TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES

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## TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES

| Project | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name:** | TRAF-FIC_LIGHTS_BRIDGE_CROSS-ING_SCL_SWITCHES | **Creation time:** | 01/29/2025 07:02:13 | **Last change** | 04/04/2025 11:12:08 | **Author:** | Admin |
| **Last modified by:** | Admin | **Version:** | | | | | |
| **Comment:** | | | | | | | |

| Operating system | |
|---|---|
| **Name** | **Description** |
| Operating system | Microsoft Windows 11 Enterprise |
| Version of the operating system | 10.0.22000.0 |
| Operating system service pack | |
| Version of the Internet Explorer | 11.1.22000.0 |
| Computer name | SIEMENS-VM |
| User name | SIEMENS-VM\Admin |
| Installation path of the TIA Portal | C:\Program Files\Siemens\Automation\Portal V19 |

| Components | | |
|---|---|---|
| **Name** | **Version** | **Release** |
| HelpViewer_WebApp - HelpViewer_WebApp V1.0 (HVWebApp) | V1.0 | V01.00.00.00_02.00.00.58 |
| TIA Portal Project Server V17 - TIA Portal Project Server Single SetupPackage V17.0 Upd7 (MUSERVERV17) | V17.0 + Upd7 | V17.00.00.07_05.01.00.06 |
| S7-PLCSIM - S7-PLCSIM Setup V18.0 SP2 (PLCSIM_V18) | V18.0 + SP2 | V18.00.02.00_09.13.00.01 |
| S7-PLCSIM - S7-PLCSIM Setup V19.0 Upd1 (PLCSIM_V19) | V19.0 + Upd1 | V19.00.00.01_06.04.00.01 |
| TIA Portal Project Server - TIA Portal Project Server Single SetupPackage V1.2 (ProjectServer) | V1.2 | V01.02.00.00_00.00.04.16 |
| SIMATIC S7-PLCSIM (S7_PLCSIM_V17) | V17.0 | V17.00.00.00_43.02.00.01 |
| Siemens Totally Integrated Automation Portal V17 - SIMATIC S7-PLCSIM V17.0 + SP0 + Upd1 (S7_PLCSIM_V17) | V17.0 + SP0 + Upd1 | V17.00.00.01_01.00.16.01 |
| AWB Host - TIAAdminV3 SP5 V3.0 SP5 (TIAAdminV3) | V3.0 + SP5 | V03.00.05.00_01.01.00.22 |
| AWB Host - Automation License Manager Plugin V3.0 + SP5 (TIAAdminV3) | V3.0 + SP5 | V03.00.05.00_01.01.00.22 |
| AWB Host - Software Management Plugin V3.0 + SP5 (TIAAdminV3) | V3.0 + SP5 | V03.00.05.00_01.01.00.22 |
| AWB Host - TIA Addin V3.0 + SP5 (TIAAdminV3) | V3.0 + SP5 | V03.00.05.00_01.01.00.22 |
| AWB Host - Central User Management Plugin V3.0 + SP5 (TIAAdminV3) | V3.0 + SP5 | V03.00.05.00_01.01.00.22 |

| Name | Version | Release |
|---|---|---|
| Totally Integrated Automation Portal V19 - TIA Portal Single SetupPackage V19.0 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - HelpViewer Server V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - HM All Editions Single SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - HM NoBasic Single SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - Hardware Support Base Package 0 V19.0 (TIAP19) | V19.0 | V19.00.00.00_66.01.00.07 |
| Siemens Totally Integrated Automation Portal V19 - Multiuser Client Single SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - Version Control Interface SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - STEP 7 Safety Single SetupPackage V19.0 UPD1 (TIAP19) | V19.0 UPD1 | V19.00.00.01_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - SESSP Single SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - STEP 7 Single SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - Hardware Support Base Package 02 V19.0 (TIAP19) | V19.0 | V19.00.00.00_66.01.00.07 |
| Siemens Totally Integrated Automation Portal V19 - Hardware Support Base Package 03 V19.0 (TIAP19) | V19.0 | V19.00.00.00_66.01.00.07 |
| Siemens Totally Integrated Automation Portal V19 - Hardware Support Base Package 04 V19.0 (TIAP19) | V19.0 | V19.00.00.00_66.01.00.07 |
| Siemens Totally Integrated Automation Portal V19 - Support Base Package TO-01 V19.0 (TIAP19) | V19.0 | V19.00.00.00_66.01.00.07 |
| Siemens Totally Integrated Automation Portal V19 - Support Base Package TO-02 V19.0 (TIAP19) | V19.0 | V19.00.00.00_66.01.00.07 |
| Siemens Totally Integrated Automation Portal V19 - Hardware Support Base Package WCF-01 V19.0 (TIAP19) | V19.0 | V19.00.00.00_66.01.00.07 |
| Siemens Totally Integrated Automation Portal V19 - TIACOMPCHECK Single SetupPackage V19.0 + Upd3 (TIAP19) | V19.0 + Upd3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - TIA Portal Security Audit Log Single SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - TIA Portal Shim Single SetupPackage V19.0 (TIAP19) | V19.0 | V19.00.00.00_68.01.00.03 |

| Name | Version | Release |
|---|---|---|
| Siemens Totally Integrated Automation Portal V19 - Simatic Single Setup-Package V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - WinCC Basic ES Single SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - WinCC CA ES Single SetupPackage V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - Openness SetupPack-age V19.0 UPD3 (TIAP19) | V19.0 UPD3 | V19.00.00.03_05.01.00.01 |
| User Management Component - UserManagementComponentx64 V2.13 SP1 (UMC64) | V2.13 + SP1 | V02.13.01.00_00.00.00.01 |
| User Management Component - umtrayiconx64 V2.13 + SP1 (UMC64) | V2.13 + SP1 | V02.13.01.00_00.00.00.01 |
| WinCC Runtime Advanced V17.0 - SIMATIC WinCC Runtime Advanced V17.0 (HMIRTM_V11) | V17.0 UPD8 | V17.00.00.08_04.01.00.01 |
| WinCC Runtime Advanced V17.0 - HMIRTM Tagging Package 01 Single SetupPackage V17.0 UPD8 (HMIRTM_V11) | V17.0 UPD8 | V17.00.00.08_04.01.00.01 |
| PLCSIM Advanced Single SetupPackage - PLCSIM Advanced Single Setup-Package V6.0 Upd1 (PLCSIMADV) | V6.0 + Upd1 | V06.00.00.01_01.01.00.31 |
| SIMATIC S7-PCT - SIMATIC S7-PCT V3.5 SP3 Upd6 (S7PCT) | V3.5 + SP3 + Upd6 | V03.05.03.06_04.01.00.01 |
| Siemens Totally Integrated Automation Portal V19 - Simatic Single Setup-Package 32 Bit V19.0 (TIAP19) | V19.0 | V19.00.00.00_68.01.00.03 |
| AddinRolloutService | 19.0.0.3 | V19.00.00.03_05.01.00.01 |
| SIMATIC HMI License Manager Panel Plugin (x64) | 19.0.0.0 | V19.00.00.00_68.01.00.03 |
| Automation Access Control Component x64 | 5.0 | K05.01.01.02_90.01.00.77 |
| SIMATIC WinCC Runtime Advanced Driver (x64) | 19.0.0.0 | V19.00.00.00_68.01.00.03 |
| ETWEventCollector | 19.0.0.0 | V19.00.00.00_68.01.00.03 |
| SIMATIC NCM FWL 64 | 5.6.0.3 | K5.6.0.3_1.1.0.2 |
| NCM GPRS 64 | 01.02.01.00 | V1.2.1.0_1.1.0.3 |
| SIMATIC PLCSIM 64 | 19.00.00 | 19.00.00.00_01.07.00.01 |
| SIMATIC PLCSIM Advanced Driver64 | 6.0.0.1 | V06.00.00.01_01.01.00.31 |
| SIMATIC Device Drivers | 9.4 | 09.04.00.02_01.01.00.02 |
| TelemetryConnector | 2.2.0.17 | V02.02.00.17_01.00.00.00 |
| Automation Access Control Component | 5.0 | K05.01.01.02_90.01.00.77 |
| Automation Software Updater | 02.05.0000 | V02.05.00.00_01.03.00.02 |
| SIEMENS OPC | 3.9 | 03.09.12.02_01.01.00.04 |
| SIMATIC PLCSIM Advanced SimRT | 6.0.0.1 | V06.00.00.01_01.01.00.31 |
| SIMATIC HMI ProSave | 19.0.0.0 | V19.00.00.00_68.01.00.03 |
| SIMATIC HMI Symbol Library | 17.0.0.8 | V17.00.00.08_04.01.00.01 |
| SIMATIC HMI Touch Input | 17.0.0.8 | V17.00.00.08_04.01.00.01 |

