

VSN-05UE

INSTRUCTION MANUAL

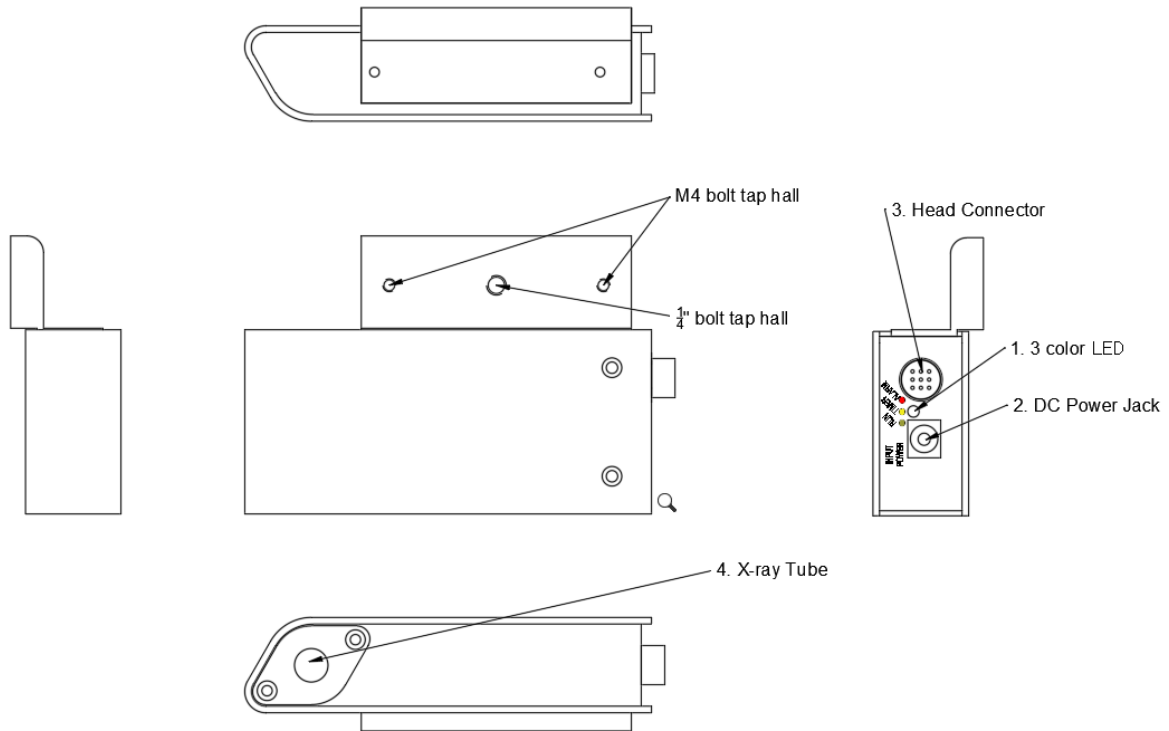


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1. Part Names and Functions

■ Head (VSN-05UE)



1) 3 Color LED

3 Color LED indicating the operation status of the head.

Run	Green light is turned on during normal operation of the head.
Timer	Orange light is turned on when the soft X-ray pipe needs to be replaced. (The head still operates normally even with the orange light.)
Alarm	Red light is turned on when the head operates abnormally.

2) DC Power Jack

DC Power Jack supplying power to the head (12V type).

3) Head Connector

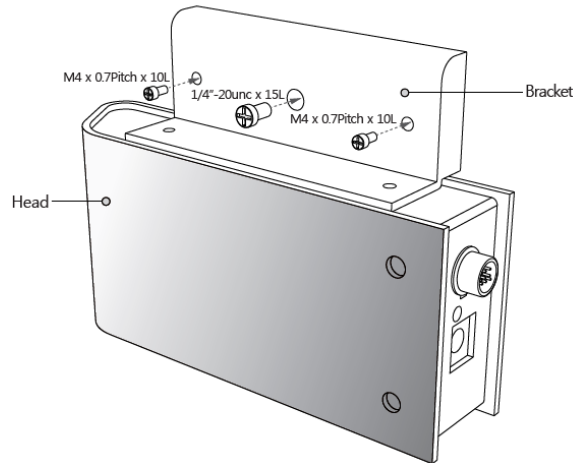
It is an I/O connector to the external devices.

