

WARDEN 4

MULTI SHOWER ELECTRONIC CONTROL

DESCRIPTION

Warden 4 is a low voltage, microprocessor based water control system for running up to 4 showers, providing limitations on run times and shut down times after use. Thus it is ideal for applications in commercial applications such as gymnasiums, schools, backpackers lodges etc.

Each shower has a Piezo electric touch button which, when pressed, will open a solenoid valve allowing tempered water to pass to the shower head. At the end of the run time, or if the button is pressed a second time, the solenoid valve will close initiating a "lock out" phase .

The run times and lock out times are pre-programmed into the Warden 4 control, and cannot be changed. See Page 4 for programming options. If customer requirements are different to any of these options please contact MacDonald Industries for additional options that may be available. All showers will operate identically

CONTENTS OF STANDARD KIT

Because Shower 4 can be supplied to suit installations requiring 1 - 4 showers, the kit changes depending on the model ordered. Each Piezo switch is mounted onto a stainless steel plate suitable to pop rivet (supplied) to a double electrical flush box (Clipsal 164/2 or similar) - by others.

MODEL	CONTROL MODULE	TRANSFORMERS	1/2" SOLENOID	PIEZO SWITCH
SH1	1	1	1	1
SH2	1	1	2	2
SH3	1	1	3	3
SH4	1	1	4	4

Piezo Buttons

Each model of Warden 4 is supplied with sufficient cable to install the Piezo buttons up to 4m from the control module . Therefore mount the control module in a central location to suit. Each Piezo button activates a solenoid that is connected to the same input number. i.e. Switch 1 activates solenoid 1

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INSTALLATION INSTRUCTIONS

TRANSFORMER

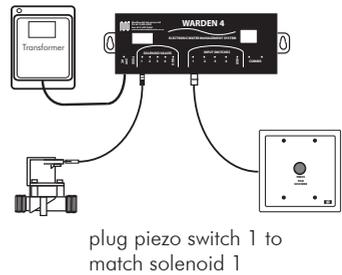
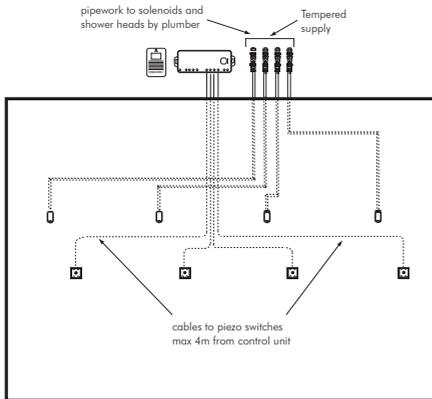
The transformer supplied is plugged directly into the control module and is supplied with a 1.8m lead and 3 pin plug, ready to plug into a standard 230V ac 10A supply (by others)

DO NOT SWITCH POWER ON TO WARDEN 4 CONTROLLER UNTIL PLUG HAS BEEN FULLY INSERTED INTO WARDEN 4 CONTROLLER

SOLENOID VALVES

Shower 4 uses 24V AC 1/2" BSP (13mm) plastic solenoid valves to supply water to the shower heads.

Solenoid valves have Faston terminals to which the solenoid cables must connect. It is not important which terminal connects to which spade connector.



CONTROL MODULE

Each control module is ready to connect to the solenoid and Piezo wiring looms. The lid of the control module shows where each wire loom needs to connect. Ensure the correct sequence of wiring - e.g. Piezo switch 1 - solenoid 1 etc

CABLES

Piezo switch cables are 4m long as standard. Shorter cables are available on request.

Solenoid valve cables are supplied 2m long as standard. 0.75, and 4m cables are available on request.

Excess cabling should be rolled and tied back to pipework or other secure position neatly when job is finished to ensure it cannot be accidentally unplugged or tripped over. Cable ties are supplied for this purpose.

All cables that are not easily accessible after installation **MUST** be installed in conduit. This serves two purposes - it allows for easier installation and allows for replacement for any future servicing. Ensure conduit is installed using swept bends, NOT elbows.

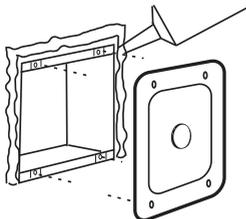
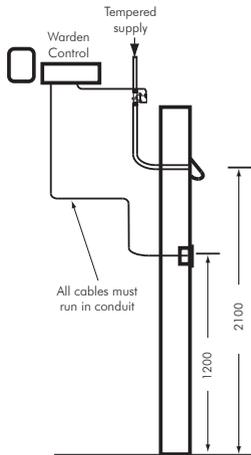
Any Warden 4 installation completed without correct conduit installed may result in warranty being void.

