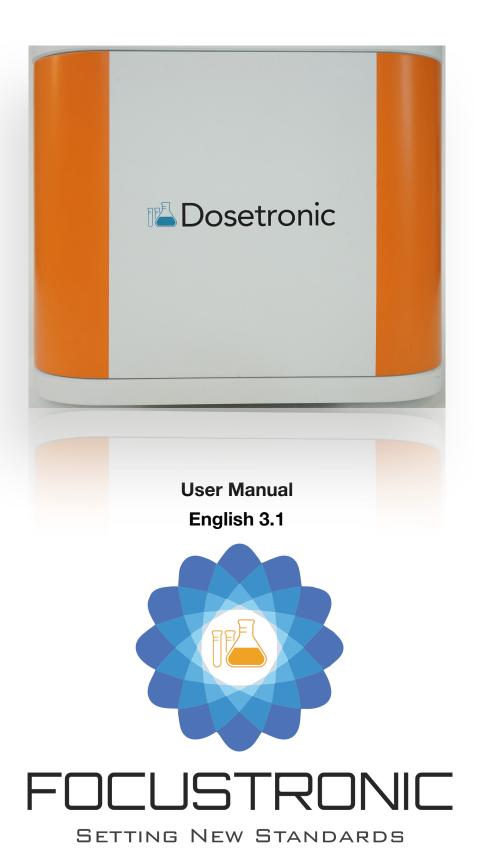
Dosetronic



	2
Introduction	4
Basic Philosophy	4
Set-up-procedure	5
Placement	5
Connecting external hoses	5
Establish software connection	5
Establish connection with Alkatronic	6
Establish connection with Mastertronic	7
Prime hoses and Calibrate pumps	7
Prime hoses	7
Calibrate Pumps	7
Functions	8
Pump name	8
Dose Alert/Refill Alert	8
Alkatronic mode	8
Example 1:	9
Example 2:	9
Automatic Correction Modes of the dosing schedule	11
Overall Dosing Adjustment	11
Selective Dosing Adjustment	12
Important user tips how to utilize the autocorrection functions	12
View/make/edit/delete schedule	13
Copy schedule	13
Manual Overall Adjustment	13
Last Advertise Time	14
Last Online	14
Manual Dose	14
Test pump accuracy	14
Maintenance Control of the Control o	14
Change hoses in the pumps	14
Recalibration	14
Changing external hoses	15
Frouble shooting	15
No app-connection	15
Machine do not "skip doses" despite "high dKH"	15
Different numbers in "Dosed Today" despite identical schedule	15

A motor just run a few seconds when you prime or when it shall dose	
, , , , , , , , , , , , , , , , , , ,	16
No connection between Alkatronic and Dosetronic	16
No alerts from Dosetronic	16
How to change the SSID and password	16
Helping guide when and how to use ODA/SDA	17
Establish software connection in units with generation earlier than 2.5	
	19
Contents in the Box	20
Specifications	21

Product Registration - Warranty



Each unit of Dosetronic carries a limited factory warranty for 12 months from purchase date with official invoice from shop.

Damages result from user error will not be included in the warranty. Online registration must be done within 14 days after purchase in order to be deemed valid. In the case of any disputes, FOCUSTRONIC has the right to make the final decision. FOCUSTRONIC will also send update information such as firmware updates or new features information via the registered email account. Product warranty is not transferrable. Please register via our website www.focustronic.net/produc-registration

Introduction

Congratulations on your choice of this highly advanced device, which automatically dosing different solutions in your aquarium-system, and also if you have an Alkatronic, will communicate with that and open up some new and very high ended functions.

Please read the whole manual very carefully before setting up and using the device. There may be slight differences (of no importance) between what is on the screen of the device and the pictures within this manual.

Basic Philosophy

Dosetronic is a standalone dosing station, based on 5 very accurate stepper motors, that will dose according to individual dosing scheme, that you can 100% customize to fit your purpose and needs.

