Vendo

PROGRAMMING MANUAL
MDB / EXECUTIVE SF01 BOARD
COMBY MACHINE

VENDO SPECIFICATIONS FOR ELECTRONIC BOARD SF01 FOR BOTTLE AND CAN VENDORS

HARDWARE FEATURE

This board called SF01 has all functions inboard.

Power supply : 24 Volt AC 2 A rms
14   motor outputs 24 VDC 1 A
14   motor micro-switches
14   sold-out micro-switches
14   sold-out leds
26   selections switches
1   Door switch
3   Analogics inputs (for temperature control)
1   Real time clock
1   Jack plug for DEX/UCS audit output.
1   Serial TTL output.

The board uses an XA 16bit microcontroller with up to 4096 Kbit of program eprom and 256 Kbit of Eeprom memory used to store Setting and audit.

External slave board (placed on the box transformer) used to control refrigerant system, fluorescent tube.

External slave board (placed near maina board) used to drive 64 vending motor with current control and limitation.

External slave Optical detector board used to check the product fall down.

External slave fluorescent display 2 lines 20 characters

Master and Slave optically isolated serial link for MDB
                                                          EXECUTIVE

SOFTWARE FEATURE

The SF01 software includes all above functions

   Service Programming routine
   Credit Accumulation
   Coin Mechanism Interface
   Consumer Manipulation and Vend process
   Multi pricing
   Escrow
   Correct change Indicator
   Manual Payout
   Manual Tubes filling
   Saved Error listing - Audit
   Cooling unit control by electronic

FUNCTION OF THE SELECTION BUTTON

| Selection Nr.: 1 | O back ⌫ | Abort or escape a programming point |

| Selection Nr.: 2 | O up ⇧ | Increase or next programming point by pushing selection button2 |

| Selection Nr.: 3 | O down ⇩ | Decrease or previous programming point by pushing selection button 3 |

| Selection Nr.: 4 | O Enter / Store ↵ | Call or store a programming point by pushing selection button4 |

| Selection Nr.: # | O Price set to zero | |

| Selection Nr.: 5 | O Fast up | Fast Increase of price or column |

| Selection Nr.: 6 | O Fast down | Fast Decrease of price or column |

| Selection Nr.: * | O Copy function | Copy price on next column |

Password 4-2-3-1-4

Entry by selection button

4 = key 4
2 = key 2
3 = key 3
1 = key 1

SERVICE ROUTINE

In the service mode, information such as sales by selection, total sales, total cash flow through the machine, and diagnostic error codes can be accessed by using the selection buttons and the electronic display. In addition, storage column assignments and vend pricing can be set in this mode using the same techniques. The service mode can only be entered when the vendor door is open and when the service mode switch is activated (place in the middle of the electronic board).

The first four vendor selection switches are used to step through the various programming functions. To do this each of these selection switches is given a specific function:

Selection Switch 1	HOME	(means Escape, Cancel, Abort)
Selection Switch 2	UP	(means Increase, Next)
Selection Switch 3	DOWN	(means Decrease, Previous)
Selection Switch 4	ENTER	(means OK, Accept, Enter, Save)

After entry into the service mode the operator can select one of several routines to read data registers or to program machine configuration information. This level is called the code level. Each of these paths is identified by a service code. The code for the various paths are as follows.

Eror   Error routine

CPo   Coin Payout Routine (work only MDB)

tUFL   Tube Fill Routine (work only MDB)

tESt   Test Vend Routine

PASS   Required a password to access on the protected menu

CASH	Cash counter routine	
SALE	Sales counter routine	
PriC	Prices setting routine	
StS	Spaces to sales setting routine	
Con	Machine configuration setting routine	
CCOC	Overpay routine	Protected menu
LanG	Language selection	
TinE	Time and data routine	
Lit	Light control routine	
rFrG	Refrigeration control routine	
PAY-S	Payment system	
DEPh	Vending depth on bottle-can mech.	
rtn	Return to unprotected menu	

rtn   Return to normal mode door open state

The password is the sequence of selection 4-2-3-1. The purpose of this password is to prevent accidental reprogramming by the operator.

ERROR ROUTINE

If the ENTER button is activated at the **"Eror"** prompt the VMC will enter in the error routine. If no errors have occurred since the last error reset the display will show a **"nonE"** message. If an error has been detected since the last error reset the display will show the first summary level error code that has occurred, such as **"COLJ",** which would indicate a column jam error. Using the UP or DOWN buttons will cycle through the various summary level error. On the appendix A (Map of internal menu) you find all the error that the machine can generate.

Activation of the HOME button while summary level error code is displayed will return the VMC to the **"Eror"** prompt.

Activation of the HOME button at **"Eror "** prompt returns the VMC to the normal mode door open state.

The most common errors are :

VEnd	Vend Mechanism
door	Door open
SELS	Selection Switch
CHAr	Changer
ACCE	Changer Acceptor
STS	Space to sales programming
bUAL	Bill Validator
Crdr	Card reader
rFrG	Cooling unit
DETEC	Optical detector

COLUMN JAM ERROR ROUTINE

If the ENTER button is activated at the **"VEnD"** prompt the VMC will display a **"CJXX"** message where XX indicates the columns that have been detected as being jammed.

