

6600 - 6665 AND 6665 DVGW VALVES



6600



6665

SERVICE MANUAL

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1 - VALVE SPECIFICATION

Installation N°	<input type="text"/>	System capacity	<input type="text"/>	m ³ °TH
Valve serial N°	<input type="text"/>	Inlet water hardness	<input type="text"/>	°TH
Tank size	<input type="text"/>	Water hardness after mixing valve	<input type="text"/>	°TH
Resin type	<input type="text"/>	Brine tank size	<input type="text"/>	L
Resin volume	<input type="text"/>	Quantity of salt per regeneration	<input type="text"/>	Kg

VALVE TECHNICAL CHARACTERISTIC

INITIATION		REGENERATION SET AT	
Time clock	<input type="checkbox"/>	Days	<input type="text"/> / <input type="text"/> m ³ or l
Meter delayed	<input type="checkbox"/>	REGENERATION TIME	
Meter immediate	<input type="checkbox"/>	2 o'clock A.M.	<input type="checkbox"/>
		or	<input type="text"/> Hour

REGENERATION CYCLES SETTING

Cycle 1	<input type="text"/>	min
Cycle 2	<input type="text"/>	min
Cycle 3	<input type="text"/>	min
Cycle 4	<input type="text"/>	min
Cycle 5 (only 6665 DVGW)	<input type="text"/>	min
Cycle 6 (only 6665 DVGW)	<input type="text"/>	min

HYDRAULIC SETTING

Injector size	<input type="text"/>	Pressure Regulator	
Drain line flow control (DLFC)	<input type="text"/>	2,1 bar (30 PSI) <input type="checkbox"/>	1,4 bar (20 PSI) <input type="checkbox"/>
Brine line flow control (BLFC)	<input type="text"/>	Without	<input type="checkbox"/>

VOLTAGE

24V / 50Hz	<input type="checkbox"/>
24V / 60Hz without transformer	<input type="checkbox"/>

NOTES



2 - VALVE INSTALLATION

2.1 WATER PRESSURE

A minimum of 1,4 bar of water pressure is required for regeneration valve to operate effectively. Do not exceed 8,5 bar ; if you face this case, you should install a pressure regulator upstream the system.

2.2 ELECTRICAL CONNECTION

An uninterrupted alternating current supply is required. Please make sure your voltage supply is compatible with your unit before installation. If the electrical cable is damaged, it must imperatively be replaced by a qualified personal.

2.3 EXISTING PLUMBING

Existing plumbing should be in a good shape and free from lime. The installation of a pre-filter is always advised.

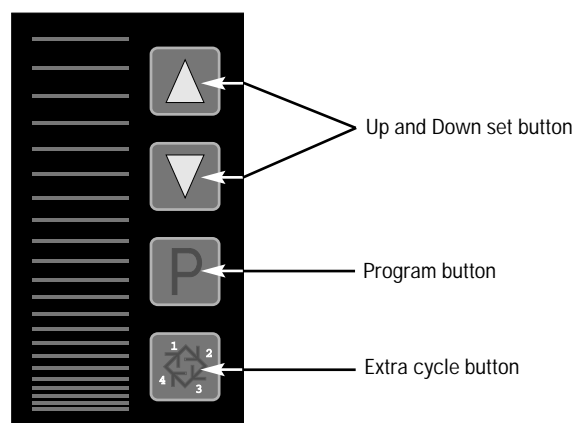
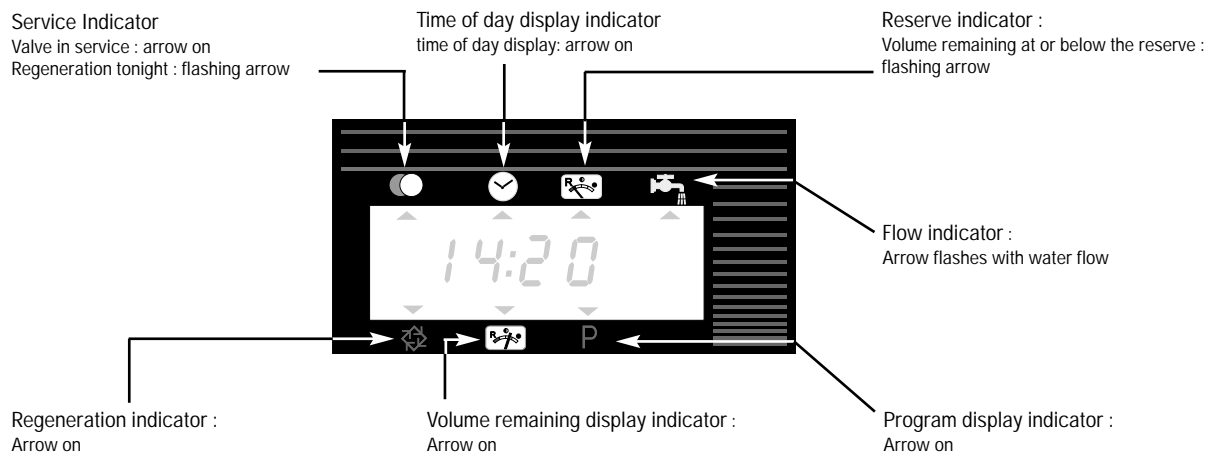
2.4 BY-PASS

