ValveMate 8040 Controller

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 from Nordson EFD, the world leader in fluid dispensing. The ValveMate™ 8040 controller was 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 ValveMate 8040 controller.

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 Ferran.Ayala@nordsonefd.com.

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

Thanks again for choosing Nordson EFD.

Ferran

Ferran Ayala, Vice President

Contents

Introduction

IMPORTANT: The primary control of deposit size is the valve open time. The ValveMate 8040 provides easy access and “on the fly” adjustment of valve open time.

The ValveMate 8040 is an EFD spray valve controller, incorporating programmable dispense time, digital time readout, four independent solenoid drivers and input / output communication with host machine PLCs.

Other features include:

- Push-button time setting input or onetouch time programming.
- Floating decimal, providing dispense time ranges of 0.001 to 99.9 seconds.
- Bright red LED display.
- Push-button purge feature.
- Low air-pressure optional tank low level detection, or other alarm detection devices.
- End-of-Cycle feedback signal.

The ValveMate 8040 has been designed with the machine builder and operator in mind. The objectives are to bring spray valve control close to the point of application, and to provide the features necessary to make setup and operation as easy and precise as possible.

The ValveMate is easy to operate. Once you have reviewed the features, you will understand the benefits and the ease of control the ValveMate provides.

As with all EFD products, the ValveMate has been produced to exacting specifications and thoroughly tested prior to shipment.

To obtain maximum performance from this equipment, please read the instructions carefully.

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

NOTE: Specifications and technical details are subject to change without prior notification.

Item	Specification
Cabinet size	18.3W x 5.1H x 8.6D cm (7.20W x 2.00H x 3.38D")
Weight	0.3 kg (0.6 lb)
Cycle rate	Exceeds 400 per minute
Time range	0.001–99.9 s
Electrical power input	24 VDC, 1.25 Amp maximum
Input AC (to power supply)	100–240 VAC (±10%), 50/60Hz, 1.0 Amp
Output DC (from power supply)	24 VDC, 1.25 Amp maximum
Feedback circuits	5–24 VDC NC solid-state switch, 100 mA maximum
Cycle initiate	5–24 VDC signal
Ambient operating conditions	Temperature: 5–45° C (41–113° F) Humidity: 85% RH at 30° C, 40% at 45° C non-condensing Height above sea level: 2,000 m (6,562 ft) maximum
Product Classification	Installation Category I Pollution Degree 2
Approvals	CE, UKCA, TÜV, RoHS, WEEE, China RoHS

RoHS标准相关声明 (China RoHS Hazardous Material Declaration)

产品名称 Part Name	有害物质及元素 Toxic or Hazardous Substances and Elements					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr6)	多溴联苯 Polybrominated Biphenyls (PBB)	多溴联苯醚 Polybrominated Diphenyl Ethers (PBDE)
外部接口 External Electrical Connectors	**X**	**0**	**0**	**0**	**0**	**0**

0: 表示该产品所含有的危险成分或有害物质含量依照EIP-A, EIP-B, EIP-C 的标准低于SJ/T11363-2006 限定要求。
Indicates that this toxic or hazardous substance contained in all the homogeneous materials for this part, according to EIP-A, EIP-B, EIP-C is below the limit requirement in SJ/T11363-2006.

X: 表示该产品所含有的危险成分或有害物质含量依照EIP-A, EIP-B, EIP-C 的标准高于SJ/T11363-2006 限定要求.
Indicates that this toxic or hazardous substance contained in all the homogeneous materials for this part, according to EIP-A, EIP-B, EIP-C is above the limit requirement in SJ/T11363-2006.

WEEE Directive

This equipment is regulated by the European Union under WEEE Directive (2012/19/EU). Refer to www.nordsonefd.com/WEEE for information about how to properly dispose of this equipment.

Operating Features

Front Panel Buttons

SEL — Pressing the SEL button scrolls sequentially through ❶····❷ and ❸····❹ channel time settings appropriate to the MODE selection. Time in seconds is displayed on the three digit LED display.

MODE — Pressing the MODE button scrolls through the menu at the left of the LED. Also used for clearing ALARM faults.

RUN **RUN** — Enables external initiate inputs. The cycle button is disabled.

SETUP **SETUP** — Setup / testing / and modification of ❶····❷ and ❸····❹ TIMER modes.

PURGE **PURGE** — Enables individual or simultaneous purge of spray valves. Used in conjunction with SEL channel selector, PURGE PURGE can occur with or with out nozzle air function. See page 22 for complete PURGE sequence details.

