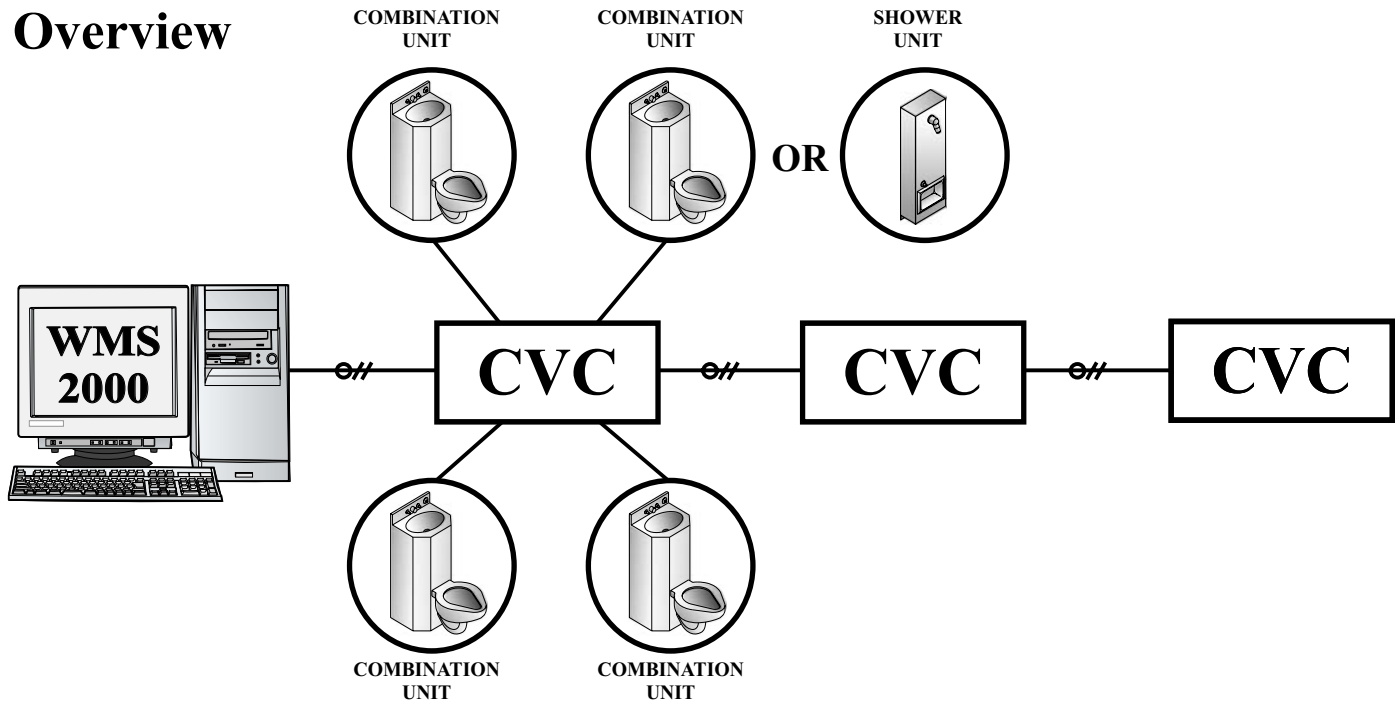


WMS-2000 Water Management System

Overview



Recommended Specifications

Electronic water management system shall be Willoughby Model WMS2000.

Water management system shall be a PC based system operating in a Windows XP or Windows NT environment. PC shall serve as operator interface serving up to eight individual trunks of up to 32 networked Cell Valve Controllers.

Individual Cell Valve Controllers (CVC's) shall be located in the plumbing chase and shall control the operation of electronic lavatory valves, electronic shower valves and electronic-hydraulic flush valves. CVC's shall require 24 volts AC for operation. System manufacturer shall supply 120/24 VAC step down transformers. Each CVC shall be capable of controlling up to 4 lavatory/toilet combination units (1 hot valve, 1 cold valve, and 1 flush valve for each of the units), or four individual lavatories and toilets, or a total of 12 individual low voltage solenoid valves. The recommended total length of low voltage cabling from the CVC to the solenoid is 50ft. CVC's shall be modular and capable of operating in a fully networked or stand alone configuration. CVC enclosure shall be fabricated from stainless steel with clear Lexan front cover to view diagnostic lights.

Lights on the CVC shall provide diagnostic information on the 16 inputs, the 12 outputs, communication activity to the CVC,

and the presence of control voltage. A flashing light shall indicate the computer within the CVC is operational.

