Safety Enclosure for Automated Dispensing Systems

Operating Manual

Electronic pdf files of Nordson EFD manuals are also available at www.nordsonefd.com

Nordson EFD

You have selected a reliable, high-quality dispensing system safety enclosure from Nordson EFD, the world leader in fluid dispensing. Nordson EFD automated dispensing systems are designed specifically for industrial dispensing and will provide you with years of trouble-free, productive service.

This manual will help you maximize the usefulness of your automated dispensing system safety enclosure.

Please spend a few minutes to become familiar with the controls and features. Follow our recommended testing procedures. Review the helpful information we have included, which is based on more than 50 years of industrial dispensing experience.

Most questions you will have are answered in this manual. However, if you need assistance, please do not hesitate to contact EFD or your authorized EFD distributor. Detailed contact information is provided on the last page of this document.

The Nordson EFD Pledge

Thank You!

You have just purchased the world's finest precision dispensing equipment.

I want you to know that all of us at Nordson EFD value your business and will do everything in our power to make you a satisfied customer.

If at any time you are not fully satisfied with our equipment or the support provided by your Nordson EFD Product Application Specialist, please contact me personally at 800.556.3484 (US), 401.431.7000 (outside US), or Srini.Subramanian@nordsonefd.com.

I guarantee that we will resolve any problems to your satisfaction.

Thanks again for choosing Nordson EFD.

Srini Subramanian

Srini Subramanian, General Manager

Contents

Introduction

This manual provides safety, installation, operation, service, and parts information for guarded safety enclosures for all PROPlus, PRO, EV, E, RV, and R Series automated dispensing systems. The safety enclosure is shipped fully assembled in a large wooden crate, making installation and setup easy.

For installation in the European Union (EU) and areas with similar regulations, these CE-compliant enclosures provide full compliance with EU Machinery Directive 2006/42/EC, essential for all production requirements.

Nordson EFD safety enclosures easily integrate into existing production lines. Each enclosure features an internal lockable electrical control box and integrated wireways that allow easy cable routing for faster, safer setup. A safety light curtain at the front opening stops the dispensing cycle anytime an object passes its sensing field.

External controls, including START, EMERGENCY STOP, and RUN/TEACH, allow operators to control the dispensing system from outside of the enclosure. An ergonomic, adjustable monitor bracket and keyboard tray make it easy to program vision-guided systems at any height.

CE-compliant safety enclosure with an installed automated dispensing system (EV Series system and standard safety enclosure shown)

Nordson EFD Product Safety Statement

⚠ WARNING

The safety message that follows has a WARNING level hazard.
Failure to comply could result in death or serious injury.

ELECTRIC SHOCK

Risk of electric shock. Disconnect power before removing covers and / or disconnect, lock out, and tag switches before servicing electrical equipment. If you receive even a slight electrical shock, shut down all equipment immediately. Do not restart the equipment until the problem has been identified and corrected.

⚠ CAUTION

The safety messages that follow have a CAUTION level hazard.
Failure to comply may result in minor or moderate injury.

READ MANUAL

Read manual for proper use of this equipment. Follow all safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate. Make sure these instructions and all other equipment documents are accessible to persons operating or servicing equipment.

MAXIMUM AIR PRESSURE

Unless otherwise noted in the product manual, the maximum air input pressure is 7.0 bar (100 psi). Excessive air input pressure may damage the equipment. Air input pressure is intended to be applied through an external air pressure regulator rated for 0 to 7.0 bar (0 to 100 psi).

RELEASE PRESSURE

Release hydraulic and pneumatic pressure before opening, adjusting, or servicing pressurized systems or components.

BURNS

Hot surfaces! Avoid contact with the hot metal surfaces of heated components. If contact can not be avoided, wear heat-protective gloves and clothing when working around heated equipment. Failure to avoid contact with hot metal surfaces can result in personal injury.

Nordson EFD Product Safety Statement (continued)

Halogenated Hydrocarbon Solvent Hazards

Do not use halogenated hydrocarbon solvents in a pressurized system that contains aluminum components. Under pressure, these solvents can react with aluminum and explode, causing injury, death, or property damage. Halogenated hydrocarbon solvents contain one or more of the following elements.

Element	Symbol	Prefix
Fluorine	F	“Fluoro-”
Chlorine	Cl	“Chloro-”
Bromine	Br	“Bromo-”
Iodine	I	“Iodo-”

Check the Safety Data Sheet (SDS) or contact your material supplier for more information. If you must use halogenated hydrocarbon solvents, contact your EFD representative for compatible EFD components.

