Instruction Manual   SUNJE

SBP-14J4   (Eng)

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.

❶ The matters of safety

⚠ WARNING

* If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
* 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.
* Do not use the product at the place where dangerous material such as inflammable or ignitable material exists. This product is not the product of anti-explosive type.
* 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 controller 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.

❷ Check the package contents

▶ Product compositions
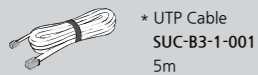The package includes the following products composition.
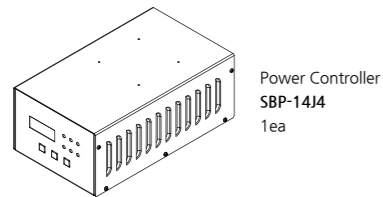
Power Controller
SBP-14J4
1ea

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

Ground Cable
SGC-MT-6-001
1m /Ø4~Ø6[mm] /
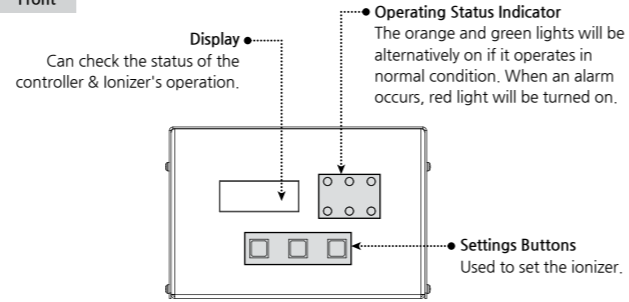1~2ea

Signal Cable
SUC-MT-2-001
5m /
2ea

▶ Option
If you require extra functions with the basic accessories we provided, you need to purchase optional items in below for further assistant.
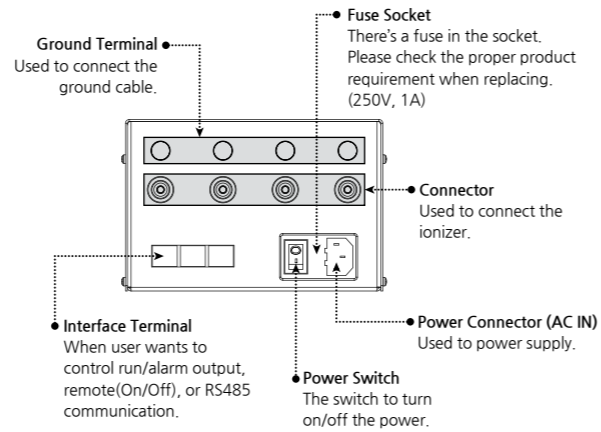
* UTP Cable
SUC-B3-1-001
5m

❸ Nomenclatures of parts

Front

● Display
Can check the status of the controller & Ionizer's operation.

● Operating Status Indicator
The orange and green lights will be alternatively on if it operates in normal condition. When an alarm occurs, red light will be turned on.

● Settings Buttons
Used to set the ionizer.

Rear

● Ground Terminal
Used to connect the ground cable.

● Fuse Socket
There's a fuse in the socket.
Please check the proper product requirement when replacing.
(250V, 1A)

● Connector
Used to connect the ionizer.

● Interface Terminal
When user wants to control run/alarm output, remote(On/Off), or RS485 communication.

● Power Connector (AC IN)
Used to power supply.

● Power Switch
The switch to turn on/off the power.

❹ Installation and connection

❗ CAUTION

* During installation, please try to avoid the area where the product might get(electrical) stress. There might be chances for cable breakage, electric shock, or fire explosion.
* Please be sure to use a ground cable for safety purposes.

▶ How to connect
Refer to the figure below to connect the product.

