



## MEDALLIST PROGRAMMING INSTRUCTIONS

Use this sheet to assist in programming the Medallist water softener when used as a standard application. Please refer to the Medallist Installation and Operation Manual if modifications need to be made to the programming options or service check out.

Make sure the inlet water supply is turned off, then supply power to the timer. The display will power up flashing "12:00 PM" and the motor will energize and cycle the control, without stopping, to the home position. This is required to ensure that the control is in the home position.



The timer uses four buttons:

1. STATUS: Advance timer through display options.
2. UP ARROW "+": Increase the setting.
3. DOWN ARROW "-": Decrease the setting.
4. REGEN.: Initiate a manual regeneration.

### SETTING THE MICROPROCESSOR

The microprocessor senses when it is installed as a Soft-Minder<sup>®</sup> control. Adding or removing any connection to the board will automatically reset the microprocessor to the factory settings.

#### Step 1 – Programming Time of Day

Press the "STATUS" key.

The display will blink "tod" for 3 seconds and then change to time of day with the "ones" digit blinking.

Adjust the "ones" digit with the "+" or "-" keys.

Press the "REG" key to blink the "tens" digit.

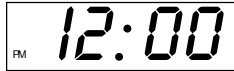
Adjust the "tens" digit with the "+" or "-" keys.

Press the "REG" key to blink the "hours" digit.

Adjust the "hours" digit with the "+" or "-" keys.

Press the "REG" key to cycle back to "ones" or

Note: The "hours" setting scrolls through 1-12 AM and 1-12 PM. Make sure the proper AM or PM indicator is shown when setting the time.



#### Step 2 – Programming Regeneration Time

Press the "Status" key after setting the time of day.

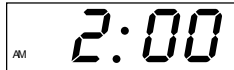
The display will blink "tor" for 3 seconds and then

change to the time setting with the "ones" digit

blinking. Adjust regeneration time as time of day

above.

Note: This option will not show if the "dIP 2" option is set to immediate



#### Step 3 – Programming Salt Dosage

Press the "Status" key after programming regeneration time.

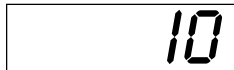
The display will blink "SLtP" if set to English or

"SLtG" if set to Metric for 3 seconds and then

display the salt dosage. Refer to the reverse side of this sheet for salt settings.

Adjust the setting with the "+" or "-" key (3-24 lbs.)(1-10 kgs.)

Note: This option will not show if the control is set to Filter mode.



#### Step 4 – Programming Backwash Time

Press the "Status" key after programming salt dosage.

The display will blink "bw" for 3 seconds and then display the backwash time in minutes.

Adjust the setting with "+" or "-" key. (1-40 minutes)



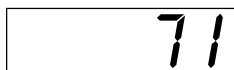
#### Step 5 – Programming Brine Draw/Slow Rinse Time

Press the "Status" key after programming the backwash time.

The display will blink "br" for 3 seconds and then display the brine draw/slow rinse time in minutes.

Adjust the setting with the "+" or "-" key. (35-99 minutes). See Table 5 for suggested brine draw/slow rinse times.

Note: This option will not show if the control is set to Filter mode.



#### Step 6 – Programming Gallons (Liters) or Days to Regeneration

##### Meter Mode—

Press the "Status" key after programming the brine draw/slow rinse time.

The display will blink "CAPG" ("CAPL") for 3 seconds and then display the gallons or liters set point.

Adjust the setting with the "+" or "-" key. (10-9990 Gallons) (40-37000 Liters). Refer to the reverse side of this sheet for calculating capacity setting.

Note: The programmed value must be multiplied by 10 to obtain the actual setting. For example, if 87 is shown in the display, the control will regenerate after 870 gallons have passed through the meter.



##### Timeclock Mode—

Press the "Status" key after programming the brine draw/slow rinse time.

The display will blink "CAP" for 3 seconds and then display the number of days between regenerations.

Adjust the setting with the "+" or "-" key. (1-42 days). Refer to the reverse side of this sheet for calculating time clock settings.

##### Exiting Program Mode

From Step 6 (or step 7 if it is active) press the "Status" key.

The display will go blank.

Press the "Status" key again to exit programming.

Note: The control will exit the programming mode if no key press activity takes place within one minute.