High Pressure Fluids

High pressure fluids, unless they are safely contained, are extremely hazardous. Always release fluid pressure before adjusting or servicing high pressure equipment. A jet of high pressure fluid can cut like a knife and cause serious bodily injury, amputation, or death. Fluids penetrating the skin can also cause toxic poisoning.

⚠ WARNING

Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury:

- Go to an emergency room immediately.
- Tell the doctor that you suspect an injection injury.
- Show the doctor the following note.
- Tell the doctor what kind of material you were dispensing.

Medical Alert — Airless Spray Wounds: Note to Physician

Injection in the skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the bloodstream.

Qualified Personnel

Equipment owners are responsible for making sure that EFD equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

Nordson EFD Product Safety Statement (continued)

Intended Use

Use of EFD equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property. Some examples of unintended use of equipment include:

- Using incompatible materials.
- Making unauthorized modifications.
- Removing or bypassing safety guards or interlocks.
- Using incompatible or damaged parts.
- Using unapproved auxiliary equipment.
- Operating equipment in excess of maximum ratings.
- Operating equipment in an explosive atmosphere.

Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson EFD equipment will be voided if instructions for installation, operation, and service are not followed. If the equipment is used in a manner not specified by Nordson EFD, the protection provided by the equipment may be impaired.

Personal Safety

To prevent injury, follow these instructions:

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, and covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Make sure spray areas and other work areas are adequately ventilated.
- When using a syringe barrel, always keep the dispensing end of the tip pointing towards the work and away from the body or face. Store syringe barrels with the tip pointing down when they are not in use.
- Obtain and read the Safety Data Sheet (SDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials and use recommended personal protection devices.
- Be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located.
- Wear hearing protection to protect against hearing loss that can be caused by exposure to vacuum exhaust port noise over long periods of time.

Nordson EFD Product Safety Statement (continued)

Fire Safety

To prevent a fire or explosion, follow these instructions:

- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Do not heat materials to temperatures above those recommended by the manufacturer. Make sure heat monitoring and limiting devices are working properly.
- Provide adequate ventilation to prevent dangerous concentrations of volatile particles or vapors. Refer to local codes or the SDS for guidance.
- Do not disconnect live electrical circuits when working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located.

Preventive Maintenance

As part of maintaining continuous trouble-free use of this product, Nordson EFD recommends the following simple preventive maintenance checks:

- Periodically inspect tube-to-fitting connections for proper fit. Secure as necessary.
- Check tubing for cracks and contamination. Replace tubing as necessary.
- Check all wiring connections for looseness. Tighten as necessary.
- Clean: If a front panel requires cleaning, use a clean, soft, damp rag with a mild detergent cleaner. DO NOT USE strong solvents (MEK, acetone, THF, etc.) as they will damage the front panel material.
- Maintain: Use only a clean, dry air supply to the unit. The equipment does not require any other regular maintenance.
- Test: Verify the operation of features and the performance of equipment using the appropriate sections of this manual. Return faulty or defective units to Nordson EFD for replacement.
- Use only replacement parts that are designed for use with the original equipment. Contact your Nordson EFD representative for information and advice.

Nordson EFD Product Safety Statement (continued)

Important Disposable Component Safety Information

All Nordson EFD disposable components, including syringe barrels, cartridges, pistons, tip caps, end caps, and dispense tips, are precision engineered for one-time use. Attempting to clean and re-use components will compromise dispensing accuracy and may increase the risk of personal injury.

Always wear appropriate protective equipment and clothing suitable for your dispensing application and adhere to the following guidelines:

- Do not heat syringe barrels or cartridges to a temperature greater than 38° C (100° F).
- Dispose of components according to local regulations after one-time use.
- Do not clean components with strong solvents (MEK, acetone, THF, etc.).
- Clean cartridge retainer systems and barrel loaders with mild detergents only.
- To prevent fluid waste, use Nordson EFD SmoothFlow™ pistons.

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

1. Disconnect and lock out system electrical power. If using hydraulic and pneumatic shutoff valves, close and relieve pressure.
2. For Nordson EFD air-powered dispensers, remove the syringe barrel from the adapter assembly. For Nordson EFD electro-mechanical dispensers, slowly unscrew the barrel retainer and remove the barrel from the actuator.
3. Identify the reason for the malfunction and correct it before restarting the system.