Besides that, it can communicate with an Alkatronic, and in that way all actions from Alkatronic like extra doses or skipping doses, will be performed by the Dosetronic in all channels that are in "Alkatronic Mode". In that way, if Alkatronic decide to dose extra alkalinity due to a low dKH value, that dosing action will not only containing KH, but also Ca and Mg, and thus always giving you a 100% fully balanced dosing also concerning the extra doses due to actions from Alkatronic.

Besides that, and this is completely new to market so far, Dosetronic will together with the dKh measurements from Alkatronic last day, do a trend analyze, and every day at 24 pm, but also as selective dosing adjustments, make an autoadjustment of all channels that you have settled into "Alkatronic Mode". In that way, Alkatronic together with Dosetronic can automatically make a perfect dosing scheme, with always small autocorrections if needed.

Set-up-procedure

When setting up this device for first time, follow every points below very carefully.

Placement

Make sure you place the Dosetronic in a location that allows you to easily manage regular maintenance. The machine must be placed in a horizontal position. It is possible to mount the device directly on a wall with our included wall mount, or just let it stand on a flat surface with space for letting the hoses go downwards.

Make sure that if you adjust the positions you should recalibrate the pumps, as the delivery amount of fluids can vary based on the suction heights.

Feel free to use the included wall-mount for easy installation on wall, se picture.

If you have an Alkatronic as well, Dosetronic will communicate with Alkatronic (if you link them) using wireless technology. Of that reason try to have a max distance between Alkatronic and Dosetronic of 5m.



Connecting external hoses

Just mount the external hoses directly to the pump fittings, and let the hoses leave the machine through the gap in the bottom area.

Establish software connection

The next step is to establish a connection between the App in the phone/tablet and the machine. The app is running on internet/wifi.



Follow these instructions if you are running a Dosetronic with gen 2.5 or later. Serial number from D2101xxxx are always gen 2.5 or later.

(Versions earlier than gen 2.5 follow instructions on page 19.)

If this is your first Focustronic product and have no account yet, start with step I-II(users with existing accounts can start from point 1):

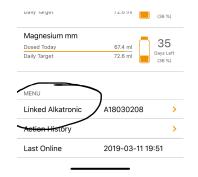
- I. Download the **Focustronic All in One app** from Google Play or App Store.
- II. Open the app, and create an account.

Now proceed with the following steps:

- 1. Power on the Dosetronic
- 2. <u>If you have Android</u> now turn off 4G/ mobile data on the phone.
- 3. Open wifi settings on your phone/tablet and wait for wifi to find Dosetronic
- 4. Dosetronic will show up in "other networks" with its serial number "Dxxxxxxxxx"
- 5. Connect to Dosetronic's WIFI (Dxxxxxxxx) and use the password: *dtpassword*.
- 6. <u>If you have Android</u> it may ask you if you want to stay connected despite no internet access. Press *Yes* in that case.
- 7. Open the App, log in.
- 8. Now its asking you to connect to your home router
- Enter your router's SSID and Password (DT will use the 2.4GHZ channel. For SSID name use no symbols).
- 10. Your Dosetronic is now connected to your router, and therefore also now online.
- 11. If Dosetronic is not online, check in the router settings if it is blocked by a firewall.
- 12. In the app now choose Dosetronic, and you can start to calibrate pumps, make schedules, link an Alkatronic etc, according to instructions in this manual.

Establish connection with Alkatronic

Dosetronic works perfectly as a standalone dosing station. But if you are lucky to have an Alkatronic, some game changing further functions will open up. The communication between Dosetronic and Alkatronic is wireless, and to establish this communication, just open the Dosetronic app and tap "Linked Alkatronic", and enter the serial number of your Alkatronic, and press Save.









Establish connection with Mastertronic

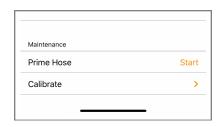
See User Manual for Mastertronic. Note this: In MT the alkalinity test is limited to 1 scheduled test per day, and therefore the KH from MT will not be able to control the DT. All other parameters from MT can control an assigned Dosetronic channel/s.

