
ARPEGE
SECURITY
MENU
MODE
RESET
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AS280 B

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SECURITY

Maintenance Manual AS280 B

Preface

Thank you for choosing our multi-currency discriminator, which with 5 counting modes(COUNT, FACE, ORIENT, SINGLE, MIX). The user can choose the setting according to their requirement, which can improve the working efficiency. When need to repair the machine, please refer to this maintenance manual.

Content

1. Specification

1.1 Voltage ：100～240VAC

1.2 Frequency：50/60Hz

1.3 Rated consumption：80W（Max）

1.4 Batch range：1～200pcs

1.5 Counting speed：800, 1000, 1200pcs/min

1.6 Hopper capacity：500pcs（Max）

1.7 Stacker capacity：200pcs（Max）

1.8 Working noise：＜80dB

1.9 Working temperature： 0～40℃

2. The introduction of the main parts

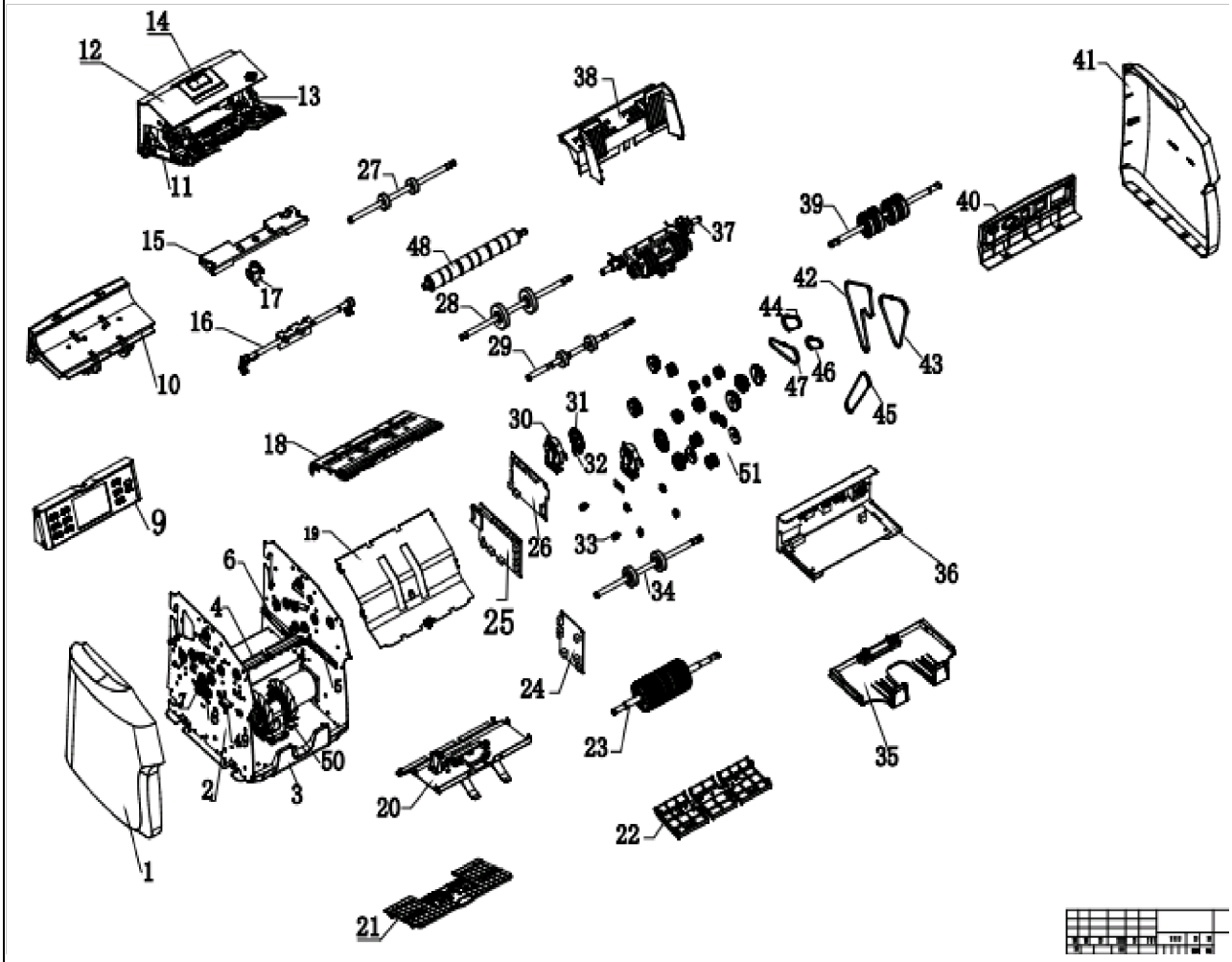
1.Display screen	
2.Rejection pocket	
3.Banknote receiving wheel	
4.Reset sensor-emitting	
5. Stacker board	