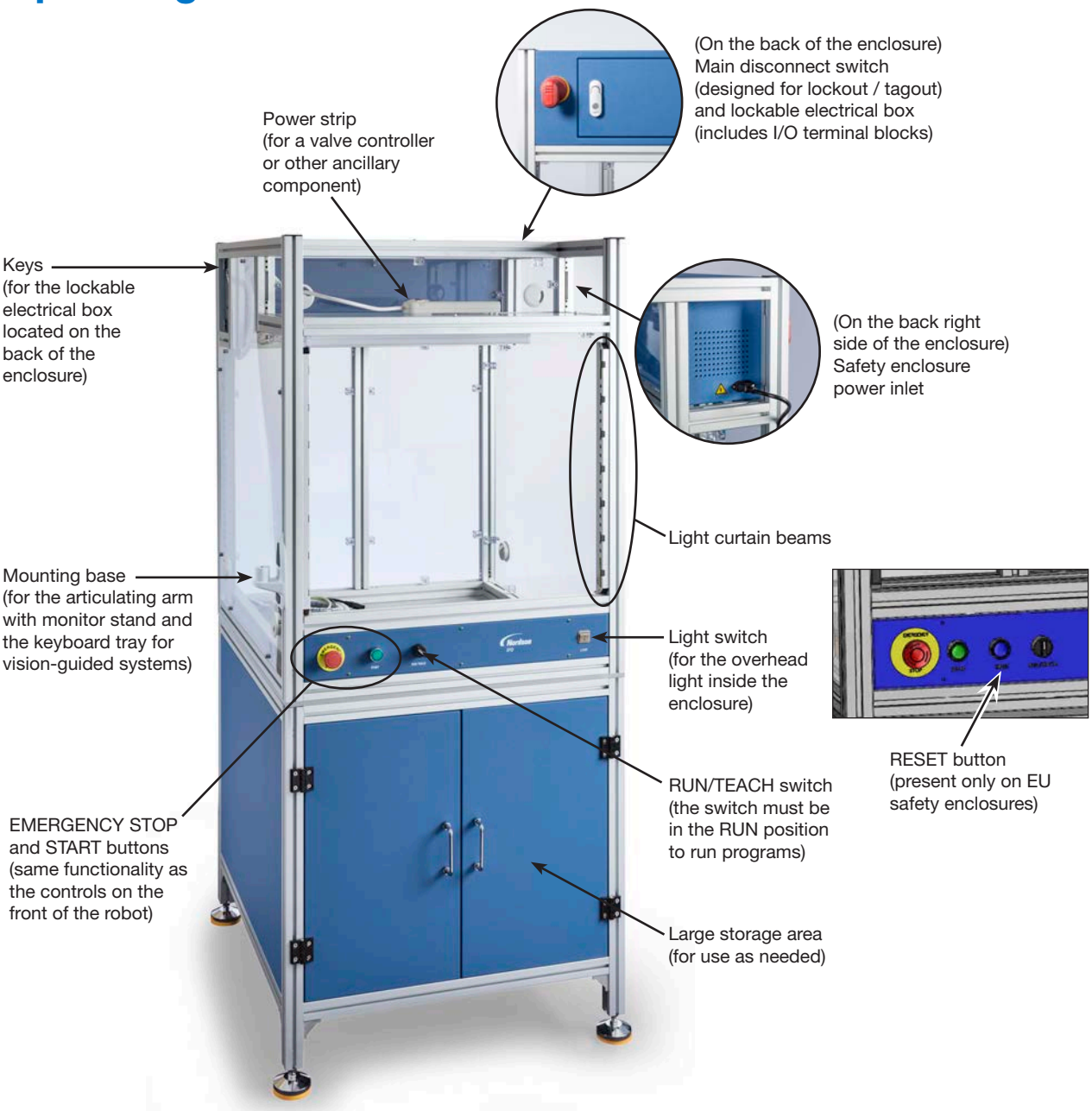
Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Specifications

Item	Small Enclosure	Large Enclosure
Size	800W × 1920H × 900D mm (31.5W × 75.6H × 35.4D")	1000W × 1920H × 1100D mm (39.4W × 75.6H × 43.3D")
Construction	Extruded aluminum and steel	
Weight	215 kg (474.0 lb)	227 kg (500.5 lb)
Input AC (to power supply)	100–240 VAC, ±10%, 50/60Hz, 20 Amp maximum	
Output DC (from power supply)	24 VDC, 5 Amp maximum	
Ambient operating temperature	10–40° C (50–104° F)	
Approvals	CE	

Operating Features



Installation

Use this section in tandem with the Quick Start Guide and the valve system manuals to install all components of the system.

