## Commonly used Timing Parameters

- WALK—Establishes the length of the WALK interval.

- PED CLEARANCE—Establishes the length of flashing DON'T WALK interval

- MINIMUM GREEN—Establishes the length of initial state of green interval

- PASSAGE TIME/\*Vehical Extension\*/Gap—Establishes the increment of right-of-way (green) time extension for each vehicle actuation during the green interval

- MAXIMUM GREEN—Establishes the maximum limit to which the green interval can be extended on a phase in the presence of a serviceable demand on a conflicting phase

- ADDED INITIAL—Density feature. Establishes number of seconds by which each vehicle (actuation) increases the initial state of green during non-green time on the phase

- MAXIMUM INITIAL—Density feature. Establishes the maximum limit to which the initial interval can be extended on a phase

- TIME B4 REDUCTION—Density feature. Establishes a preset time before the allowed gap (Passage Time) begins to reduce

- TIME TO REDUCE—Density feature. Establishes time in which the allowed gap is reduced from passage time to minimum gap, after the time before reduction has expired

- MINIMUM GAP—Density feature. Establishes minimum value to which allowed gap between actuations on phase with green can be reduced upon expiration of time to reduce

- YELLOW CHANGE—Establishes the length of yellow interval following the green interval

- RED CLEARANCE—Establishes the length of red clearance interval following the yellow interval

- Splits - control the amount of time given to each phase in a cycle.

- \*Offsets\* - control the time relationship between intersections.

- Offset Reference Point (or Coordination Point)—The defined point that creates an

association between a signalized intersection and the master clock.

- Recall - causes the controller to place a call automatically for a specified phase regardless of the presence of any detector-actuated calls. E.g. Before weather events that may render the detection system ineffective.

- Maximum Recall— A recall mode that place a continuous call for vehicle service on a phase in order to run its maximum green duration every cycle.

- Pedestrian Recall— place a continuous call for pedestrian service on a phase, resulting in the

controller timing its walk and FDW intervals every cycle.

- Memory modes — controller settings that place calls on a particular phase so that the phase will be served either automatically or based on past vehicle actuations

- Locking Mode — the first actuation received by the controller on a specified channel during the red interval (and optionally, yellow) is used by the controller to trigger a continuous call for service. This call is retained until the assigned phase is served, regardless of whether any vehicles are waiting to be served.

- Non-Locking Mode — does not retain an actuation in the controller after the actuation is dropped by the detection unit.

- Pre-emption Phase - the transfer of normal operation of a traffic control signal to a special control mode of operation (1) designed and operated for important vehicles, e.g. trains, boats, emergency vehicles, and light rail transit, to have green light at and through a signal. Fire engines because the size of their vehicles are less able to move through traffic without the aid of preemption.

- Transition Into Preemption

\* The yellow and all-red vehicle clearance interval shall not be shortened or omitted.

\* Pedestrian walk or clearance intervals may be shortened or omitted.

\* A return to the previous steady green signal indication shall be permitted following a steady yellow signal indication in the same signal face, omitting the red clearance interval.

- Transition out of Preemption

\* The yellow and all-red vehicle clearance interval of the preempted approach shall not be shortened or omitted.

\* A signal indication sequence from a steady yellow signal indication to a steady green signal indication shall not be permitted.

## OpenPLC FAQ

- BINDING MODBUS SLAVE TO PLC ADDRESSES [link](https://www.openplcproject.com/reference/plc-addressing)

OpenPLC operates as a block for Modbus tables. PLC address binding (the Modbus map) is based on the hierarchical address value, the data width, and the direction.

- Import existing PLCOpen compliant XML code into OpenPLC \*Editor\*

Create a new project on OpenPLC Editor and save it. Then close the project, open the folder where you saved the project, and replace the file plc.xml with your PLCOpen XML file. It is important that your file has the same name (plc.xml) otherwise it won't work. After that, just open the project again on OpenPLC Editor and you should see your program.

- REAL TIME CLOCK (RTC) [link](https://openplc.discussion.community/post/support-for-rtc-on-special-functions-9900466?pid=1305993224#post1305993224)

Currently only two special functions are implemented: current time (RTC) and number of scan cycles executed. These functions are located in memory at address %ML1024 onwards. To be more specific:

%ML1024   ->   Current time in seconds since Epoch

%ML1025   ->   Number of scan cycles executed since the runtime started

%ML1026   ->   Slave Devices communication error counter