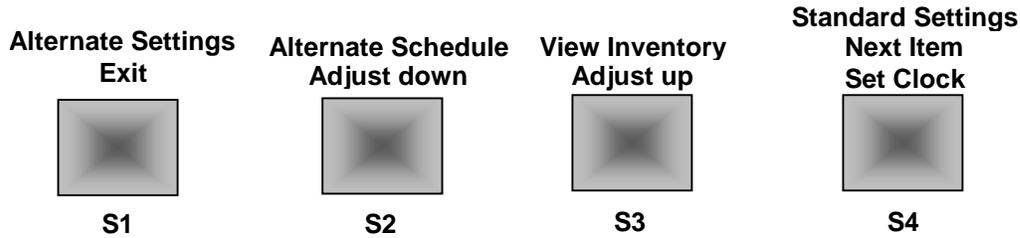


DX2002 OPERATING AND PROGRAMMING INSTRUCTIONS

The four pushbuttons located at the bottom right of the circuit board are used to do all programming. Each button has more than one function.



S1 is used to exit to standby while in programming or to enter alternate schedule program settings.

S2 is used to adjust down or to enter alternate schedule time settings.

S3 is used to adjust numbers up or to view inventory.

S4 is used to advance to next menu item, to enter standard program settings and to set clock.

PROGRAMMING

To enter standard program settings press **S4**. Timer will display "standard settings" and then show menu item 1. To enter alternate schedule settings press **S1**. Timer will display "alternate settings" and then show menu item 1.

MENU ITEMS

Default values are shown. Menu items are the same for standard program settings and alternate schedule program settings. Some menu items are explained in more detail later in the instructions.

- COIN**
\$.25 Monetary value of one coin pulse. Adjustable from 0.05 to 5.00
Hold S4 to turn dollar sign off and on.
- COIN**
00:30 Time per coin. Adjustable from 0:01 to 9:59.
- START**
008 COINS Number of coins to start. Adjustable from 1 to 200.
- AUX**
04 COINS Pulse multiplier for auxiliary input. Adjustable from 1 to 80.
- BONUS**
009 COINS Coins until bonus. Bonus time is issued when this coin is deposited.
- BONUS**
00:00 Amount of time added when bonus coin is received.
Adjustable from 00:00 to 99:59.
- BONUS**
SINGLE Single or multiple bonus.
- DEBIT**
MODE Debit mode, Credit mode.
- DELAYED**
START Delayed start (2 second) or instant start.

- | | |
|----------------------------------|---|
| 10. HORN
00:10 | Length of warning horn at one minute of time remaining.
Adjustable from 00:00 to 00:59 |
| 11. HORN
PULSED | Pulsed or continuous. Horn sounds for amount of time set above or horn is on continuous for the entire last minute. |
| 12. RE-START
DISABLED | Enable or disable 25 second courtesy time. |
| 13. WELCOME
STANDARD | Welcome message choice. Standard, User or Mix. |
| 14. WASHDOWN
05:00 | Length of wash down cycle using remote control.
Adjustable from 0:01 to 10:00. |
| 15. PASSWORD
1 2 3 4 | Remote control password. |
| 16. LANGUAGE
ENGLISH | Choice of language for welcome message. English, Spanish or Both. |
| 17. DIMMING
1 | Auto dimming mode. Preset for the led blocks on the circuit board. Do not reset. |
| 18. EXIT | Timer exits to standby. |

INVENTORY

Timer keeps a running count of coins deposited, auxiliary input pulses and manual cycles. To display inventory press **S3**. Timer will display "**INVENTORY**" then "**COINS 0000**" (number of coin pulses since last cleared). Press **S4**. Timer will display "**AUX 0000**" (number of pulses on auxiliary input). Press **S4**. Timer will display "**MANUAL 0000**" (number of manual cycles used since last cleared). Pressing **S4** again will show either "**CLEAR INV?**" or "**RESET TO DEFAULT?**". This is used to either reset all inventories to zero (CLEAR) or reset all timer programming to factory defaults (RESET). If there are counts in any inventory "**CLEAR INV?**" will appear if inventories have been cleared "**RESET TO DEFAULT?**" will appear.

