

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.

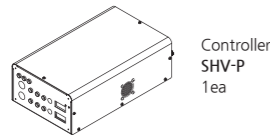
CAUTION

- * 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.



- * High Voltage Cable SHC-HV-1-001
10m / 1 ~ 2ea
- * D-Sub Cable SDC-VC-1-001
25Pin- Open, 5m / 1ea
- * Terminal Block STB-BT-1-001 (2ESDVM-02P)
1ea

Option

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

<Ground>

- * Ground Cable SGC-MT-6-001
Ø6-Ø4, 1m / 1 ~ 2ea

<Adapter & Power Cable>

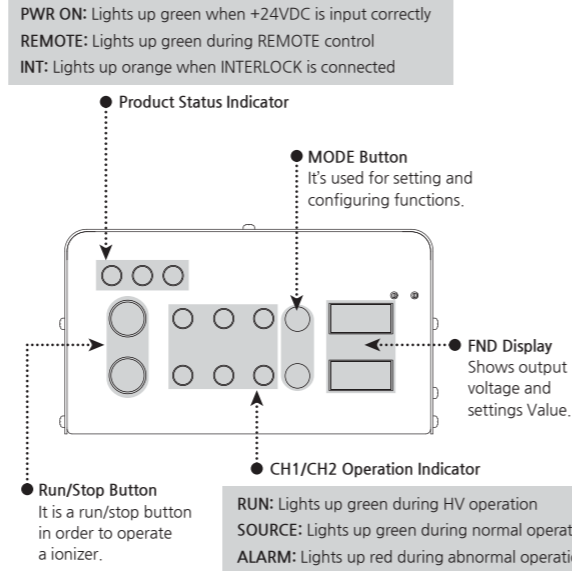
- * Power Cable SPC-MT-1-001
AC 100V, 50/60Hz, 1.8m / 1ea
- or
- * Power Cable SPC-MT-2-001
AC 220V, 50/60Hz, 1.8m / 1ea
- * Adapter SAD-MT-3-003
DC 24V / 2.5A (Connector Processing)
/ 1ea

<RMS>

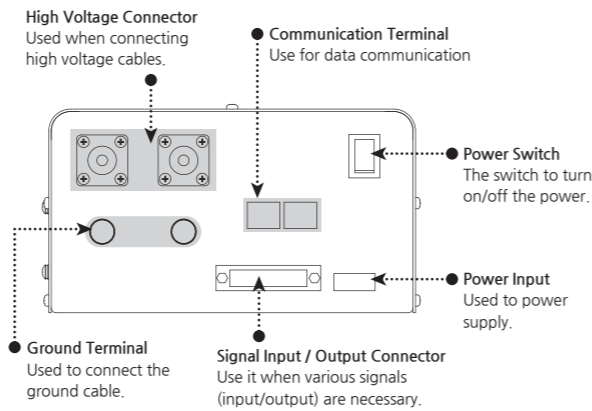
- * UTP Cable SUC-B3-1-001
5m
- * Signal Cable SUC-MT-2-001
5m