Always provide a by-pass valve for the installation, if unit is not equipped with one.

2.5 WATER TEMPERATURE

Water temperature is not to exceed 43° C, and the unit cannot be subjected to freezing conditions.

2.6 PRESENTATION





3 - INSTALLATION INSTRUCTIONS

- 3.1 Install the unit making sure the tank is level and on a firm base.
- 3.2 During cold weather it is recommended that the installer warms the valve up to the room temperature before operating.
- 3.3 All plumbing should be done in accordance with local plumbing code. The pipe size for the drain line should be a minimum of 13 mm (1/2"). For length in excess of 6 m, the drain line should be a minimum of 19 mm (3/4").
- 3.4 Solder joints on the principal plumbing and near the drain must be done prior to connecting the valve. Failure to do this could cause irreversible damage to the valve.
- 3.5 Teflon® tape is the only sealant to be used on the drain fitting.
- 3.6 Make sure that the floor is clean beneath the salt storage tank and that it is level.
- 3.7 On units with a by-pass, place in by-pass position. Turn on the main water supply. Open a cold soft water tap nearby and let run a few minutes or until the system is free from foreign material (usually solder) that may have resulted from the installation. Once clean, close the water tap.
- 3.8 Place the by-pass in service position and let water flow into the mineral tank. When water flow stops, slowly open a cold water tap nearby and let run until the air is purged from the unit.
- 3.9 Plug the valve into an approved power source. Once powered, it is possible that the valve drives itself to the service position.
- 3.10 Set the time of day (see chap.4.1.2).
- 3.11 Fill approximately 25 mm of water above the grid plate, (if used). Otherwise, fill to the top of the air check in the brine tank. Do not add salt to the brine tank at this time.
- 3.12 Initiate a manual regeneration (see chap.4.2.2). Let flow the water during 3 or 4 minutes. Bring the valve into each regeneration cycle and check the functioning of each step. Bring the valve in brine draw position (see chap. 4.2.3) and let it draw the water contents in the brine tank until it stops. The water level will approximately be in the middle of the air check cage.
- 3.13 Now bring the valve in brine refill position (see chap.4.2.3) and let it get back to service position automatically.
- 3.14 Now you can add salt to the brine tank, the valve will operate automatically.
- 3.15 It is recommended to install a 9V alkaline battery at all times for proper valve operation.



4 - VALVE OPERATION

Timeclock regeneration valves

The valve will operate normally until the number of days since last regeneration reaches the regeneration day override setting. Once this occurs, a regeneration cycle will be initiated at the pre-set regeneration time.

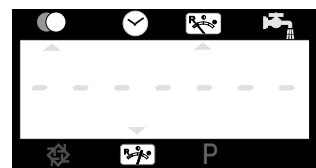
Immediate or meter delayed regeneration valves

The volume remaining display will count down from a maximum value to zero. Once this occurs, a regeneration will be initiated immediately or delayed to the set regeneration time.

For example :



845 litres of treated water remaining



0 litre of treated water remaining

Immediate or meter delayed regeneration with days override set

When the valve reaches its set of days since regeneration override value, a regeneration will be initiated immediately or at the preset regeneration time. This event occurs regardless of the volume remaining display.