Using the UP and DOWN buttons will cycle through all jammed columns. If the ENTER button is pressed and held for two seconds during the display of any error code, that code will be cleared.

After clearing, VMC will display the next existing column jam error, or **"nonE"** if no other error.

Activation of HOME button will return the VMC to the code level at the **"Eror"** message.

DOOR SWITCH ERROR ROUTINE

If the ENTER button is activated at the **"door"** prompt the VMC will display a **"dS"** message indicating a door switch error was detected (door open for more than one hour). If the ENTER button is pressed and held for two seconds during the display of any error code, that code will be cleared.

After clearing VMC will display the next existing error or **"nonE"** if no other error.

Activation of HOME button will return the VMC to the code level at the **"Eror"** message.

Be carefull if Door Switch doesn't Work the refrigerant system is stopped!!

SELECTION SWITCH ERROR ROUTINE

If the ENTER button is activated at the **"SEL"** prompt the VMC will display a **"SLXX"** message where **"XX"** indicates the first selection switch error (switch always close). Using the UP and DOWN buttons will cycle through all selection switch error. If the ENTER button is pressed and held for two seconds during the display of any error code , that code will be cleared.

After clearing VMC will display the next existing error, or **"nonE"** if no other error.

Activation of HOME button will return the VMC to the code level at the **"Eror"** message.

CHANGER ERROR ROUTINE

If the ENTER button is activated at the "**CHAr**" prompt the VMC will display a "**CC**" message indicating a changer communication error a **"tS"** message indicating a tube sensor error, an "IC" message indicating an Inlet chute blocked error (no coins sensed in the acceptor for a supplier pre-determined number of hours, a "**tJ**" message indicating a tube jam error, or a "**CRCH**" message indicating a changer ROM checksum error. Using the UP and DOWN buttons will cycle through all changer error. If the ENTER button is pressed and held for two seconds during the display of any error code, that code will be cleared.

After clearing VMC will display the next existing error, or "**nonE**" if no other error.

Activation of HOME button will return the VMC to the code level at the "**Eror**" message.

ACCEPTOR ERROR ROUTINE

If the ENTER button is activated at the "**ACCE**" prompt the VMC will display a "**EE**" message indicating excessive escrow attempts (escrow to vends greater than a pre-determined supplier standard), and "**nJ**" message indicating a coin jam (sensed and reported by coin mechanism), or a "**LA**" message indicating a low acceptance rate. Using the UP or DOWN buttons will cycle through all acceptor errors. If the ENTER button is pressed and held for two seconds during the display of any error code , that code will be cleared.

After clearing VMC will display the next existing error, or "**nonE**" if no other error.

Activation of HOME button will return the VMC to the code level at the "**Eror**" message.

BILL VALIDATOR ERROR ROUTINE
If the ENTER button is activated at the **"bUAL"** prompt the VMC will display a **"bC"** message indicating a bill validator communication error, a **"bFul"**

message indicating that the bill stacker is full, a **"biLL"** message indicating a defective motor, a **"bj"** message indicating that there is a bill jammed in the bill validator, a **"brCH"** message indicating a checksum error, a **"bOPn"** message indicating an open cash box, or a **"bS"** message indicating a bill sensor error. The first column that has been detected with a home sense error. Using the UP or DOWN buttons will cycle through all bill validators errors. If the ENTER button is pressed and held for two seconds during the display of any error code that code will be cleared.

After clearing VMC will display the next existing error, or **"nonE"** if no other error.

Activation of HOME button will return the VMC to the code level at the **"Eror"** message.

COOLING UNIT ERROR ROUTINE

If the ENTER button is activated at the **"rFrG"** prompt the VMC will display a **"SEnS"** message indicating probe failure .The message **"COLd"** indicating than the temperature is lower the 1,5 C° lower than the setpoint . The message " **HOT**" indicating than the temperature is 1,5 °C higher than the setpoint .

The message " **CnP**r" indicating than the temperature did not fall down of more than 0.5 °C during the last hour .

The message **" Htr"** indicating than the temperature did not increase of more than 0.5 °C during the last hour .

IMPORTANT:

AFTER "POWER ON", THE COMPRESSOR HAS A START DELAY OF 3 MINUTES THE REFRIGERANT SYSTEM DOESN'T WORK WITH THE DOOR OPEN.

Using the UP or DOWN buttons will cycle through all cooling unit errors. If the ENTER button is pressed and held for two seconds during the display of any error code that code will be cleared.

After clearing VMC will display the next existing error, or **"nonE"** if no other error.

Activation of HOME button will return the VMC to the code level at the **"Eror"** message.

OPTICAL BARRIER ERROR ROUTINE

If the ENTER button is activated at the "**DETEC**" prompt the VMC will display a "**OPTIC**" message indicating an optical barrier error. If the ENTER button is pressed and held for two seconds during the "**OPTIC**" error code, that code will be cleared.

After clearing VMC will display the next error, or "**nonE**" if no other error.