3 Nomenclatures of parts

Front



Rear

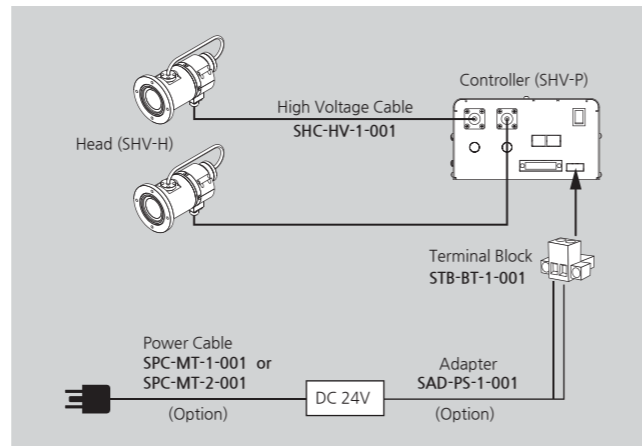


4 Installation and connection

How to connect

Connecting Power with the Head

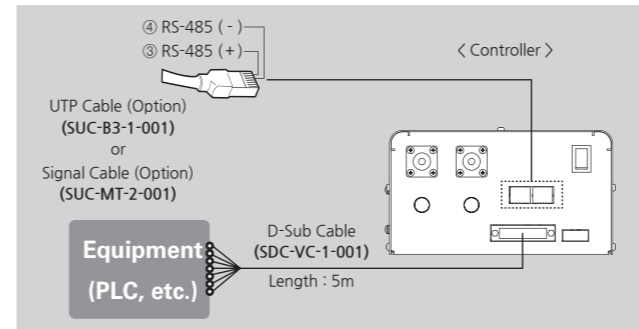
Using the provided Head cable and Adapter (Option), connecting as below.



* 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

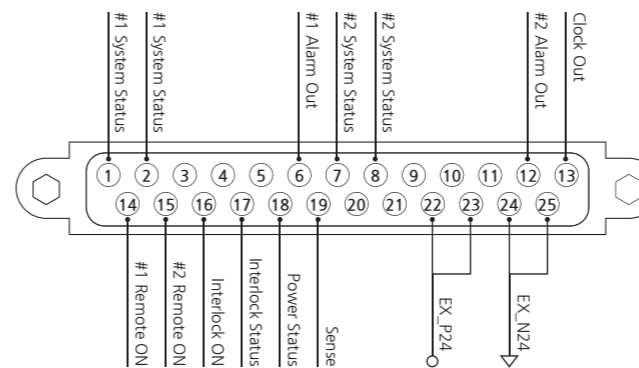
Please connect the controller and external machinery equipment with supported "D-Sub Cable".



Connecting the Interface

Use the Signal Cable as chart below.

D-Sub 25PIN

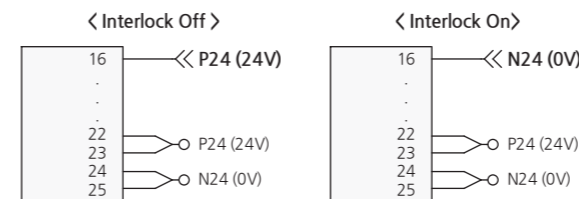


Pin No.	Function	Input/Output	Action
1	#1 System Status	Output	When #1 is operating, 0V output
2	#1 System Status	Output	When #1 is operating, 0V output
3		Reserve	
4		Reserve	
5		Reserve	
6	#1 Alarm Out	Output	When #1 Alarm occurs, 0V output
7	#2 System Status	Output	When #2 is operating, 0V output
8	#2 System Status	Output	When #2 is operating, 0V output
9		Reserve	
10		Reserve	
11		Reserve	
12	#2 Alarm Out	0V Output	When #2 Alarm occurs, 0V output
13	Clock Out	Output	Operates properly, Clock on (1Hz)
14	#1 Remote On	0V Input	#1 Remote On Input (0V)
15	#2 Remote On	0V Input	#2 Remote On Input (0V)
16	Interlock On	0V Input	Interlock Input (0V)
17	Interlock Status	0V Output	When Interlock On 0V output
18	Power Status	24V Output	When Power On, 24V output
19	Sense	0V Input	Input 0V, #1, #2 On
20		Reserve	
21		Reserve	
22	External Power +24V	EX_P24V	External Power (P24) Input
23	External Power +24V	EX_P24V	External Power (P24) Input
24	External Power 0V	EX_N24V	Using External Power GND
25	External Power 0V	EX_N24V	Using External Power GND

*** External power connection is required when using the interface**

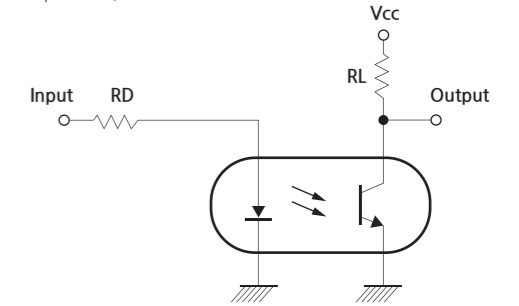
- Required
- No. 22, 23 : P24 input (24V)
- No. 24, 25 : N24 input (0V)

