Project Documentation

File: Simulator.ecp

Date: 5/29/2023

Profile: e!COCKPIT

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1 Device: Controller

Users and Groups

Users:

Groups

Access Rights

View
Modify
Execute
Add/remove children

Symbol Rights

Parameters

Parameters:

Name:	Type:	Value:	Default Value:	Unit:	Description:
Processor Load Lower Limit	DWORD	80	80		
Processor Load Upper Limit	DWORD	90	90		
Processor Load Processor Share	DWORD	90	90		
Processor Load Should Throw ProcessorLoadWatchdog_Exception	bool	FALSE	FALSE		

Information

Name:	750-8214 PFC200 G2 2ETH RS CAN
Vendor:	WAGO
Categories:	PLCs
Type:	4096
ID:	1006 120a
Version:	5.17.3.10
Order number:	0750-8214

1.1 PLC Logic: Plc Logic

1.1.1 Application: Application

1.1.1.1 Folder: Functionblocks

1.1.1.1.1 POU: Arduino

```
1   FUNCTION_BLOCK Arduino
2   VAR_INPUT
3       Encoder_Input : INT;
4   END_VAR
5   VAR_OUTPUT
6       Posision_Out : INT;
7   END_VAR
8   VAR
9   END_VAR
10
```

```
1   Posision_Out := Encoder_Input;
2
```

1.1.1.1.2 POU: UR10

```
1   FUNCTION_BLOCK UR10
2   VAR_INPUT
3       Modbus_Inn : INT;
4   END_VAR
5   VAR_OUTPUT
6       Modbus_Out : INT;
7       Pos_Out : INT;
8   END_VAR
9   VAR
10      Rad : REAL;
11      Rad2 : REAL;
12      Degree : REAL;
13      Mod_In : REAL;
14      Mod_Out : REAL;
15  END_VAR
16
```

```
    Rad := ((Mod_In / 1000) - 6.28);
    Degree := (Rad * (180 / 3.1415));

    IF Rad < -6.28
        THEN Rad := -6.28;
    END_IF

    IF Rad > 6.28
        THEN Rad := 6.28;
    END_IF

    Pos_Out := REAL_TO_INT(Degree);

    Rad2 := ((Rad + 6.28) * 1000);

    Modbus_Out := Real_To_INT(Rad2);

```

1.1.1.1.3 POU: Wago1

```
    FUNCTION_BLOCK Wago1
    VAR_INPUT
        Posision_Inn : INT;
        Max_Inn : REAL;
        Min_Inn : REAL;
        Max_Out : REAL;
        Min_Out : REAL;
    END_VAR
    VAR_OUTPUT
        Modbus_Out : INT;
    END_VAR
    VAR
        Posision : REAL;
        RadPos : REAL;
    END_VAR

```

```
    Posision := INT_TO_REAL(Posision_Inn);

    RadPos := Posision * ((Max_Out - Min_Out) / (Max_Inn - Min_Inn));

    Modbus_Out := REAL_TO_INT(RadPos);

```

1.1.1.1.4 POU: Wago2

```
FUNCTION_BLOCK Wago2
VAR_INPUT
    Posision_Inn : INT;
    Max_Inn : REAL;
    Min_Inn : REAL;
    Max_Out : REAL;
    Min_Out : REAL;
END_VAR
VAR_OUTPUT
    Modbus_Out : INT;
END_VAR
VAR
    Posision : REAL;
    RadPos : REAL;
END_VAR

```

```
Posision := INT_TO_REAL(Posision_Inn);

RadPos := Posision * ((Max_Out - Min_Out) / (Max_Inn - Min_Inn));

Modbus_Out := REAL_TO_INT(RadPos - 360);

