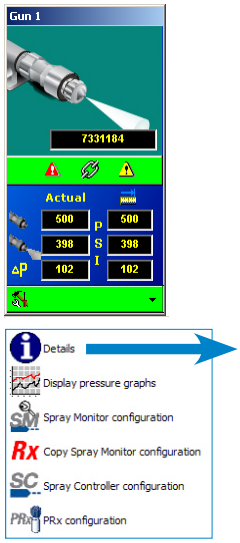
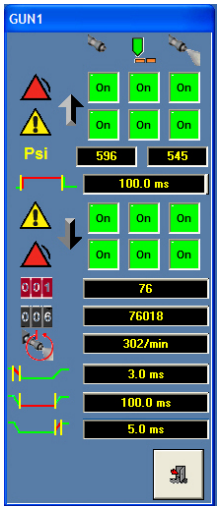
iTrax® Spray Monitor (SM) Module

Automatic, real-time process monitoring of critical operating parameters during can coating operations.





Spray pressure variations and worn or partially clogged nozzles result in variable spray weights and inconsistent quality. If undetected during production, these problems can quickly add up to significant waste in both material costs and production time.

Automatic, Real-time Process Monitoring

The iTrax® Spray Monitor (SM) module automatically monitors important operating parameters inside the spray gun, including base pressure, spray pressure, spray duration, spray count, spray rate and gun open and close time. The unit watches these parameters for each and every can.

If any parameter falls outside a pre-selected operating range, the Spray Monitor alerts the operator. Because a single “bad” product is detected immediately at the spray machine, scrap production is greatly reduced. Effects of wearing parts are detected as they occur, before bad product is made, making the Spray Monitor a valuable tool in a preventive maintenance program. Plus, reminder messages can be coordinated with a cycle counter to notify personnel of required maintenance on the spray gun, nozzle, pump, etc., after a selected period of operation.

The Spray Monitor also identifies guns spraying too much or too little coating to ensure the proper amount of coating is applied. It enables operation at the lower end of the spray weight requirement, while still maintaining proper quality. Can manufacturers have found this capability to be an integral part of the necessary Best Practices required for increasing productivity and production quality.

Features and Benefits

- Monitors coating flow through the spray gun and nozzle, automatically alerting the operator of significant changes that may occur outside of a selected operating range
  - Monitored parameters include base pressure, spray pressure, spray duration, spray count, spray rate and gun open and close time
- Relay contacts are provided to automatically shut-down the spray machine if a single “bad” can is detected
- Can-In-Pocket (CIP) feature uses a customer-supplied proximity sensor to verify that a can is in the spray pocket before the spray gun fires, ensuring a timer signal is received for every can that is detected
- Can counter maintains an ongoing record of the number of cycles per gun
- Optional PC interface monitors multiple spray guns from a centralized location
- Easy-to-use help screen assists with troubleshooting of the hydraulic system

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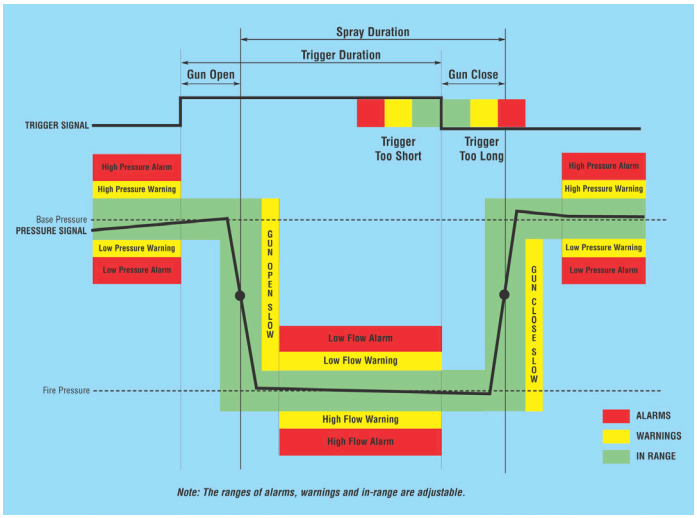
How it Works

The Spray Monitor uses an embedded Digital Signal Processor (DSP) for high-speed monitoring of the spray process. By sampling data at up to 500,000 times per second, it keeps a virtual eye on production quality. Any significant change in pressure or flow at the spray gun will trigger a fault condition.

Depending upon the severity of the fault, either a warning or an alarm relay is activated. The warning may turn on a beacon light, for example, and the alarm switch may stop the spray machine. The operator may then view the iTrax display that identifies the fault condition (Low Flow, for example), and then correct (or resolve) it.

And just as importantly, the iTrax spray monitor records corrective action taken. Operators choose from an illustrated list representing corrective measures and click the actions taken. This provides a history of corrective action, which is a valuable tool for future trouble-shooting and preventive maintenance.



Specifications

Power Requirements	24 Vdc +4/-2 @ 2.5 plus external loads
iTrax Network Communications	CAN 2.0 with proprietary iTrax protocol Maximum Network Length: 200 ft
Physical	Height: 1.50 in (38 mm) Width: 4.00 in (102 mm) Depth: 7.25 in (184 mm) Weight: 1.13 lbs (0.51 kg)
Environmental Operating Conditions	Max. Ambient Temperature: 104 °F (40 °C)

User Interface

LED Indicator TRIG	Green for timer input status (or Yellow when using optional CIP feature)
LED Indicator WARN	Yellow for warning
LED Indicator ALARM	Red for alarm
Power On/Off Switch	Green LED indicator

Outputs

Alarm Relay Contacts	Normally Open and Normally Closed contacts 30 Vdc @ 5A
Warning Relay Contacts	Normally Open and Normally Closed contacts 30 Vdc @ 5A
Spray Duration Output	Optically isolated sourcing input Software configurable hi/lo true

Inputs

Timer Input	Jumper configurable for sinking or sourcing input signal. Software configurable hi/lo true.
Can-In-Pocket	Jumper configurable for sinking or sourcing proximity switches*. Software configurable hi/lo true.

Pressure Sensor (not included with SM)

Input	1 to 4 Vdc with 2.5V common-mode voltage
Output	24 Vdc +/- 6V sensor excitation

** Note: Requires customer supplied sensor*

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