

# Programmable Logic Controller Labs

## Safety and Orientation

Syllabus

1 Lab 1-1 Safety

## PLC Hardware

2 Lab 2-1 PLC Hardware  
Lab 2-2 PLC Industrial Trainer

## PLC Programming Software

3 Lab 3-1 RSLOGIX Programming Software  
4 Lab 3-2 Programming With Symbols

## Number Systems

5 Lab 4-1 PLC Files and Number Systems

## Decoder/Encoder Applications

6 Lab 5-1 PLC Logic Gates  
7 Lab 5-2 BCD Thumbwheel Switch  
8 Lab 5-3 Binary to Decimal Decoder  
9 Lab 5-4 Seven Segment Decoder Driver  
10 Lab 5-5 Disney World Ride

## Controlling Pneumatic Applications

11 Lab 6 Program 6-1  
12 Program 6-2  
13 Program 6-3  
14 Program 6-4  
15 Program 6-5

## Sensor Applications

16 Lab 7-1 Proximity Sensors  
17 Lab 7-2 Photo Sensors

## PLC Timer Applications

18 Lab 8-1 Types of PLC Timers  
19 Lab 8-2 Timer Dwell Applications - Dbl Solenoid  
20 Timer Dwell Applications - Single Solenoid  
21 Lab 8-3 Generating Timing Pulses -two TON timers  
22 Generating Timing Pulses -TOF One-Shot  
23 Lab 8-4 Clocks & System Timers - TON Clock  
24 Clocks & System Timers - System Clock  
25 Lab 8-5 Anti-Tie Down Press Application  
26 Lab 8-6 Time Driven Sequence  
27 Lab 8-7 Fault Detection Timer

## **PLC Counter Applications**

28	Lab 9-1	PLC Counters - Up Counter
29		PLC Counters - Down Counter
30	Lab 9-2	Cascading Counters
31	Lab 9-3	Thirty Day Clock
32	Lab 9-4	Counting Machine Cycles

## **Data manipulation Applications**

33	Lab 10-1	Load a Counter with the Thumbwheel Switch
34	Lab 10-2	Load a Timer with a Pushbutton Switch
35	Lab 10-3	Loading Two Timers
36	Lab 10-4	Equal and Limit Test

## **Math Instruction Applications**

37	Lab 11-1	Parts Inspection
38	Lab 11-2	Scaling
39	Lab 11-3	BCD to Binary Conversion

## **Program Control Applications**

40	Lab 12-1	Master Control Reset (MCR)
41	Lab 12-2	Jumps
42	Lab 12-3	Subroutines

## **Rung Sequencing Applications**

43	Lab 13-1	Single Cycle Rung Sequencing- Sequence 1
44		Single Cycle Rung Sequencing - Sequence 2
45	Lab 13-2	Continuous Cycle Rung Sequencing - Sequence 3
46		Continuous Cycle Rung Sequencing - Sequence 4
47	Lab 13-3	Indirect Addressing Rung Sequencing - Sequence 5

## **Sequencer Instruction Applications**

48	Lab 14-1	Output Sequencers - SQO
49	Lab 14-2	Input Sequencers - SQO & SQC

## **File Applications**

50	Lab 15-1	Mixing Paints
51	Lab 15-2	File Copy
52	Lab 15-3	File Fill
53	Lab 15-4	Shift Registers
54	Lab 15-5	FIFO & LIFO

## **Troubleshooting**

55	Lab 16-1	Force Commands
56	Lab 16-2	Histograms
57	Lab 16-3	Temporary End
58	Lab 16-4	Status Files
59	Lab 16-5	Suspend Instruction
60	Lab 16-6	Trends