ZDJ Series

ZDJ-SRIII Microcontroller (Servo)

User's Manual

§ Introduction

This document contains Sunrise Electric Co.,Ltd's ZDJ series microcontroller's using guide and notice. Operator should use the machine only after thoroughly reading of this manual. If you have any problem during operation, please refer to Notice and FAQ section first.

§ How to use

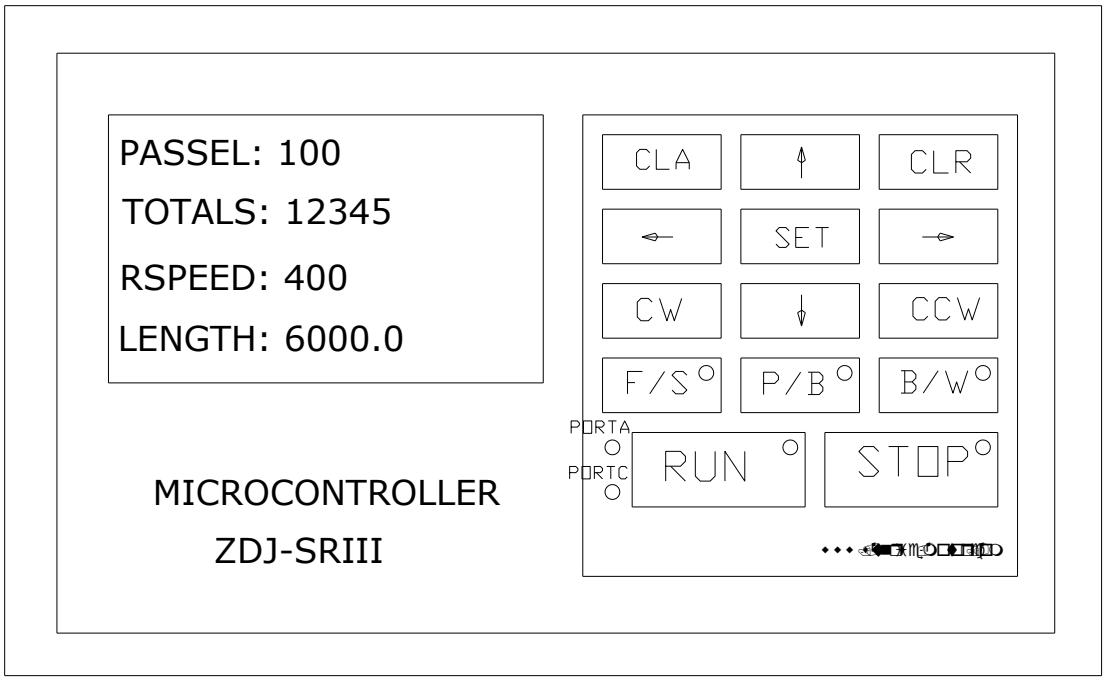


figure 1. Controller Panel

Figure 1 shows Controller panel, which contains three function blocks: **keyboard**, **display**, and **trademark**. All parameters can be easily modified through keyboard.

1. How to use keyboard

The keyboard has 14 buttons in all. Following describes each button's function.

- **SET:** Press 'SET' to enter setup mode, each function is identified by its unique function name. For example, press 'SET' once to enter setup page 1, function 1: length - modify bag making length; press 'SET' twice, function 2: curve - drag motor speed. Each time press 'SET' button, funtion code is increased by 1 ,then can modify other parameters. The color of the current set line displays reversely.
- **←:** when enter setup mode, '←'is used to left shift shining bit

- **→:** when enter setup mode, '→'is used to right shift shining bit
- **↑:** when enter setup mode, '↑'is used to increase shining bit by 1 with carry.
- **↓:** when enter setup mode, '↓'is used to decrease shining bit by 1 with carry.
- **CL A:** clr all, is used to clear totally bag group to zero
- **CLR:** is used to clear current bag passel or group to zero
- **CW:** is used to jog step motor forward
- **CCW:** is used to jog step motor backward
- **F/S:** is used to alter between two operate mode: fast detect and slow detect, disabled when making blank bag. Fast detect mode is mainly used for normal bag making, slow detect is for test purpose mainly
- **P/B:** is used to choose making blank bag or printed bag
- **B/W:** is used to choose optic detector's operation mode, the LED inside button indicates if the color mark is detected by optic detector, if yes it is light, or it is dark
- **RUN:** is used to start running. The LED inside indicates if it is on running mode
- **STOP:** is used to stop running. The LED inside indicates if it is normal stop(GREEN LIGHT) or error stop(RED LIGHT)。

2. How to understand LED indicator

- **F/S**：red，fast detect light, slow detect dark.
- **P/B**：red, printed bag light；blank bag dark.
- **B/W**：red，when the color mark is detected it is light, or it is dark.
- **RUN**：green，run light；stop dark.
- **STOP**：red and green，normal stop green light；over speed or error stop red light. Before run, all dark.
- **PORTA**：red，drag port ,when light , step motor begin work.
- **PORTC**： red，two position, one: machine stop position, another: drag motor stop position.

3. Status page

Two display mode: setup mode or status mode.when it is in status mode,lcd displays:

- **PASSEL:** bag no. of current passel or group
- **TOTALS:** total groups. total bags=TOTALS*PPASSEL+PASSEL.
- **RSPEED:** real speed, bag making speed, unit number per minute.
- **LENGTH:** set bag length, when making printed bag, should be 1~2 mm shorter than real bag speed. Unit 0.1mm, max 6000.0mm.

