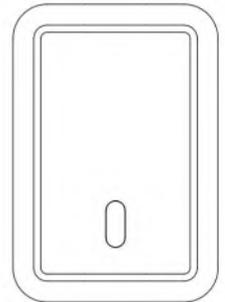




Cistermiser
OUR WORLD IS WATER

Direct Flush Urinal Control Valve

Installation
guide



Please keep this booklet for future reference.

Installer, when you have read these instructions
please ensure you leave them with the user.



DF/27 C-03

1. Introduction

The Direct Flush valve provides automatic flushing of the urinal after use ensuring the highest level of hygiene from the minimum volume of water. No cistern is required. Once installed the operation is entirely automatic with continuous monitoring of user behaviour and washroom demand. One Direct Flush is required for each urinal.

The Direct Flush detects users at the bowl and flushes when the user departs. If a user is detected while the valve is flushing the Direct Flush will pause the flush to prevent splashing of the user and save water: this is called the “flush arrest” function.

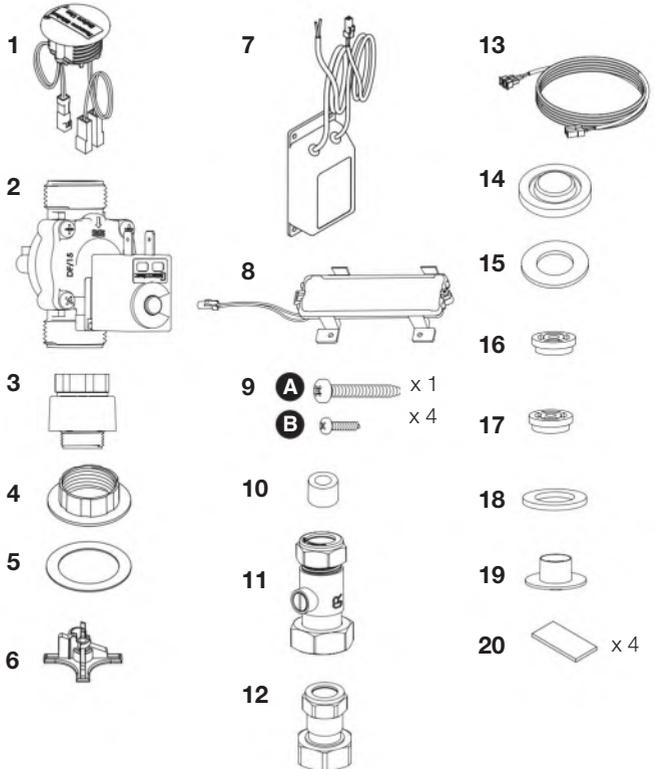
After 12 hours without use the Direct Flush automatically runs a hygiene flush: this feature can be turned off.

Direct Flush Discreet (DFD)

Direct Flush Accessible (DFA)

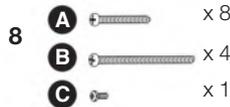
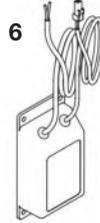
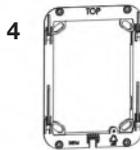
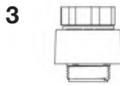
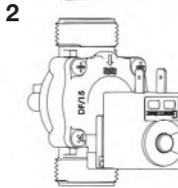
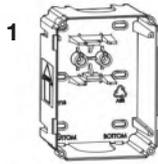
Direct Flush Discreet supplied parts

1. Sensor unit
2. Valve unit
3. DC pipe interrupter inc 4lpm flow regulator (grey)
4. Sensor nut
5. Rubber gasket
6. Clamp plate
7. Mains adaptor
8. Battery case
9. Screws
10. Screw packer
11. 15mm pipe fitting with isolation valve
12. 15mm pipe fitting
13. 3m cable
14. Filter
15. Washer
16. 3lpm flow regulator (brown)
17. 5lpm flow regulator (yellow)
18. Seal
19. DC Pipe Interrupter jet
20. Adhesive pads



Direct Flush Accessible supplied parts

1. Mount box
2. Valve unit
3. DC pipe interrupter inc 4lpm flow regulator (grey)
4. Clamp frame
5. Sensor plate
6. Mains adaptor
7. Battery case
8. Screws
9. Shoulder washer
10. 2mm alien key
11. 15mm pipe fitting with isolation valve
12. 15mm pipe fitting
13. Filter
14. Washer
15. 3lpm flow regulator (brown)
16. 5lpm flow regulator (yellow)
17. Seal
18. DC Pipe Interrupter jet



2. Installation

IMPORTANT:

Read this before fitting the urinal valve when flushing directly from the mains supply

Why is a DC pipe interrupter supplied?

When urinals are flushed directly from the mains water supply, the Water Regulations require that the water supply be protected by a suitable category 5 protection method or device. In the case of urinals, this can be achieved in three ways:

1. The use of a WRAS approved type DC pipe interrupter (supplied with Cistermiser Direct Flush).
2. The use of a dedicated supply for flushing use only, supplied from a break tank that protects the mains supply with a type AA, AB or AD air gap.
3. The use of a specific type of urinal which has been tested and shown to incorporate the equivalent of a type AB air gap.

