

It is recommended that only persons who have sufficient knowledge and experience such as system designers and responsible persons deal with this product after carefully reading the product manual.

1 The matters of safety

WARNING

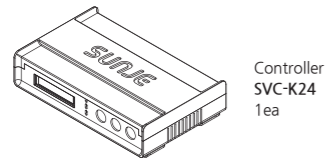
- * Do not fabricate or do maintenance by yourself. Malfunction, Electric shock, and fire danger are considered. Contact us directly if you need the item to be repaired. <A/S is not possible in case of arbitrary disassembly>
- * Do not let the water touch the product. It may cause electric shock or fire due to malfunction.
- * When you check or maintain the product, make it sure you turn off the power. It may cause electric shock or fire due to malfunction.
- * The item should be fixed to the target tightly. Electric discharging or breakage might happen.
- * This device is made only for industrial uses. You need to ground the device beforehand. Otherwise, there are in case of malfunction, electric shock, or fire damage.

CAUTION

- * Do not disconnect the output cable with power applied. There is a possibility of electric shock or malfunction.
- * Connect wires referring to the product manual. Wrong connection can cause failures.
- * For your proper cable connection, take a look at the manual "Installation & Connection" for references. Any disordered connection is detected, the malfunction might arise.
- * All cables should be connected all the time. Please careful of cable disconnections. If power or communication cables got damaged, replace them immediately. Malfunction and fire danger may happen.
- * Do not install the device where the vibration can be detected. Any minor impact or vibration on the device, the malfunction or danger of accident might happen.
- * Do not use the item off the range of usage(Electrostatic elimination). Malfunction or danger of accident may occur.

2 Check the package contents

- ▶ **Product compositions**
The package includes the following products composition.



Controller
SVC-K24
1ea

- * Head Cable
SCC-SM-1-002
5m / 1 ~ 2ea
- * D-Sub Cable
SDC-VC-1-001
25Pin- Open, 5m / 1ea
- * Terminal Block
STB-VC-1-001
(EC381V-2P)
/ 1 ea

- ▶ **Option**
If you require extra functions with the basic accessories we provided, you need to purchase optional items in below for further assistant.

<Adapter & Power Cable>

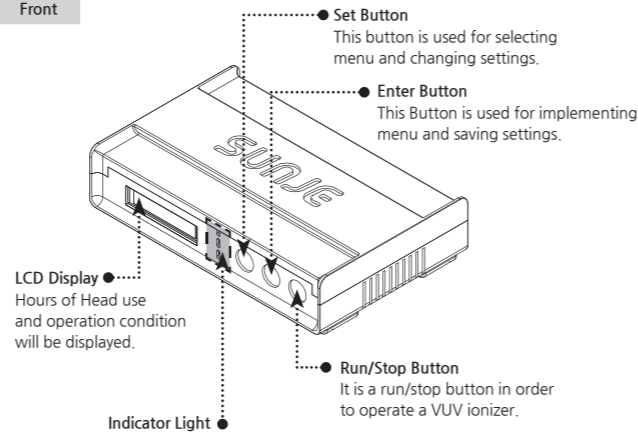
- * Power Cable
SPC-MT-1-001
AC 100V, 50/60Hz,
1.8m / 1ea
- or
- * Power Cable
SPC-MT-2-001
AC 220V, 50/60Hz,
1.8m / 1ea
- * Adapter
SAD-MT-3-003
DC 24V / 2.5A
/ 1ea

