



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.
- 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.
- Please shield your installing circumstances first since the item releases the soft X-ray. Direct X-ray exposure is not recommended owing to cause health problem.
- It includes a beryllium window on the x-ray tube unit in order to release soft x-ray for ionization. This beryllium material can cause respiratory disorder only if the person gets exposed to forms of either beryllium powder or smoke. However, our device doesn't create beryllium in neither of the mentioned forms. Please be careful not to break the device since there might be a slight chance that the device could partially degrade into the powder form, then it can cause harm defects. If the user touches the beryllium material on the device, clean oneself on the running water or rinse it off with soap directly. If the beryllium window gets dirty or damaged, call us directly for assistance.
- 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.

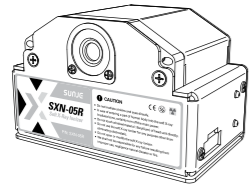
CAUTION

- Do not disconnect the head 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.
- If you wish to discard the head unit of x-ray device, you need to report for disuse declaration to the institution(s) where they ask to. A proper declaration procedure is necessary in order to disuse x-ray device.
- Please contact to either Korea Institute of Nuclear Safety(KINS) or a safety supervisor of Sunje directly.

2 Check the package contents

Product Compositions

The package includes the following products composition.



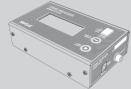
Soft X-Ray Ionizer SXN-05R 1ea



IN / OUT Cable SOC-5R-1-001 1m / 1ea

Option

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



Time Reader(S) SXN-S Time Reader 1ea



Time Reader Cable STR-5R-1-001 10m / 1ea

* The length of supported cable might be different among users equipment.



SXN-05R Bracket SBR-XN-3-001 1ea

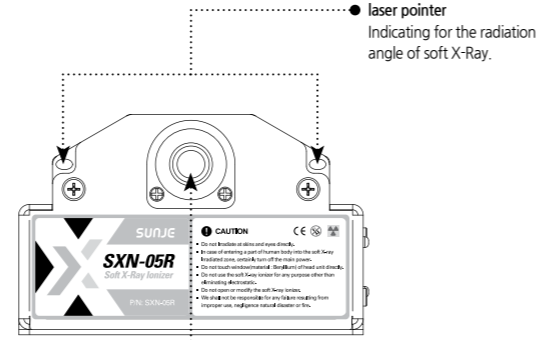


SXN-05R Bracket SBR-XN-3-002 1ea

3 Nomenclatures of parts

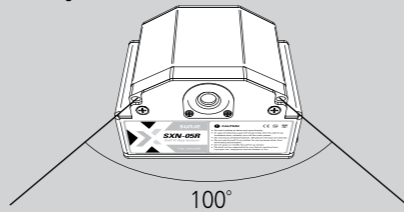
SXN-05R

Front

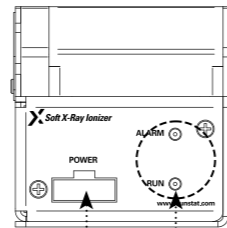


Soft X-Ray Window
The x-ray radiation will be released through this beryllium window from the head unit of x-ray ionizer.

SXN-05R radiation angle



Right Side



In / Out Cable Connector
A connector to wire the YSXN-05R and Equipment.

Indicator Light

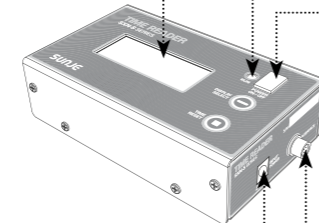
- ALARM Alarm LED
- RUN Run LED

When these cases, Red LED will be on.
a. Soft X-ray Tube life time end.
b. Some troubles with Soft X-ray Tube.

Blue LED will be on when the item is in operating condition.

SXN-S Time Reader (Option)

LCD Display
LCD Display indicates the use time of SXN-05R. LCD Display enables you to manage the use time of SXN-05R from the outside of equipment.



Run state indicating lamp
This LED will show the status of the product (Run/Alarm) condition.

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

Power Connector (DC IN)
Used to power supply.

Interface Connector
Interface Connector is for connecting RMS, checking the hours of use and reset.

4 Installation and Connection

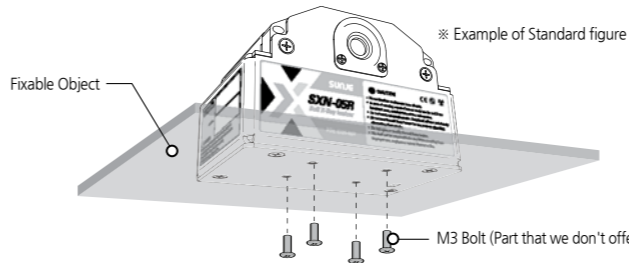
Check the installation conditions SXN-05R

Please check the installation condition whether it meets proper specification.