1.Hopper guide	
2.Keys	
3.Banknote receiving wheel	

	1.Printer		1.Rear cover
	2.Adjusting screw		2.SD card slot
	3.Start sensor		3.USB port

	4.Banknote twiddling wheel		4. External display port
	5.Hopper assembly		5. Power switch
			6.Power socket

3. Explosive view and Spare Parts introduction



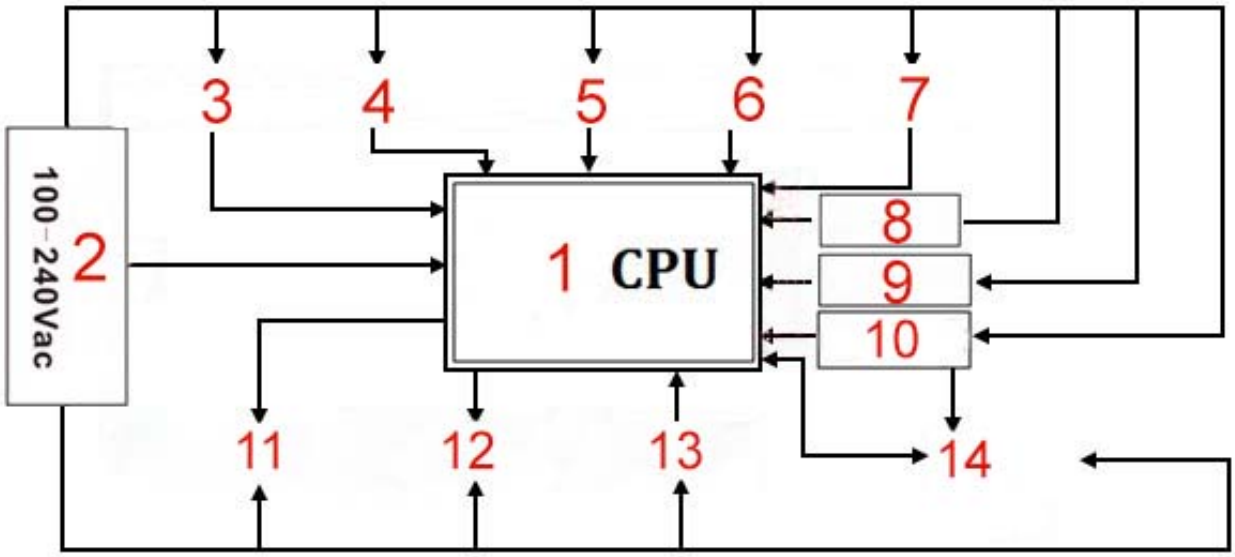
Explosive view

NO.	NAME	NO.	Name	NO.	NAME	NO.	NAME

1	Left cover	2	Mainframe	3	Stacker board	4	Banknote
			assembly				transporting guide
5	Rejection pocket track platform	6	Backside track platform	7	Banknote guide sensor	8	Banknote guide sensor board
9	Display assembly	10	Back track platform assembly	11	Banknote feeding top track platform assembly	12	Top-rear cover
13	Top-rear cover fixing frame	14	Thermal printer	15	Supporting frame	16	Fixing frame assembly
17	Resistance regulation part assembly	18	Aisle front board	19	Transporting platform	20	Rejection pocket aisle assembly
21	Hopper	22	Banknote receiving stacker aisle assembly	23	Banknote twiddling wheel assembly	24	Image processing board
25	Main board	26	Motor control board	27	Banknote receiving counter roller assembly	28	Transporting roller assembly
29	Banknote feeding counter roller assembly	30	Dial sensor cover	31	Dial sensor	32	Speed sensor
33	M shape string buckle	34	Stacker banknote receiving roller assembly	35	Rejection pocket assembly	36	Power box assembly
37	Resistance frame assembly	38	Counting guide assembly	39	Banknote feeding counter roller assembly	40	Bottom-rear cover

