

DEMA[®] 80-77-6 Probeless Detergent Control DEMAMaster[™]

This instruction sheet will describe the setup and operating procedure for the DEMA Probeless Detergent Control Board. The full wiring diagrams and tubing hook up configurations for DEMAMaster units can be found in the instruction sheets supplied with those units describing the full assembly and DEMAMaster installation.

All installations must be in accordance with city, county, state or provincial electrical codes and be performed by a certified electrician.

When hooking up the a control board or installing a DEMAMaster dispenser, all electrical power must be turned off to the dish machine and any other circuit that is to be used for the installation. Lockout and tag procedures should be observed when installing this device. Never open the DEMAMaster unless power has been turned off. Signals may be present from dish machine, even with the power turned off. Only use electrical code approved insulated wiring and electrical fixtures with this installation

This control board is designed to deliver chemical product automatically to commercial dish machines. To properly fit this control board into an application, it is necessary to understand that this board will deliver a chemical product based on either counting operations (door type dish machine) or time for continuos power (conveyor type dish machines).

The DEMA Probeless control board has the following features:

- 2 banks of DIP switches for configuration (see detergent calibration for details)
- Requires 24VAC 50/60Hz input power for proper operation (24VAC power in terminals)
- 24VAC power out for powering an additional DEMA control board.
- A 24VDC output for a pump/motor or solenoid valve
- A coin cell battery type CR2032 for initial charge clock operation.

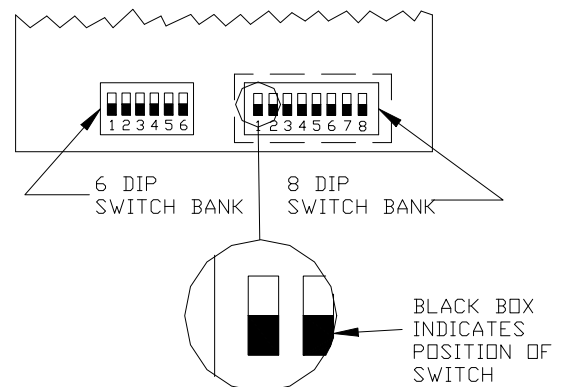
These features are shown on the photograph of the control board in this instruction sheet.

Detergent Calibration

For liquid detergent applications, it will be necessary to prime the pump system on the DEMAMaster, prior to the calibration procedure described in this section. The system can be primed by pressing the “Detergent Prime” button on the front of the DEMAMaster. The system is primed when the chemical has filled the pump discharge tubing up to the injection point on the dish machine. This can only be done while power is being supplied to the probeless detergent board.

Note: *If Detergent Prime button is held less than 5 seconds, the pump or valve will run for the amount time that has been set for initial charge or until button is pushed again.*

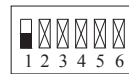
The detergent set up involves the use of the DIP switches on the probeless detergent control board. There is a bank of 6 and 8 switches located directly on the control board. The detergent concentration should be setup so that the desired level of concentration is maintained while dish machine is being used.



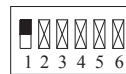
If “X” is shown on a dip switch in the different modes shown below, it indicates that the DIP switch is not used in that particular mode!

DEMA[®] 80-77-6 Probeless Detergent Control DEMAMaster[™]

1. Door or Conveyor mode: 6 DIP Switch Bank, Switch 1



OFF = Door Mode



ON = Conveyor Mode

2. Initial Charge Time: Sets the amount of Initial Charge based on time. See switch diagrams below for the DIP switch configuration.

