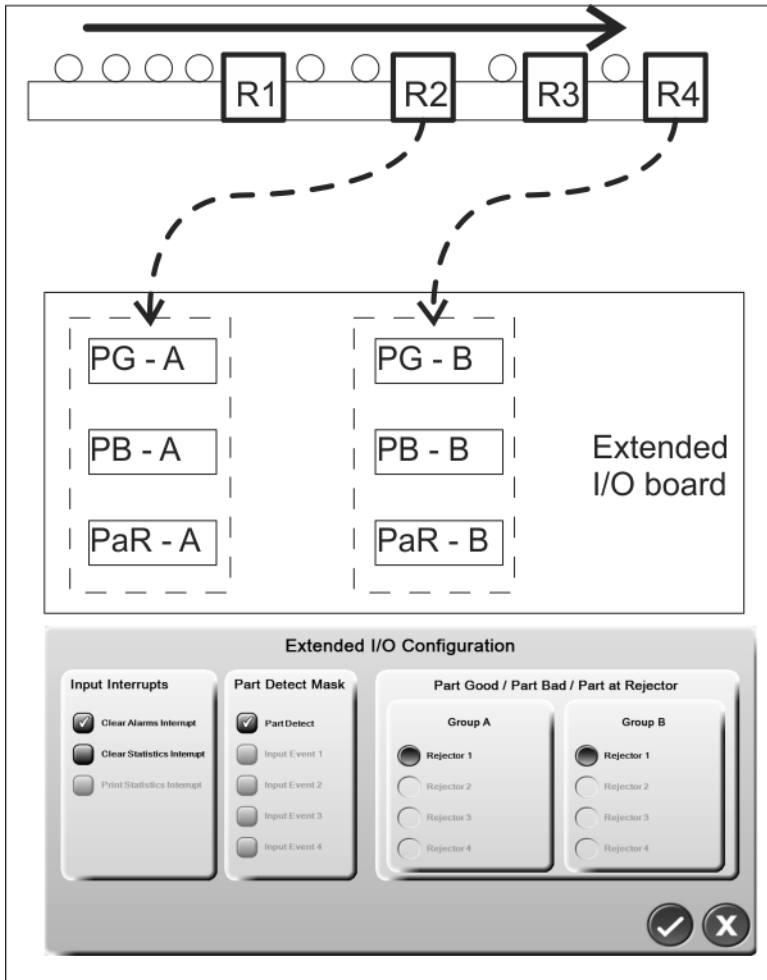
R = Rejector

PG = Part Good signal, Group A and Group B

PB = Part Bad signal, Group A and Group B

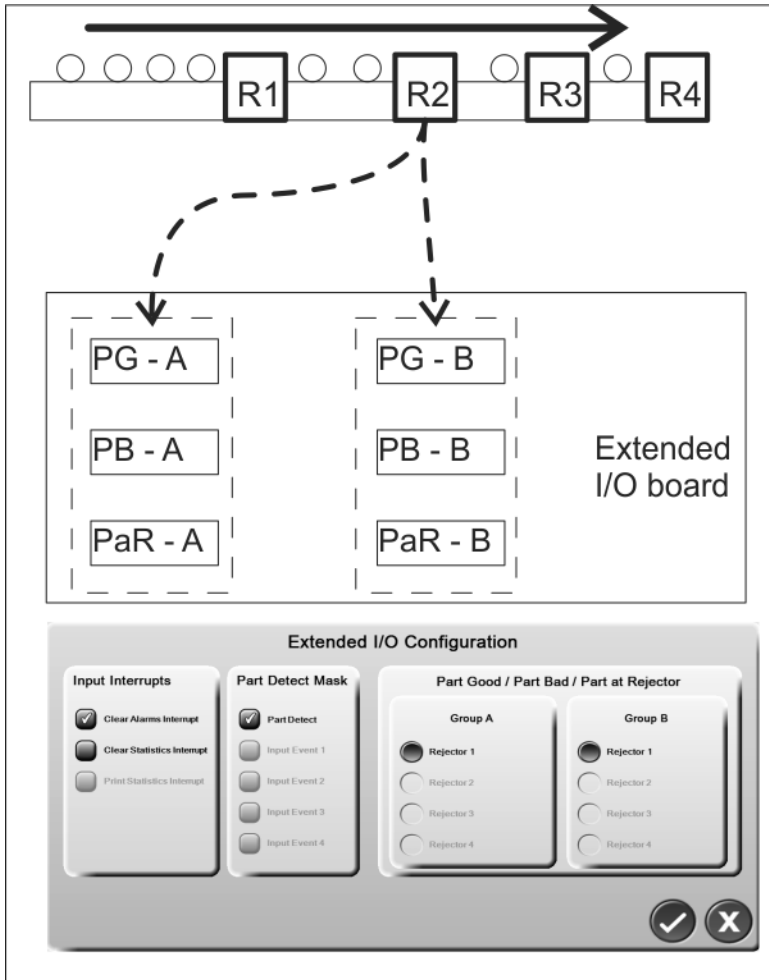
PaR = Part at Reject signal, Group A and Group B

