

Nordson Automated Triggering System

Automatic triggering system controls rotary atomizer and spray gun trigger points.

The Nordson Automated Triggering System (ATS) provides effective control of rotary atomizer and spray-gun trigger points in automated finishing systems. Precise control of spray-device triggering can substantially reduce paint waste and clean-up costs by spraying only when parts are within range of the spray devices. The system can control triggering of up to four spray devices in up to two spray stations.

The Automated Triggering System includes an operator interface, PLC controller, one or two photo cells (depending on spray line configuration), and a conveyor encoder. Two photo cells cover two different vertical zones, allowing for a wide variety of part and conveyor arrangements. The operator enters trigger points and delay on/delay off times in the operator interface terminal. As parts pass through the photo cells, a signal is sent to the PLC, which triggers the spray devices on as the leading edge of the part approaches the spray devices. The spray devices trigger off as the trailing edge of the part passes the spray devices.

When used with rotary atomizers, the system controls paint triggering, solvent cleaning burst, pre-burst



of paint after solvent flush and high-voltage

triggering. All are easily adjusted through the operator-interface keypad. Adjustability of triggering points is critical when coating non-standard parts and multiple-part configurations.

For paint systems with more than four spray devices, additional control stations can be added. The control stations are connected in series, and do not require additional encoders or photo cells.

System timing is maintained with a conveyor encoder. A typical encoder setting which sends a pulse to the PLC for every inch of conveyor travel will accommodate line speeds of up to 50 feet per minute. This feature maintains proper trigger points

regardless of changes in line speeds. The resolution of the encoder can be adjusted to provide more or less distance between pulses to accommodate varying production requirements.

The system can provide up to two vertical zones when spray devices are mounted on oscillators or reciprocators. The vertical zoning feature triggers spray devices in the appropriate zones when spray devices move above and below parts. Photo cells turn spray devices on and off, depending on part size and conveyor configuration. Vertical zoning further reduces paint waste by minimizing heavy film builds at the top and bottom edges of parts.

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■ **Modular system configuration** interfaces with other paint-system components such as paint-heater controllers, fire-detection systems, motor start/stop unit and color-change unit.



Optional Features

- Remote-emergency-stop button allows operator to stop the line from a remote location.
- Motor start/stop unit and switch for oscillator or reciprocator.
- Up to two proximity switches for vertical zoning with spray-device movers.

System Specifications

Size: 20" H x 20" W x 8" D

Input Voltage: 120/240 VAC, 50/60 Hz

Inputs: Conveyor encoder input with up to two photo cells

Outputs: Four paint trigger solenoids, four solvent trigger solenoids and power supply outputs for up to two booths.

Display: LCD, 40 character display

Operator Settings: Via 20-key membrane-type keypad

Photocell Type: Retro-reflective with polarized filter

Encoder: Explosion-proof

Pulses Per Revolution: 10

The information in this brochure is representative of a typical system. Other options are available to tailor equipment design to specific application requirements.

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When spray devices are mounted on oscillators or reciprocators, vertical zoning is accomplished with a proximity switch, located on the spray device mover. The proximity switch activates at the bottom of the vertical stroke, and a time delay triggers spray devices at operator-selected set points. The system can control triggering with up to two device movers.

The ATS features a built-in eeprom (electrically erasable, programmable, read-only memory), which maintains program settings in the event of a power failure. Although the central processing unit is pre-programmed, the system allows the operator to easily make set-point changes. However, access can be limited to any number of menu options through the use of a password.

Features and Benefits

- **Automatic control of spray-device trigger points** for paint savings and a cleaner operation.
- **Controls spray guns and rotary atomizers** for enhanced production flexibility.
- **Standard system programming** accommodates a wide range of production requirements.
- **Conveyor encoder resolution can be adjusted** to meet varying system layouts.
- **Password access to selected programs** prevents unauthorized changes to programming.
- **Built-in eeprom memory** preserves set-points in the event of a power failure.
- **High-voltage test switch** permits voltage-level monitoring when the system is not in use.
- **Front-panel on/off switches** for easy operator access.

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