



*Brilliant Technology Co.*

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# Genius 7R Bill Acceptor

## RTN User's Manual



*Brilliant Technology Co.*

11240 Robin Park Ave., Las Vegas, NV 89138, USA  
深圳市福田区红荔西路 7002-2 第一世界广场 A 座 10 楼 B1

@2023/01



## A、Features :

- 1、Four ways Acceptance
- 2、Accept multiple Bill width
- 3、High speed, High resolution import Sensors
- 4、Light weight and Quite system Design
- 5、High speed Bill transportation system
- 6、Dimensions : 131.9mm(H) X 95.5mm(W) X 81.5mm(D)
- 7、Power Supply : DC 12V +/- 10%
- 8、Low Power Consumption, Low Standby current
- 9、Firmware and Data Upload Box or On Line Upload
- 10、Patent Optical Recognition, Multiple Wave length, Anti-Fishing, Jam less
- 11、Real time Bill detector in all modes
- 12、Support Up and Downward installation

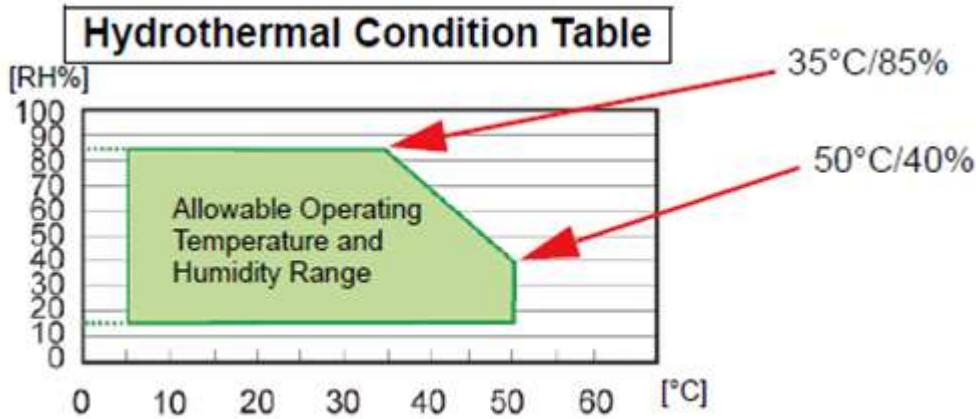
## B、 Specifications :

|                     |                                       |
|---------------------|---------------------------------------|
| Bill Validation     | Worldwide major bank notes            |
| Validation time     | < 1 Sec.                              |
| Insertion direction | 4 directions                          |
| Maximum Width       | 73 mm                                 |
| Validation Rate     | >98%                                  |
| Acceptance Rate     | >98 %                                 |
| Firmware upgrade    | Upload Online                         |
| Dimension           | 131.9mm (H) X 95.5mm (W) X 81.5mm (D) |
| Weight              | 300g                                  |

Note: Except dirty, wet, broken or wrinkled notes. (Used in market)

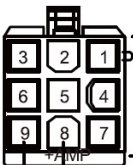
## C、 Electrical :

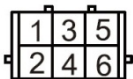
|                       |                                |
|-----------------------|--------------------------------|
| Operation voltage     | DC 12V+/- 10%                  |
| Operation current     | < 1A max.                      |
| Standby current       | < 10mA                         |
| Operation temperature | 0°C to +60°C (41°F to 140°F)   |
| Storage temperature   | -20°C to +70°C (-4°F to 158°F) |
| Operation humidity    | 15% to 85% RH (non-condensed)  |
| Storage humidity      | 15% to 85% RH (non-condensed)  |
|                       |                                |