41	Right cover	42	Synchronous belt TBD-3M-363-4	43	Synchronous belt TBD-3M-264-4	44	Synchronous belt TBD-2M-180-4
45	Synchronous belt TBD-3M-252-4	46	Synchronous belt TBD-2M-110-4	47	Synchronous belt TBD-3M-252-4	48	Brush roller assembly
49	Limit switch	50	Gear Motor	51	Synchronous gear and cover	52	

4. Working principle



1. Main control CPU 2. Power 3. Start circuit

4. Upper counting tube circuit 5.Lower counting tube circuit 6. Dial sensor circuit

7. Banknote receiving circuit 8.UV detection circuit 9. MG detection circuit

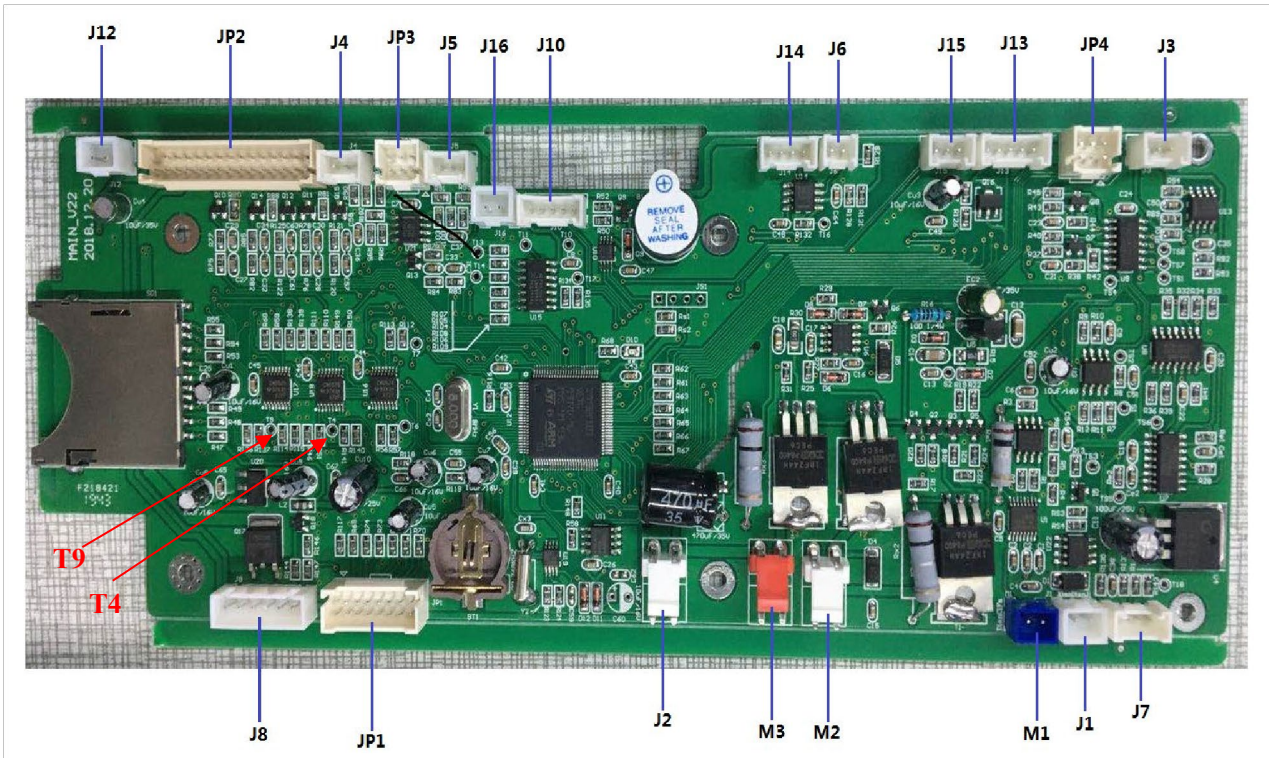
10. CIS detection circuit 11. Motor control circuit 12. Main display circuit

13. External port control board 14. Image control board

When banknotes cover the start sensor, the receiving tube will generate pulse level signal and transfer to CPU, then CPU send signal to motor control circuit to make the motor work; meanwhile, the machine can work by the running of each driving belt and driving wheel, in order to send the banknote into the aisle to check and collect the data. The machine will collect and analysis the data when the

banknote is passing through the IR counting tube, then send the feedback to CPU to make a judgment of the banknote is original or fake.

