

Chapter 3 Car Wash

A car wash with two bays has a pump supplying water pressure to the spray heads. If both bays are in use or if one bay requires a second set of heads for a tall truck, a second pump is required. The Tall truck request is made via a selector switch for each bay. If both bays are in use with a tall truck in one or both bays, a third pump is required.

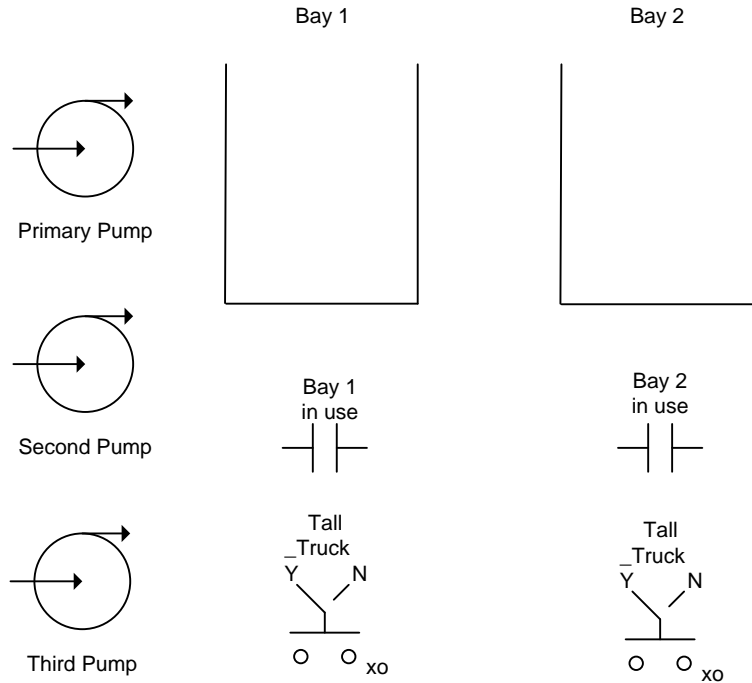


Fig. 5-41 Car Wash

Definition of Inputs:

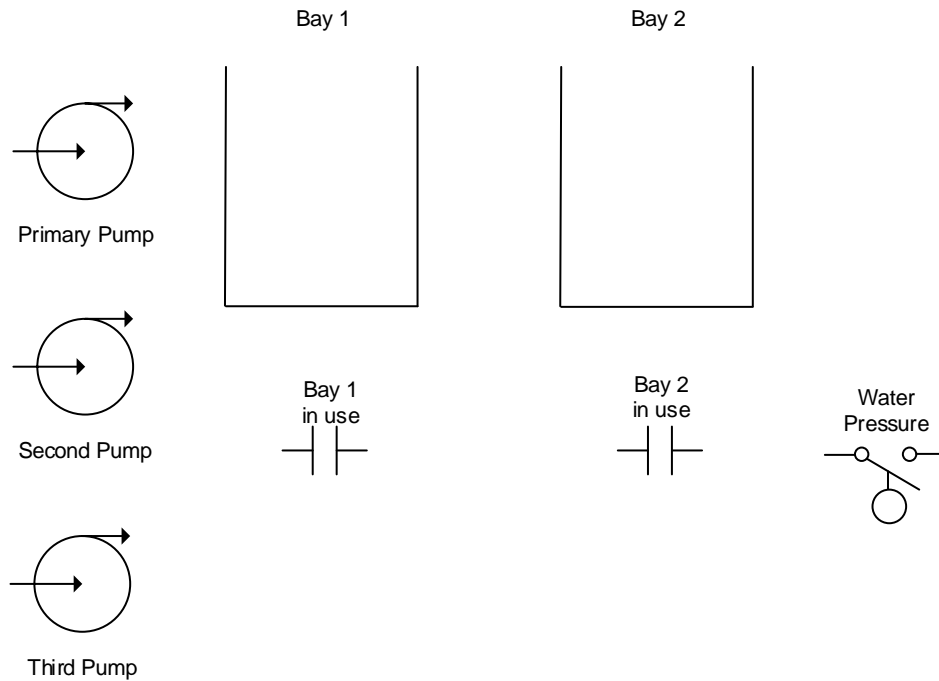
Sensor	Function/State	Signal Assignment

Definition of Outputs:

Table 5-6b

Actuator	Function/State	Signal Assignment

A car wash with two bays has a pump supplying water pressure to the spray heads. If a bay in use contact turns on, one pump automatically turns on. If a water pressure switch is not satisfied (sufficient pressure) and a delay of 5 seconds occurs, a second pump turns on. If, after the second pump turns on and water pressure is not satisfied and a 10 second delay occurs, a third pump is turned on. All pumps stay on for the duration of the wash and turn off after both bay in use contacts turn off.



Fill in Definition of Inputs:

Sensor	Function/State	Signal Assignment

Fill in Definition of Outputs:

Actuator	Function/State	Signal Assignment

Write Ladder Logic to Turn on the Outputs using Ladder Logic for the Problem above:

What could you do to enhance the logic for this process?

Change the problem above per:

A car wash with two bays has a pump supplying water pressure to the spray heads. If a bay in use contact turns on, one pump automatically turns on. If a water pressure switch is not satisfied (sufficient pressure) and a delay of 5 seconds occurs, a second pump turns on. If, after the second pump turns on and water pressure is not satisfied and a 10 second delay occurs, a third pump is turned on. Pumps remain on until one of the bay in use contacts turns off at which time pump 2 and 3 turn off and the timer circuits again may turn on additional pumps if the pressure is not satisfied. If both contacts turn off, all pumps turn off.