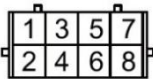
## D、Wire Hardness

### 1. Power : 12VDC Power+ Pulse wire

|                                                                                                                 |       |              |                    |
|-----------------------------------------------------------------------------------------------------------------|-------|--------------|--------------------|
| <br>AMP 172340-1<br>Back View | PIN 1 | Yellow ..... | Inhibit+           |
|                                                                                                                 | PIN 2 | Green .....  | Inhibit-           |
|                                                                                                                 | PIN 5 | Red .....    | +12VDC             |
|                                                                                                                 | PIN 7 | Blue .....   | Credit Relay (NO)  |
|                                                                                                                 | PIN 8 | Purple ..... | Credit Relay (COM) |
|                                                                                                                 | PIN 9 | Orange ..... | GND                |

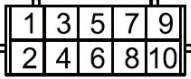
|                                                                                                                          |       |              |                    |
|--------------------------------------------------------------------------------------------------------------------------|-------|--------------|--------------------|
| <br>JST PHD 2.0 mm<br>2 x 3 Back View | PIN 1 | Orange ..... | GND                |
|                                                                                                                          | PIN 2 | Red .....    | +12VDC             |
|                                                                                                                          | PIN 3 | Green .....  | Inhibit-           |
|                                                                                                                          | PIN 4 | Yellow ..... | Inhibit+           |
|                                                                                                                          | PIN 5 | Purple ..... | Credit Relay (COM) |
|                                                                                                                          | PIN 6 | Blue .....   | Credit Relay (NO)  |

### 2. COMMUNICATION RS-232 TTL : Serial Bus

|                                                                                                                          |       |       |           |
|--------------------------------------------------------------------------------------------------------------------------|-------|-------|-----------|
| <br>JST PHD 2.0 mm<br>2 x 4 Back View | PIN 1 | ..... | RESERVED  |
|                                                                                                                          | PIN 2 | ..... | GND       |
|                                                                                                                          | PIN 3 | ..... | RESERVED  |
|                                                                                                                          | PIN 4 | ..... | RESERVED  |
|                                                                                                                          | PIN 5 | ..... | VDD +3.3V |
|                                                                                                                          | PIN 6 | ..... | RESET     |
|                                                                                                                          | PIN 7 | ..... | TXD       |
|                                                                                                                          | PIN 8 | ..... | RXD       |



## PROG and JTAG Upload

|                                                                                                                        |       |                 |
|------------------------------------------------------------------------------------------------------------------------|-------|-----------------|
| <br>JST PHD 2.0 mm<br>2 x 5 Back View | PIN 1 | ..... JTCK      |
|                                                                                                                        | PIN 2 | ..... JTMS      |
|                                                                                                                        | PIN 3 | ..... JTDO      |
|                                                                                                                        | PIN 4 | ..... GND       |
|                                                                                                                        | PIN 5 | ..... NC        |
|                                                                                                                        | PIN 6 | ..... JTDI      |
|                                                                                                                        | PIN 7 | ..... VDD +3.3V |
|                                                                                                                        | PIN 8 | ..... NJTRST    |
|                                                                                                                        | PIN 9 | ..... TXD2      |
|                                                                                                                        | PIN10 | ..... RXD2      |

### 3. 6 PIN Power Connection and 8 PIN Data Connection.

| POWER                | Pin No. |  |  |
|----------------------|---------|--|--|
| CREDIT RELAY(COMMON) | 1       |  |  |
| CREDIT RELAY(N.O)    | 2       |  |  |
| INHIBIT-             | 3       |  |  |
| INHIBIT+             | 4       |  |  |
| GROUND               | 5       |  |  |
| POWER (+12V)         | 6       |  |  |
|                      |         |  |  |
| COMMUNICATION        | Pin No. |  |  |
| RS-232 TXD TTL       | 1       |  |  |
| RS-232 RXD TTL       | 2       |  |  |
| VDD +3.3V            | 3       |  |  |
| RESET                | 4       |  |  |
| RESERVED             | 5       |  |  |
| RESERVED             | 6       |  |  |
| RESERVED             | 7       |  |  |
| GROUND               | 8       |  |  |



## E、Installation

### In/Out circuit

(1) Pulse Interface connection, See figure 1、 2.