| Name | Version | Release |
|---|---|---|
| SIMATIC Device Drivers WoW | 29.4 | 29.04.00.02_01.01.00.02 |
| SIMATIC Event Database | 5.7 | 05.07.02.02_01.01.00.01 |
| SeCon | 2.9 | V02.09.00.00_01.03.00.01 |
| WinCC Runtime Advanced Simulator | 17.0.0.0 | V17.00.00.00_43.02.00.01 |

| Products | | |
|---|---|---|
| **Name** | **Version** | **Release** |
| TIA Portal Help Viewer | V1.0 | V01.00.00.00_02.00.00.43 |
| TIA Portal Project Server | V17.0 Upd7 | V17.00.00.07_05.01.00.06 |
| S7-PLCSIM | V18 SP2 | 18.00.02.00_09.13.00.01 |
| S7-PLCSIM | V19 Upd1 | 19.00.00.01_06.04.00.01 |
| TIA Portal Project Server | V1.2 | V01.02.00.00_00.00.04.16 |
| SIMATIC S7-PLCSIM | V17.0 Upd1 | V17.00.00.01_01.00.16.01 |
| TIA Administrator | V3.0.5.0 | V03.00.05.00_01.01.00.22 |
| SIMATIC WinCC Panel Images | V17.0 Upd8 | V17.00.00.08_04.01.00.01 |
| SIMATIC WinCC Legacy Panel Images | V17.0 | V17.00.00.00_43.02.00.01 |
| SIMATIC STEP 7 Prof - STEP 7 Safety - WinCC Adv | V17.0 Upd8 | V17.00.00.08_04.01.00.01 |
| SIMATIC STEP 7 Prof - STEP 7 Safety - WinCC Adv | V18.0 Upd5 | V18.00.01.05_04.01.00.01 |
| SIMATIC STEP 7 Prof - STEP 7 Safety - WinCC Adv + Unified + Prof | V19.0 Upd3 | V19.00.00.03_05.01.00.01 |
| User Management Component | V2.13 Sp1 Upd0 | V02.13.01.00_00.00.00.01 |
| UMC Status Application | V2.13 Sp1 Upd0 | V02.13.01.00_00.00.00.01 |
| SIMATIC WinCC Runtime Advanced Simulation | V17.0 Upd8 | V17.00.00.08_04.01.00.01 |
| S7-PLCSIM Advanced | V6.0 Upd1 | V06.00.00.01_01.01.00.31 |
| S7-PCT | V3.5 SP3 Upd6 | V03.05.03.06_04.01.00.01 |
| Automation License Manager | V6.2 + Upd3 | 06.02.00.03_00.00.00.09 |
| S7-PLCSIM | V5.4 + SP8 + Upd2 | V05.04.08.02_02.40.00.01 |
| SIMATIC ProSave | V19.0 | V19.00.00.00_68.01.00.03 |
| S7-PCT | V3.5 SP3 Upd6 | K3.5.3.6_4.1.0.1 |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES

## TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]

| TRAFFIC_LIGHTS_PLC | | | | | |
|---|---|---|---|---|---|
| **Project information** | | | | | |
| **Name** | TRAFFIC_LIGHTS_PLC | **Author** | Admin | **Comment** | |
| **Slot** | 1 | **Rack** | 0 | | |
| **Catalog information** | | | | | |
| **Short designation** | CPU 1215C DC/DC/DC | **Description** | Work memory 200 KB; 24VDC power supply with DI14 x 24VDC SINK/SOURCE, DQ10 x 24VDC and AI2 and AQ2 on board; 6 high-speed counters and 4 pulse outputs on-board; signal board expands on-board I/O; up to 3 communication modules for serial communication; up to 8 signal modules for I/O expansion; PROFINET IO controller, 2 ports, I-device, transport protocol TCP/IP, secure Open User Communication, S7 communication, Web server, OPC UA: Server DA | **Article number** | 6ES7 215-1AG40-0XB0 |
| **Firmware version** | V4.6 | | False | | |

| Connection resources\ | | | | |
|---|---|---|---|---|
| | **Station resources - Reserved - Maximum** | **Station resources - Reserved - Configured** | **Station resources - Dynamic - Configured** | **Module resources - TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] - Configured** |
| Maximum number of resources: | | 34 | 34 | 68 |
| | Maximum | Configured | Configured | Configured |
| PG communication: | 4 | - | - | - |
| HMI communication: | 12 | 0 | 0 | 0 |
| S7 communication: | 8 | 0 | 0 | 0 |
| Open user communication: | 8 | 0 | 0 | 0 |
| Web communication: | 2 | - | - | - |
| OPC UA client/server communication: | 0 | - | - | - |
| Other communication: | - | - | 0 | 0 |
| Total resources used: | | 0 | 0 | 0 |
| Available resources: | | 34 | 34 | 68 |

| Overview of addresses\Overview of addresses\Overview of addresses | | | | | |
|---|---|---|---|---|---|
| **Inputs** | True | **Outputs** | True | **Address gaps** | False |
| **Slot** | True | | | | |

| Type | Addr. from | Addr. to | Module | PIP | Device name | Device number | Size | Master / IO system | Rack | Slot |
|---|---|---|---|---|---|---|---|---|---|---|
| I | 0 | 1 | DI 14/DQ 10_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 1 |
| O | 0 | 1 | DI 14/DQ 10_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 1 |
| I | 64 | 67 | AI 2/AQ 2_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 2 |
| O | 64 | 67 | AI 2/AQ 2_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 2 |
| I | 1000 | 1003 | HSC_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 16 |
| I | 1004 | 1007 | HSC_2 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 17 |
| I | 1008 | 1011 | HSC_3 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 18 |
| I | 1012 | 1015 | HSC_4 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 19 |
| I | 1016 | 1019 | HSC_5 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 20 |
| I | 1020 | 1023 | HSC_6 | Automatic update | TRAFFIC_LIGHTS_PLC | - | 4 Bytes | - | 0 | 1 21 |

| Type | Addr. from | Addr. to | Module | PIP | Device name | Device number | Size | Master / IO system | Rack | Slot |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | [CPU 1215C DC/DC/DC] | | | | | |
| O | 1000 | 1001 | Pulse_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 32 |
| O | 1002 | 1003 | Pulse_2 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 33 |
| O | 1004 | 1005 | Pulse_3 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 34 |
| O | 1006 | 1007 | Pulse_4 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 35 |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Program blocks

## Main [OB1]

| Main Properties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **General** | | | | | | | |
| **Name** | Main | **Number** | 1 | **Type** | OB | **Language** | LAD |
| **Numbering** | Automatic | | | | | | |
| **Information** | | | | | | | |
| **Title** | "Main Program Sweep (Cycle)" | **Author** | | **Comment** | | **Family** | |
| **Version** | 0.1 | **User-defined ID** | | | | | |

| Name | Data type | Default value |
|---|---|---|
| ▼ Input | | |
| Initial_Call | Bool | |
| Remanence | Bool | |
| Temp | | |
| Constant | | |

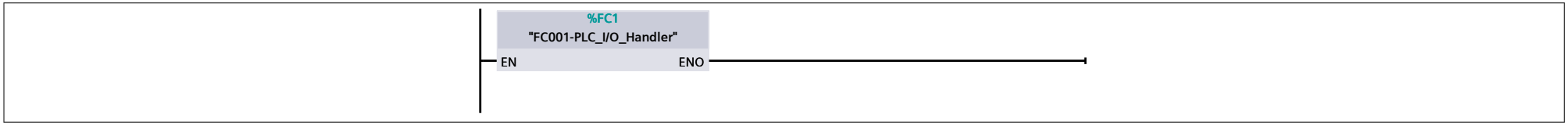
**Network 1: ================= PROGRAM_INFORMATION =================**

```
0001 (*
0002 ================================================================
0003 ****** TRAFFIC LIGHTS - BRIDGE CROSSING WITH PUSH BUTTONS *******
0004 ================================================================
0005
0006 TVET Workstation WS01
0007 - 1215C DC/DC/DC - 6ES7215-1AG40-0XB0
0008 - IP: 192.168.0.175/24
0009 - Gateway: 192.168.0.1
0010
0011 ================================================================
0012
```

```
0013 The program has 2 main sections - I/O Handler & Traffic Control.
0014
0015 I/O Handler FC:
0016 We are directly interacting with the PLC's I/O and DB tags, therefore
0017 a FC can be used for the I/O mapping logic.
0018 - maps the physical inputs & outputs to corresponding tags in DB001
0019  (this makes code easier to read, maintain & troubleshoot).
0020
0021 Traffic Control FB:
0022 We use a FB for traffic control logic as any additional tags needed can
0023 be created in the FB interface.
0024 - sets the default state of the system at startup,
0025 - make use of SCL state machine with inputs to automatically change LED
0026  states in a loop.
0027 Vehicle Queue Control FC:
0028 We don't need to store additional data so we can use a FC to increment
0029 and decrement the vehicle counters via the push button inputs.
0030 - seperates the counter control from the SCL FB so that we only need to
0031  use the values of the counters in the traffic control logic.
0032
0033 Additional Notes:
0034 PLC Tags have been grouped relating to their use/function.
0035
0036 ===============================================================================
0037 *)
```