<RMS>

- * UTP Cable
SUC-B3-1-001
5m

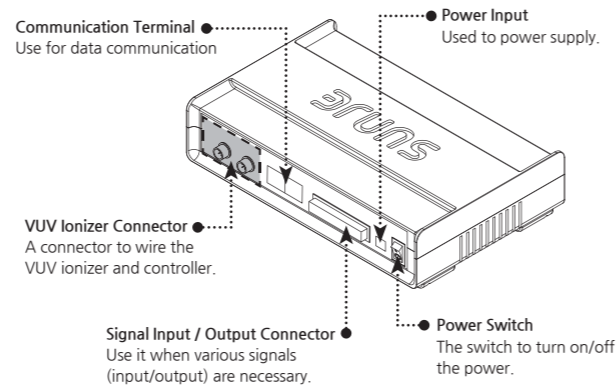
3 Nomenclatures of parts

Front



LAMP 1 - Green LED	Green LED will be turned on when LAMP 1 is operating.
- Orange LED	Orange LED will be turned on when Overtime Warning is occurred. (Over 1,800h)
- Red LED	Red LED will be turned on when Overtime Alarm is occurred. (Over 2,000h)
LAMP 2 - Green LED	Green LED will be turned on when LAMP 2 is operating.
- Orange LED	Orange LED will be turned on when Overtime Warning is occurred. (Over 1,800h)
- Red LED	Red LED will be turned on when Overtime Alarm is occurred. (Over 2,000h)
INTERLOCK - Green LED	Green LED will be turned on if Interlock is ON

Rear

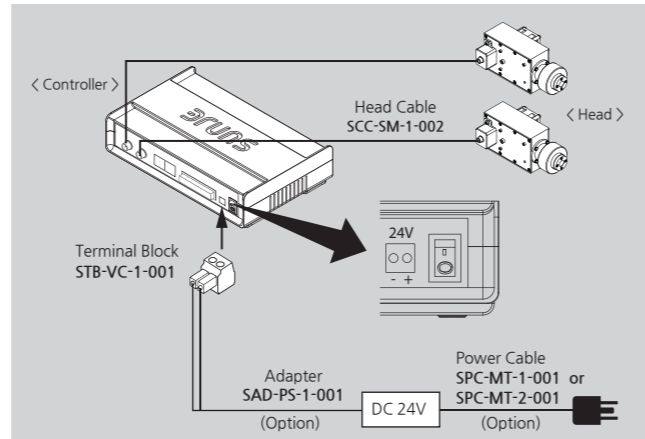


4 Installation and connection

▶ **How to connect**

Connecting Power with the Head

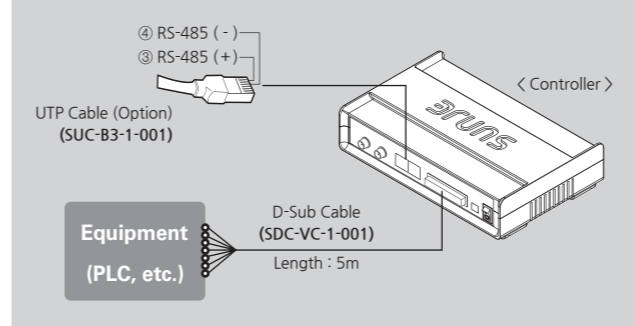
Using the provided Head cable and Adapter (Option), connecting as below.



* Attaching and detaching the cable while the controller is operating may cause damage to the product, so be sure to connect the cable while the power is off.

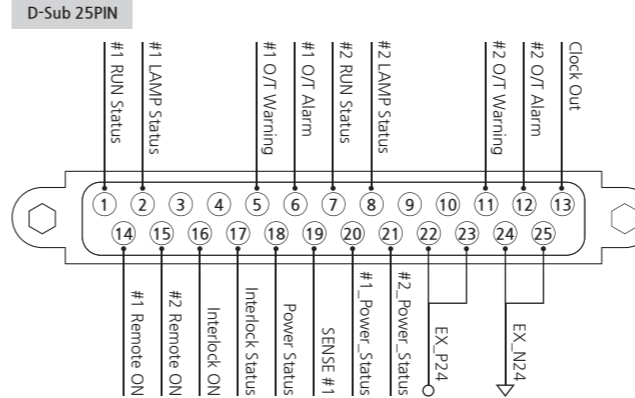
Connecting the Input & Output Signal

Please connect the controller and external machinery equipment with supported "D-Sub Cable".



▶ **Connecting the Interface**

Use the Signal Cable as chart below.

