



Product Type: *Controllers* *Detector Volume Occupancy Simulation*

Reference: AN2065
Date: March 16, 2007

EXAMPLE:

- This operation illustrated the simulation of a set Volume and Occupancy input to a selected detector. The table allows for the selection of preset values for the delays required to create this simulation.

Program the Logic Processor

MM-1-8-2 Program LP steps 1 - 3 as follows:

LP 1 (Volume count selection)

```

IF LOGIC FLAG 1 IS OFF
THEN SET LOGIC FLAG 1 ON
ELSE SET LOGIC FLAG 2 ON
      DELAY FOR X.Y SECONDS
      SET LOGIC FLAG 1 OFF

```

LP 2 (Occupancy percent per of Volume count)

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IF LOGIC FLAG 2 IS ON
THEN DLAY FOR Z.W SECONDS
      SET LOGIC FLAG 2 OFF

```

LP 3 (Detector simulation applied to a detector 31.)

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IF LOGIC FLAG 2 IS ON
THEN SET VEH DET 17-32 31 ON
ELSE SET VEH DET 17-32 31 OFF

```

Additional detectors can use the same simulation by adding additional LP statements similar to LP 3 and assign a different detector.

The detector number or values for X,Y,Z & W can be changed to produce the desired simulation on a specific detector.



Product Type: Controllers

Detector Volume Occupancy Simulation

		Z.W Occupancy (in percent)								
		X.Y	5	10	15	20	25	30	35	40
Vehicle per hour	300	12.0	0.6	1.2	1.8	2.4	3.0	4.0	4.2	4.8
	600	6.0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4
	900	4.0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6
	1200	3.0	-	0.3	-	0.6	-	0.9	-	1.2
	1500	2.4	-	-	-	-	-	0.8	-	-
	1800	2.0	-	0.2	-	0.4	-	0.6	-	0.8
	2400	1.5	-	-	-	-	-	-	-	-
	3000	1.2	-	-	-	-	-	-	-	-
	3600	1.0	-	0.1	-	0.2	-	0.3	-	0.4

This table only references volumes and occupancy values that reflect even numbers. For the cells with a dash “-“, refer to the general case below.

In General to calculate what the VPH is for any value of X and Y, $VPH = 3600 / X.Y$. That VPH may contain partial counts that will alter the VPH from recording period to recording period.

Example $3600 / 1.7 = 2116.6...VPH$

In General to simulate what the % Occupancy (expressed by its decimal equivalent [DE]) is for the VPH calculated above, $OCC = X.Y * DE * 100$ for any value of DE. That % Occupancy may contain partial counts that will alter the Occupancy from recording period to recording period.

Example $1.7 * .25 * 100 = 42.5\%$ occupancy