5. The introduction of the main board



No.	Name	No.	Name	No.	Name
J12	Printer power interface	J14	Middle counting tube interface	J1	Small motor interface
JP2	Magnetic board interface	J6	Limit switch interface	M1	Solenoid valve interface
J4	Down dial sensor interface	J15	USB transfer interface	M2	Down big motor interface

JP3	Down counting board interface	J13	Start sensor & Rejection pocket transmission sensor interface	M3	Upper big motor interface
J5	Lower dial sensor interface	JP4	Display board interface	J2	24V power supply interface
J16	CIS board power interface	J3	Upper dial sensor interface	JP1	External port board interface
J10	Image singal interface	J7	Stacker sensor interface	J8	Main board power supply interface

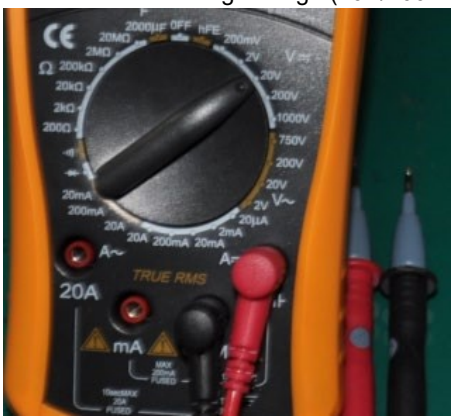
6. Faults and resolutions

Fault	Reason	Resolution
When put the banknotes on the hopper, both of the twiddling wheel and the receiving wheel are not working	Start sensor is broken	Replace the start sensor
	The motor is not running or problem with the start sensor circuit	Check the start sensor control circuit or replace the main board
When put the banknotes on the hopper, twiddling wheel is working, but the receiving wheel is not working	small motor is not in good connection	Repair the small motor interface connection
	Small motor is damaged	Replace the small motor
	Problem with the small motor control circuit	Check the small motor control circuit or replace the main board
When put the banknotes on the hopper, twiddling wheel is not working, but the receiving wheel is working	Main motor is not in good connection	Repair the main motor interface connection
	Main motor is damaged	Replace the main motor
	Problem with the main motor control circuit	Check the main motor control circuit or replace the main board
There is no counting number during the counting	Left and right counting tube is damaged	Replace the left and right counting tube
	Dial sensor is damaged	Replace the dial sensor

Unsmooth counting	Banknote clearance is too tight	Rotate the adjust screw to the clockwise direction to decrease the clearance
	Banknote clearance is too loose	Rotate the adjust screw to the anti-clockwise direction to increase the clearance
TEST-7 UP_MOTOR ERR	Problem with the main motor or problem with the control circuit	Replace the main motor or replace the main board
	Driving belt is damaged	Replace the driving belt
TEST-5 Hopper capacity ERR	Problem with the start sensor	Clean or replace the start sensor

7. Common faults and the eliminating methods

Digital multimeter: choose a right range (20V/200V DC), showed as below:



7.0 Outer inspection and PCB checking

①please check the electronic component assembly is good or not, debugging the short circuit, circuit breaker, poor connection etc., removing the other things which is adhesive to the PCB.

②please check position and the connection condition of each connector.

③before turning on the machine, please use the multimeter(24V input) to test if the motor board is short circuit or not. If it is good, then turn on the machines.

④insert J8, and the voltage of it should be 12V,5.1V,5.1V checked by the multimeter, the voltage of T9,T4 should be 2.6V. If the voltage is the same as above mentioned, then it means the PCB is not short circuit, the user can insert other interface. Otherwise, the user should remove the J8 at once, in case the PCB will be damaged.

⑤insert the J2 , and the voltage of two pins should be 24.4V, the voltage of J1 and J6 should be 12V and5.1V. If the voltage is the same as above mentioned, then it means the PCB is not short circuit, the user can insert other interfaces of the motor board. Otherwise, the user should remove the J2 at once, in case the PCB will be damaged.