```

1.1.1.2 Global Variable List: Sim

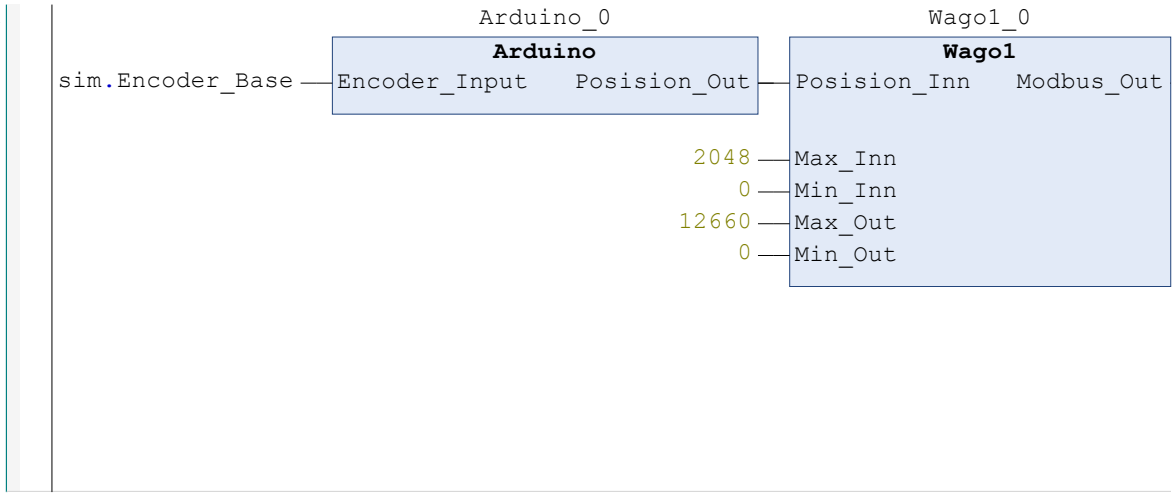
```
{attribute 'qualified_only'}
VAR_GLOBAL
    Encoder : INT;
    Robot_Degrees : INT;
    Robot_Degrees_UR10_Base : INT;
    Robot_Degrees_UR10_Sholder : INT;
    Robot_Degrees_UR10_Elbow : INT;
    Robot_Degrees_UR10_Wrist1 : INT;
    Robot_Degrees_UR10_Wrist2 : INT;
    Robot_Degrees_UR10_Wrist3 : INT;

    Encoder_Base : INT;
    Encoder_Sholder : INT;
    Encoder_Elbow : INT;
    Encoder_Wrist1 : INT;
    Encoder_Wrist2 : INT;
    Encoder_Wrist3 : INT;
```

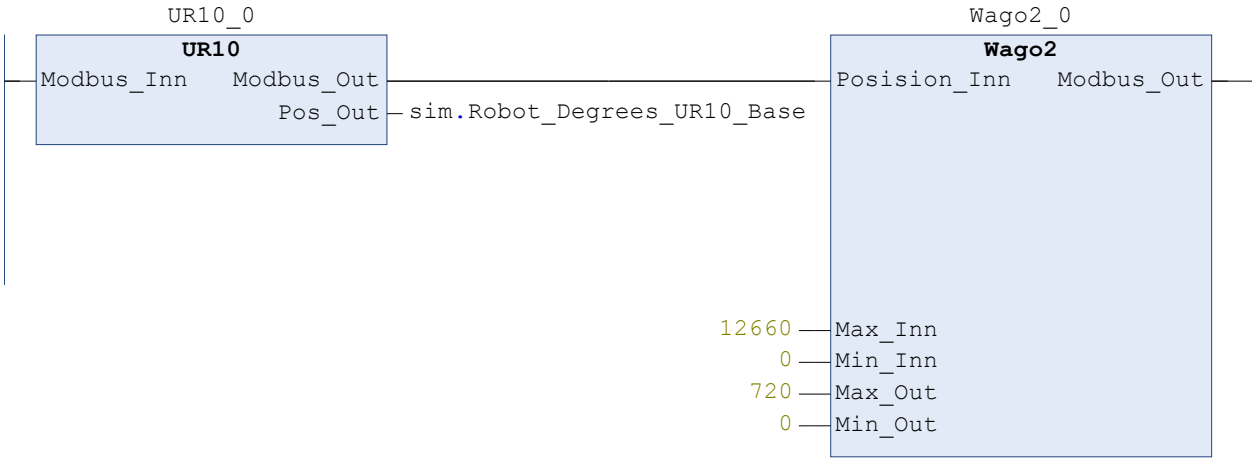
```
23          Wrist2  :  INT ;
24          Wrist3  :  INT ;
25
26
27      END_VAR
28
```