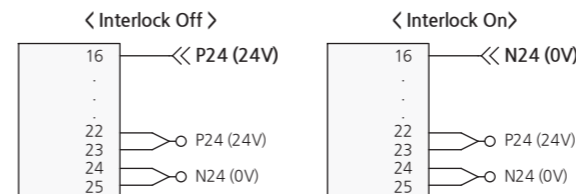


Pin No.	Function	Input/Output	Action
1	#1 RUN Status	Output	When #1 is operating, 0V output(Input "Run" signal)
2	#1 LAMP Status	Output	When #1 is turned on, 0V output(When LAMP On)
3		Reserve	
4		Reserve	
5	#1 O/T Warning	Output	#1 Over 1,800h using time, 0V output
6	#1 O/T Alarm	Output	#1 Over 2,000h using time, 0V output
7	#2 RUN Status	Output	When #2 is operating, 0V output(Input "Run" signal)
8	#2 LAMP Status	Output	When #2 is turned on, 0V output(When LAMP On)
9		Reserve	
10		Reserve	
11	#2 O/T Warning	Output	#2 Over 1,800h using time, 0V output
12	#2 O/T Alarm	Output	#2 Over 2,000h using time, 0V output
13	Clock Out	Output	SVC-K24 Operates properly, Clock on (1Hz)
14	#1 Remote On	Input	#1 Remote On Input (0V)
15	#2 Remote On	Input	#2 Remote On Input (0V)
16	Interlock On	Input	Interlock Input (0V)
17	Interlock Status	Output	When Interlock On 0V output
18	Power Status	Output	When SVC-K24 Power On,24V output
19	Sense #1	Input	Input 0V, #1,#2 On
20	#1 Power Status	Output	#1 Head Power Output Monitoring
21	#2 Power Status	Output	#2 Head Power Output Monitoring
22	EX_P24	Input	Out power (P24) Input
23	EX_P24	Input	Out power (P24) Input
24	EX_P24	Input	Out power (N24) Input
25	EX_P24	Input	Out power (N24) Input

* External power connection is required when using the interface Required

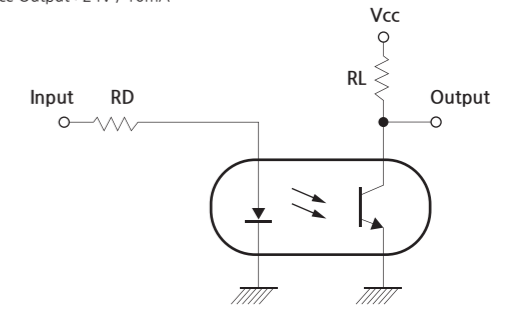
- No. 22, 23 : P24 input (24V)
- No. 24, 25 : N24 input (0V)

Configuration Example



Output circuit diagram

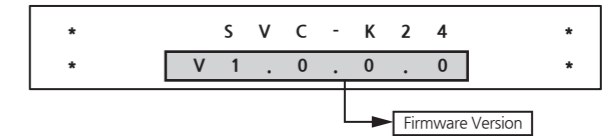
Interface Output : 24V / 10mA



5 How to operate SVC-K24

▶ **Operates when power is on**

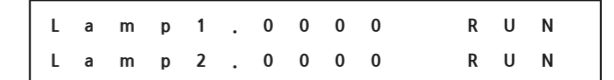
It switches to the default screen after displaying about 1 seconds.



▶ **Main Screen**

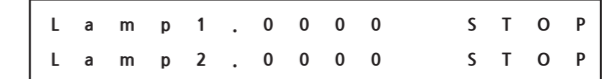
Steady State

Lamp Run



- Display Lamp1, Lamp2 using time and indicates "RUN" if light the lamp.

Lamp Stop



- Display Lamp1, Lamp2 using time and indicates "STOP" if light no lamp.

Alarm State

Lamp Run



- During operating, indicates the Alarm information if Alarm occur.

→ The Head that Alarm occurred will indicates Alarm information and using time every 5 sec.

- Indicates Alarm information.

→ Time Warning : "WA" → Time Alarm : "AL"

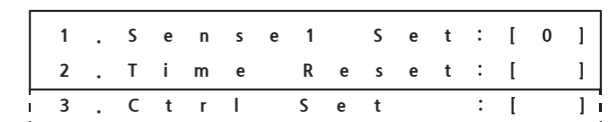
→ The Head that Alarm occurred will indicates Alarm information and using time every 5 sec.

- Indicates Alarm information.

→ Time Warning : "WA" → Time Alarm : "AL"

▶ **Menu**

Press Enter Switch for 2 sec, enter the Menu Page.



