

Instruction Manual





SXN-U Series Communication



1 RS-485 Communication

1. Pin

- Pin 8 : RS-485(+)
- Pin 9 : RS-485(-)

2. Communication Spec.

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

2 Communication Protocol

| Command Format |    |   |   | Communication device → SXN-U 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 |    |   |   | Communication device → SXN-U 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    | Photo : A                                 | Photo Type Ionizer              |
| 2       | Ionizer Model              | 1    | 05U : A, XRC-05(10U) : B, 15U : C         |                                 |
| 1, 2    | Broadcasting               | 2    | ZB                                        | Respond to any kinds of product |
| 4, 5, 6 | Command                    | 3    | REQ                                       | Request                         |
| 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 |          |    |    | Communication device -- SXN-U Series |     |    |     |    |     |    |     |    |      |    |
|-----------------|----------|----|----|--------------------------------------|-----|----|-----|----|-----|----|-----|----|------|----|
| Byte            | 0        | 1  | 2  | 3                                    | 4   | 5  | 6   | 7  | 8   | 9  | 10  | 11 | 12   | 13 |
| ASCII           | \$       | P  | M  | ,                                    | A   | ,  | H/C | ,  | H/O | ,  | H/A | ,  | Head |    |
| Byte            | 14       | 15 | 16 | 17                                   | 18  | 19 | 20  | 21 | 22  | 23 | 24  | 25 | 26   | 27 |
| ASCII           | Run Time |    |    | ,                                    | I/S | ,  | R/S | ,  | P/S | ,  | A/S | ,  | R/S  | *  |
| Byte            | 28       | 29 | 30 | 31                                   |     |    |     |    |     |    |     |    |      |    |
| ASCII           | Checksum |    | CR | LF                                   |     |    |     |    |     |    |     |    |      |    |

| Byte    | Information                | Byte | Comment                                                | Remarks                 |
|---------|----------------------------|------|--------------------------------------------------------|-------------------------|
| 0       | Start Code                 | 1    |                                                        |                         |
| 1       | Product Type               | 1    | Photo : A                                              | Photo Type Ionizer      |
| 2       | Ionizer Model              | 1    | 05U : A, XRC-05(10U) : B, 15U : C                      |                         |
| 4       | Address                    | 1    | 1 ~ 16 : 1,2,3,4,5,6,7,8,9, A,B,C,D,E,F,G              |                         |
| 6       | Head Connect               | 1    | Normal:1                                               | 1 : Head Con(Always on) |
| 8       | Head Over Time             | 1    | Normal:0, Abnormal:1                                   | Abnormal when overtime  |
| 10      | Head Alarm                 | 1    | Normal:0, (Head Fail/Random):1, (Over/Under Current):2 | Abnormal except 0       |
| 12 ~ 16 | Head Run Time              | 5    | 00000 ~ 99999 Hour                                     |                         |
| 18      | Controller Interlock State | 1    | 0 : Interlock Off, 1 : Interlock On                    |                         |
| 20      | Controller Remote State    | 1    | 0 : Remote Off, 1 : Remote On                          |                         |
| 22      | Controller Power State     | 1    | 0 : Power Off, 1 : Power On                            |                         |

| Byte   | Information                | Byte | Comment                                                | Remarks                  |
|--------|----------------------------|------|--------------------------------------------------------|--------------------------|
| 24     | Controller Alarm State     | 1    | Normal:0, (Head Fail/Random):1, (Over/Under Current):2 | Abnormal when Head Alarm |
| 26     | Controller Run/Stop State  | 1    | 0 : Stop, 1 : Run                                      |                          |
| 27     | End Code                   | 1    | *                                                      |                          |
| 28, 29 | Check Sum                  | 2    | CheckSum                                               |                          |
| 30, 31 | Carriage Return, Line Feed | 2    |                                                        |                          |

| 2. Control [Run] |    |   |   | Communication device → SXN-U Series |   |   |   |   |   |   |          |    |    |    |
|------------------|----|---|---|-------------------------------------|---|---|---|---|---|---|----------|----|----|----|
| Byte             | 0  | 1 | 2 | 3                                   | 4 | 5 | 6 | 7 | 8 | 9 | 10       | 11 | 12 | 13 |
| ASCII            | \$ | P | M | ,                                   | R | U | N | , | A | * | Checksum |    | CR | LF |

| 2. No Receive |  | Communication device ← SXN-U Series |  |  |  |  |  |  |  |  |  |  |  |
|---------------|--|-------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
|---------------|--|-------------------------------------|--|--|--|--|--|--|--|--|--|--|--|

| 3. Control [Stop] |    |   |   | Communication device → SXN-U Series |   |   |   |   |   |   |          |    |    |    |
|-------------------|----|---|---|-------------------------------------|---|---|---|---|---|---|----------|----|----|----|
| Byte              | 0  | 1 | 2 | 3                                   | 4 | 5 | 6 | 7 | 8 | 9 | 10       | 11 | 12 | 13 |
| ASCII             | \$ | P | M | ,                                   | S | T | P | , | A | * | Checksum |    | CR | LF |