Special mode DVGW (German norm)

This valve is in immediate and upflow regeneration, with chlorination and "pause-vacancy" position. The particularity of the "pause-vacancy" position :

- When there is not a flow rate detected for 4 days running :
 - the valve initiates a regeneration and returns in service
- When there is not still a flow rate detected for next 4 days running :
 - the valve initiates a regeneration and stops at the "pause-vacancy" position
 - the valve will end the regeneration and return in service only when there will be a flow rate detected.

Variable brining mode (only for meter delayed up flow)

The valve will determine that a regeneration is required when the volume remaining drops to the reserve capacity. The regeneration will begin immediately at the set regeneration time. The volume of the brine depends on the volume of the softened water consummate, therefore the time of the brine refill is calculated by the electronic.



4 - VALVE OPERATION

4.1 SERVICE

4.1.1 SERVICE DISPLAYS

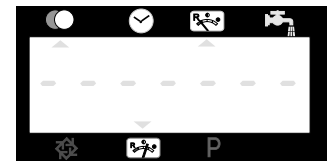
In service operation, the time of day and the volume remaining will alternatively be viewed, (except for the time-clock version : only the time of day will be viewed)



Time of day



Volume remaining : 845 l



Volume remaining : 0 l.

4.1.2 TIME OF DAY SETTING

Set minute by minute the time of day display by depressing the  or  button.

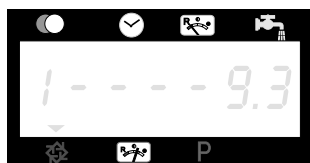
Depress and hold the  or  button to set quickly the time of day.

4.2 REGENERATION

4.2.1 REGENERATION DISPLAYS

In regeneration operation, the valve will show the current regeneration cycle number the valve is advancing to (flashing display) or has reached and the time remaining in that step (fixed display). Once all regeneration cycle steps have been completed the valve will return to the service position.

For example :





Regeneration step #1 has been reached
9,3 minutes remain in step #1



For valves with chlorinator,
the letter C indicates its functioning

4.2.2 SART A MANUAL REGENERATION


There are two options to initiate a regeneration :

- 1) - Press and release the button 
 - With an immediate regeneration, the valve will start immediately a regeneration.
 - With a delayed regeneration, the service arrow will begin to flash immediately and the regeneration will occur at the preset regeneration.
- 2) - Press and hold for 5 seconds the button 
 - In any case, the valve will go into regeneration immediately.



4 - VALVE OPERATION


4.2.3 ADVANCE TO THE NEXT REGENERATION CYCLE

To advance to the next regeneration cycle position, push the button . This action won't have any effect if the valve is advancing to the next cycle.


4.3 PROGRAMMING

CAUTION : *the programming has to be only done by the installer for the valve setting of parameters. The modification of one of these parameters could prevent the good functioning of the device.*

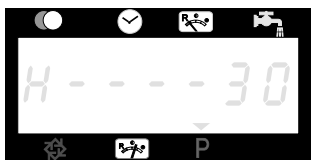
To enter the program mode the valve has to be in service. While in the program mode, the valve will continue to operate normally monitoring all information. The programming is stored in permanent memory with or without line or battery backup power.

To enter in program mode, push and hold the button  for 5 seconds

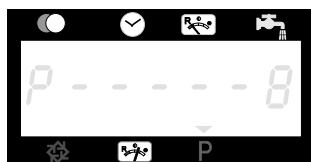
Push the button  once per display.

Change the option setting by pushing either the button  or .

Note: you must pass through all the programming step and come back in service position to save the modifications that have been done during the programming mode.



Water hardness (not viewed in timeclock version)
For ex. : 30° tH



Water hardness after mixing valve (not viewed in timeclock version)
For ex. : 6° tH



Regeneration time (not viewed in immediate version)
For ex. : 2 o'clock AM



4 - VALVE OPERATION

4.4 VALVE OPERATION DURING A POWER FAILURE

During a power failure all control displays will be turned off and regeneration cycles delayed. The valve will otherwise continue to operate normally until the line power is restored or the battery backup power is lost.

If the battery backup power is never lost during a power outage, the valve will continue to operate normally, recording all data until the line power is restored.

If the battery backup power is lost during a power outage, the valve will store the current time of day, volume remaining, regeneration cycle status and diagnostic displays. These stored displays will then be used upon the line power restoration until updated ones are created. To indicate this type of failure, the time of day will flash showing that this display and the volume remaining may not be correct.



