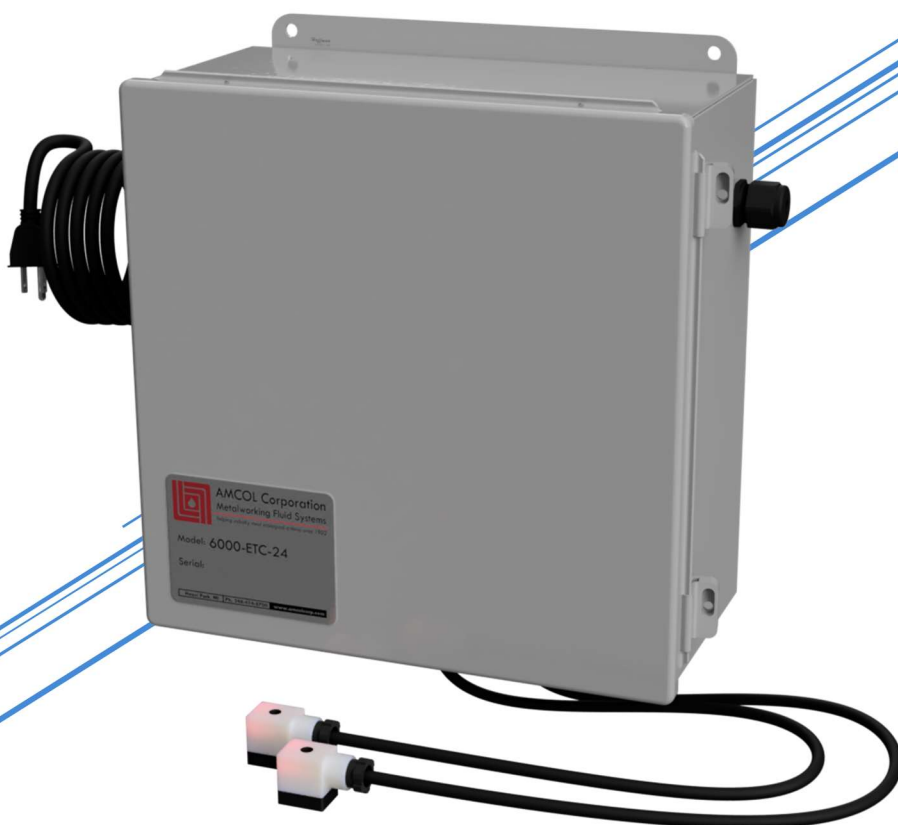




AMCOL CORPORATION 6000-ETC ELECTRONIC TIMING CONTROLLER

Technical Description



Contents

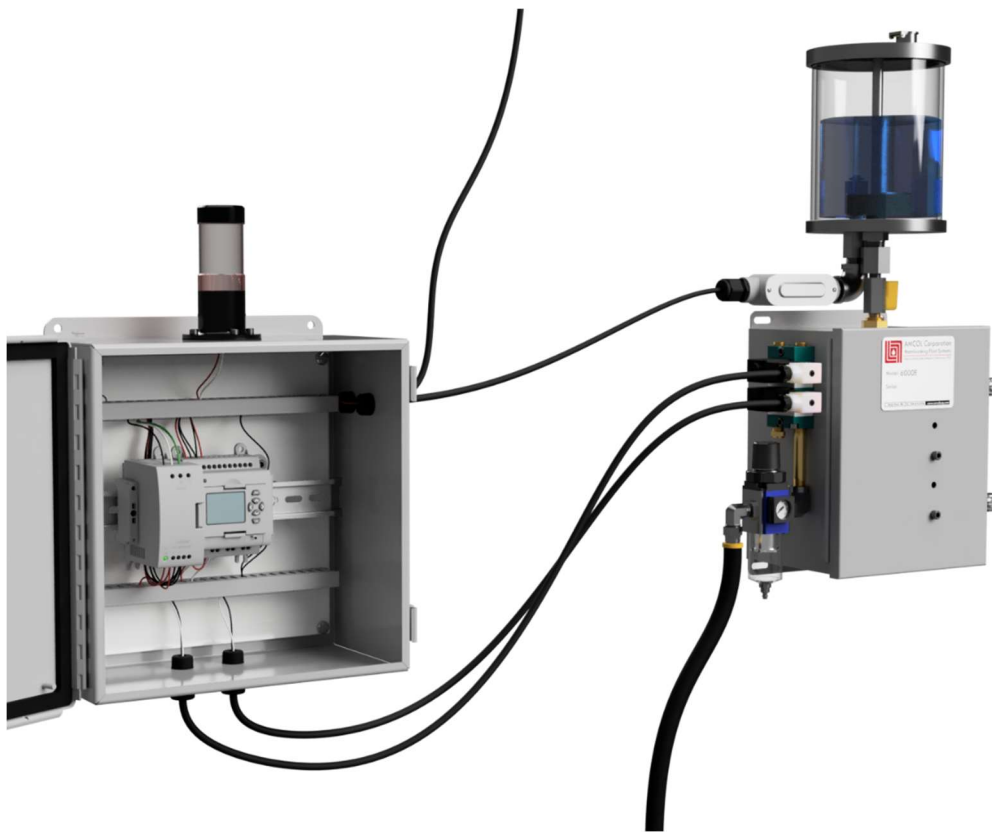
1 Introduction	2
2 System Overview	3
3 Description of Components.....	4
4 System in Detail	5
5 How to Order	6
6 Additional Information.....	7