4) X-ray Tube

A window that irradiates soft X-ray that ionizes the air to eliminate static electricity.

2. Installation and Operation

■ Head Installation

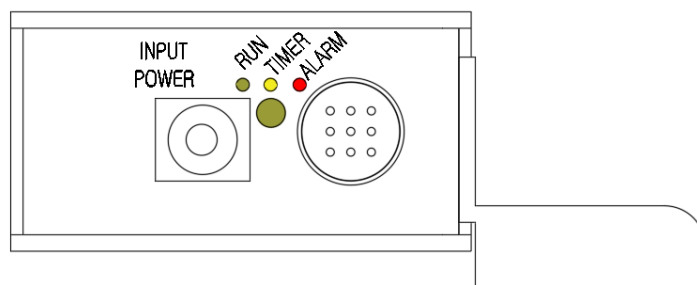


- Fix the device using the holes on the fixture bracket and the screws supplied at a desired location.

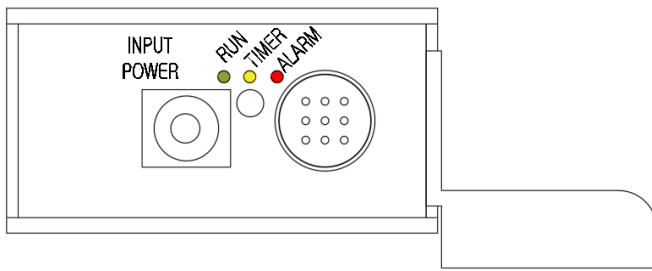
※ Please install the head in a shielded equipment.

■ Operation of the Head

- ① Connect the control equipment with the connection cable to use the head.
- ② Connect the DC12V adapter to the head DC input connector.
- ③ **[Head Irradiation ON]** Close pin 1 & 2 with a reference to the head connector. Green LED of the 3-color LED is turned on, and the ionizer operates normally. Please refer to (“1) Remote/Interlock Signal Input Contents” on page 6)

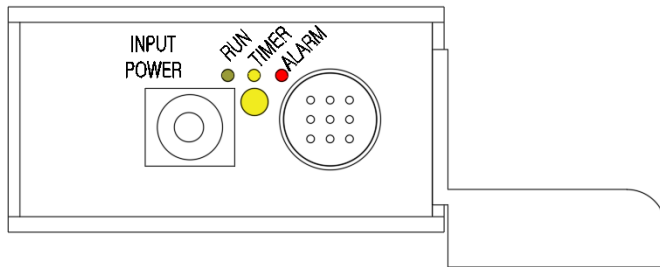


- ④ **[Head Irradiation OFF]** Close pin 1 & 2 with a reference to the head connector. Green LED of the 3-color LED is turned off, and the ionizer stops operating. Please refer to (“1)Remote/Interlock Signal Input Contents” on page 6)



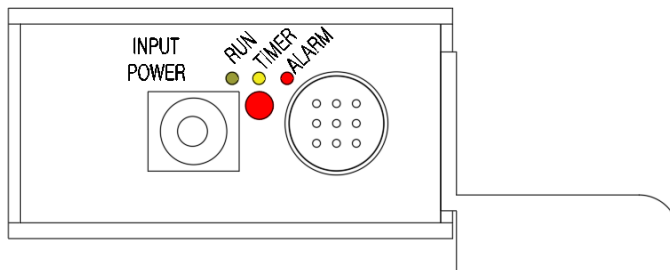
■ **Operation Status when Head OverTime Occurs**

When the head OverTime occurs, orange LED of the 3-color LED is turned on.



