How to Program a 480 DDS

Multiple-Tank Systems
(D/2, D/3, E/2, E/3)

This instruction sheet is intended to be a supplement to the Installation, Operation and Maintenance Manual supplied with the control. **DO NOT** attempt to install or program the control without first reading the entire manual thoroughly.

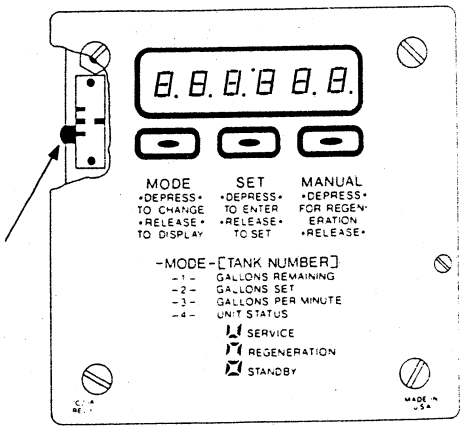
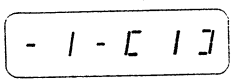


Figure 1

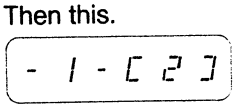
1) Figure 1 shows the faceplate of the 480 control. Before connecting power to the control, check that all of the wiring is correct. Be sure to observe all local codes. Be sure that the control is set in the proper system. Check that the Lockout Switch is in the lower, or UNLOCKED position. When power is first connected to the control, the display will show six 8's (Figure 1). If the six 8's do not appear or the display shows something other than the six 8's, consult the Installation, Operation and Maintenance Manual or the Trouble-shooting Guide supplied with the unit. In this example, a D/3 system is used.

2) Depress the MODE button.

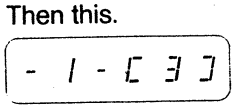
   First the display will show this.

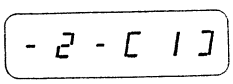
   Then this.

   Then this.

   When the display shows this, release the MODE button.

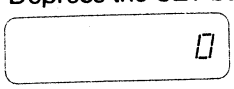
3) The control is now in Mode 2, Tank [1]. This is where to program the calculated capacity of the unit, and where the calculated capacity of the unit is displayed. For this example, the calculated capacity is 45,000 gallons.

   The numbers are entered one at a time, starting from right to left. Depressing the SET button will roll the numbers "0" through "9" in the first position.

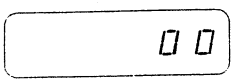
   Releasing the SET button will set in the number selected and shift to the next position. This occurs for each of the six digits.

   To enter 45,000 gallons, proceed as follows.

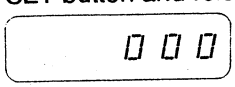
   The display shows this. DO NOT change the "0". Depress the SET button and release.

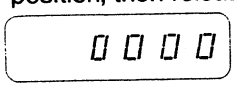
   The display will now show this. Again, depress the SET button and release.

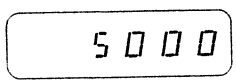
   

   The display will now show this. Again, depress the SET button and release.

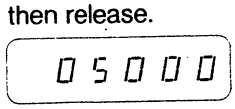
   

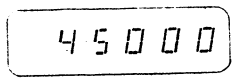
   The display will now show this. To change the "0" to a "5", depress the SET button and keep it depressed until a "5" appears in the fourth position, then release.

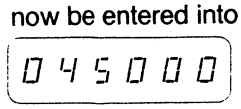
   

   The display will now show this. To change the "0" to a "4", depress the SET button and keep it depressed until a "4" appears in the fifth position, then release.

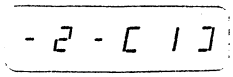
   

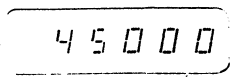
   The display will now show this. The capacity must now be entered into the microprocessor.

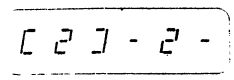
Depress the MODE button until the display shows this, then release.



The display will now show this. The calculated capacity of the unit is now programmed into the microprocessor.

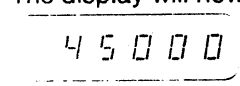


4) Depress the MODE button until the display shows this, then release.

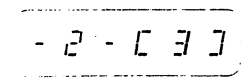


The control is now in Mode 2, Tank [2]. This is where the calculated capacity of Tank 2 is displayed. When Mode 2, Tank [1] is programmed, the microprocessor will assign the same capacity to Tank 2. If the capacity of Tank 2 is different than the capacity of Tank 1, the value can be changed by using the procedure described in Step 3. Note, however, the capacity will not be changed in the microprocessor until Tank 2 regenerates one time.

The display will now show this.

