# MAGIKIST ⊘ iCoin

## Electronic Multi-Coin Acceptor

### Model CP990

### Model CP890



## Instruction Manual

v 1.1

**MAGIKIST** ⊘

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## 1)   MOUNTING

Mount the iCoin to the faceplate of the meter box using the holes on the stainless steel edgemount bracket. On the CP990 the middle left mounting hole may or may not be used as it does have restricted access due to the display enclosure. Ensure that the iCoin is mounted vertically and is not tilted in any direction.

Optional
Mounting
Hole
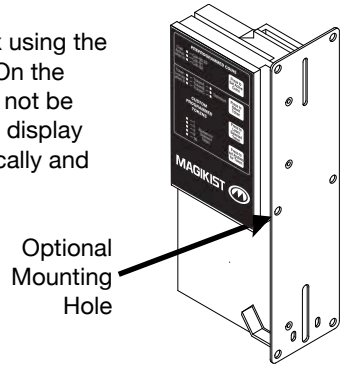
## 2)   ELECTRICAL CONNECTION

Wire connections for the CP990 & CP890 are shown in the following chart. Before connecting power to the iCoin, check the supply voltage with a voltmeter.

| Model | Power Requirements | Power Connections | Pulse Connections |
|-------|--------------------|-------------------|-------------------|
| CP990 CP890 | 24±2 VAC | Yellow + Black – | Blue (*Note 1*) Purple (*Note 2*) |
| CP990-R CP890-R | | | Red w/green stripe (*Note 3*) Red w/green stripe (*Note 3*) |
| CP990-D CP890-D | 12 to 30 VDC | Red + Black – | Blue (*Note 1*) Purple (*Note 2*) |
| CP990-DR CP890-DR | | | Red w/green stripe (*Note 3*) Red w/green stripe (*Note 3*) |

***Note 1:*** The blue wire is a DC switch used for pulsing that will sink a maximum of 200mA at 5-36 VDC to black –.

***Note 2:*** The purple wire is an AC switch used for pulsing that will sink a maximum of 500mA up to 24 VAC to black –.

***Note 3:*** The two red wires with green stripe (non-polarized) are a normally open contact used for pulsing rated at a maximum resistive load (non inductive) 1A, 125 VAC, 60 VDC.

When turning power off and on to the iCoin power must remain off for a minimum of 10 seconds before being turned back on to ensure that the iCoin powers up correctly.

Following are the wiring connections for several brands of timers. If your timer is not listed, consult your supplier for further information.

| Timer | Power | | Electronic Pulse | | Relay Pulse | |
|---|---|---|---|---|---|---|
| | Yellow | Black | Blue | Purple | Red with green stripe | Red with green stripe |
| Magikist MT580 or MT580U | 24VAC Hot #2 | COMMON #3 | COIN SWITCH+ #6 | N/C | COIN SWITCH+ #6 | COIN SWITCH– #7 |
| Magikist MTV840 | Yellow | -Black | +Blue | N/C | +Blue | -Black |
| Magikist MTV600 | 24VAC HOT OUT #3 | COIN SWITCH– #8 | COIN SWITCH+ #7 | N/C | COIN SWITCH+ #7 | COIN SWITCH– #8 |
| Dixmor LED7 | red | green | brown | N/C | brown | grey |
| Grace Timer or PEM7 | #3 | #1 | #4 | N/C | #1 | #4 |

## 3)  DISPLAY PANEL AND PUSHBUTTONS

The iCoin utilizes a display and pushbuttons for configuration settings, current settings, and self-diagnostics. The display has several indicator lights that show which currency coins the iCoin is currently accepting and setup information regarding tokens. The pushbuttons allow one to change the coins that are to be accepted and to set the tokens (if any) that the iCoin is to accept. Pushbuttons are labelled with the function that they provide as well as a number. For convenience, this manual will include in parenthesis the number of the pushbutton in addition to the label of the pushbutton.

Immediately during the first 10 to 15 seconds of power up, the iCoin display will sequence through the current configuration settings. These settings are covered later in *Section 8) Configuration Settings*. Following this the display shows which preprogrammed currency coins it will accept as well as if there are any learned tokens that it will accept.

By default the iCoin power saving mode is enabled so that if there is no activity for a period of time, either coins being accepted or pushbuttons pressed, then the acceptor will enter a power saving mode where the display will flash the preprogrammed coins and token settings repeatedly. Once a coin is dropped or a pushbutton is pressed the display will turn on steady until the period of time elapses again at which time the acceptor will again enter the power saving mode. The period of time by default is 1 minute. You can learn how to change this value in *Section 8) Configuration Settings*.

## 4) CANADIAN QUARTER, LOONIE AND TOONIE SELECTION

The iCoin is preprogrammed to accept any combination of Canadian quarter, $1 (loonie) and $2 (toonie) coins. Once the iCoin is powered up, the display shows which coins the iCoin is activated to accept. For example, if the indicator lights for *Cdn-$0.25* and *Cdn-$1* are lit as in figure 4.1, then the iCoin will accept both the Canadian quarter and $1 coin. If the indicator lights for *Cdn-$1* and *Cdn-$2* are lit, as in figure 4.2, then the iCoin will accept both the Canadian $1 and $2 coins.



**PREPROGRAMMED COINS**

Coin ● — Cdn-$0.25
Active ● — Cdn-$1
when lit — Cdn-$2

Press to Set Active Coins  1

figure 4.1

To change which coins that the iCoin is to accept, press the pushbutton *Press to Set Active Coins* (1). Pressing this pushbutton will change the activated coins that the iCoin is to accept as shown by the display. By repeatedly pressing the pushbutton you will arrive at the setting you wish for coins that the iCoin is to accept.



**PREPROGRAMMED COINS**

Coin — Cdn-$0.25
Active ● — Cdn-$1
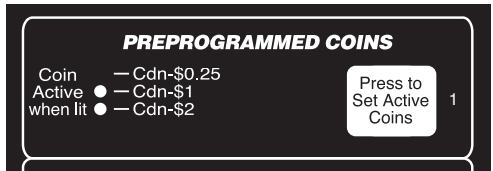when lit ● — Cdn-$2

Press to Set Active Coins  1

figure 4.2

Because the coins that the iCoin can accept have different values, different number of pulses will be sent to the timer depending on which coin is accepted. Only 1 pulse will be sent to the timer for the lowest value coin that the iCoin is set to accept. Multiple pulses will be sent to the timer for higher value coins that are accepted. Figure 4.3 shows the different coin selection settings and the corresponding number of pulses that will be sent to the timer for the coins that are activated. Ensure that your timer is setup correctly based on the number of pulses that the iCoin will send for the coins that you have activated.
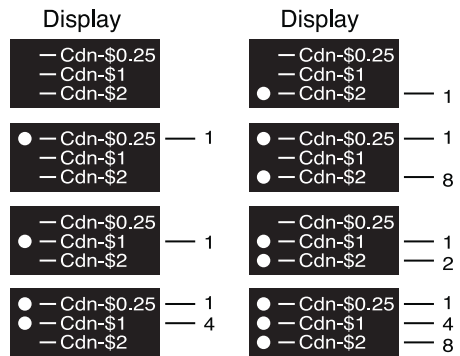


figure 4.3

It is possible for the iCoin to be configured for fixed pulses such that it will always send 1 pulse for a quarter, 4 pulses for a $1 coin, and 8 pulses for $2 coin regardless of which coins are activated. *Section 8) Configuration Settings* provides instructions to enable fixed pulsing.

## 5)  TOKEN SETUP

The iCoin can be easily programmed to accept up to 3 different tokens of your choice. Ensure that you have selected good quality tokens and that other operators in your area are not using a similar size token of the same alloy. While the iCoin is compatible with most tokens, consult your distributor who can then confirm that the token you have selected is compatible with the iCoin.



figure 5.1

The tokens that the iCoin learns are stored as TokenA, TokenB, or TokenC. The panel display of the iCoin shows TokenA, TokenB, and TokenC, and which of these tokens is currently learned. If the indicator light under *Learned* next to TokenA, TokenB, or TokenC is lit, then that token has already been learned. For example, figure 5.1 shows a setting where TokenA and TokenC have been learned and tokenA has a value of 4 pulses. All learned tokens will be accepted by the iCoin.
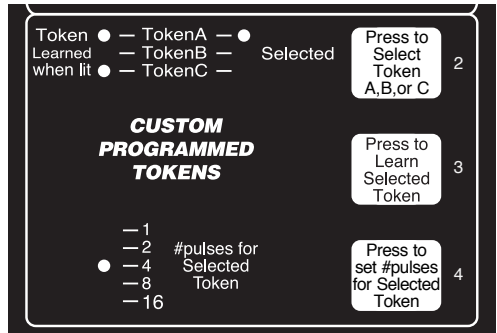
The currently lit indicator light under *Selected* shows which token is currently selected. Pressing the pushbutton labeled *Press to Select Token A,B, or C* (2) advances the indicator light under *Selected* to the next token. For example, if the indicator light under *Selected*  and next to TokenB was lit, pressing the pushbutton *Press to Select Token A,B, or C* (2) would light the indicator light next to TokenC. Pressing the pushbutton again would now move the indicator light to TokenA.

The indicator lights 1, 2, 4, 8, and 16 for *#pulses for Selected Token* show the total number of pulses that will be sent when the currently selected token is accepted. The total number of pulses that will be sent is the sum of all the indicator lights 1, 2, 4, 8, and 16 for *#pulses for Selected Token* that are lit. If all indicator lights for *#pulses for Selected Token* are off for the current learned token, then 32 pulses will be sent. If the currently selected token is not learned, then all the indicator lights 1, 2, 4, 8, and 16 for *#pulses for Selected Token* will not be lit.

To learn a token, first decide whether the token is to be stored as TokenA, TokenB, or TokenC. The indicator light for that token under the *Selected* column must then be lit for that token to be the currently selected token. If necessary, press the pushbutton *Press to Select Token A,B, or C* (2) to sequence the indicator lights under the *Selected* column until the indicator light next to your choice of TokenA, TokenB, or TokenC is lit.

You will need two samples of the token that you wish to program. Press the pushbutton *Press to Learn Selected Token* (3) to start the learn process. The indicator light under the *Learned* column next to the currently selected token will begin to flash slowly. At this point you have 10 seconds to insert the first sample token. **It is extremely important that you hold the token, insert it fully as far as possible into the coin slot while still holding the token, and then release the coin without pushing it. To accurately learn the token, the token must be**

**inserted into the iCoin as slow as possible otherwise the learn may fail.** If the token is read correctly then the iCoin will accept the token. At this point you have another ten seconds to insert the second sample token again with taking the same care to insert without pushing the token at all. If the second sample token is accepted then the indicator light under *Learned* next to the current selected token will be lit indicating that the token has been learned. If either the first or second sample token is rejected the learn process is aborted and you will need to restart the learn process from the beginning.

With the token learned the next step is to set the number of pulses for the token. Press the pushbutton *Press to set# pulses for Selected Token* (4) until the display showing the *#pulses for Selected Token* is set to the correct number of pulses (and thus the correct value) for your token.

You may at anytime "unlearn" a token. Make sure that the token you wish to erase is the currently selected token. Press the pushbutton *Press to Learn Selected Token pushbutton* (3). The indicator light under the *Learned* column next to the currently selected token will begin to flash. Wait for 10 second without dropping any coins after which the learned indicator light for the selected token will turn off signifying that the token is now erased.

## 6)  DISPLAYING THE ACCEPTED COIN

When a coin is accepted by the iCoin, the display will show which coin was accepted and how many pulses were generated for the coin. For example if a $0.25 coin is accepted, the indicator light for *Cdn-$0.25* will flash once. If a $1.00 coin is accepted the indicator light for *Cdn-$1* will flash once (if quarters are not active) or four times (if the quarters are active). Likewise if a token is accepted, the learned light for the token will flash once for each pulse that is generated for the token.

## 7)  COIN RELEASE MECHANISM

Should a bent or damaged coin become jammed in the iCoin, the coin may be able to be freed using the coin release mechanism. The coin release mechanism is a spring loaded mechanism located on the left side of the acceptor as show in figure 7.1. Pressing on the round head of the mechanism will compress the spring and slightly separate the two sides of the iCoin which may allow any coin jam to be released. Releasing the round head of the mechanism will return the iCoin back to its normal operating position.
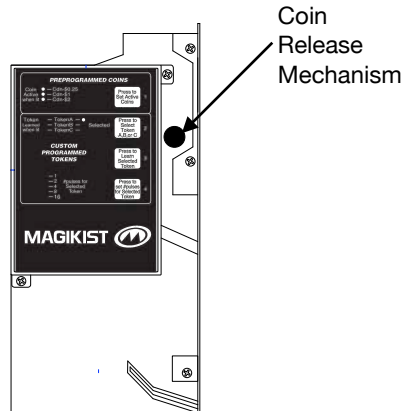


Coin Release Mechanism

figure 7.1

Should the coin release mechanism not correct the coin jam, it will then be necessary to open the acceptor as described in  *See Section 9) Cleaning & Removing Coin Jams*.

## 8)  CONFIGURATION SETTINGS & SETUP MODE

Immediately during the first 10 to 15 seconds of power up, the iCoin display will sequence through the current configuration settings.

The configuration settings are divided into 3 groups: group 1 token settings, group 2 preprogrammed coin settings, and group 3 miscellaneous settings. Group 1 settings are displayed first, followed by group 2 and then group  3. Group 1 settings are identified by the *Cdn-$0.25* being lit, group 2 settings are identified by *Cdn-$1* being lit, and group 3 settings are identified by both *Cdn-$0.25* and *Cdn-$1* being lit. Within each group, the *Token A, Token B, or Token C Selected* light will indicate the configuration setting within that group. The 1, 2, 4, and 8 indicator lights for # *pulses for Selected Token* will indicated the value for the configuration setting within the group.

Table 8.1 shows the configuration settings groups, settings, and values. Default values are indicated with an asterisk *.

The *Token Reading, Sizing, and Speed* settings determine how closely the iCoin will compare each of these characteristics of incoming coins with the sample token(s) it has learned. Low settings are the least strict and are the default setting which should work in the vast majority of installations. In the rare case that the iCoin is accepting a token that it has not learned, you may wish to experiment by changing the reading and/or sizing setting to medium and then if necessary to high. Typically it is best to adjust the reading and sizing settings before trying to adjust the speed setting.

The *Variable/Fixed Pulse* setting is by default set to variable such that the number of pulses sent by the iCoin for the Cdn quarter, $1 coin, and $2 coin, is dependent on which of these coins are active as described in *Section 4*. Changing this setting to Fixed results in the iCoin sending 1 pulse for a quarter, 4 pulses for a $1 coin, and 8 pulses for $2 coin regardless of which coins are active.

The *Preprogrammed Coin Sizing and Speed* settings, can be but typically should not be adjusted.

The *Pulse Speed* setting is by default set to fast pulsing. Some older timers may not be fast enough to correctly accept multiple pulses from the iCoin and thus require the pulse speed setting to be set to slow pulse.

The *Time to enter power saving mode* setting is the amount of time after which either no coins have been inserted or any pushbutton pressed that the acceptor will enter a power saving mode where the display will flash the preprogrammed coins and token settings repeatedly.

To enter setup mode to change the value of any configuration settings, you must power down the iCoin, depress and hold the *Press to Set Active Coins* (1) pushbutton and then power on the iCoin. The *Cdn-$0.25* and *Token A Selected* indicator lights will flash continuously indicating that you are at Group 1 Token Settings with the Token Reading setting. You can now release the *Press to Set Active Coins* (1) pushbutton. At this point use the *Press to Set Active Coins* (1) pushbutton to cycle through the different Groups. Within the group, press the *Press to Select Token A,B, or C* (2) pushbutton to select the setting that you wish to change. Pressing the *Press to set# pulses for Selected Token* (4) pushbutton will

cycle through all the values that are available for that setting. You may change the values of multiple settings during the time you are in setup mode. To save all changes you must press the *Press to Learn Selected Token* (3) pushbutton. This will save the current configurations settings and the iCoin will restart with the new settings. To discard any changes you have made simply power off the iCoin without pressing the *Press to Learn Selected Token* (3) pushbutton.

table 8.1

| Group | Setting | Value | |
|-------|---------|-------|---|
| **Group 1**<br>**Token Settings**<br>● — Cdn-$0.25<br>— Cdn-$1 | Token Reading<br>TokenA — ●<br>TokenB —     Selected<br>TokenC — | — 1<br>— 2   #pulses for<br>— 4    Selected<br>— 8     Token<br>— 16 | 1=low, least strict *<br>2=medium<br>4=high, most strict<br>8=off |
| | Token Sizing<br>TokenA —<br>TokenB — ● Selected<br>TokenC — | — 1<br>— 2   #pulses for<br>— 4    Selected<br>— 8     Token<br>— 16 | 1=low, least strict *<br>2=medium<br>4=high, most strict<br>8=off |
| | Token Speed<br>TokenA —<br>TokenB —     Selected<br>TokenC — ● | — 1<br>— 2   #pulses for<br>— 4    Selected<br>— 8     Token<br>— 16 | 1=low, least strict *<br>2=medium<br>4=high, most strict<br>8=off |
| **Group 2**<br>**Preprogrammed**<br>**Coin Settings**<br>— Cdn-$0.25<br>● — Cdn-$1 | Variable/Fixed Pulsing<br>TokenA — ●<br>TokenB —     Selected<br>TokenC — | — 1<br>— 2   #pulses for<br>— 4    Selected<br>— 8     Token<br>— 16 | 1=variable *<br>2=fixed |
| | Preprogrammed<br>Coins Sizing<br>TokenA —<br>TokenB — ● Selected<br>TokenC — | — 1<br>— 2   #pulses for<br>— 4    Selected<br>— 8     Token<br>— 16 | 1=low, least strict *<br>2=medium<br>4=high, most strict |
| | Preprogrammed<br>Coins Speed<br>TokenA —<br>TokenB —     Selected<br>TokenC — ● | — 1<br>— 2   #pulses for<br>— 4    Selected<br>— 8     Token<br>— 16 | 1=low, least strict *<br>2=medium<br>4=high, most strict |
| **Group 3**<br>**Miscellaneous**<br>**Settings**<br>● — Cdn-$0.25<br>● — Cdn-$1 | Pulse Speed<br>TokenA — ●<br>TokenB —     Selected<br>TokenC — | — 1<br>— 2   #pulses for<br>— 4    Selected<br>— 8     Token<br>— 16 | 1=fast *<br>2=slow |
| | Time to enter power<br>saving mode<br>TokenA —<br>TokenB — ● Selected<br>TokenC — | — 1<br>— 2   #pulses for<br>— 4    Selected<br>— 8     Token<br>— 16 | 1=1 minute *<br>2=3 minutes<br>4=5 minutes |

### 9) CLEANING & REMOVING COIN JAMS

The iCoin allows full access to the internal coin path for cleaning or to remove a coin jam that the Coin Release Mechanism was not able to remove.

To gain access to the internal coin path you must first remove the screw that holds the Coin Release Mechanism to the body of the iCoin as shown in figure 9.1. Remove the screw while holding the Coin Release Mechanism to prevent it from turning. Once the screw is fully removed the 3 components of the Coin Release Mechanism will be loose so place them aside.

The right side of the iCoin can now be opened a full 90° to gain access to the complete internal coin path for cleaning or removal of any coin jam as shown in figure 9.2. **Do not open the side more than 90° otherwise damage to the hinge may occur voiding any warranty.**

For cleaning use a cotton swab or soft cloth with isopropyl alcohol or Windex to clean the coin path and the sensor. **Do not use any sharp objects or abrasive cleaners that my damage the sensors or the coin path.**

When reinstalling the Coin Release Mechanism, ensure that the components are assembled in the correct order as shown in figure 9.3.
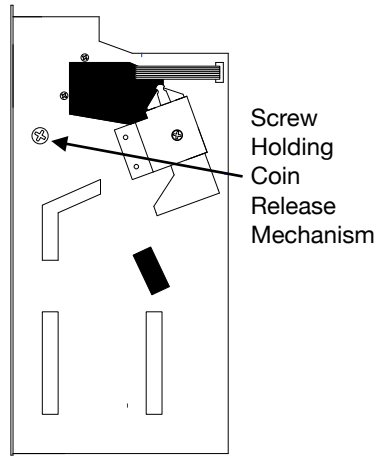
Screw Holding Coin Release Mechanism
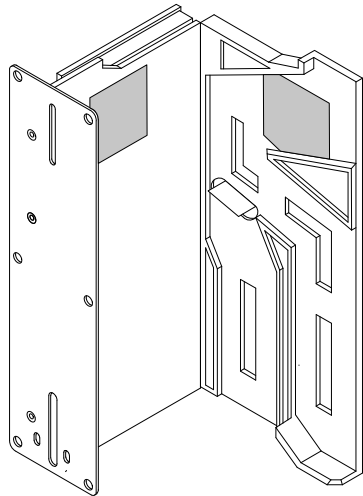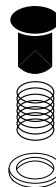
figure 9.1

figure 9.2

figure 9.3

## A. APPENDIX

For future reference, write down the serial# located on the bottom of the display enclosure of the iCoin. In addition, when learning tokens, record the details of each token on the following lines:

SERIAL# _____

TokenA Description _____

TokenB Description _____

TokenC Description _____