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**Example 2 below:**

Group A is triggered when the part passes Rejector 2, and Group B is also triggered when the part passes Rejector 2.



## Chapter 8 Maintenance Frequency with Chromapulse Modules

Item	Description	Frequency
Observe proper rejection	Verify that defective parts are being rejected by inserting a known defective part through inspection	Daily
Observe Proper inspection	Verify that no stray parts are stuck in or near the inspection module or reject station	Daily
Observe Proper inspection	Verify that no buildup of dirt or contaminants has occurred on inspection module. Clean if necessary.	Daily
Observe Proper inspection	Verify that each camera's image is properly centered, focused, and properly lit. Adjust if necessary.	Daily
Glass surfaces	Clean with soft, clean, oil-free cloth dampened with glass cleaning solution	Daily
Plastic surfaces	Clean with soft, clean, oil-free cloth dampened with mild soap and water solution	Daily
Part Detect Sensor and Reflector	Clean with soft, clean, oil-free cloth dampened with mild soap and water solution. Wipe dry.	Weekly
Support Package	Create a snapshot of your Intellispec settings.	Monthly
Clean Vision Processor Filter	Rinse in clean water; use mild soap and water solution if oily.	Monthly
Camera lens	Clean only with lens tissue and lens cleaner. Be careful not to alter focus or aperture.	Monthly
Glass surfaces: Beam Splitter and Secondary lens	Clean with soft, clean, oil-free cloth dampened with lens cleaning solution	Monthly
Plastic surfaces: Dome light or Ring light diffusers	Clean with soft, clean, oil-free cloth dampened with mild soap and water solution. Wipe dry.	Monthly
Fan filters CP4422EV	Rinse in clean water; use mild soap and water solution if oily.	Monthly
Ellipsoidal mirror	Normally does not need cleaning. If dirty, blow off dust with clean, compressed air.	Only if dirt appears on image
Filter/ Regulator	Replace filters	Oil removal filter - replace every 2000 hours Oil vapor removal filter - replace every 12 months

Item	Description	Frequency
Acronis Backup	Create a full System Backup.	Yearly

## Clean the Vision Processor Filter SV Plus

The filter should be cleaned once a month for best results. The filter is located on the side of the cabinet. Replace with a new filter when necessary.

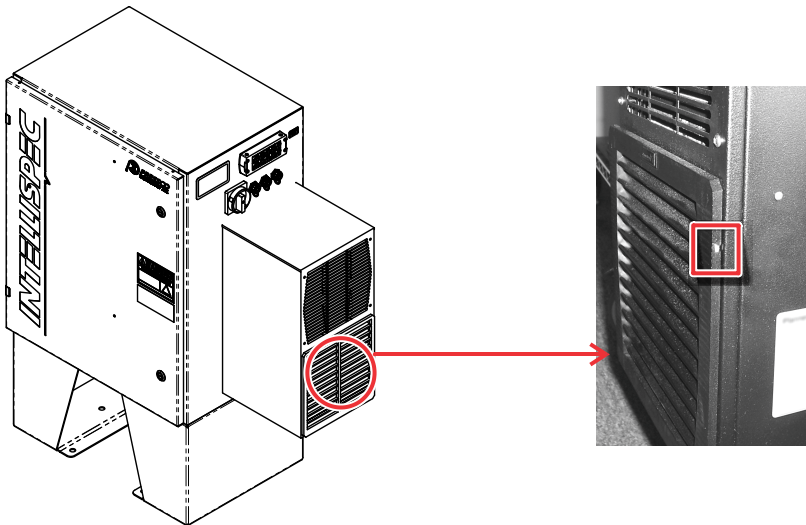
*Note: You may need to clean the filters weekly depending on plant conditions*