7.1 The introduction of the interfaces and pins in the main board

No.	Name	The voltage of the interface and pin	No.	Name	The voltage of the interface and pin
J1	Small motor interface	J1-1:12V	J14	Middle counting tube interface	J14-1:5.1V J14-3:5.1V

J2	24V power supply interface	J2-2:24.4V	J15	USB transfer interface	
J3	Upper dial sensor interface	J3-1：5.1V J3-3：5.1V	J16	CIS board power interface	J16-1:5.1V
J4	Down dial sensor interface	J4-1：5.1V J4-3：5.1V	JP1	External port board interface	JP1-1:5.14V JP1-2:5.14V JP1-3:0V JP1-4:3.26V JP1-6:3.3V JP1-8:3.26V JP1-9:3.3V JP1-10:3.27V JP1-11:3.3V JP1-12:3.3V
J5	Lower dial sensor interface	J5-1：5.1V J5-2：5.1V	JP2	Magnetic board interface	JP2-2:3.3V JP2-7:5.1V JP28:5.1V JP2-25:12V JP2-26:12V
J6	Limit switch interface	J1-1：5.1V	JP3	Down counting board interface	JP2-2:5.1V
J7	Stacker sensor interface	J7-1：2.7V J7-3：3.7V	JP4	Display board interface	JP4-1:2.6V JP4-4:3.26V JP4-5:3.24V JP4-6:5.1V
J8	Power interface	J8-1 ： 12V JP8-5:5.1V JP8-6:5.1V	M1	Solenoid valve interface	M1-1:+-24V
J10	Image signal interface	J10-5:3.3V	M2	Down big motor interface	M2-2:10.7V
J12	Printer power interface	J12-2:24.4V	M3	Upper big motor interface	M3-2:15.1V
J13	Start sensor & Reject pocket transmission sensor interface	J13-2:2.7V J13-5:5.1V			

7.2 counting tube fault

Fault：when turn on the machine, the display shows “TEST-2R_D_IR ERR / TEST-4R_U_IR ERR / L_D_IR ERR / L_U_IR ERR”.

Reasons：① the connector of the counting tube is cold solder joint or the it is not in good connection.

② there is some dust on the counting tube sensor or it is damaged.

③ problem with the relative circuit of the counting tube

Resolutions：⑴ check the connection between the counting tube and the main board is in good connection or not, or replace the counting tube sensor.

⑵ clean the counting tube sensor with brush or replace it.

⑶ refer to the 7.1 the introduction of the interfaces and pins in the main board, to check the voltage of each pin is consistent with this form; otherwise, replace the counting tube sensor or replace the main board.

7.3 reset sensor fault

Fault：when turn on the machine, the display shows “TEST-5 Stacker Capacity ERR”.

Reasons：① there is some dust on the reset sensor or it is damaged.

② the reset sensor is not in good connection. ③

problem with the relative circuit of the reset sensor Resolutions：

⑴ clean the reset sensor with brush or replace it.

⑵ check the connection between the reset sensor and the main board is in good connection or not, or replace the reset sensor.

⑶ refer to the 7.1 the introduction of the interfaces and pins in the main board, to check the voltage of each pin is consistent with this form; otherwise, replace the reset sensor or replace the main board.

7.4 speed sensor problem

Fault：when turn on the machine, the display shows “TEST-7 UP_MOTOR ERR”.

Reasons：① the driving belt of the big motor is broken or damaged.

② the connector of the big motor is not in good connection or the connector is damaged.

③ problem with the power board.

④ connector of the speed sensor is not in good connection or the speed sensor is damaged.

⑤ problem with the main board.

Resolutions：⑴ replace the driving belt.

⑵ replace the connector of the big motor and check the connector of the big motor is in good connection with the power board or not.

⑶ check the connector of the start fuse or replace the start fuse.

⑷ replace the power board.

⑸ check the connector of the speed sensor is in good connection with the main board, or replace the speed sensor.

⑹ refer to the 7.1 the introduction of the interfaces and pins in the main board, to check the voltage of each pin of J3 is consistent with this form; otherwise, replace the main board.

7.5 UV detection fault

Fault：when turn on the machine, the display shows “UV L Error/ UV R Error”.