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1 Introduction



The AMCOL 6000E Series Precision Applicator is available with a two-solenoid valve configuration where Dispersing Air Pressure is controlled separately from the Injection Pulse Rate. This configuration is an alternative to the more commonly used single solenoid valve systems where injection rate is controlled with an integral air timer (also known as a Pulse Frequency Generator).

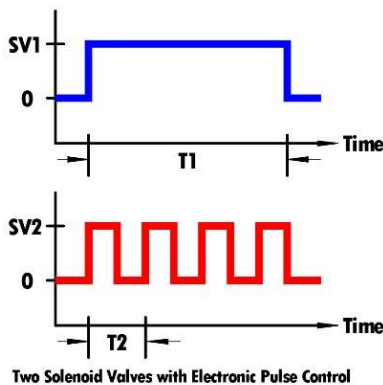
The concept and option for electronic control of injection rate is not new, but is quickly gaining popularity. By replacing the air operated timer with electronic control of injection rate, the result is precise, repeatable, and easily adjustable lubricant output volumes.

In many situations, the electronic control of pulse rate comes from the machine PLC. Reprogramming a PLC and installing additional hard wiring for the two-solenoid configuration is not always easy or efficient. To solve this problem, AMCOL has created a simple package to control a dual solenoid 6000E system with a single control signal.

2 System Overview

The 6000-ETC is an electronic controller with a built-in PLC, designed specifically to control AMCOL 6000E Precision Lubrication Systems. This option allows you to have the benefit of electronic timing without the technical resources.

The 6000-ETC Controller gives you the ability to quickly and accurately increase or decrease injection pulse frequency at the push of a button. With traditional air pulse frequency generator systems, this value cannot be set consistently and accurately. Using the ETC controller, the injection pulse rate is set digitally, which allows for a consistent and repeatable spray volume.



When the 6000-ETC receives a signal from your machine controls (24VDC or 110VAC), it begins cycling, and continues to cycle until the signal is removed. The ETC uses two output signals to control the dual solenoids on a 6000E. The first output controls the Dispersing Air Solenoid Valve (SV1). This valve will be open during the complete spray cycle (T1). The second output controls the Injection Pulse Rate Solenoid Valve (SV2). This is a timed, intermittent signal which opens and closes SV2 at a rate set by the operator (T2).

When used in combination with a 6000-ETC, a 6000E series applicator can provide an accurate and repeatable coating in a complete package without any of the hassle of reprogramming or rewiring for a dual solenoid system.