- Shielded Room
- There must be no objects between the target area and x-ray device.
- No vibration on the fixed device.
- Be aware of any flammable or ignitable materials around the working area.
- Secure to have enough working space for quick maintenance of the device.

SXN-05R fixing

Fix the target product on the fixed area where you install by using supported fixing bolt(s).

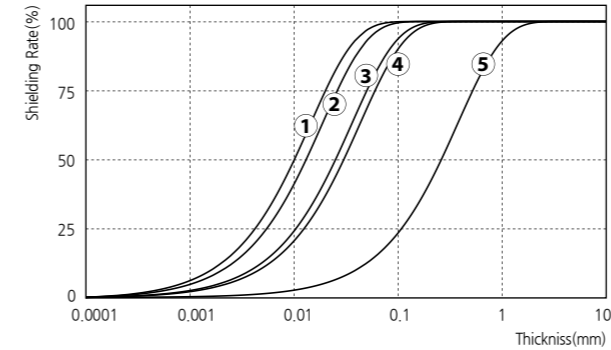


Do not insert the bolts more than 4mm from the outer product. (Bolt size = The thickness of the fixable object + 4mm or under)

Shielding methods

Shielding material selection

See the following graph for references. Select the ideal tickness and quality of shielding material.



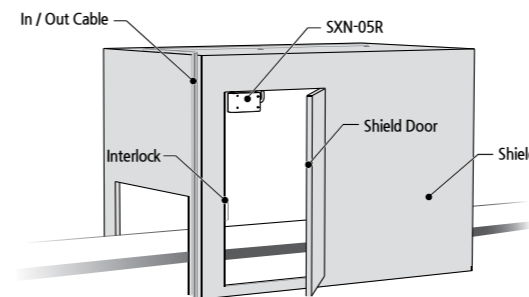
No.	Shield Material	Thickness [mm]
1	SUS	Over 0.2
2	Aluminium	Over 0.25
3	Glass	Over 0.5
4	PVC	Over 0.6
5	Acrylic	Over 5.0

WARNING

- Please shield the area where the customer is willing to install the soft x-ray device for safety issue.
- After shielding process, please connection to your own interlock system to operate the x-ray device ON/OFF when the door is opened/closed.

Shield Installation Compositions

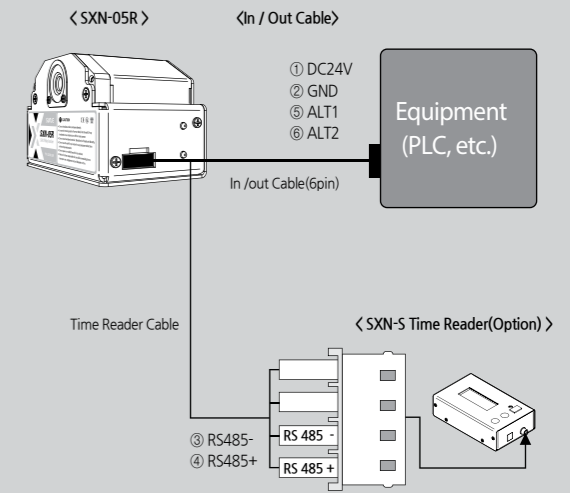
Please refer to the "Installation Compositions" for your references. Please keep your working environment of the leakage radiation level within the range of 1μSv/hr all the time.



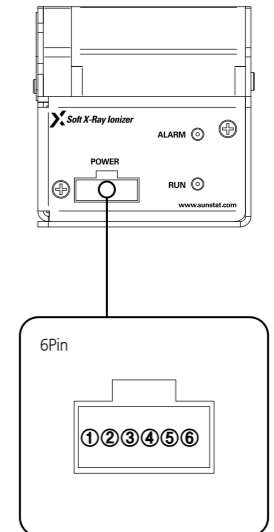
In / Out Cable

Connecting to the Soft X-Ray Ionizer

Please connect the YSXN-05R and equipment and Time Reader(Option) with supported "In / Out Cable". It enables you to check the hours of use outside the equipment connecting Time Reader sold separately.



In / Out Cable No.



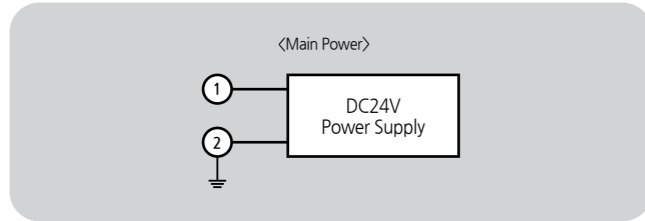
In / Out Cable Specifications

No.	Pin Name	Function and State
1	DC 24V	The Socket is for On / Off function of the product. (Ionizer On : DC24V In, Ionizer Off : Open)
2	GRD	
3	RS485 -	The Socket is for connecting Time Reader(Option)
4	RS485 +	
5	ALT1	When Alarm occurred, the contact of in / out cable No.5 and No.6 is closed.
6	ALT2	

5 How to set

▶ Main Power

When inputting Main Power, Blue LED is turned on.