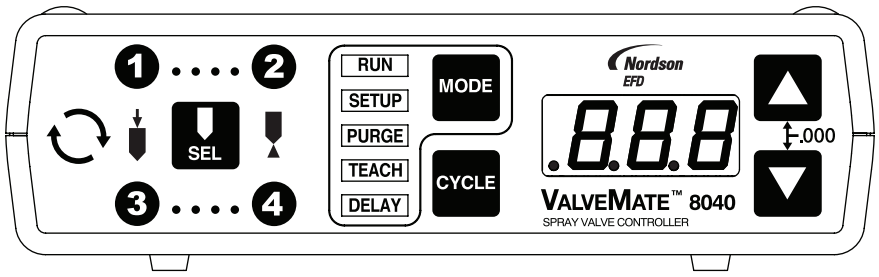
TEACH **TEACH** — For easy setting / teach of times modes longer spray cycle applications.

DELAY **DELAY** — Allows user entry to increase or decrease post nozzle air delay upon completion of spray valve actuation.

CYCLE — Pressing the CYCLE button will provide different results according to the selected MODE.

TIME SET — Pressing the UP or DOWN buttons will change valve-on time for the selected valve(s) or the DELAY time. Pressing both buttons simultaneously will zero out the time. These buttons are enabled in the RUN RUN, SETUP SETUP, and DELAY DELAY modes only.

ALARM INDICATORS — At the beginning of any of the spray activities, if ALARM circuit is open, “ALr” ALr flashes on the LED display. ALARM condition needs to be corrected — either low pressure, low level, or other alarm open circuit. After the circuit is restored, the flashing “ALr” ALr becomes steady. Press MODE button to resume normal operation.



Operating Features (continued)

Indicator Lamps

The indicator lamp ↻ at the far left will be lit any time valves are actuated.

The four numbered spray lamps around the SEL button will be lit ❶····❷ and ❸····❹ sequentially then all ON by pressing the SEL button.

In the center of the front panel are five indicator lamps: RUN SETUP PURGE TEACH DELAY. These lamps indicate the mode of operation.

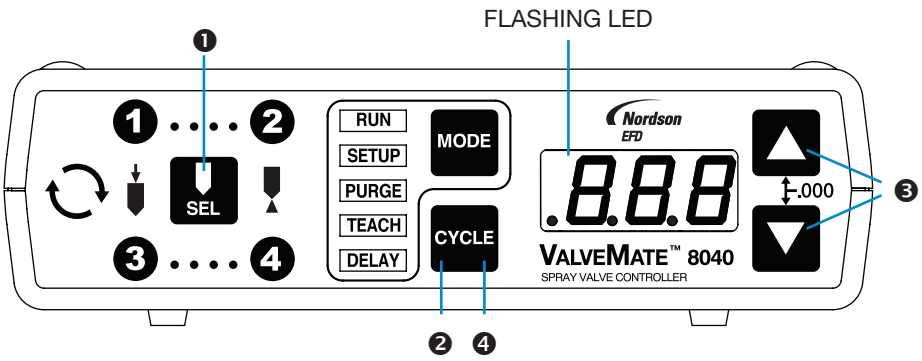
Modes of Operation

RUN **RUN** — The ValveMate 8040 is ready to be initiated through the I/O, resulting in a spray cycle. Time settings can be made "on the fly" while the machine is running. For "on the fly" adjustment, ❶ select appropriate channel, ❶····❷ and ❸····❹. ❷ Press CYCLE. LED display will "flash." ❸ Press UP ▲ or DOWN ▼ arrow to add or subtract time to selected channel. ❹ When finished, press CYCLE to lock in new TIME. Initiate signals are only enabled in the RUN mode.

SETUP **SETUP** — In the SETUP mode, time settings can be changed and spray volume tested.

PURGE **PURGE** — This allows purging from selected or all channels for the duration the CYCLE button is pressed. PURGE PURGE can occur with or without nozzle air function. See page 22 for complete PURGE sequence details.

TEACH **TEACH** — Select channel. Pressing and holding the CYCLE button in the TEACH TEACH mode will begin "flashing" of the LED display for 5 seconds before TEACH function begins. Add incremental time to selected channel by continued press and hold of CYCLE button, or ".000" out channel time and begin TEACH TEACH sequence described above. Repeat sequence for each channel.