Activation of HOME button will return the VMC to the code level at the "**Eror**" message.

This error appear only if the optical barrier is enable (see menu CCOC-CONFY-C11).

Be carefull if the parameter C11=1, this error will disable all selection.

COIN PAYOUT ROUTINE (work only on MDB)

If the ENTER button is activated at the **"CPO"** prompt the VMC will enter the coin payout routine. Upon entry into this routine the display will show the lowest coin value dispensable. Pressing the UP button will increase the display to the next highest coin value, the DOWN will decrease to the next lowest coin values. When the changer has only 3 tubes, the fourth value will display to 0, means don 't exist the fourth tube.
Pushing the button number 5 to a corresponding coin value the display will show the number of coins in the tube reported by the changer .

Pressing the ENTER button will pay out the displayed coin type. Activation of the HOME button while a coin value is displayed will return the VMC to the **"CPO"** prompt.

Activation of the HOME button at the **"CPO"** prompt returns the VMC to the " normal mode door open state.

TUBE FILL ROUTINE (work only on MDB)

If the ENTER button is activated at the **"tUFL"** prompt the VMC will enter the tube fill routine.

The purpose of this routine is to allow the operator to fill the tubes by entering them through the acceptor and thus have total coin accountability, if they so choose.

Upon entry into this routine the VMC will enable acceptance of any coin type that will be routed to an inventory tube and disable all others.

The VMC will count and display all inventoried coins and will not disable the acceptor from taking coins when the highest price setting is reached.

Activation of HOME button while a coin inventory is displayed will return the VMC to the **"tUFL"** prompt. Activation of the HOME button at the **"tUFL"** prompt returns the VMC to the normal mode door open state

TEST VEND ROUTINE

If the ENTER button is activated at the "**tESt**" prompt the VMC will enter the test vend routine.

Upon entry into this routine the display will show the first test routine " **UEnd** " the description of the test routine available are the follows:

- " **Uend** " to test the vend motor
- " **SL**" to test selection switch
- " **S.Out**" to test sold out switch on bottle-can mech.
- "**rELY**" to test relays output (compressor, heater, light.)
- **"Temp"** to test the temperature sensor

" **Uend** "

Activation of the ENTER button (at the " **Uend** " routine) will show the column number "**CXY**" (**X** is number of row, **Y** is number of column) activation of the enter button will perform the vending test for selected column, using the up or down button will change the column number. **Vends made on this routine will not increase the vend counters.**

On this routine you will find only the Motor installed on the machine, If you change the motor configuration you have to make an AUTO configuration to enable the new motor.

The column 71-72-73-74 are referred to can-bottle mechanism.

Activation of the HOME button while a column is displayed will return the VMC to the " **Uend** "prompt.

Activation of the HOME button at the " **Uend** " prompt will return to "**tESt**" prompt.

" **SL**"

Activation of the ENTER button (at the " **SL**" routine) will show the last selection button pressed "**SE***Y*" where *Y* is the number of the selection. Use this routine to test all the selection switch. To come back to the "**tESt**" menu, keep pressed the first selection for two seconds.

" **S.Out**"

It's works only on bottle – cans mechanism.

Activation of the ENTER button (at the "**S.Out**" routine) will show the sold out status of the selected column, "**C** *XXY*" where *XX* is the column number (you can choose the column using up or down button) and *Y* is the sold-out state (0=column is not sold out, 1=column is sold out). Press escape button to come back to the "**tESt**" menu.

"**rELY**"

Activation of the ENTER button (at the "**rELY**" routine) will start the relay test , the display show the first relay name and the status(*X*) "**CnP***X*" press enter button to toggle the status of the relay (*X*=0 off, *X*=1 on) you can choose a different relay pressing up or down, the relay name are:

- "**CnP***X*" refrigerant system relay
- "**FAn***X*" Evaporator fan
- "**Lit***X*" Light relay
- "**Htr***X*" Heater relay (optional Kit)
- "**OPEN**" Open snack antitheft motor
- "**CLOSE**" Close snack antitheft motor

- **"tEmp"**

Activation of the ENTER button (at the "**tEmp**" routine) will display the temperature of the detect by the sensor .If error is dedected on the sensor the display will show **"SenS".**

Press escape button to come back to the "**tESt**" menu.

PASS ROUTINE

This routine is used to access at the protected menu.

At the "**PASS**" prompt press enter button, the display show "nothing" press the follow sequence of selection button 4-2-3-1 (password must be entered in 10 seconds) press enter to confirm (selection 4) now you can see the first protected menu "**CASH**" (use up and down button to cycle on the available menu).

CASH COUNTER ROUTINE (PROTECTED MENU)

If the ENTER button is activated at the "**CASH**" prompt the VMC will enter the cash counter routine. Upon entry into this routine the display will show a "**CASH**" / "**XXXX**" / "**XXXX**" message where "**XXXX**" characters are the historical total cash counters due to vends that have been recorded by the VMC.

The first quartet "**XXXX**" is the highest digit and the 2th "**XXXX-**" is the lowest.