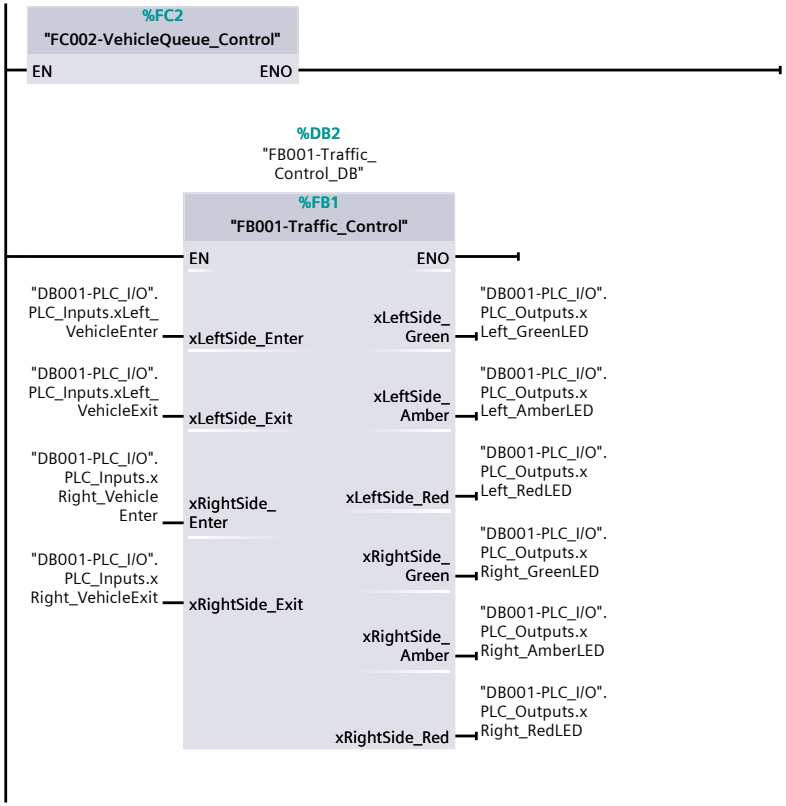
**Network 2: ================= I/O_HANDLING =================**

> Call the PLC I/O Handler Function




**Network 3: ================= TRAFFIC_CONTROL =================**

> Call the Vehicle Queue Control Function
> Call the Traffic Control Function Block


%FC2
"FC002-VehicleQueue_Control"
EN
ENO
%DB2
"FB001-Traffic_
Control_DB"
%FB1
"FB001-Traffic_Control"
EN
ENO
"DB001-PLC_I/O".
PLC_Inputs.xLeft_
VehicleEnter
xLeftSide_Enter
xLeftSide_
Green
"DB001-PLC_I/O".
PLC_Outputs.x
Left_GreenLED
"DB001-PLC_I/O".
PLC_Inputs.xLeft_
VehicleExit
xLeftSide_Exit
xLeftSide_
Amber
"DB001-PLC_I/O".
PLC_Outputs.x
Left_AmberLED
"DB001-PLC_I/O".
PLC_Inputs.x
Right_Vehicle
Enter
xRightSide_
Enter
xLeftSide_Red
"DB001-PLC_I/O".
PLC_Outputs.x
Left_RedLED
"DB001-PLC_I/O".
PLC_Inputs.x
Right_VehicleExit
xRightSide_Exit
xRightSide_
Green
"DB001-PLC_I/O".
PLC_Outputs.x
Right_GreenLED
xRightSide_
Amber
"DB001-PLC_I/O".
PLC_Outputs.x
Right_AmberLED
xRightSide_Red
"DB001-PLC_I/O".
PLC_Outputs.x
Right_RedLED

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Program blocks / WS01_TVET_Workstation / 00-I/O_Mapping

## DB001-PLC_I/O [DB1]

| DB001-PLC_I/O Properties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **General** | | | | | | | |
| **Name** | DB001-PLC_I/O | **Number** | 1 | **Type** | DB | **Language** | DB |
| **Numbering** | Automatic | | | | | | |
| **Information** | | | | | | | |
| **Title** | | **Author** | | **Comment** | | **Family** | |
| **Version** | 0.1 | **User-defined ID** | | | | | |

| Name | Data type | Start value | Retain |
|---|---|---|---|
| ▼ Static | | | |
| PLC_Inputs | Struct | | False |
| PLC_Outputs | Struct | | False |

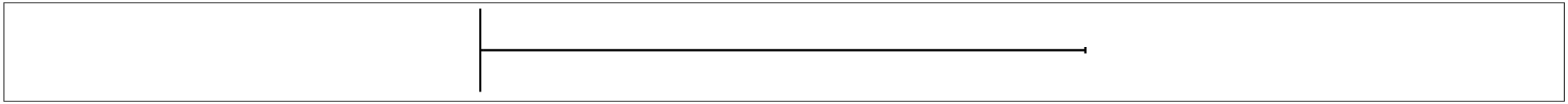
# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Program blocks / WS01_TVET_Workstation / 00-I/O_Mapping

## FC001-PLC_I/O_Handler [FC1]

| FC001-PLC_I/O_Handler Properties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **General** | | | | | | | |
| **Name** | FC001-PLC_I/O_Handler | **Number** | 1 | **Type** | FC | **Language** | LAD |
| **Numbering** | Automatic | | | | | | |
| **Information** | | | | | | | |
| **Title** | | **Author** | | **Comment** | | **Family** | |
| **Version** | 0.1 | **User-defined ID** | | | | | |

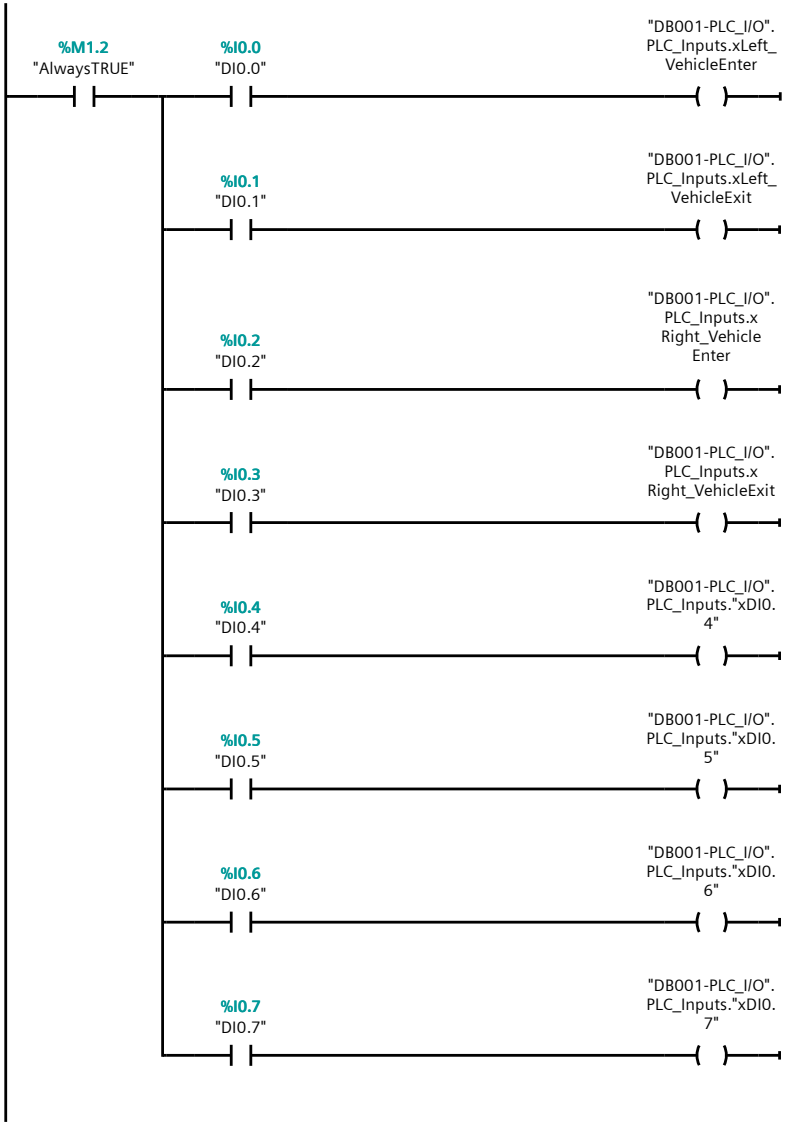
| Name | Data type | Default value |
|---|---|---|
| Input | | |
| Output | | |
| InOut | | |
| ▼ Temp | | |
| rAI0.0_Temp | Real | |
| rAI0.1_Temp | Real | |
| rAQ0.0_Temp | Real | |
| rAQ0.1_Temp | Real | |
| Constant | | |
| ▼ Return | | |
| FC001-PLC_I/O_Handler | Void | |