Bonus Time Settings

Amount of time set in bonus time is added to time remaining on timer when bonus coin pulse is received.

Bonus is disabled by setting bonus time to "00:00".

If "SINGLE BONUS" is selected, bonus time is only added once, when bonus coin pulse is received. Any coins deposited after that bonus coin will receive the regular time per coin.

If "MULTIPLE BONUS" is selected, every coin deposited after bonus coin pulse is reached will receive amount of time set in "BONUS TIME".

Debit/Credit Mode:

Debit Mode: As coins are deposited display shows "\$1.75 MORE, \$1.50 MORE, \$1.25 MORE" etc. until start price is reached. Once start price is reached display switches to time accumulating until no more coins have been deposited.

Credit Mode: As coins are deposited display shows money accumulating (\$.25, \$.50, \$.75 etc.). If timer is also set to Delayed Start Mode timer will continue to show money accumulating until no more coins have been deposited. If timer is set to Instant Start mode, as soon as start price is reached, timer will change to time counting down. If start price is not reached, after 5 seconds timer will alternate between "ADD \$X.XX MORE" and amount of money already deposited.

Auxiliary Input

The auxiliary input allows for the connection of a second coin acceptor or a bill validator to the timer. The **AUX COINS** menu item acts as a pulse multiplier for this input. For example, if you are using a bill validator with this input and a dollar bill puts out one pulse and a coin pulse is worth \$0.25 then the AUX COINS would be set to 004. If the validator sends 4 pulses for a dollar bill then AUX COINS would be set at 001. The timer keeps a separate inventory of pulses received by this input.

Credit Card Input:

Credit card input is either standard or serial. If timer is serial version, all credit card functions are controlled, via serial interface, by credit card system.

Standard model modes:

Count up mode: No pre-set amount is charged to card. Timer will count up and run until terminated by credit card system.

For count up: Close pin #9 (input) to 24 VAC common for more than 400ms. Timer will continue to count up until closure is released for more than 400ms.

To have timer display amount charged to card at end of cycle: Close input as above. Credit card system sends a string of pulses to timer equal to the number of coins that timer would require in order to reach the amount of time used when customer stops cycle.

Pre-pay mode: A pre-determined amount is charged to credit card each time card is swiped and credit card system sends pulses to input.

Pulses between 16ms and 200ms will register on timer like coin pulses.

A pulse between 200ms and 400ms will cause timer to display "VERIFYING CARD". Should a second pulse of 200ms to 400ms be received on input timer will display "TRY DIFFERENT CARD".

Minimum time between pulses is 16ms.

Note: Not all credit card systems can utilize all modes of operation. Contact your credit card system manufacturer for more information on what your system can do.

Messages Choices

If welcome is set to standard the following messages will be displayed.

Standard greeting message (English): "PLEASE DEPOSIT \$2.00 TO START".

Standard greeting message (Spanish): "POR FAVOR DEPOSITO \$2.00 PARA EMPEZAR"

Standard exit message (English): "THANK YOU"

Standard exit message (Spanish): "GRACIAS"

If welcome is set to user the custom message that you have programmed will be displayed.

If welcome is set to mix the standard message and the custom message will be displayed.

Dimming Mode

The DX2000 has a unique built in dimming feature that allows the display to be as bright as possible under different lighting conditions without being uncomfortable to look at (i.e. more ambient light means brighter display, less ambient light means dimmer display).

Custom Message Programming

A custom message of up to 128 characters may be programmed into the DX2000.

Characters available for message programming include upper and lower case letters, numbers and standard keyboard symbols. The character **V** represents a variable, and the character **E** represents the end of the message. You must use this character at the end of the message. Variables are used in messages so that the message will automatically change when changes are made to timer programming.

Following is variable menu and what the timer will show when they are used.

COST OF BONUS - Timer will display the dollar amount needed to reach the bonus time.

BONUS TIME - Timer will display the amount of time given as a bonus.

BONUS TOTAL - Timer will display the total amount of time that will be shown on timer when bonus time is reached.

TIME PER COIN - Timer will display the time per coin.

COIN VALUE - Timer will display the monetary value of one pulse.

START COST - Timer will display the amount of money needed to start wash.

START TIME - Timer will display the amount of time needed to start wash.