| 3. No Receive |  | Communication device ← SXN-U Series |  |  |  |  |  |  |  |  |  |  |  |
|---------------|--|-------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
|---------------|--|-------------------------------------|--|--|--|--|--|--|--|--|--|--|--|

| 4. Control [Address Set] |    |    |   | Communication device → SXN-U Series |   |   |   |   |   |   |    |    |          |    |
|--------------------------|----|----|---|-------------------------------------|---|---|---|---|---|---|----|----|----------|----|
| Byte                     | 0  | 1  | 2 | 3                                   | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12       | 13 |
| ASCII                    | \$ | P  | M | ,                                   | A | D | R | , | A | , | A  | *  | Checksum |    |
| Byte                     | 14 | 15 |   |                                     |   |   |   |   |   |   |    |    |          |    |
| ASCII                    | CR | LF |   |                                     |   |   |   |   |   |   |    |    |          |    |

| Byte   | Information                | Byte | Comment                           | Remarks                                   |
|--------|----------------------------|------|-----------------------------------|-------------------------------------------|
| 0      | Start Code                 | 1    |                                   |                                           |
| 1      | Product Type               | 1    | Photo : A                         | Photo Type Ionizer                        |
| 2      | Ionizer Model              | 1    | 05U : A, XRC-05(10U) : B, 15U : C |                                           |
| 4 ~ 6  | Command                    | 3    | ADR                               | Address set                               |
| 8      | Address                    | 1    | Current Address                   | 1 ~ 16 : 1,2,3,4,5,6,7,8,9, A,B,C,D,E,F,G |
| 10     | Address                    | 1    | Change Address                    |                                           |
| 11     | End Code                   | 1    | *                                 |                                           |
| 12, 13 | Check Sum                  | 2    | CheckSum                          |                                           |
| 14, 15 | Carriage Return, Line Feed | 2    |                                   |                                           |

| 4. No Receive |  | Communication device ← SXN-U Series |  |  |  |  |  |  |  |  |  |  |  |
|---------------|--|-------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
|---------------|--|-------------------------------------|--|--|--|--|--|--|--|--|--|--|--|

| 5. Version Request |    |   |   | Communication device → SXN-U Series |   |   |   |   |   |   |          |    |    |    |
|--------------------|----|---|---|-------------------------------------|---|---|---|---|---|---|----------|----|----|----|
| Byte               | 0  | 1 | 2 | 3                                   | 4 | 5 | 6 | 7 | 8 | 9 | 10       | 11 | 12 | 13 |
| ASCII              | \$ | P | M | ,                                   | V | E | R | , | A | * | Checksum |    | CR | LF |

| Byte    | Information                | Byte | Comment                                   | Remarks                         |
|---------|----------------------------|------|-------------------------------------------|---------------------------------|
| 0       | Start Code                 | 1    |                                           |                                 |
| 1       | Product Type               | 1    | Photo : A                                 | Photo Type Ionizer              |
| 2       | Ionizer Model              | 1    | 05U : A, XRC-05(10U) : B, 15U : C         |                                 |
| 1, 2    | Broadcasting               | 2    | ZB                                        | Respond to any kinds of product |
| 4, 5, 6 | Command                    | 3    | VER                                       | Version                         |
| 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    |                                           |                                 |

| 5. DATA Receive |          |    |    | Communication device — SXN-U Series |   |   |   |   |   |   |    |    |    |    |
|-----------------|----------|----|----|-------------------------------------|---|---|---|---|---|---|----|----|----|----|
| Byte            | 0        | 1  | 2  | 3                                   | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| ASCII           | \$       | P  | M  | ,                                   | A | , | R | , | U | , | D  | ,  | C  | *  |
| Byte            | 14       | 15 | 16 | 17                                  |   |   |   |   |   |   |    |    |    |    |
| ASCII           | Checksum | CR | LF |                                     |   |   |   |   |   |   |    |    |    |    |

| Byte   | Information                | Byte | Comment                                   | Remarks            |
|--------|----------------------------|------|-------------------------------------------|--------------------|
| 0      | Start Code                 | 1    |                                           |                    |
| 1      | Product Type               | 1    | Photo : A                                 | Photo Type Ionizer |
| 2      | Ionizer Model              | 1    | 05U : A, XRC-05(10U) : B, 15U : C         |                    |
| 4      | Address                    | 1    | 1 ~ 16 : 1,2,3,4,5,6,7,8,9, A,B,C,D,E,F,G |                    |
| 6      | Release                    | 1    |                                           |                    |
| 8      | Update                     | 1    |                                           |                    |
| 10     | Debug                      | 1    |                                           |                    |
| 12     | Compile                    | 1    |                                           |                    |
| 13     | End Code                   | 1    | *                                         |                    |
| 14, 15 | Check Sum                  | 2    | CheckSum                                  |                    |
| 16, 17 | Carriage Return, Line Feed | 2    |                                           |                    |

Checksum Calculation

\$ ~ \* Calculation

```
#include<stdio.h>

void main()
{
    char packet[] = "AC,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 : $AC,REQ,1*%2X",cksum); //Checksum character send by ASCII.
}
```

※ Checksum is Exclusive-or operation of all data from after \$ mark to before \*mark.



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