SUZO HAPP
GAMING, AMUSEMENT AND INDUSTRIAL COMPONENTS

2 PRICE CREDIT ACCUMULATOR/TIMER
OPERATING INSTRUCTIONS
P/N 42-1138-XX

Theory Of Operation:

The Suzo-Happ 2-price credit accumulator/timer is intended to be used in conjunction with a coin or dollar bill acceptor. The unit will allow the flexibility of from 1 to 16 coin drops before giving a credit to the game or device it is connected to. This means that now you can change the pricing to anything from 1 to 16 coins on games that currently allow game play on only 1 or 2 coins.

The 2-price feature works as follows:

One credit pulse is given after coins (from 1-8) have been dropped. A second credit pulse is given after additional coins (from 1-8) have been dropped. This means that you can apply a bonus to your pricing. For example, the first credit can be given for 4 quarters and the second for only 3 additional quarters. If 2-price vend or only a single vend is desired, up to 16 coins can be dropped before giving a credit.

Note that on either bank of pricing selection switches that no more than one switch per bank may be set to the on position. I.E. On switch bank 1 you may not have switch 3 and 7 on at the same time as this will cause the 2 Price Credit Accumulator Timer to not function.

When operated in the 2-price mode, the first credit can be set to automatically occur, or an optional customer operated button can be used to send the credit signal. A lamp driver output line is available to light a 12 volt lamp (maximum 130ma) when the first credit is available to be given. For example illuminated *"PUSH TO VEND"* button can be used.

Once the credit is given to the game or device, the timer feature allows the credit pulse to the game to be extended by up to a maximum of 10 minutes. The credit pulse is given to the game or device by a relay; this relay can be adjusted to stay ON for up to 10 minutes to operate the game or device it is connected into.

The CREDIT ACCUMULATOR/TIMER operates on either 120VAC or 12VDC. The credit is given by a DPDT relay rated at 5 amps (250VAC, 30VDC). The timer is adjusted by an on board potentiometer.

Technical Information:

Input voltage may be supplied to the CREDIT ACCUMULATOR/TIMER in one of the following methods.

  1: By supplying 120VAC to pins 1 and 3 of J2 (AC IN)
  2: By supplying a regulated 12VDC between pins 5 (VRG) and pin 4 (PSG) of J1.
  3: By supplying an unregulated voltage, in the range 14VDC-17VDC, between pins 9 (VUN) and pin 4 (PSG).

  NOTE: (*FOR ITEMS 2 AND 3 ABOVE THE EXTERNAL POWER SUPPLY MUST BE CAPABLE OF DELIVERING A MINIMUM OF 300mA CURRENT*)

Input From Coin Switch:

Connect coin switch COM to pin 15 of J1; connect coin switch NO to pin 14 of J1.

Timer Output Mode:

When the unit is placed in **TIMER OUTPUT MODE**, by placing T/P of CONT in the off position, the closure time of the relay may be adjusted using the trim pot on the PCB (R8).
The ON range time range is from approximately 2 seconds (pot fully CW) to 10 minutes (pot fully CCW).

Contact Output Information:

The output is obtained by connecting leads from pins 10-12 on J1 (RELAY CONTACTS SET #1) and or pins 6-8 on J1 (RELAY CONTACT SET #2). The relay operates when the vend price is reached. The relay remains energized for 100ms in non-timed mode and for the preset time in timer mode.

These pins are defined as follows:
PIN 6   RELAY CONTACT SET #2 NORMALLY OPEN
PIN 7   RELAY CONTACT SET #2 COMMON
PIN 8   RELAY CONTACT SET #2 NORMALLY CLOSED
PIN 10   RELAY CONTACT SET #1 NORMALLY OPEN
PIN 11   RELAY CONTACT SET #1 COMMON
PIN 12   RELAY CONTACT SET #1 NORMALLY CLOSED

These contacts are rated at   5A 250VAC   5A 30VDC
In certain applications it may be desirable to use one set of the relay contacts to disable acceptance of any additional coins during the vend cycle. This would be accomplished by means of a lockout coil assembly or some similar means.

Single Vend Explanation:

Single vend is where only a single price will be charged (bonus pricing not used).
EXAMPLE: 25¢, 50¢, or $1.00 per vend, where 25¢ would be the equivalent of one coin insertion, 50¢ would be 2 coin insertions ...ETC.

Dual Vend Explanation:

Dual vend is where one price would be charged for the first vend and a second (usually lower, **BONUS**) price would be charged for a second vend.
EXAMPLE 1st vend would be at $1.00 and the second vend would occur with the insertion of an additional 75¢.