CLOCK - Timer will display the time of day.

DAY OF WEEK - Timer will display day of week (sun-sat).

DATE - Timer will display the date. (1-31).

MONTH - Timer will display the month (1-12).

YEAR - Timer will display the year (2000-2099).

Caution: when using the date as part of the message you must program a character such as / or - between the variables in order for the date to display correctly.

To program a custom message:

Press **S4** to enter standard settings. Press **S4** until the welcome message menu item is displayed. Use **S3** to select either "USER" or "BOTH". Press and hold **S4** until **E** appears on right side of display. Use **S2** or **S3** to select the first letter of your message. Press **S4** to advance to the next space (the first letter will move to the left). Use **S2** or **S3** to select the second letter of the message. Continue in this manner until the complete message has been programmed. Push **S4** to advance to the next space, push either **S2** or **S3** to select the letter, number, symbol, or variable required in that space.

Note: If using a variable, with **V** displayed on the timer, pushing **S4** will display variable menu so that you may use **S2** or **S3** to select variable required in that space. Pushing **S4** after selecting variable required will advance you to the next space.

Remember - you must use **E** to signify the end of the message.

Custom Message Example

To program timer to read: "Deposit \$2.00 to Start or \$5.00 for 20:00."

Push **S4** until "message standard" appears on display. Use **S3** to select "user".
Press and hold **S4**.

Timer will display **E** on right side of display.

Press **S2** or **S3** until "**D**" appears on right side of display.

Press **S4**. "**D**" will move to the left. Press **S2** or **S3** until "**e**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**p**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**o**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**s**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**i**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**t**" appears on right of display.

Press **S4**. Press **S2** or **S3** until a blank space appears on right of display.

Press **S4**. Press **S2** or **S3** until **V** appears on right of display.

Press **S4**. Press **S2** or **S3** until "**start cost**" appears on display.

Press **S4**. Press **S2** or **S3** until a blank space appears on right of display.

Press **S4**. Press **S2** or **S3** until "**t**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**o**" appears on right of display.

Press **S4**. Press **S2** or **S3** until a blank space appears on right of display.

Press **S4**. Press **S2** or **S3** until "**S**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**t**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**a**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**r**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**t**" appears on right of display.

Press **S4**. Press **S2** or **S3** until a blank space appears on right of display.

Press **S4**. Press **S2** or **S3** until "**o**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**r**" appears on right of display.

Press **S4**. Press **S2** or **S3** until a blank space appears on right of display.

Press **S4**. Press **S2** or **S3** until **V** appears on right of display.

Press **S4**. Press **S2** or **S3** until "**cost of bonus**" appears on display.

Press **S4**. Press **S2** or **S3** until a blank space appears on right of display.

Press **S4**. Press **S2** or **S3** until "**f**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**o**" appears on right of display.

Press **S4**. Press **S2** or **S3** until "**r**" appears on right of display.

Press **S4**. Press **S2** or **S3** until a blank space appears on right of display.

Press **S4**. Press **S2** or **S3** until **V** appears on right of display.

Press **S4**. Press **S2** or **S3** until "**bonus total**" appears on display.

Press **S4**. Press **S2** or **S3** until **E** appears on right of display. (If not there already).

Press **S1**. Timer will display "**welcome user**". Press **S1** timer will return to standby.

Message programming is now complete.

The above example assumes the following timer programming settings: Time per coin = 00:30,
Start Coins = 008, Bonus Coins = 020, Bonus = 10:30.

ALTERNATE SCHEDULE

The DX2000-2 contains an alternate schedule program allowing for the timer programming to change automatically at a pre-determined time for a specified length of time.

ALTERNATE SCHEDULE PROGRAMMING

For the alternate schedule to work correctly three sections in the timer must be set - alternate settings, clock settings, and alternate schedule.

ALTERNATE SETTINGS

Press **S1**. Timer displays “**ALTERNATE SETTINGS**” then menu item 1. Menu items for alternate settings are the same as standard settings and are programmed in the same manner. Press **S4** to advance from item to item. Press **S2** or **S3** to adjust settings for that item.

CLOCK SETTINGS

Hold **S4**. Timer displays “**CLOCK SETTINGS**” then “**YEAR 20XX**”. Press **S2** or **S3** to adjust year.