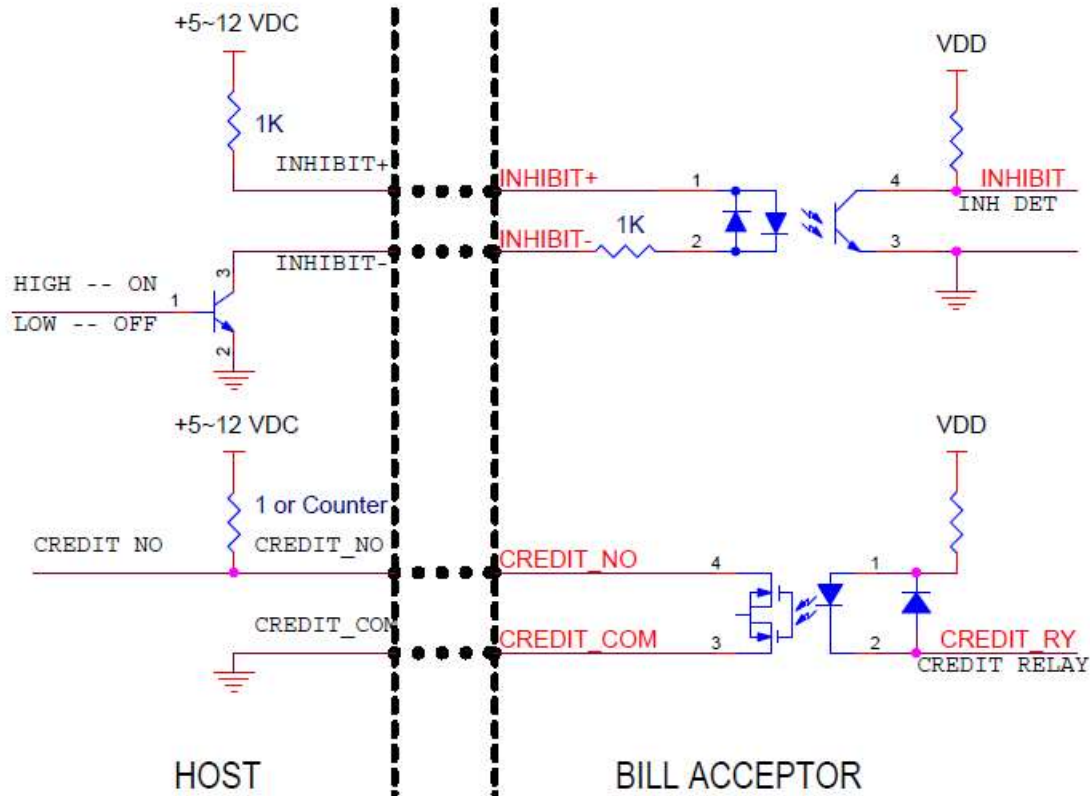


Figure 1.

| FUNCTION | DIP SW SETTING     |      | CONTROL |
|----------|--------------------|------|---------|
| INHIBIT  | IINHIBIT<br>ACTIVE | LOW  | LOW     |
|          |                    | HIGH | HIGH    |
| ENABLE   | INHIBIT<br>ACTIVE  | LOW  | HIGH    |
|          |                    | HIGH | LOW     |

Figure 2.



(2) TTL Interface, See figure 3、4.