Using the UP and DOWN button at this point will change the display to "**CA n**" / "**-XXXX**" / "**XXXX-**" where **n** is a selection number and "**XXXX**" are the cash counter for that selection.

Using the UP and DOWN buttons will cycle through the available selections cash counters.

Activation of the HOME button while a selection counter is displayed will return the VMC to the "**CASH**" prompt.

Activation of the HOME button at the "**CASH**" prompt will return the VMC to unprotect area.

SALES COUNTER ROUTINE (PROTECTED MENU)

If the ENTER button is activated at the "**SALE**" prompt the VMC will enter the sales counter routine. Upon entry into this routine the display will show a "**SALE**" "**-XXXX**", "**XXXX-**" message where "**XXXX**" characters are the historical total sale counters due to vends that have been recorded by the VMC.

The 1th "**XXXX"** are the highest digits and the 2th "**XXXX-**" are the lowest.

Using the UP and DOWN button at this point will change the display to "**SL n**" / "**-XXXX**" / "**XXXX-**" where **n** is a selection number and "**XXXX**" are the sales counter for that selection.

Using the UP and DOWN buttons will cycle through the available selections sales counters.

Activation of the HOME button while a selection counter is displayed will return the VMC to the "**SALE**" prompt.

Activation of the HOME button at the "**SALE**" prompt will return the VMC to unprotect area.

PRICE SETTING ROUTINE (PROTECTED MENU)

If the ENTER button is activated at the "**PrIC**" prompt the VMC will enter the price setting routine. The display will show a "**Price column 11**", if the machine is working in multi-price, or "**SPrI**" if it's work in in single price.

An "*" symbol near the column means that this motor is not installed (or have an error) see STOS configuration.

In multi-price mode you can choose different price for each selection; using UP and DOWN buttons will cycle through available column (**11 – 74**) or "**ALL**", "**ALL**" is used to change the price for all selection. Activation of the ENTER button will show the actual price using UP and DOWN button will increase or decrease the price by one lowest coin value respectively.

On this menu works also the button 5 and 6 (fast up, fast down) that increase or decrease selection by 8 position (change tray), this selection is used also to fast increase or decrease price value.

Is possible to copy current price to next selection pressing "*" button.

To clear price (set price = 0) press selection "#".

Activation of the ENTER button while the desired price is displayed will save that price. Activation of the HOME button while a selection price is displayed, without doing an ENTER before will return the VMC to the selection display without saving the displayed selection price.

In single price the price that you choose on "**SPrI**" submenu, is used for all selection.

Activation of the HOME button while a selection is displayed will return the VMC to the "**PrIC**" prompt. Activation of the HOME button returns the VMC to unprotected area.

SPACE TO SALES SETTING ROUTINE (PROTECTED MENU)

With this function is used to recognise the configuration of the machine, you have to do it only when you change the number, or position of the motor in the tray.

If the ENTER button is activated at the "**StOS**" prompt the VMC will show "**AUTO**".

Pressing selection 4 on "**AUTO**" menu, the machine start from column 11 to column 64 and test all the motor if it's doesn't found the motor (or the motor and/or motor switch is defective) an "NO" appear near the column n°. This configuration is stored in a non volatile memory.

This autoconfiguration takes 4 minuts to complete.

MACHINE CONFIGURATION SETTING ROUTINE (PROTECTED MENU)

If the ENTER button is activated at the "**Con**" prompt the VMC will enter the machine configuration setting routine. The display will show a "**C1**" message where the "**1**" indicates configuration setting number 1. Using UP and DOWN button will cycle through the available configuration setting numbers. Activation of the ENTER button while a configuration setting number is displayed will allow access to the current setting number of the displayed configuration setting.

 Activation of the ENTER button will save the displayed configuration.

Activation of the HOME button while configuration is displayed, without doing an ENTER before, will return the VMC to the "**Con**" display without saving the displayed configuration. Activation of the HOME button returns to unprotected area.

THE FOLLOWING INFORMATION'S DESCRIBES VARIOUS MACHINE CONFIGURATION SETTINGS

C1 SINGLE PRICE/MULTI PRICE

This setting is used to enable the single price mode. In this mode, all selection prices are set to the same price:

- C1 = 0 Single price mode.

- C1 = 1 Multi price mode (default).

C2 OPTIONAL FEATURES

This parameter enable or disable optional program menu:

- C2 = 0 Extended menu off.

- C2 = 1 Extended menu on(default).

C3 EXTRA ROTATION

This parameter is used to activate an extra rotation of the spiral if the product fall is not detected by the optical barrier (it works only with optical barrier enable).

- C3 = 0 Extra rotation disable.

- C3 = 1 Extra rotation enable.

C4 OPEN DOOR DISPLAY MODE

This parameter is used to change the MIS data information that you can read when the door of VMC is open:

- C4 = 0 Display only the Existing Error or nonE

- C4 = 1 Display total Sales, total Cash and Existing Error or none (default).

C5   RESET COUNTER MODE

This parameter determines how the VMC have to reset the MIS internal counter:

- C5 = 0 All the re-settable counter will be reset only using a reset command on MIS communication mode (default).
- C5 = 1 All the re-settable counter will be reset when you open the door , read one of the re-settable counter and close the door.