0		5 MIN 20 SEC	
20 SEC		5 MIN 40 SEC	
40 SEC		6 MIN	
1 MIN		6 MIN 20 SEC	
1 MIN 20 SEC		6 MIN 40 SEC	
1 MIN 40 SEC		7 MIN	
2 MIN		7 MIN 20 SEC	
2 MIN 20 SEC		7 MIN 40 SEC	
2 MIN 40 SEC		8 MIN	
3 MIN		8 MIN 20 SEC	
3 MIN 20 SEC		8 MIN 40 SEC	
3 MIN 40 SEC		9 MIN	
4 MIN		9 MIN 20 SEC	
4 MIN 20 SEC		9 MIN 40 SEC	
4 MIN 40 SEC		10 MIN	
5 MIN		10 MIN 20 SEC	

3A. Dead Cycle Count – Door Mode Only

Sets the amount of wash cycles (door operations) that will take place before a recharge will occur. See table below for DIP switch configuration.

Example: If the Dead Cycle Count is set to 3, there will be three wash cycles where no detergent will be added. On the 4th cycle a recharge will occur.

0 CYCLES		4 CYCLES	
1 CYCLE		5 CYCLES	
2 CYCLES		6 CYCLES	
3 CYCLES		7 CYCLES	



DEMA[®] 80-77-6 Probeless Detergent Control DEMAMaster[™]

3B. Dwell Time Setting – Conveyor Mode Only

Sets the amount of time between a charge and a recharge. See table below for DIP switch configuration. **Example:** Dwell Time is set for 1 min 30 sec. After the probeless control supplies an initial charge or a recharge, 1 minute and 30 seconds must expire before the next recharge will occur.

0		4 MIN	
15 SEC		4 MIN 15 SEC	
30 SEC		4 MIN 30 SEC	
45 SEC		4 MIN 45 SEC	
1 MIN		5 MIN	
1 MIN 15 SEC		5 MIN 15 SEC	
1 MIN 30 SEC		5 MIN 30 SEC	
1 MIN 45 SEC		5 MIN 45 SEC	
2 MIN		6 MIN	
2 MIN 15 SEC		6 MIN 15 SEC	
2 MIN 30 SEC		6 MIN 30 SEC	
2 MIN 45 SEC		6 MIN 45 SEC	
3 MIN		7 MIN	
3 MIN 15 SEC		7 MIN 15 SEC	
3 MIN 30 SEC		7 MIN 30 SEC	
3 MIN 45 SEC		7 MIN 45 SEC	

4. Recharge Time: Sets the amount of time that the pump or valve will operate to replenish chemical product into the dish/cleaning machine wash tank. See diagrams below for DIP switch configuration.

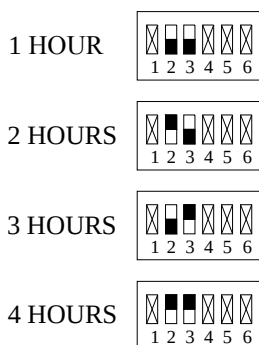
1 SEC		5 SEC	
2 SEC		6 SEC	
3 SEC		7 SEC	
4 SEC		8 SEC	



DEMA[®] 80-77-6 Probeless Detergent Control DEMAMaster[™]

5. Initial Charge Clock – Door Mode Only

This is used to provide an initial charge after a set amount of time expired without using the DEMAMaster. See the table below for the DIP switch configuration. **Example:** Initial Charge Clock is set for 2 hours. If no power has been supplied to the probeless control for at least 2 hours, the probeless control will provide an initial charge the next time power is supplied. This feature is adjustable as shown in diagram below, while in door mode only. **When the unit is in the conveyor mode, the initial charge clock defaults to 1 hour.**



Note: When the coin cell battery (CR2032) is removed this will disable the initial charge clock. This will cause the probeless control to deliver recharges each time it is powered up. It is possible to deliver an initial charge anytime without the coin cell battery by pressing and releasing the "Detergent Prime" switch on the front face of the DEMAMaster unit.

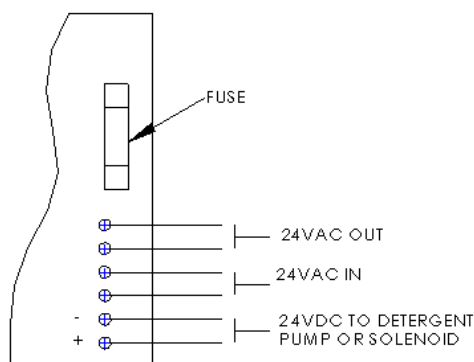
Operation

Priming Pumps: Press and hold "Detergent Prime" until the pump and lines are fully primed then release.

