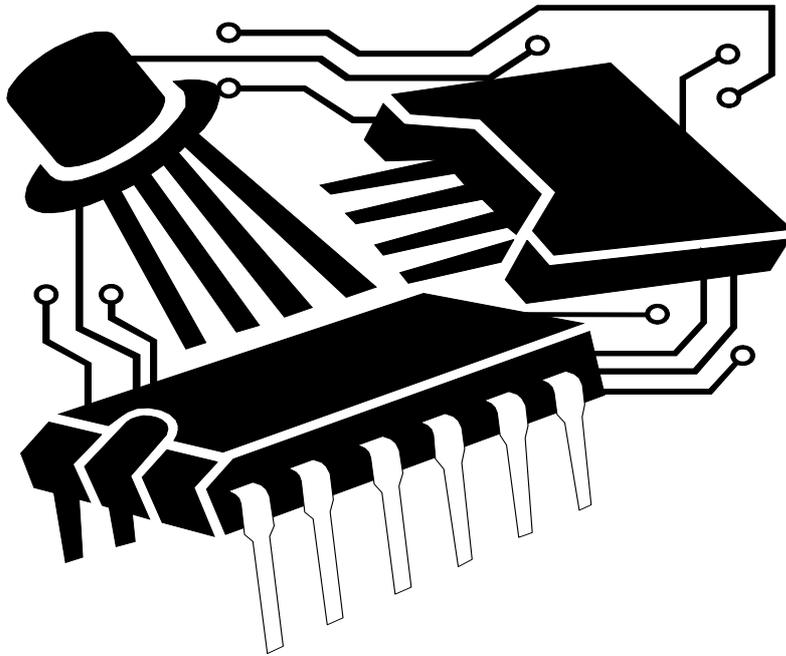


Model 5600SE OEM Manual



To get into the master programming mode, which effectively tells the system what it is and what it is supposed to do, you have to get through the "security lock". This is done by setting the time of day to 12:01 using the UP or DOWN arrows. When you have established the time at 12:01 you must then press the UP and DOWN arrow buttons simultaneously for 5 seconds. This lets you into the master programming mode.

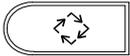
A word of caution. When using the UP or DOWN arrow buttons you will notice that the longer you keep the button depressed, the faster the digits change. This can be annoying at first because you will keep missing the setting you require. A series of quick depressions on the appropriate button is usually the best way.

MODEL 5600SE

master programming mode

1. Display format [U - - ?]

This display is used to determine the display format and is identified by the letter 'U' as the first digit in the display window. Use the UP or DOWN arrow button to set this display to [U - - 2]. In this format the volume unit displays will be in LITRES and time displays will be in 24 hour clock format. NOTE: The P.M. indicator is disabled. Regeneration timings will be in minutes with an accuracy of 0.1 minute. See NOTE 2 at the end of this document



←PRESS

2. Regeneration type [7 - - ?]

This display is used to determine the regeneration initiation format. There are three possible options, selected via the UP or DOWN arrow buttons:

Time only [7 - - 1]

If selected, the control will determine that a regeneration is required when the set regeneration time has been reached. The Regeneration Day Override (*step 5*) setting will determine on which days a regeneration cycle will be initiated.

or

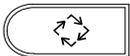
Immediate meter [7 - - 2]

The control will determine that a regeneration is required when the system capacity value reaches zero. Regeneration begins immediately, regardless of the time.

or

Delayed meter [7 - - 3]

The control will determine that a regeneration is required when the system capacity value reaches zero. Regeneration will occur at the next occurrence of the set Regeneration Time.



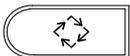
←PRESS

3. System capacity (no display code)

This display is used to establish the volume of softened water that the system can produce between regenerations.

With delayed meter initiation operation defined [7 - - 3], it is up to the installer / programmer to determine a reserve capacity and subtract that volume from the total system capacity. Normally, the reserve capacity should be approx. equal to the estimated daily water demand. The value to be set in the display should be in LITRES using the UP or DOWN arrow buttons. See NOTE 2 at the end of this document

NOTE: If time only initiation was determined [7 - - 1] then this display will be omitted.

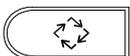


←PRESS

4. Regeneration time (no display code)

This display is used to establish the time at which a regeneration will initiate. It is identified by a non-flashing colon between two sets of numbers. Set the required time - normally 02:00 - using the UP or DOWN arrow buttons.

NOTE: If immediate meter initiation was determined [7 - - 2] then this display will be omitted.



←PRESS

MODEL 5600SE

master programming mode

5. Regeneration day override [A - - -]

This display is used to establish the maximum number of days between regenerations. This setting can interact with the time only, immediate and delayed meter initiation settings. With immediate meter initiation it is recommended that you set this function to [A OFF]. With delayed meter initiation you must set the display to a value of at least 2 and have appropriate capacity available to meet the requirements of function 3



←PRESS

6. Regeneration cycle step programming [1 thru 4]

This series of displays is used to establish the timings of the various regeneration steps. Up to 4 steps can be programmed and for normal softener operations, ALL steps should be programmed.