1.1.1.3 POU: Simulator

```
1       PROGRAM  Simulator
2       VAR
3           Arduino_0 :  Arduino ;
4           Wago1_0 :  Wago1 ;
5           UR10_0 :  UR10 ;
6           Wago2_0 :  Wago2 ;
7       END_VAR
8
```

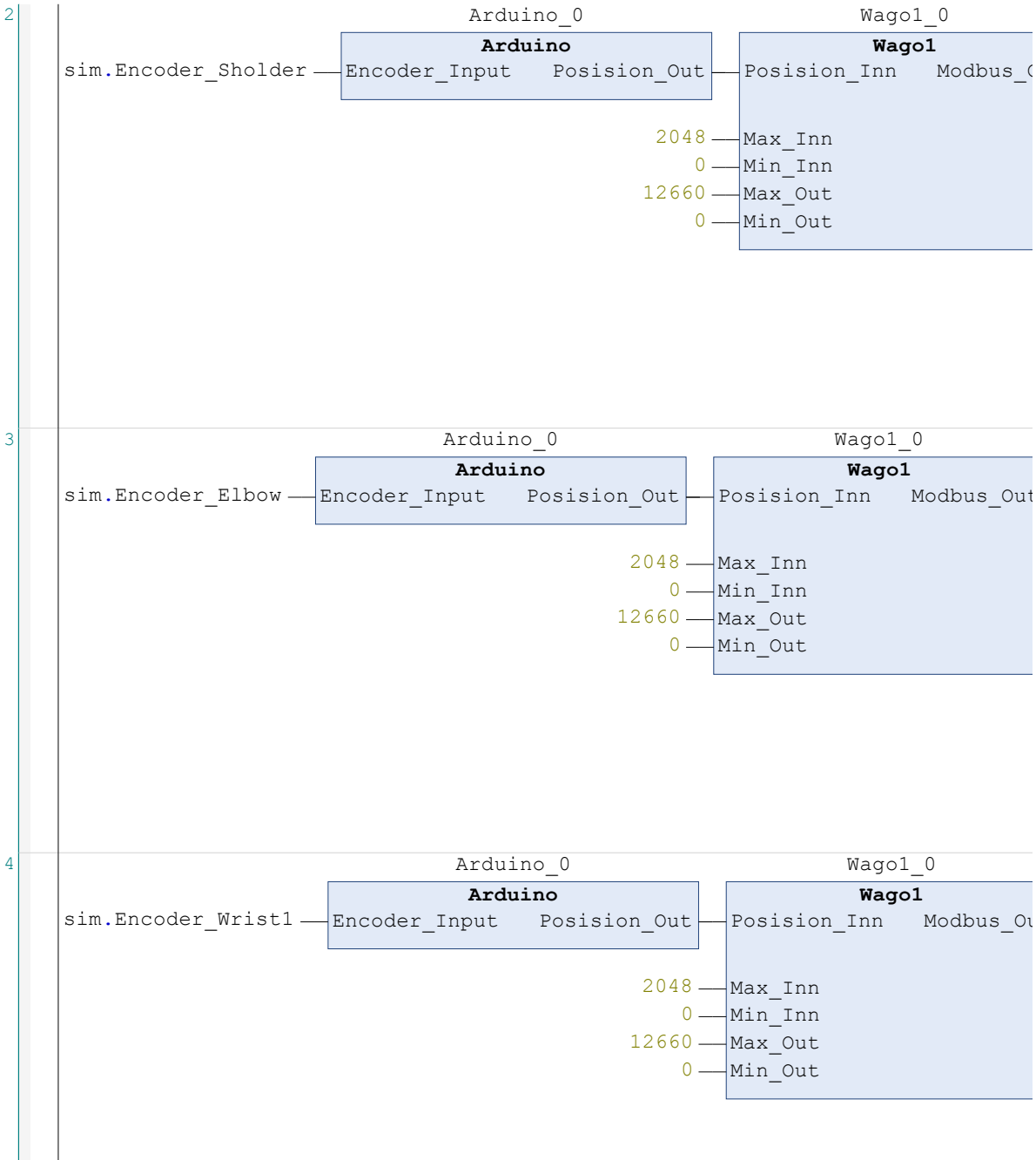


1.1.1.3 POU: Simulator

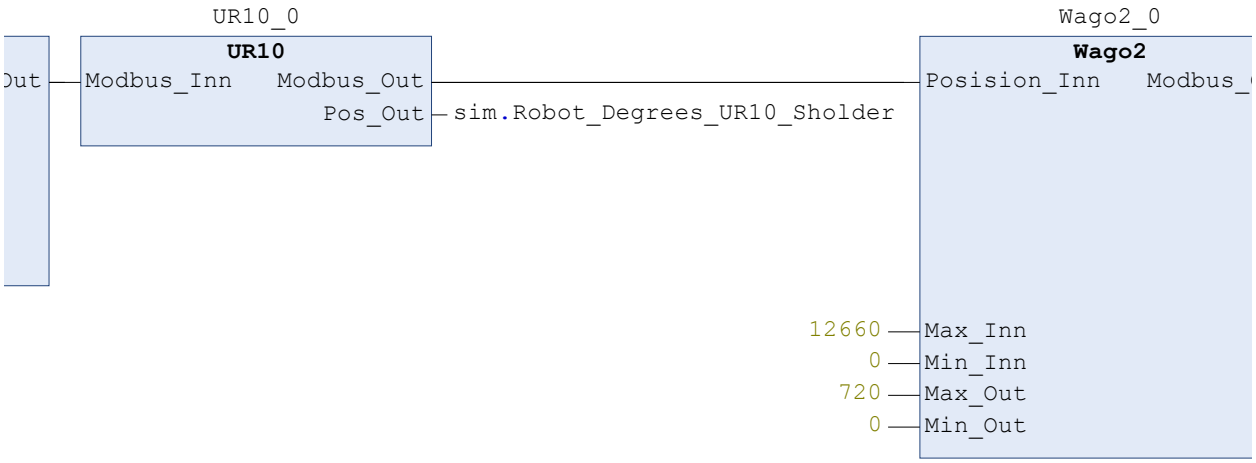


