

### CREDIT CONTROL UNIT (CCU)

#### Applications

The Credit Control Unit has been designed to work with C200 Series Electronic Validators, and can be operated in single or dual currency mode. All connections to the validator are made from the CCU, and connections to the host machine are made via the 6 way connector.

Where the host machine is required to control 'inhibits' directly, then the inhibit wiring must be modified to suit the application. Please contact Coin Controls technical service for advice.

#### CCU Switch Settings

##### CURRENCY SELECT SWITCH

Most standard coin sets have a fixed ratio of 100:50:20:10. (For example in the UK 100p, 50p, 20p, 10p.) However a small number of non-standard coin sets have a different ratio (e.g. 100 cents, 25 cents, 10 cents, 5 cents). On the CCU an option switch allows the operator to select the coin set required. With the switch set to standard coin selection, the meter output pulses are in units of 10. For non-standard coin sets the meter output pulses are in units of 5.

Switch Setting SW12 ~~ON~~ - Non-standard coin set (100:25:10:5)

Switch Setting SW12 ~~OFF~~ - Standard coin set (100:50:20:10)

##### TOTALISING SWITCH

In totalise mode, 10p and 20p coins, for example, are added together and when the sum reaches or exceeds 50p or £1, then the appropriate additional bonuses are awarded. A time limit of 30 secs is placed on the totalising sequence in order to avoid bonuses being passed onto other users.

In non totalise mode additional bonuses can only be awarded by inserting the two highest value coins e.g. 50p and £1 coins.

Switch Setting SW11 ON - Totalise mode

Switch Setting SW11 OFF - Non-totalise mode

##### INHIBIT SWITCHES

Inhibits for coins 1 to 4 are controlled by switches 13 to 16. Inhibit for coins 5 and 6 are paired together as are inhibits 7 and 8 and are controlled by switches 17 and 18 respectively

Note: When the validator is used in dual currency mode, and Inhibit 5 and 6 and Inhibit 7 and 8 are 'enabled' by setting SW17 and SW18 'ON', then both currencies must have the same coin ratios.

SW13 - Coin 1

SW14 - Coin 2

SW15 - Coin 3 - Switch ON - Coin enabled

SW16 - Coin 4 - Switch OFF - Coin inhibited

SW17 - Coins 5 and 6

SW18 - Coins 7 and 8

#### PRICE SETTING

The price setting switches are used to determine the price per game for either of the selected coin sets. The switches are arranged in 3 groups: -

- (a) 5 switches for the basic price per credit
- (b) 3 switches for the number of additional credits bought by the highest value coin e.g. £1.00.
- (c) 2 switches for the number of additional credits bought by the second highest value coin e.g. 50p

The price setting switch sequences are shown in the following tables:

TABLE A - Price per game for 100, 50, 20, 10 coin set

SW1	SW2	SW3	SW4	SW5	UNITS/GAME
X	ON	ON	ON	ON	5
X	OFF	ON	ON	ON	10
X	ON	OFF	ON	ON	20
X	OFF	OFF	ON	ON	30
X	ON	ON	OFF	ON	40
X	OFF	ON	OFF	ON	50
X	ON	OFF	OFF	ON	60
X	OFF	OFF	OFF	ON	70
X	ON	ON	ON	OFF	80
X	OFF	ON	ON	OFF	90
X	ON	OFF	ON	OFF	100
X	OFF	OFF	ON	OFF	110
X	ON	ON	OFF	OFF	120
X	OFF	ON	OFF	OFF	130
X	ON	OFF	OFF	OFF	140
X	OFF	OFF	OFF	OFF	150

x means switch may be on or off

TABLE B - Price per game for 100, 25, 10, 5 coin set

SW1	SW2	SW3	SW4	SW5	UNITS/GAME
ON	ON	ON	ON	ON	5
OFF	ON	ON	ON	ON	10
ON	OFF	ON	ON	ON	15
OFF	OFF	ON	ON	ON	20
ON	ON	OFF	ON	ON	25
OFF	ON	OFF	ON	ON	30
ON	OFF	OFF	ON	ON	35
OFF	OFF	OFF	ON	ON	40
ON	ON	ON	OFF	ON	45
OFF	ON	ON	OFF	ON	50
ON	OFF	ON	OFF	ON	55
OFF	OFF	ON	OFF	ON	60
ON	ON	OFF	OFF	ON	65
OFF	ON	OFF	OFF	ON	70
ON	OFF	OFF	OFF	ON	75
OFF	OFF	OFF	OFF	ON	80
ON	ON	ON	ON	OFF	85
OFF	ON	ON	ON	OFF	90
ON	OFF	ON	ON	OFF	95
OFF	OFF	ON	ON	OFF	100
ON	ON	OFF	ON	OFF	105
OFF	ON	OFF	ON	OFF	110
ON	OFF	OFF	ON	OFF	115
OFF	OFF	OFF	ON	OFF	120
ON	ON	ON	OFF	OFF	125
OFF	ON	ON	OFF	OFF	130
ON	OFF	ON	OFF	OFF	135
OFF	OFF	ON	OFF	OFF	140
ON	ON	OFF	OFF	OFF	145
OFF	ON	OFF	OFF	OFF	150
ON	OFF	OFF	OFF	OFF	155
OFF	OFF	OFF	OFF	OFF	160