Reasons：① the connector of the UV sensor is not in good connection or the UV sensor is damaged.

② UV sensor is not working or damaged.

③ problem with the relative circuit.

Resolutions：⑴ check the connector of the UV sensor is in good connection with the main board,

or replace the UV sensor.

⑵ replace the UV sensor.

⑶ refer to the 7.1 the introduction of the interfaces and pins in the main board, to check the voltage of each pins are is consistent with this form; otherwise, replace the main board.

7.6 MG fault

Reasons：① the connector of the MG sensor is not in good connection or the MG sensor is damaged.

② the magnetic sensitive plate is damaged.

③ problem with the relative circuit of the main board.

Resolutions：⑴ check the connector of the MG sensor is in good connection with the main board or not,

or replace the MG sensor.

⑵ replace the magnetic sensitive plate.

⑶ refer to the 7.1 the introduction of the interfaces and pins in the main board, to check the voltage of each pin is consistent with this form; otherwise, replace the main board.

7.7 power on fault

Reasons： ① the fuse is damaged.

② power box is damaged.

③ the power cable is not in good connection.

④ power switch is damaged.

⑤ problem with the main board or it is damaged.

Resolutions：⑴ replace the fuse.

⑵ replace the power box.

⑶ insert the power cable again.

⑷ replace the power switch.

⑸ insert J8, and the voltage of it should be12V, 5.1V, 5.1V checked by the multimeter. If the voltage is the same as above mentioned, then it means the PCB is good; otherwise, the user should replace the according PCB.

8. CIS calibration

Press ADD and PRT at the same time(see Pic1), second open the top-back cover and put a calibration paper, and press BATH RPT BATH in turn (see Pic2). Third press ADD to calibration the counting tube,then press RESET for 7 times (see Pic3) to calibration CIS, succeed will show below (see Pic4).

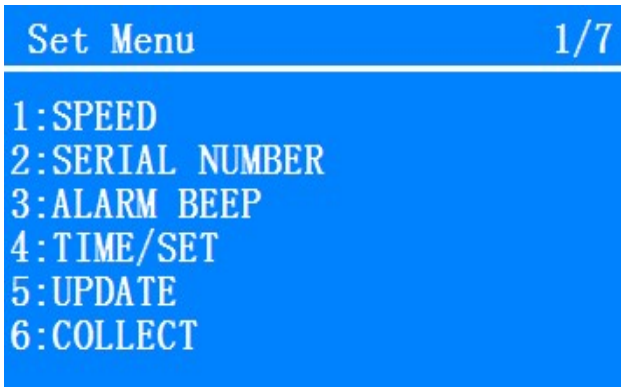
Pic1 Pic2 Pic3 Pic4

9. Return to the factory setting

Keep pressing ERROR turn on the machine. When the display showing the image which is showed as below, which means the machine is returned to the factory setting successfully(meanwhile clear all the stored datas)

10. ALARM BEEP SETTING

10.1、Press MENU enter below (PIC. 8-1)



10-1

10.2、Press ERROR and PRT same time 3seconds into the Limit set interface(Pic10-2),then press RESET to select the one which you want to set.Press CUR and MODE to increase and decrease sensitive level,press RESET save the change and move to next setting,press MENU to come back the main interface.

10-2

MG：

MG sensitivity level setting, “MG--0” is off, “MG—19” is the highest. The default is “MG—5”.

DD：DD(size) sensitivity level setting,“DD--0” is off, “DD—9” is the highest. The default is “DD—5”.

DB：double note sensitivity setting, “DB--0” is off, “DB—9” is the highest. The default is “DB—5”.

UV：UV sensitivity level setting, “UV--0” is off, “UV—9” is the highest. The default is “UV—5”.

UV wid：UV intensity sensitivity level setting,“UN--0” is off,“UN—9” is the highest. The default is “UN—5”.

Slope：Slop sensitivity level setting, “Slope--0” is off, “Slope—16” is the highest. The default is “Slope-5”.

IR：IR sensitivity level setting, “IR--0” is off, “IR—9” is the highest. The default is “IR—9”.

AUTO: AUTO/MUNL counting setting. “0” is the manual counting, “1” is the automatic counting, “2” is also the automatic counting, but the display will not show “A”.

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