1. **Select the Page**

- Able to select the Page at Menu Page.

- Select menu sequentially by pressing the Select button. (Scroll up)

2. **Change the Page**

- Press Enter to enter the selected menu.

- Press Enter Switch for 2 sec, change the Main Page.

Sensor Control Setting

Sensor Control Delay / Run Time Setting

Delay Time	:	00
Run Time	:	00

- How to set
 - Blinking will indicate the setting number.
 - Setting (0~9) with Select button.
 - Change to next digit with Enter button.

Setting 0 ~ 99 sec available

- After the setting is completed, press Enter button over 2 sec.
 - If any setting changes, save the setting information and indicate Power Off.
 - If no setting changes, change to Menu page.

What is sensor mode?

This is a function that investigates VUV during the run time after the delay time set in the controller when a sensor signal is input. When using sensor mode, control commands other than sensors are ignored.

Sensor Mode	Remote	RS-485	Switch
On	X	X	X
Off	1	2	3

Initialize hours of use

Lamp1/Lamp2 Using time initialization

Lamp1 Reset	:	OF
Lamp2 Reset	:	OF

- How to set
 - Blinking will indicate the possible setting digit.
 - Setting with Select button. (ON or OF)
 - Change to next digit with Enter button.
 - Only OF setting is available, if the status is not Overtime Warning or Alarm.

- When setting is completed, press the Enter button over 2 sec.
 - ON : After Time Reset, Indicate Power Off.
 - (Only time will be initialized for the Lamp which is set as Reset ON)
 - OF : Change Menu page (When the setting of Lamp1, Lamp2 is OF)

Operating mode Setting

Set the Controller operating mode

Ion Control	:	OF
Comm Address	:	01
Max Run Time	:	OF

- How to set
 - Blinking will indicate the possible setting digit.
 - Setting with Select button.
 - Ion Control (OF : Remote Control / ON : Sensor Control)
 - Comm Address : Setting communication address (1 ~ 16)
 - Max Run Time: Set the automatic run stop time (0~99)
 - Change to next digit with Enter button.

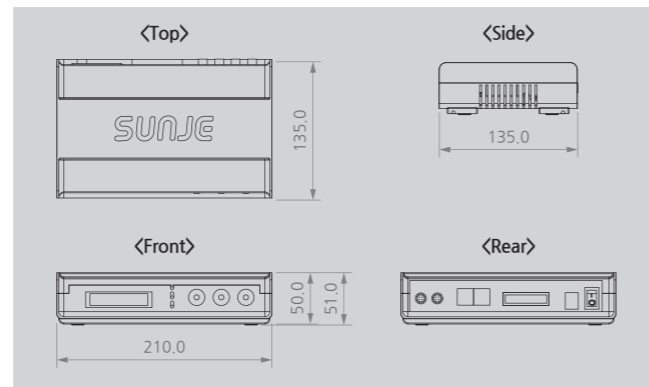
- When setting is completed, press the Enter button over 2 sec.
 - If any setting changes, save the setting information and indicate Power Off.
 - If no setting changes, change to Menu page.

What is Max Run Time?

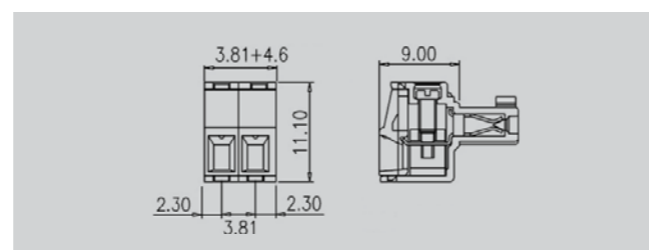
When using the front button or communication for the run operation, the lamp will automatically turn off after the set time.
 → Sensor control is unavailable when this function is set.