**Network 1: ================= DIGITAL_INPUTS =================**



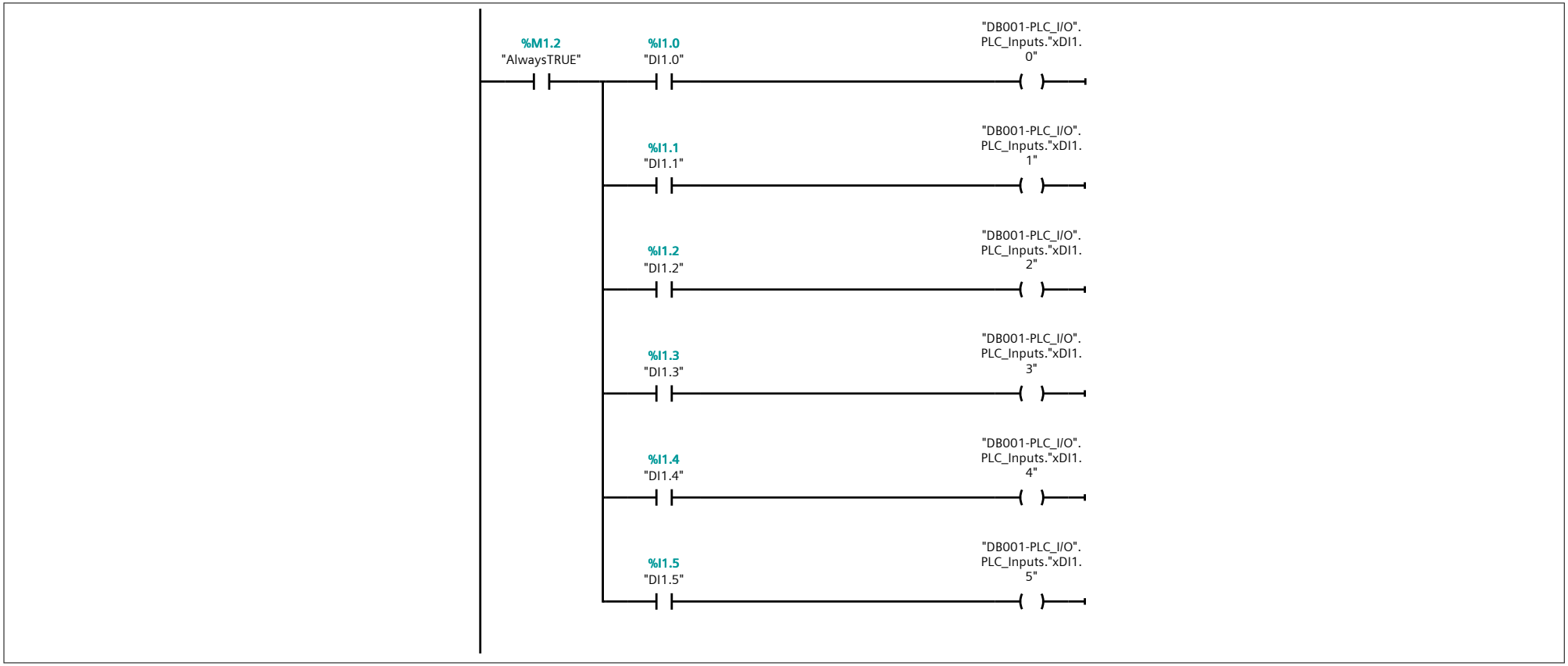
## Network 2: BANK_0

> DI0.0 - DI0.7

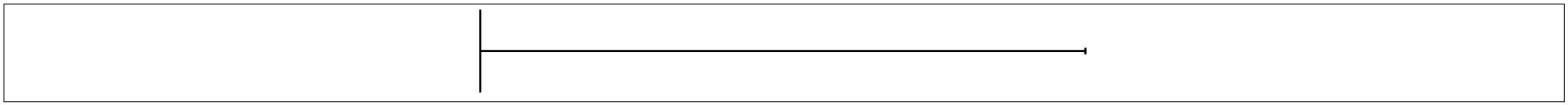


## Network 3: BANK_1

> DI1.0 - DI1.5

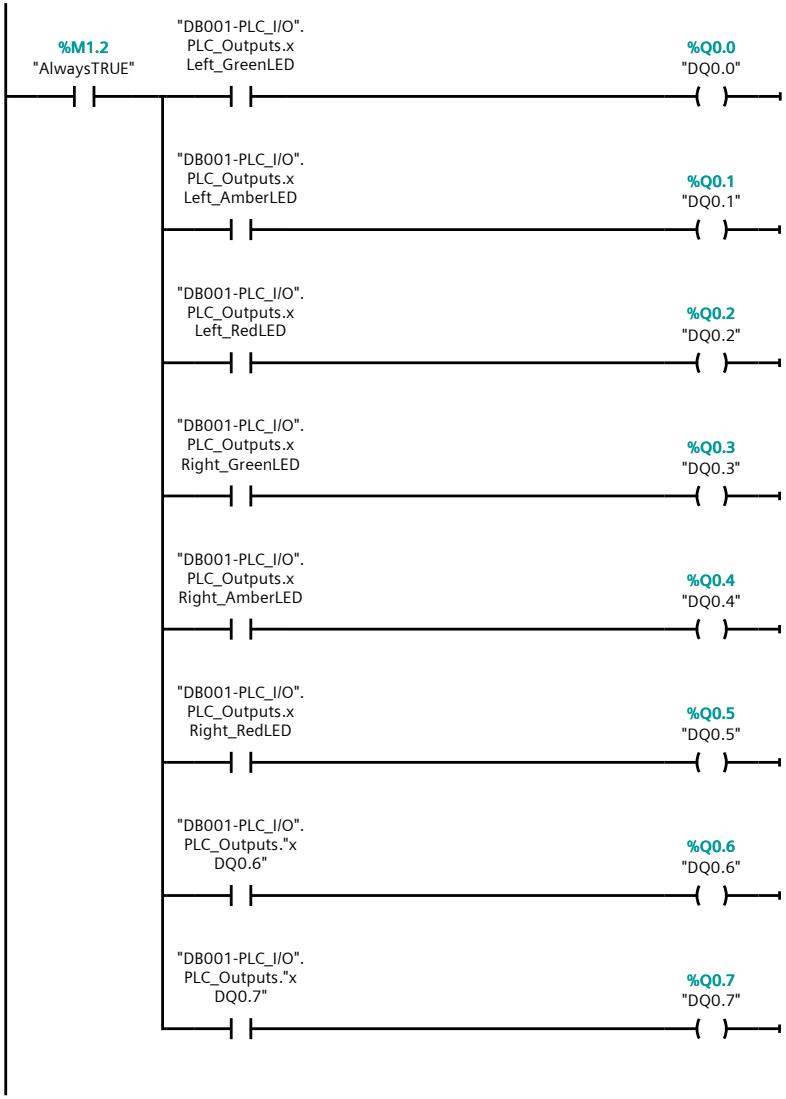



## Network 4: ================= DIGITAL_OUTPUTS =================



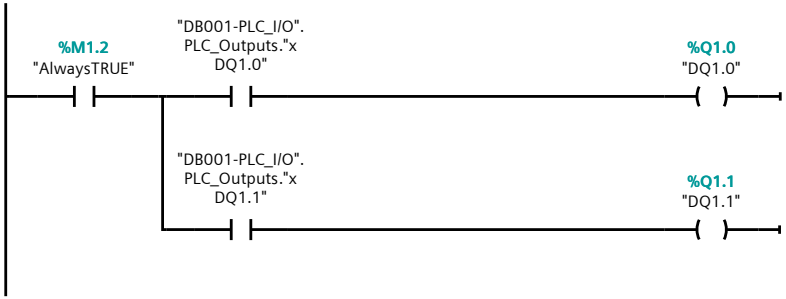
## Network 5: BANK_0

> DQ0.0 - DQ0.7

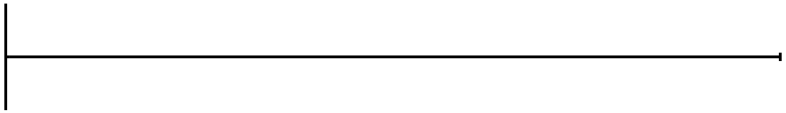


## Network 6: BANK_1

> DQ1.0 - DQ1.1

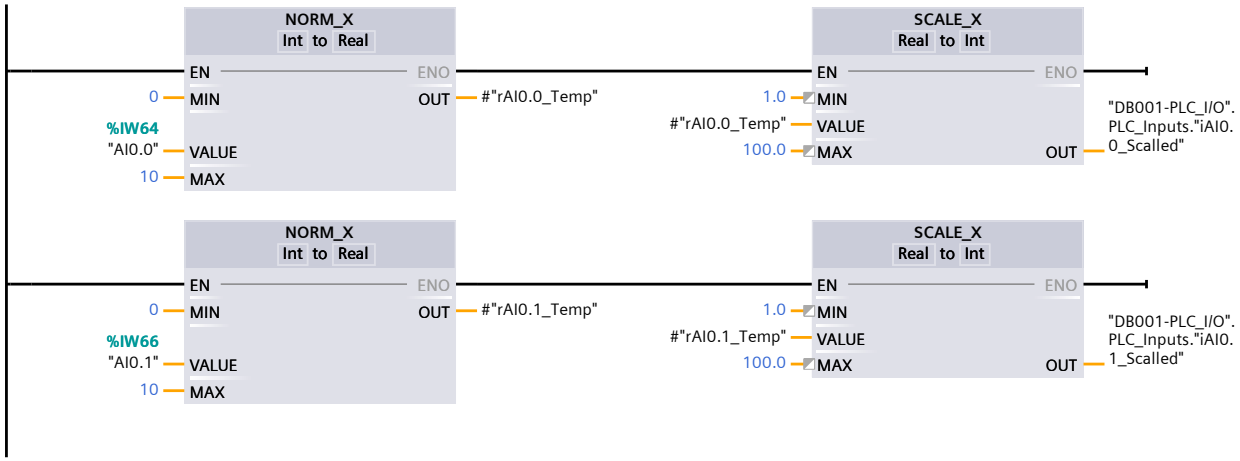



## Network 7: ================= ANALOG_PROCESSING =================



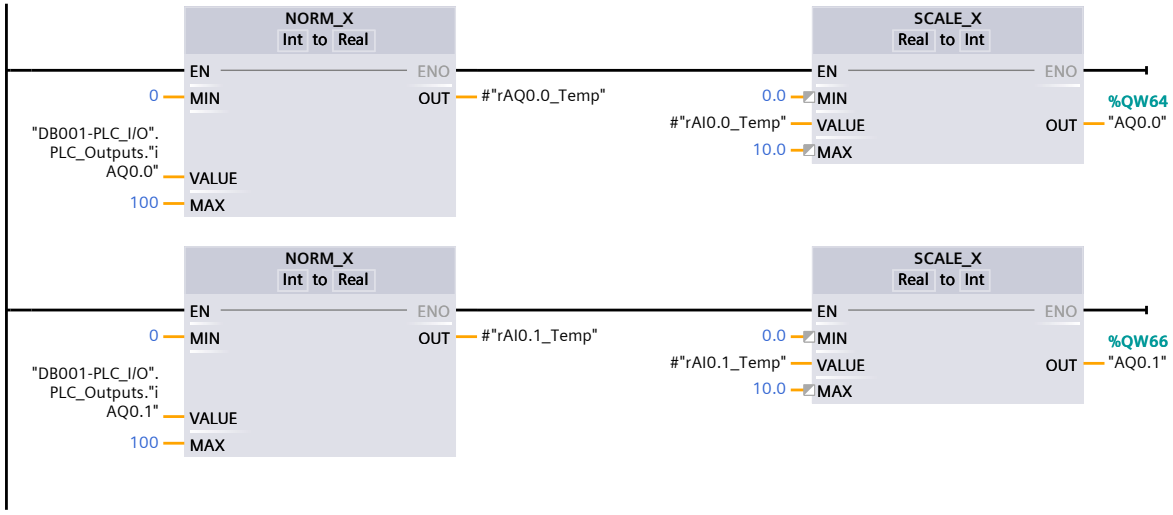
## Network 8: ANALOG_INPUTS

> 0V to 10V Analog Scalling
> change MIN/MAX values accordingly




## Network 9: ANALOG_OUTPUTS

> 0V to 10V Analog Scalling
> change MIN/MAX values accordingly



# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Program blocks / WS01_TVET_Workstation / 01-Traffic_Logic

## FB001-Traffic_Control [FB1]

| FB001-Traffic_Control Properties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **General** | | | | | | | |