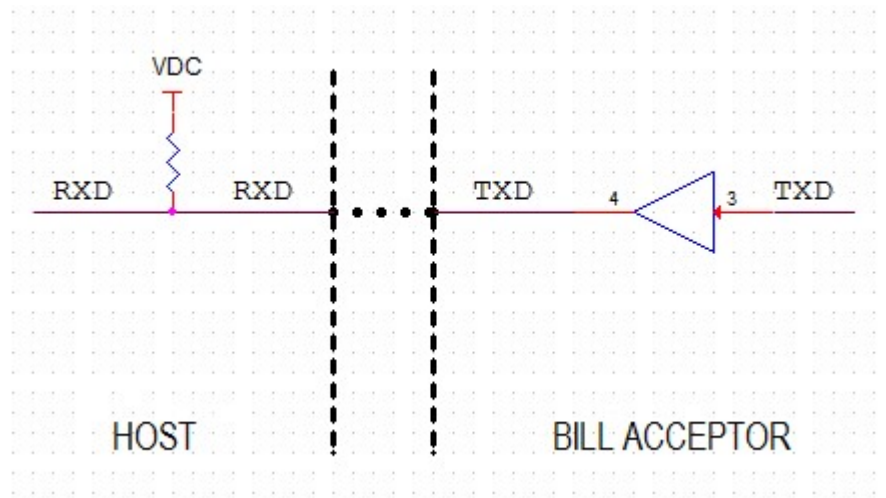


Figure 3.

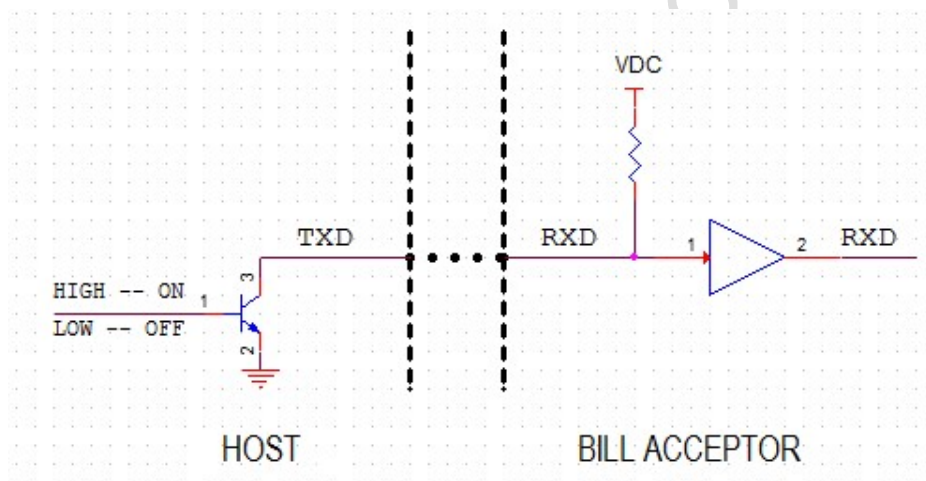


Figure 4.