#1 #2 #3 #4

Ionizer

Ground Cable

Ground

AC 100~240V, 50/60Hz
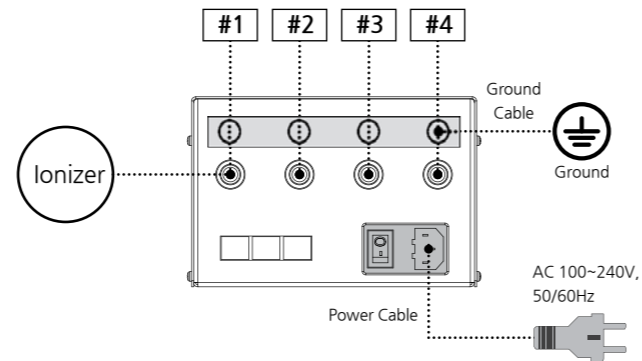
Power Cable

▶ Connectable products
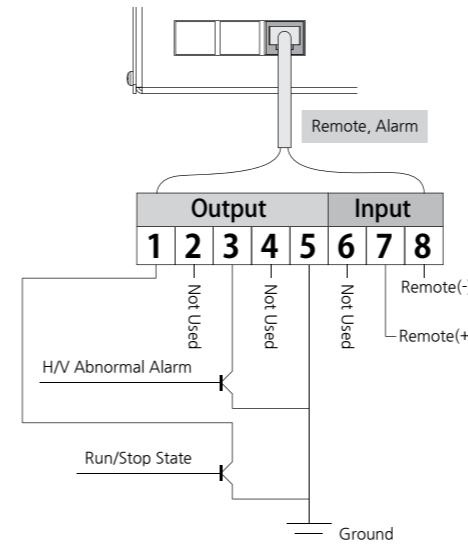The SBP-14J4(i.e.Power Controller) can be connected to the (multiple) products as below.

* Ion Bar
SIB1 Series

* Ion Bar
SIB1(N) Series

* Ion Bar
SSB1 Series

* Ion Nozzle
SPN-21

▶ How to connect the interface (Signal Cable)
For the specification of the signal cable to be used, refer to the table below.

1 ~ 8
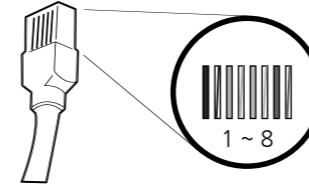
No	Color	Function	Output	Picture	Remarks
1	Brown	Run/Stop State	Photo Relay Output (Run-Close, Stop-Open)	Run / Stop	
2	White & Brown	Not Used	-	-	
3	Orange	High Voltage Abnormal Alarm	Photo Relay Output (Normal-Open, Alarm-Close)	Normal / Alarm	Output
4	White & Orange	Not Used	-	-	
5	Green	Common	-	-	
6	White & Green	Not Used	-	-	

No	Color	Function	Input	Picture	Remarks
7	Blue	Remote(+)	DC 24V	-	Input
8	White & Blue	Remote(-)	Ground	-	

Remote, Alarm

Output				Input			
1	2	3	4	5	6	7	8

Not Used (2), Not Used (4), Not Used (6)
Remote(-)
Remote(+)

H/V Abnormal Alarm

Run/Stop State

Ground

▶ How to connect the interface (UTP Cable : Option)
For the specification of the UTP cable to be used, refer to the table below.

No	Color	Descriptions
1	Brown	Not Used
2	White & Brown	Not Used
3	Orange	RS-485+
4	White & Orange	RS-485-
5	Green	Not Used
6	White & Green	Not Used
7	Blue	Not Used
8	White & Blue	Not Used

RMS UTP

Input							
1	2	3	4	5	6	7	8

RS-485 + , RS-485 -

Communication Spec
Baudrate : 9,600
Parity Bit : None
Data Bit : 8
Stop Bit : 1
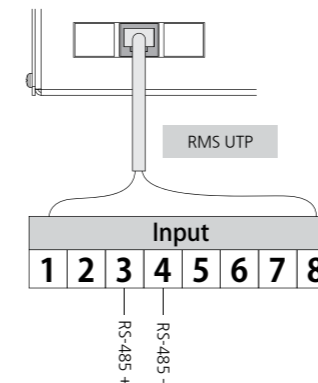
▶ Communication Protocol

1. DATA Request

Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	$	B	2	,	R	E	Q	,	A	*	h	h	₩r	₩n

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	B(Bar Type Ionizer)	A:Photo, B:Bar, C:Blower
2	Ionizer Model	1	2	SBP-14J4
4, 5, 6	Data Request	3	REQ	Command(REQ,RUN,STP)
8	Bar Address	1	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G	1 ~ 16 : '1' ~ 'G'
9	End Code	1		
10, 11	Check Sum	2	Check Sum	
12, 13	Line Feed, New Line	2		

1. DATA Receive

Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	$	B	2	,	A	,	1F	,	1D	,	1H	,	1P/T	,