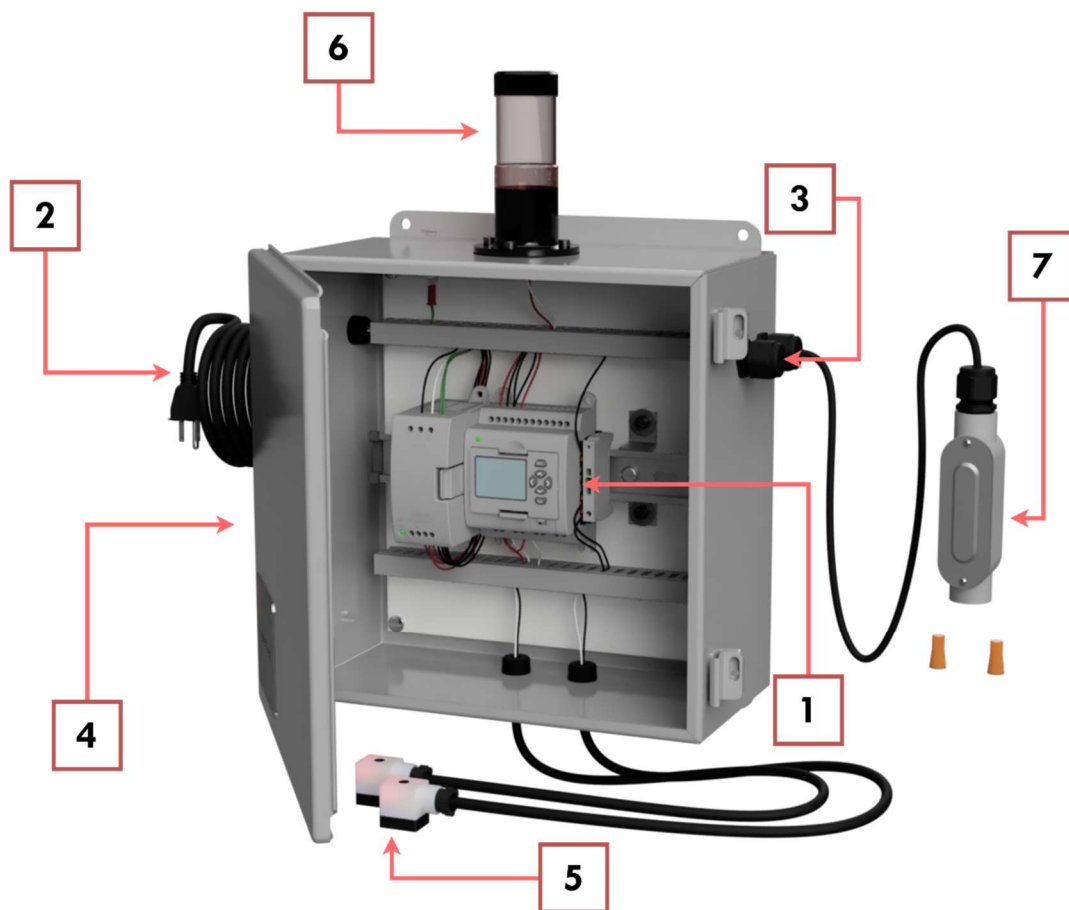
3 Description of Components

Each 6000-ETC comes standard with the following components:

1. Preprogrammed Allen Bradley PLC
2. 6' grounded power cord with plug
3. Open cable gland to insert the machine PLC control output
4. NEMA 12/13 sealed steel electrical enclosure
5. Solenoid caps prewired for quick connection to MAC 100 Series valves

As an optional addition:

6. Light for connection with a low-level indicator. (6000E must have LLI option)
7. Sealed conduit connection for reservoir with LLI.



4 System in Detail

The 6000-ETC has two operating modes: automatic and manual.

Automatic mode uses a control signal from the PLC or machine output to operate the system. Manual mode allows for temporary operation without an electrical connection for setup, maintenance, and troubleshooting.

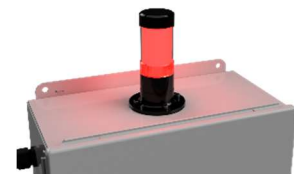


During either mode, pressing the up or down buttons on the PLC will increase or decrease the cycle time of the T60A Pump in 100ms increments (10 cycles per second maximum). Both the system status and the current cycle time are displayed directly on an LCD screen on the PLC inside the ETC.

The ETC includes lighted solenoid caps, allowing for easy visual confirmation that the solenoids on the 6000E are operating correctly.

An optional low-level indicator light activates when the reservoir on the 6000E system is low, if the reservoir is equipped with a low-level switch. This ensures the 6000E system never runs dry.

This controller is made to operate with standard AMCOL 6000E precision applicator systems. For more information about the 6000E precision applicator, see the 6000E Technical Description. Additionally, dual solenoid controls can also be retrofitted to older model single air source systems.

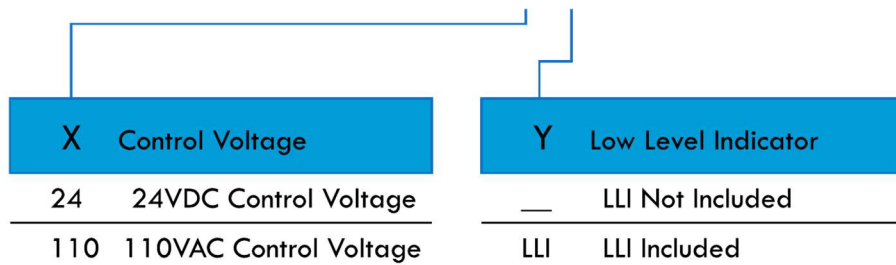


5 How to Order

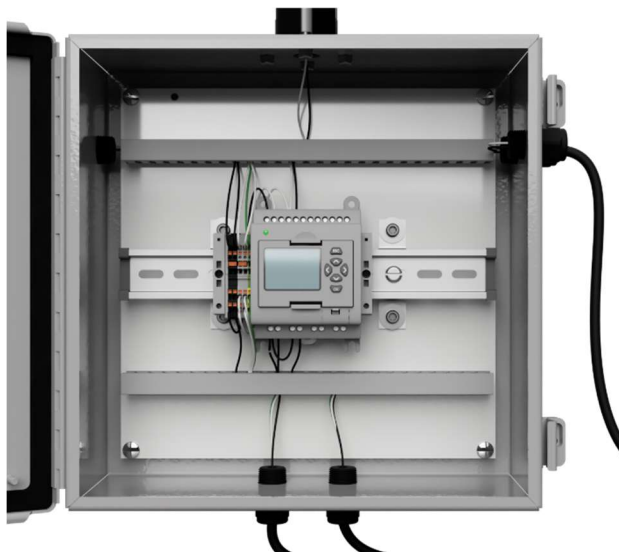
Control Voltage specifies the signal voltage coming from your machine or PLC output.