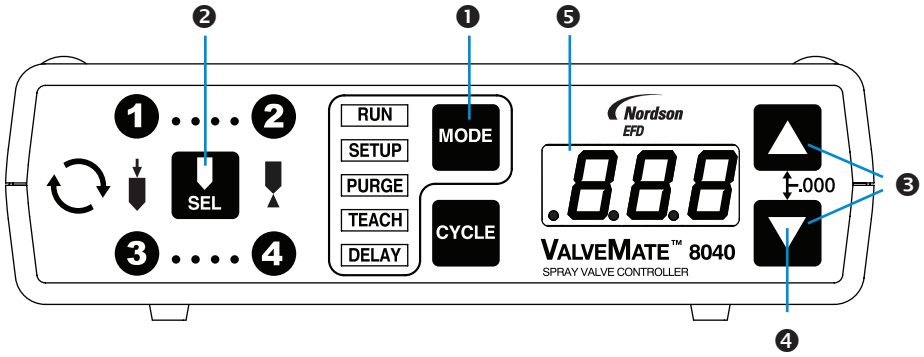
Operating Features (continued)

Modes of Operation (continued)

DELAY **DELAY** — In the DELAY mode, the time set buttons can be used to enter a post nozzle air delay for the selected spray valve. This delay is used to ensure that all fluid is atomized after the valve closes leaving a clean nozzle.

Steady Mode Operation

Channel ❶····❷ and ❸····❹ can be put into a steady mode / time override operation. ❶ In Setup mode SETUP, ❷ press SEL for selected channel. ❸ Press both UP / DOWN buttons to ".000" out channel time. ❹ Press and hold DOWN button for 5 seconds or until ❺ "– – –" appears on LED display. Repeat steps for each channel requiring steady mode. To return to TIME setting, enter SETUP SETUP mode. Select appropriate channel. Press UP / DOWN buttons simultaneously. ".000" will appear on LED display. Re-enter time value as needed.



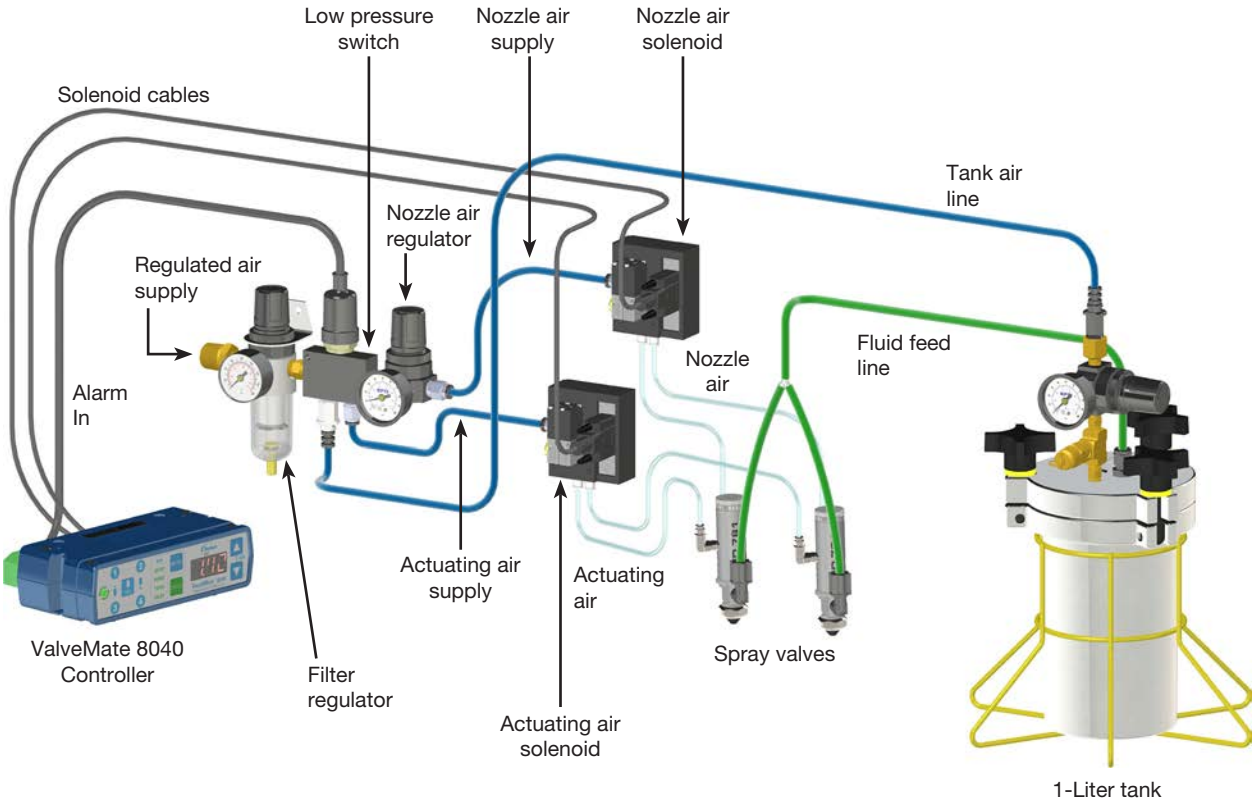
Typical Setup — Two Valve System Installation