5 - TROUBLE SHOOTING

PROBLEM	CAUSE	CORRECTION
1. Softener fails to regenerate.	<p>A - Electrical service to unit has been interrupted.</p> <p>B - Timer is not operating properly.</p> <p>C - Meter cable disconnected.</p> <p>D - Meter jammed.</p> <p>E - Defective valve drive motor.</p> <p>F - Improper programming.</p>	<p>A - Assure permanent electrical service (check fuse, pull chain or switch).</p> <p>B - Replace the timer.</p> <p>C - Check the meter connection to the timer and the meter cover.</p> <p>D - Clean or replace the meter.</p> <p>E - Replace the drive motor.</p> <p>F - Check the programming and reset as needed.</p>
2. Softener delivers hard water.	<p>A - By-pass is opened.</p> <p>B - No salt in the brine tank.</p> <p>C - Injector and/or screen is plugged.</p> <p>D - Insufficient water flowing into the brine tank.</p> <p>E - Hardness from the hot water tank.</p> <p>F - Leak at the distributor tube.</p> <p>G - Internal valve leak.</p> <p>H - Flow meter is jammed.</p> <p>I - Flow meter cable is disconnected or not plugged into the meter cap.</p> <p>J - Improper programming.</p>	<p>A - Close the by-pass valve.</p> <p>B - Add salt to the brine tank and maintain the salt level above the water level.</p> <p>C - Replace or clean the injector and screen.</p> <p>D - Check the brine tank fill time and clean the brine line flow control if it's plugged (BLFC).</p> <p>E - Repeated flushing of the hot water tank is required.</p> <p>F - Make sure distributor tube is not cracked. Check the O' ring.</p> <p>G - Replace seals and spacers and/or piston.</p> <p>H - Remove the obstruction from meter.</p> <p>I - Check the meter connection to the timer and the meter cap.</p> <p>J - Check the programming and reset as needed.</p>
3. Unit uses too much salt.	<p>A - Improper brine refill setting.</p> <p>B - Excessive water in the brine tank.</p> <p>C - Improper programming.</p>	<p>A - Check salt usage and salt setting.</p> <p>B - See the problem n° 7.</p> <p>C - Check the programming and reset as needed.</p>



5 - TROUBLE SHOOTING

PROBLEM	CAUSE	CORRECTION
4. Loss of water pressure.	<p>A - Iron build up in line to softener.</p> <p>B - Iron build up in the softener.</p> <p>C - Inlet of the valve plugged due to foreign material.</p>	<p>A - Clean the line to the softener.</p> <p>B - Clean the valve and the resin bed.</p> <p>C - Remove the piston and clean the valve.</p>
5. Loss of resin through drain line.	<p>A - Top distributor missing or broken.</p> <p>B - Air in water system.</p> <p>C - Drain line flow control is too large (DLFC).</p>	<p>A - Add or replace the top distributor.</p> <p>B - Assure the presence of air check system in the brine tank.</p> <p>C - Ensure drain line flow control size is correct.</p>
6. Iron in softened water.	<p>A - Fouled resin bed.</p> <p>B - Iron exceeds the recommended parameters.</p>	<p>A - Check backwash, brine draw and brine tank refill; increase frequency of regeneration; increase backwash time.</p> <p>B - Contact the dealer.</p>
7. Excessive water in brine tank.	<p>A - Plugged drain line flow control.</p> <p>B - Brine valve failure.</p> <p>C - Improper programming.</p>	<p>A - Clean drain line flow control (DLFC).</p> <p>B - Replace brine valve.</p> <p>C - Check programming and reset as needed.</p>
8. Salted water in service line.	<p>A - Plugged injector and/or screen.</p> <p>B - Timer not operating properly.</p> <p>C - Foreign material in brine valve.</p> <p>D - Foreign material in brine line flow control (BLFC).</p> <p>E - Low water pressure.</p> <p>F - Improper programming.</p>	<p>A - Clean injector and replace screen.</p> <p>B - Replace timer.</p> <p>C - Clean or replace brine valve.</p> <p>D - Clean brine line flow control.</p> <p>E - Raise water pressure to 1,4 bar at least.</p> <p>F - Check programming and reset as needed.</p>



