



Smart Printer

SP1-VR/VRS

Installation Guide

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1. Introduction

SP1-VR/VRS, a compact-size design, is installed on the vending machine that needs the functionality of output a receipt while the transaction completed.

With adjustable paper length function, the user can easy and quick operate SP1-VR/VRS to increase the efficiency of paper-use and reduce the maintenance cost.

With a DAB(ICT's Data Audit Box) installation, it can satisfy the operator not only the requirements of audit transaction(DAB) but also to print out the receipt/coupon for the vending machines.

Both coupon and receipt, the format including the logo, text contents and QR/ bar code, etc, can be set-up by the user.

The downloadable design that the operator can save or upload the printing format/settings between SP1-VR/VRS and utility tool via a USB pen-drive would considerable reduce the maintenance efforts.

1-1. Feature

- Design dedicated for Vending Applications
- Easy Installation and Low Maintenance
- Adjustable Paper Length
- Low-paper Alarm Indicator
- Quick, Easy Settings & Upgrade via USB Pen-drive

2. Specifications

General

Interface	RS232 USB ESC/POS
Power Source	20V DC~45V DC
Power Consumption	Standby: 2.4W Operation: 14.4W Maximum: 84W (in case of printing in all gray)
Operation Environment	Operation Temperature: 0°C~+50°C Storage Temperature: -20°C~+60°C Humidity: 30 %~85 %RH (no condensation)
Paper Size	Width: 58+/-0.5mm Outside Diameter: 78±2.0mm
Paper -Length Adjustment	7.0~11.4 cm
Weight	(Without paper roll) SP1-VR_ Approx.761g SP1-VRS_ Approx.816g
Installation	Indoor

Cutter

Thickness	Max. 0.12mm
Life Time	Max. 500,000 cuts
Time	Approx. 1.0s/ cycle

Print head

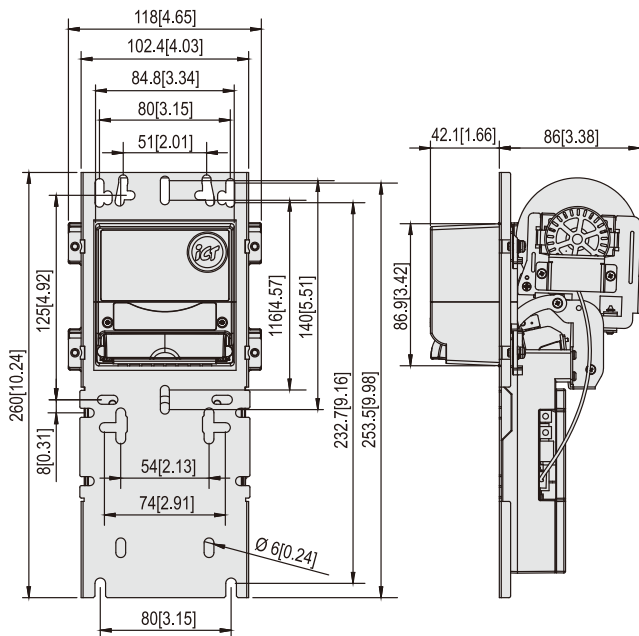
Resolution	8 dots/mm
Speed	90±5mm/Sec

3. Packing List

Main	SP1-VR/VRS Printer
Accessory	SP1-VR/VRS Quick Start Guide Harness: Refer to 5-1 Decorated Plate Scanner Converter Box & Cable(For SP1-VRS only)

4. Dimension

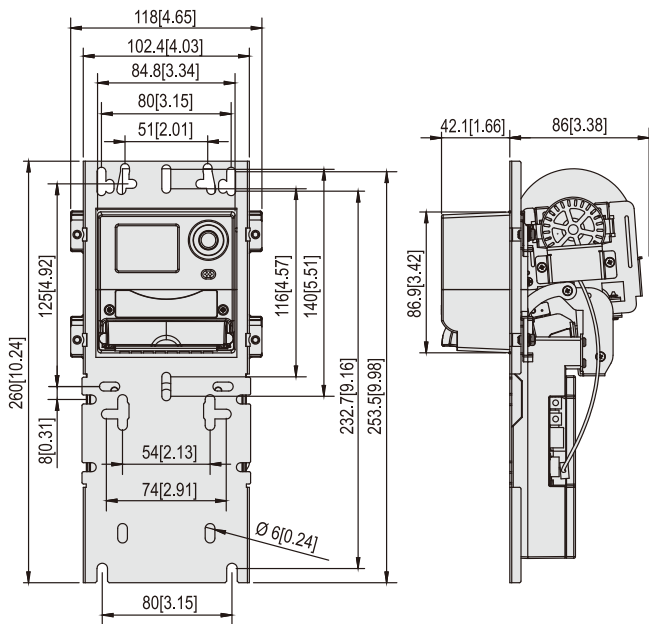
SP1-VR



Unit:mm[inch]