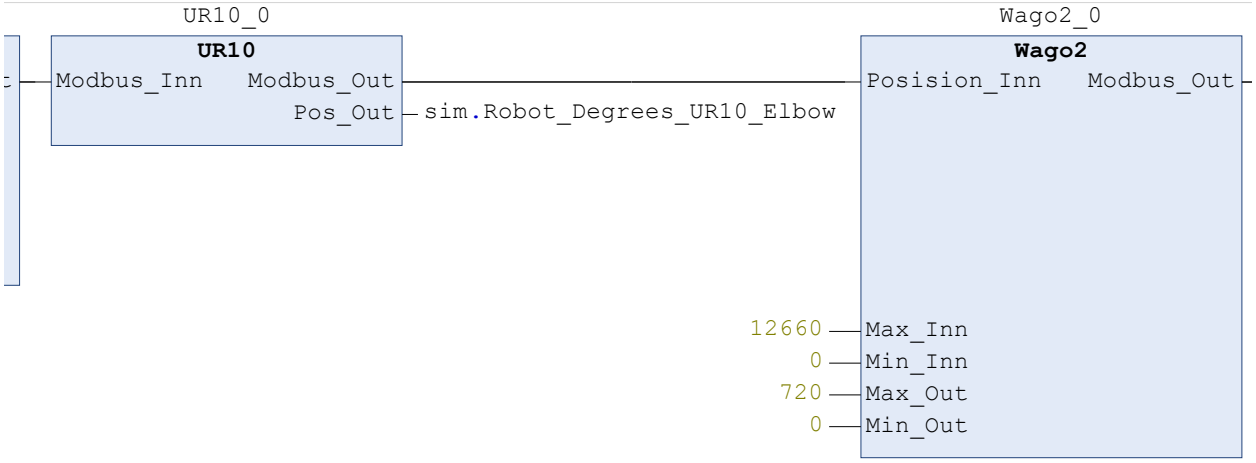
— sim.Base

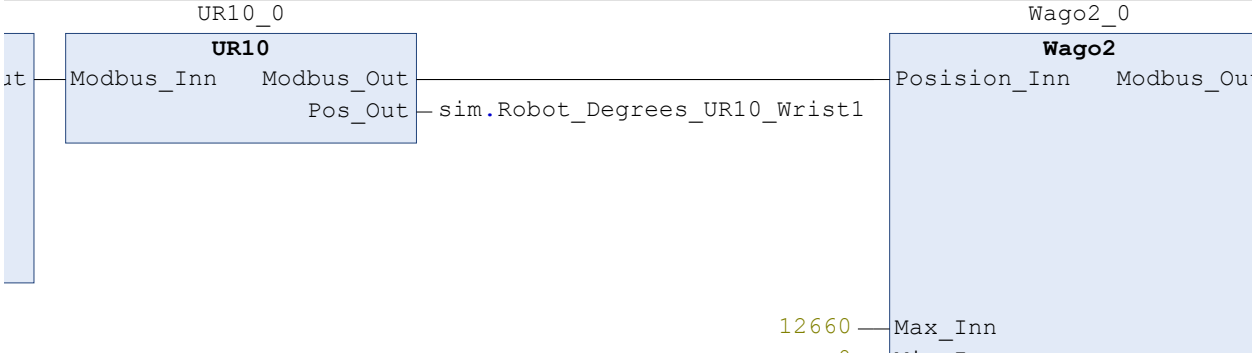
1.1.1.3 POU: Simulator

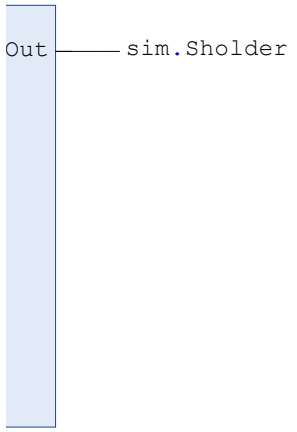


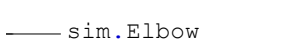
1.1.1.3 POU: Simulator

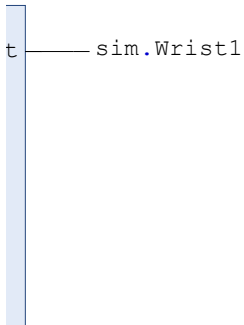




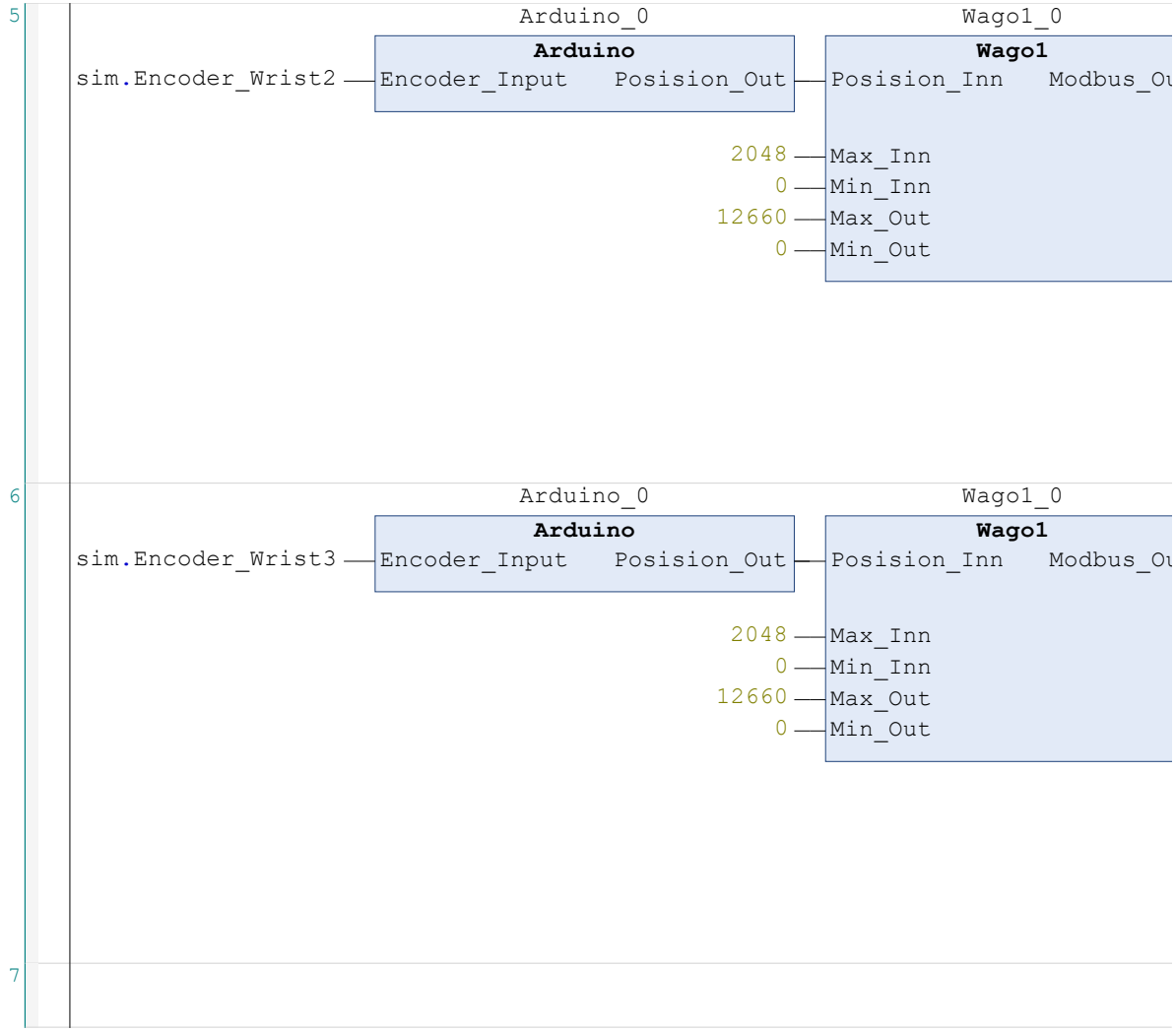



Out
sim.Sholder

