

PLCs and the Bytronic Industrial Control Trainer

Introduction

These exercises are based around the Industrial Control Trainer 3 and Unitronics V350-35-R34 PLC. The exercises are setup to increase in complexity and build on previous work. Upon completion of the sequence a fully featured control program should be achieved. Your solutions to each lab should be demonstrated to the lab TA at the assigned dates on the website.

Creating the PLC programs will be done in the VisiLogic OPLC IDE software suite. To launch this program go to Start Menu > View all Programs > Unitronics > VisiLogic > Visilogic.

In order to create a new project, you must open the Visilogic OPLC IDE software program and Click Project > New... . Select the V350-35-R34 snap-in I/O module and configure the Inputs and Outputs as shown in the table below. Your programs will be written in ladder logic in the Main Routine. Review of ladder logic structure and elements is recommended.

I/O Setup

PLC inputs and outputs are addressed as 'I'x and 'O'x respectively.

PLC Inputs	Function
I 0	Reject Area - Solenoid Return Inductive Sensor
I 1	Assembly Area - Inductive Sensor
I 2	Start Button
I 3	Assembly Area - IR Through beam Sensor
I 4	Assembly Area - Hopper IR Reflective Sensor
I 5	Sort Area - Inductive Sensor
I 6	Not used
I 7	Not Used
I 8	Sort Area - Solenoid Return Inductive Sensor
I 9	Stop Button
I 10	Reject Area - IR Reflective Sensor
I 11	Assembly Area - Capacitive Sensor
I 12	Sort Area - IR Reflective Sensor

PLC Outputs	Function
O 0	Belt Conveyor Motor
O 1	Rotary Solenoid
O 2	Chain Conveyor Motor
O 3	Not Used
O 4	Reject Solenoid
O 5	Sort Solenoid