Ver. 190115

Instruction Manual

SUNJE Electrostatic

SIB5S Communication (Kor)

1 RS-485 Communication

1. Pin

- TRX+ (3)
- TRX- (4)

2. Communication Spec.

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

2 Communication Protocol

Command Format	통신장비 → SIB5S Series													
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
ASCII	$	P	M	,	C	M	D	,	A	*	Checksum		CR	LF

1. Data Request	통신장비 → SIB5S Series													
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
ASCII	$	P	M	,	R	E	Q	,	A	*	Checksum		CR	LF

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	B : Bar Type Ionizer	A: Photo, B: Bar, C: Blower
2	Model Ionizer	1	9 : SIB5S	
1, 2	Broadcasting	2	ZB	제품군, 제품명 상관없이 응답
4, 5, 6	Command	3	[REQ] / RQT / RUN / STP	Request / Run / Stop
8	Address	1	1 ~ 16	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G
9	End Code	1		
10, 11	Check Sum	2	CheckSum	
12, 13	Carriage Return, Line Feed	2		

1. Data Receive	통신장비 ← SIB5S Series													
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	$	P	M	,	A	,	F	,	D	,	PV	,	NV	,
Byte	14	15	16	17	18	19	20	21	22	23	24	25		
Code	PC	,	NC	,	A/S	,	R/S	*	Checksum		CR	LF		

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	9 : SIB5S	
4	Address	1	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G	1 ~ 16
6	Frequency	1	0,1,2,3,4,5,6,7,8,9,A,B,C	0.1,0.3,1,3,5,8,10,20, 30,35,40,45,50Hz
8	Duty	1	(~ d : 40% ~ 70%	2로 고정
10	PV	1	0 ~ 9 : 1Lv ~ 10Lv	Pos Voltage Level
12	NV	1	0 ~ 9 : 1Lv ~ 10Lv	Neg Voltage Level
14	PC	1		
16	NC	1		
18	Alarm State	1	0 : Normal, 1 : HV, 2 : Tip Clean	
20	Run/Stop State	1	1 : Run, 0 : Stop	
21	End Code	1		
22, 23	Check Sum	2	CheckSum	
24, 25	Carriage Return, Line Feed	2		

2. DATA Request	통신장비 → SIB5S													
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	$	P	M	,	R	Q	T	,	A	*	Checksum		CR	LF

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	B : Bar Type Ionizer	A: Photo, B: Bar, C: Blower
2	Model Ionizer	1	9 : SIB5S	
1, 2	Broadcasting	2	ZB	제품군, 제품명 상관없이 응답
4, 5, 6	Command	3	REQ / [RQT] / RUN / STP	Request / Run / Stop
8	Address	1	1 ~ 16	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G
9	End Code	1		
10, 11	Check Sum	2	CheckSum	
12, 13	Carriage Return, Line Feed	2		

2. Data Receive	통신장비 ← SIB5S Series													
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	$	P	M	,	A	,	R	Q	T	,	F	,	D	,
Byte	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Code	PV	,	NV	,	PC	,	NC	,	A/S	,	R/S	*	Checksum	
Byte	28	29												
Code	CR	LF												

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	B : Bar Type Ionizer	A: Photo, B: Bar, C: Blower
2	Model Ionizer	1	9 : SIB5S	
4	Address	1	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G	1 ~ 16
6, 7, 8	Command	3	REQ / [RQT] / RUN / STP	Request / Run / Stop
10	Frequency	1	0,1,2,3,4,5,6,7,8,9,A,B,C	0.1,0.3,1,3,5,8,10,20, 30,35,40,45,50Hz
12	Duty	1	(~ d : 40% ~ 70%	2로 고정
14	PV	1	0 ~ 9 : 1Lv ~ 10Lv	Pos Voltage Level
16	NV	1	0 ~ 9 : 1Lv ~ 10Lv	Neg Voltage Level
18	PC	1		
20	NC	1		
22	Alarm State	1	0 : Normal, 1 : HV, 2 : Tip Clean	
24	Run/Stop State	1	1 : Run, 0 : Stop	
25	End Code	1		
26, 27	Check Sum	2	CheckSum	
28, 29	Carriage Return, Line Feed	2		

3. Control [Run]	통신장비 → SIB5S Series												
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	$	P	M	,	R	U	N	,	A	*	Checksum		CR	LF

3. Control [Run] Receive	통신장비 ← SIB5S Series												
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
ASCII	$	P	M	,	A	,	R	U	N	*	Checksum		CR	LF

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	B : Bar Type Ionizer	A: Photo, B: Bar, C: Blower
2	Model Ionizer	1	9 : SIB5S	
4	Address	1	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G	1 ~ 16
6, 7, 8	Command	3	REQ / RQT / [RUN] / STP	Request / Run / Stop

4. Control [Stop]	통신장비 → SIB5S Series												
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	$	P	M	,	S	T	P	,	A	*	Checksum		CR	LF

4. Control [Stop] Receive	통신장비 ← SIB5S Series												
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	$	P	M	,	A	,	S	T	P	*	Checksum		CR	LF

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	B : Bar Type Ionizer	A: Photo, B: Bar, C: Blower
2	Model Ionizer	1	9 : SIB5S	
4	Address	1	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G	1 ~ 16
6, 7, 8	Command	3	REQ / RTQ / RUN / [STP]	Request / Run / Stop

〈 예시 〉 SIB5S Series의 상태 요청													
Data Request	통신장비 → SIB5S Series												
ASCII	$	B	9	,	R	E	Q	,	1	*	0	C	CR	LF

Data Receive	통신장비 ← SIB5S Series													
ASCII	$	B	9	,	1	,	6	,	0	,	4	,	4	,
ASCII	4	,	4	,	0	,	1	*	Checksum		CR	LF		

Checksum Calculation

$ ~ * Calculation

```
#include<stdio.h>

void main()
{
    char packet[] = "B9,REQ,1", cksum = 0;
    int i, size = 0;
    char cksum = 0;

    while(packet[size] !='₩0') size++;

    for(i = 0 ; i < size ; i++)
    {
       if(i == 0)
         cksum = packet[i];
       else
         cksum^= packet[i];
    }
    printf("Request : $B9,REQ,1*%.2X",cksum); //Checksum character send by ASCII.
}
```

※ Checksum 검사는 $표시 이후부터 *표시 전까지의 모든 데이터를 Exclusive-or 연산한 것입니다.

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