You will need the following items:

- Pallet jack
- Open-end wrench set
- Adjustable open-end wrench
- 4 mm and 5 mm hex keys
- (Vision systems only) Four M4 x 12 screws to install the monitor

Unpack the System Components and Install the Feet

1. Remove loose items from inside the enclosure (feet, articulating arm, keyboard tray, and loose hardware).

2. Carefully remove the enclosure and stand it upright.

3. Use a pallet jack to lift a corner of the enclosure and then use an adjustable open-end wrench to install the feet. Repeat to install the remaining feet.

(Vision Systems Only) Install the Monitor and Keyboard

1. Install the articulating arm on the mounting base.

2. Install the keyboard tray on the articulating arm.

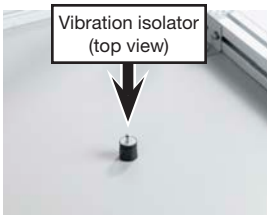
3. Use four (4) M4 x 12 screws (customer-supplied) to secure the monitor to the monitor mounting plate.

Installation (continued)

Install the Robot in the Enclosure

1. Open the enclosure doors and use an open-end wrench to remove the M5 hex nuts that secure the vibration isolators.

   NOTE: The vibration isolators are secured to the enclosure by a locking nut that is accessible only by opening the enclosure doors.



2. Remove the four (4) vibration isolators from the enclosure.

3. a. Use a 5 mm hex key to remove the right-side clear panel (9 screws) and the two back clear panels (6 screws each).
   b. Set the panels and screws aside in a safe location.

4. **⚠ WARNING**

   Moving the robot requires a minimum of two people. Do not attempt to lift the robot without assistance.

   ⚠ CAUTION

   Avoid tilting the robot, and never lay the robot on its side. Doing so can damage the circuitry.

   a. Use foam (or a similar methodology) to carefully and safely elevate the robot such that you can access the robot feet.
   b. Use a 4 mm hex key to remove the four (4) existing feet from the robot.

Continued on next page

Installation (continued)

Install the Robot in the Enclosure (continued)

5. By hand, install the vibration isolators (that were removed from the safety enclosure) on the robot where the robot feet were previously installed. Hand tighten.

6. **⚠ WARNING**

Moving the robot requires a minimum of two people. Do not attempt to lift the robot without assistance.

Position the robot inside the safety enclosure, aligning the feet to the correct holes for your robot model.

NOTE: The safety enclosure bottom provides holes for the multiple robot sizes.

7. Open the enclosure doors and use an open-end wrench to install the M5 nuts removed previously, thus securing the robot to the enclosure.

Installation (continued)

Connect Cables

1. Use a Phillips-head screwdriver to connect the ground wire to the ground connection on the back of the robot.

2. Connect the power cable to the Power Inlet.

3. Connect the input / output safety plug cable to the Ext. Control port.

4. Connect the input / output (I/O) cable to the IO Port.

5. **(Vision systems only)**

   - Connect the monitor power and DispenseMotion™ controller cables to the robot.

   (Teach Pendant systems only)

   - Connect the Teach Pendant to the Teach Pendant port on the front of the robot.

   NOTES:

   - Cables can be routed through the grommet holes provided on all sides of the safety enclosure.
   - Refer to the Quick Start Guide for the correct cable connections for your system.

Installation (continued)

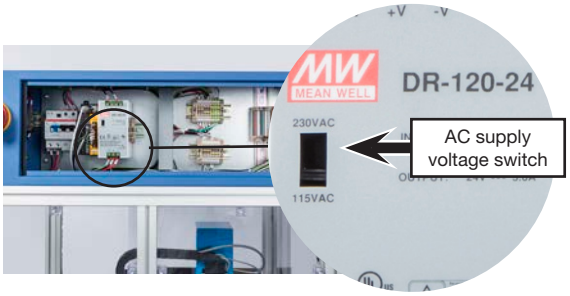
Install the Dispensing System and Reinstall the Panels

1. Install the dispensing system. Refer to the dispensing component manuals for complete installation instructions.

   NOTE: A power strip is provided on the front top of the enclosure. This location is ideal for a dispense valve controller.

2. Reinstall the back clear panels and the right-side clear panel using the screws removed previously.

3. a. Open the electrical box on the back of the safety enclosure.
   b. Set the 24V voltage supply switch to the correct setting for your installation.



The automated dispensing system is now fully installed in the safety enclosure.

Continue to the next procedures to connect inputs / outputs and to power on the complete system for the first time.