6 Dimensions

SVC-K24



Terminal Block



7 Specification

Parameter	Description / Value
Input Power	24V (± 5%)
Current	Max. 1.5A (When 2 Lamps are connected)
Display Specification	LCD: 16 X 2 CLCD
	LED: 3ea (Lamp1, Lamp2, Interlock)
Local Control	Push Switch: 3ea (Set, Enter, Run)
Interface	Input: 5ea Lamp1/ Lamp2 Remote, Interlock, Sensor Control, Power Input
	Output: 11ea Lamp1 : Run Status, Lamp Status, Overtime Warning, Overtime Alarm Lamp2 : Run Status, Lamp Status, Overtime Warning, Overtime Alarm, Interlock, Power, Clock Out
	Communication: Modbus_RTU Support (Address Map will be provided seperately)
Connectable Lamp	SVH-K24 2ea
Weight	0.62 Kg
Warranty	1 year

※ The appearance and specification of the product may be changed without prior notice for the improvement of the product.

8 Modbus Mapping Table (V1.0.0.0)

Baud rate : 9600
 Parity : None
 Data Bit : 8
 Stop Bit : 1

Memory Address	Distinction	Data Address		Start Address		Comment	Range	Default		Function Code (Hex)	Read / Write		
		Dec	Hex	Dec	Hex			DEC	HEX				
Coil (1 bit)	Run Control	1	1	0	0	Operation Control	0 : Stop 1 : Run	0	0	Read Coils (0x01) Write Single Coil (0x05)	Read-write		
	Reserved												
	Lamp1 Run Control	129	81	128	80	Lamp1 Operation Control	0 : Stop 1 : Run	0	0				
	Lamp2 Run Control	130	82	129	81	Lamp2 Operation Control	0 : Stop 1 : Run	0	0				
Discrete input (1 bit)	Lamp Sensor Control 1	131	83	130	82	Operates for the time set in the sequence(Lamp1,2 control)	0 : Stop 1 : Run	0	0	Read Discrete Input (0x02)	Read-only		
	Lamp1 Run Control Status	10129	2791	128	80	Lamp1 Run/Stop Control Status	0 : Stop Control 1 : Run Control	0	0				
	Lamp1 Run Status	10130	2792	129	81	Lamp1 Light on Status	0 : Stop 1 : Run	0	0				
	Lamp1 Time Warning	10131	2793	130	82	Warning alarm before Lamp1 Lifetime Exceeded	0 : Normal 1 : Time Waring	0	0				
	Lamp1 Time Over	10132	2794	131	83	Lamp1 Lifetime Exceeded	0 : Normal 1 : Time Over	0	0				
	Reserved												
	Lamp2 Run Control Status	10145	27A1	144	90	Lamp2 Run/Stop Control Status	0 : Stop Control 1 : Run Control	0	0				
	Lamp2 Run Status	10146	27A2	145	91	Lamp2 Light on Status	0 : Stop 1 : Run	0	0				
	Lamp2 Time Warning	10147	27A3	146	92	Warning alarm before Lamp2 Lifetime Exceeded	0 : Normal 1 : Time Waring	0	0				
	Lamp2 Time Over	10148	27A4	147	93	Lamp2 Lifetime Exceeded	0 : Normal 1 : Time Over	0	0				
Input register (16 bits)	Interlock Status	10161	27B1	160	A0	Interlock Status	0 : Off 1 : On	0	0	Read Input Registers (0x04)	Read-only		
	Products	30001	7531	0	0	Products	G	71	47				
	Model	30002	7532	1	1	Model	1	49	31				
	Firmware_Version_HIGH	30003	7533	2	2	Firmware Version	0 ~ 99	10	A				
	Firmware_Version_LOW	30004	7534	3	3		0 ~ 99	0	0				
	Slave Address	30005	7535	4	4	Slave Address	1 ~ 16	1	1				
	Reserved												
	Lamp1 Use Time	30129	75B1	128	80	Lamp1 Use Time	0 ~ 9,999 hour	0	0				
	Lamp2 Use Time	30130	75B2	129	81	Lamp2 Use Time	0 ~ 9,999 hour	0	0				
	Holding register (16 bits)	Sensor Control 1 Delay Time	40129	9CC1	128	80	Sequence1 Dleay Time setting	Min. : 1 (1 Sec) Max. : 99 (99 Sec)	1			1	Read Holding Register (0x03) Write Single Register (0x06)
Sensor Control 1 Run Time		40130	9CC2	129	81	Sequence1 Run Time setting	Min. : 1 (1 Sec) Max. : 99 (99 Sec)	1	1	Write Multiple registers (0x10)			

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