(3) ccTalk Interface, See figure 5

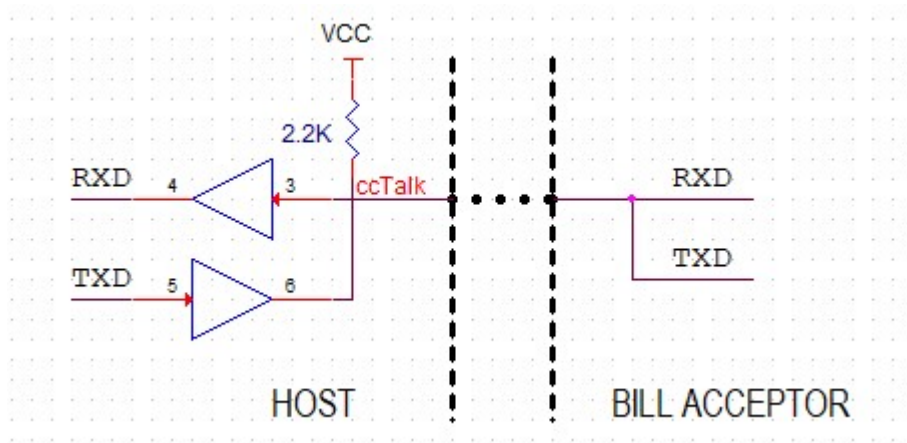
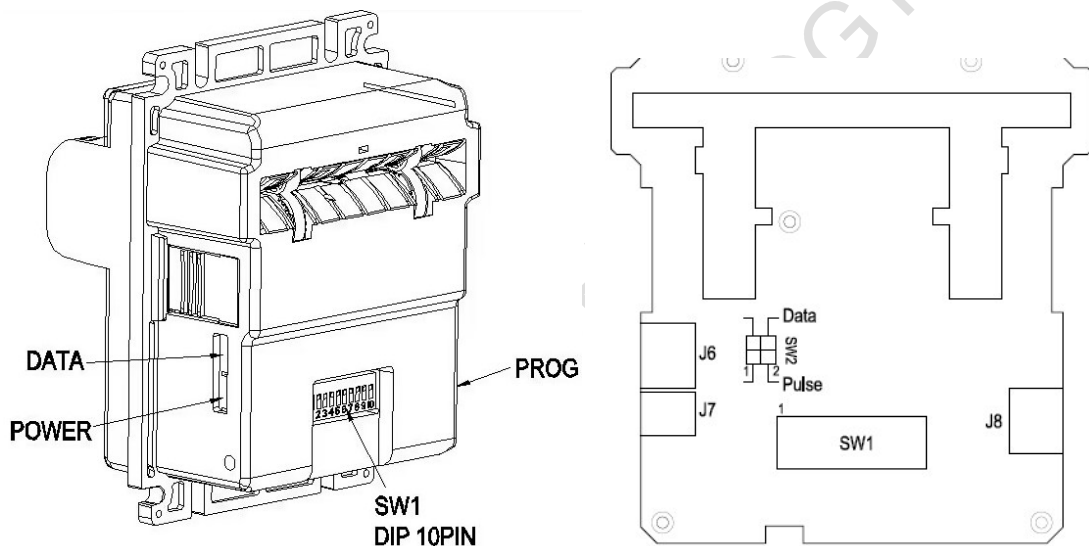


Figure 5



## Genius7R DIP SWITCH SETTING

There are two setting DIP switches, SW1 is a 10p DIP switch located in the back, SW2 is on the PCB inside of the unit.

Open back cover, SW2#2 in “UP”, set the unit in Data mode (RS-232 TTL), turn it in “DOWN” position will set to Pulse mode.

| FUNCTION                       | SW#1 | SW#2 |
|--------------------------------|------|------|
| Data Mode (RS232, ccTalk)      | X    | On   |
| Pulse Mode (Anti-Interference) | On   | Off  |
| Pulse Mode                     | Off  | Off  |

\* With Anti Interference Cable



## 10P Switch in Pulse Mode Setting:

| Function                       | SW1 | SW2 | SW3 | SW4 | SW5 | SW6 | SW7 | SW8 | SW9 | SW10 |
|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1 Pulse /Dollar                | Off |     |     |     |     |     |     |     |     |      |
| 5 Pulses /Dollar               | On  |     |     |     |     |     |     |     |     |      |
| Pulse Output NO (Normal Open)  |     | On  |     |     |     |     |     |     |     |      |
| Pulse Output NC (Normal Close) |     | Off |     |     |     |     |     |     |     |      |
| Low level inhibit              |     |     | On  |     |     |     |     |     |     |      |
| High level inhibit             |     |     | Off |     |     |     |     |     |     |      |
| Pulse Rate Lo=50ms             |     |     |     | On  |     |     |     |     |     |      |
| Hi=100ms                       |     |     |     |     |     |     |     |     |     |      |
| Pulse Rate Lo=50ms             |     |     |     | Off |     |     |     |     |     |      |
| Hi=300ms                       |     |     |     |     |     |     |     |     |     |      |
| Accept Channel 1               |     |     |     |     | On  |     |     |     |     |      |
| Reject Channel 1               |     |     |     |     | Off |     |     |     |     |      |
| Accept Channel 2               |     |     |     |     |     | On  |     |     |     |      |
| Reject Channel 2               |     |     |     |     |     | Off |     |     |     |      |
| Accept Channel 3               |     |     |     |     |     |     | On  |     |     |      |
| Reject Channel 3               |     |     |     |     |     |     | Off |     |     |      |
| Accept Channel 4               |     |     |     |     |     |     |     | On  |     |      |
| Reject Channel 4               |     |     |     |     |     |     |     | Off |     |      |
| Accept Channel 5               |     |     |     |     |     |     |     |     | On  |      |
| Reject Channel 5               |     |     |     |     |     |     |     |     | Off |      |
| Accept Channel 6               |     |     |     |     |     |     |     |     |     | On   |
| Reject Channel 6               |     |     |     |     |     |     |     |     |     | Off  |