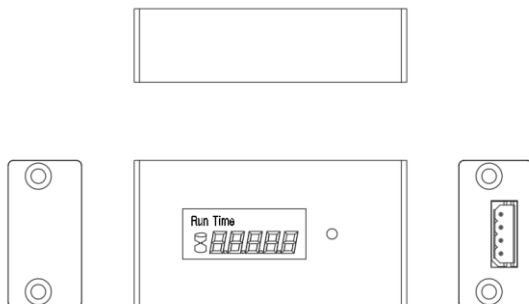
■ **Operation Status when Abnormal Head Operation Occurs**

When the abnormal head operation occurs, red LED of the 3-color LED is turned on, and ionizer stops operating.



■ **Utilizing TimeReader to Check the VSN-05UE Time Information**

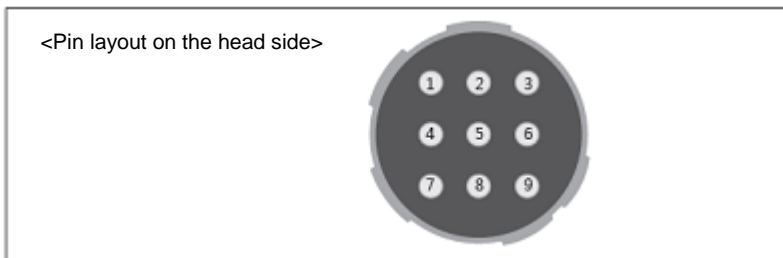
Using the RS-485 terminal of the head connector of the VSN-05UE, user can obtain time information through a separate TimeReader.



√ TimeReader Sold Separately.

■ Head Connector Function

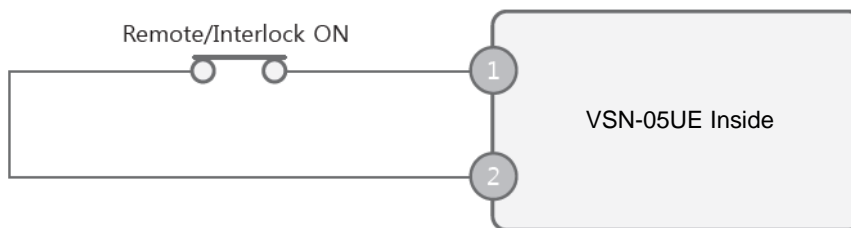
PIN No.	Color	CONNECTOR	TERMINAL NAME	Description of the function
1	Yellow	Remote/Interlock	Remote +	It is a terminal to turn ON/OFF the ionizer soft X-ray (Close : X-ray ON, Open : X-ray OFF)
2	Blue	Remote/Interlock	Remote -	
3	Black	Alarm Sate	Alarm NO	It opens against the common terminal when 1) the ionizer is off; 2) alarm occurs
5	Red	Overtime State	Overtime NO	It closes against the common terminal when the replacement is due
6	Orange	Common	Common	It is a common terminal for the alarm and overtime.
8	White	TRX+	RS485 +	It is a communication terminal to use Time Reader to read usage time.
9	Green	TRX-	RS485 -	
4.7	N.C			



1) Remote/Interlock Input Signal

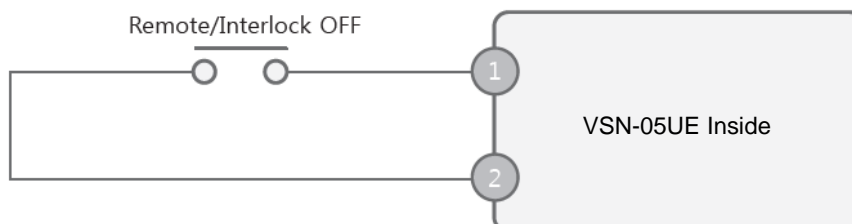
- Remote/Interlock ON

Close pin 1 & 2 at the Remote/Interlock function pin.