Byte	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Code	1N/T	,	2F	,	2D	,	2H	,	2P/T	,	2N/T	,	A/S	,

Byte	28	29	30	31	32	33
Code	R/S	*	h	h	₩r	₩n

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	B(Bar Type Ionizer)	A:Photo, B:Bar, C:Blower
2	Ionizer Model	1	2	SBP-14J4
4	Address	1	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G	1 ~ 16 : '1' ~ 'G'
6	Bar1 Frequency	1	0,1,2,3,4,5,6,7,8,9	0.1,0.3,1,3,5,8,10,20,30,50Hz '0' ~ '9'
8	Bar1 Duty	1	ASCII : '(' [40] ~ 'F' [70]	40 ~ 70%
10	Bar1 High Voltage	1	1 ~ 10	1 : 8.0 ~ 10 : 12.5
12	Bar1 Positive Time	1	0 ~ 10	0 : 0sec, 10 : 10sec
14	Bar1 Negative Time	1	0 ~ 10	0 : 0sec, 10 : 10sec
16	Bar2 Frequency	1	0,1,2,3,4,5,6,7,8,9	0.1,0.3,1,3,5,8,10,20,30,50Hz '0' ~ '9'
18	Bar2 Duty	1	ASCII : '(' [40] ~ 'F' [70]	40 ~ 70%
20	Bar2 High Voltage	1	1 ~ 10	1 : 8.0 ~ 10 : 12.5
22	Bar2 Positive Time	1	0 ~ 10	0 : 0sec, 10 : 10sec
24	Bar2 Negative Time	1	0 ~ 10	0 : 0sec, 10 : 10sec
26	Alarm State	1	Normal : 0, HV : 1	
28	Run/Stop State	1	Run : 1, Stop : 0	
29	End Code	1		
30, 31	Check Sum	2	Check Sum	
32, 33	Line Feed, New Line	2		

1. Comm Sample

Request	$B2, REQ, 9*0F₩r₩n
Receive	$B2, 1, 6, 5, 1, 2, 2, 6, 5, 1, 2, 2, 0, 1*6C₩r₩n

