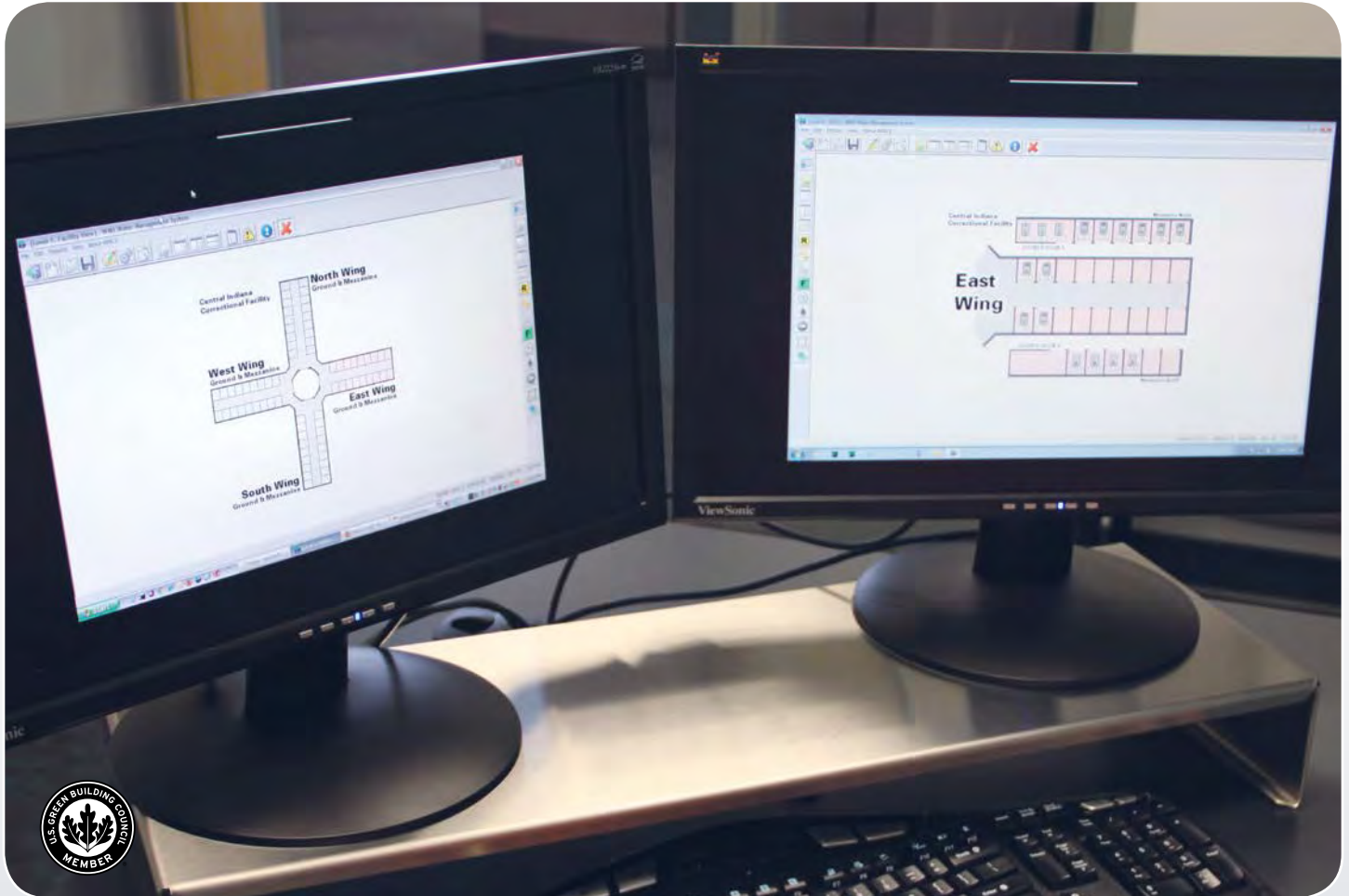




BUILT TO LAST, IN AMERICA



Take control of inmate water usage

The Willoughby WMS II System takes plumbing fixture water control from inmates and puts it back in the hands of corrections staff while saving time, water, and money.