Prime hoses and Calibrate pumps

Prime hoses

Now you have to prime the hoses from Pumps 1-5

1) Click "View" to open the app. Click on Pump 1 and select "Prime Hose". Press START, and make sure the water is moving upwards in the hose. Continue to prime the hose until you are sure there is no air bubbles anywhere in the hose. The priming will of security reason stops automatically after a certain time, so if not finished with priming, just hit the start

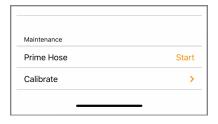


button once again. Note that the very first command from app can take 30-40 seconds before machine respond. Commands after that will have a response time of around 3 seconds.

2) Now do the same for Pump 2-5.

Calibrate Pumps

Now you have to calibrate the pumps 1-5. Its the same procedure for each pump.



- 1) Click on the pump you wants to calibrate
- 2) In pump menu, press "Calibrate".
- 3) Make sure the hose is placed down in a "50-100 ml"-test-cylinder or similar measure device, and press "Calibrate"
- 4) Pump now starts, and stops automatically.
- 5) When it stops, take the hose out of the measuring device, and read the delivered volume. TIP: If pumps already are close to a correct calibration it will give around 30 ml when doing this calibration.
- 6) Note the value in the number fields with one decimal, then press save.

Functions

Pump name

In Pump menu it's possible to change the name of the pumps. Just click on the Pump number to change the name.



Dose Alert/Refill Alert

By enable these buttons Dosetronic will alert you when time to refill the dosing containers (Refill Alert), and give you an alert if Alkatronic has given instructions to Dosetronic to perform extra doses or skipping scheduled doses (Dose Alert). When you have refilled a container, just enter the new "remaining volume" and save, and then you will get in the app information of remaining volume both graphical and numerical, and also remaining days of the container.



Each pump have a graphic line to illustrate how much have been dosing, the so called **Dosed Today.** That is the true volume of fluid that have been delivered to the tank, thus also including extra doses or skipped doses.

Daily Target is the total dose over 24 h according to the schedule.



Alkatronic mode

When a Pump is in *Alkatronic Mode*, that means that pump will perform the extra dose initiated from Alkatronic due to a dKH value below *low reference value* (red value), or skip the next scheduled dose if dKh from Alkatronic is above high reference value.



If a pump is **not** in Alkatronic Mode, that channel will only follows its own internal schedule, and will **never** be affected by actions from Alkatronic.

Alkatronic mode also means that if you in Alkatronic app have chosen one of the correction modes (Overall Dosing Adjustment or Selective Dosing Adjustment), that will apply to all pumps that are in Alkatronic mode.

So another way to express this is that all communication and commands from Alkatronic will be performed in those pumps that are in Alkatronic mode.

The typical situation is that you run some sort of Balling dosing system, where you use 3 pumps to dose the basic elements KH/Ca/Mg. Thus you have a basic schedule in pump 1-3 that manage that. These 3 pumps are in "Alkatronic Mode." If Alkatronic now do a measurement that is below your settled "low reference value", and Alkatronic is set in "Action Mode" and "Dosetronic Mode" (see manual for Alkatronic), then that extra dose from Alkatronic will now be performed by the these 3 pumps with 5 minutes apart. The first pump will always start at XX:40, and the others with 5 minutes interval.

Example 1:

You run a Balling system and use Pump 1-3 to dose KH/Ca/Mg according to a basic schedule you have done in Dosetronic.

Settings in Alkatronic:

Dosetronic Mode ON Action Mode ON

Settings in Dosetronic:

Alkatronic Mode ON for pumps 1-3

Now Alkatronic do a measurement and that is finished 19:12. Let us assume that value is **below your "low ref value" in Alkatronic**, and thus **is leading to an extra dose initiated from Alkatronic** of 45.0 ml (an example).

Then this happens in Dosetronic:

Pump 1: Dosing 45.0 ml at 19:40 Pump 2: Dosing 45.0 ml at 19:45 Pump 3: Dosing 45.0 ml at 19:50

The ordinary basic schedule is not affected, this was just an extra dose beside the ordinary schedule.

Example 2:

You run a Balling system and use Pump 1-3 to dose KH/Ca/Mg according to a basic schedule you have done in Dosetronic.