항목	Run	Stop
In / Out Cable No.	1 - 2 The power supply is inputted.	1 - 2 The power supply is not inputted.
State	Product Operation State	Product Stop State
LED	Blue	Off
LED Operation	RUN	RUN

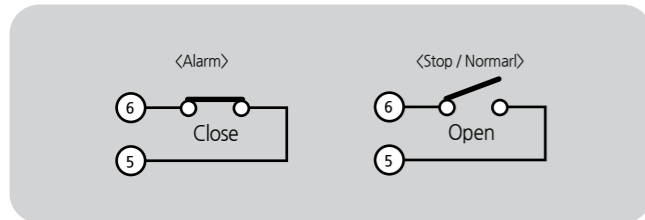
▶ Alarm State Signal Output

Alarm

When Alarm occurred, the contact of in / out cable No.5 and No.6 is closed.
Alarm means abnormal state of product, and red LED is turned on.

Stop / Normal

When Alarm Stop / Normal state, the contact of in / out cable No.5 and No.6 is opened.
Alarm Stop / Normal means operation state of product, and red LED is turned off.



Article	Alarm	Alarm Stop
In / Out Cable No.	5 - 6 Close	5 - 6 Open
State	Product Abnormal State	Product Normal State
LED	Red	Off
LED Operation	ALARM	ALARM

6 Problem solving

▶ LED Check

When power is turned on, normal state is that all LEDs are turned on and kept turned on for about 1.5 sec for checking defective LED.

※ It runs only once when turning on power.

▶ Checklist before called

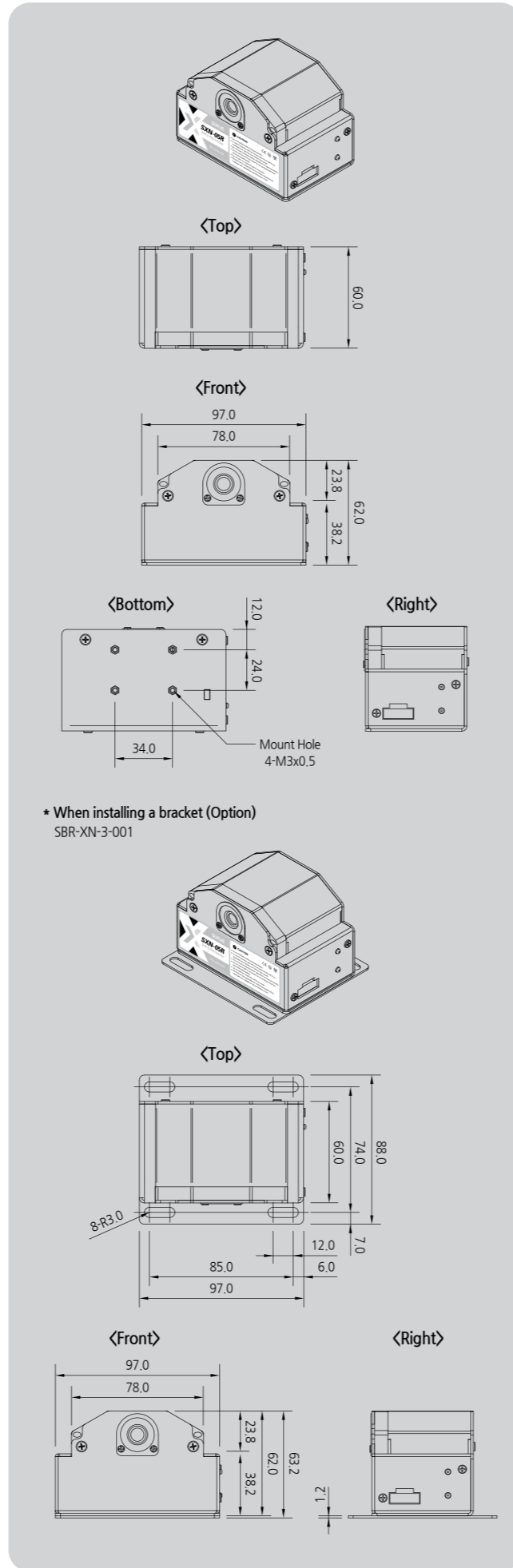
Before requesting A/S, please check the followings.

Product may not work properly not because of failure of product but minor cause.
Please check the followings.