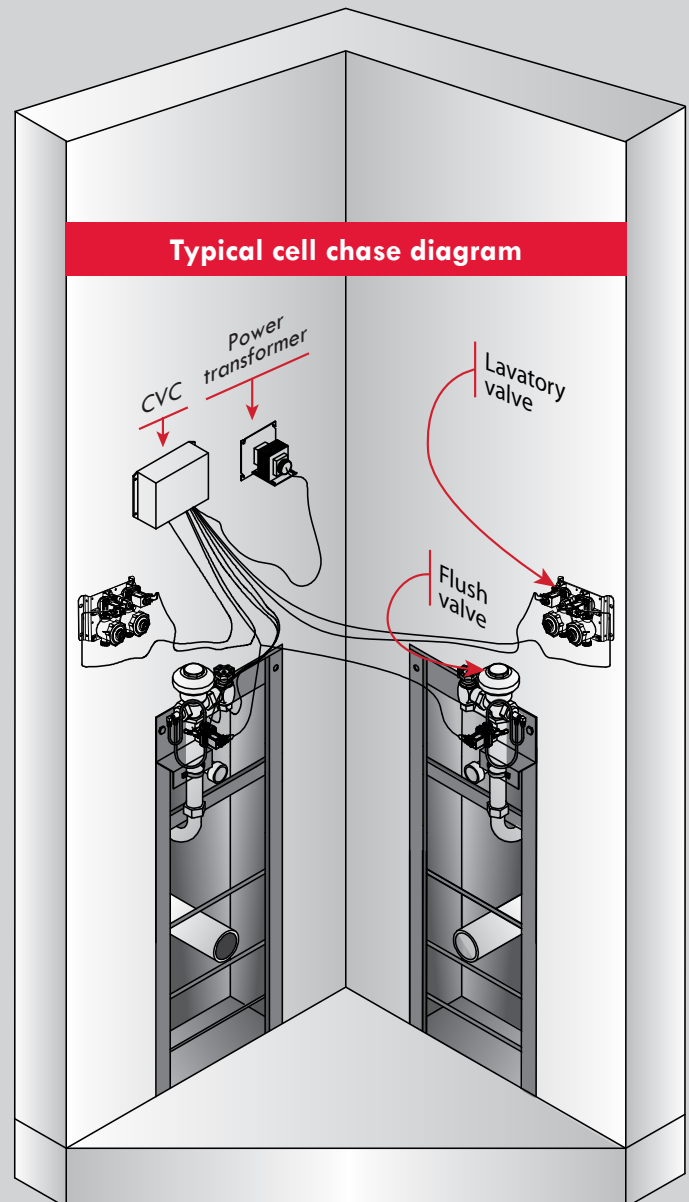


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The WMS II system is capable of:

- » Enabling or disabling an individual fixture or an entire group of fixtures from an operator work station
- » Controlling the maximum number of simultaneous flushes (adjustable from 1-999) that can occur within a given 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 water stagnating (automatic cycling feature also provided for all other fixtures)
- » Logging of all valve activity, including all overflow and alarm conditions
- » Allowing for a remote flush from an operator work station (remote actuation provided for all non-flushing fixtures)
- » Allowing for valve timing changes from an operator work station
- » Providing schedule use periods of selected fixtures
- » Providing an interflush or valve cycle delay of any fixture function after a specified number of flushes or time period of use
- » Providing overuse control to set the maximum use of any fixture function within a defined time period, up to 24 hours (maximum use defined by the number of flushes for flushing fixtures and amount of time for all other fixtures)
- » Providing options of how overuse will be handled:
 - only operator notification
 - fixture function lockout requiring operator intervention
 - auto-lockout of fixture function requiring sufficient time period to elapse until fixture comes out of overuse condition
- » Providing four levels of operational security with privileges for each level. Each level includes the functions of the previous level.
 - 1 View Only Security Level
 - Move between display screens
 - Observe fixture activity on screens
 - Observe any loss of communications to controllers
 - 2 Operator Security Level
 - Remote valve actuation
 - Fixture lockout/reset
 - Clear alarms (overflow and overuse)
 - 3 Supervisor Security Level
 - Set supervisor password
 - Adjust valve timing
 - Set and adjust scheduled use periods
 - Set overuse parameters & system response to overuse
 - Enable and set parameter of flush guard
 - Turn on activity logging
 - Enable and assign sound effects
 - 4 System Administrator Level
 - Create system user accounts with name, password, and security level defined
 - Set and adjust network communication settings
 - Enable and configure remote client connections to server
 - Configure fixture event log files and user activity log files
 - Set sound files to be used when sound feature is enabled



