

Enclosed Automated Dispensing Systems

Operating Manual Supplement



Original

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



Contents

Contents2

Introduction3

Automated Dispensing Systems Collateral3

EC Declaration5

Machine Designation6

General Description6

Intended Use6

Safety6

 General Safety Information6

 Equipment-Specific Safety Information7

Installation, Operation, and Service9

 Assembling, Setting Up, and Connecting the Machine9

 Commissioning and Operating the Machine and Personnel Training10

 Residual Risks10

 Personal Protective Equipment10

 Tools10

 Stability11

 Transport11

 Emergency Stop11

 Setup, Maintenance, and Protective Measures11

 Spare Parts11

Introduction

This supplement provides European Union (EU)-specific content for complete, enclosed automated dispensing systems (any system in which a robot is fully installed inside a guarded safety enclosure).

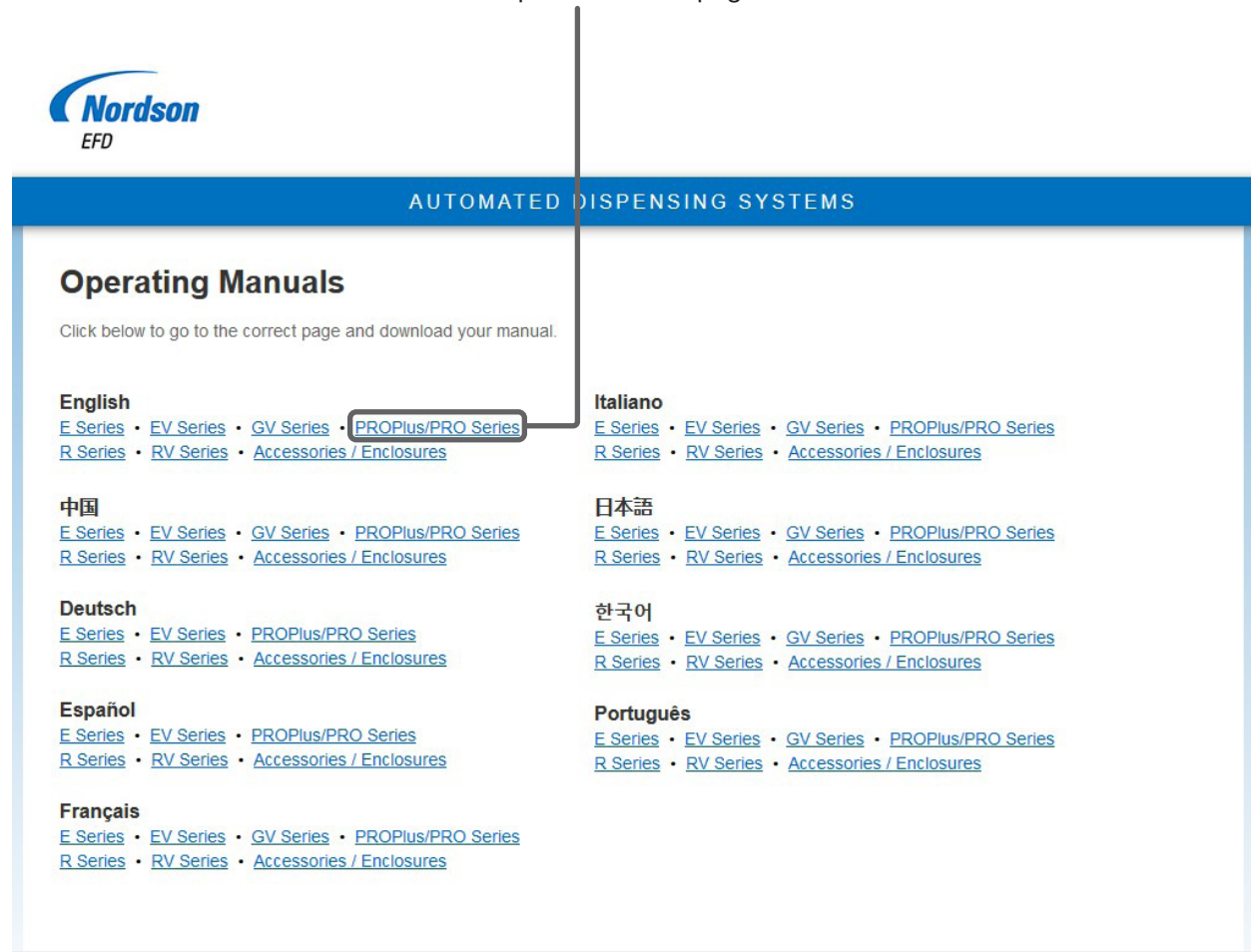
This supplement either provides the required content, or references the location of the required content in other collateral. It does not provide detailed operating instructions.

