



Nordson Corporation

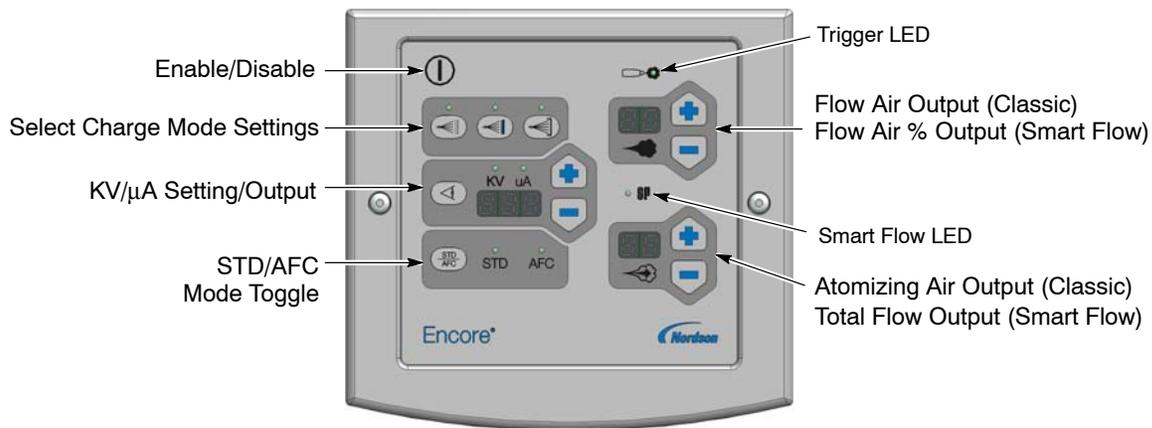
# Encore® LT Manual Powder Spray Systems

OPERATOR CARD P/N 1604859-01



**WARNING:** Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

## Controller Interface



Pressing the **Enable/Disable** button for three seconds puts the controller to sleep (low power mode). The displays and LEDs turn off. To wake the controller press the button again.

The system goes to sleep automatically if no activity is detected for approximately 15 minutes. Pulling the gun trigger, pressing the purge switch, or pressing a button on the controller interface wakes the controller.

 When the gun is triggered the Trigger LED is lit, and actual kV/μA outputs are displayed. When not triggered the kV/μA setpoint is displayed. The two air flow displays always show the setpoints.

 The Smart Flow LED lights when the controller is configured for Smart Flow mode. Refer to Powder Flow Setting for an explanation.

## Controller Configuration

During power up or wake up from disable, press and hold the + and - buttons on the kV/μA panel for 1 second. When the kV/μA panel displays **F - 1** for function 1 the controller is in configuration mode.

To change functions, press the Plus or Minus buttons on the kV/μA panel. To change function values press the Plus or Minus buttons on the Flow Air panel. To save your settings and exit Configuration Mode, press the Enable/Disable button.

Function No.	Name	Settings	Default
1	Gun Type	0 = Encore	0
2	Fluidizing	0 = Hopper, 1 = Box, 3 = Disable	0
3	Electrostatic Control	0 = Custom, 1 = Classic, 2 = PE	0
4	Powder Flow Control	0 = Smart, 1 = Classic	0
5	Cable Length	0 = 6 meters, 1 = 12 meters, 2 = 18 meters	0
6	Vibratory Box Delay	on, 0–90 seconds	30

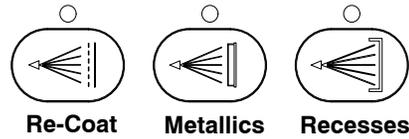
# Electrostatic Settings

## Select Charge® Mode

The Select Charge modes are non-adjustable electrostatic settings. The LEDs above the Select Charge mode buttons indicate the selected mode.

The Select Charge Modes and electrostatic setpoints are:

Re-Coat:	100 kV, 15 $\mu$ A
Metallics:	50 kV, 50 $\mu$ A
Deep Recesses:	100 kV, 60 $\mu$ A



**NOTE:** If you press the STD/AFC selection button while using a Select Charge mode, the controller switches to STD or AFC mode. Pressing the + or - keys have no effect in Select Charge Mode.

