

Banknote Acceptor

BA-08Z

Technical Manual



1 . Overall

The banknote acceptor BA-08Z is a whole-stack banknote deposit module developed for the fields of retail, transportation, games, recharge and payment. It has banknote recognition and deposit functions. The module has high reliability, ease of use and easy maintenance, and is mainly used in occasions with small amounts of cash transactions, such as retail cash registers, station ticket machines, gaming machines, self-service recharge and payment equipment, parking lot automatic toll collection equipment and other automatic equipment with deposit functions.

2 . Model and meaning

Model: BA-08Z: Available in 1000 notes cash box and 2000 notes cash box configurations, front operation.

Term: BA - Bill Acceptor

3 . Appearance and composition

3.1 Overall appearance



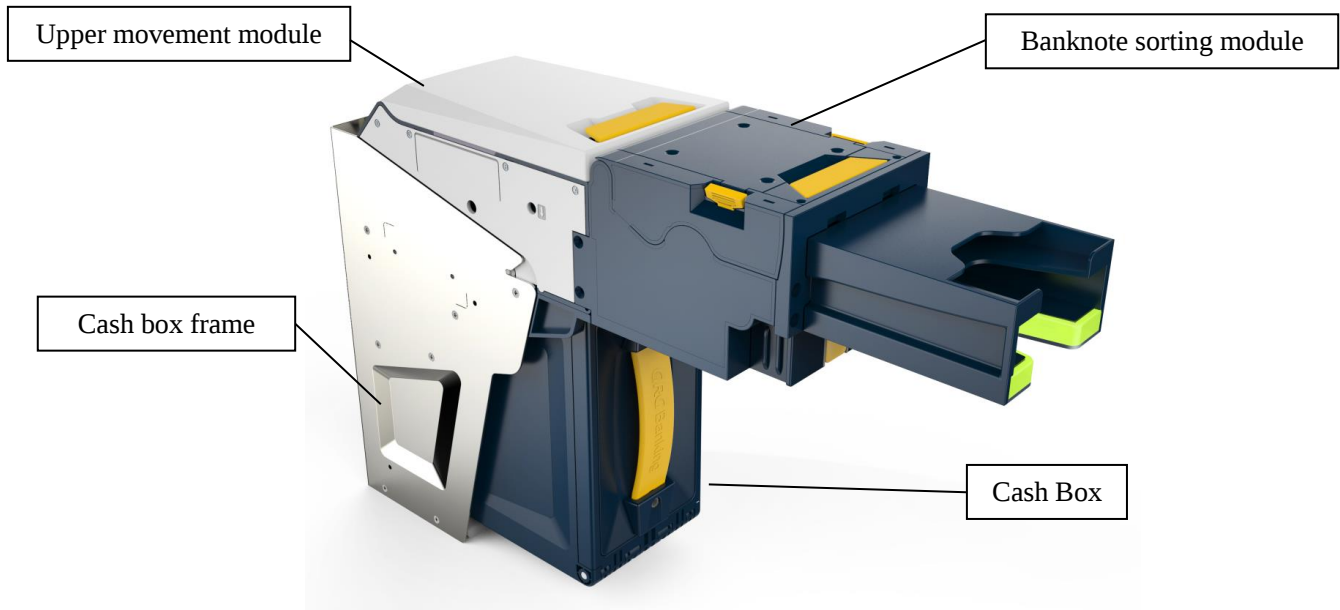
1000 notes



2000 notes

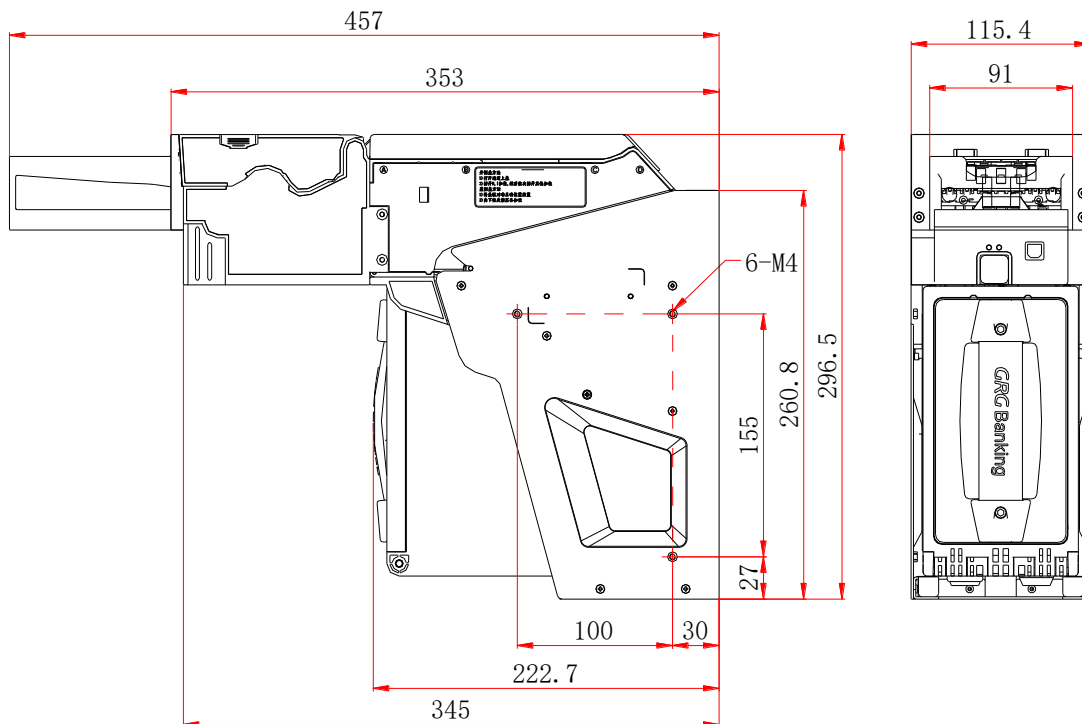
3.2 Module composition

The banknote acceptor BA-08Z consists of four parts: the banknote sorting module, the upper module, the cash box, and the cash box frame, as shown in the following figure:

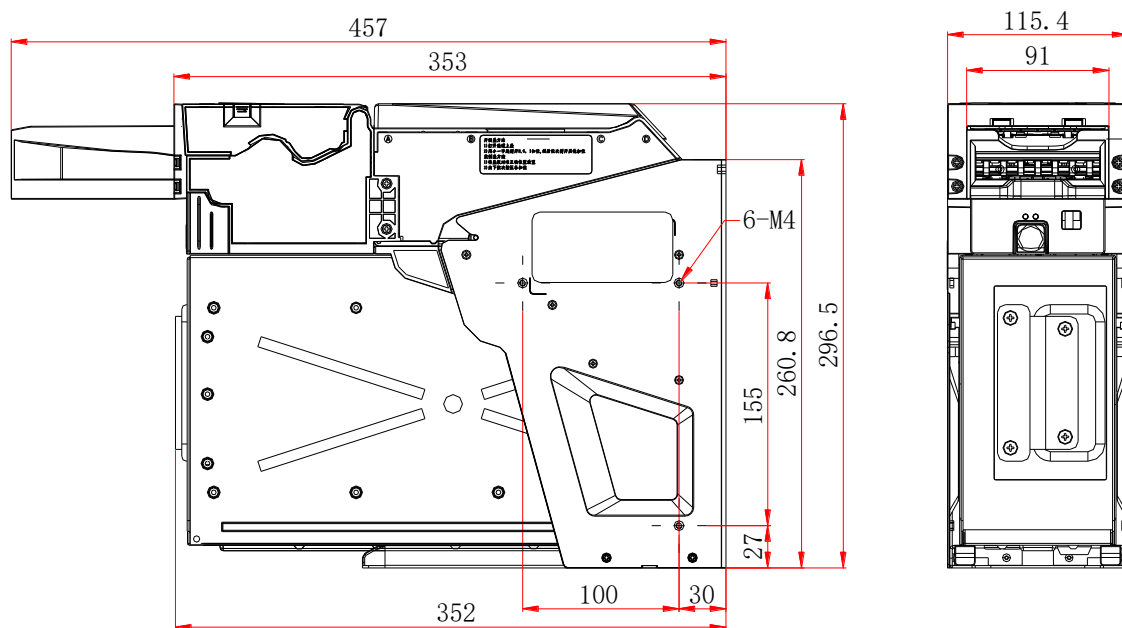


3.3 Dimensions

1) BA-08Z, 1000 notes Cash box configuration: (unit: mm)



2) BA-08Z, 2000 notes Cash box configuration: (unit: mm)



