METRIA

Balance printer, Metria

Please read the User Manual carefully before use and follow all operating and safety instructions!

User Manual

english

1 Overview

The Printer balance of Metria features a compact, fully enclosed design with easy paper loading. Despite its small size, it offers a large paper roll capacity (up to Ø50mm). With a stylish appearance, lightweight structure, and high-speed, clear printing, it is ideal for various industries including medical, firefighting, utilities, banking, weighing systems, and GPS applications.

1.1 Main performance index

Printing performance	Model number	BAAC-PRI-001
	Printing method	Thermal printing
	Printing speed	65mm/s（MAX）
	Resolution	8dot/mm，384dot/line
	Effective printing width	48mm
	Feeding step	0.125mm
	Western character	1.support standard ASCII characters (96): 5×7， 2.Support extended ASCII characters (352): 6×8， 3.support standard ASCII characters (224): 12×24， 4.support standard ASCII characters (224): 8×16 ASCII Character 12x24,8X16,8X12 can be selected.
	Chinese Character	Standard 24x24 dot matrix GBK Character (Support Around 20,000Kanji and rare Character printing)
Detection method	Out of paper detection	YES
	Pressure detection	yes
Control system	Interface	Parallel interface:DB25 Pin Serial Port:DB9 socket 485 port: DB9 Socket USB Interface: USB square
	Buffer	2k/64K
	Command system	ESC/P Printing command，Compatible with IBM/EPSON ESC/P.
	Driver	WIN2000/NT/XP/WIN7
Power	Working pressure	DC12V
	Working current	2 A
Reliability	Mechanism working life	50km
paper	Normal thermal paper	Dia≤Φ50mm.
	thermal label with gum	Outer dia≤Φ50mm, label paper thickness<=0.12mm
	Paper loading method	Easy paper loading structure
	Paper cutting method	Manual paper tearing
Physical property	Operating temperature range/Humidity	-10～55℃/10～80%RH
	Storage temperature range/Humidity	-20～60℃/10～90%RH
	Weight (Including printing paper)	About 185 g
	Outlook dimension（mm）	145×109×73 (L x W x H)

1.2 Power connector

Equipped with 12V/2.6A Power adapter，Input voltage range AC110-AC240V, Out pressure is DC12V，Plug adopts DC2.0 type。

1.3 Operation (Single button operation)

1.3.1 Indicator

Power light

POWER indicator light: with the word 'POWER' under it. When power on the printer, the indicator light brightens (red) for long

Lack of paper indicator light: with the word 'PAPER' under it. When there is no paper in the paper storehouse, the light will flicker (green) to indicate the lack of paper.

1.3.2 Operation button

Paper feeding button

Press the indicator button and make printer feed paper one line; keep pressing the indicator light and continuous paper feeding.

1.3.3 Operation

1. Self-test: Connect the power adapter, keep and press the button, turn the left switch to"-", power on about 2 seconds, the printer starts self-test.
2. Paper loading：

2.1 Open printer cover

2.2 Put the printing paper into the storage warehouse, smoothly upside, come out around 2mm paper end.

2.3 Close the paper cover, press the paper and the paper change is finished.

3. Paper feeding: press button under power up stat us.
4. Paper Identification Operation

Thermal paper &label paper switch need following operation.

1. Out of paper status, keep pressing the button for around 2 seconds.
2. When the indicator flash fast, put the paper into the printer, and cover it.
3. Then the printer will feed paper atomically to finish the paper test operation.

2. Communication interface

2.1 Serial port

The BAAC-PRI-001 printer uses the standard DB-9-hole socket, which can directly connect with the PC machine. The printer is equipped with six DIP switches at the same time and through the combination of the DIP switches, the users can set the printer communication baud rate and flow control way etc. (Figure 3.1 is the communication interface, and Figure 3.2 is the DIP switch figure).