What are the possible implications of fitting a DC pipe interrupter?

1. Water may overflow from the DC pipe interrupter if the sparge or pipe run leading to the sparge is too restrictive. (See diagram **A** opposite). This may also occur if there are too many bends in the pipework.
2. If the feed to the urinal is coming directly from the mains water supply, the pressure may be too high for the sparge and bowl and splashing may occur in the urinal bowl.
3. System pressure is lost when a DC pipe interrupter is fitted, therefore the flush performance may change after installing a DC pipe interrupter.

NOTE:

When using flexible pipes: flexible pipes typically have a smaller internal diameter than copper pipes. A greater distance between the valve and sparge may therefore be required. Ensure there are no kinks in the flexible pipe.

How to install a DC pipe interrupter correctly

1. To avoid overflowing:
 - Install a free-flowing, low restriction sparge.
 - Install the DC pipe interrupter and valve as high as possible and use as long a pipe run between the pipe interrupter and the sparge as possible. (See diagram **A** opposite)
 - Select the appropriate flow regulator to match the flow through the urinal sparge provided.
 - Use a large pipe size in the pipework between the DC pipe interrupter and the sparge.
 - Minimise pipe bends between the DC pipe interrupter and the sparge.
2. To avoid splashing:
 - Fit a sparge and urinal bowl to accommodate the pressure.
 - Select the appropriate flow regulator to fit onto the pipe interrupter provided.

NOTE:

For grey water/rain water harvesting.

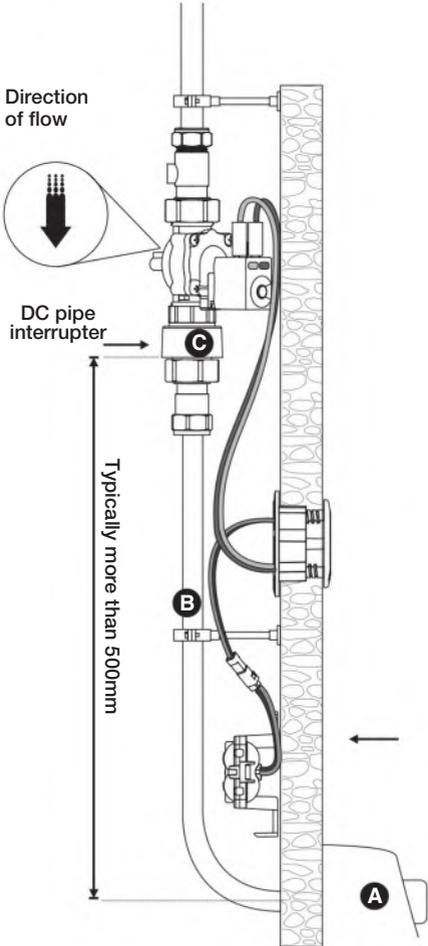
Ensure adequate filtering is fitted, a 10µm filter is recommended. For chemical water treatment. If the water system has been treated with chemicals, ensure the system is thoroughly flushed before fitting any Cistermiser products. Concentrated chemicals in dead legs can damage the product and result in failure. If the water is treated with Chlorine Dioxide (ClO₂), concentration levels must be maintained below 5ppm.

NOTE:

As with all water containing products, limescale in hard water areas can affect the products performance. This can result in maintenance to remove the limescale as and when required.

DFD installation

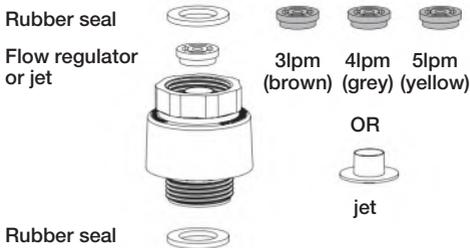
A **IMPORTANT:**
Read installation guidelines on page 4



The DC pipe interrupter is supplied with 3 flow regulators. Select the appropriate flow rate to match the sparge **A** and the volume of the pipe **B** to prevent overflow from the DC pipe interrupter **C**

The valve should always be installed as high as possible on the vertical pipe feeding the sparge outlet to prevent water backing up and leaking from the DC pipe interrupter. A 1.5m extension cable is supplied.

DC pipe interrupter is supplied with:

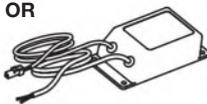


In some circumstances a squeak may be heard when the valve closes. If so, the DC pipe interrupter jet may be used to reduce this.