4 Module Features

Upper module:

- Universal entrance indicator lights for easy use
- Fast banknote reception, the interval between two banknotes is about 2.5 seconds
- The channel uses 2 pairs of special belts for banknote conveying to clamp banknotes throughout the whole process and convey them accurately
- Closed channel to avoid dust interference and reduce maintenance
- Highly compact structure, reducing space occupation
- No tools are required to remove the stuck banknotes on site
- Modular design, can be disassembled independently
- Industrial-grade electronic components, adaptable to various harsh environments such as high and low temperatures, high humidity, etc.
- Support software online upgrade

Anti-counterfeiting design:

- Three-line anti-counterfeiting technology, up to 40,000 identification scanning points per banknote
- Multi-spectral full-width image scanning (CIS technology) and multi-channel magnetic signal detection, high-security banknote recognition
- Specially designed for the domestic banknote usage environment and characteristics (many counterfeit banknotes, poor quality banknotes)

Deposit cash box:

- High strength composite material, safe cash box with double lock design (optional)
- Independent removable cash box, no electrical connection, high reliability
- With a perspective observation mirror, you can observe the denomination and status of the last banknote without opening the cash box
- Modular design, can be disassembled independently

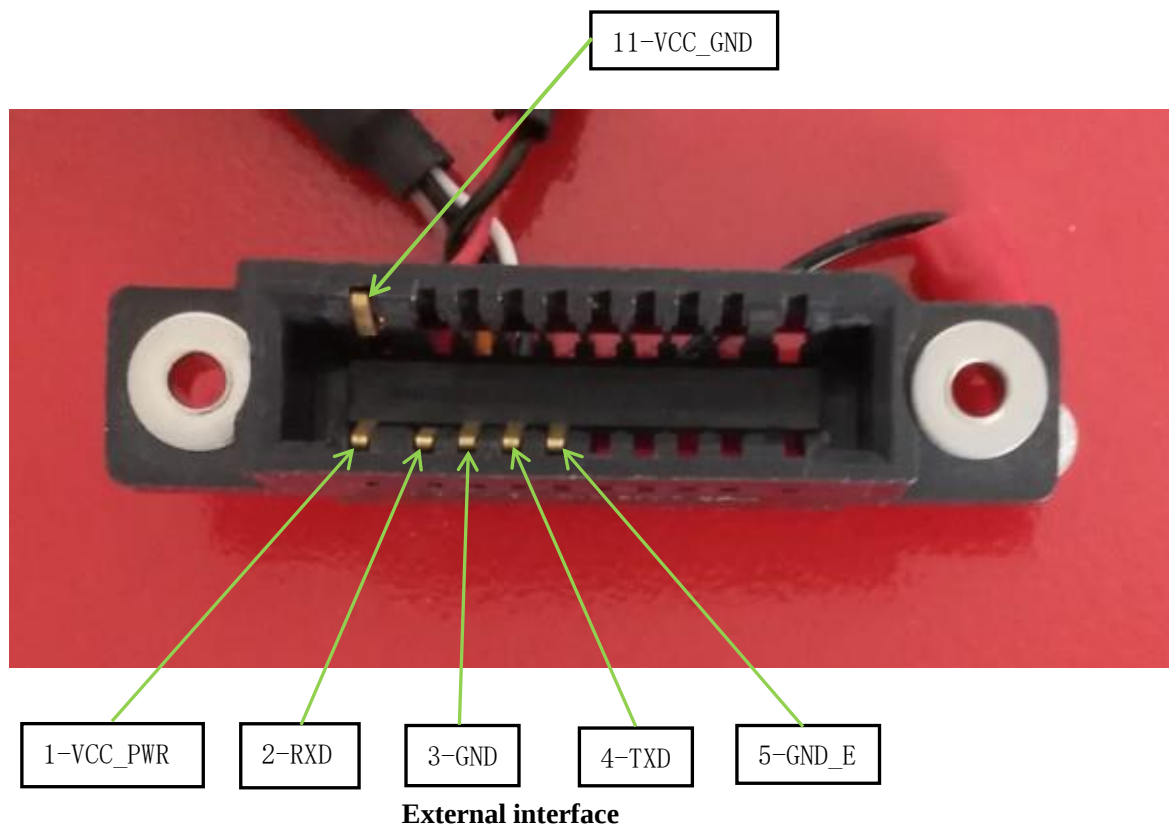
5 Technical Parameters

5.1 Performance parameters

Item		Performance Specifications
Cash in	Cash input direction	Vertical banknote feeding
	Specific orientation	Unlimited
Identify	Currency	Can support 100 different denominations of banknotes (one or more countries) at the same time, see the appendix for details
	Material	Paper, plastic-based (polymer)
	Real banknote acceptance rate	≥99% (70% new or above, no damage, stain or wrinkles)
	Banknote size	Length range: 120~168 mm; width range: 60~85 mm.