C6 RESERVED FOR FUTURE USE

C7 SAVE CREDIT MODE

This parameter determines how the VMC have to manage the credit::

- C7 = 0 Clear the credit if nothing happen in the last five minutes (default).
- C7 = 1 Keep the credit indefinitely.

C8 FORCE VEND

This parameter is used to prevents the use of the machine like a coin changer. When forced vend is enable you can obtain escrow only in this cases:

- if you insert money and make a selection (full or empty selection is the same)
- if you put coin that you can obtain like escrow (coins that go in the tube of the coinage) and you don't reach the maximum price.
- C8 = 0 Force vend disable (default).
- C8 = 1 Force vend enable.

C9 MULTI VEND

This parameter enable or disable automatic escrow process:

- C9 = 0 Multi Vend disable (you obtain automatically the escrow after the selection) (default)
- C9 = 1 Multi Vend enable (you can use your escrow to make another selection, or if you want escrow, you have to press the escrow button)

C10 BILL ESCROW MODE

This parameters allows the escrow of bill. If enabled and the last bill inserted takes the credit over the maximum price, the bill be held in the escrow position, and can be returned as escrow. If the function is disabled, bills go always to the stacker. The valid value are:

- C10 = 0 Bill escrow enabled (default)
- C10 = 1 Bill escrow disabled.

<u>C11 RESERVED FOR FUTURE USE</u>

<u>C12 RESERVED FOR FUTURE USE</u>

CORRECT CHANGE ONLY CONTROL (protected menu)

CORRECT CHANGE RULE

IF IN CCOC   CON=0 (means the VMC manage automatically the changer setting)

CCU correct change value

If (changer is able to change back (CCU value + Maximum Price))correct change led is OFF

Else correct change led if ON

If correct change led is ON or is OFF the VMC automatically accept only coins than can be return or can return the equivalent credit with other coins.

ACC (Unconditional acceptance value) is automatically managed equal to the Maximum price

IF IN CCOC CON=1 (means the VMC manage the changer setting according to CONFY setting)

Correct change led is set regarding the C2 (Low change equation) and C3 (minimun coins Tube level)

If correct change is OFF VMC accept coins set in C06 and C07

If correct change is ON   VMC accept coins set in C08 and C09

ACC (Unconditional acceptance value) is automatically managed equal to the Maximum price

If the ENTER button is activated at the "**CCOC**" prompt the VMC will show the actual overpay status ""**ConX**", where X is 0(overpay not allowed) or 1(overpay

allowed), use up or down button to select the other submenu available ("**CCU**", "**ACC**" and "**ConF**"), or press enter button to change X value.

- "**CCU**" if you press enter at the "**CCU**" prompt, the display show the actual maximum value used by VMC to work in correct change situation, you can change the value using up or down button.

- "**ACC**" if you press enter at the "**ACC**" prompt, the display show the actual maximum value accepted, even if the VMC doesn't know if it has the change, you can change the value using up or down button

- "**ConFY**" (this menu, and submenu, are used by VMC only if overpay is allowed) if you press enter at the "**ConFY**" prompt, the display show"**C1**",

using up or down button you can choose the other submenu ("**C1**"-"**C10**"), which have this function:

"ConF"

"C1" KEYPAD ACTIVATION (COINAGE)
C1 = 0 (OFF)   C1 = 1 (ON)

"C2" LOW CHANGE EQUATION (MDB MODE)

This parameter defines the exact change equation. The combination of the empty states assume the exact change state

A is the lowest coin value reported in the tubes

D is the highest coin value reported in the tubes

If the tubes are empty according to these equations the CORRECT CHANGE led is ON

0 : TUBE A and TUBE B and TUBE C and TUBE D

1 : TUBE A or TUBE B or TUBE C

2 : TUBE A only

3 : TUBE B only

4 : TUBE C only

5 : TUBE D only

> ATTENTION: When using **executive** please be aware to set into the programming menu **"ConF"** C2 and C3 to zero otherwise machine is working in **"Price holding"**

6 : TUBE B or TUBE C or TUBE D

7 : TUBE A and TUBE B or TUBE C

8 : TUBE A and TUBE B or TUBE D

9 : TUBE A and TUBE C or TUBE D

10 : TUBE B and TUBE C or TUBE D

11 : TUBE A and TUBE D or TUBE C

12 : TUBE B and TUBE D or TUBE A

13 : TUBE A or TUBE C

14 : TUBE A or TUBE B and TUBE C

15 : TUBE A or TUBE B

"C2" PRICE HOLDING (EXECUTIVE MODE)

If you set C2=1 and payment system is set to executive, the machine works in price holding mode; it means that the price is stored on payment system. On this mode each time you press a selection the machine send to the payment system the n.° of selection pressed on that way:

Sel 11 pressed – send 1 to payment system

Sel 18 pressed – send 8 to payment system

Sel 21 pressed – send 9 to payment system

Sel 46 pressed – send 30 to payment system

...