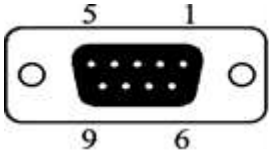


Figure 3.1

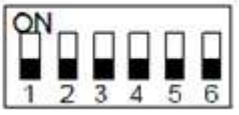


Figure 3.2

2.1.1 Data Interface

DB-9 Hole Socket	SIGNAL	Source	Direction	Illustration
——	——	——	——	——
3	TXD	Mainframe	input	The printer receives the data from the main computer. (TRANSMIT DATA)
2	RXD	Printer	Output	When using the 'X-ON/X-OFF' Handshake Protocol, the printer sends control code 'X-ON/X-OFF' to the computer. (RECEIVE DATA)
6，8	CTS	Printer	Output	When the signal is in a state of 'MARK', it means that the printer is busy and can't receive data. But when the signal is in a state of 'SPACE', it means that the printer is ready to receive data.
5	GND	——	——	Signal ground

Matters need attention:
1. The mainframe and printer in the item 'signal source' mean the source of the signal sending out.
2. The signal logic level is RS232 level.

2.1.2 Baud rate select bit

SW NO.	1200	2400	4800	9600	19200	38400	57600	115200
1	off	on	off	on	off	on	off	on
2	off	off	on	on	off	off	on	on
3	off	off	off	off	on	on	on	on

2.1.3 Handshake method select bit

There are two kinds of Handshake method select bit: One is the mark control mode; another is the X-ON/X-OFF Protocol method. It can be selected by DIP switch SW4. The mode is K4=OFF when out of factory. Two kinds of handshake method are as follows:

SW4	Handshake method	Data direction	RS-232 interface signal
ON	Mark Control	Data can enter	The signal line '4' is in a state of 'SPACE'
		Data can't enter	The signal line '4' is in a state of 'mark'
OFF	X-ON/X-OFF Control	Data can enter	The signal line '2'send out the X-ON code '11H'
		Data can't enter	The signal line '2'send out the X-OFF code '13H'

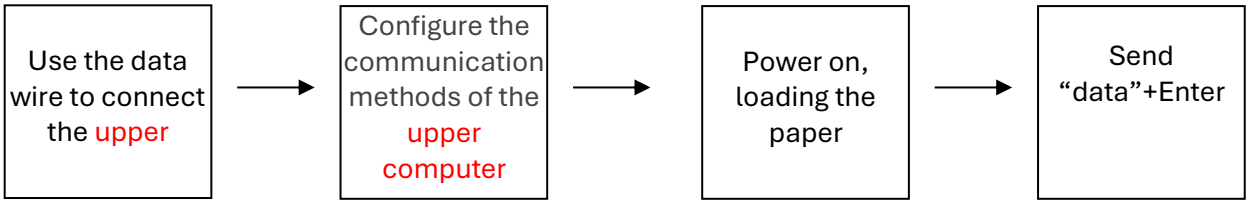
2.1.4 Parity bit selection

SW5	SW6	Illustration
ON	ON	8 data bits, No parity
ON	OFF	8 data bits， odd parity Check
OFF	ON	8 data bits, even parity check
OFF	OFF	7data bits, even parity check

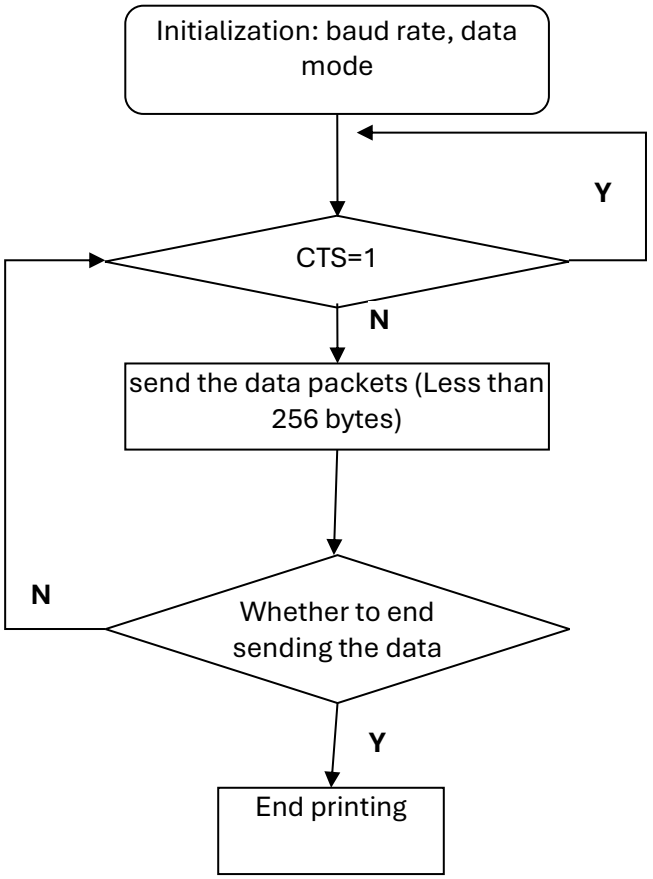
2.1.5 Data transmission method of serial interface