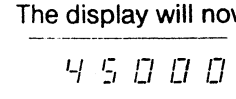


5) Depress the MODE button until the display shows this, then release.

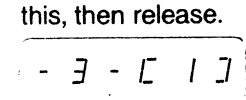


The control is now in Mode 2, Tank [3]. This is where the calculated capacity of Tank 3 is displayed. When Mode 2, Tank [1] is programmed, the microprocessor will assign the same capacity to Tank 3. If the capacity of Tank 3 is different than the capacity of Tank 1, the value can be changed by using the procedure described in Step 3. Note, however, the capacity will not be changed in the microprocessor until Tank 3 regenerates one time.

The display will now show this.

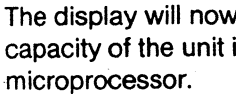


6) Depress the MODE button until the display shows this, then release.

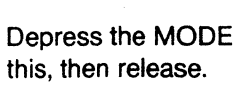


The control is now in Mode 3, Tank [1]. This is where the flow rate of Tank 1 is displayed. The rate shown is in gallons per minute and is updated every 5 seconds. In a D/2 or D/3 system, when power is connected to the control, Tank 1 is placed in the standby position so there will not be a flow rate displayed.

The display will now show this.

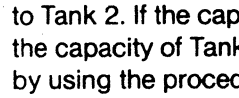


Depress the MODE button until the display shows this, then release.



The control is now in Mode 3, Tank [2]. This is where the flow rate of Tank 2 is displayed. The rate shown is in gallons per minute and is updated every 5 seconds. For this example, the flow rate is 25 GPM.

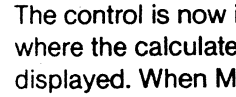
The display will now show this.



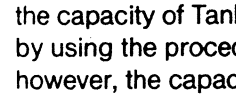
Depress the MODE button until the display shows this, then release.

The control is now in Mode 3, Tank [3]. This is where the flow rate of Tank 3 is displayed. The rate shown is in gallons per minute and is updated every 5 seconds. For this example, the flow rate is 25 GPM.

The display will now show this.

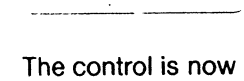


7) Depress the MODE button until the display shows this, then release.

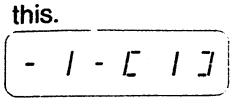


The control is now in Mode 4. This is where the status of each tank is displayed. When power is connected to the control, the microprocessor will place Tank 1 in the Standby position, and Tanks 2 and 3 in the Service position. (For an E/2 or E/3 system, all tanks are placed in the Service position.)

The display will now show this.

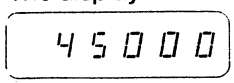


8) Depress the MODE button until the display shows this.

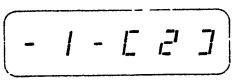


The control is now in Mode 1, Tank [1]. This is where the remaining capacity of Tank 1 is displayed. When the calculated capacity of the tanks is entered into the microprocessor (see Step 3), that number is transferred into Mode 1, Tank [1], and as the turbine counts the gallons, the display is updated every 5 seconds, showing how much capacity remains. Because Tank 1 is in the Standby position, all of the calculated capacity remains.

The display will now show this.

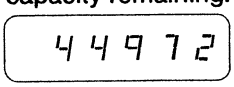


Depress the MODE button until the display shows this.

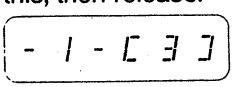


The control is now in Mode 1, Tank [2]. This is where the remaining capacity of Tank 2 is displayed. When the calculated capacity of the tanks is entered into the microprocessor (see Step 3), that number is transferred into Mode 1, Tank [2], and as the turbine counts the gallons, the display is updated every 5 seconds, showing how much capacity remains.

The display will now show the actual gallons of capacity remaining.

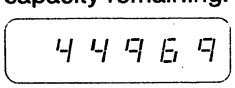


Depress the MODE button until the display shows this, then release.



The control is now in Mode 1, Tank [3]. This is where the remaining capacity of Tank 3 is displayed when the calculated capacity of the tanks is entered into the microprocessor (see Step 3), that number is transferred into Mode 1, Tank [3], and as the turbine counts the gallons, the display is updated every 5 seconds, showing how much capacity remains.

The display will now show the actual gallons of capacity remaining.



The control is now programmed. To prevent tampering with the programmed values, move the Lockout Switch to the LOCKED (center) position (Figure 2). The Lockout Switch disables the SET button, so it is still possible to view each of the modes, but the programmed values cannot be changed.