| **Name** | FB001-Traffic_Control | **Number** | 1 | **Type** | FB | **Language** | SCL |
| **Numbering** | Manual | | | | | | |
| **Information** | | | | | | | |
| **Title** | | **Author** | | **Comment** | | **Family** | |
| **Version** | 0.1 | **User-defined ID** | | | | | |

| Name | Data type | Default value | Retain |
|---|---|---|---|
| ▼ Input | | | |
| xLeftSide_Enter | Bool | false | Non-retain |
| xLeftSide_Exit | Bool | false | Non-retain |
| xRightSide_Enter | Bool | false | Non-retain |
| xRightSide_Exit | Bool | false | Non-retain |
| ▼ Output | | | |
| xLeftSide_Green | Bool | false | Non-retain |
| xLeftSide_Amber | Bool | false | Non-retain |
| xLeftSide_Red | Bool | false | Non-retain |
| xRightSide_Green | Bool | false | Non-retain |
| xRightSide_Amber | Bool | false | Non-retain |
| xRightSide_Red | Bool | false | Non-retain |
| InOut | | | |
| ▼ Static | | | |
| xFirstScan | Bool | false | Non-retain |
| iState | Int | 0 | Non-retain |
| iLeftQueue | Int | 0 | Non-retain |
| iRightQueue | Int | 0 | Non-retain |
| TONs | Struct | | Non-retain |
| Temp | | | |