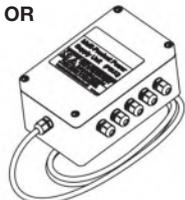
Power options



Battery case (requires 4 x AA alkaline batteries)
OR



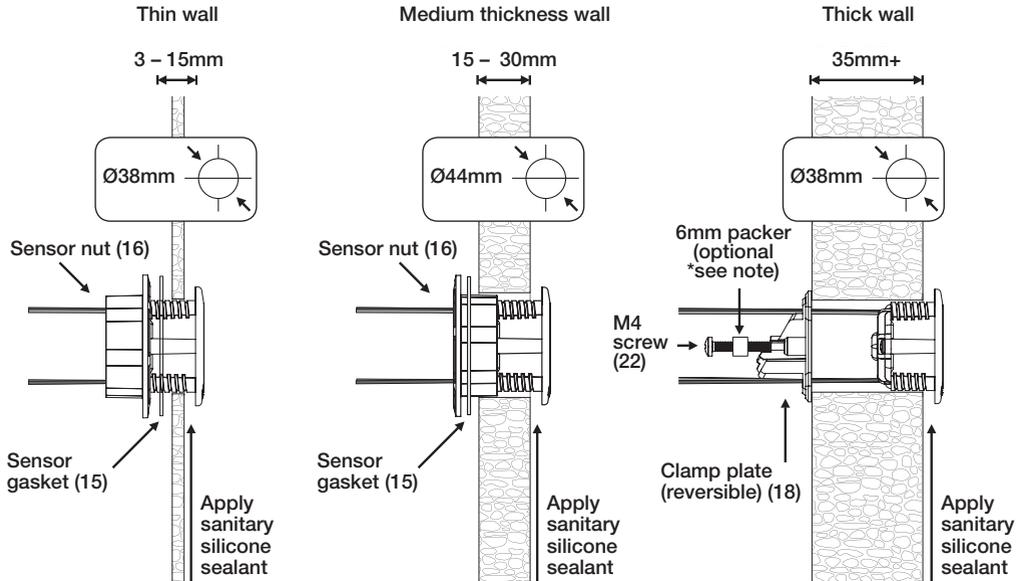
Mains adaptor (requires 1A fused spur)
OR



Multi product power supply unit (not supplied)
(suitable for powering up to 20 units)

Sensor installation

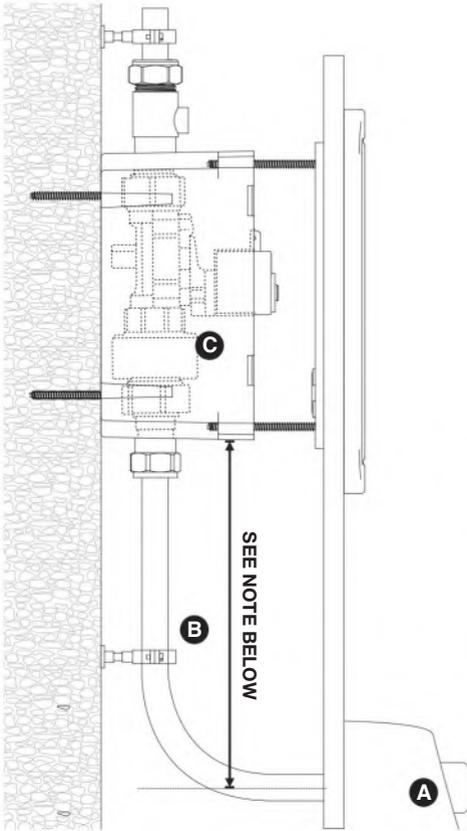
Install sensor vertically above the urinal.



NOTE:

*If wall thickness is under 35mm use packer to prevent screw causing damage to sensor

DFA – option 1 wall mounted

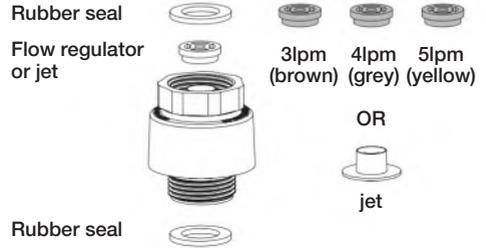


The DC pipe interrupter is supplied with 3 flow regulators. Select the appropriate flow rate to match your rate through the sparge **A** and sufficient volume of the pipe **B** to prevent overflow from the DC pipe interrupter **C**.

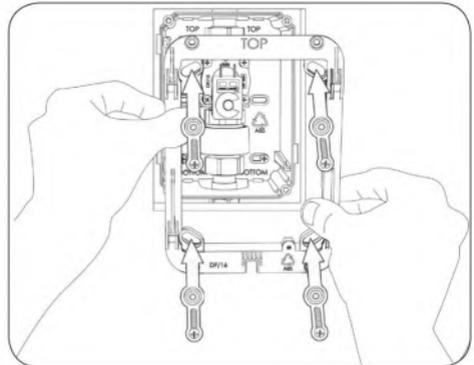
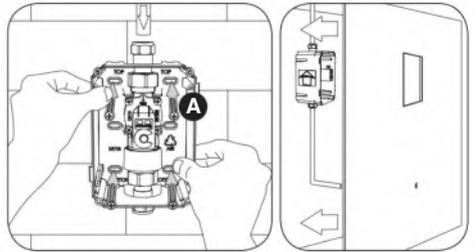
NOTE:

The bottom of the mount box should always be installed as high as possible on the vertical pipe feeding the sparge outlet to prevent water backing up and leaking from the DC pipe interrupter.