Press 'SET', enter setup mode; after the last parameter, return the status page and mode. Other, when modify parameters, press 'RUN',return status page.

4. Setup Parameter

Accurate parameters make better bag-making. For the first time of using, parameters as follows must be set: bag length, motor speed, bag group, number of pause, diameter of rollers.

Setup page 1:

- **LENGTH:** the set length of bags, appreciably 1.0~2.0mm less than real length when making printed bag. When stopping and bag-making, can be modified if the button 'SET' is pressed one time. Sparkling digit can be modified. '↑' and '↓' are used to change the value. '←' and '→' are used to circularly choose digit for modification. Max 6000.0 mm, Min 0.1 mm.
- **CURVE:** the speed of step motor, 9 the fastest, 0 the slowest. When stopping and bag-making, can be modified. Sparkling digit can be modified. '↑' and '↓' are used to change the value. '←' and '→' are used to circularly choose digit for modification.
- **PPASSEL:** preset passel, one group. The horn works ahead 5 bags when one group has been made. Max 999, min 6.
- **PSWORD:** password to next setup page which normally needn't be modified. 01 is the password

Setup page 2

- **PSPEED:** speed for unwinding the material in first machine cycle
- **PUSH HOLE:** the time for push hole, max 400 ms, 0 for no hole
- **DIAMETER:** the diameter of roller, Unit 0.1mm. Only when stopping can be modified. '←' and '→' are used to circularly choose digit for modification. '↑' and '↓' are used to change the value. Max 130.0 mm, Min 15.0 mm.
- **DETECT L:** Detect length, when making printed bags, the length for detecting printed mark. Only when stopping can be modified. '←' and '→' are used to circularly choose digit for modification. '↑' and '↓' are used to change the value. Max 20.0 mm, Min 5.0 mm.

Setup page 3

- **ERROR STOP:** permitted errors for over speed or finding no printed mark. Max 5, min 1.when adding up to the number, it alerts and stops immediately with alert. Press 'STOP' to clear it.
- **TABLE DELAY:** the time for table delay
- **TABLE TIME:** the time for table motor works when one bag has been done. Max 9.9s, 0 for no table.
- **PAUSE DRAG:** the pausing number after bag group reaches. When one group has been done, some times it need the step motor pause dragging for one or more cycles. Max 9; 0 for no pausing. DISABLE THIS FUNCTION.

Setup page 4

- **REV LEN:** back length when one group be finished
- **REV ONE:** The switch for one CW&CCW drag after cutting
- **OIL TIME:** the interval time for appending/adding oil to machine; 0: disable this function. 0~9999s, Unit：second
- **OIL OPEN:** the lasting time when the oil output be enabled. When the time is used up, the oil output be disabled. 0~9.9s, Unit Second

Setup page 5(PASSWORD 99)

- **FEED BROKEN:** the switch for detecting feed broken. 1: enable; 0: disable. If enabled, when feed broken, it alerts and stops immediately with displaying FEED BROKEN. Press 'STOP' to clear it.
- **FEED SPEED:** the speed for feeding out ratio
- **XOUT SWITCH:** the switch for DA1 OUT ,1 OIL , 2 BLOW
- **VERSION:** the version of the program

§ Notice

I. **DO NOT LEAVE THIS CONTROLLER IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW –20 CELSES OR ABOVE 60 CELSUS. IT MAY DAMAGE THE CONTROLLER. ALSO DO NOT USE CONTROLLER AT FERROMANEGTIC CIRCUMSTANCE.**

II. **DO NOT OPEN THE CONTROLLER BOX.**

§ FAQ

1) Why some buttons have no answer when pressed, i.e., the buzzer don't sound?

These buttons is automatically disabled, because its function has conflict with current task.

Why the machine stops abnormally sometimes?

To minimize the waster, the controller will automatically stop the machine and generate an alarm when the number of wasters exceeds 5. which may caused by over speed or optic detect error, please check the motor speed or adjust the optic detector.

2) Why the display is black after start?

Please check the power switch and the DC input power connection.

3) When it alert, how to clear it?

Please press 'STOP' to clear it and check the reason.

§Appendix ： Electric Connection Description

No.	Name	Detail
1	+5V	+5V DC Input
2	GND	+5V DC Ground
3	+12V	+12V DC Input
4	COM	+12V DC Ground
5	BUT	Common Pin of Outside Parallel Buttons
6	RUN	Outside Parallel Button—Run
7	STOP	Outside Parallel Button—Stop
8	CW	Outside Parallel Button—CW
9	CP	Connected to servo motor driver pulse signal with +12V.(NEED 1K RESISTOR)
10	CW/CCW	Connected to servo motor driver direction signal with +12V..((NEED 1K RESISTOR)
11	COIN	RESERVE
12	CLR	Connected to servo Motor driver clr signal with +12V.
13	+12V	+12V DC Input
14	COM	+12V DC Ground
15	DA1	OIL OR BLOW
16	DA2	FEED SPEED OUT
17	BRKN	Connected to Optic Detector FEED BROKEN with +12V and COM.
18	GLBR	FEED DETECTOR
19	B/W	Connected to Optic Detector Black/White Output with +12V and COM.
20	OPAA	Connected to Port A of Board of Blade Position OPAA with +12V and COM.
21	OPCC	Connected to Port C of Board of Blade Position OPCC with +12V and COM.
22	SPK	Connected to Speaker Input with +12V
23	EP	Connected to Board of Stiletto Input with +12V
24	TAB	Connected to Controller of TABLE Relay with +12V
25	BK1	Connected to Outside Start Controller Input I of Transducer
26	BK2	Connected to Outside Start Controller Input II of Transducer