| Name | Data type | Default value | Retain |
|---|---|---|---|
| Constant | | | |
| 3sec | Time | t#3s | |
| 5sec | Time | t#5s | |
| 10sec | Time | t#10s | |

```
0001 REGION OPENING_COMMENTS
0002   (*
0003  * BASIC PROGRAM OPERATION:
0004  * On startup - both sides start with GREEN LEDs OFF and RED LEDs ON for 5sec.
0005  * After the initial 5sec has elapsed, left side switches to GREEN ON (RED OFF).
0006  *
0007  * Left side stays green until right side has a queue & switches to AMBER ON (GREEN OFF) for 3sec.
0008  * After 3sec has elapsed, left side switches to RED ON & right side switches to GREEN ON after a 3sec transition
      delay (left AMBER & right RED OFF).
0009  *
0010  * Right side stays green until right side queue has emptied & left side has a queue & switchs to AMBER ON (right
      GREEN OFF) for 3sec.
0011  * After 3sec has elapsed, right side switches to RED ON & left side switches to GREEN ON after a 3sec transition
      delay (right AMBER & left RED OFF).
0012  *
0013  * Process repeats.
0014  *
0015  * User is required to activate the vehicle counter buttons to simulate a vehicle entering & exiting the single lane
      bridge.
0016  *
0017  * STATES:
0018  * 0 - Both sides RED for 5sec & both queues = 0 (initial state)
0019  * 1 - Left side GREEN for until right queue > 0 (right stays RED)
0020  * 2 - Left side AMBER for 3sec
0021  * 3 - Left-to-Right 3sec transition delay (both RED)
0022  * 4 - Right side GREEN for until right queue empty & left queue > 0 (left stays RED)
0023  * 5 - Right side AMBER for 3sec
0024  * 6 - Right-to-Left transition delay (both RED)
0025  * Loops around to state #1.
0026 *)
0027 END_REGION
0028
```

```
0029
0030 REGION FIRST_SCAN
0031   // Catch first PLC scan
0032   IF "FirstScan" THEN
0033     #xFirstScan := TRUE;
0034   END_IF;
0035
0036   // First PLC scan caught
0037   IF #xFirstScan THEN
0038     // Start the inital delay timer & move to the next state
0039     #TONs.tInitial_Delay(IN := TRUE,      // timer input on
0040                PT := #"5sec"); // 5sec duration
0041     #iState := 0; // initialize the state to 0
0042   END_IF;
0043 END_REGION
0044
0045
0046 REGION STATE_MACHINE
0047   // LED State Machine
0048   CASE #iState OF
0049     0:  // Initial state - both sides red for 5 sec
0050       #xLeftSide_Green := FALSE;  // left green off
0051       #xRightSide_Green := FALSE; // right green off
0052       #xLeftSide_Amber := FALSE;  // left amber off
0053       #xRightSide_Amber := FALSE; // right amber off
0054       #xLeftSide_Red := TRUE;     // left red on
0055       #xRightSide_Red := TRUE;    // right red on
0056
0057       // Set both vehicle counts to 0
0058       #iLeftQueue := 0;
0059       #iRightQueue := 0;
0060
0061       // Reset xFirstScan flag
0062       IF #xFirstScan THEN
0063         #xFirstScan := FALSE;
0064       END_IF;
0065
0066       // Wait for Initial_Delay_TON output
0067       IF #TONs.tInitial_Delay.Q THEN
```

```
0068          // Reset initial timer & move to the next state
0069          RESET_TIMER(TIMER := #TONs.tInitial_Delay);
0070          #iState := 1;
0071        END_IF;
0072        ;
0073      1:  // Left side green for until right queue > 0 (right stays red)
0074        #xLeftSide_Green := TRUE;    // left green on
0075        #xRightSide_Green := FALSE; // right green off
0076        #xLeftSide_Amber := FALSE;  // left amber off
0077        #xRightSide_Amber := FALSE; // right amber off
0078        #xLeftSide_Red := FALSE;     // left red off
0079        #xRightSide_Red := TRUE;     // right red on
0080
0081        // Wait for right side queue to become greater than 0
0082        IF #iRightQueue > 0 THEN
0083          // Start the amber LED delay timer
0084          #TONs.tAmber_Delay(IN := TRUE,      // timer input on
0085                             PT := #"3sec"); // 3sec duration
0086          // Move to the next state
0087          #iState := 2;
0088        END_IF;
0089        ;
0090      2:  // Left side amber for 3sec
0091        #xLeftSide_Green := FALSE;  // left green off
0092        #xRightSide_Green := FALSE; // right green off
0093        #xLeftSide_Amber := TRUE;    // left amber on
0094        #xRightSide_Amber := FALSE; // right amber off
0095        #xLeftSide_Red := FALSE;     // left red off
0096        #xRightSide_Red := TRUE;     // right red on
0097
0098        // Wait for Amber_Delay_TON output
0099        IF #TONs.tAmber_Delay.Q THEN
0100          // Start the transition delay timer (both sides red)
0101          #TONs.tTransition_Delay(IN := TRUE,      // timer input on
0102                                  PT := #"3sec"); // 3sec duration
0103          // Reset amber delay timer
0104          RESET_TIMER(TIMER := #TONs.tAmber_Delay);
0105          #iState := 3;
0106        END_IF;
```

```
0107        ;
0108      3:  // Left-to-Right transition (both red)
0109        #xLeftSide_Green := FALSE;  // left green off
0110        #xRightSide_Green := FALSE; // right green off
0111        #xLeftSide_Amber := FALSE;  // left amber off
0112        #xRightSide_Amber := FALSE; // right amber off
0113        #xLeftSide_Red := TRUE;     // left red on
0114        #xRightSide_Red := TRUE;    // right red on
0115
0116        // Wait for Transition_Delay_TON output
0117        IF #TONs.tTransition_Delay.Q THEN
0118          // Reset transition delay timer & move to the next state
0119          RESET_TIMER(TIMER := #TONs.tTransition_Delay);
0120          #iState := 4;
0121        END_IF;
0122        ;
0123      4:  // Right side green for until right queue empty & left queue > 0 (left stays red)
0124        #xLeftSide_Green := FALSE;  // left green off
0125        #xRightSide_Green := TRUE;  // right green on
0126        #xLeftSide_Amber := FALSE;  // left amber off
0127        #xRightSide_Amber := FALSE; // right amber off
0128        #xLeftSide_Red := TRUE;     // left red on
0129        #xRightSide_Red := FALSE;   // right red off
0130
0131        // Wait for right side queue to = 0 & left side queue to become greater than 0
0132        IF #iRightQueue = 0 AND #iLeftQueue > 0 THEN
0133          // Start the amber LED delay timer & move to the next state
0134          #TONs.tAmber_Delay(IN := TRUE,     // timer input on
0135                             PT := #"3sec"); // 3sec duration
0136          #iState := 5;
0137        END_IF;
0138        ;
0139      5:  // Right side AMBER for 3sec
0140        #xLeftSide_Green := FALSE;  // left green off
0141        #xRightSide_Green := FALSE; // right green off
0142        #xLeftSide_Amber := FALSE;  // left amber off
0143        #xRightSide_Amber := TRUE;  // right amber on
0144        #xLeftSide_Red := TRUE;     // left red on
0145        #xRightSide_Red := FALSE;   // right red off
```

```
0146
0147        // Wait for Amber_Delay_TON output
0148        IF #TONs.tAmber_Delay.Q THEN
0149          // Start the transition delay timer
0150          #TONs.tTransition_Delay(IN := TRUE,      // timer input on
0151                                  PT := #"3sec"); // 3sec duration
0152          // Reset amber delay timer
0153          RESET_TIMER(TIMER := #TONs.tAmber_Delay);
0154          #iState := 6;
0155        END_IF;
0156        ;
0157      6:  // Right-to-Left transition (both red)
0158        #xLeftSide_Green := FALSE;  // left green off
0159        #xRightSide_Green := FALSE; // right green off
0160        #xLeftSide_Amber := FALSE;  // left amber off
0161        #xRightSide_Amber := FALSE; // right amber off
0162        #xLeftSide_Red := TRUE;     // left red on
0163        #xRightSide_Red := TRUE;    // right red on
0164
0165        // Wait for Transition_Delay_TON output
0166        IF #TONs.tTransition_Delay.Q THEN
0167          // Reset transition delay timer & loop back to state 1
0168          RESET_TIMER(TIMER := #TONs.tTransition_Delay);
0169          #iState := 1;
0170        END_IF;
0171    END_CASE;
0172 END_REGION
```

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Program blocks / WS01_TVET_Workstation / 01-Traffic_Logic

## FB001-Traffic_Control_DB [DB2]

| FB001-Traffic_Control_DB Properties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **General** | | | | | | | |
| **Name** | FB001-Traffic_Control_DB | **Number** | 2 | **Type** | DB | **Language** | DB |
| **Numbering** | Automatic | | | | | | |
| **Information** | | | | | | | |
| **Title** | | **Author** | | **Comment** | | **Family** | |
| **Version** | 0.1 | **User-defined ID** | | | | | |

| Name | Data type | Start value | Retain |
|---|---|---|---|
| ▼ Input | | | |
| xLeftSide_Enter | Bool | false | False |
| xLeftSide_Exit | Bool | false | False |
| xRightSide_Enter | Bool | false | False |
| xRightSide_Exit | Bool | false | False |
| ▼ Output | | | |
| xLeftSide_Green | Bool | false | False |
| xLeftSide_Amber | Bool | false | False |
| xLeftSide_Red | Bool | false | False |
| xRightSide_Green | Bool | false | False |
| xRightSide_Amber | Bool | false | False |
| xRightSide_Red | Bool | false | False |
| InOut | | | |
| ▼ Static | | | |
| xFirstScan | Bool | false | False |
| iState | Int | 0 | False |
| iLeftQueue | Int | 0 | False |
| iRightQueue | Int | 0 | False |
| TONs | Struct | | False |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Program blocks / WS01_TVET_Workstation / 01-Traffic_Logic

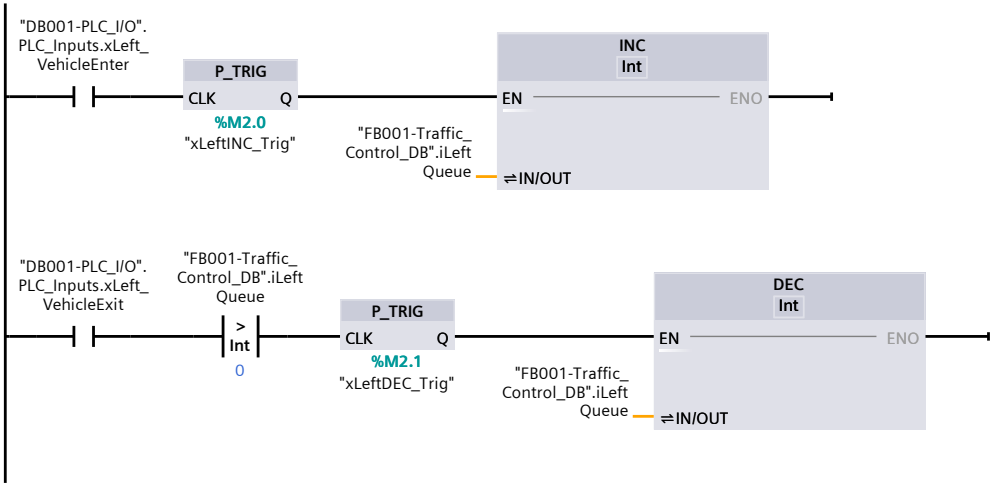
## FC002-VehicleQueue_Control [FC2]

| FC002-VehicleQueue_Control Properties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **General** | | | | | | | |
| **Name** | FC002-VehicleQueue_Control | **Number** | 2 | **Type** | FC | **Language** | LAD |
| **Numbering** | Manual | | | | | | |
| **Information** | | | | | | | |
| **Title** | | **Author** | | **Comment** | | **Family** | |
| **Version** | 0.1 | **User-defined ID** | | | | | |

| Name | Data type | Default value |
|---|---|---|
| Input | | |
| Output | | |
| InOut | | |
| Temp | | |
| Constant | | |
| ▼ Return | | |
| FC002-VehicleQueue_Control | Void | |