The receiving buffer of the printer is 32K

1. When the number of sending data once is less than 2K, the data can be directly sent. And the sending method is as follows:

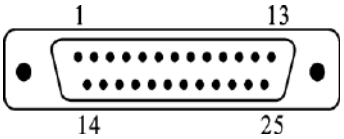


2. If large amounts of data once are sent, need to judge the mark 'CTS' when sending the data. When the mark is '1', the data can't be sent. When the mark is '0', the data can be sent. Data can be sent in the form of packets or byte. When the data is sent in the form of packets, each data packet can't exceed 256 bytes, and the sending flowchart is as follows:



2.2 Parallel interface

The BAAC-PRI-001 parallel interface printer uses DB-25pin needle socket as the communication interface.



2.2.1 data interface

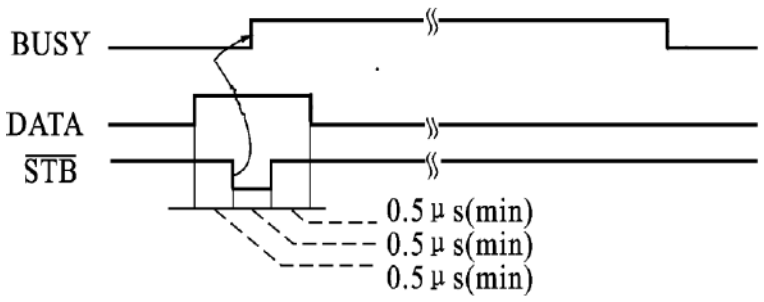
DB-25pin socket (pin NO.)	**Signal name**	**Signal direction**	**Illustration**	**DB25** parallel interface wire on the PC (pin NO.)
1	STB/	In	Data gate trigger pulse, read in data	1
2	DATA1	In	8 data pins, the logic '0' indicates low, 1' indicates high	2
3	DATA2	In		3
4	DATA3	In		4
5	DATA4	In		5
6	DATA5	In		6
7	DATA6	In		7
8	DATA7	In		8
9	DATA8	In		9
10	ACK/	Out	Answer pulse, and "Low" level indicates that the data has been accepted	10
11	BUSY	Out	"High" level	11

			indicates that the printer is busy and can't receive data	
12	PE	——	Grounding (PERROR)	——
13	SEL	Out	High level indicates that printer is online	13
15	ERR/	Out	High level indicates that no fault	15
14,16,17	NC	——	No connection	——
18～25	GND	——	Signal ground	12、25

Note:
1. The mainframe and printer in the item 'signal source' mean the source of the signal sending out
2. The signal logic level is EIA level.

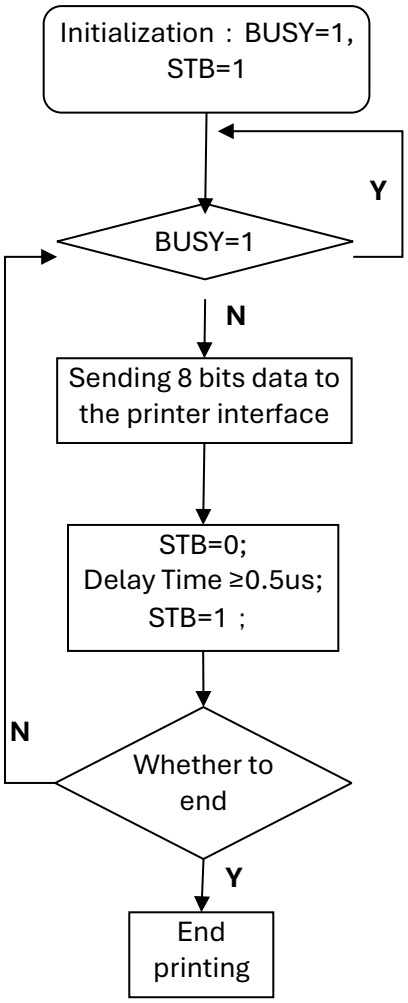
2.2.2 Parallel interface data transmission method

Using parallel interface to send data is relatively more trouble than using serial interface, because using parallel interface to send data needs the cooperation of the 'STB', 'BUSY' AND 'DATA' data wires. The following diagram is a timing diagram about using a parallel interface to send one byte.