Willoughby Cell Valve Controller (CVC)
in water-resistant enclosure

The Willoughby WMS II State-of-the-art Electronic Water Management System



The Willoughby WMS II Electronic Water Management System takes plumbing fixture water control from inmates and puts it back in the hands of prison officials while saving time, water, and money. The new WMS II system is the most technologically advanced in the industry today. After research with correctional facility professionals, Willoughby designed the system to:

- » **reduce water usage** through fixed scheduling, dynamic usage, or cycle timing control
- » **reduce sewer bills** by reducing water usage
- » **control overall water usage**, including the ability to lockout toilets, sinks, and showers from a central PC and detect/prevent toilet overflows
- » **provide valuable fixture usage data** that can be imported into Excel for further analysis
- » **enable system troubleshooting** from the service chase with no need to enter the cell to actuate the fixture
- » **be simple to administrate** with an optional graphical floor plan including fixture control icons
- » **include over-current protection** on all outputs, virtually eliminating potential damage from installation errors
- » **allow one cell valve controller to control several different devices** (two standard combination units **or** four toilets with overflow detection **or** six toilets without overflow detection **or** six shower valves, with mixing of fixtures types also possible)
- » **be simple to install**, using common connectors and color-coded wiring
- » CVC can be **installed up to 300'** from associated fixtures and valves
- » **be less costly to install, use and maintain**

The net result can be a reduction in water and sewer usage of up to 50%

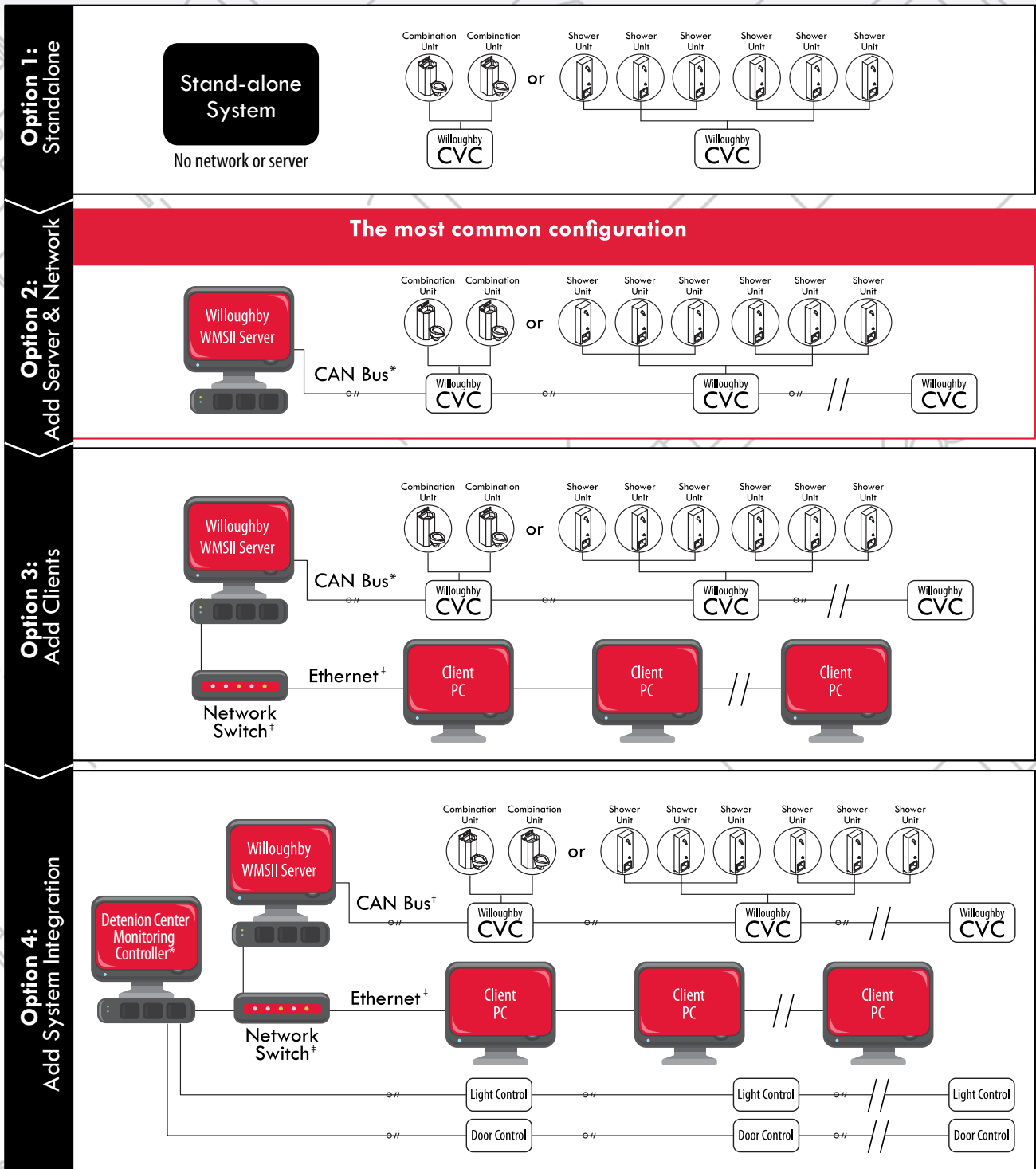
The WMS II system requires only a standard 110V outlet in the mechanical chase and features an operator display with an optional facility-specific floor plan for simple administration. For new installations or retrofits of existing systems, visit www.willoughby-ind.com for all the details.