Sel 88 pressed – send 64 to payment system

If C2=0 the prices is stored on vending machine, and they are sent to payment system.

"C3" LOW CHANGE LEVEL (MDB mode)

This number will be deducted to the coins tubes number reported by the changer in order to calculate according to the low change equation the CORRECT CHANGE status.

"C3" PRICE HOLDING OFFSET (EXECUTIVE mode)

If price holding is activated (C2=1), the value of "C3" menu is added to the number sent to the payment system:

IF C3=5

Sel 21 pressed – send 14 (9 + 5) to payment system

...

Sel 46 pressed – send 35 (30 + 5) to payment system

...

Sel 88 pressed – send 69 (64 + 5) to payment system

"C4" BILL ACCEPTED (EQUAL TO "C6" AND "C7")

Bill to accept when "CORRECT CHANGE" is OFF

"C5" BILL ACCEPTED IN LOW CHANGE CONDITION
(EQUAL TO "C7" AND "C8")

Bill to accept when "CORRECT CHANGE" is ON

"C6","C7" This parameter is used for determining the 16 accepted coins by the changer.

Coin 1 is assumed to be the smallest coin, and coin 16 the highest.
C6 = coins 1 to 8   C7 = coins 9 to 16

Each coin has a binary value as

In C6	coin	1	=	1	in C7	coin	9	=	1
	coin	2	=	2		coin	10	=	2
	coin	3	=	4		coin	11	=	4
	coin	4	=	8		coin	12	=	8
	coin	5	=	16		coin	13	=	16
	coin	6	=	32		coin	14	=	32
	coin	7	=	64		coin	15	=	64
	coin	8	=	128		coin	16	=	128

EXAMPLE: If you want to accept coin 1 – 2 – 3 – 4 –13 – 15 you must add the correspondent values

$$C6 = 1 + 2 + 4 + 8 = 15$$
$$C7 = 16 + 64 = 80$$

"C8","C9" This parameter is used for determining the 16 accepted coins by the changer, **when the VMC is in low change condition**. The value of this submenu are calculated on the same way like "C6","C7" submenu.

C10   RESET TO THE FACTORY (DEFAULT VALUE)
Be careful using this option you lose all the configuration parameters on the machine and reset all the counters (also the total counter), you lose also the configuration of the vending tray, so is necessary to made an auto configuration (see "STOS" menu).

AVAILABLE RESET OPTION		
"C10"	**=**	**18**

Put value **option** on the **ConFY** "C10" submenu and press button 4 to confirm.

Turn off the machine: Press and keep pressed the button on the board and turn on the machine waiting until the end of initialisation of the board (when you read message "RESET" on the display). Release the button on the board.

Now you have to reprogram all parameters.

"C11"   OPTICAL BARRIER

This menu is used to enable the optical barrier detection of the product:

C11=0 optical barrier disable not installed

C11=1   optical barrier enable, and if it doesn't works all the selection is inhibited.

C11=2 optical barrier enable, and if it doesn't works the machine will disable it and suppose that each motor rotation a product is sell.

LANGUAGE CONFIGURATION (PROTECTED MENU)

If ENTER button is activated at the "**LAnG**" prompt the VMC will show the actual language used by VMC. using up or down to toggle through the available language:

For executive version of eprom:
- "**ENGL.**" English
- "**ITAL.**" Italian
- "**FREN.**" French
- "**SPAN.**" Spanish
- "**GERM.**" German
- "**GREE.**" Greece
- "**CUSTO**" Custom message programmed by Dex

Press enter to confirm the new language or escape to come back on the "**LAnG**" prompt.

TIME CONFIGURATION (PROTECTED MENU)

If ENTER button is activated at the "**tInE**" prompt the VMC will enter the machine on the time setting routine with the follow submenu :
- "**Enb**X" time status ($X=0$ time disable, $X=1$ time enable), press enter to modify X value,
- "**YEAr**" press enter show actual year, up down modify the value, enter to confirm, home to come back at "**EnbX**" message,
- "**nth**" press enter show actual month, up down modify the value, enter to confirm, home to come back at "**EnbX**" message,
- "**dAtE**" press enter show actual date, up down modify the value, enter to confirm, home to come back at "**EnbX**" message,
- "**Hour**" press enter show actual hours-minutes, up down modify the value hours, enter to blanking minutes up or down to modify minutes, enter to confirm, home to come back at "**EnbX**" message,
- " **dSt** "daylight saving time, press enter to modify the country, the available value are:
-
    - "**AUS** " Australian rules
    - " **EU** " European rules
    - " **NA** " North America rules
    - " **OFF** " no saving time

LIGHT CONTROL (PROTECTED MENU)

If ENTER button is activated at the "**LIt**" prompt the VMC will enter the machine on the light control routine with the follow submenu :
- "**Enb** X " Used to enable ($X=1$) or disable ($X=0$) the light control,
- "**Strt**" Set the start time using the follow submenu:
    - "**dAY**" select the days of the week for start function, press enter to cycle through the days, press enter to change the status of the day (0 =not selected, 1= selected)
    - "**Hour**" press enter to change the start hour and minute for selected day.
- "**StoP**" Set the stop time using the follow submenu:
    - "**dAY**" select the days of the week for stop function, press enter to cycle through the days, press enter to change the status of the day (0 =not selected, 1= selected)
    - "**Hour**" press enter to change the stop hour and minute for selected day.