## Custom Electrostatic Mode

Custom Mode is the default electrostatic mode. In Custom mode, both kV and  $\mu$ A can be adjusted independently. Both the STD and AFC LEDs light when this mode is configured.

Use the View button  to toggle the display between kV and  $\mu$ A.

Use the + and - buttons to select the desired setpoint. The longer a button is pressed the faster the units change.

- The valid STD (kV) range is 0 or 25–100 kV.
- The valid AFC ( $\mu$ A) range is 5–100  $\mu$ A.

## Classic Electrostatic Mode

**Classic Mode** is the optional electrostatic mode. The controller must be configured to use this mode. Refer to your system manual.

In Classic mode you can choose to control kV (STD) output or  $\mu$ A (AFC) output, but not both at the same time. AFC allows you to set a top limit for current output. As current output increases, kV output decreases.

Press the STD/AFC button  to toggle between STD and AFC mode.

Press the View button  to toggle the display between kV and  $\mu$ A.

Press the + or - buttons to select the desired setpoint. The longer a button is pressed the faster the units change. Valid ranges for kV and  $\mu$ A are the same as in Custom Mode.

## Encore LT PE Mode

To configure the controller for the Encore PE system, set function number 3 (Electrostatic Control) to setting 2 (Encore PE).

When the controller function number 3 is set to PE, the electrostatic settings will allow the user to control both kV and  $\mu$ A (custom mode) and they will be able to control the  $\mu$ A setting to values less than 3.0 $\mu$ A in 0.1 $\mu$ A increments.

# Powder Flow Settings

**Smart Flow Mode** – This is the factory default mode. In this mode, you set the Total Flow rate and the Flow Air %. If you decrease the flow air %, the flow air pressure decreases, but the atomizing air pressure increases, so that the result is that the powder velocity remains the same. The Smart Flow LED lights when the controller is configured for Smart Flow mode.

**Classic Flow Mode** – This is the standard method of setting powder flow and velocity, by setting flow and atomizing air percentages separately and balancing them manually for optimum results. When the controller is configured for Classic Flow mode, the Smart Flow LED is off.

## Smart Flow Mode

 The Smart Flow LED lights when the controller is configured for Smart Flow mode.

 sets the powder flow rate (Flow Air %).

 sets the powder velocity (Total Flow).

Setting values for both are 0–99%.

Press the + and – buttons to select the desired setpoint. The longer a button is pressed the faster the units change.

Set Total Flow first to obtain the desired pattern size and velocity, then set Flow Air % for the desired powder flow.

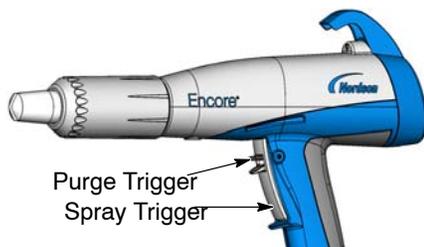
## System Operation

**NOTE:** Allow powder in the feed hopper to fluidize for several minutes before spraying powder.

**Spraying Powder:** Point the spray gun into the booth and pull the spray trigger.

**Purging the Gun:** Release the spray trigger and press down on the purge trigger. Pump air and electrostatic voltage turn off and **P** appears on the displays.

**Electrode air wash air** turns on and off automatically as the gun is triggered. The air flow prevents powder from collecting on the electrode.



**NOTE:** If either Total Flow or Flow Air are set to 0% then the controller cannot output any air when triggered and no powder is pumped.

## Classic Flow Mode

To use Classic Flow mode, the controller must be configured for it. Refer to your system manual for configuration settings.

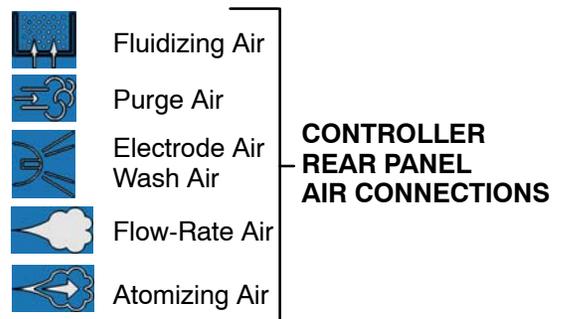
 sets the flow air pressure as a percentage of maximum pressure.

 sets the atomizing air pressure as a percentage of maximum pressure.