DC pipe interrupter is supplied with:



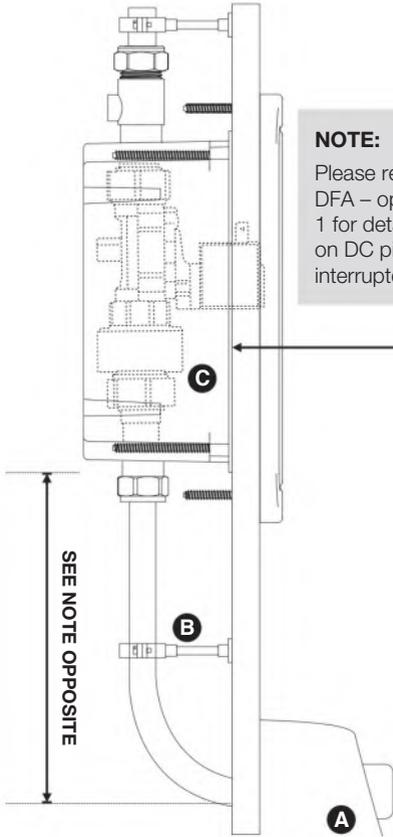
In some circumstances a squeak may be heard when the valve closes. If so, the DC pipe interrupter jet may be used to reduce this.



NOTE:

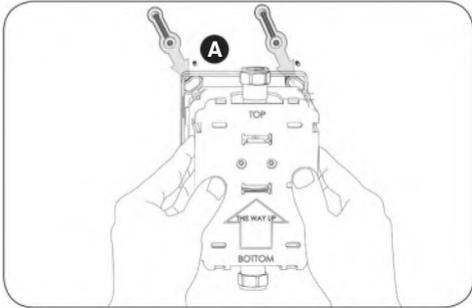
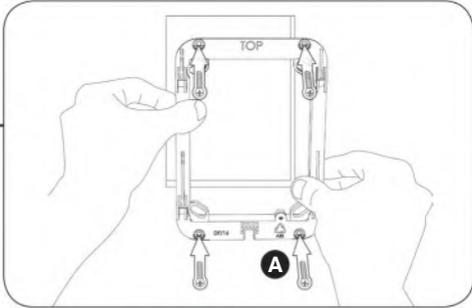
4 long screws **B** are provided to allow for flexible fixing of the mount box and clamp frame, if required.

DFA – option 2 panel mounted

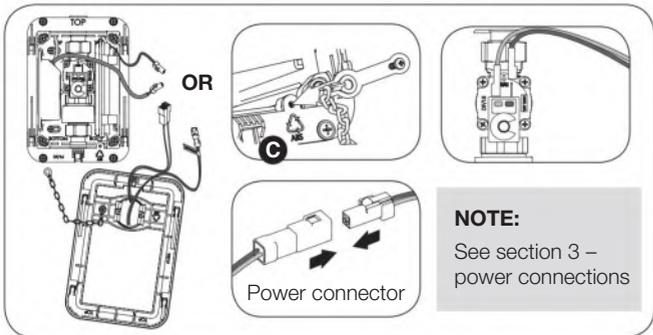


NOTE:
Please refer to DFA – option 1 for details on DC pipe interrupter.

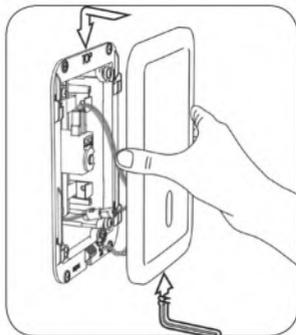
NOTE:
The bottom of the mount box should always be installed in as high as possible on the vertical pipe feeding the sparge outlet to prevent water backing up and leaking from the DC pipe interrupter.



DFD & DFA - fitting sensor plate



NOTE:
See section 3 – power connections



3. Power connections

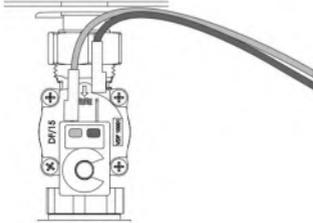
NOTE:

Only one power source should be connected at any time, either mains or batteries. It is not possible to connect both simultaneously.

Batteries

Open the battery case and fit 4 Alkaline AA (LR-6) batteries as indicated. Reseal and fasten into place on the panel using screws **A** or with the tape pads (for DFA installations slide into the mount box).

If using the mains adaptor, fasten into place on the panel in a dry location using screws **A** or with the sticky pads (for DFA installations slide into the mount box) and connect the unterminated mains cable to a 50Hz 230V AC single phase supply via a 1A fused spur (not supplied).



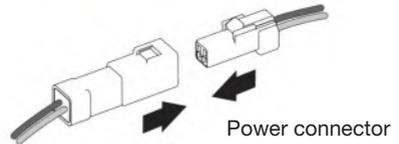
Connect the spade connectors from the sensor (DFD) or sensor plate (DFA) to the solenoid terminals – take care to connect the wires according to the colour coding on the label. If these are not long enough they can be extended by up to 1.5 metres. (Extension cable supplied with DFD).

Electrical connection

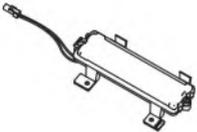
Connect the power connector from the sensor (DFD) or sensor plate (DFA) to the mains adaptor, or in the case of a battery powered installation, the battery case.

