WEINTEK LABS., INC.

PU PWM Inverter

iR-PU01-P PWM output; encoder input

Demo Project

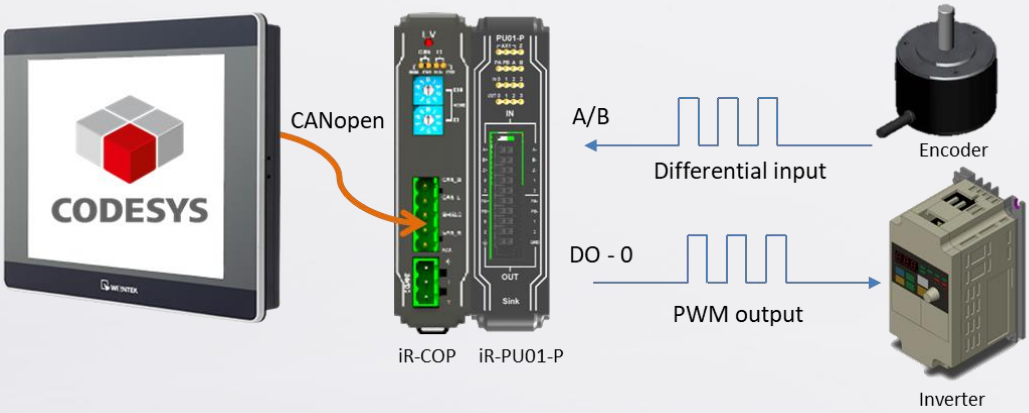
Contents

1. Overview 1
2. Installing Weintek Library 1
3. Configuring PU Module 3
4. Demo Program 4
5. Login and Operation 5

1. Overview

Overview

This demo project explains how to develop a closed-loop control system using an iR-PU01-P, an inverter and an encoder. In this system, iR-PU01-P's DO-0 is used for PWM output to control the inverter to adjust the speed, and iR-PU01-P receives pulse input from the encoder.



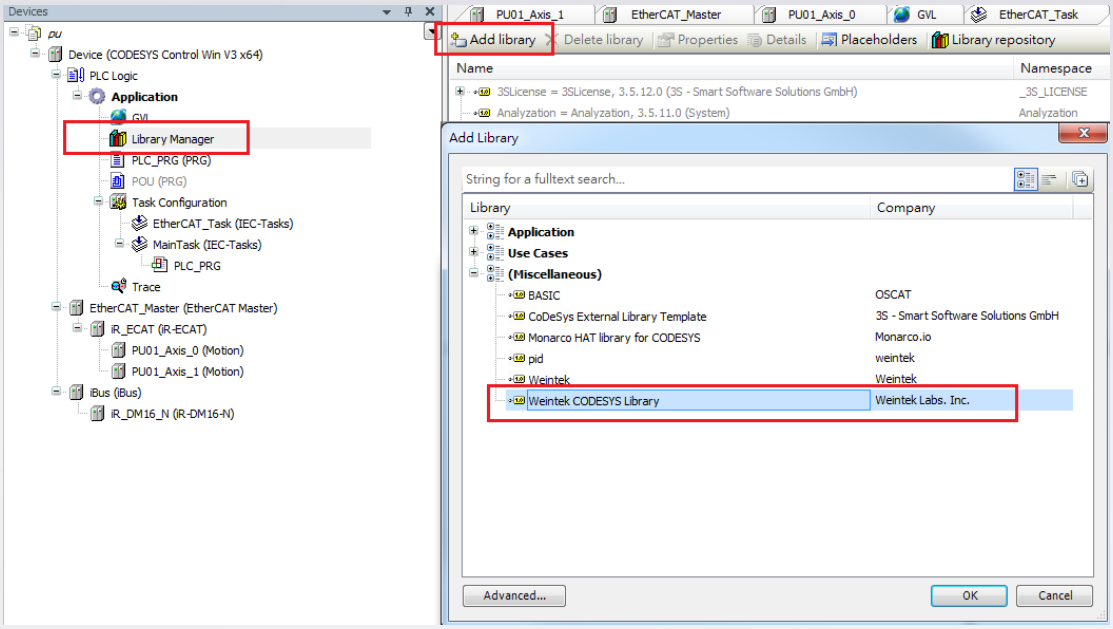
2. Installing Weintek Library

Step 1. Open the download page on Weintek official website and search for [cMT+CODESYS Package] to download and install the package.

https://www.weintek.com/globalw/Download/Download.aspx

(This package contains iR-PU01-P's device description file)

Step 2. Add Weintek CODESYS Library in CODESYS software.