Fluid

Actuating air, nozzle air

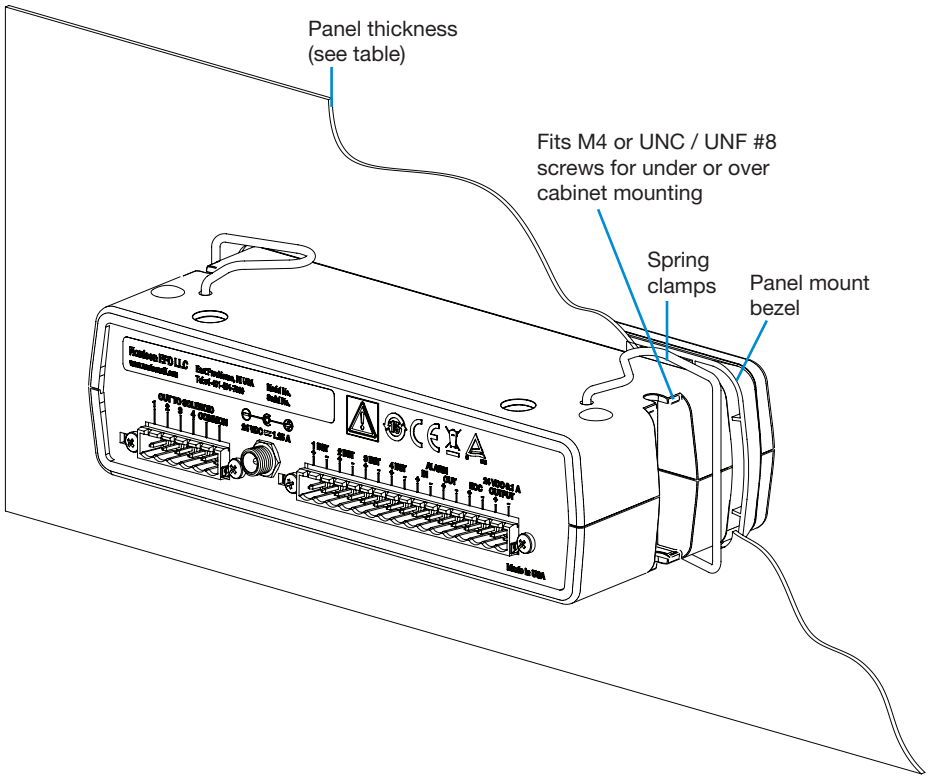
Constant air

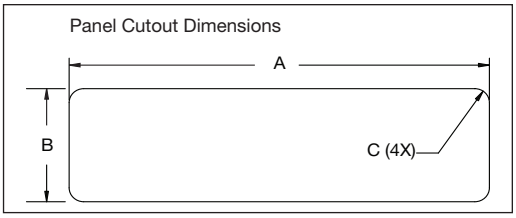
Electrical



Mounting the ValveMate 8040

The ValveMate 8040 can be mounted either over or under a cabinet using screws.

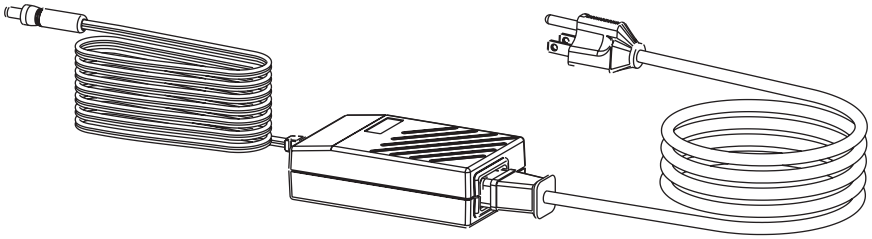




	Min		Max	
Dimension	**mm**	**in.**	**mm**	**in.**
A	183.6	7.23	185.2	7.29
B	51.6	2.03	53.1	2.09
C	R3.3	R.13	R9.4	R.37
Thickness	1.6	0.063	2.3	0.091

Connecting Power

Connect the power cord (ordered separately) to the appropriate input voltage.



Input / Output Connections

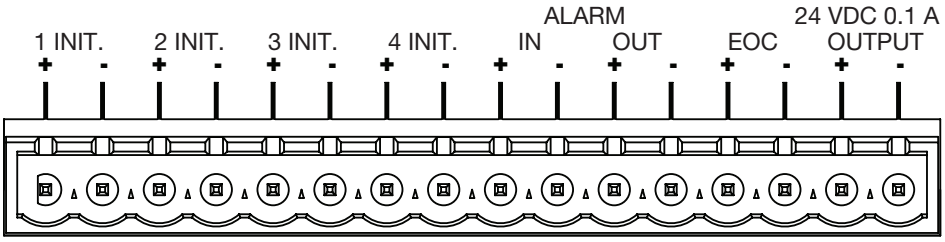
The 16 pin terminal strip includes four dispense valve initiate inputs, an alarm I/O, an End of Cycle output, and a 24VDC courtesy power output.