NOTE:

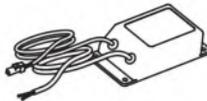
Remove the label from the sensor BEFORE connecting to the power. When the power is first connected the LED in the sensor flashes amber. This is normal and lasts only a few seconds.



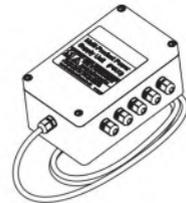
Power options



OR



OR



Battery case
(requires 4 x AA alkaline batteries)

Mains adaptor
(requires 1A fused spur)

Multi product power supply unit
(not supplied) suitable for powering up to 20 units

Additional configuration options with the Infrared configuration unit (ICU) remote control (sold separately)

- Hygiene flush on/off. The installer is able to switch the 12 hr hygiene rinse function on or off.
- Clean mode. The Direct Flush can be disabled for a short period to allow for cleaning.
- Siphonic trap refill mode. When activated this allows a small flush after every flush to refill the siphonic trap.

4. Usage advice and specification

Minimum working pressure*: 0.5 bar. *Working or dynamic pressure is measured when water is flowing.

NOTE:

The minimum working pressure refers to the pressure required to operate the valve. Higher pressure may be required for an effective flush, depending on the bowl and sparge outlet design.

Maximum working pressure: 6 bar

NOTE:

When using the Direct Flush valve from a mains water supply, the pressure may be higher than is suitable for the design of the sparge or bowl which may cause splashing to occur. In such cases a pressure reducing valve on the supply may be required to reduce the pressure as necessary.

Back siphonage protection: Class 5, type DC

Factory settings

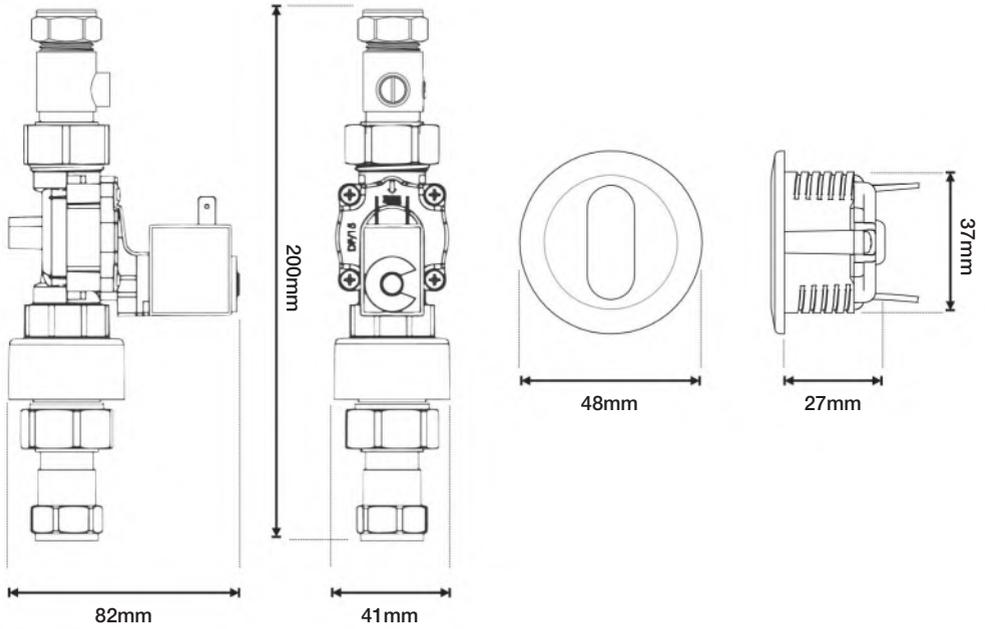
Range:	Circa 50cm
Flush time:	7 seconds
Flush delay:	2 seconds
Power requirements:	Either 6V from 4 x alkaline AA (LR6) batteries or 6V DC regulated from mains adaptor (1A fused spur required).
Normal battery life:	2 years under typical usage conditions. A single red flashing of the LED indicates that the batteries are low and need to be replaced.
Cleaning:	Clean with soap and water only.
Lens care:	Infrared lens can be polished with a soft cloth.

Electronic specification

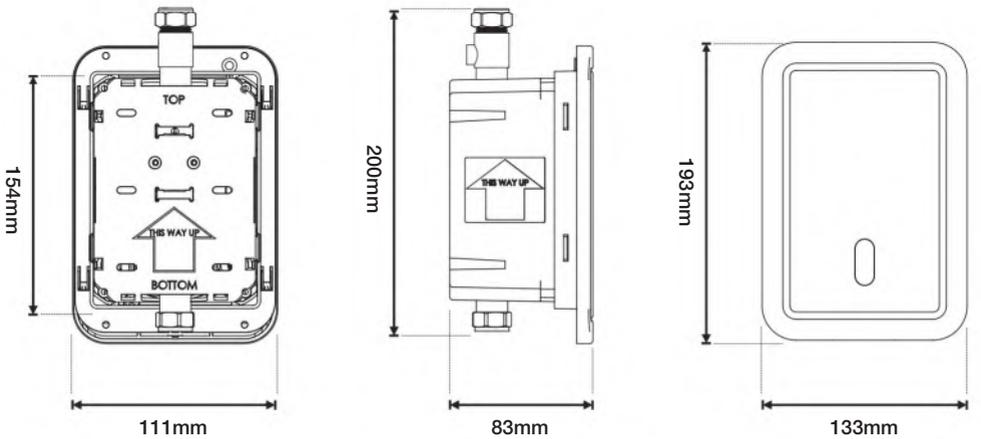
Control classification – DFD:	Independent
Control classification – DFA:	Independent
Maximum load:	2W 0.33A
Rated temperature range:	0-40°C.
Action classification:	Type 1.Y
Pollution classification:	Degree 1
Ingress protection:	IP65.