- Remote/Interlock Off

Open pin 1 & 2 at the Remote/Interlock function pin.

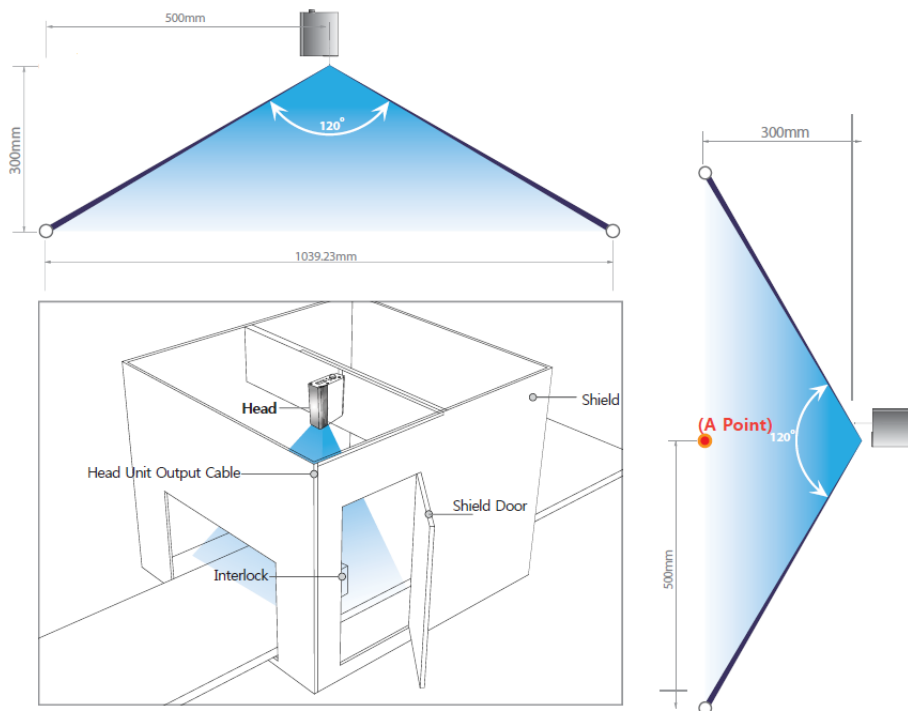


3. Safety Instructions

Head that emits soft X-ray during operation must be shielded for users' safety. Since the shielding rate differs depending on the material, please refer to the following materials to design the shield.