Backwash step [1 - - ?]

This is one of the major regeneration water consumption steps and should be carefully considered. On smaller systems where the resin vessel is very full and the system is treating clean mains water then backwash is of limited value. A setting of 2 minutes [1 - 2.0] will usually be sufficient to loosen the resin bed prior to brine injection. If sufficient resin bed expansion has been allowed for and the water supply contains particulate matter then a setting of 6 minutes [1 - 6.0] may be more appropriate. If you programme this step to 0 minutes [1 - - 0] then the step will be skipped.



←PRESS

Brine injection and slow rinse [2 - - ?]

This step needs to be considered in relation to the values you intend to establish in step 4 - Brine tank refill. The amount of water refilled into the brine tank must be fully drawn out during the first phase of this step. The first phase is completed when the brine air check device shuts off, allowing the system to enter the second phase of this step - Slow rinse. When establishing the total time to be set in this step you must add the time required to draw out the brine from the brine tank PLUS the contact time / slow rinse time. In the absence of any other information, a typical setting for residential type applications would be 50 minutes [2 50.0].



←PRESS

Rapid rinse [3 - - ?]

This is the other major regeneration water consumption step which also needs to be carefully considered. If the time set is too short then the brine regenerant will not be rinsed out and will be present in the water flowing to service - leading to customer complaints and possible corrosion damage. If the time set is too long then system capacity will be wasted as you will simply be putting softened water down the drain. Again, in the absence of other information, a typical setting of 10 minutes [3 1 0.0] should be sufficient on typical residential type installations.



←PRESS

MODEL 5600SE

master programming mode

Brine tank refill [4 - - ?]

This is the key step that influences system performance, both in terms of capacity and treated water quality. Several factors have to be taken into account when determining the time to set in this step. Detailed discussion is not appropriate to this document and the following examples are for illustration purposes only.

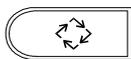
The refill flow rate is controlled by the brine line flow control (BLFC) fitted in the injector assembly. This is typically sized at 0.25 US gpm which equals 0.95 l/min. For most purposes you can assume that 1 kg. NaCl (salt) is dissolved in 3 litres of water. The amount of salt used per regeneration is a function of resin volume and regeneration level. The regeneration level used should be given some thought, particularly with regard to regeneration efficiency vs. available softening capacity and appropriate residual hardness. Please refer to resin data sheets for details of these considerations. For the purposes of this example, assume 15 litres of resin and a regeneration level of 160 kg. NaCl / m³ resin which would provide a nominal resin capacity of 64 kg CaCO₃/m³ resin. If we assume 15 litres of resin then to establish the salt required per regeneration multiply 160 x 0.015 which gives you 2.4 kg. salt. Multiply this value by 3 and you get 7.2 litres of water required to dissolve this amount of salt. If we divide 7.2 by 0.95 we get 7.58 minutes.

In this example, using the UP or DOWN arrow buttons set the display to show [4 - 7.6]

NOTE: The relationship of this setting to the value set in section 3 is shown by the following formula:

System capacity (in litres) equals

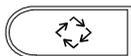
Resin capacity (kg CaCO₃/m³) x resin volume (litres) x 1000
water hardness (mg/l as CaCO₃)



←PRESS

Spare cycle [5 - - ?]

This cycle does not apply to the 5600SE valve and MUST be programmed to show [5 o f f]

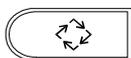


←PRESS

7. Flow meter size [F - - ?]

This display is used to define the water meter characteristics and MUST be set to show [F 35.1]. Any other value will cause false operation of the system.

NOTE: If Time only initiation was selected earlier then this display will be skipped.



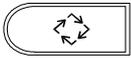
←PRESS

MODEL 5600SE

master programming mode

8. Valve type [0 - - ?]

This display is used to tell the control what type of system it is operating and MUST be set to show [0 - - 1]



←PRESS

9. Line frequency [L F - -]

This display is used to tell the control the characteristics of the electrical power supply. It needs this information in order to properly determine both the time of day and the duration of the various steps. In Europe the value MUST be set to [L F 50] representing 50 Hz.

Exiting the programming mode is done by a final touch of the Extra Cycle button.



←PRESS

NOTE 1: If everything gets screwed up then you can restore the permanent programme memory by pressing the UP and DOWN arrow buttons simultaneously for 25 seconds or until the time of day display shows [1 2:0 0]. The control will then have been reset to default values and you must then start back at the beginning to establish the required programme.

NOTE 2: There may be situations where the supply water is already quite soft. In such a situation, the capacity of the water softener might exceed the 9999 maximum litre count. If this is the case then set the U value to 4. This provides water volumes in cubic meters (m³) to an accuracy of 100 litres. In this case, System capacity is therefore set in cubic meters to one decimal place eg. 2.7m³

MODEL 5600SE

Notes:
