Coin Processing Module Technical Manual CAS-006K6

Version： **V1.6**
Update Date： **2024-12-02**

1、 General Description

CAS-006K6 is a high-capacity coin cycling module that supports single-slot insertion. It can recognize, classify, receive and store coins, and make change based on external controls.

CAS-006K6 module has a coin receiver, recognition counter, coin classifier, and can simultaneously save classified coins to the recycling hopper. When a need to get change, the recycling hopper will dispense change based on external control.

2、 Model
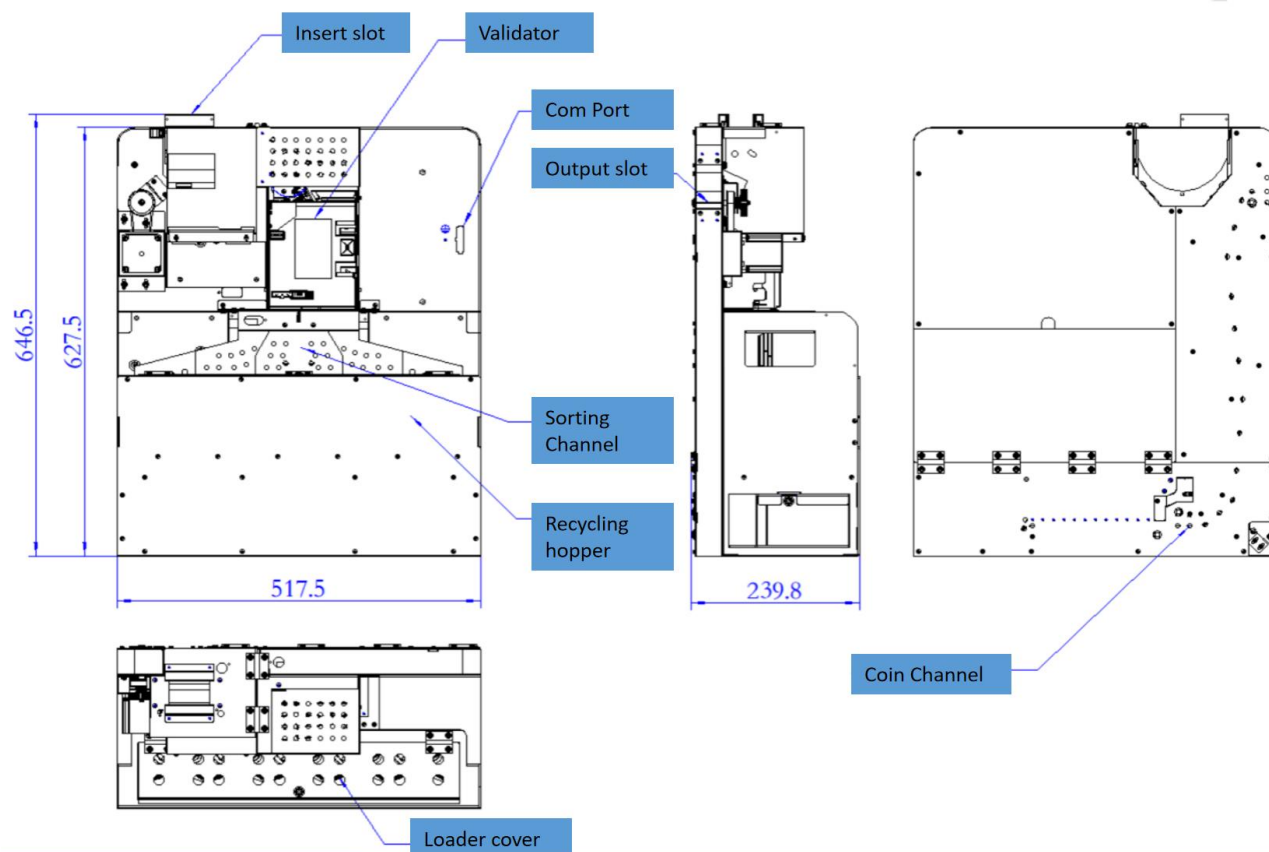
CAS-006K6

3、 Nomenclature

- Single-slot insertion: a mixture of multiple coins of different specifications are inserted once.
- Coin recognizer: to identify the authenticity of the coins inserted by passengers.
- Coin classification and reception: sending different coins specifications received to corresponding recycling hoppers.
- Recycling change: using the coins received from the passengers for change, avoiding frequent cash replenishment and service interruption.
- Coin exit: the exit where the coin are inserted and removed.