Settings in Alkatronic:

Dosetronic Mode ON Action Mode ON

Settings in Dosetronic:

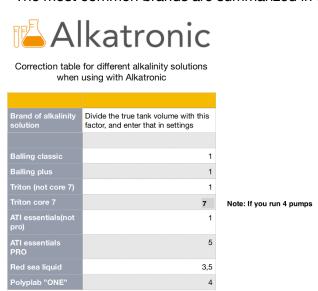
Alkatronic Mode ON for pumps 1-3

Now Alkatronic do a measurement and that is finished 19:12. Let us assume that value is **above your "high ref value" in Alkatronic**. **This is leading to that next planned scheduled dose is skipped,** IF that scheduled dose is happening before Alkatronic is back to a "normal" measurement again.

Settings in Alkatronic to adapt to different dosing recipes

In Alkatronic you must set the correct volume in settings to get correct volumes of these extra doses. If you have a standard Balling recipe, like classic or similar, you enter the true volume of the system in settings in the Alkatronic app. If you run other chemical-systems with higher strength than a classic Balling, divide the volume in the settings by same factor as the recipe is stronger.

The most common brands are summarized in this chart:



A special comment concerning the *core* 7 recipe is needed to be mentioned: If you follow the original instructions in this recipe and dose equal from all 4 pumps, then you shall divide volume in settings by 7 according to the chart above. Some user, to save one pump, are dosing the alkalinity part (3a/3b) from one pump and thus double that dosing amount from that channel. As you wants the extra doses (and also the autocorrection doses) from Alkatronic to be in a balanced way, you can **not** have different dosing from the KH channel vs the Ca/Mg channel. So we recommend to do in either of these 2 ways if you run *Triton core* 7, to get this correct:

With 4 pumps:

Same dose from all 4 pumps, and divide volume in settings by 7. Most easy way.

With 3 pumps:

Same dose from all 3 pumps, and dilute the Ca and Mg bottles (1,2) with equal amount of RO water (Thus all 3 solutions will be with same strength), and divide volume in settings by 3.5.

Automatic Correction Modes of the dosing schedule

One of the unique and game changing features of Dosetronic, is that it can in combination with an Alkatronic, autoadjust the scheduled doses based on the KH-measurements from Alkatronic.

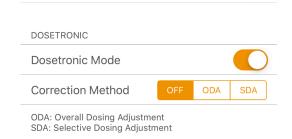
We have 2 different autocorrection functions, with slightly different purposes.

Overall Dosing Adjustment, and Selective Dosing Adjustment. You shall not use

both at same time, and to prevent that, the software only allows one to be enabled each time. You find the buttons to enable/disable these in the Alkatronic app.

These autocorrection functions will apply to all channels in Dosetronic that are in Alkatronic mode.

Here is what the 2 different functions will do, as a guideline when to use respectively.



Overall Dosing Adjustment

This function fine-tune and autocorrect all doses in a schedule and keep the existing ratio between all these doses. So it's a sort of general increase or decrease of the total daily doses.

In the basic dosing schedule you can easily see what the autocorrect algoritm have done since yesterday. The previous dose before autocorrection is shown within the (xx), and the new autocorrected dose are shown to the left of the (xx).

23:12 ₹ Save	Pump 2	ııl ∻ •
02:10		Dose Volume: 14 (13) ml
05:10		Dose Volume: 14 (13) ml
08:10		Dose Volume: 14 (13) ml

All doses are changed in respect to the existing ratio within a schedule, so all proportions between different doses are preserved.

Selective Dosing Adjustment

This function do what it says. It will **adjust isolated single doses to avoid too much ups and downs in the graph**. If for instance one single dose at a certain hour is too high, this functions will detect that and next time that dose will occur (next day), it is lowered some. And vice versa. The result will be a more straight line.

Our advice is to enable this function only if you experience a graph that is very much ups and downs. To get the best out of this algoritm the software will **automatically** do this when this function is activated:

- Measure frequency is set to 2 hour
- SDA will be automatically disabled after 24 hour

Important user tips how to utilize the autocorrection functions

The two autocorrection functions described above is a very helpful tool to get a dosing schedule that fits the tanks consumption of all the elements you dose. Let us give you some tips to get highest possible benefits of these functions.