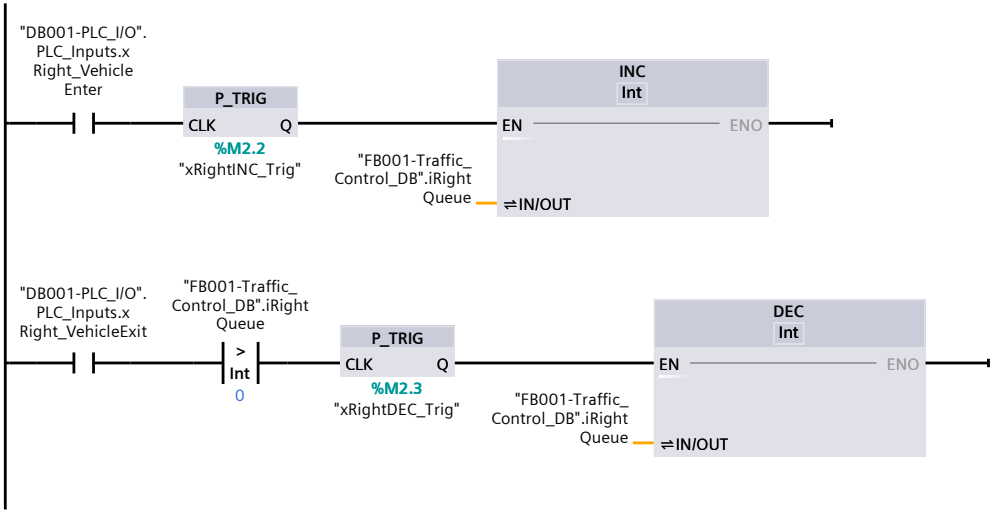
### Network 1: Left Side Vehicle Counting

> Increment left queue count with push button
> Decrement left queue count with push button only when the count is greater than 0 (prevents negative values)




## Network 2: Right Side Vehicle Counting

> Increment right queue count with push button
> Decrement right queue count with push button only when the count is greater than 0 (prevents negative values)



# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]

## Technology objects

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / Default tag table [30]

## PLC tags

| PLC tags | | | | |
|---|---|---|---|---|
| | Name | Data type | Address | Retain |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / Default tag table [30]

## User constants

| User constants | | | |
|---|---|---|---|
| | Name | Data type | Value |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / PLC_Inputs [16]

## PLC tags

| PLC tags | | | | |
|---|---|---|---|---|
| | Name | Data type | Address | Retain |
| | DI0.0 | Bool | %I0.0 | False |
| | DI0.1 | Bool | %I0.1 | False |
| | DI0.2 | Bool | %I0.2 | False |
| | DI0.3 | Bool | %I0.3 | False |
| | DI0.4 | Bool | %I0.4 | False |
| | DI0.5 | Bool | %I0.5 | False |
| | DI0.6 | Bool | %I0.6 | False |
| | DI0.7 | Bool | %I0.7 | False |
| | DI1.0 | Bool | %I1.0 | False |
| | DI1.1 | Bool | %I1.1 | False |
| | DI1.2 | Bool | %I1.2 | False |
| | DI1.3 | Bool | %I1.3 | False |
| | DI1.4 | Bool | %I1.4 | False |
| | DI1.5 | Bool | %I1.5 | False |
| | AI0.0 | Word | %IW64 | False |
| | AI0.1 | Word | %IW66 | False |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / PLC_Inputs [16]

## User constants

| User constants | | | |
|---|---|---|---|
| | Name | Data type | Value |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / PLC_Outputs [12]

## PLC tags

| PLC tags | | | | |
|---|---|---|---|---|
| | Name | Data type | Address | Retain |
| | DQ0.0 | Bool | %Q0.0 | False |
| | DQ0.1 | Bool | %Q0.1 | False |
| | DQ0.2 | Bool | %Q0.2 | False |
| | DQ0.3 | Bool | %Q0.3 | False |
| | DQ0.4 | Bool | %Q0.4 | False |
| | DQ0.5 | Bool | %Q0.5 | False |
| | DQ0.6 | Bool | %Q0.6 | False |
| | DQ0.7 | Bool | %Q0.7 | False |
| | DQ1.0 | Bool | %Q1.0 | False |
| | DQ1.1 | Bool | %Q1.1 | False |
| | AQ0.0 | Word | %QW64 | False |
| | AQ0.1 | Word | %QW66 | False |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / PLC_Outputs [12]

## User constants

| User constants | | | |
|---|---|---|---|
| | Name | Data type | Value |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / System_Tags [14]

## PLC tags

| PLC tags | | | | |
|---|---|---|---|---|
| | Name | Data type | Address | Retain |
| | Clock_Byte | Byte | %MB0 | False |
| | Clock_10Hz | Bool | %M0.0 | False |
| | Clock_5Hz | Bool | %M0.1 | False |
| | Clock_2.5Hz | Bool | %M0.2 | False |
| | Clock_2Hz | Bool | %M0.3 | False |
| | Clock_1.25Hz | Bool | %M0.4 | False |
| | Clock_1Hz | Bool | %M0.5 | False |
| | Clock_0.625Hz | Bool | %M0.6 | False |
| | Clock_0.5Hz | Bool | %M0.7 | False |
| | System_Byte | Byte | %MB1 | False |
| | FirstScan | Bool | %M1.0 | False |
| | DiagStatusUpdate | Bool | %M1.1 | False |
| | AlwaysTRUE | Bool | %M1.2 | False |
| | AlwaysFALSE | Bool | %M1.3 | False |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / System_Tags [14]

## User constants

| User constants | | | |
|---|---|---|---|
| | Name | Data type | Value |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / Trigger_Tags [5]

## PLC tags

| PLC tags | | | | |
|---|---|---|---|---|
| | Name | Data type | Address | Retain |
| | xLeftINC_Trig | Bool | %M2.0 | False |
| | xLeftDEC_Trig | Bool | %M2.1 | False |
| | xRightINC_Trig | Bool | %M2.2 | False |
| | xRightDEC_Trig | Bool | %M2.3 | False |
| | xTrig5 | Bool | %M2.4 | False |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC tags / Trigger_Tags [5]

## User constants

| User constants | | | |
|---|---|---|---|
| | Name | Data type | Value |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / PLC data types

## System data types

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Watch and force tables

## Force table

| Name | Address | Display format | Force value |
|---|---|---|---|

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]

## Traces

| Name |
| --- |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Traces

## Measurements

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Traces

## Combined measurements

| Name |
| --- |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / OPC UA communication

## Server interfaces

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]

## PLC alarm text lists

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] / Local modules

## TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]

| TRAFFIC_LIGHTS_PLC | | | | | |
|---|---|---|---|---|---|
| **Project information** | | | | | |
| **Name** | TRAFFIC_LIGHTS_PLC | **Author** | Admin | **Comment** | |
| **Slot** | 1 | **Rack** | 0 | | |
| **Catalog information** | | | | | |
| **Short designation** | CPU 1215C DC/DC/DC | **Description** | Work memory 200 KB; 24VDC power supply with DI14 x 24VDC SINK/SOURCE, DQ10 x 24VDC and AI2 and AQ2 on board; 6 high-speed counters and 4 pulse outputs on-board; signal board expands on-board I/O; up to 3 communication modules for serial communication; up to 8 signal modules for I/O expansion; PROFINET IO controller, 2 ports, I-device, transport protocol TCP/IP, secure Open User Communication, S7 communication, Web server, OPC UA: Server DA | **Article number** | 6ES7 215-1AG40-0XB0 |
| **Firmware version** | V4.6 | | False | | |

| Connection resources\ | | | | |
|---|---|---|---|---|
| | **Station resources - Reserved - Maximum** | **Station resources - Reserved - Configured** | **Station resources - Dynamic - Configured** | **Module resources - TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] - Configured** |
| Maximum number of resources: | | 34 | 34 | 68 |
| | Maximum | Configured | Configured | Configured |
| PG communication: | 4 | - | - | - |
| HMI communication: | 12 | 0 | 0 | 0 |
| S7 communication: | 8 | 0 | 0 | 0 |
| Open user communication: | 8 | 0 | 0 | 0 |
| Web communication: | 2 | - | - | - |
| OPC UA client/server communication: | 0 | - | - | - |
| Other communication: | - | - | 0 | 0 |
| Total resources used: | | 0 | 0 | 0 |
| Available resources: | | 34 | 34 | 68 |