### What you need:

Recommended: "RP Super Filter Coat Adhesive." Find this on the Internet or in a hardware store near you.

### To clean the filter:

1. Pry open the filter cover using a standard screwdriver or your finger. Pry it open by the notch on the right side of the cover.
2. Remove the filter and clean it.
  - If the filter contains dry dust and dirt, rinse it in plain water
  - If the filter contains oily dust and dirt, clean it in soapy water, then rinse in clear water - DO NOT use caustic solutions
3. Dry the filter completely [placing it with a corner down will assure complete drainage].
4. Recoat the filter with "RP Super Filter Coat Adhesive." Spray both sides for best results.
5. Place the filter back inside the cabinet cover.
6. Replace the filter cover and snap the cover in place.



## Cleaning Optical Surfaces



*Important - Debris and contamination could build up on both the glass and plastic surfaces. This dirt could appear in the inspection windows, causing false rejects of parts, or it could degrade lighting. Clean glass and plastic surfaces often to avoid false rejects.*

To maintain proper image quality and system performance, the clear glass and plastic surfaces on the Inspection Modules must be cleaned on a regular basis. Dirt and debris that appear in the image can cause false rejects. An oily film on optical surfaces can cause false rejects or missed defects.

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## Cleaning Glass Surfaces

Glass surfaces that may require cleaning are:

- Camera Lens
- Beam Splitter (if present)
- Secondary lens (if present)
- Secondary mirror (if present)

### **To clean glass surfaces:**

- Blow off dust with canned, compressed air
- Use a clean non-abrasive cloth dampened with lens cleaning solution
- Use lens tissue and lens cleaning solution on camera lenses
- If surface has compound on it, first clean with alcohol, then with lens cleaning solution

*Note: Cleaning frequency will depend on plant and process conditions.*

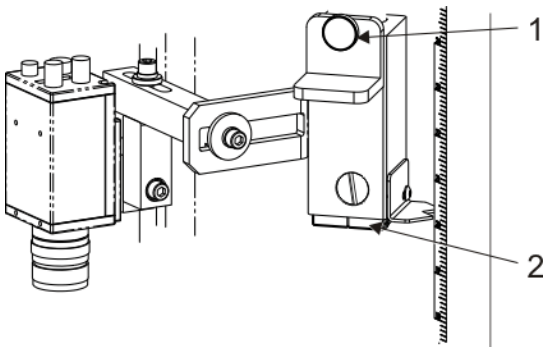
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## Cleaning the Camera Lens

 **Caution:** Do not touch lenses with fingers or oily cloths.

### **To clean the camera lens:**

1. Raise the camera to access the lens by loosening the height adjustment screw [item 1].
2. Leave the clamping bracket in place [item 2].
3. Clean all camera lenses with lens tissue and lens cleaning fluid. Be careful not to alter the focus or aperture of the cameras.
4. Slide the camera back into position as marked by the clamping bracket.
5. Tighten the height adjustment screw
6. Re-adjust aperture and focus if needed.