4、 Advantages

- Distance between coin entrance and exit is 120mm
- Flexible gripper for coins conveying to reduce the risk of coin jamming.
- intelligent flipping program and a cam knockdown mechanism are designed to effectively reduce the risk of coin residue.
- Main maintenance areas are open-design, eliminating blind spots and making maintenance easily.
- Coin recognition speed: 2 coins/second, 6 coins/second for change dispensing speed .
- Support circulating change for 6 currency types, while other currency types can be directly deposited into the recycling box.

5、Overview

Module design,Size and Main Module components

6、Features

6.1.General Specifications

No.	Items	Specifications	
1	Power supply	·voltage input:DC24V ·voltage range:±10%	
2	Power consumption	· Standby mode:<1.0A · Average(working mode): <2.5A · Maximum(working mode): <5A （exclude when peak current generated within 500ms, like motor start-up ）	
3	Weight	·Main Module：~25.0kg（empty box)	
4	Environment requirement	·Working environment	·Temperature：0°C～50°C ·Humidity：20%～85% RH (without condensation)

		·storage environment	·Temperature：-5°C～55°C
			·Humidity：20%～85% RH (without condensation)
5	Interface	·RS-232	

6.2.Function

No．	Items	Specifications
1	Functionality	1 coin recognition 2 coin sorting 3 coin change cycling 4 counterfeit coin rejection 5 coin change dispensing
2	Currency handling	Can customize based on usage requirement，usually will have 6 currencies in circulation and non-circulating currency will be recycled directly.
3	Transaction processing quantity	·Inlet/Outlet：continuous change dispensing (coin inlet shall be properly throttled so that no more than 150 coins are processed per minute).
4	Inlet speed	· 2 coins/sec (without reversed)
5	Change speed	·6 coins/sec(without reversed)
6	Change delivery Speed	· 1 sec
7	Rejection function	·Coins outside the designated parameters will be rejected via recognition mechanism （will not excluded from coins total quantity)
8	Recognition function	·magnetic sensing mechanism ·recognition rate ≥99.9% ·detection accuracy rate＞99.9%
9	Individual testing function	· function available (A dedicated operation tool can be used when it is not connected)

6.3. Component Specifications

No.	Items	Specifications
1	Coin slot	- Supporting multi-coin insertion; - Supporting uninterrupted coin insertion; - ≥50 coins can be inserted each time approximately .
2	Coin Recognizer	- Electronically detect surface,core metal materials and outer dimensions (diameter and thickness) of the coin, for value and authenticity recognition; - Invalid coins are returned directly.
4	Coin separator	- Using sensor and software to count coins.
5	Change Hopper	- 6 cycling hoppers; - Using rotating disc for coin dispensing; - Outlet speed: >6 coins/sec; - Channels switchover automatically for change and recycling according to the outlet requirements; - Each hopper can hold up to 300 coins (one-yuan), or 500 coins (five-jiao and one-jiao).
6	Change Channel	- Belt clip delivery; - Change speed: > 6 coins/sec; - Counterfeit and unrecognizable coins will be returned to the change channel.
7	Capacity of recycling box	approximately 300 coins (one-yuan), with expandable through external bottom connection.

7、 Interface

7.1. Power supply and communication interface

(1)Specifications：Molex 3901-2161 16-pin female connector

(2)Plug signal instructions

power supply

Plug no.	Signal	Instruction
1	24V	DC power 24V
9	GND	DC power GND
10	GND	DC power GND

Communication

Plug no.	Signal	Instruction
3	TXD	Serial data transmission signal (module side)
4	RXD	Serial data reception signal (module side)
11	GND	Common reference ground for communication
12	GND	Common reference ground for communication

7.2.Communication Specification

Items	Parameters
Communication specifications	RS-232
Communication baud rate	19200 bps
Start bit	1 bit
Data bit	8 bits
Parity Check	Even parity check
Stop bit	1 bit

8、Reliability

8.1 Definitions

(1) Fault

Service cannot be resumed without maintenance operator to take actions for:

component replacement, readjustment, or inspecting and repairing etc.

(2) Coin jam

During the coin processing, the coin stays in certain positions and causes abnormal situations.

(3) Error reporting

To stop the working status which device requires maintenance operator to involve will have error reporting, except for usual coin replenishment/retrieval and power on/off situation.

8.2 Standard

(1) Coin jam rate: less than 1/20,000 coins.

(2) MCBF: ≥ 150,000 times.

(3) MTBF: ≥ 20,000 hours.

(4) MTTR: 30 minutes (including power off/power on time).

(5) Lifespan: 8 years.

Under standard processing conditions, regular maintenance and periodic replacement of parts are required as specified.

The lifespan is calculated based on internal company testing and can be used until a malfunction occurs based on its operating condition.

9、Maintenance

9.1 Regular Maintenance:

The maintenance cycle will depend on the usage situation.

9.2 Components maintenance:

Components warranty and replacement cyclicality will depend on actual usage conditions.