##### Locking the Programmed Menu

Press and hold the "+" key for 3 seconds while in the service mode.

The display will show the status of the lock feature. ("LoC" or "unL")

Adjust with the "+" or "-" key.

Press the "STATUS" key to return to the service mode.

Note: While the programmed menu is locked ("LoC") all of the programming menu items will display, however only the time of day can be changed.

Note: If programming times out, values will not be saved. The "Status" key must be pressed to save values.

TABLE 5 - Suggested Brine Draw/Slow Rinse Times

Salt Dosage	Brine Draw/Slow Rinse Time (Minutes)	
	8" Tank	10" Tank
3	53	—
4	55	—
5	57	40
6	59	42
7	62	44
8	65	46
9	68	48
10	71	50
11	74	52
12	76	53
13	78	55
14	80	56
15	82	58
16	—	59
17	—	61
18	—	62
19	—	64
20	—	65
21	—	67
22	—	68
23	—	70
24	—	71

Note: Values are for 50 psi pressure. Minutes should be adjusted for lower and higher pressures to ensure that the brine is fully rinsed out.

**CAPACITY AND SALT SETTINGS**

As mentioned previously, the softener will regenerate once the amount of water equal to the treated water volume set point has passed through the turbine for meter models or after a fixed time interval for timeclock models. Regeneration is either delayed until the selected regeneration time or immediate depending on how the microprocessor is programmed. Before completing the programming, the following information must be determined:

**1. Compensated Water Hardness.**

If your water supply contains iron, compensate for it by the following procedure.

1. Multiply the iron by 0.1 and add the result to the hardness.  
Example: (3 ppm of iron x 0.1) + 25 gpg of hardness = 25.3 gpg of total hardness

2. Choose the % capacity you want and refer to the table below for the appropriate multiplier.  
Example: 67% capacity gives a multiplier of 1.5.

**TABLE 2**

% capacity	50%	67%	75%
Multiplier	2	1.5	1.33

3. Multiply the result from Step 1 by the multiplier chosen in Step 2. This is the compensated hardness.  
Example: 25.3 gpg total hardness x 1.5 = 38 gpg compensated hardness.

4. Use the effective hardness for sizing and to determine salt dosage and regeneration frequency.

5. The forced regeneration feature should be used for Soft-Minder meter operation to ensure the resin bed does not become iron fouled due to lack of water flow. See "Programming the Option Settings" for the forced regeneration feature.

**2. Salt Dosage**

From Table 3, select the salt dosage at which the softener will be operated.

- Low Setting — Maximum salt efficiency, more frequent regeneration, reduced overall softening capacity.
- Medium Setting — Good combination of efficiency and overall softening capacity.
- High Setting — Maximum softening capacity, less frequent regeneration, and reduced salt efficiency.

Recommended whenever iron is present and for hardness levels above 30 Grains Per Gallon, or high volume water usage.

**TABLE 3 - SALT DOSAGE**

Capacity	160 lb. Brine Tank "A" Dimen. Secondary (Only)		250 lb. Brine Tank "A" Dimension		375 lb. Brine Tank "A" Dimension	
	Salt Dosage	Capacity	Secondary in.	Primary in.	Secondary in.	Primary in.
4	18,300	X	7-3/4	19.7	6-5/8	16.8
5	20,000	20,200	9-1/2	24.1	8	20.3
6	22,000	22,500	11-1/4	28.6	9-3/8	23.8
7	23,200	24,400	13	33	10-7/8	27.6
8	24,100	25,700	14-3/4	37.5	12-1/4	31.1
9	25,100	27,000	16-1/2	42	13-5/8	34.6
10	26,100	28,300	18-1/4	46.3	15	38.1
11	26,800	29,400	20	51	16-3/8	41.6
12	27,500	30,500	21-3/4	55.2	17-3/4	45.1
13	X	31,500	21-1/2	59.7	19-1/8	48.6
14	X	32,500	25-1/4	64.1	20-1/2	52.1
15	X	33,300	—	—	21-7/8	55.5
16	X	34,100	—	—	23-1/4	59
17	X	35,000	—	—	24-5/8	62.5
18	X	X	—	—	26	66
19	X	X	—	—	27-3/8	69.5
20	X	X	—	—	28-3/4	73