Automated Dispensing Systems Collateral

To access marketing and technical collateral for Nordson EFD automated dispensing systems, including data sheets, manuals, and videos, go to the following link:

<http://www.nordsonefd.com/EFDManuals>

On this web page, select the product under the language you want to view to go to that product's web page.



Nordson EFD

AUTOMATED DISPENSING SYSTEMS

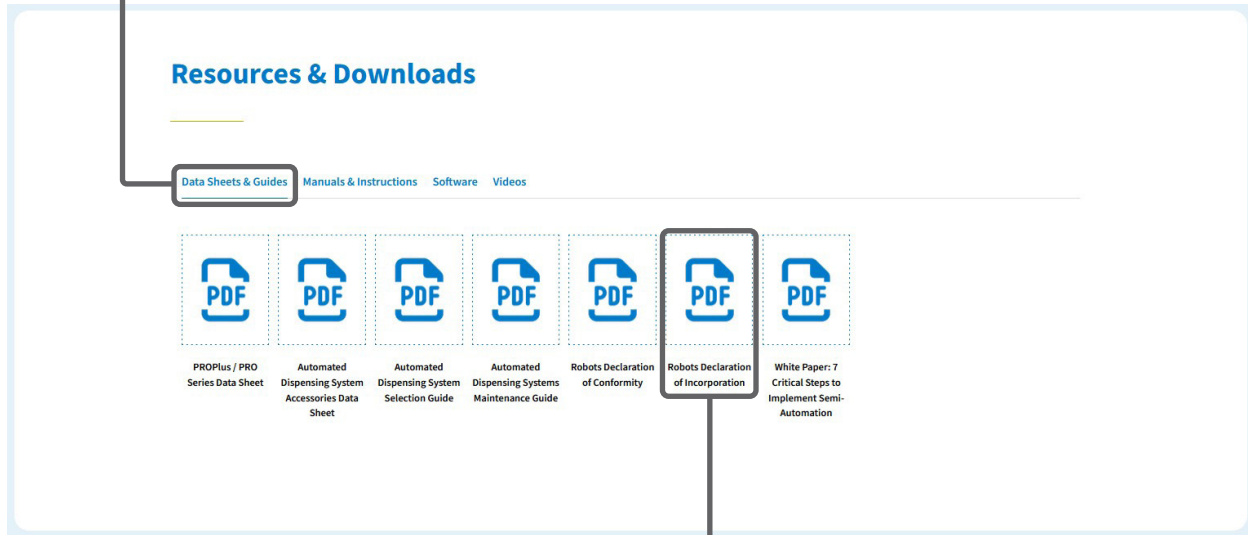
Operating Manuals

Click below to go to the correct page and download your manual.

English E Series • EV Series • GV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures	Italiano E Series • EV Series • GV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures
中国 E Series • EV Series • GV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures	日本語 E Series • EV Series • GV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures
Deutsch E Series • EV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures	한국어 E Series • EV Series • GV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures
Español E Series • EV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures	Português E Series • EV Series • GV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures
Français E Series • EV Series • GV Series • PROPlus/PRO Series R Series • RV Series • Accessories / Enclosures	

Automated Dispensing Systems Collateral (continued)

On the product's web page,
select the type of collateral
you want to view or download.



Select the item you want to
view or download.

Company and Address

Company Name:

Nordson EFD
40 Catamore Blvd
East Providence, RI 02914
United States

Manufacturer:

Nordson Deutschland GmbH
Nordson EFD Branch Office
Kapellenstraße 12
85622 Feldkirchen
Germany

EC Declaration

Each safety enclosure is shipped with a Declaration of Conformity that includes its unique serial number. The Declaration of Conformity will be similar in appearance to the one shown below.

EC Declaration of Conformity

In Accordance with Machinery Directive 2006/42/EC, Annex II, 1A



Responsible Party: Nordson EFD LLC
Address: 40 Catamore Blvd
East Providence, RI 02914, USA

Type of Equipment: Robot Enclosure

Product Name: Automated Dispensing System

Model / Part Number: XxX

Manufacture Date: xx.XX.20xx

Serial Number: XXXX

The above listed product(s) have been evaluated for conformity to:

'RoHS Directive' 2011/65/EU
'EMC Directive' 2014/30/EU

The standards to which conformity is declared are:

Machinery Directive:

EN 614-1:2006+A1:2009

EN 894-1:1997+A1:2008

EN ISO 14118:2018

EN ISO 12100:2010

EN ISO 13849-1:2015

EN ISO 13849-2:2015

EN ISO 13850:2015

EN ISO 13855:2010

EN ISO 13857:2008

EN ISO 14120:2015

EN 60204-1:2018

Safety of machinery - Ergonomic design principles Part 1: Terminology and general principles

Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 1: General principles for human interactions with displays and control actuators

Safety of machinery - Prevention of unexpected start-up

Safety of machinery - General principles for design - Risk assessment and risk reduction

Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design

Safety of machinery - Safety-related parts of control systems - Part 2: Validation

Safety of machinery - Emergency stop function - Principles for design

Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body

Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs

Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards

Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Holly Sarza

Sr. Quality Assurance Manager
East Providence, RI, USA

Authorized Representative:
European Technical Manager
Nordson Deutschland GmbH
Nordson EFD Branch Office
Kapellenstraße 12
85622 Feldkirchen

7362781 Rev 01

Machine Designation

Nordson EFD robots are designated as follows:

Model	Designation on Robot	Location of Designation
PROX / PROPlus / PRO Series	PRO3*, PRO4	Front panel
E / EV Series	E2, E3, E4, E5, E6	Front panel
R* / RV Series	R4, R5, R6	Front panel
GVPlus / GV Series	G4V, G8V	Operation box
*Legacy product		

General Description

Nordson EFD safety enclosures are specifically designed to safely and completely enclose Nordson EFD dispensing robots. A complete automated dispensing system includes the safety enclosure, the robot and its associated components, and the dispensing components.

For a full description of your system components, refer to the applicable operating manual.

Intended Use

Nordson EFD automated dispensing systems are designed for standalone, semi-automated dispensing applications.

Safety

General Safety Information

For a complete safety statement that includes all applicable warnings, cautions, and other safety-related information, refer to the applicable operating manual.

The safety statement includes, but is not limited to, the following:

- Warnings relating to the misuse of the machine.
- Information on any remaining residual risks
- Guidance on the protective measures to be taken by the user, including personal protective equipment.

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.

General Safety Information (continued)

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.

Equipment-Specific Safety Information

The following safety information is specific to Nordson EFD automated dispensing systems.

For a complete safety statement that includes all applicable warnings, cautions, and other safety-related information, refer to the applicable operating manual.

European Community

To meet the requirements of the European Community (CE) safety directives, the robot must be placed in an enclosure. The enclosure prevents an operator from entering the robot's work area and generates an emergency stop signal if the door switch is opened while the robot is running.

Equipment-Specific Safety Information (continued)

WARNING

Install the input/output safety plug only to bypass the door switch. When this plug is installed, the installer assumes all safety liability.

Installation Location

Do not store, install, or operate the robot in a location where it is exposed to the following:

- Temperatures lower or higher than 10–40 °C (50–104 °F) or humidity lower or higher than 20–95%
- Direct sunlight
- Electrical noise
- Flammable or corrosive gases
- Dust or iron powder
- Sources of splashing water, oil, or chemicals
- Radioactive materials, magnetic fields, or vacuum rooms

Power and Grounding

- Connect the robot and accessories to a properly grounded power source.
- Make sure the system is connected to the correct voltage.

Operation and Service

- Turn on the dust collection system before operating the robot.
- Do not drop or spill foreign objects or material, such as screws or liquids, into the robot.
- Do not overload the robot.
- Do not touch any part of the robot while it is running. Load and unload workpieces or material only when the robot is stopped.
- Disconnect and lock out power to the system before changing fixtures or tooling.
- Use only a neutral detergent for cleaning. Do not use alcohol, benzene, or thinner.

Laser Use and Operation

- Be aware of the laser beam path. Make sure the laser beam cannot be reflected or diffused from a mirrored surface.
- Do not use any optical instruments, such as a telescope, to view the laser beam.
- Allow only trained engineers to operate or disassemble the laser parts.
- Have periodic maintenance and function tests performed by trained engineers.

WARNING

Do not gaze at or into the laser beam. Gazing directly at the laser beam can cause serious eye injury. Nordson EFD recommends optical filter glasses for eye protection.






Installation, Operation, and Service

For installation, setup, programming, operation, service, and technical information, including specifications, drawings, and wiring diagrams, refer to the following:

- Applicable operating manual
- Automated Dispensing Systems Maintenance and Parts Manual

NOTE: The maintenance and parts manual includes all available replacement parts. For additional assistance as needed, contact your local Nordson EFD representative.

- Applicable videos

To access all robot Operating Manuals, including the Safety Enclosures Manual and the Maintenance and Parts Guide , use this link or QR code. Refer to “Automated Dispensing Systems Collateral” on page 3 for instructions.	http://www.nordsonefd.com/EFDManuals	
For safety enclosure installation and setup videos , use this link or QR code.	 www.nordsonefd.com/RobotEnclosureSetup	
For robot installation and setup videos , use this link or QR code.	 www.nordsonefd.com/RobotInstallation	

Assembling, Setting Up, and Connecting the Machine

Refer to the following sections of the **Safety Enclosure for Automated Dispensing Systems Operating Manual**:

- Operating Features
- Installation
- Unpack the System Components and Install the Feet
- (Vision Systems Only) Install the Monitor and Keyboard
- Install the Robot in the Enclosure
- Connect Cables
- Install the Dispensing System and Reinstall the Panels
- Connect Inputs / Outputs (Optional)
- General Block Wiring Diagram (Standard and EU)
- Safety Enclosure I/O Terminal Block Pin Assignments

Commissioning and Operating the Machine and Personnel Training

Refer to the following sections of the **Safety Enclosure for Automated Dispensing Systems Operating Manual**:

- Qualified Personnel
- Initial Startup
- Starting the System
- About the RUN/TEACH Switch
- Running a Program

Residual Risks

Nordson EFD's automated dispensing systems have been comprehensively tested for health and safety risks. When a safety enclosure is used, risks are negligible.

The operating manuals for the robots and the safety enclosure include the following end user guidance and instructions:

- Periodically inspect and test safety functions to prevent crushing risks. Wear personal protective equipment.
- Create a working environment that restricts the use of the Run/Teach function to authorized personnel only.
- Create a Lockout / Tag-Out (LOTO) procedure, post the LOTO procedure on the machine, label all isolation devices accordingly, and provide personal safety locks and accessories to operators.
- Implement a training and monitoring program.
- Control the configuration of the safety-rated software functions by recording and monitoring the safety controller checksum. The speeds of the robot motion are limited to the following:
 - X axis: 500 mm/s
 - Y axis: 500 mm/s
 - Z axis: 150 mm/s

Ergonomically, the machine design allows for the variability of the operator's physical dimensions, strength, and stamina. No repetitive activities or intensive physical strain are foreseen.

To prevent an arc flash hazard, access to the electrical panel is restricted to qualified electricians only.

Personal Protective Equipment

- Always wear appropriate protective equipment suitable for the dispensing application, including safety goggles, gloves, and clothing.
- Wear heat-protective gloves and clothing when working around heated equipment.
- Wear hearing protection to protect against hearing loss that can be caused by exposure to vacuum exhaust port noise over long periods of time.

Tools

Every six months, confirm that the light curtain is functioning properly by moving a test rod (supplied with the enclosure) through the light curtain field, as described in the **Safety Enclosure for Automated Dispensing Systems Operating Manual**.

Stability

Conditions under which the machine meets the requirements for stability during operation, transport, assembly, disassembly, when it is out of service, during tests, and in the event of foreseeable faults.

- Properly train operators to observe the warnings contained in the operating manuals, the warnings and safety tags on the equipment, and any warning signs in the facility.
- Protect the safety enclosure and automated dispensing system components from exposure to water.
- Ensure that all operating manuals, software, materials, accessories, and spare parts are readily available to operators.
- Ensure that the Safety Data Sheets for hazardous materials are available to operators.

Transport

Refer to the Specifications section of the **Safety Enclosure for Automated Dispensing Systems Operating Manual** for the weight of the safety enclosure.

Use a forklift and pallet jack to move the robot and enclosure pallets to the designated installation location.

Once installed, the safety enclosure is not transported on a regular basis.

Emergency Stop

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

1. Remove any obstructions and / or 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.

Setup, Maintenance, and Protective Measures

Refer to the following sections of the **Safety Enclosure for Automated Dispensing Systems Operating Manual**:

- Installation
- Service
- Stopping the System (Emergency Stop)
- Resetting the System

Spare Parts

No spare parts are required for safety enclosures.



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

Global

800-556-3484; +1-401-431-7000
info@nordsonefd.com

Europe

00800 7001 7001
infoefd.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