Lockout Switch shown in LOCKED position

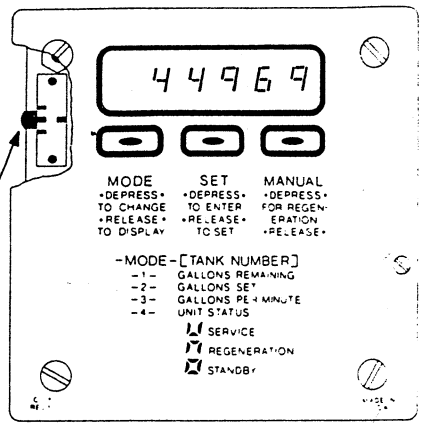


Figure 2

How to Reset a 480 DDS

The 480 control can be reset by moving the Lockout Switch to the RESET (upper), position (Figure 3), depressing the SET button, then releasing. When the control is reset, the display will show six 8's, and any information stored in the microprocessor will be erased. The 480 control must now be reprogrammed. Remember to move the Lockout Switch back to the UNLOCKED position after a reset is complete (Figure 1).

Lockout Switch shown in RESET position

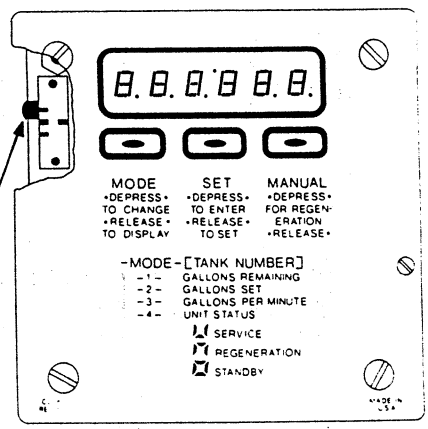
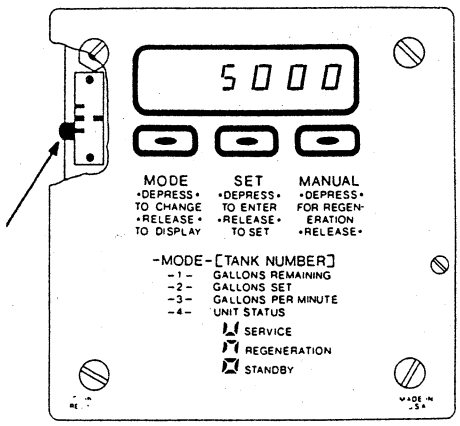


Figure 3

How to Manually Regenerate a 480 DDS

The 480 control can be manually regenerated at any time. Up to three tanks can be regenerated in any sequence. The microprocessor will remember which tanks are to be regenerated, in what sequence, and to lock out the tanks in service so that one tank, and only one tank, can be regenerated at a time. In this example, a D/3 system will be regenerated, Tank 1 first, Tank 2 second, and Tank 3 third.

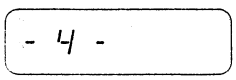
Move the Lockout Switch to the UNLOCKED (lower) position (see Figure 4).



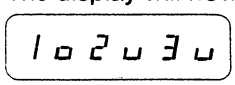
Lockout Switch shown in UNLOCKED position

Figure 4

Depress the MODE button until the display shows this, then release.

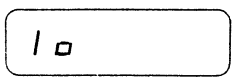


The display will now show this.



To regenerate Tank 1:

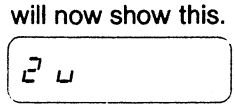
Depress the SET button, then release. The display will now show this.



Depress the MANUAL button, hold for 3 seconds, then release.

To regenerate Tank 2:

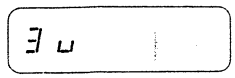
Depress the SET button, then release. The display will now show this.



Depress the MANUAL button, hold for 3 seconds, then release.

To regenerate Tank 3:

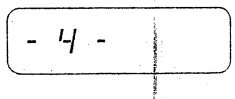
Depress the SET button, then release. The display will now show this.



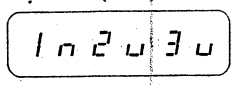
Depress the MANUAL button, then release. The display will now show this.

To enter the sequence into the microprocessor:

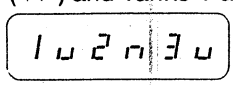
Depress the MODE button until the display shows this, then release.



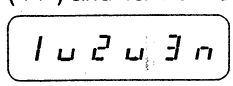
The display will now show this. Tank 1 is in Regeneration ("⊓") and Tanks 2 and 3 are in Service ("⊔").



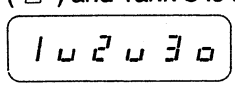
When Tank 1 completes its regeneration, the display will show this. Tank 2 is in Regeneration ("⊓") and Tanks 1 and 3 are in Service ("⊔").