**3. Treated Water Volume Set Point**

Calculate the treated water volume set point using the following information:

- Softening capacity — Grains (based upon salt dosage setting).
- Compensated hardness of water supply — Grains Per Gallon
- Estimated daily water usage — Gallons Per Day (refer to Table 4)

**TABLE 4 - Daily Water Usage**

Persons in Household	Gallons Per Day
2	150
3	225
4	300
5	375
6	450
7	525
8	600
9	675
10	750

**Example - Meter: Softener Model Medallist 2M**

Capacity @ 9 lb. Salt Dosage: 25,100 Grains  
Compensated Water Hardness: 19 Grains Per Gallon  
Estimated Daily Water Usage: 300 Gallons Per Day

$$\text{Treated Water Volume Set Point} = \frac{\text{Softener Capacity}}{\text{Compensated Hardness}} - \text{Water Usage}$$

Softening Capacity 25,100 Grains  
Divide by Compensated Hardness ÷ 19 Grains per Gallon  
Result is total number of gallons of soft water per regeneration 1,321 Gallons

Subtract daily Water Usage (needed as a reserve to ensure continuous soft water until regeneration occurs) — 300 Daily Water Usage (One Day Supply)  
Water Volume Set Point 1,021 Gallons

Round down to nearest ten for Treated Water Volume Set Point 1,020 Gallon Setting  
**Set "CAPG" to 102**

**Example - Timeclock: Softener Model Medallist 2**

Capacity @ 9 lb. Salt Dosage: 25,100 Grains  
Compensated Water Hardness: 19 Grains Per Gallon  
Estimated Daily Water Usage: 300 Gallons Per Day

$$\text{Treated Water Volume Set Point} = \frac{\text{Softener Capacity}}{\text{Compensated Hardness}} - \text{Water Usage}$$

Softening Capacity 25,100 Grains  
Divide by Compensated Hardness ÷ 19 Grains per Gallon  
Result is total number of gallons of soft water per regeneration 1,321 Gallons

Subtract daily Water Usage (needed as a reserve to ensure continuous soft water until regeneration occurs) — 300 Daily Water Usage (One Day Supply)  
Divide by daily water usage ÷ 300  
3.4 Days

Round down to nearest day 3.0 Days  
**Set "CAP" to 3**

Use the following worksheets to calculate and record the proper settings.

**Treated Water Volume Set Point Work Sheet - Meter Models**

1. Enter Softening Capacity	_____
2. Divide by Compensation Hardness	÷ _____
Result is Total Gallons of Soft Water Per Regeneration	= _____
3. Subtract Daily Water Usage (Reserve)	— _____
Result	= _____
Round down to nearest ten for Treated Water Volume Set Point	<input type="text"/> Gallons

**Treated Water Volume Set Point Work Sheet - Timeclock Models**

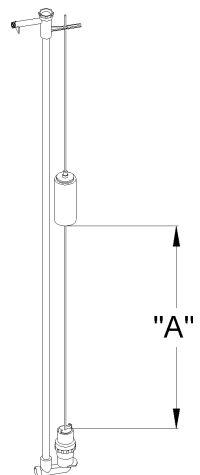
1. Enter Softening Capacity	_____
2. Divide by Compensation Hardness	÷ _____
Result is Total Gallons of Soft Water Per Regeneration	= _____
3. Subtract Daily Water Usage (Reserve)	— _____
4. Divide by Daily Water Usage	÷ _____
Result	= _____
Round down to nearest ten for days between regeneration set point	<input type="text"/> Days

Note: All Softening capacity is based on using sodium chloride as the regenerate. If potassium chloride is used reduce the rated softening capacity by 20%.

**BRINE VALVE "A" DIMENSION**

The brine valve contains a float-actuated safety shut-off device to prevent overflow of the brine tank in the unlikely case of an electrical or mechanical failure during the brine tank refill cycle.

It is recommended that the brine valve float be used as intended, that is, as a secondary, safety shut-off. Remember, the timer mechanism provides the primary refill shut-off. To use the float as a safety shut-off, refer to Table 4 for the salt dosage and brine tank size being used. The "A" dimension is the distance between the filter screen and the bottom of the float (Figure 11) when the float stem is in its fully raised position; adjust the float and rubber grommets accordingly.



**FIG. 11**