Example of a fully installed system
(EV Series system shown)

Installation (continued)

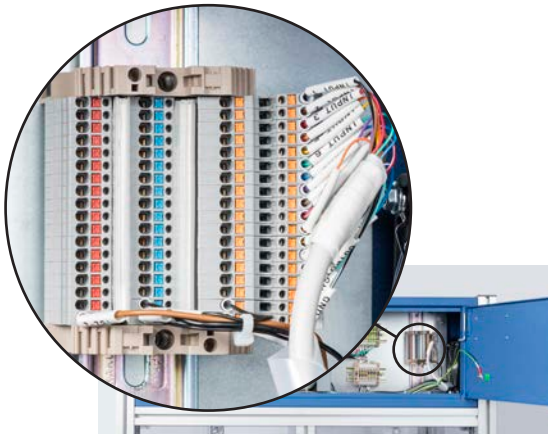
Connect Inputs / Outputs (Optional)

The electrical box on the back of the safety enclosure includes an I/O terminal block. The terminal wires are labeled, and each terminal provides a signal, power, and ground connection. This terminal block mimics the functionality of the IO Port on the back of the robot.

Make the I/O connections as needed for your operation.

NOTES:

- Outputs from the robot I/O Port are rated at 125 mA.
- Courtesy +24VDC output is rated at 5.0 Amp.



Location of the I/O terminal block inside the electrical box

Safety Enclosure I/O Terminal Block Pin Assignments

Block Number*	Assignment	Block Number*	Assignment
Block 1	Input 1	Block 9	Output 1
Block 2	Input 2	Block 10	Output 2
Block 3	Input 3	Block 11	Output 3
Block 4	Input 4	Block 12	Output 4
Block 5	Input 5	Block 13	Output 5
Block 6	Input 6	Block 14	Output 6
Block 7	Input 7	Block 15	Output 7
Block 8	Input 8	Block 16	Output 8
		Block 17	GND
		Block 18	GND
*Each terminal block has a dedicated +24V terminal and ground rails for connecting external equipment.			

The safety enclosure terminal block pin assignments extend to the 25-position I/O Port connector on the back of the robot. Refer to the table below for robot I/O Port pin assignments.

Robot I/O Port Pin Assignments

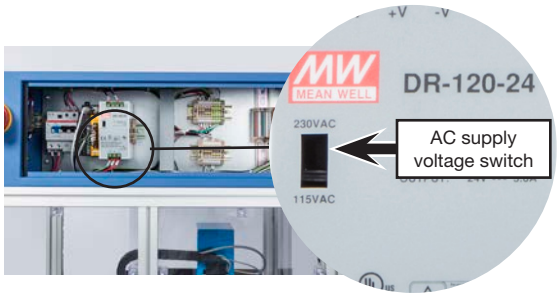
Pin	Assignment	Pin	Assignment
Pin 1	Input 1	Pin 14	Output 1
Pin 2	Input 2	Pin 15	Output 2
Pin 3	Input 3	Pin 16	Output 3
Pin 4	Input 4	Pin 17	Output 4
Pin 5	Input 5	Pin 18	Output 5
Pin 6	Input 6	Pin 19	Output 6
Pin 7	Input 7	Pin 20	Output 7
Pin 8	Input 8	Pin 21	Output 8
Pin 9	N/C*	Pin 22	N/C*
Pin 10	N/C*	Pin 23	N/C*
Pin 11	Ground*	Pin 24	+24 VDC*
Pin 12	Ground	Pin 25	+24 VDC*
Pin 13	Ground		
*These signals are not connected to the safety enclosure I/O terminal block.			

Installation (continued)

Initial Startup

NOTE: This startup procedure applies only to the first power-on of the enclosure after installation. For routine operation, refer to “Operation” on page 19.

1. Verify that the 24V voltage supply switch inside the electrical box is set to the correct voltage.



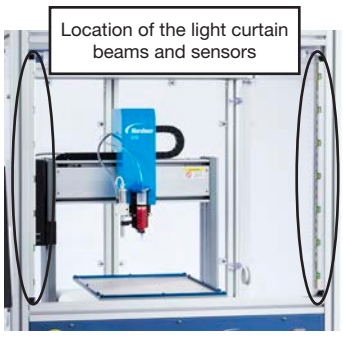
2. Ensure that:
   - All system cables are properly connected as applicable for your installation.
   - The dispensing system installation is complete.

3. Connect the 5 m safety enclosure power cable to the power inlet on the right side of the enclosure and to the power source.

4. Turn the main disconnect switch located on the back of the safety enclosure to the ON position.

When the system is powered on, the light curtain and all I/O connections are automatically active.

If the light curtain is interrupted by any passing object (such as a hand reaching into the enclosure), the system enters an emergency stop condition.