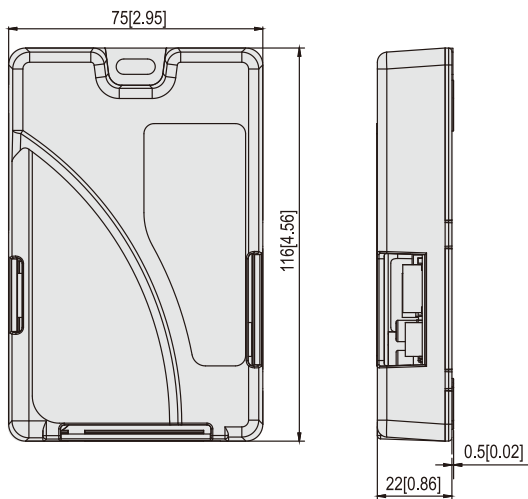
4 FIG.01

SP1-VRs



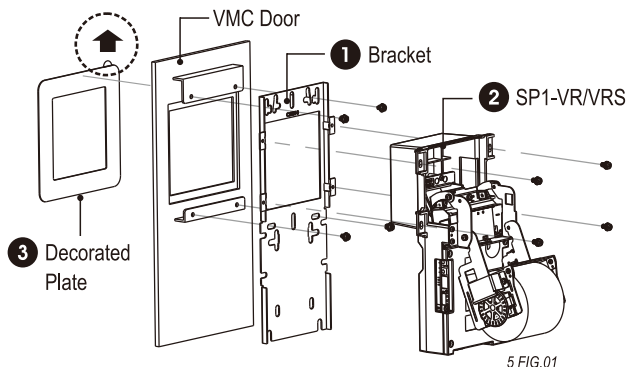
Unit:mm[inch]

4 FIG.02

Scanner Converter Box (For SP1-VRS only)**Unit:mm[inch]**

4 FIG.03

5. Installation



Turn off the vendor's power supply before installation.

Step 1. Select suitable hole of Bracket for hole of VMC door to install by screws.

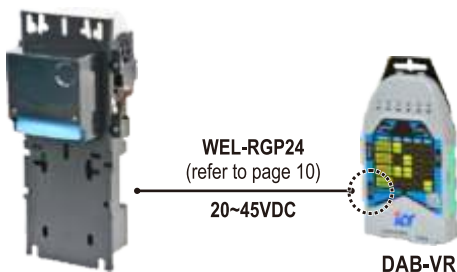
Step 2. Let SP1-VR/VRS be fixed on Bracket by 4 screws.

Step 3. Paste Decorated plate on VMC.
(attention to the direction)

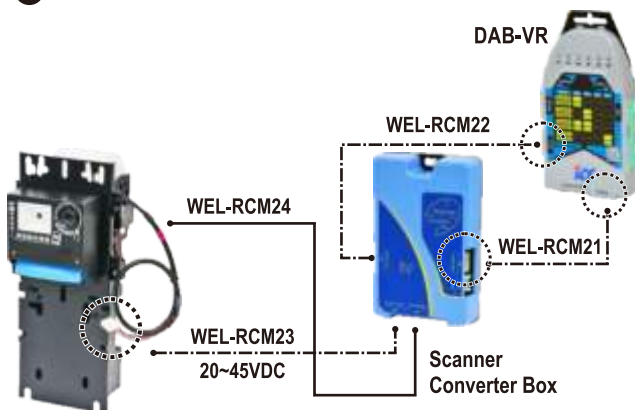
Step 4.

Plug Power and Data communication cable to DAB-VR Device.