## 10P Switch in Data Mode Setting:

| Function              | SW1 | SW2 | SW3 | SW4 | SW5 | SW6 | SW7 | SW8 | SW9 | SW10 |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| I-Protocol1.04        | Off | Off | Off | Off |     |     |     |     |     |      |
| I-Protocol1.06        | On  | Off | Off | Off |     |     |     |     |     |      |
| MDB                   | Off | Off | On  | Off |     |     |     |     |     |      |
| J Protocol            | On  | Off | On  | Off |     |     |     | N/A |     |      |
| ccTalk (Normal Check) | Off | Off | Off | On  |     |     |     |     |     |      |
| ccTalk (CRC Check)    | On  | Off | Off | On  |     |     |     |     |     |      |
| TL Protocol           | Off | Off | On  | On  |     |     |     |     |     |      |

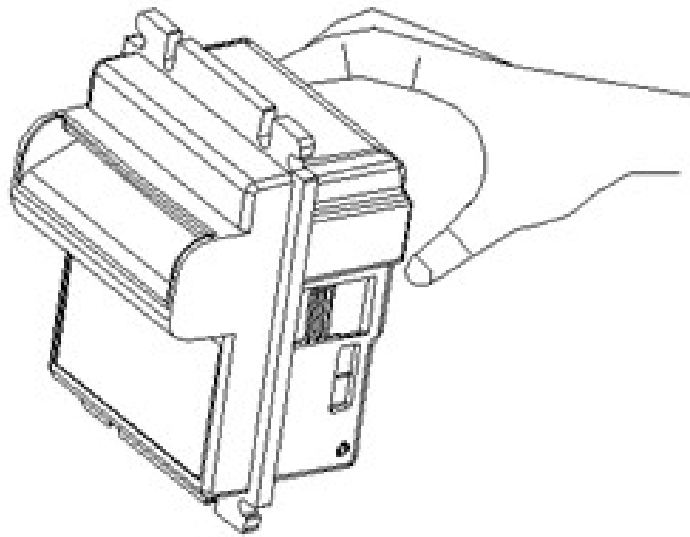
NOTE:

Please restart unit after setting.



## F、Product disassembly and maintenance

### 1. Disassembly



Never use an organic solvent such as gasoline or paint thinner to clean the unit.

### 2. Cleaning

Any residuals in the channel of the sensors or LED will causing bill jam or decrease acceptance rate.

For the best performance, please cleanup internal channel regularly

Please refer to the following steps to cleanup internal channel :

- (1) Turn off the power and remove power cable.
- (2) Open the back cover by press the both sides lock and pull out.
- (3) Use a soft brush to clean the back cover and use clean paper to clean the bill path.

## H、Troubleshooting

Entrance light is breathing Red/Green/Blue colors in normal operation. This light also indicated the errors by flashing color alternatively. The unit need to clean or re-calibration if only two colors remains.