5 - TROUBLE SHOOTING

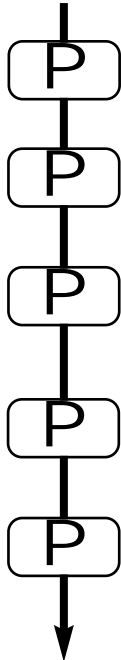
PROBLEM	CAUSE	CORRECTION
9. Softener fails to draw brine.	<p>A - Plugged drain line flow control.</p> <p>B - Plugged injector and/or screen.</p> <p>C - Low water pressure.</p> <p>D - Internal valve leak.</p> <p>E - Improper programming.</p> <p>F - Timer not operating properly.</p>	<p>A - Clean flow control (DLFC).</p> <p>B - Clean injector and/or replace screen.</p> <p>C - Increase water pressure to 1,4 bar at least.</p> <p>D - Change seals and spacers and/or piston assembly.</p> <p>E - Check programming and reset as needed.</p> <p>F - Replace timer.</p>
10. The valve regenerates continuously.	<p>A - Timer not operating properly.</p> <p>B - Faulty microswitches and or harness.</p> <p>C - Faulty cycle cam operation.</p>	<p>A - Replace timer.</p> <p>B - Replace faulty microswitches and/or harness.</p> <p>C - Replace cycle cam or reinstall.</p>
11. Drain flows continuously.	<p>A - Foreign material in the valve.</p> <p>B - Internal valve leak.</p> <p>C - Valve jammed in brine or backwash position.</p> <p>D - Timer motor stopped or jammed.</p> <p>E - Timer not operating properly.</p>	<p>A - Remove piston assembly and inspect bore, remove foreign material and check the valve in various regeneration positions.</p> <p>B - Replace seals spacers and or piston assembly.</p> <p>C - Replace piston assembly and seals and spacers.</p> <p>D - Replace timer motor and check all gears for missing teeth.</p> <p>E - Replace timer.</p>



MASTER PROGRAMMING MODE

Note :

1. Push the **P** button once per display.
2. Option settings may be changed by pushing the **▼** and **▲** set buttons.
3. Depending on current valve programming, some displays will not be viewed or set.



The valve is in service position. To enter in the first level, push and hold the **P** button for 5 seconds.

1.1. Water Hardness in °tH
Not viewed in timeclock regeneration mode
Ex.: 30 °tH [H - - - -30]

1.2. Water Hardness after mixing valve in °tH
Not viewed in timeclock regeneration mode
Ex.: 6 °tH [P - - - -6]

1.3. Regeneration time
Not viewed in immediate regeneration mode
Ex. : 02:00 [- - 2:00 -]

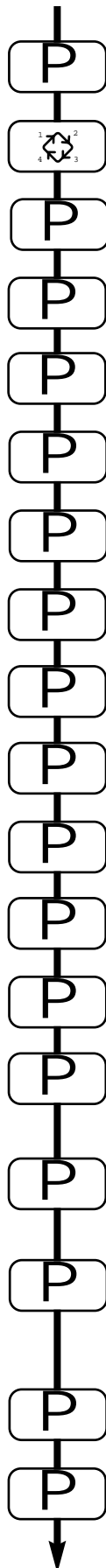
Level #1 exit.
The valve returns in normal operation.



MASTER PROGRAMMING MODE

Note :

1. Push the **P** button once per display.
2. Option settings may be changed by pushing the **▼** and **▲** set buttons.
3. Depending on current valve programming, some displays will not be viewed or set.



The valve is in service position. To enter in the second level, push and hold the **P** button for 5 seconds.

Then depress the button for 5 seconds. You are in the second level.