- Always start with making a reasonable dosing schedule manually.
 The autocorrections algorithms works best when they fine-tune an already existing schedule, and needs something to start from.
- When using ODA, set measure interval of 4 h or lower.
- When using SDA, have temporary a distance between high and low reference values (settings in Alkatronic) of around 0.6dKH. That is to avoid too many potential actions from Alkatronic (extra doses and skipping doses), and thus give a graph that is a better reflection of the biological situations in the tank. Then SDA will be more effective.
- Never use the autocorrection functions if you do major management in the tank or do something else that will just **temporary** give fluctuations of the dKH that day/s.
- When using ODA, avoid too many extra measurement
- Let the measurement from Alkatronic get stable before use ODA/SDA. So
 when you install a brand new Alkatronic, or just have recalibrated
 Alkatronic, or whatever, wait for stabilization of the new situation.

We strongly advice to study typical graph examples in <u>page 17</u>, as a guideline when to use SDA and/or ODA.

View/make/edit/delete schedule

Within the menu of a pump channel, click on "View Schedule" and thats pumps schedule will open up. If the schedule is empty, you will see a great tool we call "Schedule generator". By using that and just enter the total daily dose and number of doses, Dosetronic will do a basic schedule for you within seconds. That



schedule is then possible to manual adjust to 100% customize the schedule. Like different dosing amounts in different times etc. Dosetronic will take care of deciding the minutes automatically with 5 minutes apart, to avoid precipitation of the basic chemicals in a dosing regim, so you just have to decide the hours.

When you have a dosing schedule its also very easy to edit or add further doses by just click on the existing dosing occasion or click on the "+" sign at upper right corner.

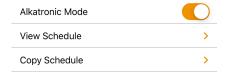
If you wants to delete a post just swipe to the left, and if you swipe twice the software will ask if you wants to delete the whole schedule in one step.





Copy schedule

With this function you can copy the whole schedule of a pump to another pump. It's extremely helpful when doing a Balling/Dosing schedule, where the basic rules always are to have same doses from all channels. So just customize



the Dosing-schedule for **one** channel, and then copy/paste that to the other 2-3 channels to very quickly get a complete and correct Balling/Dosing-schedule in 3-4 pumps.

Manual Overall Adjustment

With this function you can manually increase or decrease the total daily dose in one channel and keep all ratios between the doses. So its an overall increase or decrease in term of %. The function thus resembles very much the automatic *Overall Dosing Adjustment*, but here you do it manually.

06:05	Dose Volume: 1.3 ml
07:05	Dose Volume: 1.3 ml
22-25	Dose Volume:
Manual Overall Adjustment	Save

Last Advertise Time

In the app, you can see when Alkatronic and Dosetronic had its last wireless communication. That time normally not differ from real time more than a few minutes.

	>
2019-04-27 12:15	
2019-04-27 12:14	

Last Online

In the app, you can see when Dosetronic had its last router communication. That time normally not differ from real time more than a few minutes.

Manual Dose

With this function you can let a pump perform a single dose of desired volume.



Test pump accuracy

If you want to check if the pumps are correct calibrated, then press "Prime Hose". If pumps are correct calibrated Prime Hose will give 10.0 ml.

Maintenance

Change hoses in the pumps

Every 6-8 months

OBS: Always use original hoses from FOCUSTRONIC for this purpose. We will not guarantee precision/accuracy, nor safety, if you use other hoses than our replacement hoses. It is of the utmost importance that these hoses are of correct quality, diameter, length, with correctly positioned stops, and are specialized for this machine and it's pumps.

Recalibration

Every \sim 8-12 weeks. The machine will give you an alert when time to calibrate, as a reminder

NOTE: A brand new machine (or after newly replaced hoses) may require recalibration after 2 weeks, due to some short run in period of a new hose.

Changing external hoses

The replacement interval can vary quite much, but as a guideline we recommend to exchange the external hoses every **6 months**.