Low-Level Indicator specifies whether the system will include components for a low-level indicator light.

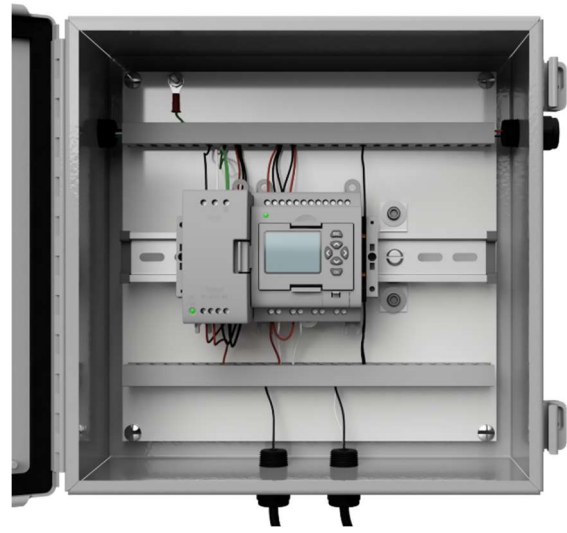
6000-ETC-X-Y



Sample Systems:



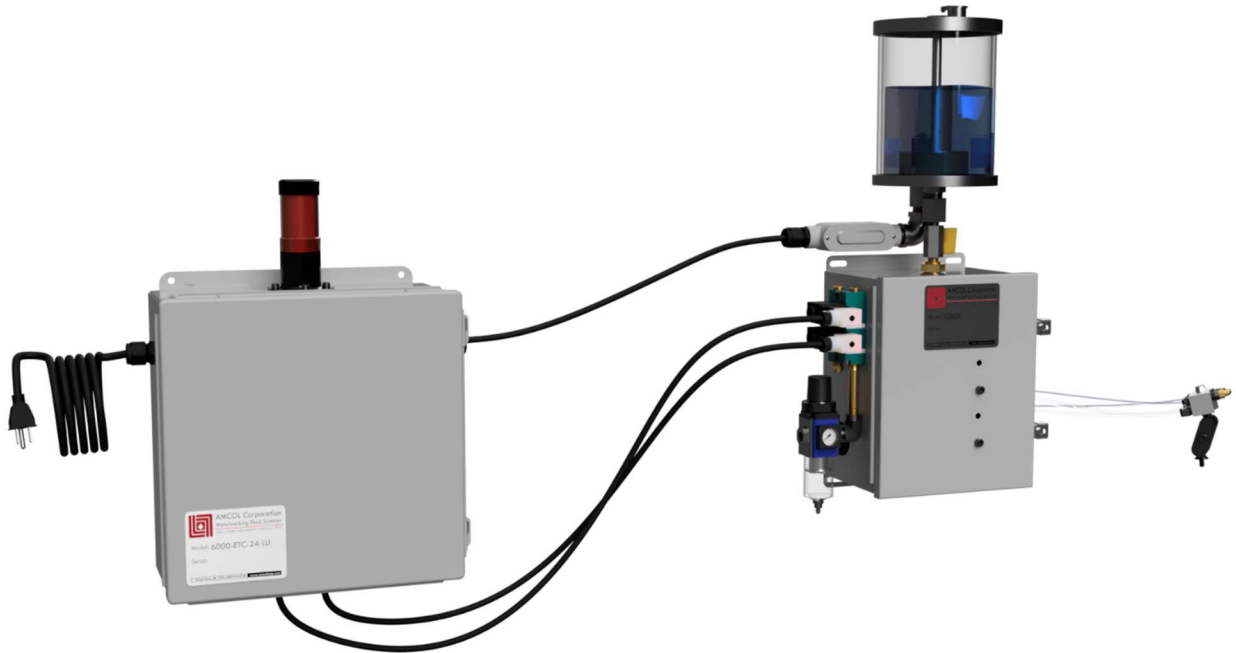
6000-ETC-110-LLI



6000-ETC-24

6 Additional Information

For information regarding installation, operation, and maintenance please refer to the AMCOL 6000-ETC Operator's Manual.



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