

PLC-Based Liquid Level & Flow Control Training | Multimedia Courseware

PLC-Based Liquid Level and Flow Control - WX40084-AA01XEN-E1

Objective 1: Describe the Operation of a CompactLogix PLC-Based On/Off Liquid Level Control System with Discrete Inputs

PLC-Based On/Off Control

PLC-based on/off control is a **closed-loop** control method used in process control applications to maintain a **process variable** within a specified operating range.

The **PLC** in simple on/off processes uses discrete input switches or **sensors** to monitor the high and low limits of the controlled variable. An example is the on/off liquid level process shown.

The diagram illustrates a PLC-based on/off liquid level control system. It features a tank with a pump, a PLC, an HMI, and two level switches (High-Level and Low-Level). The HMI has buttons for 'STOP', 'CLOSE VALVE', and 'START'. The PLC is connected to the tank and the switches. A green light is shown on the left, and a warning symbol is on the right.

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eLearning System: M40082

Amatrol's PLC Process Control eLearning for the Allen-Bradley CompactLogix L32 covers PLC-based level/flow control topics like On/Off Control, Open Loop Control, Closed Loop Control, Closed Loop Performance, and Trend View and Tuning. This PLC-Based Liquid Level and Flow Control multimedia training course references Amatrol's PLC Process Control Learning System for Allen-Bradley CompactLogix L32 PLC ([99-PCAB53](#)).

Interactive eLearning

What Control are Used in PLC-Based Liquid Level and Flow Control?

PLC-based on/off control is a closed loop control method used in process control applications to maintain a process variable within a specified operating range. In the simplest on/off process control applications, the controller uses discrete input switches or sensors to monitor the high and low limits of the controlled variable. Two level switches are positioned at high- and low-level limits. The control circuit maintains the level between the level limits and not at a specific setpoint. The PLC uses the status of the input switches in the program logic to turn an output device on and off to control the process.

The upper limit is the cutoff, and the lower limit is the reset. The region between the two limits is called the deadband because the PLC output does not change state in that region. Sometimes, the cutoff and reset values are set by physically moving the low-level and high-level switches in the tank. In some cases, the switch positions are fixed and the cutoff and reset values cannot be changed.

Multimedia Curriculum Features for PLC Process Control eLearning | Allen-Bradley CompactLogix L32 PLC

Amatrol's peerless interactive [multimedia](#) curriculum utilizes text with voiceovers, pictures, videos, stunning 3D animations, and interactive quizzes and reviews that engage learners in theoretical knowledge and concepts. This thorough, detailed curriculum begins with the basics and advances to complex concepts. Through partnerships

with key industry leaders and leading educators, Amatrol developed the right balance of knowledge to train learners to work in their chosen field.

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Free Learning Management System (LMS)

Amatrol eLearning is easy-to-use for both students and instructors. Its web-based interface is simple to navigate and available on any WebGL-compatible Internet browser. Instructors love Amatrol eLearning for its simple, yet sophisticated Learning Management System (LMS). The LMS allows instructors to create custom courses, monitor student participation, track course progress, assess knowledge levels prior to a course, and test knowledge levels after completion. Learners appreciate the fact that they can start and stop as needed, moving through each Amatrol course at their own pace. If a self-review reveals that they didn't understand a particular topic as well as they thought they did, they can revisit it before moving on.

Additional Info

Requires:

- Computer (see [Computer Requirements](#))
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