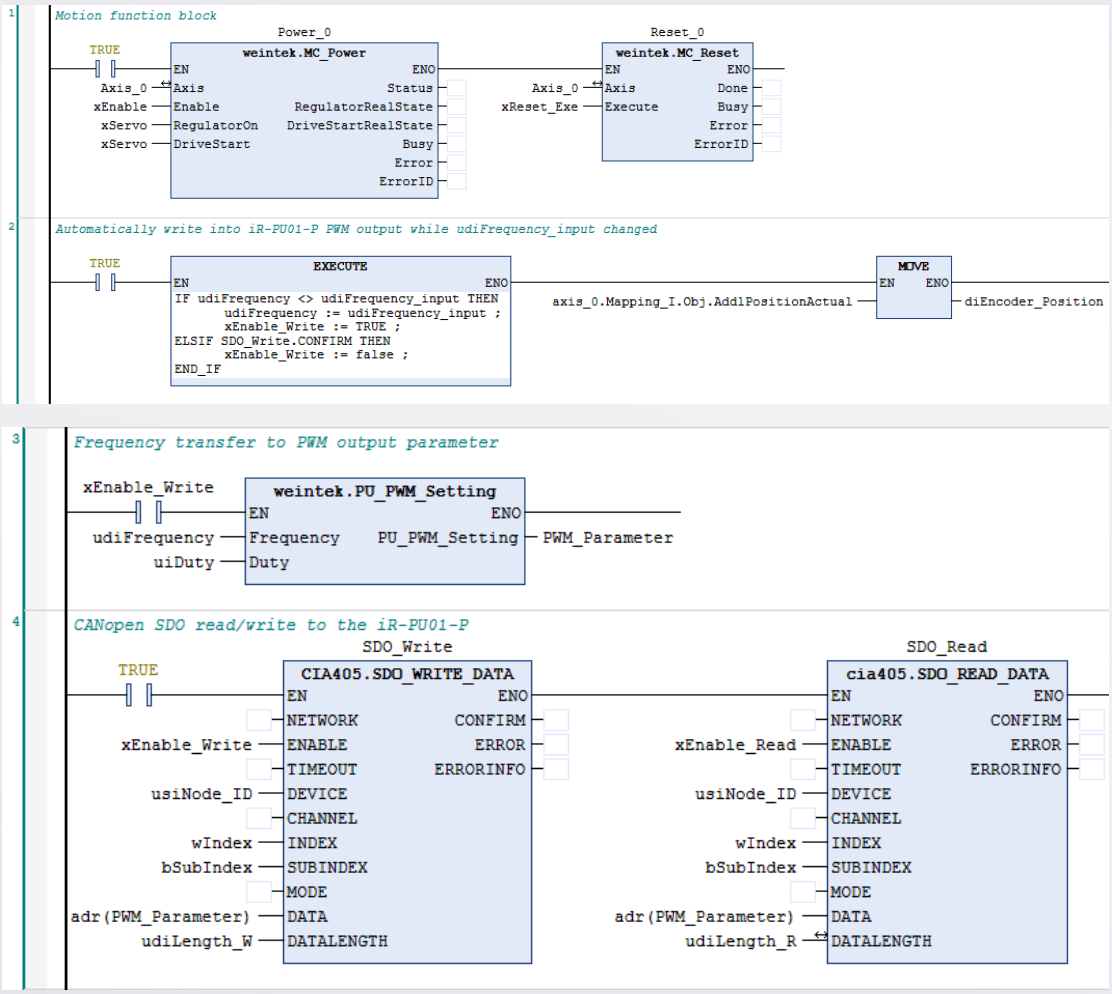


Step 3. Motion Function Block can be used after completing the installation.

3. Configuring PU Module

Parameter	Value	Description
Pulse Input Method	16#16	Set encoder pulse input as a master encoder and the mode is A/B phase (According to encoder specification).
DO 0 Function	16#2	Set DO-0 to PWM output.
PWM Output D0 setting	16#0	Set frequency of PWM output. (Default is 0 and is changeable in the program)
2nd additional position resolution-encoder increments	16#1	Set encoder user units
2nd additional position resolution-motor revolutions	16#1	
2nd additional gear ratio-motor shaft revolutions	16#1	
2nd additional gear ratio-driving shaft revolutions	16#1	
2nd additional feed constant-Feed	16#1	
2nd additional feed constant- driving shaft revolutions	16#1	
2nd additional position modulo range	16#0	Set encoder position modulo range. (Optional)
2nd additional home offset	16#0	Set encoder home offset (Optional)

4. Demo Program



Network 1: The motion control function block. When MC_Power.Status = TRUE, D0 sends PWM output signal.

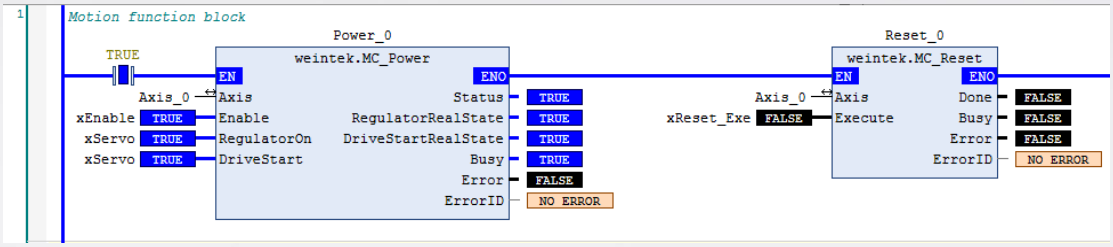
Network 2: When the frequency of PWM output (udiFrequency) is changed, the new frequency is automatically written to iR-PU01-P.