- Point A : Shielding 10cm from the front of the X-ray window

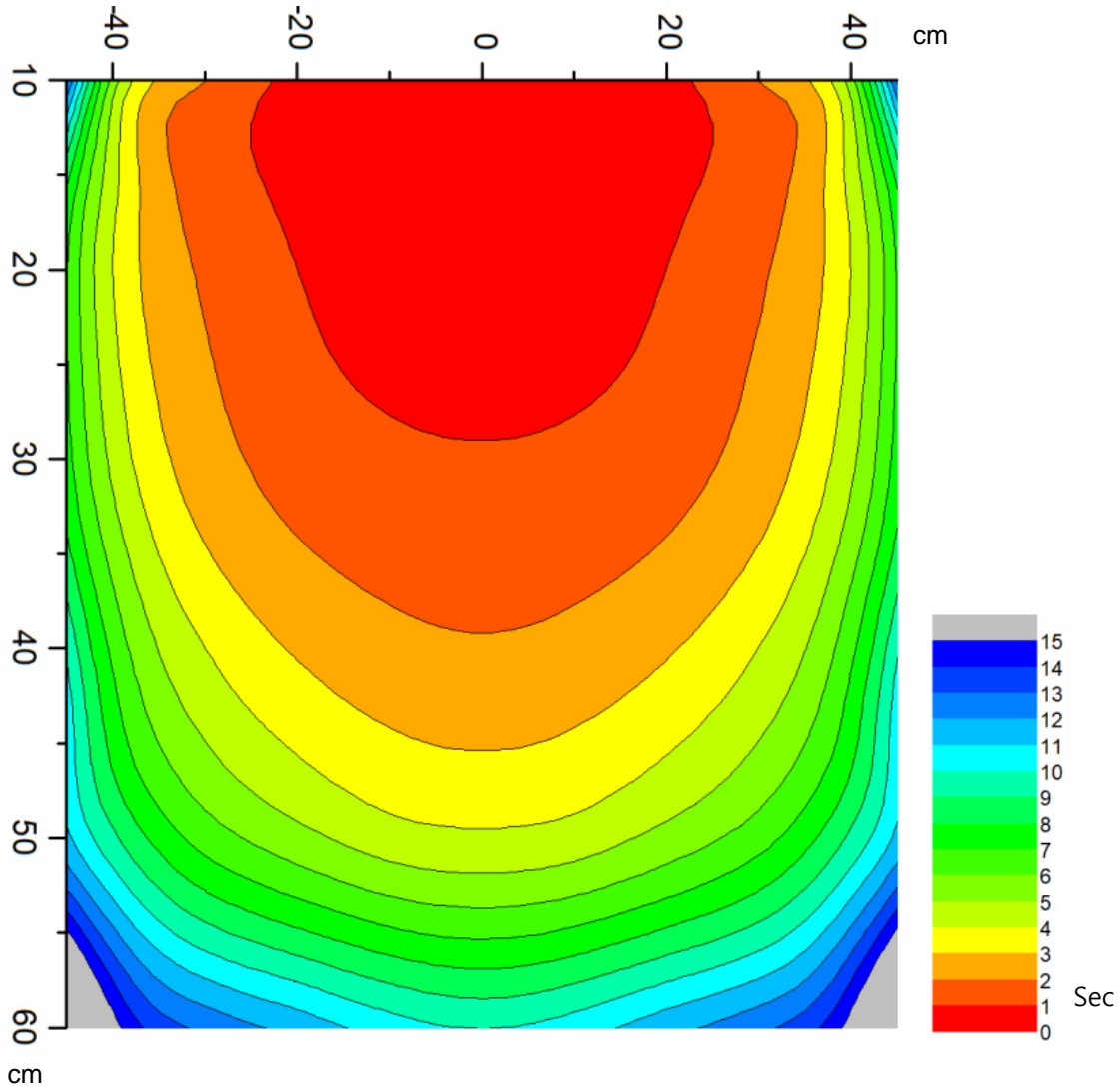
Shielding Material	Thickness [mm]
Stainless steel	0.2
Aluminum	0.4
glass	0.7
PVC	0.6
Acrylic	8



- The above shield thickness design is only suitable when the shield is 10cm away from the source of the X-ray. If the distance is shorter, the thickness must be increased.
- After shielding, the leaked radiation level must be lower than the legal limit ($10\mu\text{Sv/h}$).

4. Decay Time

Static electricity removal performance is represented by the time taken to drop the metal plate charged at $\pm 1000\text{V}$ to $\pm 100\text{V}$ by irradiating soft X-ray.



※ Decay Time (when mounted): Top -> Down Irradiation, Based on straight line distance.