Press **S4**. Timer displays “**MONTH**”. Use **S2** or **S3** to set month.

Press **S4**. Timer displays “**DATE**”. Use **S2** or **S3** to set date.

Press **S4**. Timer displays “**DAY**”. Use **S2** or **S3** to set day of week.

Press **S4**. Timer displays “**CLOCK XX:XX**”. Use **S2** or **S3** to set time of day.

Press **S1**. Timer exits to standby.

ALTERNATE SCHEDULE

Press **S2** to enter alternate schedule menu. Display will show “**ALTERNATE SCHEDULE**” then “**SUNDAY 12:*** PM**”. This represents the day of the week and the time of day that the alternate schedule will start.

Press **S2** or **S3** to set the hour (12:00 PM is noon 12:00 AM is midnight).

Press **S4**. The “***” will change to “00”. press **S2** or **S3** to set the minutes.

Press **S4**. Display will show “**SUNDAY 00 HOURS**”. this represents the length of time, in hours, that the alternate settings will be in effect (adjustable from 00 to 24). Press **S2** or **S3** to adjust the number of hours.

Press **S4**. Timer will display “**MONDAY 12:*** PM**”. Press **S2** or **S3** to set the hour.

Continue in this manner until days of week and duration of alternate settings have all been programmed.

Press **S1** to exit menu and return to standby.

EXAMPLE: To run an overnight special Monday-Thursday from 7:00PM to 7:00am.

Set alternate schedule start time for Monday, Tuesday, Wednesday, and Thursday for 7:00 PM.

Set Monday, Tuesday, Wednesday, and Thursday hours to 12.

All other day's settings can be left at default settings.

SPECIAL NOTES FOR ALTERNATE SCHEDULE PROGRAMMING

If an alternate schedule start time is reached during a wash cycle, the timer will wait until cycle is complete before changing to alternate settings.

If an alternate schedule overlaps into the next day, that day's alternate schedule start time will override the previous day's settings. For example: Alternate settings are set to activate on Tuesday at 2:00 PM and last for 24 hours, but the settings for Wednesday are still at the default settings of 12:00 PM start time for a duration of 0 hours. Because the time overlaps, the alternate settings would deactivate at 12:00 PM instead of 2:00 PM. To have this example work, Wednesday's start time would need to be set to 2:00 PM.

If time does not overlap, it is not necessary to change the next day's settings.

INFO-KEY PROGRAMMING

With the optional info-key, it is not necessary to program each timer individually. Simply program one timer, then transfer program to the info-key. The info-key can then be used to program the remaining timers.

TRANSFERRING PROGRAM FROM TIMER TO INFO-KEY

Insert info-key into receptacle on lower right side of timer circuit board.

Timer will automatically detect info-key and display **"INFOKEY DETECTED"** then **"INFOKEY 2=RD 3=WR"**.

Press S3.

Timer will display **"WRITING TO KEY..."** then **"DONE"** then **"INFOKEY 2=RD 3=WR"**.

Programming is now complete.

Remove info-key from receptacle. Timer will return to standby.

TRANSFERRING PROGRAM FROM INFO-KEY TO TIMER

Insert info-key into receptacle on lower right side of timer circuit board.

Timer will automatically detect info-key and display **"INFOKEY DETECTED"** then **"INFOKEY 2=RD 3=WR"**.

Press S2. Timer will display **"READING FROM KEY..."** then **"DONE"** then **"INFOKEY 2=RD 3=WR"**.

Remove info-key from receptacle. Timer will return to standby with new program.

REMOTE CONTROL OPERATION

Remote control will hold program for 15 minutes without batteries to allow you to change batteries without reprogramming remote. If remote loses its program for any reason use the following instructions.

1. Hold down the set button until the red LED blinks twice, and then release the button.
 2. Press 0000.
- Remote is now ready to use.

WASHDOWN

Press red power button . Display will show **"PASSWORD 0000"**. Enter your four digit remote access code. Timer will show **"OK"** if correct.
Press red power button  on remote control. Timer will display **":00"** and start counting up. Timer will continue to run until wash down cycle length is reached or cycle is stopped by operator. To stop cycle press red power button .