Network 3: Convert PWM output frequency to PWM output parameter for iR-PU01-P's D0.

Network 4: Write / Read PWM output parameter of iR-PU01-P's D0.

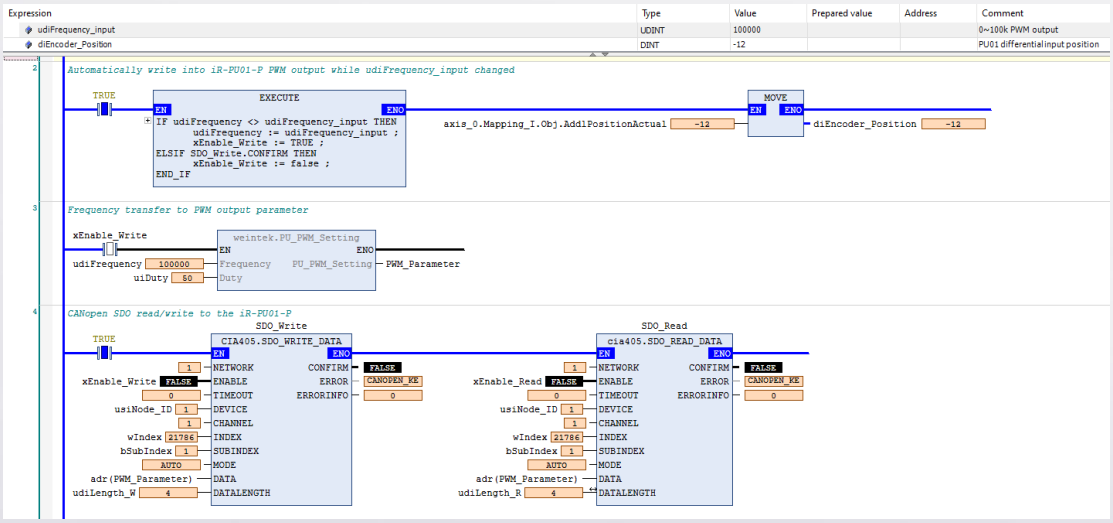
5. Login and Operation

Starting Motion Control System



When xEnable & xServo = TRUE, PWM output signal is sent. When encountering an error in this step, please see information about error codes and execute xReset_Exe to reset.

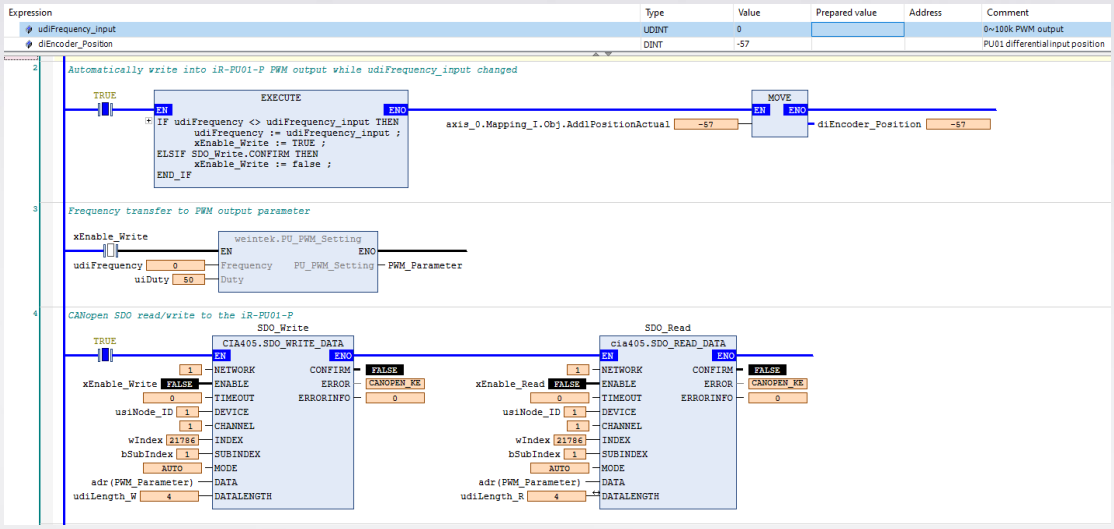
Adjusting PWM Output Frequency



udiFrequency_input can be used to adjust PWM output frequency, and the range is from 20Hz to 100kHz. PWM output frequency immediately changes after the value is input.

When Power_0.Status = TRUE, iR-PU01-P returns Axis_0.Mapping_I.Obj.AddPositionActual to CODESYS.

Stopping PWM Output



To stop sending PWM output signal, the user can set udiFrequency_input to 0.