Water Matrix Inc.
3-331 Trowers Rd., Woodbridge, ON L4L 6A2 Tel: (905)850-8080 or Toll-Free: (800)668-4420
Fax: (905)850-9100
www.watermatrix.com

UTC Sentinel™ Product Component Description

Components:

Passive infrared motion sensor
Solenoid valve
Programmable control unit

Passive infrared motion sensor

The motion sensor utilized in the UTC Sentinel™ system is a high quality, extremely sensitive device. It is installed in the ceiling and can be flush, surface or recess mounted. It is designed to pick up traffic directly in front of the urinals. The area of activation can be fine tuned using the precut masks supplied with the sensor. This sensor has a 16 volt DC @ 50mA rating.

Solenoid valve (and assembly)

The solenoid valve is the plumbing portion of the UTC Sentinel™ system. The solenoid valve is installed in the supply line.

The solenoid valve has a 6-watt rating and operates on 24 volts DC. This solenoid valve is a "normally closed" valve so that should the power be interrupted the valve will remain closed. It is also a "slow actuating" valve, meaning that it is designed to open and close slowly. This prevents such occurrences as "hammering" associated with high water pressure and quick closing valves.

Programmable control unit

This unit is can be installed anywhere including, above ceiling tiles, or any convenient location which is not readily accessible to the public. The control unit plugs into a 110-volt outlet. The output is 24 volts DC/60Hz/1.2 Amps. Therefore wiring from the unit to the solenoid carries low voltage only. The unit is CSA approved. It utilizes a class 2 transformer that is designed to be quickly and easily replaced, if necessary, by simply unplugging it from the circuit board. The control unit has two distinct stages that it operates through. Each of these stages are designated on the L.E.D. display by the first digit.

Stage 1 is the "inactivity" timer. This stage is programmable from 1 hour to 99 hours. The function of this stage is to flush the urinals within a certain period of time, even if the system is not activated by the motion sensor, when so desired. This function helps prevent odor and keeps the traps primed should the building be unoccupied for extended periods of time. For example, it would be most useful over the summer holidays of a school year. If you wanted the system to flush once a day whether or not the urinals were used, you would set stage 1 to 24 hours. If the timer reached zero it would automatically initiate a flush sequence by moving to stage 2.

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Stage 2 is a programmable delay time initiated from the activation of the motion sensor. This delay can be programmed from 1 minute to 99 minutes. The purpose of this delay is to prevent the urinals from being flushed after each and every person. For example, if it were recess or break time in a school environment and a number of students entered the washroom to use the urinals, the first student in front of the urinal would initiate the stage 2 countdown timer (normally about 10 minutes). Therefore even though a number of students use the urinals, the system initiates only one flush after the 10 minute delay timer has reached zero. This is particularly practical for high traffic washrooms but is fully programmable to accommodate any situation.

Stage 3 is also programmable from 1 to 99 minutes and determines how long the solenoid valve is open to flush the urinals (determines flush volume).

Each of the three programmed values are retained in the memory once set. Should there be a power interruption these times will be stored in memory until the power resumes.

Another feature of the control unit is a test button. This allows the on site person to test the system to ensure it flushes, in a reduced delay time. In other words the system when tested will flush within 1 minute rather than waiting the programmed time (usually 10 minutes).

The control unit can also monitor the number of flushes. This is particularly useful for calculating savings when retrofitting urinal tanks.

Final Overview

To quickly recap how the system works:

A person stands in front of a urinal. The passive infrared motion sensor, located in the ceiling picks them up and initiates a countdown timer. Once the timer reaches zero it initiates stage 3, which will flush the urinals. Once the flush is complete the system returns to stage 1 and restarts its inactivity countdown until it is either triggered by someone in front of the urinals again or is allowed to count down to zero.