

# **Highway Toll Card Dispensing Module**

# **TIM-007E**

**Technical Manual** 



## 1. Overview

Highway toll card dispensing module TIM-007E is mainly used in highway toll stations and major parking lots to process highway CPC cards. It has the functions of writing card information, issuing cards, recycling, and forgotten recycling. It has the advantages of fast card issuing, large card box capacity, and small module size.

## 2. Size

### 2.1. Module composition

The highway toll card dispensing module TIM-007E consists of two parts: the card box and the card input channel, as shown in the following figure:



Figure 3-1 TIM-007E structure diagram



# 2.2. Dimensions

The dimensions of the highway toll card dispensing module TIM-007E are: length 420×width 92×height 611 (unit: mm)



Figure 3-2 Dimensions of highway toll card dispensing module TIM-007E

# 3. Module Features

• Automatic card preparation

When the sensor detects that there is no card in the read-write area, the card scraping mechanism automatically scrapes the card and prepares it for the read-write area;

• Read and write card information

After receiving the card reading and writing instructions from the upper layer, the information is written to the CPC card in the reading and writing area through the card reader antenna board;

• Quick card issuance

When receiving the card output command from the upper layer, the module quickly sends the card with written information out of the card slot;

• Recycling of damaged cards

When the card information reading and writing fails, the module will automatically recycle the damaged card into the bad card box;



#### • Logging function

The module will automatically record transaction logs to avoid transaction disputes;

• Convenience

The whole machine can use multiple modules to reduce the field failure rate and simple maintenance.

# 4. Technical parameters

# 4.1. Performance parameters

Item		Performance Specifications		
Card Box	Capacity	100 cards (card box capacity can be changed according to demand)		
	Card slot	Single card slot		
Card issuance	Speed	Less than 1 second per card (excluding card preparation and writing time)		
	Delivery	Rubber wheel clamping transmission		
Card	Length	85.5mm±0.5mm		
Specifications	Width	54mm		
	Thickness	5mm±0.2mm		
Detection	Aisle	Photoelectric Sensors		
Environment	Operating temperature	-10°C~50°C		
	Storage temperature	-20°C~60°C		
	Humidity	20%RH~90%RH (Non-condensing)		
Upgrade	Upgrade method	With online download and upgrade function		
Electromagnetic compatibility		Comply with relevant national standards GB/T 17626		

#### Table 6-1 Performance parameters

# 4.2. Electrical technical parameters

Table 6-2 Electrical	technical	parameters
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Item		Specifications
Power supply	Power supply	+24VDC±10%, +4A
Communication	Communication	CAN
interface	Protocol	



# 5. Hardware interface

# 5.1. Power supply and communication interface

Including 24V power input interface, 5V power output interface, CAN communication interface, RS232 communication interface (reserved)



Figure 5-1 Power supply and communication interface

Socket Number	Pin Number	Pin Definition	Describe
	1	24V	24V power input positive
	2	24V	24V power input positive
	3	PGND	24V power input negative pole
	4	PGND	24V power input negative pole
	5	CAN_N	CAN_L
VC1	6	CAN_P	CAN_H
<b>A31</b>	7	UART0_TXD	RS232 serial port transmitter
	8	UART0_RXD	RS232 serial port receiving end
	9	5V	5V power supply output positive
	10	GND	5V power output negative pole
	11	X	None
	12	X	None

# 5.2. Input and output IO interface

It includes 4 input and 4 output interfaces, as follows:





Figure 5-2 Input and output IO interface

Socket Number	Pin Number	Pin Definition	Describe
	1	GND	Grounding
	2	OC_OUT1	OUT1 (5VOr suspended and controlled)
	3	GND	Grounding
	4	OC_OUT2	OUT 2 (5V or floating controlled)
	5	GND	Grounding
	6	OC_OUT3	OUT 3 (5V or floating controlled)
	7	GND	Grounding
VCI	8	OC_OUT4	OUT 4 (5V or floating controlled)
A32	9	GND	Grounding
	10	IN1	IN1 (Internal pull-up 5V)
	11	GND	Grounding
	12	IN2	IN2 (Internal pull-up 5V)
	13	GND	Grounding
	14	IN3	IN3 (Internal pull-up 5V)
	15	GND	Grounding
	16	IN4	IN4 (Internal pull-up 5V)