5. Component dimensions

DFD



DFA



6. Advanced settings guide

Direct Flush Accessible and Discreet Carry out only if settings need to be changed

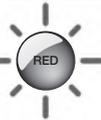
1 Disconnect power, wait for 5 seconds and reconnect.

2 When **flashing amber**.  Place hand 4-6cm from sensor until **constant green**, then remove hand. 

3 You are now in configuration mode

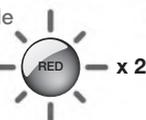
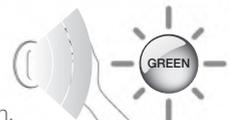
If a hand is not placed over the sensor, it will go into normal operation mode.

Sensing range of adjustment

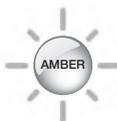
A Wait for **single red flashing LED** to enter sensing range mode.  B Briefly place your hand in front of the sensor until the **green LED flashes slowly**. Range configuration mode will then be ready. 

C Stand at the distance from the sensor you would like to set at maximum range. Wait 8 seconds until **constant green LED** shows.   Sensor distance is now set.

Flush time adjustment

A Wait for **double red flashing LED** to enter flush time.  x 2 B During **double red flashing**, briefly place your hand in front of the sensor. The valve will open and start the flush. A **green flashing LED** will be seen. 

C When the water has run for the desired flush time, move your hand out of the line of sight of the sensor. The water will cease and the flush time will be set. It is recommended that this be set to a time that allows the trap to be refilled.

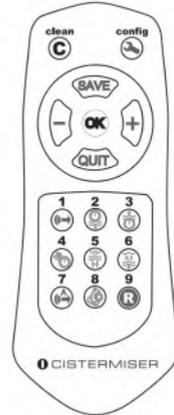
4 After configuration the unit will **flash amber**, giving opportunity to re-enter configuration mode. 

7. Infrared Configuration Unit (ICU) guide

NOTE: Not supplied but available from Cistermiser or any major plumbing merchant.

Button descriptions

-  Activates cleaning mode
-  Activates ICU configuration mode
-  Decreases setting
-  Increases setting
-  Checks the setting being altered
-  Saves changes and exits ICU configuration mode
-  Quits ICU configuration mode without saving changes
- 1**  Configures sensor range
- 2**  Configures flush time
- 5**  12-hour hygiene cycle activation
- 7**  Autorange setting of sensor range
- 8**  Siphonic trap refill activation
- 9**  Resets to default factory settings



Inserting and replacing batteries

The ICU uses 2 AAA or LR03 Alkaline batteries, these must be installed before use.

Always use new batteries of the same type. Install as indicated in the battery compartment on the rear of the ICU.

NOTE:

Batteries should be replaced when the signal of the ICU becomes weak and it becomes difficult to activate either cleaning or configuration mode.

Activating cleaning mode

Cleaning mode disables normal operation for cleaning for a timed 30 seconds.

In order to activate cleaning mode with the ICU, it must be pointed at the sensor of the selected washroom product. Activation is most effective

when the  clean button is held down as the ICU is brought close to the sensor. It can take up to 3 seconds for the product to sense the ICU.

When the washroom product is in clean mode, the sensor flashes green once a second.

Activating ICU configuration mode

In order to activate ICU configuration mode with the ICU, it must be pointed at the sensor of the selected washroom product. Activation is most effective when the  configuration button is held down as the ICU is brought close to the sensor. It can take up to 3 seconds for the product to sense the ICU.

The washroom product will return to normal operation if there are no button presses for 30 seconds.

Direct Flush configuration

The ICU can adjust/activate the following settings on the Direct Flush: sensor range; flush time; 12hr hygiene flush and siphonic trap.

The product must always be put into ICU configuration mode (see page 13) before any setting can be configured.

Configuring sensor range

Point the ICU at the Direct Flush sensor and press the 1  sensor range button (the sensor blinks green).

Decrease or increase the sensor range by pressing the  and  buttons respectively. The sensor blinks red when the min or max value is reached.

Press the  button to check the sensor range setting - the sensor displays the current setting by flashing green, see table.

Number of flashes	1	2	3	4	5
Range (cm approx)	45	50	53	56	58

Save setting and exit ICU configuration mode by pressing the  button.

Exit without saving by pressing the  button.

Configuring sensor range using the autorange function

Point the ICU at the Direct Flush sensor and press the 7  autorange button.