4 SP1-VR

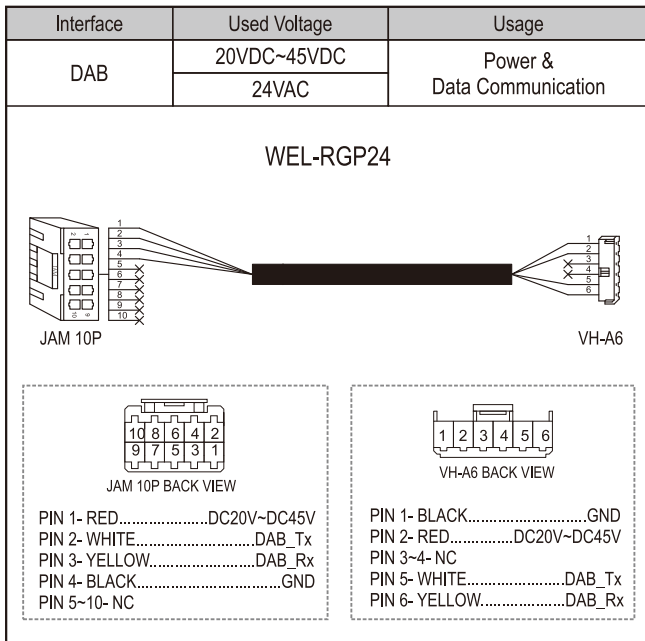


4 SP1-VRS

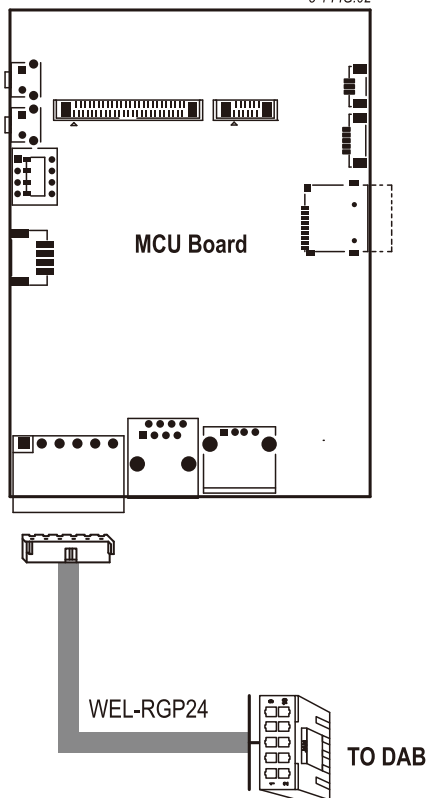


5-1. DAB connection (For SP1-VR only)

5-1 FIG.01



5-1 FIG.02



5-2. I/O Connector

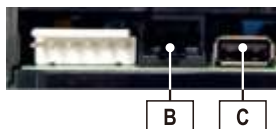


5-2 FIG.01

A: PWR/DAB Communication connector
(for cable: WEL-RGP24)

5-2 TABLE 01

PN.		RPN-R9004
Pin Assignment		Note
1	P-GND	POWER_GND
2	VIN	VDC20V~VDC45V
3	AC-2	VAC_24V
4	AC-1	VAC_24V
5	RS232-RXD1	±12V EIA-RS-232
6	RS232-TXD1	



5-2 FIG.02

B: RJ-45

5-2 TABLE 02

PN.		CNT-R8001-7
Pin Assignment		Note
1	GND	GND
2	TXD3	UART_TX3 TTL 5V (PROGRAM USE)
3	RXD3	UART_RX3 TTL 5V (PROGRAM USE)
4	/PROGRAM	PROGRAM USE
5	/RESET	RESET
6	VCC	5V
7	RXD6	UART_RX6 TTL 5V
8	TXD6	UART_TX6 TTL 5V

C: USB Port (for cable: WEL-RHP57)

5-2 TABLE 03

PN.		CNT-R9B15
Pin Assignment		Note
1	VBUS	VBUS
2	DM	USB_D-
3	DP	USB_D+
4	GND	GND

5-3. DIP Switch Setup



There are two kinds of mode that the user can configure to print out the receipt.

5-3 TABLE 01

Function	SW1	SW2	SW3	SW4
DAB	OFF	OFF	ON/OFF	OFF
ESC/POS A	ON	OFF		
ESC/POS E*	OFF	ON		
DIAGNOSTIC	ON	ON		

Note:

(*) Manufactory default

1. SW3 OFF*:

Thermal head Position sensor error, system response Error.