Configuration Example



Output circuit diagram

Interface Output : 24V / 10mA



5 How to operate SHV-P

Operates when power is on

After displaying 1111 → 2222 → 3333 → 4444 → 8888, the version information and product mode are shown



Main Screen

Steady State

Head Run



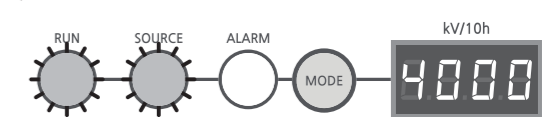
Head Stop



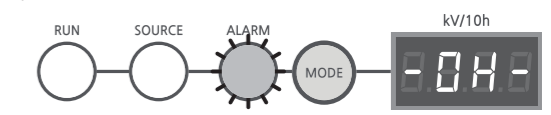
- Check the Setting Voltage / Run Time information using the MODE button.

Alarm State

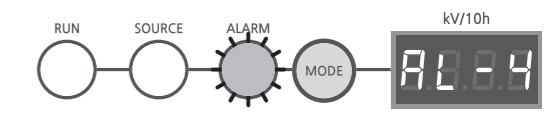
Normal operation



High-temperature alarm

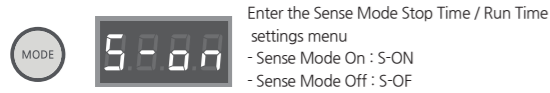


HV Alarm



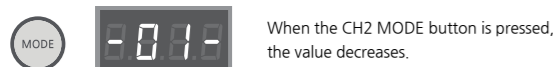
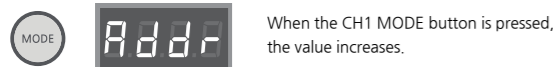
► Menu

Press and hold the CH1 MODE button and the CH2 MODE button simultaneously for 3 seconds to enter the Menu.
Use the CH1 MODE button to enter the Address setting menu.
Use the CH2 MODE button to enter the Sense Mode Stop Time, Run Time setting menu.



- Automatically saves and returns to the main screen if no button is pressed for 3 seconds.

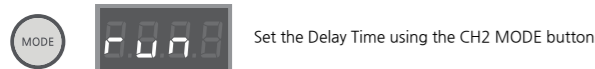
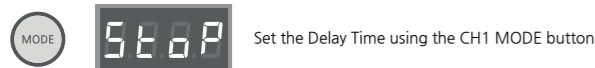
Address Settings Menu



- Automatically saves and returns to the main screen if no button is pressed for 3 seconds.
- Setting range: 01 ~ 16

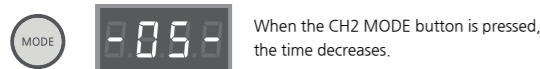
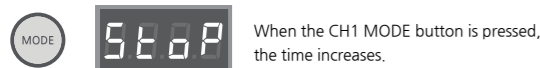
Sensor Control setting

*Sensor Control Delay / Run Time Setting.



- Automatically saves and returns to the main screen if no button is pressed for 3 seconds.

■ How to Set



- Automatically saves and returns to the main screen if no button is pressed for 3 seconds.
- Setting range: 0s ~ 99s

※ What is sensor mode?

This function operates 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 those from sensors are ignored.

