

WEINTEK LABS., INC.

# iR-PU01-P 24V Simple Counter

## Configuration Steps of iR-PU01-P Simple Counter

Demo Project

**Contents**

- 1. Overview..... 1
- 2. Installing Weintek Library ..... 2
- 3. Counter Parameters ..... 3
- 4. Demo Program ..... 5

## 1. Overview

### Overview

This Demo Project explains how to configure DI-2 for simple counter use, to receive pulse in open collector.

Comparing line driver with open collector on the market, line driver can output pulse at higher frequency, and open collector can output pulse at lower frequency. On an iR-PU01-P module, A and B pins can be used to receive pulse in line driver, and DI-2 can be used to receive pulse in open collector.

By default, iR-PU01-P's DI-2 is used for emergency stop purpose. By changing DI Function, DI-2 can be configured for 24V simple counter use, and Weintek Library's function block can be used to read counter value.

Please note that, only DI-2 can be configured as simple counter, and other pins cannot.

Please see the related demo projects according to the coupler used:

iR-ETN : iR\_Application\_PU\_SimpleCounter\_Demo\_ETN

iR-COP : iR\_Application\_PU\_SimpleCounter\_Demo\_COP

iR-ECAT : iR\_Application\_PU\_SimpleCounter\_Demo\_ECAT

This Demo Project also explains how to design a CODESYS project using counter related function blocks when pulse frequency is lower than 100Hz.

Applicable iR-PU01-P firmware version: V1011 or later.

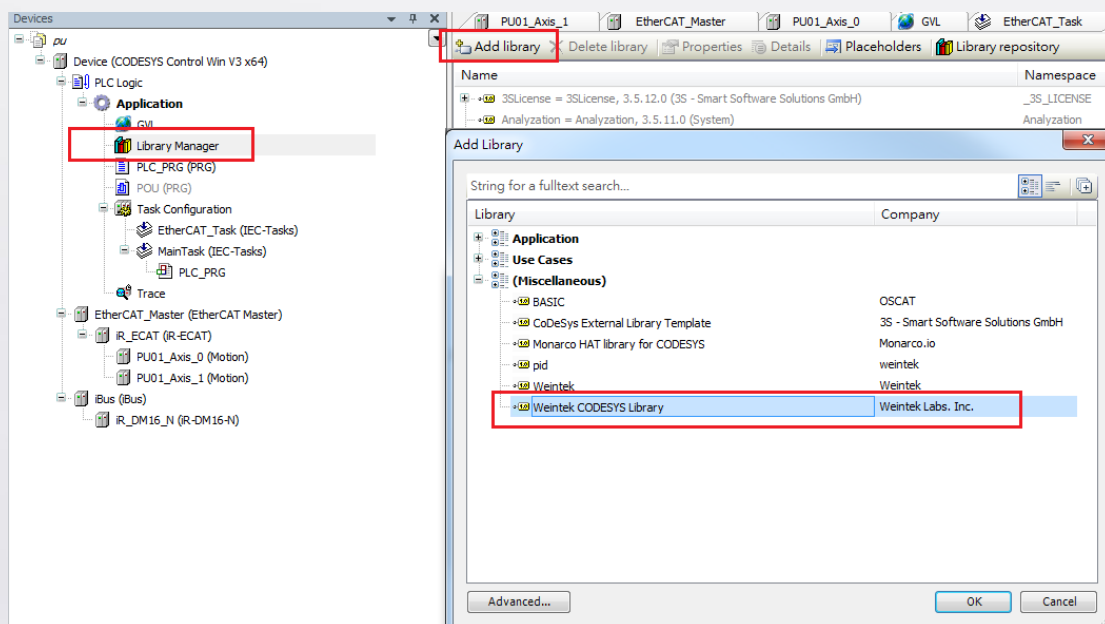
## 2. Installing Weintek Library

**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>

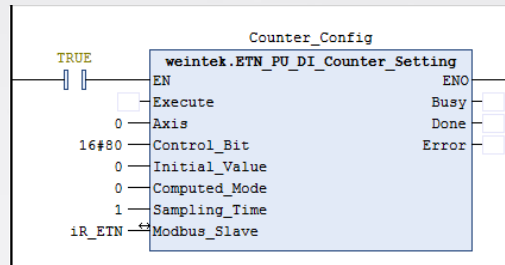
(This package contains iR-PU01-P's device description file)

**Step 2.** Add Weintek CODESYS Library in CODESYS software.



### 3. Counter Parameters

#### Counter\_Setting



Configure iR-PU01-P's counter parameters.

Axis

0-3: The sequence number of an iR-PU01-P module connected to a coupler.

Control\_Bit

Bit-0: Start the counter.

Bit-7: Reset to Initial\_Value and restart the counter.

Initial\_Value

The initial value of the counter.