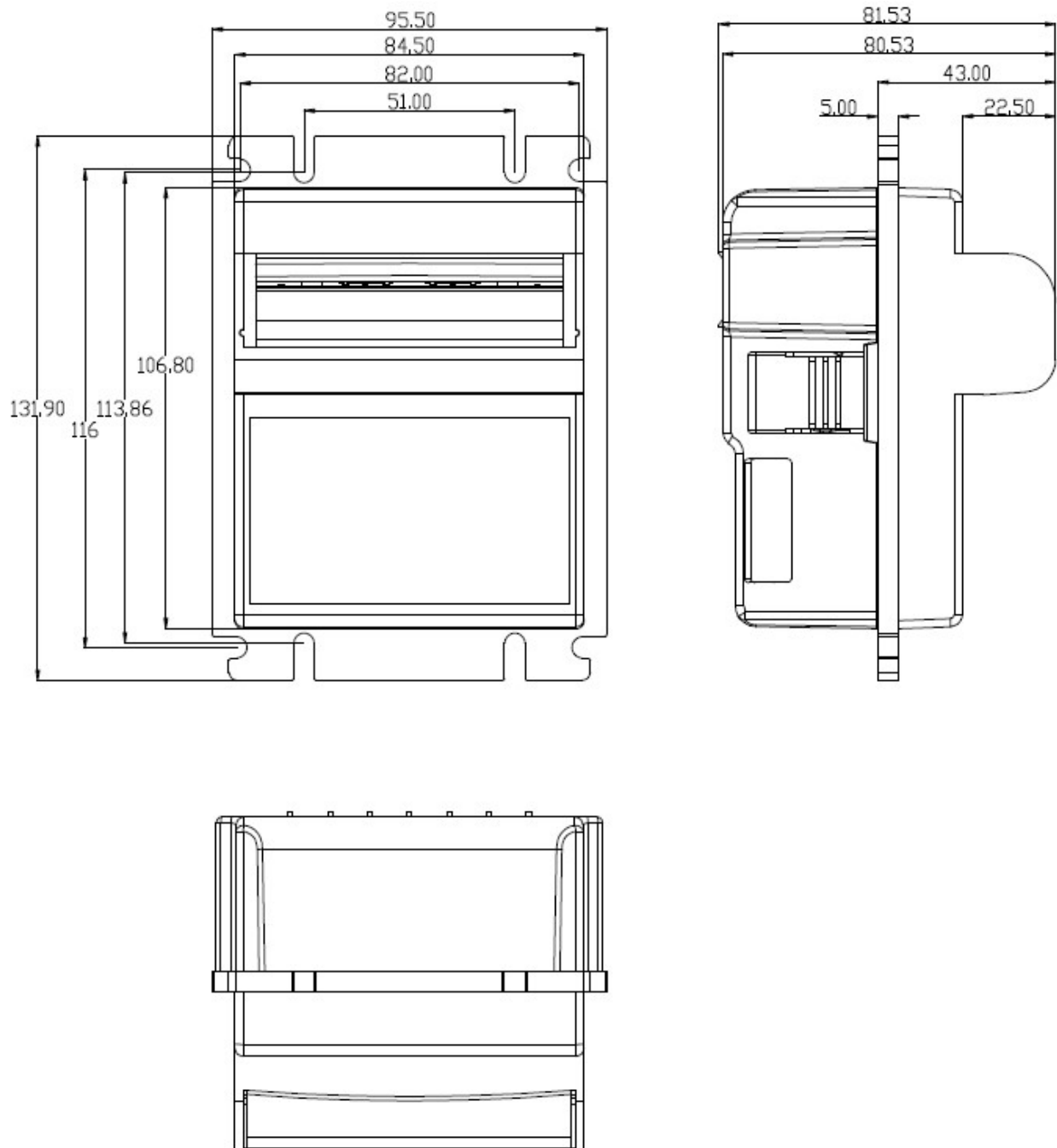
### BEZEL LED error messages

Number of flashing color LED :