TEMPERATURE CONTROL (PROTECTED MENU)

If ENTER button is activated at the "**rFrG**" prompt the VMC will enter the machine on the temperature control routine with the follow submenu :

- "**dSP**X" Enable or disable the temperature display. If you set X = 1 (enable) the VMC will show the temperature after the POS message. The default value is 0 (disable).
- "**dEG**X" Set the temperature scale (where X=C for Celsius degree, X=F for Fahrenheit),
- "**T.Snack**" Set point for snack part of the machine, press enter to change set point for refrigerant system (note the value is expressed in °C, or °F according to "**dEG**" configuration), the default value is 12.5 °C .
- "**T.Can**" Set point for Can-bottle part of the machine, press enter to change set point for refrigerant system (note the value is expressed in °C, or °F according to "**dEG**" configuration), the default value is 4 °C .
- "**T.SEC**" Temperature security for snack part, if the temperature of the snack part is over the "T.SEC" for more than 1 hour the selection defined on "S.SEC" menu is disable, until an operator open the door. If T.SEC = 0 the function is disable. Press enter to change temperature setting (note the value is expressed in °C, or °F according to "**dEG**" configuration), the default value is 0 °C (disable).
- "**S.SEC**" Selection security, it define the selection inhibited by temperature security function. Press enter to change the last selection controlled by security function (all the selection > of S.SEC are "protected").

When the temperature security is enable, If the machine is turned off, the selection "protected" by security function will be automatically disable when the machine is turned on.

PAYMENT SYSTEM (PROTECTED MENU)
(EXTENDED MENU)

Pressing confirm at "**PAY-S**" prompt the VMC will enter the payment system configuration routine. The display will show a "**MDB**" for multi drop bus or "**EXE**" for executive bus. Choose the payment system using up or down, and confirm pressing enter; the machine will restart.

When you change this parameter, you have to move a dip switch placed between the "MDB" and "EXE" connector, follow the serigraphy on the board.

VENDING DEPTH CONTROL (PROTECTED MENU)
(EXTENDED MENU)

If the ENTER button is activated at the "**SdEP**" prompt the VMC will enter on the depth control routine, showing the column number and the depth status.

EXAMPLE: "**71 4**" means column n°71 has four product each rows (4 depth)

You can change for each (bottle – can) column the depth value (valid value are: 1,2,3,4; actually 3 work like 4).

RETURN TO OPEN DOOR MODE

If the ENTER button is activated at the **"rtn"** prompt the VMC will exit to normal open door routine.

APPENDIX A
PROGRAMMING DIAGRAM

MAIN MENU	1 st SUB MENU	2 nd SUB MENU	3 rd SUB MENU	4 th SUB MENU	DESCRIPTION
Eror					Error routine
	NonE				No errors exits
	Uend				Vend mechanism summary error
		CJXX			Column jam in column XX (00 - nn)
	Ctrl				Control system summary error
		DS			Door switch
		Ran			RAM check sum of service mode settings
		ACLO			AC supply low
		SF			Scale factor incompatibility
		S.Ope			Antitheft Security failed to open
		S.Clo			Antitheft Security failed to close
	SEL				Selection switch summary error
		SLXX			Selection switch error in switch XX (01 - 12)
	CHAr				Changer summary error
		CC			Changer communication error
		TS			Tube sense error
		IC			Changer inlet chute blocked
		TJXX			Tube pay out jam in coin type XX
		CrCH			Changer ROM check sum
		EE			Excessive escrow attempts
		NJ			Coin jam
		LA			Low acceptance rate
		DIS			Disconnected acceptor
		Rout			Coin routing error
	BUAL				Bill validator summary error
		BC			Bill validator communication error
		BFUL			Bill validator stacker full
		BILL			Defective bill validator motor
		BJ			Bill validator jammed
		BrCH			Bill validator ROM check sum error
		BOPn			Bill validator stacker is open or out of position
		BS			Bill validator sensor error
	Crdr				Card reader summary error
		CrC			Card reader communication error
		CrXY			Card reader non-transient error; code X, sub-code Y
	DETEC				Sensor error
		OPTIC			Optical barrier error
	RFrG				Refrigeration summary error
		SenS			Temperature sensor defective or unplugged
		Hot			Cabinet temperature too hot
		CnPr			Cooling system not cooling
CPo					Coin Pay Out routine (only mdb)
	tube 1-4 value				Display coin value
	tube 1-4 value				Dispense coin while showing value