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*Detention center monitoring and control GUI by systems integrators. †All CAN Bus communication wiring connecting CVCs are by others. ‡Ethernet network and network switch by system integrator.

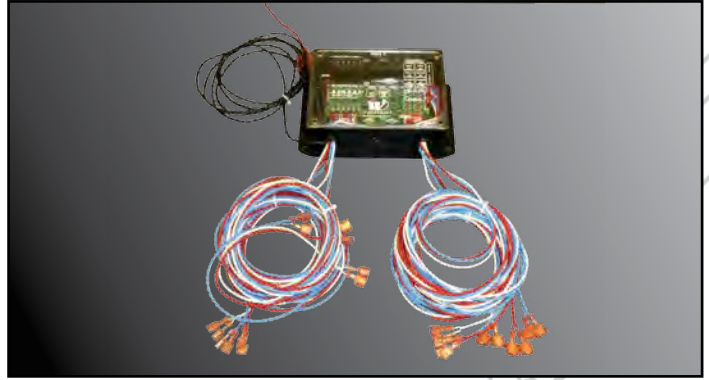
WMS II Water Management System

- » Offered in both networked (full control from a central server, options 2-4) and stand-alone versions (control pre-programmed into each individual CVC controller, option 1)
- » Network CAN lines can include up to 127 CVCs connected together in series
- » Toilet overflow protection is available with the WMS II system (requires compatible Willoughby toilet/combination unit)
- » Diagnostic lights are provided in the CVC and are easily viewed through the transparent cover
- » Optional touch-screen monitor is available
- » In the event of a loss of network communications or loss of power, controllers will retain system setting in memory
- » Valve run times are adjustable (1–60 seconds for lavatory valves, 1 second– 9 minutes and 59 seconds for shower valves)
- » Fixture pushbutton switches require less than 5 lbs. of force to activate (ADA requirement)



Electronic/Hydraulic Flush Valve

Flush valve (actuated by low voltage solenoid valve) with accurate flush delivery system, quiet performance and durable components for reliable toilet operation.



Wiring Harness

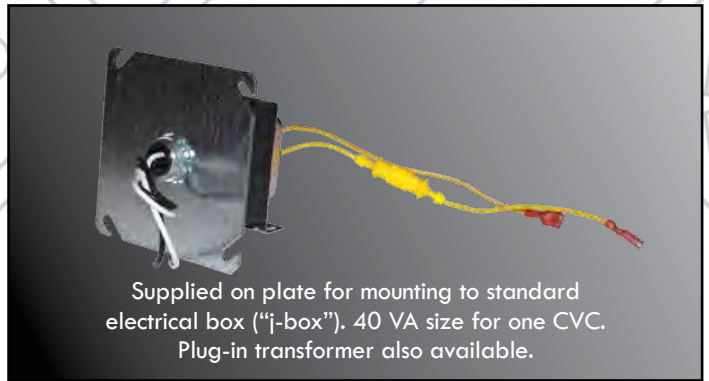
Cables attached on control end to control box before shipment. Installer only needs to connect output end (24 volt power, switches, solenoids). Cables are all 8' in length. Extension can be added at no additional charge, if specified with order.