The four initiate inputs can be connected in series, parallel, or to separate input sources for independent valve control, or ability to disable a specific valve when using “part in place” verification.

For a detailed connection schematic and instructions, refer to page 17.

The alarm I/O is used to monitor air supply pressure and / or tank low level. This I/O can be used to operate an audible alarm, or be connected to the machine controls to shut off the machine if air pressure or tank level is low. In addition, when the alarm is activated, the display will flash “ALr”  , indicating that air pressure or tank level has dropped below minimum.

The End Of Cycle (EOC) feedback can send a signal back to the machine controls, signaling when the dispense cycle is finished. Using this signal can increase machine productivity by eliminating any delay after the dispense cycle and also confirms a dispense cycle has occurred. 2 INIT and 4 INIT are non-active inputs. As long as an initiate sequence is in progress on any channel, the EOC circuit is open. Maximum load is 100 mA from 5 to 24 VDC.



Initiate Connection

See page 19 for a detailed Initiate Connection Schematic.

1····2 and 3····4 Channel Initiate

The 8040 can be initiated through a time cycle by the application of 5 to 24 VDC to the 1 INIT or 3 INIT input terminals. A system set-up schematic is detailed on page 14. 2 INIT and 4 INIT input terminals are not used.

Alarm IN / OUT Connection

The ValveMate 8040 features an ALARM input and output circuits. The ALARM IN can be activated through the connection of either the low air pressure sensor (supplied), low level fluid float switch (if used) or other such device / accessory that may be selected for ALARM purposes. ALARM switches are to be wired in series and must be normally closed switches.

If no ALARM switch is being used, the ALARM IN positive (+) and negative (-) terminals must have a jumper installed to disable the ALARM feature.

The ALARM OUT circuit is a normally OFF electronic switch that can switch an external 5–24 VDC circuit to an external signaling device or PLC input. Maximum load is 100 mA, 5–24 VDC.

Initiate Connection (continued)

End of Cycle Connection (EOC)

Upon completion of a spray cycle, an open collector circuit closes and remains closed until the next spray cycle. This circuit can be utilized to signal back to a host computer, start another device in sequence or other operations that need to be tied into the completion of the spray cycle. This circuit will close when all spray activity has completed.

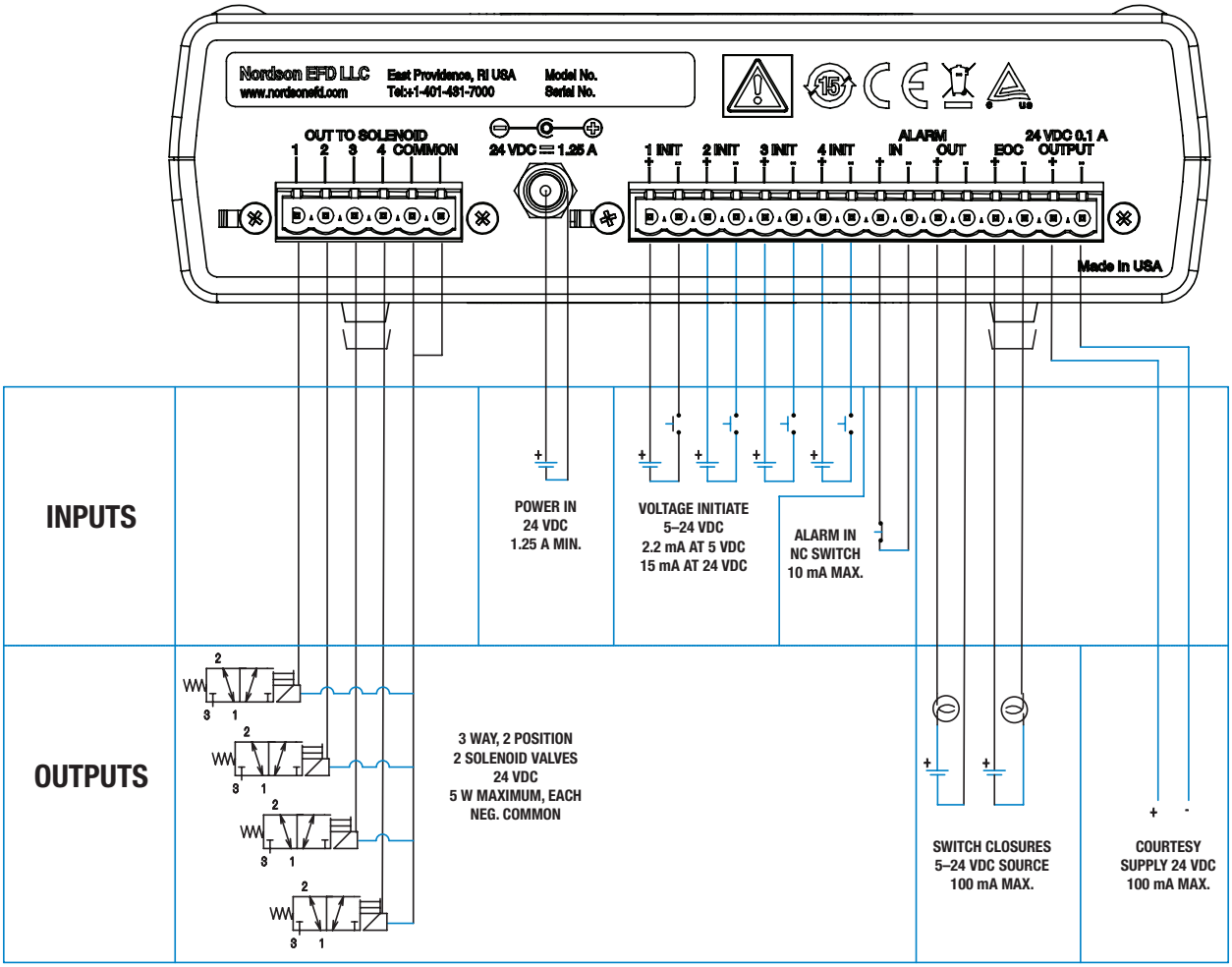
Upon closure, power from an external source is allowed to pass through the circuit to operate a 5 to 24 VDC load or be monitored by the host machine controls.