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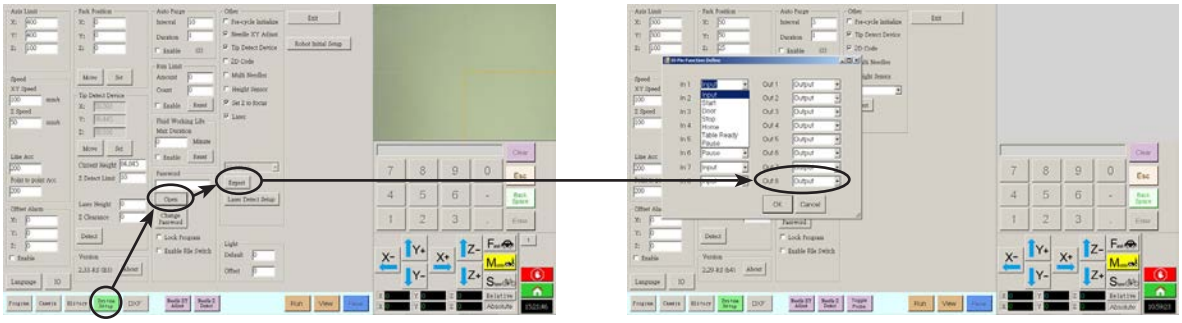
Installation (continued)

Initial Startup (continued)

5. Open the DispenseMotion software and set “Out 8” to “Running.” Refer to the “I/O Pin Function Setup” appendix in the robot operating manual for instructions.

   NOTE: The system includes a relay switching pin that is connected to output 8 on the I/O terminal block. When the output 8 signal exceeds 24V (goes “high”), the system breaks the circuit between EMG IN and EMG OUT. When output 8 is high and the light curtain is broken, the Emergency Stop signal locks and the robot enters a “hard lock” state. When Output 8 is low and the light curtain is broken, the Emergency Stop signal is not triggered, meaning the robot is in a “soft lock” state. For the system to use this soft lock feature correctly, output 8 (“Out 8”) in the DispenseMotion software must be set to Running.



DispenseMotion software screens used to set up Inputs / Outputs (refer to the robot operating manual for the complete procedure)

Operation

Once the robot is properly installed in the enclosure, follow these procedures for routine operation to ensure personnel safety.

Starting the System

Main disconnect switch

1. Turn the main disconnect switch located on the back of the safety enclosure to the ON position.
2. Refer to the robot operating manual for additional robot-specific power-on steps (such as switching on the DispenseMotion controller).

   NOTE: When the system is powered on, the light curtain and all I/O connections are automatically active. If the light curtain is interrupted by any passing object (such as a hand reaching into the enclosure), the system enters an emergency stop condition. An emergency stop may also be triggered by a customer-specific I/O connection.
3. Press the EMERGENCY STOP button to test it. If an emergency shutdown occurs, the system is operating properly.
4. Verify that the light curtain is functioning properly by moving a test object into the light curtain field. If an emergency shutdown occurs, the system is operating properly.

   NOTE: Nordson EFD strongly recommends performing the following additional checks of the light curtain operation:

   - Ensure that the safety enclosure is in a location that is free of light interference, such as from fluorescent lamps.
   - Check the sheaths of the wiring connected to the light curtain controller (inside the electrical box) for damage and replace any damaged wiring. Refer to “Service” on page 21 for the location of the light curtain controller.

Controls on the front of the safety enclosure (standard enclosure shown)

About the RUN/TEACH Switch

The safety enclosure provides a RUN/TEACH switch that affects system operation. The default position of the RUN/TEACH switch is the RUN position, which allows normal operation. Placing the switch in the TEACH position deactivates the light curtain, allowing the operator to run the robot at a reduced speed (without dispensing) or to service the robot. When the RUN/TEACH switch is in the TEACH position, the system will not run a dispense cycle.

When the RUN/TEACH switch is in the RUN position:

- The light curtain is active — any object that passes the light curtain causes an emergency shutdown condition.
- Pressing the green START button starts a dispense cycle.

When the RUN/TEACH switch is in the TEACH position:

- The light curtain is deactivated, allowing the operator to reach inside the enclosure without triggering an emergency shutdown.
- The robot cannot execute a dispense program.

Operation (continued)

Running a Program

NOTE: These steps are for a typical operation and may vary depending on the application.

1. Open the program to be run. Refer to the robot manual as needed for instructions on opening a program.
2. Turn the RUN/TEACH switch to the TEACH position.
3. Place a workpiece on the robot work surface.
4. Turn the RUN/TEACH switch to the RUN position.
5. Use the green START button on the front of the safety enclosure to run programs as follows:
   - Press the START button to start a dispense cycle.
   - While a dispense program is running, press the START button a second time to pause the dispense cycle.
   - Press a the START button a third time to resume a paused dispense cycle.