Sending step：

- Step 1: using the appropriate data wire connects the printer to PC
- Step 2: power on the printer and load the printing paper
- Step 3: Begin to transmit data and the flow chart is as follows:



2.3 USB interface

USB is an external bus standard for the specification of computer and external device connectivity and communications. USB interface support equipment features plug-and-play and hot-swappable.
The RD-TS-USB printer does not need to install the interface driver. After connecting the printer's USB port, generate ~~an~~a USB printer device on the "Universal Serial Bus" of the "Device Manager", and generate a "USB001" USB port in the system. Then, select the port in the program for printing control.

2.4 Bluetooth interface

Bluetooth interface of the RD-TS-BL printer is a radio technology to support for short distance (usually within 10m) communication between devices. Information can be exchanged between many devices such as the mobile phone, PDAs, wireless headsets, laptops, peripherals and other related external equipment. Bluetooth standard is IEEE802.15, and operates in the 2.4GHz frequency band, and the bandwidth is 1Mb / s. Before using the Bluetooth interface to print, the printer needs to match with the mainframe. And the pairing process is initiated by the mainframe.

Setting method is as follows ：

1. RD Bluetooth printer can be found and searched when the printer is in the boot state. After 10 minutes the printer enters the standby state. Search again and need to re- open the printer.
2. When the mainframe is searching for external Bluetooth devices, the device is a Bluetooth printer if finding a ‘RDTSB’ Bluetooth device.
3. Select the ‘RDTSB’ printer.
4. Input the password "0000"
5. Complete the pairing.

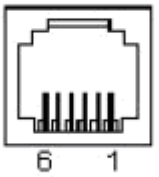
After completing the pairing, the user can operate the printer according to the port, which is mapped in the mainframe by the current Bluetooth devices.
If using a laptop, SMARTPHONE mobile phones, POCKET PC, PALM and other mainframe having virtual Bluetooth serial port, you can send the printing data to the TR2 printer through the virtual Bluetooth serial port. If the host does not have a virtual Bluetooth serial port, the company can provide the host Bluetooth module accessories.

2.5 Power interface

The plug is round socket, voltage is DC12V, Current ≧2A

2.6 Cashing drawer interface

R Using the RJ11 6pin socket interface:



Pin Definition is as follows:

Pin No.	signal	direction
1	GND	--
2	Cashbox drive signal 1	Output
3	The on-off state signal of the cashbox	Input
4	+12V---24V	--
5	NC	--
6	GND	--

Note: Not allowed to connect unmatched cash drawer, or it will damage the printer and cashing drawer, not allowed to connect telephone cable into the cash drawer, or it will damage the printer.

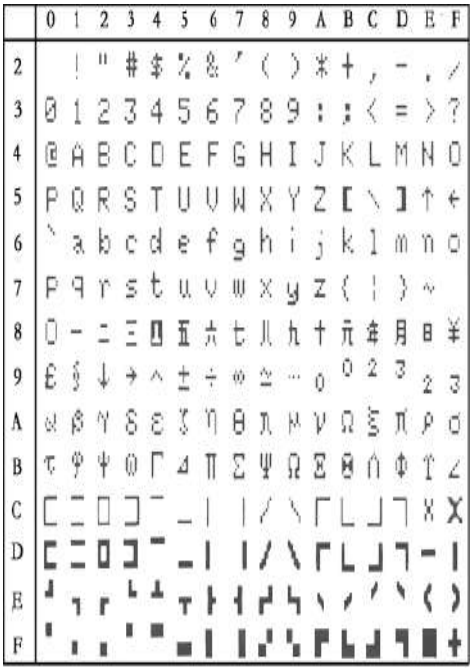
3.Maintenance and troubleshooting

To ensure the printer works normally, particularly note that we don't optionally remove the print head and do not make changes to the printer through ourselves. For users not using the printer shell, more particularly note protecting the printing head.