Detection Methods	Optics	Multispectral full-frame image sensor (CIS), approximately 40,000 scanning points per banknote
	Magnetic	Multi-channel magnetic sensor detection
Speed	Channel transmission speed	0.6m/s
	Receiving speed	About 2.5 seconds/note
Capacity	Escrow quantity	1 note
	Cash box capacity	1000 notes(Length 220×Height 185×Width 100), 2000 notes(Length 350.5×Height 191.2×Width 100)
Environment	Operating temperature	0°C~45°C
	Storage temperature	-20°C~60°C
	Humidity	20%RH~90%RH (Non-condensing)
Upgrade	Upgrade method	Support online upgrade
Weight	Complete Machine	1000 notes configuration 5.3kg; 2000 notes configuration 7.4kg, optional
	Deposit box (empty box)	1000 notes cash box 1.2kg ; 2000 notes cash box 3.1kg, optional
Electromagnetic compatibility		Comply with relevant national standards GB/T 17626

5.2 Electrical technical parameters

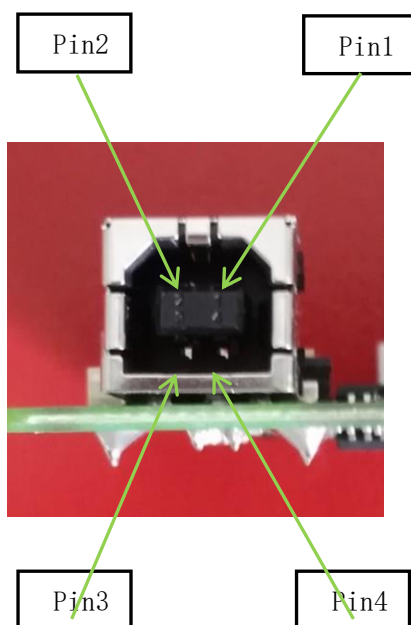
Item	Specifications
Power interface	+24V $\pm$ 10% +5A
USB interface	USB2.0 Device Type A plug (spare)
UART Serial Port	RS232: Three-wire system(RXD, TXD, GND) Baud rate: 19200 bps Inspection method: No inspection Communication parameters: data bit: 8 bits, start bit: 1 bit, stop bit: 1 bit
Input	Not supported yet
Output	Not supported yet
NetPlex Communication Port	Not supported yet
CCTalk communication port	Not supported yet



Pins	Definition	Pins	Definition
1	Power supply +12V	11	Power Ground
2	PC_RXD RS23 receiving pin on PC side	12	GND Signal Ground
3	GND Signal Ground	13	S_IN Signal input pin
4	PC_TXD RS232 transmitter pin on PC	14	GND Signal Ground
5	GND signal Ground	15	OC_OUT1 Open collector output 1
6	CCTALK CCTALK Communication signal line	16	OC_OUT2 Open collector output 2
7	USB_5V USB5V Power pin	17	NetPlex_VCC NetPlex Communication power supply
8	USB_D+ USB Data Bus D+	18	NetPlex_TX NetPlex Newsletter sending
9	USB_D- USB Data Bus D-	19	NetPlex_GND NetPlex Communication Ground
10	GND Signal Ground	20	NetPlex_RX NetPlex Communication reception

5.3 USB Interface Description (Backup)

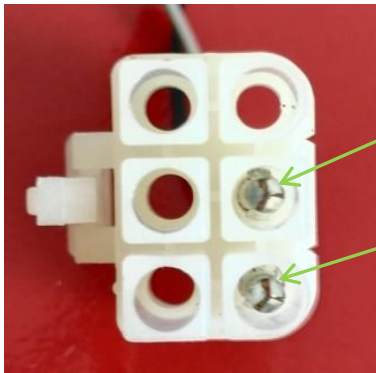
USB(stdB), Movement end(As shown below)