Immediately stand clear of the sensor. Sensor blinks green for 5 seconds, then a steady green when setting complete. The sensor measures the background reflections and sets the sensor range to an appropriate setting.

Save setting and exit ICU configuration mode by pressing the  button.

Exit without saving by pressing the  button.

Configuring flush time

Point the ICU at the Direct Flush sensor and press the flush time button 2  (the sensor blinks green).

Decrease or increase the flush time by pressing the  and  buttons respectively. The sensor blinks red when the min or max value is reached.

Press the  button to check the flush time setting - the sensor displays the current setting by flashing green, see table.

Number of flashes	1	2	3	4	5
Flush time (seconds)	3	5	7	9	11

Save setting and exit ICU configuration mode by pressing the  button.

Exit without saving by pressing the  button.

Activating the 12hr hygiene flush cycle

Point the ICU at the Direct Flush sensor and press the 5  hygiene cycle button (the sensor blinks green).

Pressing the  and  buttons switches the hygiene flush function on or off respectively. Press the  button to check the setting - the sensor flashes green once if function is off or twice if it is on.

Save setting and exit ICU configuration mode by pressing the  button.

Exit without saving by pressing the  button.

Activating the siphonic trap refill function

Point the ICU at the Direct Flush sensor and press the 8  siphonic trap button (the sensor blinks green).

Pressing the  and  buttons switches the siphonic trap refill function on or off respectively. Press the  button to check the setting - the sensor flashes green once if function is off or twice if it is on.

Save setting and exit ICU configuration mode by pressing the  button.

Exit without saving by pressing the  button.

Reset to factory settings

Point the ICU at the Direct Flush sensor and press the 9  reset button (the sensor blinks green). This sets all settings to the default factory settings.

Save all settings and exit ICU configuration mode by pressing the  button.

Exit without saving by pressing the  button.

8. Frequently asked questions

No water

The sensor is not flashing at all when the user's body is in the sensing range	<p>Ensure the power supply is connected. If mains power is being used through the mains adaptor check that the mains adaptor is working by reverting to the battery pack. Remove the mains adaptor when using batteries.</p> <p>Sensor has been deactivated by the anti-vandal feature. (Sensor detect presence for more than 30 minutes). Disconnect power for 2 minutes.</p>
Red flash once every second	<p>Low or no battery power; change batteries. If operated by mains power, contact Cistermiser.</p>
The sensor is flashing green twice a second after the user activates sensor	<p>Ensure the water supply is reaching the valve and you have a good working pressure. (min 0.5 - max 6 bar).</p> <p>Blockage. Ensure the filter on the inlet side of the valve is clear.</p>

Continuous flow of water from the outlet or dripping

The sensor is not flashing at all when in the sensing range	<p>Ensure the power supply, or batteries, are functioning; check all electrical connections.</p>
Water is flowing regardless of user activity	<p>Ensure the arrow on the valve is pointing in the direction of water flow.</p> <p>Ensure the water pressure is not above the maximum working pressure of 6 bar.</p> <p>Debris or scale in the diaphragm: isolate water supply to the valve and remove wires attached to the solenoid. Undo the 4x screws and remove. This will give you access to the diaphragm, (note orientation of diaphragm when reinstalling), flush under cold water and visually inspect. Re-install. Do not open too many times and discard any plastic swarf.</p> <p>Diaphragm has been damaged by debris. Carry out procedure for. "Debris or scale in diaphragm", visually inspect then call Cistermiser for further instructions.</p>

Water is flowing from the DC pipe interrupter

The sensor is flashing green twice a second after the user activates sensor

The DC interrupter is in backflow condition or there is a blockage or restriction downstream of the valve.

See key design and installation points on page 4.

Flow regulators are included to control the flow of water into the urinal system. (See page 4)

Splashing

Urinal bowls

Some urinals are not designed for the high pressures of mains water supplies and splashing may occur. In such cases a pressure reducing valve (not supplied) is required on the supply side of the Cistermiser valve to reduce the pressure as necessary. Flow regulators are included to control the flow of water into the urinal system. (See page 4)

Other alarms

Double red flash	Faulty wiring. Check wiring carefully. Faulty solenoid. Call Cistermiser for advice.
Red flash once every second	Low or no battery power. Change batteries. If operated by mains power, contact Cistermiser.
Red flash twice every 3 seconds	Sensor covered or heavily scratched. Uncover or polish out scratches.

Cistermiser product warranty and extended warranty

Cistermiser products are guaranteed for 12 months from the date of manufacture. The guarantee is for faulty products and parts only: there is no labour warranty. If you believe your product is faulty, please either contact Cistermiser directly on **0118 969 1611** or at **support@cistermiser.co.uk**, with a photograph and the serial number, to help diagnose the cause of the problem.

The warranty on Cistermiser products can be extended within one year of date of manufacture, at no cost, to three years from the date of installation (see details on page 17). Please make a note of the serial number and take a photograph of the installation before you leave site.

Commissioning check-list

Direct Flush Accessible/Discreet

3 YEAR
extended
warranty

The warranty on Cistermiser products can be extended within one year of date of manufacture, at no cost, to three years from the date of installation. Once the valve has been installed, complete the product commissioning checklist below to demonstrate compliance with the installation instructions. Email a photograph of this completed form to warranty@cistermiser.co.uk or post to Cistermiser, Unit 1, Woodley Park Estate, 59-69 Reading Road, Woodley, Berks, RG5 3AN.