The load illustrated is a relay, but this could be any device that will operate within the 5 to 24 volt range. Power consumption of the load must not exceed 250 mA.

24 VDC Output

Courtesy 24 volt DC 100 mA (maximum) can be used to provide power to EOC and ALARM out circuits for signaling purposes. Also, can be used as a power source for an indicator device or initiate signal through a contact closure switch to the 4-channel Initiate circuit.

Initiate Connection Schematic



Installing the Air Solenoids

❶ Mount the solenoid packs in a convenient location near the spray valve station.

❷ Interconnect the solenoid pack to the ValveMate 8040 controller using the cable supplied.

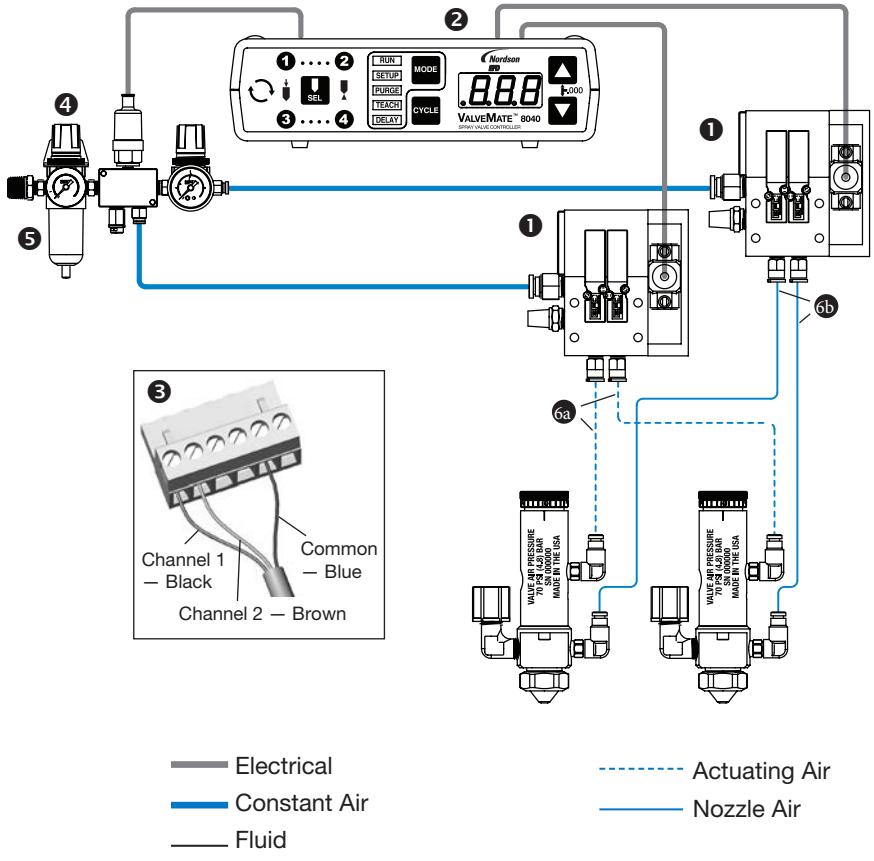
❸ Refer to the inset for color coded wire designation

❹ Connect a regulated and filtered air supply to the solenoid pack.