Pin Number	Electrical Characteristics
Pin1	+5V
Pin2	Data-
Pin3	Data+
Pin4	SG

5.4 Power interface

Movement external power interface(As shown below)



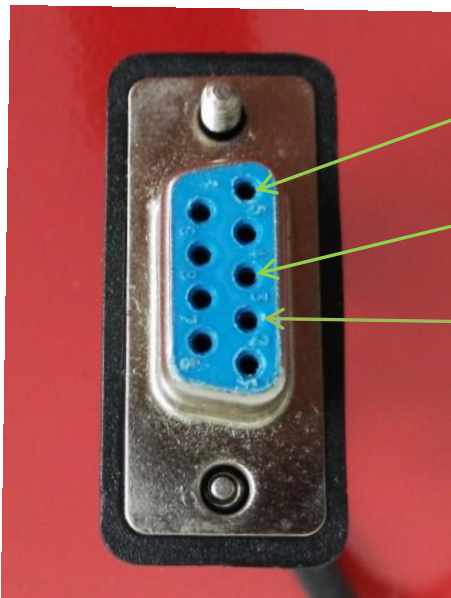
Pin2

Pin1

Pin Number	Electrical Characteristics
Pin1	+24V
Pin2	GND

5.5 Serial Port Interface

The external serial interface of the movement (see the figure below)



Pin5

Pin3

Pin2

Pin Number	Electrical Characteristics
Pin2	RXD
Pin3	TXD
Pin5	GND

6 Appendix

6.1 BA-08Z Currency Support Table

Note: All banknotes without special instructions on the paper material are paper money.

1) Par value and versions supported by RMB

Currency	Par value	Year of release
Currency (CNY)	1 Yuan	1999
	5 Yuan	2005, 1999
	10 Yuan	2005, 1999
	20 Yuan	2005, 1999
	50 Yuan	2005, 1999
	100 Yuan	2015, 2005, 1999

2) Par value and versions supported by Eur

Currency	Par value	Year of release
EUR	5 Eur	2002,2013
	10 Eur	2002,2014
	20 Eur	2002,2015
	50 Eur	2002
	100 Eur	2002
	200 Eur	2002
	500 Eur	2002

3) Par value and versions supported by Hong Kong Dollar

Currency	Par value	Year of release
Hong Kong Dollar (HKD)	10 HKD	2007 Paper money, polymer money
	20 HKD	2003, 2010 HSBC, 2003, 2010 Standard Chartered Bank 2003, 2010 Bank of China
	50 HKD	2003, 2010 HSBC, 2003, 2010 Standard Chartered Bank 2003, 2010 Bank of China
	100 HKD	003,2010 HSBC, 2003,2010 Standard Chartered Bank 2003,2010 Bank of China
	500 HKD	003,2010 HSBC, 2003,2010 Standard Chartered Bank 2003,2010 Bank of China
	1000 HKD	003,2010 HSBC, 2003,2010 Standard Chartered Bank 2003, 2010 Bank of China

4) Par value and versions supported by Indonesian Rupiah

Currency	Par value	Year of release
Indonesian Rupiah(IDR)	1K	2000
	2K	2009
	5K	2001
	10K	2005, 2010
	20K	2004, 2011
	50K	2005, 2011
	100K	2009, 2011, 2014

5) Par value and versions supported by Malaysian Ringgit

Currency	Par value	Year of release
Malaysian Ringgit(MRY)	1 Ringgit	2000, 2011
	5 Ringgit	2004, 2011
	10 Ringgit	2004, 2011
	20 Ringgit	2011
	50 Ringgit	2009
	100 Ringgit	2001, 2011

6) Par value and versions supported by Singapore Dollar

Currency	Par value	Year of release
Singapore Dollar(SGD)	1 S\$	1999
	5 S\$	1999
	10 S\$	1999
	20 S\$	1999
	50 S\$	1999
	100 S\$	1999

7) Par value and versions supported by Thai Baht

Currency	Par value	Year of release
Thai Baht(THB)	20THB	2004
	50THB	2004
	100THB	2005
	500THB	2001

8) Par value and versions supported by South African Rupee

Currency	Par value	Year of release
South African Rupee(ZAR)	10	2005, 2012
	20	2005, 2012
	50	2005, 2012
	100	2005, 2012
	200	2005, 2012