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INSTALLATION INSTRUCTIONS

WATER SUPPLY

Water to each solenoid valve should be tempered to an appropriate bathing temperature (38 - 43°C) using a quality thermostatic mixing valve - DO993622 or similar. Pressure should be in the 200 - 500kPa range - fit a Wilkins BR4 pressure reducing valve if necessary. Ensure sufficient pipe sizing to allow necessary flow rate without water hammer. Fit a Wilkins Model 1250 water hammer arrestor if necessary.



run small bead of silicon around wall to seal behind piezo plate

INSTALLATION

- 1 Mount control module in a central location no more the 4m from furthest Piezo switch.
- 2 Mount transformer beside control module and plug into 3 pin socket (by others) Do not switch on until all connections completed.
- 3 Mount solenoid valves ensuring they are positioned within cable length of the control module.
- 4 Pipe from tempered water supply through solenoid valve to shower heads. Ensure solenoids are mounted with arrow facing direction of water flow.
- 5 Connect cables between solenoid valves and control module ensuring correct solenoid is connected to appropriate input piezo button.
- 6 Plug piezo switch plate into 4m extension cable
- 7 Plug each 4m piezo cable into control module ensuring each shower corresponds with the solenoid valve that supplies water to that shower..
- 8 Switch power on to control module and test each shower for correct operation. Set program according to instructions on Pg 4
- 9 Check water temperature to each shower head using a digital thermometer. Adjust thermostatic mixer as necessary according to manufacturers instructions.
- 10 Once all functions have been thoroughly checked and proven to work correctly, pop rivet or security screw face plate to flush box in shower enclosure.

NOTE: Although the Piezo switches are fully water proof, it is necessary to seal behind each face plate with a suitable silicon sealer to ensure water does not run into cavity behind.

OPERATION

Touch the button to start, touch the button to stop. If the button is not touched to stop, the solenoid valve will close at the conclusion of the set run time. When solenoid closes, dead time commences

FUNCTIONALITY

Warden 4 showers will pulse for 1 second, 30 seconds and 15 seconds from the end of the shower run time. This gives the user a signal that the run time is nearing the end of the cycle. Where the shower run times are 2 minutes or less, the pulse will not occur.

The shower will pulse at 30 seconds and then again 15 seconds from the end of the run time. This serves as a warning to the user that the shower is about to shut down.

Once the shower has been turned off it cannot be operated again until the dead time has elapsed.

MACDONALD INDUSTRIES LIMITED INSTALLATION INSTRUCTIONS

TIMING FUNCTIONS

Timing functions for Multi shower are pre-set as per the Programming list below. Alternative programs can only be set by one of MacDonald Industries Ltd staff on special request

RUN TIMES

The time a shower stays on

DEAD TIMES

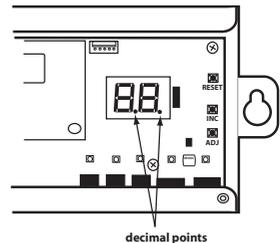
The time the shower will remain inoperable after a shower run time has concluded. If a shower run time is over-riden by pressing the piezo switch twice, the dead time will still occur.

SETTING PROGRAM

1. Remove Warden 4 cover
2. Locate programming buttons on right hand side of PC Board
3. Look for "decimal points" on display screen. These should be OFF. The display screen should show a number - usually "1". This is a COMMS address and should be ignored
4. Press and hold **ADJ** button for more than 5 secs. The decimal points will light continuously. You are now in "Parameter Change Mode"
5. Pressing **ADJ** again, but this time for less than 5 secs, will allow you to scroll through parameter options. There are 3 Parameter selections. Scroll to "1" (Program Change Parameter)
6. Push **INC** for less than 5 seconds. The decimal points will now blink, indicating you are now in "Program Change Mode" The current program number will be shown on the screen.
7. Again push **INC** for less than 5 sec and the numbers on the screen will scroll through 1 - 50.
6. Once you have reached the number corresponding to your preferred run/dead time, press **ADJ** for less than 5 seconds. New program is now stored. Decimal points will now light continuously - you are out of "Program Change Mode"
7. Press **ADJ** for more than 5 secs to exit "Parameter Change Mode"
8. Now it will now revert to showing the COMMS address as described in 3. above. This is not relevant unless all Warden 4 units are linked to a central computer (not usual for multi shower applications - see separate literature)
9. Re-fit Warden 4 cover

NO	RUN TIME (MIN)	DEAD TIME
21	4	5 sec
22	5	5 sec
23	6	5 sec
24	4	30 sec
25	5	30 sec
26	6	30 sec
27	4	4 min
28	5	4 min
29	6	4 min
34	1 *	5 sec
35	1 *	10 sec
36	2 *	5 sec
37	2 *	10 sec

* Where the shower run times are 2 minutes or less, the pulse will not occur.



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