❺ Supply pressure to the solenoids should be set to 5.5 bar (80 psi).

Install the Dispense Valves

All EFD spray valves are supplied with an installation manual. The manual will explain the operation of the spray valve and also how to set up the valve with the fluid reservoir. ❻ Connect the valve actuating air hoses to the appropriate solenoid output. 6a White hoses to white push-in fittings for actuating air. 6b Black hoses to black push-in fittings for nozzle air.



Final Setup Checklist

❶ Air pressure to solenoid pack is set to 5.5 bar (80 psi).

❷ Nozzle air pressure regulator is set to 1.02 bar (10 psi).

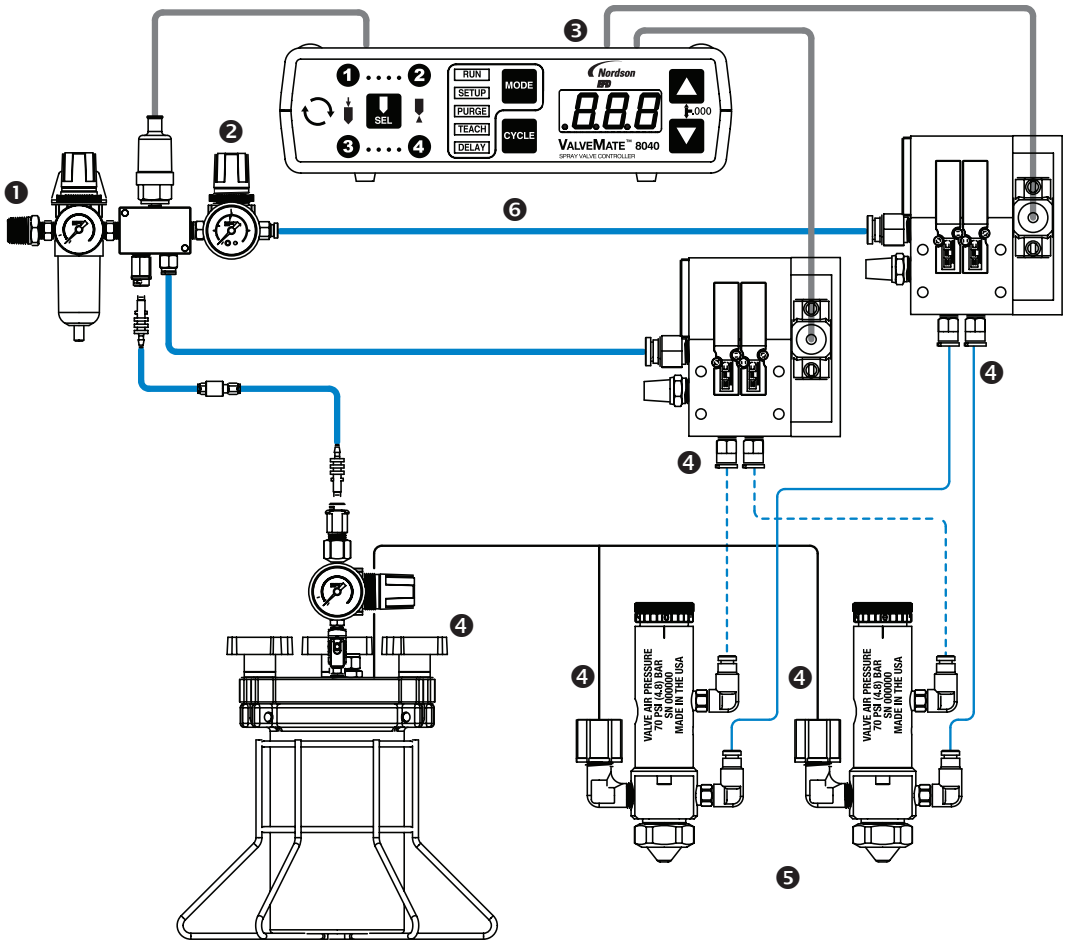
❸ Solenoids and I/O are wired correctly.

❹ Spray valves and fluid reservoir are properly connected.

❺ Spray valves are set up and installed in accordance with the spray valve installation guide.

❻ Turn power on. Confirm indicator lamps and display is lit.

NOTE: The ValveMate 8040 is not equipped with an ON / Off switch and remains in ON condition as long as input power supply voltage is maintained.



Testing the Spray Valves

Set tank pressure. For low viscosity, low pressures and high viscosity, higher pressure.

Using the MODE button on the ValveMate controller, place the controller in the PURGE mode. In PURGE mode only, channels ❶····❷ and ❸····❹ can be selected independently without nozzle air pressure.