Computed\_Mode

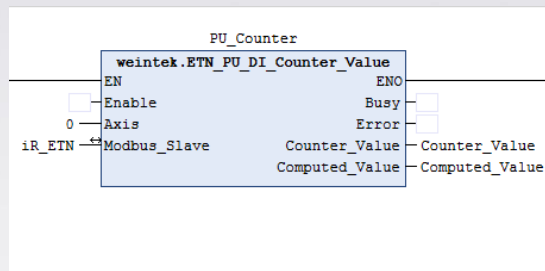
0: Frequency (Speed)

1: Difference

Sampling\_Time

Sampling time, unit: ms, max. 1000ms

### Counter\_Value



Counter\_Value:

Displays the Counter Value.

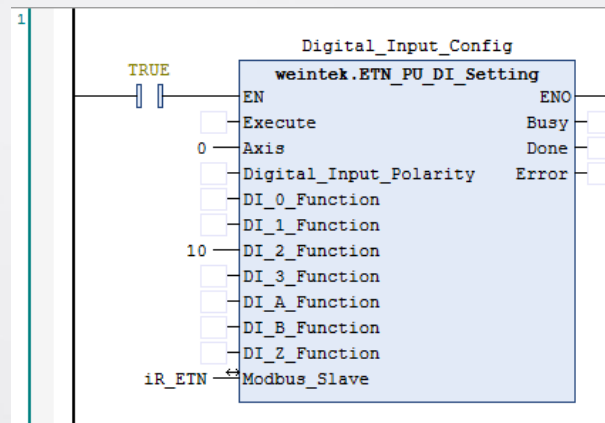
Computed\_Value:

Displays the Computed Value.

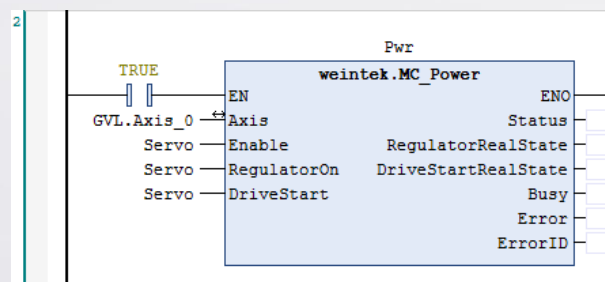
## 4. Demo Program

### iR-ETN

Step1. Trigger “Digital\_Input\_Config.Execute” to configure DI-2 for simple counter use.

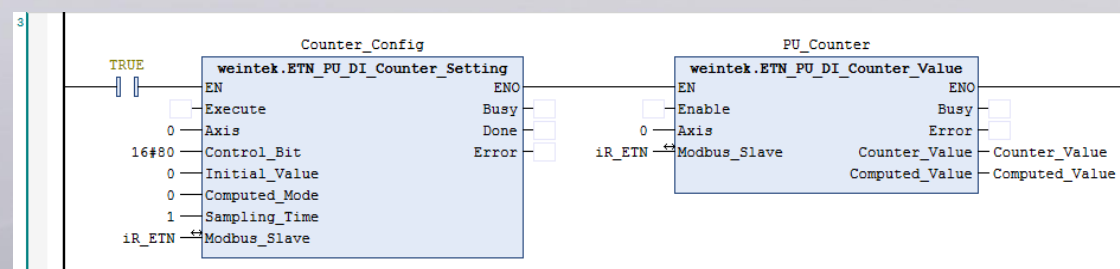


Step2. Trigger “Servo” to start up iR-PU01-P module.



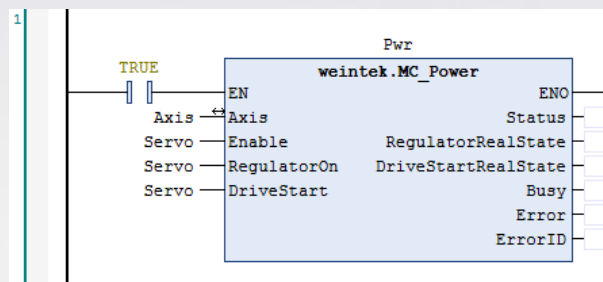
Step3. Trigger “Counter\_Config.Execute” to start up simple counter.

Step4. Trigger “PU\_Counter\_Enable”, the current counter value will be displayed in “Counter\_Value”, and the computed value will be displayed in “Computed\_Value”.