▲ Optional piezo switch also available

Electronic Valve Pushbuttons

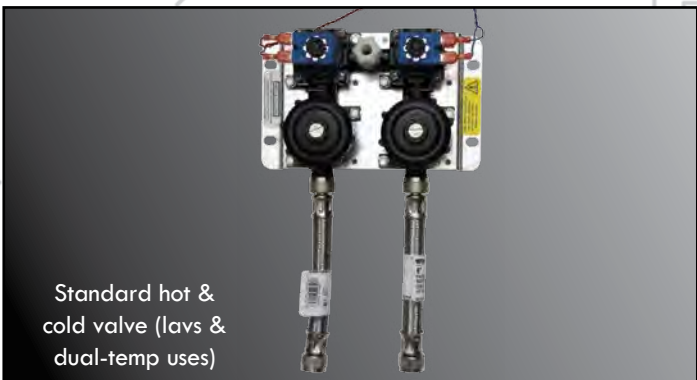
Stainless steel pushbuttons and escutcheons with durable electronic switch technology provide vandal resistant lavatory and flush valve actuations, eliminating chrome plated pushbuttons and their associated problems.



Supplied on plate for mounting to standard electrical box ("j-box"). 40 VA size for one CVC. Plug-in transformer also available.

Power Transformer

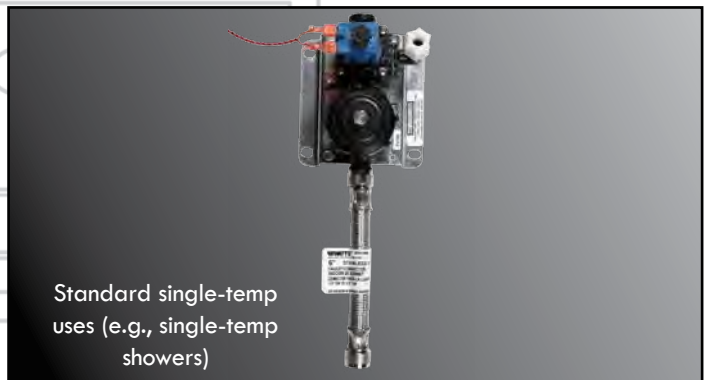
Chase mounted 120/24 VAC transformer features fuse protection to eliminate the possibility of transformer damage due to short circuiting or improper grounding.



Standard hot & cold valve (lavs & dual-temp uses)

Lavatory Valve Assembly

Lavatory valve assembly (actuated by low voltage solenoids) incorporates stainless steel lined flex hoses, check stop strainers, 0.5 gpm flow restrictor and chase mounting plate for consistent delivery of water to fixture bubbler.