Using the SEL button, press to sequence as follows:

Place a container under the spray valve and press the CYCLE button to open the spray valve and flow material until all air is purged from the system. Adjust the tank pressure, or valve stroke knob to set a flow rate that is not too low or too high. A goal starting point for a fine spray is one drop of fluid per second. For heavier spray, increase the drop rate just below where the flow becomes a steady stream. Adjust flow using a combination of tank pressure and valve needle stroke.

Set nozzle air pressure regulator to 0.7 bar (10 psi).

Using the PURGE mode again, actuate the spray valves and observe the spray sequence: ❶····❷ ❸····❹

Press SEL: Channel ❶ only is active ❷ is off.
Press SEL: Channels ❶····❷ only are active.
Press SEL: Channel ❸ only is active ❹ is off.
Press SEL: Channels ❸····❹ only are active.
Press SEL: Channels ❶ and ❸ only.
Press SEL: All channels are now active.

Press mode and place controller in SETUP mode. Using the ▲ UP / DOWN ▼ buttons, set a spray time of 0.05 seconds for all valves.

Press the CYCLE button to initiate a spray cycle. Increase or decrease the time or tank pressure to arrive at the desired deposit size. **The primary control of deposit size is the valve open time.** Final time setting may be different for each valve as this is the way we compensate for minor variations in tubing length or tolerance stack up.

The system is now ready to be initiated by the machine controls when the machine is started.

Part Numbers

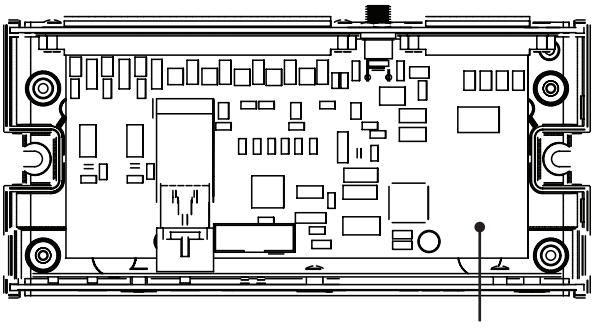
NOTES:

- Power cords are ordered separately.
- Solenoids are ordered separately based on the number of valves in the system. Each solenoid kit includes the prewired 6-pin connector and housing, a 3.6 m (12 ft) cable cordset, an input air hose, and push-in fittings.

Part #	Description
7022120	8040 spray valve controller
7014871	Kit, power cord, American plug
7014872	Kit, power cord, European plug
7022250	Solenoid valve kit, two in-line solenoids for nozzle / actuating air
7022251	Solenoid valve kit, two dual blocks for nozzle / actuating air

Replacement Parts

Part #	Description
7002002	5-micron filter / regulator
7022055	Main PC board, VM8040
7026543	Kit, DC cable assembly, 2 m (6.6 ft) locking connector



Troubleshooting

Problem	Possible Cause and Correction
LED is blinking “ALr” [ALr] and will not accept initiate signal.	Air pressure to the solenoid pack has dropped below 4.1 bar (60 psi) or if low level float switch is used, tank level is low. Raise the input pressure to 4.8 bar (70 psi) or refill the tank. Press CYCLE [CYCLE] button to reset. If problem persists, make sure devices such as air cylinders are not causing a pressure drop in the ValveMate 8040 solenoid pack input air line. If no ALARM switch is being used, the ALARM IN + / - terminals must have a jumper installed to disable ALARM feature.
Unit is not responding to the initiate signal.	Check to make sure the unit is not in a mode other than RUN [RUN]. Response delay in pneumatic circuit does not allow the valve to open when time is set at or below 0.010 seconds. Increase time. Initiate signal may have a low level of leakage. The signal must break clean before the next signal is initiated.
Timer is inoperative.	Check to make sure the unit is not in the steady mode. The timer is very reliable. Any failure is total so no inconsistency is possible.
Flashing [SoL] on LED display.	Short on the OUT TO SOLENOID circuit. Check solenoid wiring connections.

Notes

NORDSON EFD ONE YEAR LIMITED WARRANTY

This Nordson EFD product is warranted for one year from the 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 defective part upon authorized return of the part prepaid to our factory during the warranty period. The only exceptions are those parts which normally wear and must be replaced routinely, such as, but not limited to, valve diaphragms, seals, valve heads, needles, and nozzles.

In no event shall any liability or obligation of Nordson EFD arising from this warranty exceed the purchase price of the equipment.

Before operation, the user shall determine the suitability of this product for its intended use, and the user assumes all risk and liability whatsoever in connection therewith. 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.

This warranty is valid only when oil-free, clean, dry, filtered air is used, where applicable.

Nordson EFD

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