2.1. Flow rate (Fr) in l/min ⁽¹⁾
Ex. : 8,6 l/mn *not adjustable* [Fr - - 8.6]

2.2. Days since the last regeneration (d)
Ex. : 2 days *not adjustable* [d - - - 2]

2.3. Prior service volume used in litre
Ex. : 3483 l *not adjustable* [E - -3483]

2.4. Reserve capacity (rc) in litre ^{(1) (2)}
Ex. : 852 l *not adjustable* [rc - - 852]

2.5. Previous days water usage (Pd) in litre ⁽¹⁾
Ex. : 284 l *not adjustable* [Pd - -28.4]

2.6. System capacity in m³ °tH (c)
Ex. : 100 m³ °tH [C- - - 100]

2.7. Cycle #1 : [1 - - 6.0]
Ex. : 6 minutes

2.8. Cycle #2 : [2 - - 60.0]
Ex. : 60 minutes

2.9. Cycle #3 : [3 - - 10.0]
Ex. : 10 minutes

2.10. Cycle #4 : [4 - - 12.0]
Ex. : 12 minutes

2.11. Cycle #5 [5 - - OFF]
Only for DVGW mode

2.12. Cycle #6 [6 - - OFF]
Only for DVGW mode
Note : not viewed if cycle #5 is set on OFF.

2.13. Indicator of chlorination (J)
Ex. : - Chlorination during the cycle 1 [J - - - -1]
- No chlorination [J- - -OFF]

2.14. Regeneration day override (A)
Ex. : - Override every 7 days [A - - - 7]
- Cancel setting [A - -OFF]
Note: in timeclock regeneration, never cancel this setting.

2.15. Volume override (b) in litre ⁽¹⁾
Ex. : - Regenerate every 2000 l [b- - 2000]

Level #2 exit.
The valve returns in normal operation..

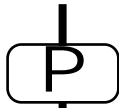
(1) not viewed in timeclock regeneration mode.
(2) not viewed in immediate regeneration mode.
(3) not viewed in case of override.



MASTER PROGRAMMING MODE

Note :

1. Push the **P** button once per display.
2. Option settings may be changed by pushing the **▼** and **▲** set buttons.
3. Depending on current valve programming, some displays will not be viewed or set.



The valve is in service position. To enter in the second level, push and hold the **P** button for 5 seconds.



Then depress the button for 5 seconds. You are in the second level.



After that, depress the button for 5 seconds. You are in the third level.



3.1. Display format (U)

Ex.: - Litre format [U - - - - - 2]
 - Cubic meter format [U - - - - - 4]

Note : If this parameter is changed, the programming comes immediately back to the level 1 and is directly followed by the levels 2 & 3.



3.2. Valve Type (o)

Ex.: - Valve 6600/6665/6665 DVGW [o - - - - - 1]



3.3. Regeneration type (7)

Ex.: - Timeclock [7 - - - - - 1]
 - Meter immediate [7 - - - - - 2]
 - Meter delayed [7 - - - - - 3]
 - DVGW Mode [7 - - - - - 7]



3.4. Flow meter size (F)

Ex.: - Standard 3/8" [F - - - - - 0]
 - Standard 3/4" [F - - - - - 1]



3.5. Mixing valve location (8)

Ex.: - No mixing valve [8 - - - - - 1]
 - Mixing valve before flow meter [8 - - - - - 2]
 - Mixing valve after flow meter [8 - - - - - 3]



3.6. System type (9)

Ex.: - System type #4 : single electronic [9 - - - - - 4]



3.7. Program lockout(PI)

Ex.: - Cancel lockout [PI - - - - OFF]
 - Lockout active [PI - - - - ON]



Level #3 exit.

The valve returns in normal operation





MASTER PROGRAMMING MODE

Settings and displays can be viewed or reset with active lockout

In service :

- Time of day
- Volume remaining

In programming level 1

- Water hardness
- Water hardness after mixing valve (P)
- Regeneration time

In programming level 2

- Flow rate (Fr)
- Days since the last regeneration (d)
- Prior service volume used (E)
- Reserve capacity (rc)
- Previous days water usage (Pd)

No possibility to enter in the level #3 if lockout is activated

The program lockout can be cancelled by depressing the button **P** for 25 seconds.

CAUTION : depressing the button **P** for 25 seconds when the program lockout is not activated will erase all previous display settings; the electronic will reset to default values. The electronic programming will have to be completely redone.

Installer note :




1. *Reserve capacity calculation : in meter delayed regeneration mode, the electronic automatically calculates its reserve capacity based on daily water usage.*
2. *System capacity and water hardness will not be viewed or set when timeclock regeneration is programmed ; when volume override is set, the system capacity will not be viewed.*
3. *The regeneration time will not be viewed or set with the metered immediate regeneration mode.*
4. *Voltage range for reliable operation of the electronic:*
Voltage : 24V +/- 10% Frequency: 50Hz or 60Hz without transformer.