When Tank 2 completes its regeneration, the display will show this. Tank 3 is in Regeneration ("⊓") and Tanks 1 and 2 are in Service ("⊔").



When Tank 3 completes its regeneration, the display will show this. Tank 1 and 2 are in Service ("⊔") and Tank 3 is in Standby ("□").



When a tank is in Regeneration, the control will not show a flow rate for that tank in Mode 3, and the capacity remaining in Mode 1 will not change for that tank. When the tank has completed its regeneration, the tank will be placed in a standby position until another tank is regenerated. The tank in standby will then return to the Service position and the control will resume displaying the flow rate in Mode 3 for that tank and the capacity in Mode 1 for that tank will be reset back to the original capacity set in Mode 2. Remember to move the Lockout Switch back to the LOCKED position after you manually regenerate any tanks (Figure 2). (Systems E/2 and E/3 do not have a standby position. Units return to Service after a re-generation.)

How to Manually Regenerate a 480 DDS

The 480 control can be manually regenerated at any time. Up to three tanks can be regenerated in any sequence. The microprocessor will remember which tanks are to be regenerated, in what sequence, and to lock out the tanks in service so that one tank, and only one tank, can be regenerated at a time. In this example, a D/3 system will be regenerated, Tank 1 first, Tank 2 second, and Tank 3 third.

Move the Lockout Switch to the UNLOCKED (lower) position (see Figure 4).

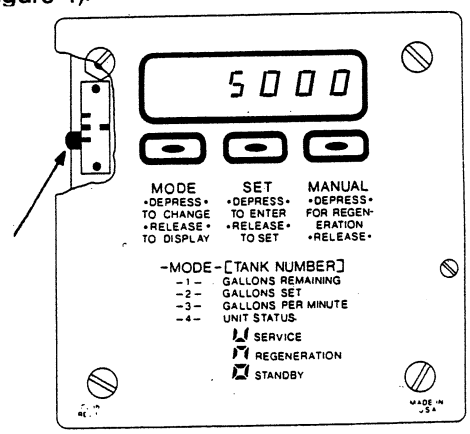
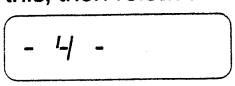
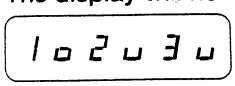


Figure 4

Depress the MODE button until the display shows this, then release.

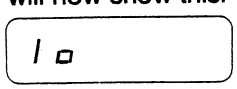


The display will now show this.



To regenerate Tank 1:

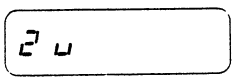
Depress the SET button, then release. The display will now show this.



Depress the MANUAL button, hold for 3 seconds, then release.

To regenerate Tank 2:

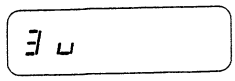
Depress the SET button, then release. The display will now show this.



Depress the MANUAL button, hold for 3 seconds, then release.

To regenerate Tank 3:

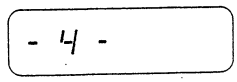
Depress the SET button, then release. The display will now show this.



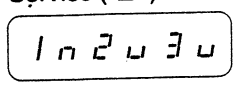
Depress the MANUAL button, then release. The display will now show this.

To enter the sequence into the microprocessor:

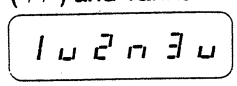
Depress the MODE button until the display shows this, then release.



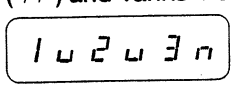
The display will now show this. Tank 1 is in Regeneration ("n") and Tanks 2 and 3 are in Service ("u").



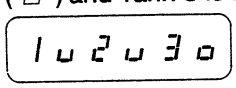
When Tank 1 completes its regeneration, the display will show this. Tank 2 is in Regeneration ("n") and Tanks 1 and 3 are in Service ("u").



When Tank 2 completes its regeneration, the display will show this. Tank 3 is in Regeneration ("n") and Tanks 1 and 2 are in Service ("u").



When Tank 3 completes its regeneration, the display will show this. Tank 1 and 2 are in Service ("u") and Tank 3 is in Standby ("o").



When a tank is in Regeneration, the control will not show a flow rate for that tank in Mode 3, and the capacity remaining in Mode 1 will not change for that tank. When the tank has completed its regeneration, the tank will be placed in a standby position until another tank is regenerated. The tank in standby will then return to the Service position and the control will resume displaying the flow rate in Mode 3 for that tank and the capacity in Mode 1 for that tank will be reset back to the original capacity set in Mode 2. Remember to move the Lockout Switch back to the LOCKED position after you manually regenerate any tanks (Figure 2). (Systems E/2 and E/3 do not have a standby position. Units return to Service after a re-generation.)

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