TABLE C - Additional games for highest value coin (Coin 1)

SW6	SW7	SW8	FUNCTION
ON	ON	ON	NO ADDITIONAL GAMES
OFF	ON	ON	1 ADDITIONAL GAME
ON	OFF	ON	2 ADDITIONAL GAMES
OFF	OFF	ON	3 ADDITIONAL GAMES
ON	ON	OFF	4 ADDITIONAL GAMES
OFF	ON	OFF	5 ADDITIONAL GAMES
ON	OFF	OFF	6 ADDITIONAL GAMES
OFF	OFF	OFF	7 ADDITIONAL GAMES

TABLE D - Additional games for second highest Coin (Coin 2)

SW9	SW10	FUNCTION
ON	ON	NO ADDITIONAL GAMES
OFF	ON	1 ADDITIONAL GAME
ON	OFF	2 ADDITIONAL GAMES
OFF	OFF	3 ADDITIONAL GAMES

### PRICE SETTING EXAMPLE

If an operator wishes to program a machine for 20p/game, 3 games for 50p, 7 games for £1.00, using a standard coin set (100:50:20:10), and allowing all coins to be totalised, then he will set the switches as follows:

- (i) SW12 - OFF This selects the standard coin set  
SW11 - ON This puts the CCU into Totalise Mode

- (ii) Select price per game (20p/game). Refer to table A.

SW1	SW2	SW3	SW4	SW5
X	ON	OFF	ON	ON

This selects 20p/game.

Because this setting will automatically generate 5 games when £1.00 is entered, it will be necessary to set the switches to give 2 additional games (i.e. 7 games/£1.00).

- (iii) To program for highest value coin. Refer to table C.

SW6	SW7	SW8
ON	OFF	ON

This selects 2 additional games for highest value coin, £1.00. Similarly when 50p is entered, 2 games will be automatically generated.

- (iv) In order to reset for additional games bought by second highest value coin, i.e. 50p. Refer to table D.

SW9	SW10
OFF	ON

This selects 1 additional game for the second highest value coin - 50p.

The machine is now fully programmed to give:

1 game for 20p
3 games for 50p
7 games for £1.00

## Electrical Specifications

### 15 WAY CONNECTOR

Pin	Colour	Use
1	Orange	Accept output common + 5V
2	Yellow	Coin 1 Accept input
3	-	Key
4	Green	Coin 2 Accept input
5	Brown	Coin 3 Accept input
6	-	Not used
7	Grey	Coin 4 Accept input
8	Pink	Coin 4 Inhibit output
9	Red	Mech Board supply + 12V
10	Black	Mech Board ground
11	White	Coin 3 Inhibit output
12	Purple	Coin 2 Inhibit output
13	Blue	Coin 1 Inhibit output
14	Black/White	Coin 5/6 Inhibit output
15	Red/Green	Coin 7/8 Inhibit output

### 6 WAY CONNECTOR

Pin	Colour	Use
1	Brown	Meter drive output
2	-	Key
3	White	Credit output N/O
4	Green	Credit output common
5	Black	supply ground
6	Orange	Supply + 12V

	Min.	Typ.	Max.	Units
CCU Supply Voltage	11	12	15	V d.c.
Supply's Current		90	160	mA
Operating Temperature	0		50	deg.C

NOTE: The power supply requirements for the validator in use with the CCU must be added to the above values for PSU loading calculations.

### METER OUTPUT (OPEN COLLECTOR DRIVE TO OV)

The open collector output is capable of sinking 200mA at 1V. the pulse length is 100ms, with a duty cycle of 50% for multiple pulse outputs.

### CREDIT OUTPUT

This is a relay, contact rated at 1A (at 24V DC) or 0.5A (at 120V AC). the pulse length is 100ms with a duty cycle of 33% for multiple pulse outputs.

	Min.	Typ.	Max.	Units
Contact current @ V = 24Va.c.			1.0	A
Contact current @ V = 120Va.c.			0.5	A
Output On time	85	100	115	msec
Output Off time	170	200	230	msec

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