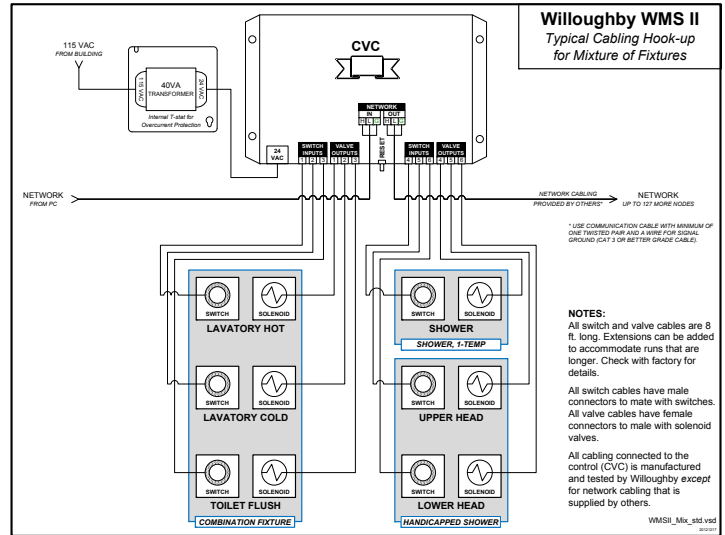
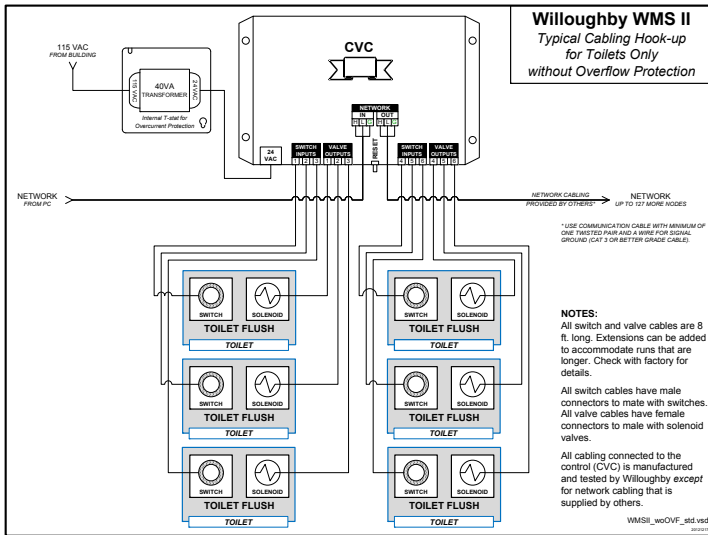
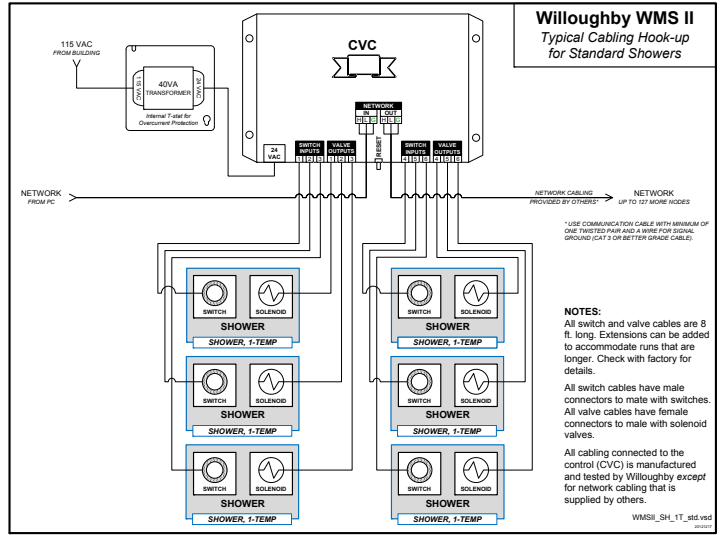
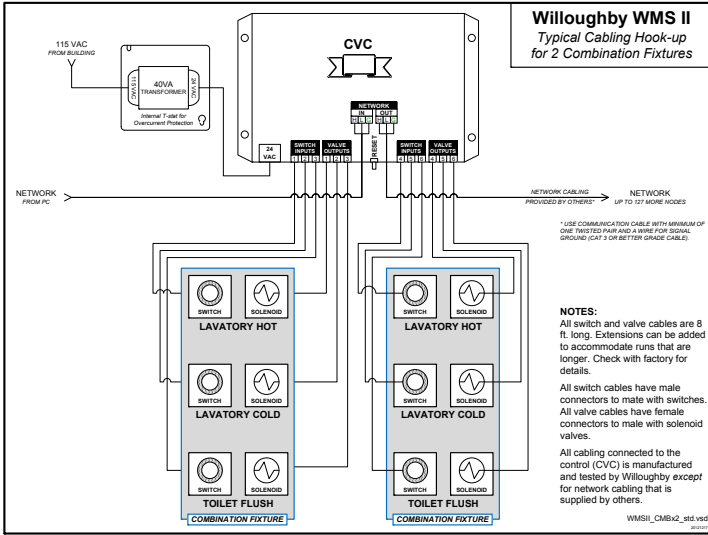


Standard single-temp uses (e.g., single-temp showers)

Shower Valve Assembly

Shower valve assembly (actuated by low voltage solenoid) incorporates stainless steel lined flex hose, check stop strainer, flow restrictor, and chase mounting plate, providing quiet, efficient shower water control. Flow rates of 2.5, 2.0, 1.5 gpm are available.

Typical Willoughby Cell Valve Controller (CVC) Installation Configurations



Note: Controls can be easily configured to control numerous different fixture types, mixes, and locations of fixtures beyond those shown above. Any output can also be configured to control a master rotary shut-off valve to control water mains (provided by others). Contact factory for additional details.



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