SW3 ON :

System would not response Error, even Thermal head Position sensor error, only no paper will response Error.

- Only permit ICT official certificated SD card and do not put any file that no relation with SP1-VR/VRS.



6. Download & Upgrade program

There are two kinds of methods that you can download Firmware for upgrading SP1-VR/VRS.

Method 1:

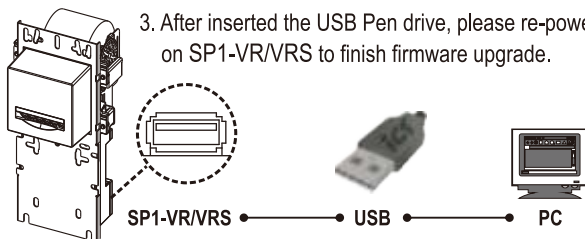
In case of SP1-VR/VRS is connected to DAB, you can download SP1-VR/VRS firmware(.ecf file).

(please make sure the communication cable is connected to DAB and DAB is on the status of power on.)

Please refer DAB-VR user manual .

Method 2:

1. Please copy the firmware file(.bin) to the folder of ECF of your USB pen drive. Please keep only one file(.bin) in this folder to avoid the possible version fault.
2. Please insert the USB Pen drive to SP1-VR/VRS USB Port, no need of any changes on DIP switch at this moment.
3. After inserted the USB Pen drive, please re-power on SP1-VR/VRS to finish firmware upgrade.



Please note:

1. During the process of upgrading, the panel's LED would flash in orange. After finished the LED would change to green light.
2. During the process of upgrading, please don't shut down the SP1-VR/VRS or remove USB Pen drive and SD card.

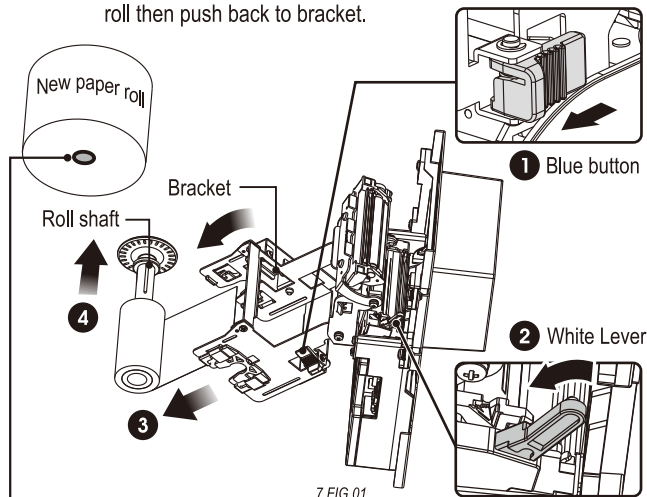
7. How to replace a new paper roll?

Step 1. Press Blue button to rotate paper roll down.

Step 2. Pull back the white lever to release paper.

Step 3. Pull out paper roll from bracket.

Step 4. Pull out roll shaft to replace a new paper roll then push back to bracket.



7 FIG.01



Paper Roll Purchase recommendation

1. Paper roll size:
width: $57 \pm 1\text{mm}$,
diameter: $80 \pm 2\text{mm}$

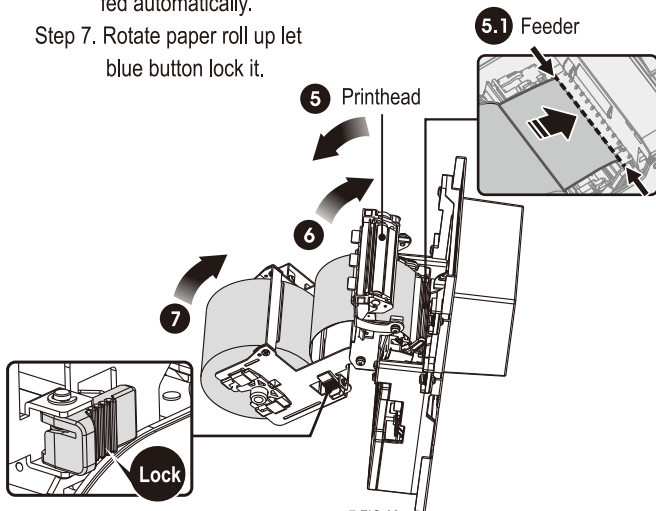
Paper roll core:
inner diameter: $13 \pm 0.5\text{mm}$,
outer diameter: $20.4 \pm 1\text{mm}$

2. "The end of the paper" needs to be glued to "the paper roll core".