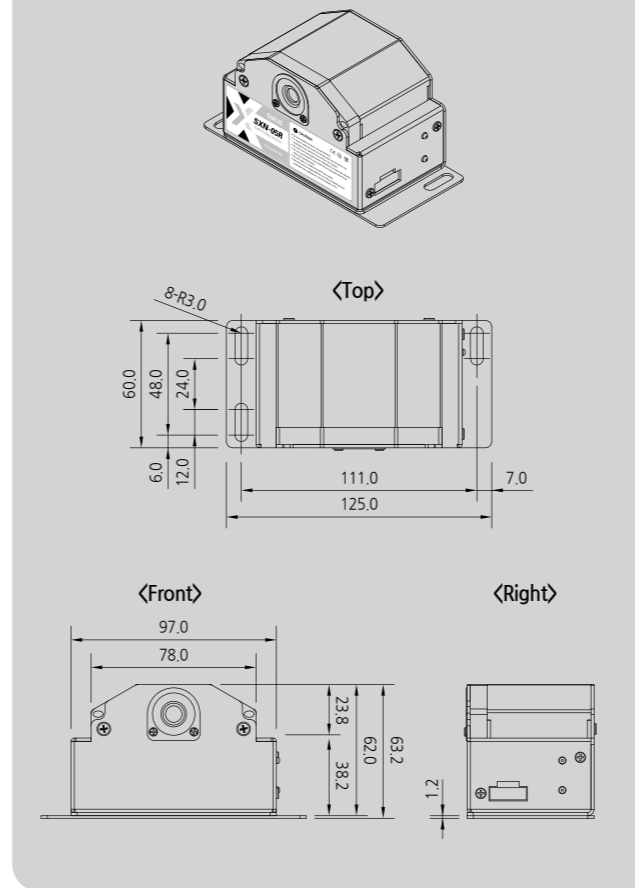
Problem	Identifying Problem	Solution
Not Operating	Is your power cable still plugged in?	Please re-plug the power cable and then turn the device on again.
	Was the proper voltage level applied for this set-up?	Please use the proper level of power input for the device. (DC 24V)
The output of signal is not correct	Have you followed the proper procedure for Input/output signal cable(s)?	Check whether the cable connection is properly done.
Decreased Performance	Any damages or cut on the cables?	You need to replace the cables if it gets cut or damaged.

7 Dimensions

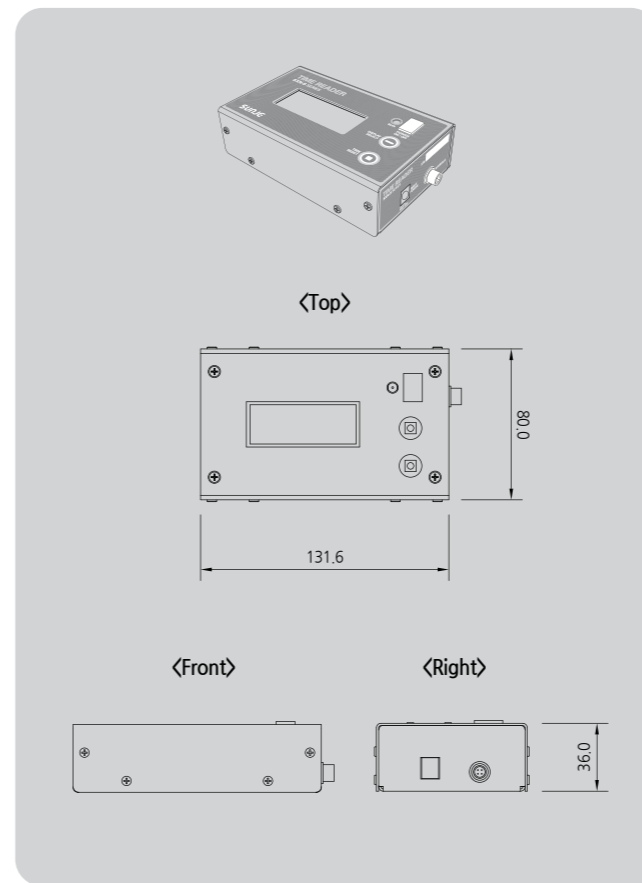
▶ SXN-05R



▶ When installing a bracket (Option) SBR-XN-3-002



▶ SXN-S Time Reader (Option)



8 Specification

▶ SXN-05R

Parameter	Description / Value	Remarks
Ion Generation Method	Soft X-ray	
Dimensions	Please Refer to Dimension Drawing	
Source	Soft X-ray Tube	
Cooling Method	Natural Air Cooling	
Mounting Method	Bolt Mounting with Bracket	
Power Consumption	9.6W	
Current Consumption	0.40A	DC 24V
Weight	0.28Kg	
Alarm	Head Fail	
Warning	Life Time Over	
Warranty	1 Year	

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

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