Controls on the front of a standard safety enclosure

Stopping the System (Emergency Stop)

An emergency stop condition occurs when the user presses the EMERGENCY STOP button on the front of the safety enclosure or when the light curtain field is broken.

When an emergency condition occurs:

- The dispense cycle stops and cannot be restarted from the stopped location
- The system requires a reset. Refer to “Resetting the System” below.

Controls on the front of an EU safety enclosure

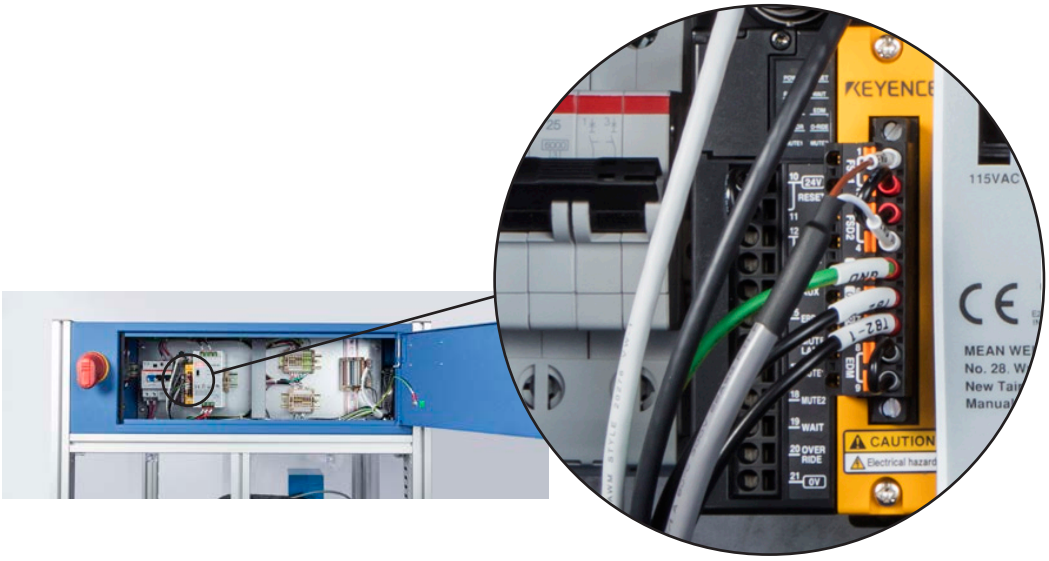
Resetting the System

When an emergency stop condition occurs, follow these steps to restart the system.

1. If applicable, correct the condition that caused the emergency stop.
2. If the EMERGENCY STOP button is pressed in, turn it clockwise to reset it.
3. **(EU safety enclosures only)** Press the blue RESET button to re-enable power to the robot motors.
4. Press the START button to reset the position of the robot.
5. Resume normal operation.

Service

Component	Recommended Interval	Action
Electrical box	As needed based on the operating environment	Remove dust and debris from inside the electrical box.
Light curtain system	Every six months	Verify the following: ☐ The light curtain response time is normal. ☐ The light curtain mounting bracket screws are secure. ☐ No modifications were made to the light curtain system. ☐ The safety enclosure installation has not been changed or damaged. ☐ The safety relay inside the electrical box is free from oil or dust accumulation that could interfere with conductivity. ☐ The wiring connections to the safety relay inside the electrical box are secure, with no loose or damaged wires. **NOTE:** Refer to the manufacturer's product manuals for additional information on light curtain and safety relay maintenance.