Step 5. Rotate the Printhead up then put the paper to the feeder.

Step 6. Rotate and Push down the Printhead. The paper will be fed automatically.

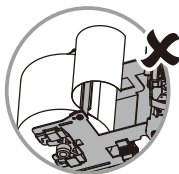
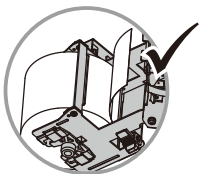
Step 7. Rotate paper roll up let blue button lock it.



7 FIG.02



When installing the thermal paper on the paper roll holder, please mind to the paper outlet position.

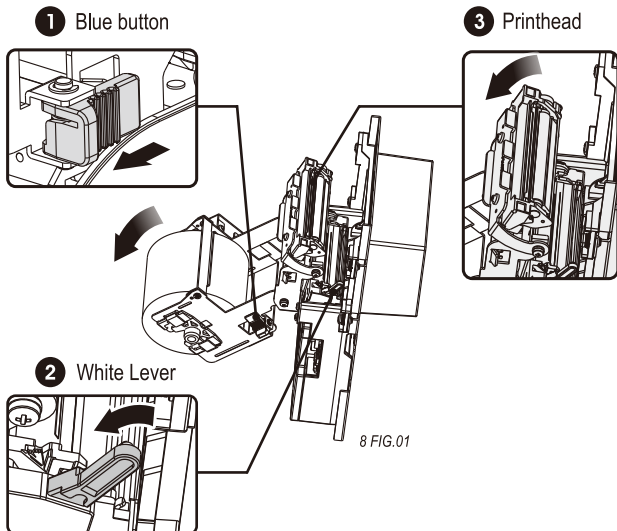


8. Maintenance

Step 1. Press Blue button or rotate paper roll down.

Step 2. Pull back the white lever to release paper.

Step 3. Rotate the Printhead up then clean thermal head.



8 FIG.01



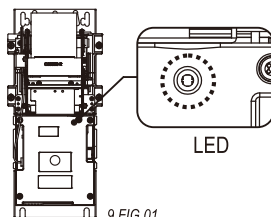
Maintenance Notice

(Any improper maintenance will result invalid warranty.)

Recommended	Mild, non-abrasive, soap water.
DO NOT USE	Organic solvent , Alcohol, Volatility liquid.

9. Troubleshooting

SP1-VR/VRS
Back LED



9 FIG.01

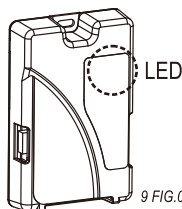
9 TABLE 01

LED Indicator	Status	Solution
Green	Standby.	
Red	Check Sum abnormal.	Contact technician.
Red flash 1 time	1. Moveable frame not close. 2. Thermal head no paper.	1. To make sure moveable frame is closed. 2. Re-feed paper.
Red flash 2 times	Cutter abnormal.	To make sure paper path jam-free.
Red flash 3 times	Out of paper or raster error.	Refill paper roll.
Red flash 4 times	Anti-jam abnormal.	To make sure paper path jam-free.
Red flash 5 times	SD card abnormal.	1. To make sure SD card inserted. 2. To make sure SD card format and specify the file exists.
Red flash 6 times	Printer head over heat.	

9 TABLE 01-1

LED Indicator	Status	Solution
Orange light / Green light will flash alternately (1 sec)	In testing mode.	1. DIP switch is set as not to enter the test mode, and restart device. 2. If the DIPSW is set into the non-test mode, please contact technician.
Orange	System booting	
Orange light Flash	Firmware upgrading or USB data operation.	
Green light Flash	Printing	
Red light highly flash	Low paper warning	

Scanner Converter Box LED



9 TABLE 02

LED Indicator	Status
Green flash	Connected
Red flash	Not connected
Red	Error occurred



If the error can not be solved after corrective actions or it recurs, please contact ICT for technical support.



International Currency Technologies Corporation

No.28, Ln. 15, Sec. 6, Minquan E. Rd., Neihu Dist., Taipei City 114, Taiwan

sales@ictgroup.com.tw (For Sales)

fae@ictgroup.com.tw (For Customer Service)

Website: www.ictgroup.com.tw