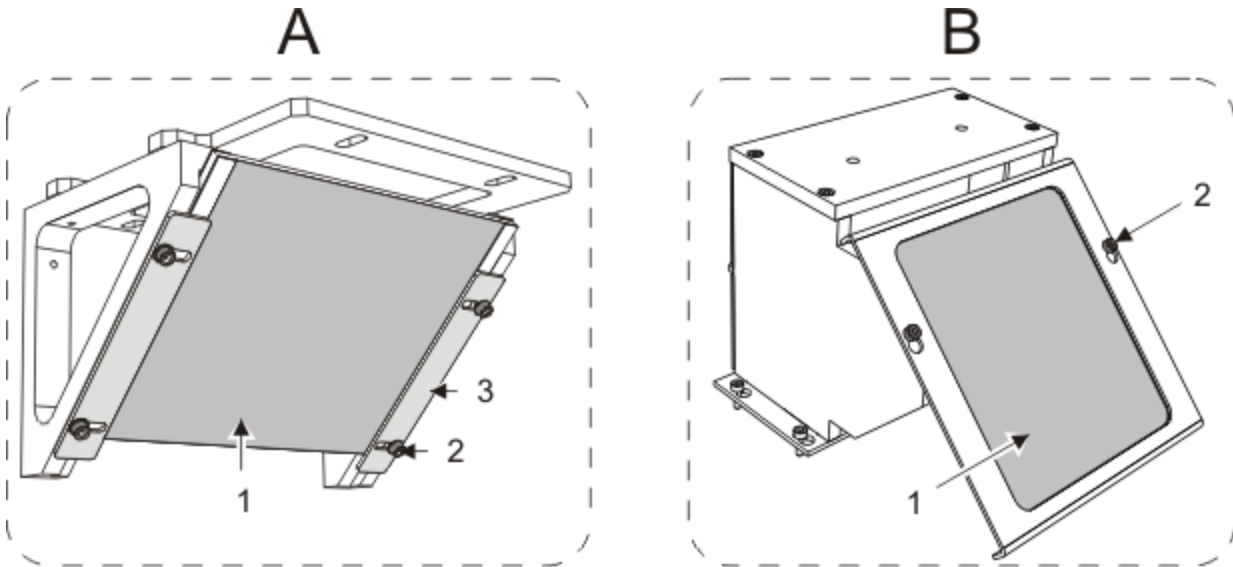


- 1) Camera height adjustment screw
- 2) Clamping bracket - camera height reference

## Cleaning the Chromapulse Beam Splitter

You must remove the Beam Splitter (on some Chromapulse models) to access the bottom side for cleaning. The method for removing the beam splitter depends on your inspection module.

In the illustration below, item A is used in preform sidewall endcap (PSE) modules. Item B is used in seal surface modules and some Chromapulse modules (example: CP750EV, CP1200EV, and more).



- 1) Beam Splitter
- 2) Screws
- 3) Retaining plates

### **To clean beam splitter:**

1. Raise the camera if necessary. Be sure to note the camera position before moving it.
2. Loosen the screws [item 2] and carefully remove the beam splitter.
  - Item A has four screws. Slide the retaining plates [item 3] to the sides and remove the beam splitter.
  - Item B has two screws. Loosen the screws to remove the beam splitter.
3. Clean the beam splitter [item 1].
  - Blow off dust from beam splitter with canned, compressed air.
  - Clean the glass on the beam splitter using lens tissue and lens cleaner.
4. Replace the beam splitter assembly.
  - Item A - Replace the beam splitter with the reflective side to the outside. Slide the retaining plates back in plates and tighten the screws.
  - Item B - Replace the beam splitter with glass to the inside. Tighten the screws.

## Cleaning Plastic Surfaces - general

*Note: Cleaning frequency will depend on plant and process conditions.*

### **To clean plastic surfaces:**

- Use canned compressed air to blow away dust
- Use a clean, non-abrasive cloth dampened with mild soap and water solution. Saturate surface completely to let particles wash away.
- Dry the surface with clean, compressed air



*DO NOT: Use paper towels, paper napkins, or dry cloths – these may scratch surfaces*

## Cleaning the Ellipsoidal Mirror

This mirror provides the enhanced neck image for optimal inspection of the neck of a can.



*Warning - The special surface of the mirror can be easily scratched. Take special precautions and do not touch the surface of the mirror.*

*Note: This mirror does not require periodic cleaning. Contact Pressco Service if the mirror has dirt or marks that cannot be blown off with clean, compressed air.*

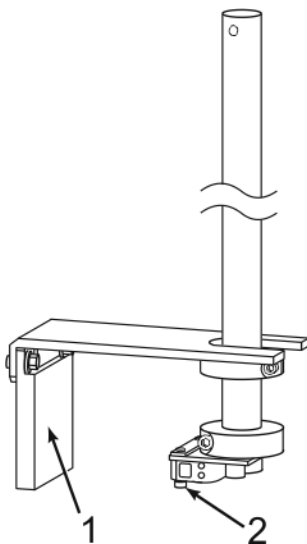
In most systems, the mirror has a built-in air cleaning system. Air is blown through the module to keep dust and debris off the mirror and out of the module. There are no bottom shields on these modules. You do not have to clean the mirror in these modules.