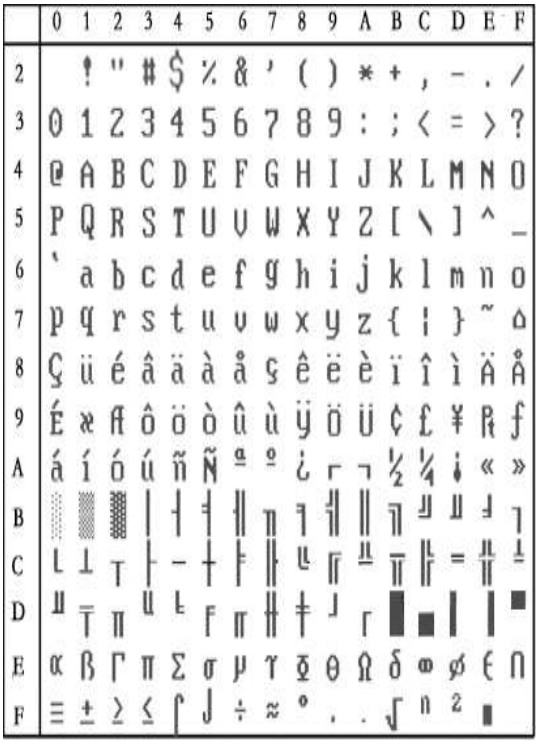
1. If the printer is not used for a long time, we do not turn on the printer power.
2. If the printer is not working properly, please turn off the printer's power.
3. Power supply must meet the requirements, or it is unfavorable for the printing head, and even damages the printing head.
4. When replacing the paper roll, please note whether there are paper scraps and dust on the printing head. If having paper scraps and dust, please gently remove. Note the thermal paper's obverse and reverse side, and if the reverse side is uncoated, the printer can‘t print out the handwriting.
5. When the printer is printing or paper feeding, we can't tear the paper, and can't more reversely drag the paper
6. Keep the printer control panel clean
7. When thermal printer prints unclearly, we can use the clean cotton ball soaked in some alcohol to gently wipe the surface dirt on the print head chip heating element.
8. When we connect the printer to the host, we should connect the printer data cable and then power on the printer.
9. To choose a good quality paper when we select the paper for the thermal printer can not only improve the printing quality but also reduce the abrasion for thermal film.

Appendix:

a) Character set 1.2



b) International Standard ASCII



Nota importante para los aparatos electrónicos vendidos en España

Instrucciones sobre la protección del medio ambiente y la eliminación de aparatos electrónicos:

Los aparatos eléctricos y electrónicos marcados con este símbolo no pueden ser eliminados en forma de residuos urbanos.

De conformidad con la Directiva 2012/19/UE, los usuarios de la Unión Europea de aparatos eléctricos y electrónicos, tienen la posibilidad de devolver sus RAEE para su eliminación al distribuidor o fabricante del equipo después de la compra de uno nuevo. La eliminación ilegal de aparatos eléctricos y electrónicos es castigada con multa administrativa.

Remarque importante pour les appareils électroniques vendus en France

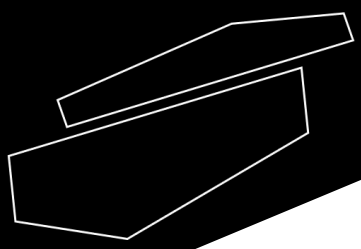
Informations sur la protection du milieu environnemental et élimination des déchets électroniques :

Les appareils électriques et électroniques portant ce symbole ne peuvent pas être jetés dans les décharges.
En réponse à la règlementation, Labbox remplit ses obligations relatives à la fin de vie des équipements électriques de laboratoire qu'il met sur le marché en finançant la filière de recyclage de ecosystem dédiée aux DEEE Pro qui les reprend gratuitement (plus d'informations sur www.ecosystem.eco).
L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.

Nota importante per le apparecchiature elettroniche vendute in Italia

Istruzioni sulla protezione ambientale e sullo smaltimento dei dispositivi elettronici:

Le apparecchiature elettriche ed elettroniche contrassegnate con questo simbolo non possono essere smaltite come rifiuti urbani.
In conformità con la Direttiva 2012/19 / UE, gli utenti dell'Unione Europea di apparecchiature elettriche ed elettroniche hanno la possibilità di restituire i propri RAEE per lo smaltimento al distributore o al produttore di apparecchiature dopo averne acquistato uno nuovo. La rimozione illegale di apparecchiature elettriche ed elettroniche è punibile con una sanzione amministrativa.



www.labbox.com