INVENTORY

Press red power button . Display will show **"PASSWORD 0000"**. Enter your four digit access code. Timer will show **"OK"** if correct.

Press  on remote. Timer will display **"INVENTORY"** then **"COINS 0000"**. This represents the number of coin pulses received by timer.

Press  on remote. Timer will display **"AUX 0000"**. This represents the number of pulses received on auxiliary coin input.

Press  on remote. Timer will display **"MANUAL 0000"**. This represents the number of manual cycles.

Press  on remote. If inventories have not previously been cleared, timer will display **"CLEAR INV?"**

Should you wish to reset all inventories to 0000, press and hold  until display shows **"DONE"**.

If inventories have been reset to 0000, timer will display **"RESET TO DEFAULT?"**. Press and hold  at this point if you wish to reset all timer programming to default values.

Press  to return timer to standby. Note: timer will display **"OK"** for 5 seconds before returning to standby.

TIMER PROGRAMMING

Press red power button . Display will show **"PASSWORD 0000"**. Enter your four digit access code. Timer will show **"OK"** if correct.

To enter STANDARD SETTINGS menu press . Display will show **"STANDARD SETTINGS"** then **"COIN VALUE \$. 25"**. Press  to move to the next item, press  or  to adjust setting or make selection for that item. Press  at any time to return to standby.

To enter ALTERNATE SETTINGS menu press . Display will show **"ALTERNATE SETTINGS"** then **"COIN VALUE \$.25"**. Press  to move to the next item, press  or  to adjust setting or make selection for that item. Press  at any time to return to standby.

To enter ALTERNATE SCHEDULE menu press . Display will show **"ALTERNATE SCHEDULE"** then **"SUNDAY 12: ** PM"**. Press  to move to the next item, press  or  to adjust setting or make selection for that item. Press  at any time to return to standby.

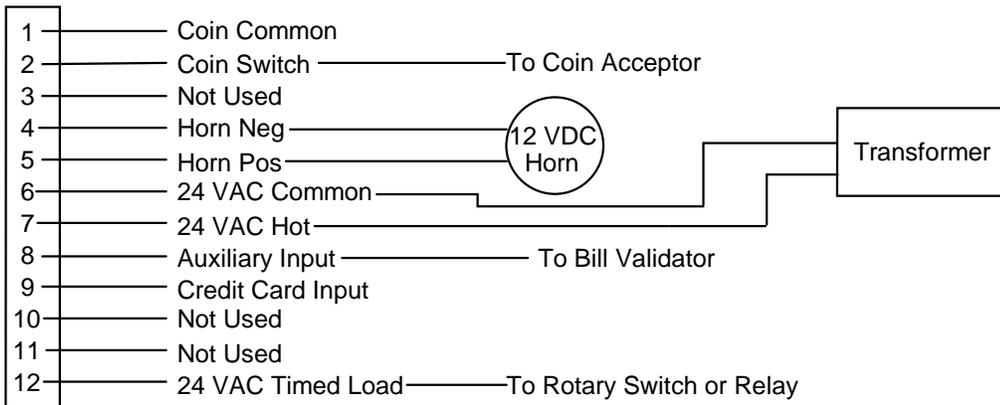
To enter CLOCK SETTINGS menu, **HOLD** . Timer will display **"CLOCK SETTINGS"** then **"YEAR 20XX"**. Press  to move to the next item, press  or  to adjust setting or make selection for that item. Press  at any time to return to standby.

Note: When exiting any of the menus when using the remote control timer will display **"EXIT"** then **"OK"** for 5 seconds before returning to standby. This allows you to enter a different menu without having to re-enter the access code.

Remember: Use  to move from item to item in the menus. Use  or  to adjust settings or make a selection for that menu item. Holding  or  will cause numbers to move up or down faster.

TIMER WIRING

PIN #	FUNCTION
1	Coin Common
2	Coin Switch
3	No Connection
4	Horn Negative
5	Horn Positive (12 VDC)
6	24 VAC Common
7	24 VAC Hot
8	Auxiliary Input
9	Credit Card Input
10	Future Use
11	Future Use
12	24 VAC Timed Load



COIN ACCEPTOR WIRING