## Cleaning the Part Detector and Reflector

The part detect sensor and reflector surfaces of the part detector must remain clean to properly detect parts. Clean these surfaces regularly to prevent dirt and oil build-up.

Clean the part detector surfaces with a soft, clean, lint-free cloth dampened with a mild soap and water solution. Do not use a glass cleaning solution or strong solvent on the plastic surfaces as they might be damaged.

The frequency of cleaning will depend on plant and process conditions.



1) Part detect reflector

2) Part detect sensor

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## Cleaning the Part Detector Without Reflector

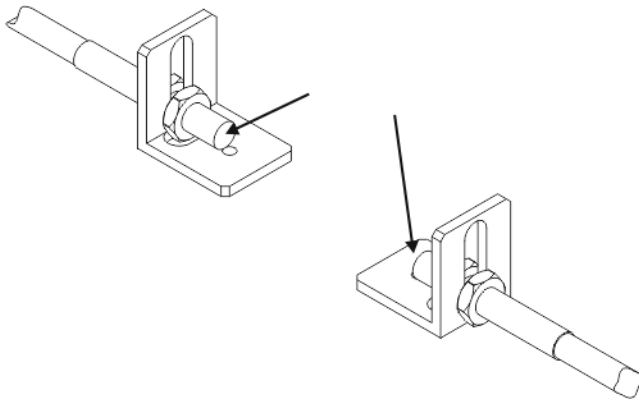
Your system will be equipped with either a part detector or proximity sensor, depending on your application. The proximity sensor does not use a reflector. However, the cleaning procedure for either of these types of sensors is similar.

The part detect sensor and reflector surfaces of the part detector must remain clean to properly detect parts. Clean these surfaces regularly to prevent dirt and oil build-up.

### **To clean the part detector:**

- Clean the part detector surfaces with a soft, clean, lint-free cloth dampened with a mild soap and water solution
- Clean the sensors on both sides of the conveyor
- Do not use a glass cleaning solution or strong solvent on plastic surfaces as they might be damaged.

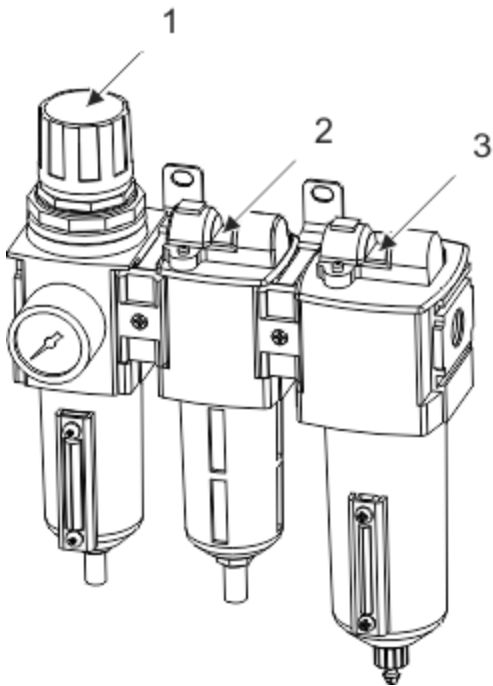
*Note: the frequency of cleaning will depend on plant and process conditions*



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## Replacing Filter-Regulator filters

The filter/ regulator assembly shown below is installed with CP4422EV inspection modules. Replace filters.



	Pressco part number	Description	Replace at least:
1		Filter/ regulator. No filter change necessary.	
2	67620	Filter oil removal	Every 2000 hours
3	67621	Filter oil vapor removal	Once per year
	67622	Kit (contains one each of 67620 and 67621) It is easier to replace both of these filters at the same time	