Product serial number

Installation address

Installer's name

Telephone number

Email address

No	Activity	Checked	Date
1.	Flush pipework prior to installation.	<input type="checkbox"/>	<input type="checkbox"/>
2.	Ensure that the urinal bowl is suitable for mains flush or use the D.C pipe interrupter.	<input type="checkbox"/>	<input type="checkbox"/>
3.	Check valve orientation: valve should be typically more than 500m from the urinal (see installation instructions).	<input type="checkbox"/>	<input type="checkbox"/>
4.	Ensure water supply working/dynamic pressure is between 0.5 - 6 bar.	<input type="checkbox"/>	<input type="checkbox"/>
5.	Install an isolation valve upstream of solenoid valve.	<input type="checkbox"/>	<input type="checkbox"/>
6.	Check pipework from valve to urinal is appropriately sized and restriction free.	<input type="checkbox"/>	<input type="checkbox"/>
7.	Ensure a low restriction sparge is fitted.	<input type="checkbox"/>	<input type="checkbox"/>
8.	Check flow direction through valve.	<input type="checkbox"/>	<input type="checkbox"/>
9.	Check sensor is mounted in correct position (see installation instructions).	<input type="checkbox"/>	<input type="checkbox"/>
10.	Ensure label is removed from sensor before connecting power.	<input type="checkbox"/>	<input type="checkbox"/>
11.	Check electrical connections: sensor to solenoid, orange to orange, blue to blue. Ensure mains power is connected, wire power adaptor to 1A fused spur.	<input type="checkbox"/>	<input type="checkbox"/>
12.	Check operation: adjust sensor range and flush time if necessary.	<input type="checkbox"/>	<input type="checkbox"/>
13.	Ensure flow rate through the valve is matched to the sparge to prevent water coming out of the D.C pipe interrupter.	<input type="checkbox"/>	<input type="checkbox"/>

Cistermiser range

Urinal flushing



Hydraulic Valve

An automatic urinal flush control valve which reduces water consumption. The valve uses a simple patented mechanism which prevents water waste by ensuring that the auto-flush cistern is only filled, and can only flush, when the washroom is used.



Infrared Control (IRC) Valve

This valve automatically manages the water supply to the urinal cistern and reduces water consumption by up to 80%. The PIR sensor detects movement and activates the solenoid valve, allowing water into a urinal cistern.



Direct Flush Valve

An infrared sensor controlled urinal valve. It automatically flushes individual urinals after use, ensuring the highest level of hygiene from the minimum volume of water.

WC flushing



Easyflush Wave

An infrared, hands-free and water-conserving WC cistern flush valve suitable for concealed or exposed cisterns. Easy to install in retrofits or new installations, its no-touch dual flush WC cistern valve promotes water economy and hygiene in domestic and commercial washrooms.



Easyflush Walkaway

An infrared controlled automatic WC cistern flush valve that is suitable for concealed cisterns. The valve flushes once the user exits the cubicle. Ideal for use in environments where hygiene and water economy are concerns.



Easyflush Direct

An infrared electronic flushing system that removes the need for a WC cistern by taking its water feed straight from the mains supply. Ideal for high traffic areas as the system allows for a second flush without a delay.

Infrared Taps



Novatap

A contemporary deck-mounted chrome tap. The infrared control reduces water and energy usage and eliminates the risk that the tap may be left running.



Vectatap

An elegantly designed infrared tap with the benefit of hygienic hands-free operation. Vectatap improves water and energy efficiency and includes auto-shut off and hygiene flush features.

Washroom control systems



Sensazone

An innovative system to conserve water and energy. Occupancy is monitored by sensors; when someone enters the washroom all services controlled by Sensazone are activated – the hot and cold water, lighting and extractor fans.

Remote Monitoring



LinkThru

LinkThru TMU delivers remote real-time monitoring of water temperatures on a 24/7 basis. LinkThru TMU harnesses the power of the Internet of Things to monitor water temperatures and helps to ensure Building Owner compliance with HSG274, reducing the risk of Legionella.

Davidson Holdings' brands



Salamander is one of the UK's leading manufacturers of pumps for boosting water pressure for showers, bathrooms and whole house supply in domestic and small commercial tank-fed systems.

salamanderpumps.co.uk



Talon is the UK market leader in the manufacture and supply of plastic pipe clips, pipe collars and fixing plugs, plus a range of cover profiles for concealing pipework.

talon.co.uk



Keraflo
OUR WORLD IS WATER

Keraflo manufacture delayed action float valves, which provide an accurate and effective method of controlling the level of stored cold water in tanks both with and without raised float valve chambers. The range is used in domestic, commercial and industrial applications worldwide.

keraflo.co.uk



Combimate
GUARANTEED LIMESCALE PREVENTION

Combimate is a domestic limescale prevention device that prevents limescale build-up and soft water corrosion in combination boilers and other domestic hot water appliances.

combimate.co.uk

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