MAIN MENU	1 st SUB MENU	2 nd SUB MENU	3 rd SUB MENU	4 th SUB MENU	DESCRIPTION
tUFL					Tube Fill routine (only mdb)
	value on tube				Display tube count
tESt					Test routine
	Uend				Vend testing
		CO 11			
		…			Vending motor test, only configured motor is showed
		CO88			
	S.Out				Sold – out test on bottle can mechanism
		So XX Y			XX is column (71-74) Y s.o status (0-empty 1-full)
	SL				Selection switch testing
		SL X			Where X is the selection number
	RELY				Relay testing
		CnPX			Compressor Display changing state (0/1)
		FAnX			Evaporator Display changing state (0/1)
		LitX			Light Display changing state (0/1)
		HtrX			Heater Display changing state (0/1)
		OPEN			Open snack antitheft
		CLOSE			Close snack antitheft
	TEmP				Temperature Sensor Test
PASS					Password entry 10 seconds to enter 4-2-3-1-ENTER
	CASH				
		CASH			Cash counter display
			XXXX		Machine historical
		CA X			
			XXXX		Selection re-settable
	SALE				Product sales display
		SALE			
			XXXX		Machine historical
		COL X			
			XXXX		Selection re-settable
	PrIC				Price setting routine
		SPrI			If in single price
		Pr 11			If in multi price
		…			11 – 74
		Pr74			
		All			
			dd.cc		Edit price (00.00 - 99.99)
	StS				Space to sales routine
		AUTO			Automatic configuration
	Con				Configuration menu
		C 1			0=single price – 1=multi price
		C 2			Optional Feature 0=disable 1=enable
		C 3			Extra rotation of spirals 0 = disable 1=enable
		C 4			Open door message 0=Error 1=counter & error
		C 5			Counter reset mode 0=after audit 1=after read using menu
		C 6			Reserved
		C 7			Save credit 0=clear after 5 min. 1=save unconditionally
		C 8			Force vend 0=disable 1=enable
		C 9			Multi vend 0=disable 1=enable
		C 10			Bill Escrow 0= enable 1= disable
		C 11			Not used
		C 12			Not used

MAIN MENU	1 st SUB MENU	2 nd SUB MENU	3 rd SUB MENU	4 th SUB MENU	DESCRIPTION
CCOC					Correct change only control
	ConX				Allow consumer overpay routine
		Conx			Edit mode (0/1)
	CCU				Correct change Value
	ACC				Unconditional acceptance value
	ConFY				Custom coinage configuration
		C01			Changer Keypad 0-disable 1-enable
		C02			Low change equation 0 to 14
		C03			Low change level
		C04			Accepted bills
		C05			Accepted bills in low change condition
		C06			Accepted coins 0-255
		C07			Accepted coins 0-255
		C08			Accepted coins in low change 0-255
		C09			Accepted coins in low change 0-255
		C10			Factory reset
		C11			Optical barrier 0= dis. 1=ena. always 2=ena. If no problem
	LanG				Language selection routine
		EnG			
		…			Eng, ITA, FRE,SPA,GER, GRE, CUSTOM
		CUSTO			
	TinE				Time and date routine
		EnbX			Current setting
			Enbx		Edit mode (0/1)
		YEAr			Year setting
			yy		Edit year, 00 - 99 (Y2K)
		nth			Month setting
			mm		Edit month, 01 - 12
		dAtE			Date setting
			dd		Edit date, 01 - 31
		Hour			Hour and minute setting
			hhmm		Edit hour (00 - 24)
			hhmm		Edit minute (00 - 59)
		dSt			Daylight savings time code
			OFF		No daylight savings used
			AUS		Australian rules
			EU		European rules
			NA		North American rules
	Lit				Lighting control routine
		EnbX			Enable Light time manage
			Enbx		X currente setting (0 disable/1 enable)
		Strt			Start light off period
			dAY		Start day setting
				nonX	
				…	non, tue, ued, thu, Fri, sat, Sun, or ALL
				ALLX	Edit mode (0/1)
			Hour		Start hour and minute setting
				hhmm	Edit hour (00 - 24)
				hhmm	Edit minute (00 – 59)
		StoP			Stop light off period
			dAY		Stop day setting
				nonX	
				…	non, tue, ued, thu, Fri, sat, Sun, or ALL

MAIN MENU	1 st SUB MENU	2 nd SUB MENU	3 rd SUB MENU	4 th SUB MENU	DESCRIPTION
				ALLX	Edit mode (0/1)
			Hour		Stop hour and minute setting
				hhmm	Edit hour (00 - 24)
				hhmm	Edit minute (00 – 59)
	RFrG				Refrigeration routine
		dSPX			POS temperature display enable
			dSPx		Edit mode (0/1)
		dEGX			Select Fahrenheit/Celsius
			dEGx		Edit mode (F/C)
		T.Snack			Set point for Snack trays
			tt.tX		Edit set point temperature
		T.Can			Set point for Can bottle mechanism
			tt.tX		Edit storage temperature
		T.SEC			Temperature security for snack trays and selection >S.SEC
			tt.tX		0= disable X= temperature upper limit
		S.SEC			Selection controlled by temperature security
			SL xx		All selection > XX are controlled
	PAY-S				Payment system
		MDB			MDB
		EXE			Executive
	SdEP				Set column depth routine only for can - bottle
		71 X			X=1 one product in depth, x=2 two product in depth
		…			X=4 four product in depth
		74 X			Current setting
	Rtn				Return to sales mode