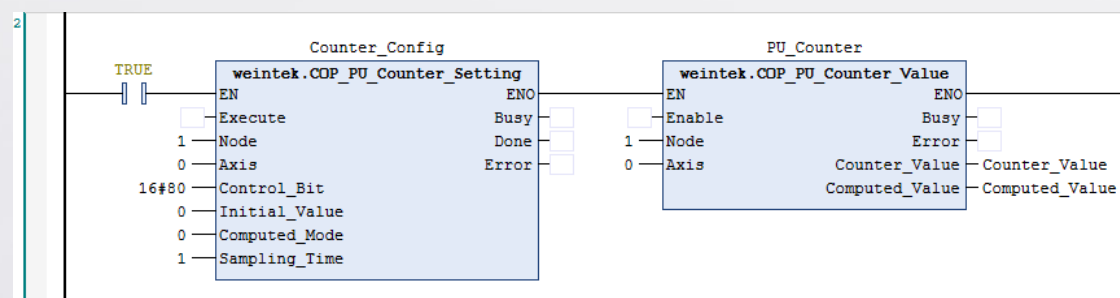
## iR-COP

Step1. Trigger “Servo” to start up iR-PU01-P module.



Step2. Trigger “Counter\_Config.Execute” to start up simple counter.

Step3. Trigger “PU\_Counter\_Enable”, the current counter value will be displayed in “Counter\_Value”, and the computed value will be displayed in “Computed\_Value”.

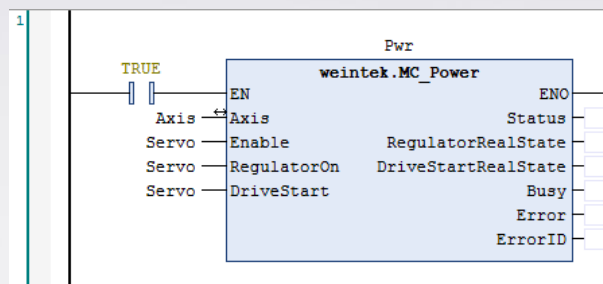


Node: iR-COP’s station number (Node ID)



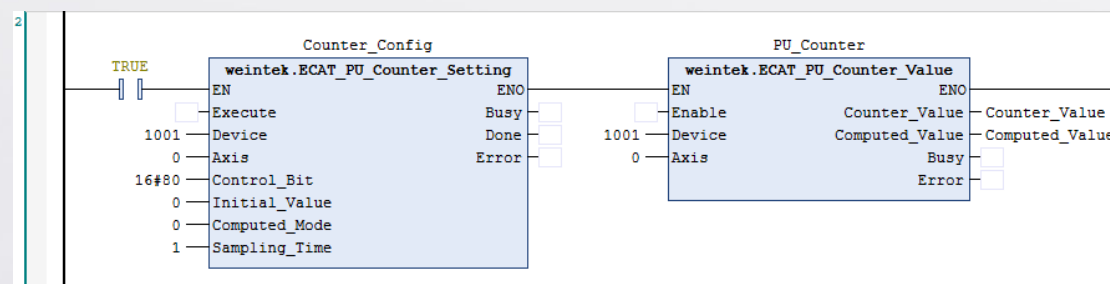
## iR-ECAT

Step1. Trigger "Servo" to start up iR-PU01-P module.



Step2. Trigger "Counter\_Config.Execute" to start up simple counter.

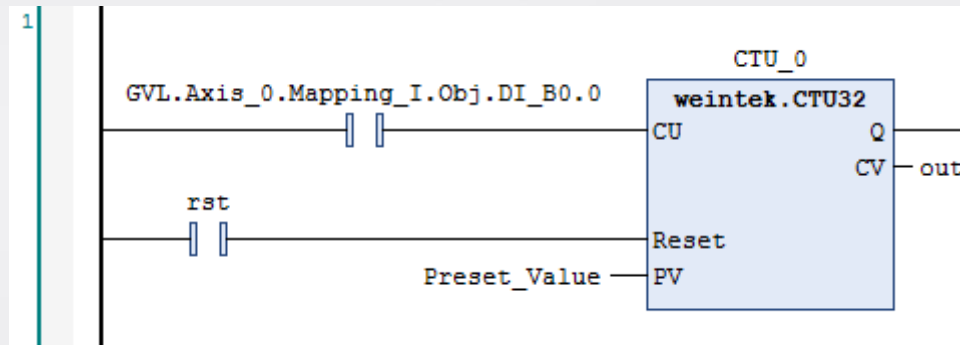
Step3. Trigger "PU\_Counter\_Enable", the current counter value will be displayed in "Counter\_Value", and the computed value will be displayed in "Computed\_Value".



Device: iR-ECAT's station number (EtherCAT Address)

### CODESYS Function Block for Counter

Weintek Library's function block can be used for 32-bit counter. Connect any DI to "CTU32.CU" to start using the counter. The counter value is displayed in "CTU32.CV".



To use the function block, the frequency must be lower than 100Hz.

CODESYS® is a trademark of 3S-Smart Software Solutions GmbH.

Other company names, product names, or trademarks in this document are the trademarks or registered trademarks of their respective companies.

This document is subject to change without prior notice.

Copyright© 2021 Weintek Lab., Inc. All rights reserved.