Location of the safety relay inside the electrical box

Part Numbers

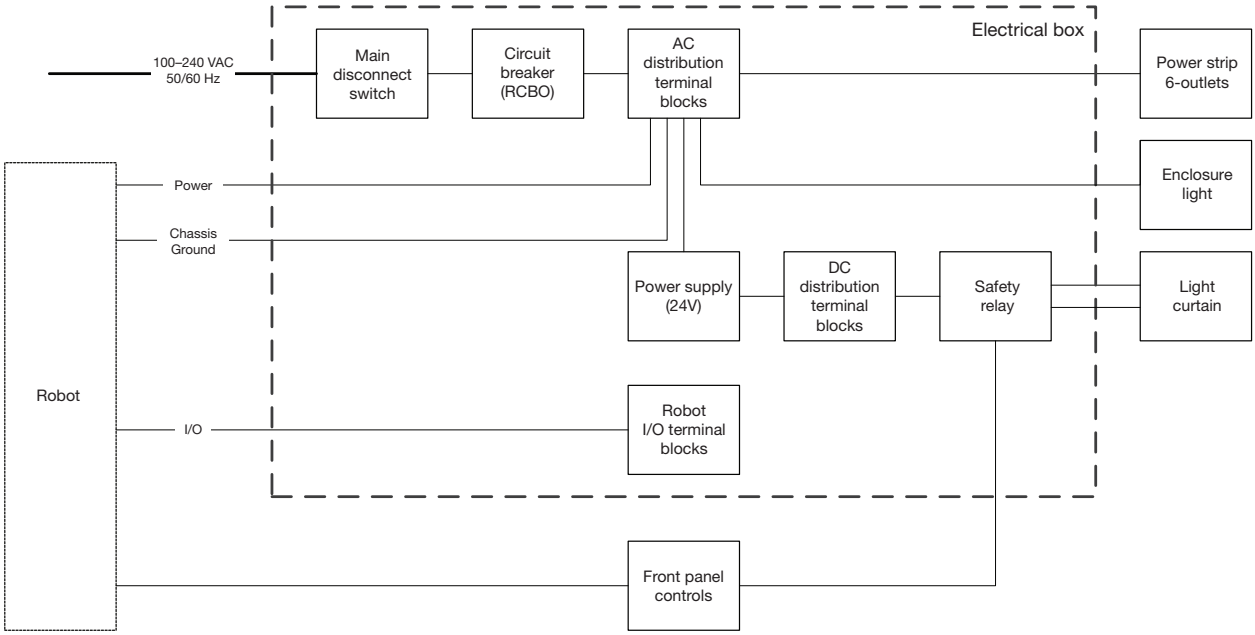
Part #	Description	Compatible Robot Models
7362738	Small safety enclosure	E2, E2V, E3, E3V, R3, R3V, PRO3, PRO3L, PROPlus3, PROPlus3L
7362766	Small safety enclosure, Europe	
7362739	Large safety enclosure	E4, E4V, E5, E5V, R4, R4V, PRO4, PRO4L, PROPlus4, PROPlus4L
7362767	Large safety enclosure, Europe	

Troubleshooting

Problem	Possible Cause	Corrective Action
Robot not responding to button presses (EMERGENCY STOP, START, RESET, or RUN/TEACH)	System power disconnected	Verify that the power cord is connected to the back right side of the safety enclosure.
	Main disconnect switch in the OFF position	Ensure that the main disconnect switch on the back of safety enclosure is in the ON position.
Light curtain not activating	System power disconnected	Verify that the power cord is connected to the back right side of the safety enclosure.
	Main disconnect switch in the OFF position	Ensure that the main disconnect switch on the back of safety enclosure is in the ON position.
	Problem in light curtain system	Refer to the manufacturer's product manuals for additional information on light curtain and safety relay troubleshooting.

Technical Data

General Block Wiring Diagram (Standard and EU)



Safety Enclosure I/O Terminal Block Pin Assignments

Refer to "Safety Enclosure I/O Terminal Block Pin Assignments" on page 16.

Notes

NORDSON EFD ONE YEAR LIMITED WARRANTY

Nordson EFD products are warranted for one year from date of purchase to be free from defects in material and workmanship (but not against damage caused by misuse, abrasion, corrosion, negligence, accident, faulty installation or by dispensing material incompatible with equipment) when the equipment is installed and operated in accordance with factory recommendations and instructions. Nordson EFD will repair or replace free of charge any part of the equipment thus found to be defective, on authorized return of the part prepaid to our factory during the warranty period. In no event shall any liability or obligation of Nordson EFD arising from this warranty exceed the purchase price of the equipment. This warranty is valid only when oil-free, clean, dry, filtered air is used.

Nordson EFD makes no warranty of merchantability or fitness for a particular purpose. In no event shall Nordson EFD be liable for incidental or consequential damages.

Nordson EFD

For Nordson EFD sales and service in over 40 countries, contact Nordson EFD or go to www.nordsonefd.com.

Global
East Providence, RI USA
800-556-3484; +1-401-431-7000
info@nordsonefd.com

Europe
Dunstable, Bedfordshire, UK
0800 585733; +44 (0) 1582 666334
europe@nordsonefd.com

Asia
China: +86 (21) 3866 9006; china@nordsonefd.com
India: +91 80 4021 3600; india@nordsonefd.com
Japan: +81 03 5762 2760; japan@nordsonefd.com
Korea: +82-31-736-8321; korea@nordsonefd.com
SEAsia: +65 6796 9522; sin-mal@nordsonefd.com