2. Control [Run]

Byte	0	5	6	7	8	9	10	11	12	13	14	15	16	17
Code	$	B	2	,	R	U	N	,	A	*	h	h	₩r	₩n

2. No Receive

3. Control [Stop]

Byte	0	5	6	7	8	9	10	11	12	13	14	15	16	17
Code	$	B	2	,	S	T	P	,	A	*	h	h	₩r	₩n

3. No Receive

Checksum Calculation

$ ~ ＊ Calculation

```
#include<stdio.h>

Void main()
{
  char packet[] = "B2,REQ,1", cksum = 0;
  int i, size = 0;

  while(packet[size] !='₩0') size++;

  for(i = 0 ; i < size ; i++)
  {
    if(i == 0)
      cksum = packet[i];
    else
      cksum^= packet[i];
    //printf("packet[%d] = %c, checksum = %.2x₩n", i, packet[i], cksum);
  }
  printf("Request : $B2,REQ,1＊%.2X",cksum); //Checksum character send by ASCII.
```
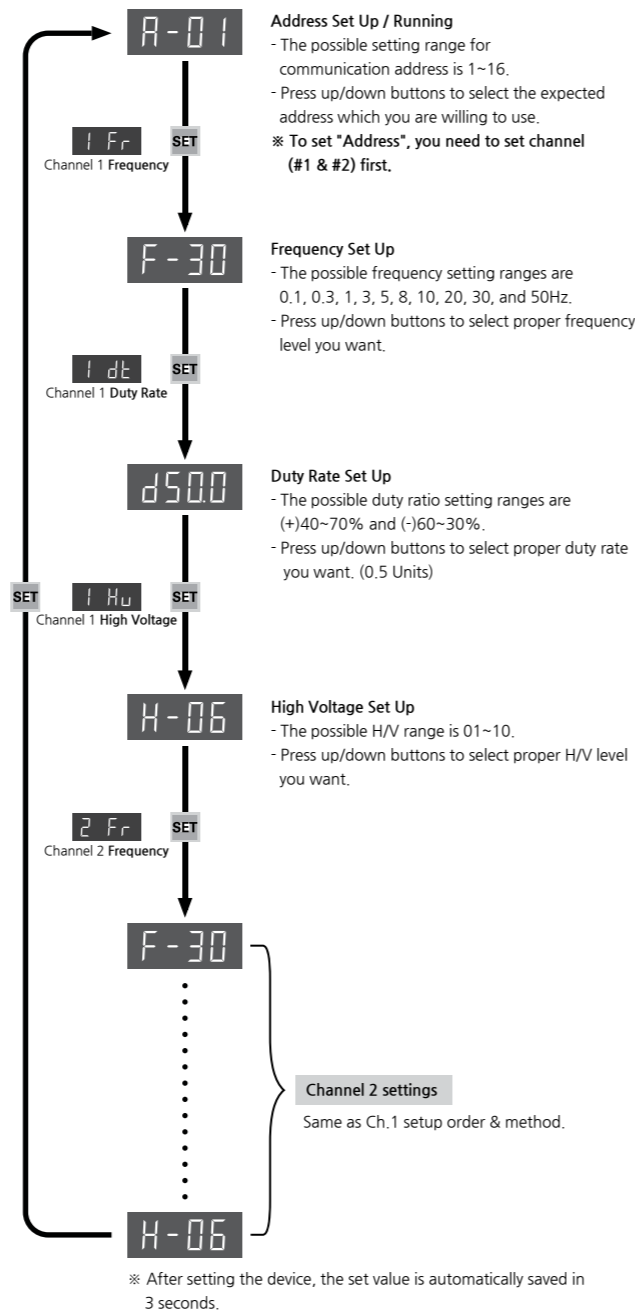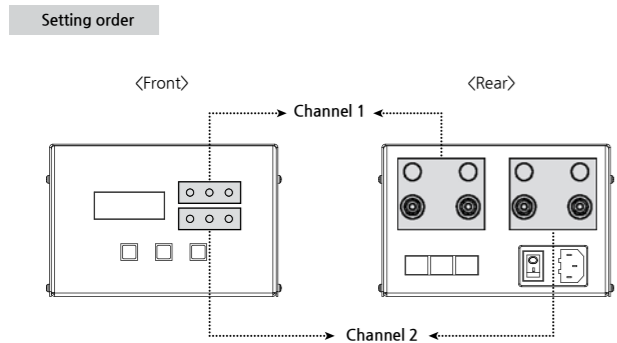

5　How to set

⚠ WARNING

＊ Do not tamper with the set value. The malfunction might arise.

Setting order

<Front>　　　　　　<Rear>

‹‹‹ Channel 1

‹‹‹ Channel 2 ‹‹‹

A-01 　**Address Set Up / Running**
- The possible setting range for communication address is 1~16.
- Press up/down buttons to select the expected address which you are willing to use.
※ To set "Address", you need to set channel (#1 & #2) first.

SET
1 Fr
Channel 1 Frequency

F-30 　**Frequency Set Up**
- The possible frequency setting ranges are 0.1, 0.3, 1, 3, 5, 8, 10, 20, 30, and 50Hz.
- Press up/down buttons to select proper frequency level you want.

SET
1 dt
Channel 1 Duty Rate

d50.0 　**Duty Rate Set Up**
- The possible duty ratio setting ranges are (+)40~70% and (-)60~30%.
- Press up/down buttons to select proper duty rate you want. (0.5 Units)

SET 1 Hu **SET**
Channel 1 High Voltage

H-06 　**High Voltage Set Up**
- The possible H/V range is 01~10.
- Press up/down buttons to select proper H/V level you want.

SET
2 Fr
Channel 2 Frequency

F-30 ⌉
⋮
Channel 2 settings
Same as Ch.1 setup order & method.
⋮
H-06 ⌋

※ After setting the device, the set value is automatically saved in 3 seconds.

6　Problem solving

▶ Checklist before called

Problem	Identifying Problem	Solution
The product does not work.	Is your power cable still plugged in?	Please re-plug the power cable and then turn the device on again.
	Was the proper voltage level applied for this set-up?	Please use the proper level of power input for the device. (AC 100~240V, 50/60Hz)
	Is the swith off at back of the device?	Turn on the power switch.
	Is a fuse broken?	Replace the proper fuse immediately. (250V, 1A)
There is no ionization.	Does the installed environment have too high/low level of humidity or temperature?	Please install the device upon the proper working specification.
The ionizing performance has been decreased.	Can't possibly ground the device?	Please refer to 「Installation & Connection」 for grounding the device.
	Any damages or cut on the cables?	You need to replace the cables if it gets cut or damaged.