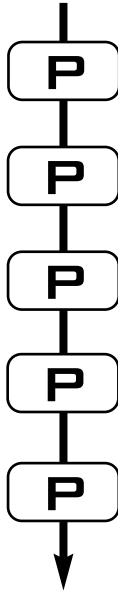





PROGRAMMING LEVEL 1

Note :

1. Push the  button once per display.
2. Option settings may be changed by pushing the  and  set buttons.
3. Depending on current valve programming, some displays will not be viewed or set.



The valve is in service position. To enter in the first level, push and hold the button  for 5 seconds.

1.1. Water Hardness in °tH

Ex.: 30 °tH

[H - - - -25]

1.2. Water Hardness after mixing valve in °tH

Ex.: 6 °tH

[P - - - -6]

1.3. Regeneration time

Ex. : 02:00 A.M.

[- - 2:00 -]




Level #1 exit.

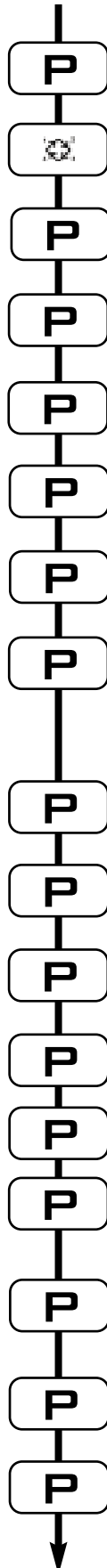
The valve returns in normal operation.





PROGRAMMING LEVEL 2

Note :

1. Push the  button once per display.
2. Option settings may be changed by pushing the  and  set buttons.
3. Depending on current valve programming, some displays will not be viewed or set.



The valve is in service position. To enter in the second level, push and hold the button  for 5 seconds.

Then depress the button  5 seconds. You are in the second level.

2.1. Flow rate in l/min
not adjustable [Fr - - - 0]

2.2. Days since the last regeneration
not adjustable [d - - - - 0]

2.3. Prior service volume used in litre
not adjustable [E - -2800]

2.4. Reserve capacity in litre
not adjustable [rc - - 450]

2.5. Previous day water usage in litre
not adjustable [Pd - - 400]

2.6. System capacity in m³ °tH
Ex. : 30 m³ °tH [C - - -30]

Cycle time settings :

2.7. Pause cycle to prepare the brine
Ex. : 30 min. [2 - - 30.0]

2.8. Brine draw & slow rinse
Ex. : 50 min. [3 - - - 50.0]

2.9. Backwash
Ex. : 8 min. [4 - - - - 8.0]

2.10. Rapid rinse
Ex. : 10 min. [5 - - - 10.0]

2.11. Not used [6 - - - OFF]

2.12. Indicator of chlorinating
- no chlorinating indicator [J - - -OFF]

2.13. Regeneration day override
Ex. : - override every 7 days
- cancel setting [A - -OFF]




2.14. Volume override in litre
Ex. : - setting not used [b - - OFF]

Level #2 exit.
The valve returns in normal operation.




PROGRAMMING LEVEL 3


Note :

1. Push the  button once per display.
2. Option settings may be changed by pushing the  and  set buttons.
3. Depending on current valve programming, some displays will not be viewed or set.



The valve is in service position. To enter in the second level, push and hold the button  for 5 seconds.

Then depress the button  5 seconds. You are in the second level.

Depress once again the button  5 seconds. You are in the third level.

3.1. Display format

Ex. : Litre format

[U - - - - 2]

Ex. : Cubic meter format

[U - - - - 4]

3.3. Valve type

- 6600

[o - - - - 1]

3.3. Regeneration type

- variable brining

[7 - - - - 4]

3.4. Volume of resin

Ex. : 15 litres

[7r - - 15.0]

3.5. Salt setting

Ex. : 120 g of salt/litre of resin

[7d - - - 120]

3.6. BLFC size

See the label on the injector housing

[7b - - X.XX]

3.7. Meter size

- standard 3/4"

[F - - - - 1]

3.8. Mixing valve location

- no mixing valve

[8 - - - -1]

- mixing valve before flow meter

[8 - - - -2]

- mixing valve after flow meter

[8 - - - -3]

3.9. System type

- single electronic

[9 - - - - 4]

3.10. Program lockout

Ex. : - lockout cancelled

[PI- - OFF]

- lockout active

[PI- - - ON]

level #3 exit.

The valve returns in normal operation.