Single Vend Operation:

To operate the 2-price credit accumulator timer in single vend mode the VEND 1 switch bank is used to select at what price the vend will occur (number of coin drops).
In this mode of operation the CONT (Control) switch labeled S/D must be set to the off position.
This mode of operation also has the capability of having the vend issued by activation of an external "PUSH TO VEND" button or having the vend issued automatically, this being determined by which position the CONT switch labeled M/A is set (MANUAL being in the off position, AUTOMATIC being in the on position).
This "PUSH TO VEND" button would be connected between pins 1 (Vend Switch Normally Open) and pin 2 (Vend Switch Common) on J1.

An example of the above conditions could be as follows:
Price per vend equals $1.00; the coin being accepted is 25¢.

VEND 1

Switches 1-3 would be set to the off position.
Switch 4 would be in the on position (4 coins x 25¢ = $1).
Switches 5-8 would be set to the off position.

VEND 2

The settings on these switches would be a don't care condition as the CONT S/D switch would be set to the off (SINGLE) position.
T/P would be set according to whether a timed or pulse output was desired.
S/D would be set to the off (SINGLE) position.
M/A would be set to either the off or on dependent on whether MANUAL or AUTOMATIC vend was desired.

The one exception to the above rule of S/D being set in the off position would be where a vend would require insertion of greater than 8 coins.
To achieve this option the two counters are effectively cascaded to give a maximum of 16 coin insertions to achieve a single vend (*PUSH TO VEND*) release is not available in this mode of operation, only automatic vend is usable.

In another example, to have a vend occur at $3 using 25¢ coins the switches would be set as follows:

VEND 1

Switches 1-8 would be set to the off position (8 coins x 25¢ = $2).

VEND 2

Switches 1-3 would be set to the off position.
Switch 4 would be set to the on position (4 more coins x 25¢ = $3 total).
Switches 5-8 would be set to the off position.
T/P would be set according to whether a timed or pulse output was desired.
S/D would be set to the on (DUAL) position.
M/A would be set to the on (AUTOMATIC) position.
An open collector darlington transistor output is also available on pin 3 of J1.(Vend Available Signal)
This output could be used to drive an indicator lamp (DC only, max 130ma, #658 lamp or similar, connect lamp between pins 3 and 9 of J1) to alert the customer to depress the "PUSH TO VEND" button once the price for a single vend had been reached.

Dual Vend Operation:

As with the single vend a second vend may be selected by using the VEND 2 switch bank.
For the release of the second vend signal there is no option for manually issuing this credit.
This mode of operation would be used where a "BONUS" feature might be desirable.
The same general rules apply for the setting of the second vend switches as with the VEND 1 switch bank.

Using the scenario stated above (1st vend at $1.00, 2nd vend at 75¢) the unit would be set up as follows:

VEND 1

Switches 1-3 would be set to the off position.

Switch 4 would be in the on position (4 coins x 25¢ = $1)
Switches 5-8 would be set to the off position.

VEND 2

Switches 1 and 2 would be set to the off position.
Switch 3 would be set to the on position. (3 more coins x 25¢ = $1.75 total)
Switches 4-8 would be set to the off position.

CONT

T/P would be set according to whether a timed or pulse output was desired.
S/D would be set to the on (DUAL) position.
M/A would be set to either off or on dependent on whether a MANUAL or AUTOMATIC vend was desired.

Pin Definitions (J1):

The following lists the pin definitions of J1 on the 2-price credit accumulator/timer PCB.
(Wire colors pertain to harness included when Kit is purchased)

PIN NAME	FULL DESCRIPTION	
1: VNO	(V)end Switch (N)ormally (O)pen	(White)
2: VCM	(V)end Switch (C)o(M)mon	(White/Black)
3: VAV	(V)end (A)(V)ailable Signal (to "VEND" lamp or other device)	(Green)
4: PSG	(P)ower (S)upply (G)round	(Black)
5: VRG	+12(V)DC (R)e(G)ulated [INPUT ONLY]	(Yellow)
6: 2NO	RELAY CONTACT SET (2) (N)ormally (O)pen	(Blue/White)
7: 2CM	RELAY CONTACT SET (2) (C)o(M)mon	(Blue)
8: 2NC	RELAY CONTACT SET (2) (N)ormally (C)losed	(Blue/Yellow)
9: VUN	+14 to +17(V)DC (U)(N)regulated [INPUT ONLY or "VEND" lamp]	(Gray/White)
10: 1NO	RELAY CONTACT SET (1) (N)ormally (O)pen	(Orange/White)
11: 1CM	RELAY CONTACT SET (1) (C)o(M)mon	(Orange)
12: 1NC	RELAY CONTACT SET (1) (N)ormally (C)losed	(Orange/Yellow)
13: KEY	NO CONNECTION POLARIZATION PIN	
14: SNO	Coin (S)witch Contact (N)ormally (O)pen	(Violet/White)
15: SCM	Coin (S)witch Contact (C)o(M)mon	(Violet/Black)