| Overview of addresses\Overview of addresses\Overview of addresses | | | | | |
|---|---|---|---|---|---|
| **Inputs** | True | **Outputs** | True | **Address gaps** | False |
| **Slot** | True | | | | |

| Type | Addr. from | Addr. to | Module | PIP | Device name | Device number | Size | Master / IO system | Rack | Slot |
|---|---|---|---|---|---|---|---|---|---|---|
| I | 0 | 1 | DI 14/DQ 10_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 1 |
| O | 0 | 1 | DI 14/DQ 10_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 1 |
| I | 64 | 67 | AI 2/AQ 2_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 2 |
| O | 64 | 67 | AI 2/AQ 2_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 2 |
| I | 1000 | 1003 | HSC_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 16 |
| I | 1004 | 1007 | HSC_2 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 17 |
| I | 1008 | 1011 | HSC_3 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 18 |
| I | 1012 | 1015 | HSC_4 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 19 |
| I | 1016 | 1019 | HSC_5 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 4 Bytes | - | 0 | 1 20 |
| I | 1020 | 1023 | HSC_6 | Automatic update | TRAFFIC_LIGHTS_PLC | - | 4 Bytes | - | 0 | 1 21 |

| Type | Addr. from | Addr. to | Module | PIP | Device name | Device number | Size | Master / IO system | Rack | Slot |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | [CPU 1215C DC/DC/DC] | | | | | |
| O | 1000 | 1001 | Pulse_1 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 32 |
| O | 1002 | 1003 | Pulse_2 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 33 |
| O | 1004 | 1005 | Pulse_3 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 34 |
| O | 1006 | 1007 | Pulse_4 | Automatic update | TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC] | - | 2 Bytes | - | 0 | 1 35 |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES

## Ungrouped devices

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES

## Security settings

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / Cross-device functions / Project traces

## Measurements

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / Cross-device functions / Long-term project traces

## Measurements

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / Common data / Alarm classes

## Alarm classes

| Alarm classes | | | | |
|---|---|---|---|---|
| **Name** | **ID** | **Display name** | **Acknowledgment** | **Priority** |
| Acknowledgement | 33 | A | True | 0 |
| No Acknowledgement | 34 | NA | False | 0 |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / Common data

## Logs

This folder is empty.

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / Languages & resources

## Project languages

| Languages |
| --- |
| **Reference language** |
| English (United States) |

| Editing language |
| --- |
| English (United States) |

| Other project languages |
| --- |
| Empty |

# TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES / Languages & resources / Project texts

## Project texts

| Project texts | | |
|---|---|---|
| **English (United States)** | **Category** | **Reference** |
| - | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\rAI0.1_Temp |
| - | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\rAI0.0_Temp |
| - | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\rAQ0.1_Temp |
| - | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\rAQ0.0_Temp |
| "Main Program Sweep (Cycle)" | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\Main [OB1]\Block title |
| ========== ANALOG_PROCESSING ========== | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 7\Title |
| ========== DIGITAL_INPUTS ========== | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 1\Title |
| ========== DIGITAL_OUTPUTS ========== | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 4\Title |
| ========== I/O_HANDLING ========== | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\Main [OB1]\Network 2\Title |
| ========== PROGRAM_INFORMA-TION ========== | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\Main [OB1]\Network 1\Title |
| ========== TRAFFIC_CONTROL ========== | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\Main [OB1]\Network 3\Title |
| > 0V to 10V Analog Scalling > change MIN/MAX values accordingly | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 8\Comment |

| English (United States) | Category | Reference |
|---|---|---|
| > 0V to 10V Analog Scalling > change MIN/MAX values accordingly | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 9\Comment |
| > Call the PLC I/O Handler Function | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\Main [OB1]\Network 2\Comment |
| > Call the Vehicle Queue Control Function > Call the Traffic Control Function Block | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\Main [OB1]\Network 3\Comment |
| > DI0.0 - DI0.7 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 2\Comment |
| > DI1.0 - DI1.5 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 3\Comment |
| > DQ0.0 - DQ0.7 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 5\Comment |
| > DQ1.0 - DQ1.1 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 6\Comment |
| > Increment left queue count with push button > Decrement left queue count with push button only when the count is greater than 0 (prevents negative values) | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FC002-Vehicle-Queue_Control [FC2]\Network 1\Comment |
| > Increment right queue count with push button > Decrement right queue count with push button only when the count is greater than 0 (prevents negative values) | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FC002-Vehicle-Queue_Control [FC2]\Network 2\Comment |
| A | Alarm class text | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\Acknowledgement\AlarmClassData_IDisplayNaming_DisplayName |
| A | Alarm class text | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\Acknowledgement\ShortName |
| Analog Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\AI0.0\Comment |
| Analog Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\AI0.1\Comment |
| Analog Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\AQ0.0\Comment |
| Analog Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\AQ0.1\Comment |

| English (United States) | Category | Reference |
|---|---|---|
| ANALOG_INPUTS | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 8\Title |
| ANALOG_OUTPUTS | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 9\Title |
| BANK_0 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 2\Title |
| BANK_0 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 5\Title |
| BANK_1 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 3\Title |
| BANK_1 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\FC001-PLC_I/O_Handler [FC1]\Network 6\Title |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI0.0\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI0.1\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI0.2\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI0.3\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI0.4\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI0.5\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI0.6\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI0.7\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI1.0\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI1.1\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI1.2\Comment |

| English (United States) | Category | Reference |
|---|---|---|
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI1.3\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI1.4\Comment |
| Digital Input | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Inputs [16]\DI1.5\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ0.0\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ0.1\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ0.2\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ0.3\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ0.4\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ0.5\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ0.6\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ0.7\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ1.0\Comment |
| Digital Output | Text category tag comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\PLC tags\PLC_Outputs [12]\DQ1.1\Comment |
| First PLC scan catch bit | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xFirstScan |
| Left Side Amber LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Outputs.xLeft_AmberLED |
| Left Side Amber LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xLeftSide_Amber |
| Left Side Green LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Outputs.xLeft_GreenLED |

| English (United States) | Category | Reference |
|---|---|---|
| Left Side Green LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xLeftSide_Green |
| Left Side Red LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Outputs.xLeft_RedLED |
| Left Side Red LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xLeftSide_Red |
| Left Side Vehicle Counting | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FC002-Vehicle-Queue_Control [FC2]\Network 1\Title |
| Left Side Vehicle Enter | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xLeftSide_Enter |
| Left Side Vehicle Exit | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xLeftSide_Exit |
| Left Side Vehicle Queue Count | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\iLeftQueue |
| NA | Alarm class text | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\No Acknowledgement\AlarmClassDa-ta_IDisplayNaming_DisplayName |
| NA | Alarm class text | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\No Acknowledgement\ShortName |
| PLC Inputs Structure | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Inputs |
| PLC Outputs Structure | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Outputs |
| PT time constant | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\3sec |
| PT time constant | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\5sec |
| PT time constant | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\10sec |

| English (United States) | Category | Reference |
|---|---|---|
| Right Side Amber LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Outputs.xRight_AmberLED |
| Right Side Amber LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xRightSide_Amber |
| Right Side Green LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Outputs.xRight_GreenLED |
| Right Side Green LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xRightSide_Green |
| Right Side Red LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Outputs.xRight_RedLED |
| Right Side Red LED | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xRightSide_Red |
| Right Side Vehicle Counting | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FC002-Vehicle-Queue_Control [FC2]\Network 2\Title |
| Right Side Vehicle Enter | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xRightSide_Enter |
| Right Side Vehicle Exit | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\xRightSide_Exit |
| Right Side Vehicle Queue Count | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\iRightQueue |
| State number | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\iState |
| Timer ON Delay | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\TONs.tInitial_Delay |
| Timer ON Delay | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\TONs.tAmber_Delay |

| English (United States) | Category | Reference |
|---|---|---|
| Timer ON Delay | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\01-Traffic_Logic\FB001-Traffic_Control [FB1]\TONs.tTransition_Delay |
| Vehicle Counter 1 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Inputs.xLeft_VehicleEnter |
| Vehicle Counter 2 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Inputs.xLeft_VehicleExit |
| Vehicle Counter 3 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Inputs.xRight_VehicleEnter |
| Vehicle Counter 4 | Block comment | TRAFFIC_LIGHTS_BRIDGE_CROSSING_SCL_SWITCHES\TRAFFIC_LIGHTS_PLC [CPU 1215C DC/DC/DC]\Program blocks\WS01_TVET_Workstation\00-I/O_Mapping\DB001-PLC_I/O [DB1]\PLC_Inputs.xRight_VehicleExit |