Individual Interface Modules (IM's) shall be located in the plumbing chase and shall provide the means to distribute signals between the CVC and individual valves and switches. The IM shall be capable of connecting up to 3 input switches and up to 3 low voltage solenoid valves. It shall also house the optional hardware necessary to provide overflow protection when used with toilets manufactured with overflow prevention option. IMs with the overflow option should be mounted above the toilet waterline and in close proximity to the fixture. IM enclosure shall be fabricated from stainless steel with clear Lexan front cover to view diagnostic lights..

Diagnostic lights on the IM shall provide the status of the output valves and indication of a valve being disabled. Diagnostic pushbuttons shall also be provided on the IM to enable maintenance personnel to activate valves from the plumbing chase.

Valve activation shall come from vandal-resistant stainless steel waterproof electronic pushbuttons, Pushbuttons shall require less than 5 pounds of force to activate. Pushbuttons shall be isolated from the low voltage wiring.

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A fully networked system shall consist of CVC's in the plumbing chases and a graphical operator workstation located in a control room. Operator workstation shall consist of a Pentium PC with 15" color monitor. Optional touch screen interface, in lieu of mouse, available. The workstation shall display a block diagram representation of the facility to simplify user interaction. Optional floor plan screen layout is available. The workstation shall be capable of supporting a network of up to 256 CVC's. A twisted shielded three pair (six conductor) RS-485/232 communication link shall run from the workstation to the first CVC and continue on to each subsequent CVC in an individual network trunk. The RS-485/232 communication cable is by others. Stand-alone CVC's not on a network shall be programmed via an optional laptop or one time factory program.

The networked system shall be capable of :

- Enabling or disabling an individual fixture or an entire group of fixtures from the controlstation.
- Automatically disabling fixtures for non-use time periods. Limiting the number of valve actuations during a specific time period.
- Controlling the maximum number of simultaneous flushes (adjustable from 1-999) that can occur within a specified time period (adjustable from 1-60 seconds).
- Automatically flushing a toilet after an adjustable period of non-use has passed to prevent the trap from drying out and stagnet water.
- Logging all valve activity chronologically. This will include all overflow or alarm conditions.
- Providing three levels of security: operator, supervisor, and builder. Operator level shall allow access to perform normal daily functions such as monitoring all fixtures, enabling and disabling fixtures, and clearing of alarms.
- Supervisory level shall be accessible only by a password and shall provide access to operational variables of the system such as valve timings, lock out schedules, system sound settings, enabling of system activity logging and simultaneous flush guard settings. All functions available in the operator level shall be available at the supervisory level. Builder level shall be accessible only by a password and shall provide access to system layout features such as floor plan graphics loading, insertion and deletion of fixtures, and network communication settings.
- All functions available in the supervisory level shall be available at the builder level.
- Allowing for a remote flush from the controp station.
- Allowing for valve timing changes to be made from the control station.

Optional toilet overflow prevention shall automatically disable toilet if overflow is attempted and, on networked systems, initiate audio/visual alarming at the workstation.

In the event of a loss of network communications or a loss of power, system timing parameters shall be retained in each CVC to allow fixtures to operate in the same way they were operating prior to the loss of power or the loss of network communications.

All solenoid valves shall be non-hold open and all metering times shall be independently adjustable. Metering time for each of the valves shall be adjustable from 1 to 60 seconds for each lavatory valve, 1 to 10 seconds for each flush valve, and 1 second to 9 minutes and 59 seconds for each shower valve. Metering cycles shall be interruptible with a second push of the button.

Options

*Willoughby will require an electronic CAD file (DWG or DXF) of the facility floor plan indentifying the fixtures to be controlled by the WMS2000 system.

1.) Control System:

- WMS2000

2.) Programming:

- Stand Alone
 Networked (network cable by others)

3.) Control Station:

- Desktop PC
 Standard Monitor (CRT)
 Standard Monitor (LCD)(Additional cost)
 Touch Screen (CRT)(Additional cost)
 Touch Screen (LCD)(Additional cost)
 Laptop PC
(available only w/ Stand Alone option or single network systems)
 No PC (Stend Alone only)

4.) Other Options:

- Block Diagram Screen Layout (Standard)
 Floor Plan Screen Layout (Additional cost)
 Overflow Protection System
 Onsite Start-Up Comissioning and Training Session
(Must be scheduled 30 days prior to training and after complete installation and testing of the system)
 Other _____
 Other _____

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