Setting values for both are 0–99% of maximum air pressure. Press the + and – buttons to select the desired setpoint. The longer a button is pressed the faster the units change.

The box feeder **vibrator motor** turns on when the gun is triggered on. When the gun is turned off the vibrator motor stays on for a set period of time (0–90 seconds, factory default is 30) to prevent rapid on-off cycling of the motor during production.

**Fluidizing air** for box feeders turns on when the gun is triggered. Feed hopper fluidizing air turns on when the controller is turned on and remains on until the power is turned off. Adjust the fluidizing air flow with the needle valve on the rear panel of the controller. The powder should boil gently.



## Maintenance

Clean the spray gun nozzle and powder path, and pump nozzle and venturi throat, in an ultrasonic cleaning machine, using Oakite® BetaSolv or an equivalent emulsion cleaning solution. Rinse with clean water and dry before re-installing.

Do not immerse the spray gun electrode assembly in the cleaning solution or rinse. Remove all O-rings before cleaning. Do not allow the O-rings to come in contact with the cleaning solution. Refer to your system manual for more information.

# Troubleshooting

Refer to your system manual for more troubleshooting procedures, resistance checks, and continuity checks.

Problem	Possible Cause	Corrective Action
<b>1. Gun not spraying powder, Trigger LED blinking</b>	Gun triggered while controller powering up or waking up, or shorted trigger switch or cable	Release the spray trigger. Press the Disable/Enable button to put the controller to sleep, then press it again to wake it up. Check the cable and trigger switch.
<b>2. Powder not charging, kV/<math>\mu</math>A display blinking</b>	Gun is shorted	Check gun cable and power supply. Refer to your system manual.
<b>3. Uneven pattern, unsteady or inadequate powder flow</b>	Blockage in spray gun, powder feed hose, or pump	Purge the gun. Check the feed hose and pump.
	Nozzle, deflector, or electrode assembly worn	Remove, clean, and replace as necessary.
	Low pump air pressure	Increase pump air setpoints.
	Low fluidizing air pressure	Increase air pressure.
	Damp powder	Check powder supply.
<b>4. Voids in powder pattern</b>	Worn nozzle or deflector	Remove and replace if necessary.
	Plugged electrode assembly or powder path in gun	Remove and clean.
<b>5. Low powder flow or surging</b>	Low supply air pressure	Input air must be greater than 4.1 bar (60 psi).
	Pump throat worn	Check and replace if necessary.
	Pickup tube blocked	Check and clean if necessary.
	Fluidizing air not adjusted correctly	Check and adjust.
	Powder hose plugged, kinked, or ID too small for length	Check hose. If longer than 20 ft, use 1/2 in. ID hose.
	Regulator on controller manifold plugged or malfunctioning	Remove tubing at controller and check air flow. Replace regulator if necessary.
<b>6. Loss of wrap, poor transfer efficiency</b>	Low electrostatic voltage	Increase voltage setpoint.
	Poor electrode connection	Remove and clean. Check electrode and gun power supply.
	Poorly grounded parts	Check part grounds. Resistance to ground should be less than 1 m $\Omega$ .
<b>7. Powder build up on electrode</b>	Insufficient air wash air	Remove air wash connector from rear panel. Check orifice for blockage and clean if necessary.
<b>8. No kV output from gun</b>	Damaged gun cable or gun power supply	Check cable and power supply.
<b>9. No kV and powder output from gun or no purge air</b>	Malfunctioning trigger switch or cable	Check Trigger LED. Check trigger switch and cable.
<b>10. More than one key on the keypad quits working when pressed</b>	Flex connection from the keypad to the main board is not seated properly	Loosen and re-seat the flex circuit on the main board, making sure the ribbon cable is fully inserted into the J8 connector. See operator's manual for more information.

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