Trouble shooting

No app-connection

As app is running with internet interface, you must establish router connection once for all between Dosetronic and your home-router. To do that refer to <u>page 5</u>. Router-channel to Dosetronic (and Alkatronic) advices to be running at 2.4 Ghz (It may work at 5 GHz, but can sometimes be unstable with 5 GHz), and sometimes you need to do local router adjustments like running in guest mode. Concerning router issues, in first place refer to the user manual of the router.

Machine do not "skip doses" despite "high dKH"

If you get a high dKH, and have Dosetronic hooked up to Alkatronic (Dosetronic mode ON and linked the units), then all channels that are in Alkatronic Mode will skip the scheduled doses in the schedule until dKH is OK again from Alkatronic measurement (that's the normal behavior). Let us now assume you have this skipping dose situation due to a high dKH, and after that put Dosetronic mode to OFF, OR that Alkatronic and Dosetronic of some other reason happens to loose its connection temporary. In that case, after 30 min of disconnection between Alkatronic and Dosetronic, the dosing behavior in Dosetronic will go back to original schedule independently of any other previous instructions. So Dosetronic will in that way never be stuck in a "skipping dose situation". You will also get a notification in alerts: "Dxxxxxxxxx lost Axxxxxxxx advertisement".

Different numbers in "Dosed Today" despite identical schedule

If a channel is in *Alkatronic Mode* and Alkatronic is measuring a dKH above the "high ref value", the following scheduled dose will be skipped until next measurement is a "dKH ok" again. Depending on when a measurement is done leading to this skipping dose command, and the dosing time for a channel, it can be small differences in the *Dosed Today* - amount after a day.

A motor just run a few seconds when you prime or when it shall dose

This is due to that you have most likely entered an invalid number when you calibrated it (far too high). Just redo the calibration process and enter correct volume. If the first try give you a very small volume almost not possible to measure, start with a "fake" calibration and enter a low number like 5 ml. Then redo the calibration again in the normal way.

No connection between Alkatronic and Dosetronic

First of all check that you have entered correct serial number of Alkatronic when you linked Alkatronic and Dosetronic. Also make sure Alkatronic is in "Dosetronic Mode Enabled". (You set that in the Alkatronic app). If all that settings are correct and still no connection, restart Dosetronic.

No alerts from Dosetronic

Make sure its linked to Alkatronic (see above). Also make sure the alert buttons in Dosetronic app is enabled. Also make sure the settings in the phone allows notifications. And last, make sure Dosetronic is online by checking in the Dosetronic app for "Last online".

How to change the SSID and password

If you have MT /DT hooked up to a router, but of some reason change SSID/pw of the router or maybe change router to a new one, here is a way how to change the SSID and pw settings in MT/DT without start from scratch.

How to change SSID/PW in MT / DT (GEN2.6)

Old router still online with MT/DT

- Keep MT online to the current router
- 2) Go to device list and tap on the unit
- Select "Update WiFi Settings"
- 4) Enter the new router info (ideally the new router is online) and click "Update"
- 5) Wait for 5 min and MT will do an internal reboot and in app it says "Completed" after the MT is back online (to the new router).

Old router is already removed

- 1) Disable 4G on the phone
- 2) Go to Settings of your phone and click on Wifi
- 3) Connect to the MT/DT wifi
- 4) Open the Focustronic All in One app from scratch
- 5) App will load for 30-50 seconds and AP Mode page will pop up
- 6) Enter the new router settings and save
- 7) Wait for 5 min and MT /DT will be back online