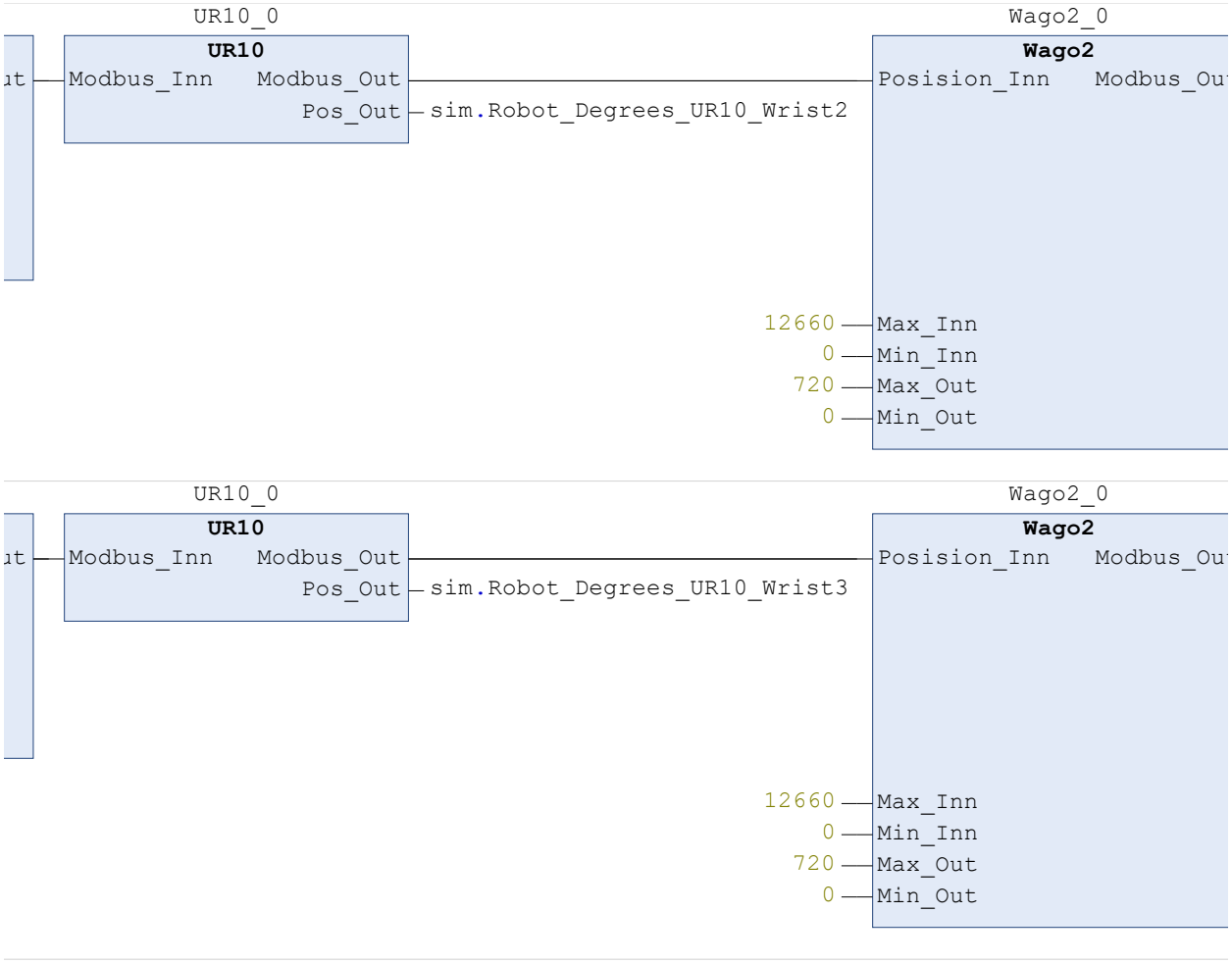

sim.Elbow


t
sim.Wrist1

1.1.1.3 POU: Simulator



1.1.1.3 POU: Simulator




t
sim.Wrist2


t
sim.Wrist3

1.1.1.4 Task Configuration: Task configuration

Max. number of tasks: 15
Max. number of cyclic tasks: 15
Max. number of freewheeling tasks: 15
Max. number of event tasks: 15
Max. number of external event tasks: 8
Max. number of status tasks: 15

System Events:

1.1.1.4.1 Task: PLC_Task

Priority: 15
Type: Cyclic
Interval: t#50ms Unit: ms
Watchdog: Inactive
POUs: Simulator

1.1.1.4.1.1 Program Call: Simulator

1.1.1.4.2 Task: VISU_TASK

Priority: 15
Type: Cyclic
Interval: 100 Unit: ms
Watchdog: Inactive
POUs: VisuElems.Visu_Prg

1.1.1.4.2.1 Program Call: VisuElems.Visu_Prg

2 GlobalTextList: GlobalTextList

3 : Project Settings

Static Analysis Light:

Unused variables (#33): 0
Overlapping memory areas (#28): 0
Write access from several tasks (#6): 0
Multiple write access on output (#4): 0
Multiple uses of identifiers (#27): 0
Report temporary FunctionBlock instances (#167): 0