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

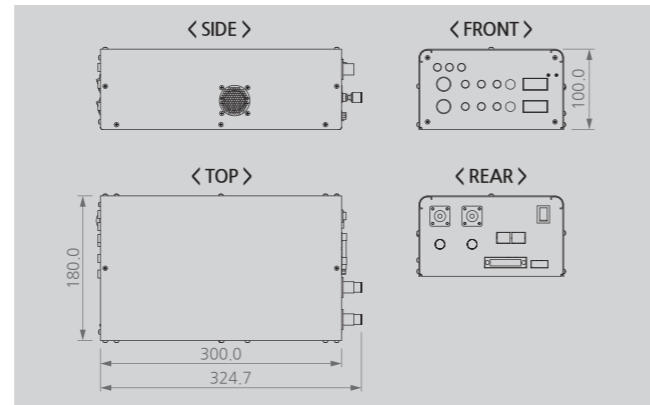
Operating mode Setting

Set the Controller operating mode

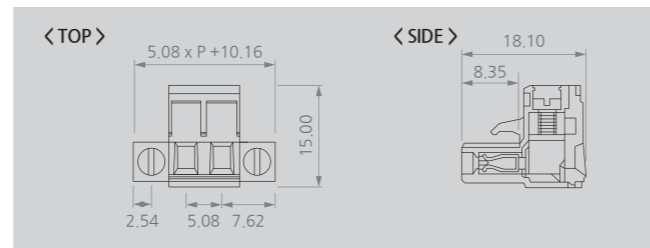
Press and hold the CH1 MODE button for 3 seconds to turn on Sensor Mode.
Press and hold the CH2 MODE button for 3 seconds to turn off Sensor Mode.
→ A beep occurs once when Sensor Mode is On.
→ A beep occurs twice when Sensor Mode is Off.
※ No beep if already set.

6 Dimensions

► SHV-P



► Terminal Block



7 Specification

Parameter	Description / Value
Input Power	24Vdc / 2.5A
Output Power	0~5kVdc (Max 2mA)
Consumption Current	Max 2.0A(48W)
Connection	1:1 Type / 1:2 Type
Interface	Alarm, Interlock, Remote, Status, RS485
Material	EGI (Power Coating)
Weight	2.8kg
Warranty	1 year

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

► Ambient temperature and humidity

Parameter	Description / Value	
Operation	Temperature	1°C to 40°C
	Humidity	20% to 65%
Storage	Temperature	0°C to 60°C
	Humidity	65%

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												
	Head1 Run Control	129	81	128	80	Head1 Operation Control	0 : Stop 1 : Run	0	0				
	Head2 Run Control	130	82	129	81	Head2 Operation Control	0 : Stop 1 : Run	0	0				
Discrete input (1 bit)	Head Sensor Control 1	131	83	130	82	Operates for the time set in the sequence(Head1,2 control)	0 : Stop 1 : Run	0	0	Read Discrete Input (0x02)	Read-only		
	Reserved												
	Head1 Run Control Status	10129	2791	128	80	Head1 Run/Stop Control Status	0 : Stop Control 1 : Run Control	0	0				
	Head1 Run Status	10130	2792	129	81	Head1 Light on Status	0 : Stop 1 : Run	0	0				
Input register (16 bits)	Head2 Run Control Status	10145	27A1	144	90	Head2 Run/Stop Control Status	0 : Stop Control 1 : Run Control	0	0	Read Input Registers (0x04)	Read-only		
	Reserved												
	Head2 Run Status	10146	27A2	145	91	Head2 Light on Status	0 : Stop 1 : Run	0	0				
	Interlock Status	10161	27B1	160	A0	Interlock Status	0 : Off 1 : On	0	0				
Holding register (16 bits)	Products	30001	7531	0	0	Products	G	71	47	Read Holding Register (0x03) Write Single Register (0x06) Write Multiple registers (0x10)	Read-write		
	Model	30002	7532	1	1	Model	2	50	32				
	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												
Holding register (16 bits)	Head1 Use Time	30129	75B1	128	80	Head1 Use Time	0 ~ 9,999 hour	0	0				
	Head2 Use Time	30130	75B2	129	81	Head2 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 (99Sec)	1	1				
	Sensor Control 1 Run Time	40130	9CC2	129	81	Sequence1 Run Time setting	Min. : 1 (1 Sec) Max. : 99 (99Sec)	1	1				

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