Helping guide when and how to use ODA/SDA





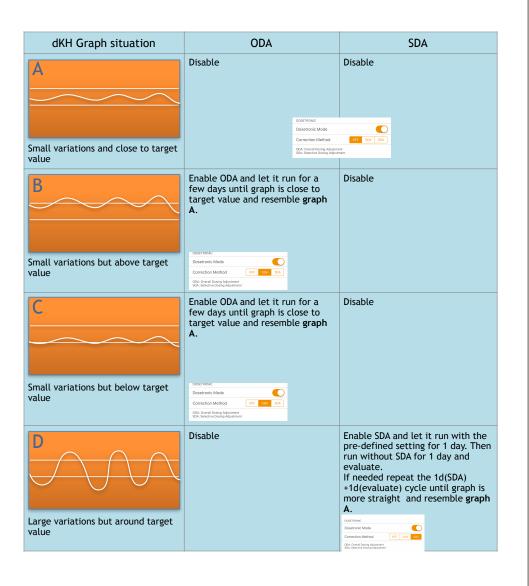


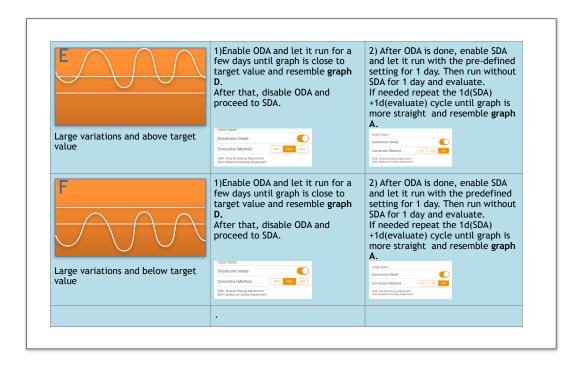
How to use Auto-Correction features in Dosetronic

One of the game-changing functions is that Alkatronic will, based on dKH measurements, make autocorrections of the Dosetronic schedule in those channels you have put into *Alkatronic Mode*. Its voluntary to use these autocorrection functions, and if the dKH graph is relatively straight and within your reference values, you shall not use it. So this tool you will activate temporary based on the dKH graph, and your own decisions.

Here is an easy guideline how to use the autocorrection functions, that we call **ODA** and **SDA**. Refer to user manual for Dosetronic, where we describe ODA and SDA in more detail.

Target Value=mean-value of High ref value and Low ref value (Settings in Alkatronic).





Establish software connection in units with generation earlier than 2.5

1. For iOS users download app at: https://itunes.apple.com/se/app/alkatronic/id1326623624?mt=8

For Android users download app at: https://play.google.com/store/apps/details?id=net.focustronic.alkatronic.lite

Do not open the app yet.

- 2. Make sure you have Bluetooth enabled on your Phone/tablet.
- 3. Power up the *Dosetronic* with the AC-adapter. Never use any other adapter than the one provided!
- 4. Open app. Register an account by choose an username (your email) and password, and make sure the account is accepted and taken.
- 5. Select "Add New Device" and select "Dosetronic".
- 6. Enter the serial number of your Dosetronic (ie:Dxxxxxxxx), and press "Ok".
- Enter the Wifi router's SSID and Password and press "Save", and wait until it says it's saved.
 After it is saved, back out to the main page (Device List) and you will see the unit showing as one of your devices.
- 8. Once Dosetronic is connected to the router, your phone/tablet should now receive a notification saying your unit is connected to internet.
- If you don't get the notification (after approx 5 min waiting) and are sure that SSID and password was correct, then restart Dosetronic. If you are uncertain that SSID and password was correct, redo step 7.
- 10. After the notification is received (thus you have a successful connection to the router), open app again, and tap on your unit's name (SN).
- 11. Tap "View" to enter the main page of the app.

The app is solely running on internet, and not bluetooth, and can thus be opened and used from all places.



Contents in the Box

- Main unit
- External Hoses
- USB cable
- 12 VDC Adapter
- Quick start guide
- Wall mount

Specifications

Accuracy and precision +- 0.1ml
Resolution 0.1 ml
Time to dose 50 ml ~60 sec
Dimensions 22x14x15 cm
Connectivity Cloud, App

Update procedure Wifi (Automatic update through cloud) Software iOS app, Android app, wifi based.

Pumps 5 steppers

Standalone Yes

Alkatronic compatible Yes. Wireless communication with Alkatronic to get

fully balanced dosing from 1-5 pumps when Alkatronic

interacts.

Autocorrection Yes. Together with Alkatronic and Mastertronic

Dosetronic autocorrect the basic dosing schedule

based on measured parameters. *

*Note: In MT the alkalinity test is limited to 1 scheduled test per day, and therefore the KH from MT will not be able to control the DT. All other parameters from MT can control an assigned Dosetronic channel/s.