

Instruction Manual

SUNJE
Electrostatic

X

SXN-05/10BT Communication

Kor

1 RS-485 Communication

1. Pin
- 24번 Pin : RS-485(+)

- 25번 Pin : RS-485(-)
2. Communication Spec.
- Baud : 9600

- Parity Bit : None

- Data Bit : 8

- Stop Bit : 1

2 Communication Protocol

kV	Model 별 통신 식별자									
	Product Type	Ionizer Model								
		1	2	3	4	5	6	7	8	9
5	E	A	B	C	D	E	F	G	H	I
10		a	b	c	d	e	f	g	h	i

※ 연결된 Tube 개수/관전압 수치에 따라 통신 식별자가 다름

1. Data Request

				통신장비 ← SXC-10BT										
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	\$	P	M	,	R	E	Q	,	A	*	Checksum	CR	LF	

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	Photo Type Ionizer	E : SXC-10BT
2	Ionizer Model	1	5kV : A ~ I, 10kV : a ~ i	
1, 2	Broadcasting	2	ZB	제품군, 제품명 상관없이 응답
4, 5, 6	Command	3	REQ : Request, RUN : Run, STP : Stop	Bar의 Tube 개수에 따라 구분 (최대 9개까지 연결)
8	Address	1	Photo : 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	Check Sum	
12, 13	Carriage Return, Line Feed	2		

1. Data Receive					통신장비 ← SXC-10BT										
Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
ASCII	\$	P	M	,	A	,	T/C	,	T/O	,	T/A	,	Tube		
Byte	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
ASCII	Run Time(1)				,	T/C	,	T/O	,	T/A	,	Tube Run Time(2)			
Byte	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
ASCII		,	T/C	,	T/O	,	T/A	,	Tube Run Time(3)					,	
Byte	42	43	44	45	46	47	48	49	50	51	52	53	54	55	
ASCII	T/C	,	T/O	,	T/A	,	Tube Run Time(4)					,	T/C	,	
Byte	56	57	58	59	60	61	62	63	64	65	66	67	68	69	
ASCII	T/O	,	T/A	,	Tube Run Time(5)					,	T/C	,	T/O	,	
Byte	70	71	72	73	74	75	76	77	78	79	80	81	82	83	
ASCII	T/A	,	Tube Run Time(6)					,	T/C	,	T/O	,	T/A	,	
Byte	84	85	86	87	88	89	90	91	92	93	94	95	96	97	
ASCII	Tube Run Time(7)					,	I/S	,	R/S	,	P/S	,	A/S	,	
Byte	98	99	100	101	102	103									
ASCII	R/S	*	Checksum	CR	LF										

※ Tube 7개 모델 기준

Byte	Information	Byte	Comment	Remarks
0	Start Code	1		
1	Product Type	1	Photo Type Ionizer	E : SXC-10BT
2	Ionizer Model	1	5kV : A ~ I, 10kV : a ~ i	Bar의 Tube 개수에 따라 구분 (최대 9개까지 연결)
4	Address	1	Photo : 1 ~ 16	1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,G
6	Tube1 Connect	1	1 : Normal	1 : Tube Con(상시)
8	Tube1 Over Time	1	0 : Normal, 1 : Abnormal	Over Time 시 Abnormal
10	Tube1 Alarm	1	0 : Normal, 1 : Tube Fail, 3 : Comm out	0 이외 Abnormal
12 ~ 16	Tube1 Run Time	5	00000 ~ 99999 Hour	
18	Tube2 Connect	1	1 : Normal	1 : Tube Con(상시)
20	Tube2 Over Time	1	0 : Normal, 1 : Abnormal	Over Time 시 Abnormal
22	Tube2 Alarm	1	0 : Normal, 1 : Tube Fail, 3 : Comm out	0 이외 Abnormal
24 ~ 28	Tube2 Run Time	5	00000 ~ 99999 Hour	
30	Tube3 Connect	1	1 : Normal	1 : Tube Con(상시)
32	Tube3 Over Time	1	0 : Normal, 1 : Abnormal	Over Time 시 Abnormal
34	Tube3 Alarm	1	0 : Normal, 1 : Tube Fail, 3 : Comm out	0 이외 Abnormal
36 ~ 40	Tube3 Run Time	5	00000 ~ 99999 Hour	

Byte	Information	Byte	Comment	Remarks
42	Tube4 Connect	1	1 : Normal	1 : Tube Con(상시)
44	Tube4 Over Time	1	0 : Normal, 1 : Abnormal	Over Time 시 Abnormal
46	Tube4 Alarm	1	0 : Normal, 1 : Tube Fail, 3 : Comm out	0 이외 Abnormal
48 ~ 52	Tube4 Run Time	5	00000 ~ 99999 Hour	
54	Tube5 Connect	1	1 : Normal	1 : Tube Con(상시)
56	Tube5 Over Time	1	0 : Normal, 1 : Abnormal	Over Time 시 Abnormal
58	Tube5 Alarm	1	0 : Normal, 1 : Tube Fail, 3 : Comm out	0 이외 Abnormal
60 ~ 64	Tube5 Run Time	5	00000 ~ 99999 Hour	
66	Tube6 Connect	1	1 : Normal	1 : Tube Con(상시)
68	Tube6 Over Time	1	0 : Normal, 1 : Abnormal	Over Time 시 Abnormal
70	Tube6 Alarm	1	0 : Normal, 1 : Tube Fail, 3 : Comm out	0 이외 Abnormal
72 ~ 76	Tube6 Run Time	5	00000 ~ 99999 Hour	
78	Tube7 Connect	1	1 : Normal	1 : Tube Con(상시)
80	Tube7 Over Time	1	0 : Normal, 1 : Abnormal	Over Time 시 Abnormal
82	Tube7 Alarm	1	0 : Normal, 1 : Tube Fail, 3 : Comm out	0 이외 Abnormal
84 ~ 88	Tube7 Run Time	5	00000 ~ 99999 Hour	
※ 연결된 Tube 개수에 따라 통신 Data Byte 수가 달라집니다.				
90	Controller Interlock State	1	0: Interlock Off, 1: Interlock On	
92	Controller Remote State	1	0: Remote Off, 1: Remote On	
94	Controller Power State	1	0: Power Off, 1: Power On	
96	Controller Alarm State	1	0 : Normal, 1 : Tube Fail, 3 : Comm out	Tube Alarm 1개 이상 발생시 Abnormal
98	Controller Run/Stop State	1	1 : Run, 0 : Stop	
99	End Code	1		
100, 101	Check Sum	2	CheckSum	
102, 103	Carriage Return, Line Feed	2		

※ Tube 7개 모델 기준

2. Control [Run]					통신장비 → SXC-10BT										
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	

2. No Receive	통신장비 ← SXC-10BT
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3. Control [Stop]					통신장비 → SXC-10BT										
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		

3. No Receive	통신장비 ← SXC-10BT
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Checksum Calculation

\$ ~ * Calculation

```
#include<stdio.h>

void main()
{
    char packet[] = "EG,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("Request : $EG,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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