5. Product Specifications

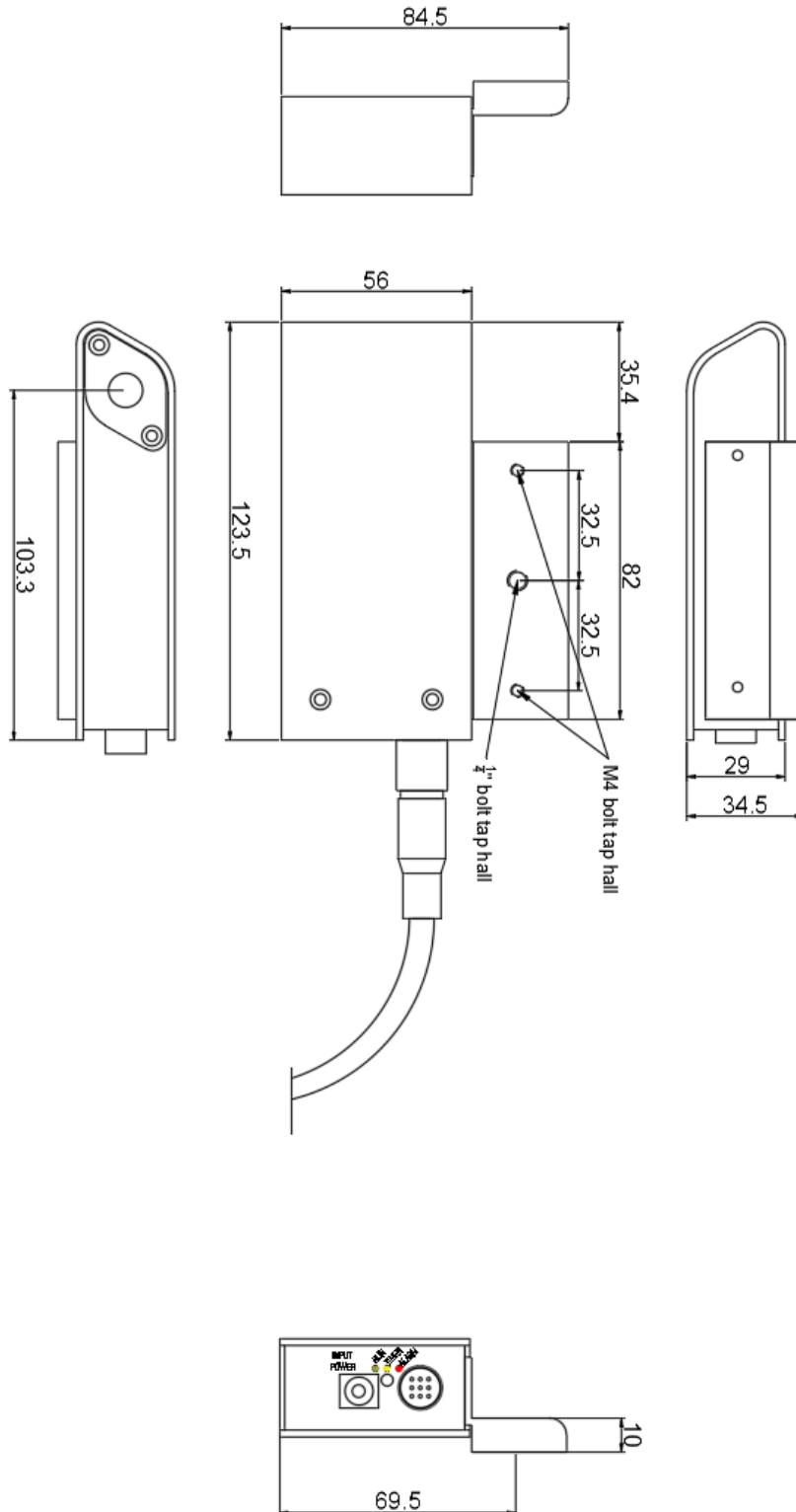
HEAD	
Dimensions	84.5 x 56x 123.5 mm
X-Ray tube	Tube voltage 4.98kV, Tube
Electron emission	Hot filament type
Weight	0.4kg
LED indicator	Run / OverTime / Alarm

6. Components Included

Head(VSN-05UE) 1ea	Adapter DC 12V 3.3A 1ea
Data Cable 5m / 1ea	Fixing Bolt 1/4"-20UNC X 15L /1ea, 1/4"-20UNC X 8L /1ea M4 x 0.7pitch x 10L / 2ea
Extension Adapter Power Cable / 15m 1ea	Power Cable / 1.8m 1ea

7. External Dimensions

■ Head



■ TimeReader(Optional)