Starting Program :

1. Set the Dip Switches accordingly
2. Press and Release "Detergent Prime" This will give the Initial Charge and reset the Initial Charge Clock. (This is done at initial installation and when chemicals are changed.) This applies in both Conveyor and Door modes.

Note: The DEMAMaster probeless board is designed with a 5-second delay when powered up. This means that the detergent pump or valve will not operate until continuous power is supplied to the board for at least 5 seconds.



80-77-6 Probeless Control Wiring Diagram

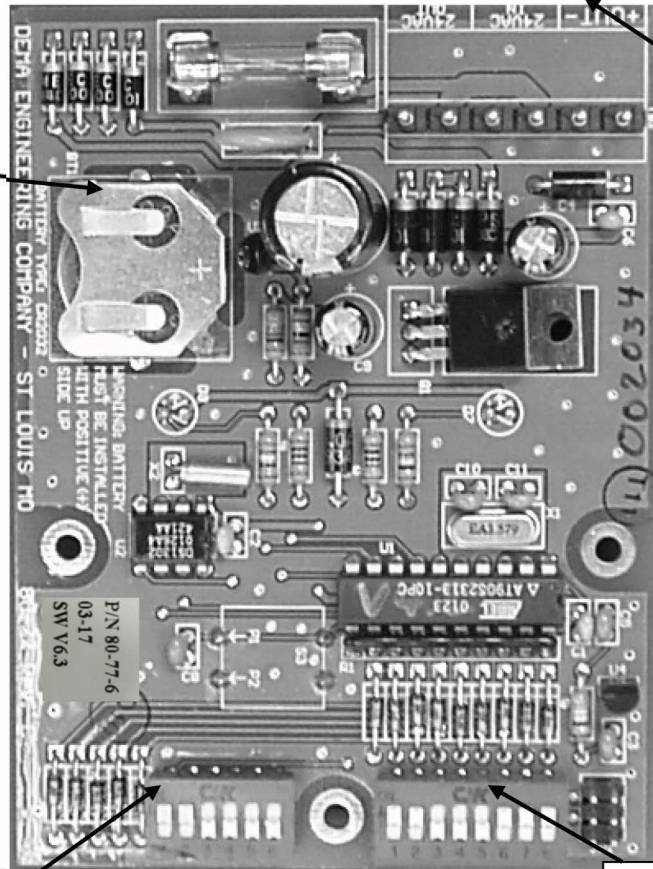
DEMA® 80-77-6 Probeless Detergent Control DEMAMaster™

24VAC Out For Auxiliary
Power To Another DEMA
Control Board

24VAC In
Power for
Control Board

Coin Cell
Battery
Type CR2032

24VDC Out For
Detergent
Motor Pump Or
Solenoid Valve



6 DIP Switch Bank

8 DIP Switch Bank

Warranty

Merchandise Returns

No merchandise will be returned for credit without DEMA'S written permission. Returned merchandise authorization number is required in advance of return.

Product Warranty

DEMA products are warranted against defective material and workmanship under normal use and service for one year from the date of manufacture. This limited warranty does not apply to any products that have a normal life shorter than one year or failure and damage caused by chemicals, corrosion, physical abuse, or misapplication. Rubber and synthetic rubber parts such as "O"-rings, diaphragms, PVC tubing, and gaskets are considered expendable and are not covered under warranty. This warranty is extended only to the original buyer of DEMA products. If products are altered or repaired without prior approval of DEMA, this warranty is void.

Defective units or parts should be returned to the factory with transportation prepaid. If inspection shows them to be defective, they will be repaired or replaced without charge, F.O.B. factory. DEMA assumes no liability for damages. Return merchandise authorization number must be granted in advance of returned units for repair or replacement (See "Merchandise Returns" above).