

## CREDIT CONTROL UNIT (C.C.U.) DATA SHEET

### Applications

The CCU has been designed to work with MCL's C2XX electronic validators and can be operated in dual or single 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 controls inhibits directly then the inhibit wiring must be modified to suit the application. Please contact Money Controls technical services for advice.

### CCU Switch Settings

#### **Currency Select Switch**

Most standard coin sets have a fixed ratio of 100:50:20:10 (eg. GB £1, 50p, 20p, 10p). However a small number of non-standard coin sets have a different ratio (eg. NL 1 Guilder, 25c, 10c, 5c). On the CCU an option switch allows the operator to select the coin ratio required. With the switch set to standard, the meter output pulses in in units of 10. For non-standard coin ratios the meter output pulses are in units of 5.

SW12	OFF	Standard Coin Set
SW12	ON	Non-Standard Coin Set

#### **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 on to other users.

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

SW11	OFF	Non-Totalise Mode
SW11	ON	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. They are controlled by switches 17 and 18 respectively.

SW13	Coin 1	ON = ENABLED  OFF = INHIBITTED
SW14	Coin 2	
SW15	Coin 3	
SW16	Coin 4	
SW17	Coin 5&6	
SW18	Coin 7&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
- (c) 2 switches for the number of additional credits bought by the second-highest value coin

The price setting switch sequences are shown on the tables overleaf:

**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 = 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**

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 value coin**

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 the operator wishes to program a machine for 20p/game, 3 games for 50p, 7 games for £1, using a standard coin set (100:50:20:10), and allowing for coins to be totalised, then the switches will be set as follows:

- i) SW12 - OFF This selects standard coin set  
SW11 - ON This sets totalise mode
- ii) SW1 - X  
SW2 - ON  
SW3 - OFF  
SW4 - ON  
SW5 - ON These select 20 units per game (see table A)
- iii) SW6 - ON  
SW7 - OFF This sets for 2 additional games per highest coin.  
SW8 - ON (5 games will automatically be generated)
- iv) SW9 - OFF This sets for 1 additional game per second highest coin.  
SW10 - ON (2 games will automatically be generated)

The CCU is now fully programmed.

## Electrical Specifications

### 15-Way Connector

Pin	Wire Colour	Function
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 0V
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	Wire Colour	Function
1	Brown	Meter Drive Output
2	-	Key
3	White	Credit Output N/O
4	Green	Credit Output Common
5	Black	Supply 0V
6	Orange	Supply +12V

CCU Supply Voltage	11 – 15 V DC, typical 12V DC
CCU Supply Current	maximum 160mA, typical 90 mA
Operating Temperature	0 – 50 °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 0v)**

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 @ 24V DC or 0.5A @ 120V AC. The pulse length is 100ms with a duty cycle of 33% for multiple pulse outputs.

Output ON Timing	85 – 115 ms, typical 100ms
Output OFF Timing	170 – 230 ms, typical 200ms

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