| Red | Green | Blue | Error message                                               | Remarks                     | Record |
|-----|-------|------|-------------------------------------------------------------|-----------------------------|--------|
| 0   | 0     | 1    | Unit inhibit by switch setting or inhibit command from host |                             | Yes    |
| 1   | 1     | 1    | Power initialization, not connected with host               |                             | Yes    |
| 2   | 0     | 1    | Bill jam in entry position                                  | Auto recovery               | Yes    |
| 2   | 0     | 2    | Bill jam in the back                                        | Auto recovery               | Yes    |
| 3   | 0     | 1    | Input or output sensor errors                               | Sensor damaged              | Yes    |
| 3   | 0     | 2    | Validation Sensors error.                                   | Sensor damaged              | Yes    |
| 3   | 0     | 3    | Anti-Fishing error                                          | Remain operation            | Yes    |
| 4   | 0     | 1    | Motor time out                                              | Auto recovery in each 10Sec | Yes    |
| 5   | 0     | 1    | No Valid Bill data, needs to update                         | Factory / Setting           | Yes    |



G、Drawing Dimensions





| 图次 | 版本 | 变更内容 | 变更者 | 日期 |
|----|----|------|-----|----|
| 01 |    | 首版发行 |     |    |

|    |         |                |    |                 |
|----|---------|----------------|----|-----------------|
| 27 | 底座      | bot            | 1  | 热缩管             |
| 26 | 弹簧限位架   | limit_spring   | 1  |                 |
| 25 | 电路板     | PCBA           | 1  |                 |
| 24 | LED光源   | COVER_LED_1    | 2  | 普通光片            |
| 23 | 马达座     | COVER_MOTOR    | 1  |                 |
| 22 | 反光片     | REFLECTOR      | 2  |                 |
| 21 | 马达支架    | MOTOR_BRACKET  | 1  |                 |
| 20 | 叶轮(带T)  | ENCODER        | 1  |                 |
| 19 | 马达小盖    | ENCODER_PCBA   | 1  |                 |
| 18 | 马达      | MOTOR          | 1  |                 |
| 17 | 操作杆     | WORKEAS-PUSH   | 1  |                 |
| 16 | 光零件     | LG_N           | 1  | LOCALLY LOCATED |
| 15 | 弹簧      | SPRING_TH      | 2  |                 |
| 14 | 前盖      | FRONT          | 1  |                 |
| 13 | 宽口散光板   | LED_LG         | 1  | PCV散光板          |
| 12 | PR2.0*5 | PR2.0*5        | 11 |                 |
| 11 | PAL.7*4 | PAL.7*4        | 6  |                 |
| 10 | 弹簧轴     | SPRING_1       | 2  |                 |
| 9  | 压盖轴     | SHAFT_3        | 1  |                 |
| 8  | 合轴轴承    | SLEEVE_1       | 2  |                 |
| 7  | 压盖      | WHEEL_WHEEL_ME | 4  |                 |
| 6  | 外盖轴     | HELPHOUSE_1    | 1  |                 |
| 5  | 轴轴2     | SHAFT_2        | 1  |                 |
| 4  | 轴轴轴轴    | PULLEY_27_J1   | 2  |                 |
| 3  | 轴轴轴轴轴   | PULLEY_27      | 4  |                 |
| 2  | 轴轴1     | SHAFT_1        | 1  |                 |
| 1  | 皮带      | PSH_WHL_4      | 2  |                 |
| 序号 | 品名      | 零件名称           | 数量 | 备注              |

|      |    |    |       |     |
|------|----|----|-------|-----|
| 制图日期 | 审核 | 批准 | 版本    | 共1页 |
|      |    |    | 01_01 |     |
| 审核日期 | 审核 | 批准 | 版本    | 共1页 |
|      |    |    | 01_01 |     |
| 审核日期 | 审核 | 批准 | 版本    | 共1页 |
|      |    |    | 01_01 |     |