7　Dimensions

<Top>

<Side>

280.5

<Front>

165.0

110.0

<Rear>
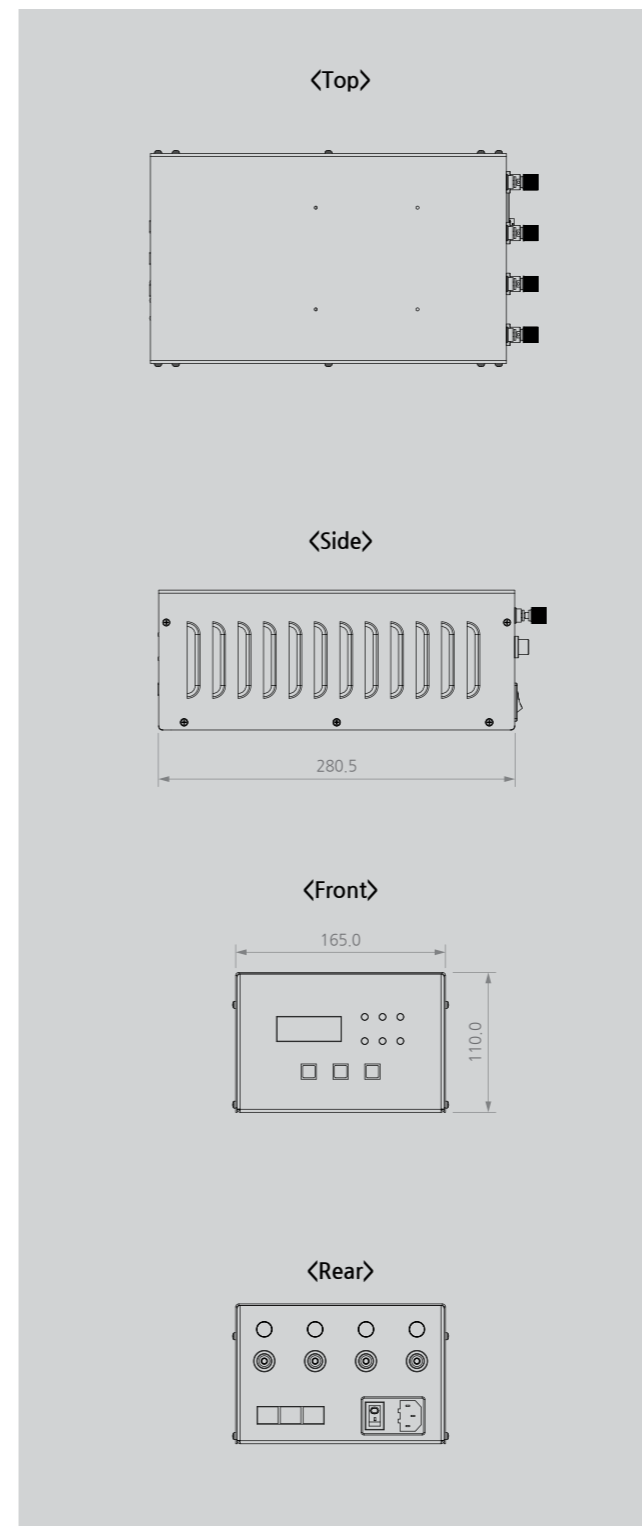
8　Specification

Parameter		Description / Value
Input Power		AC 100~240V, 50/60Hz
Output Voltage		Pulse AC 14 kVp-p(Max.)
Power Consumption		18W
Current Consumption		80mA (AC 220V)
Weight		2.90kg
Main Body Material		EGI
Number Connectable		Max. 4ea
Operation Circumstance		0℃ ~ +50℃(32℉ ~ 122℉), 35% ~ 85% RH
Adjust Function	Frequency [Hz]	0.1, 0.3, 1, 3, 5, 8, 10, 20, 30, 50(10Steps)
	Duty Ratio [%]	40~70 (0.5Units)
	High Voltage [Level]	H : 1~10 (1Units)
Dimensions		Please refer to dimension drawing
Interface		Remote On/Off, Run State, H/V Alarm State, RS485
Warranty		1 year

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

SUNJE Hi-Tek Co., Ltd. 　　　　www.sunstat.com