



UV-C VentGuard Manual

Operations & Maintenance

Safety instructions

General information

- Read this instruction manual carefully before use.
- Keep the instruction manual and the product information safe for future reference.

Restricted user group

- The device may be used by authorized personnel only.
- Electrical maintenance work must be carried out by registered electrical workers or authorized personnel only.
- Keep children away from the appliance.



Warning

This symbol indicates failure to follow the instruction may lead to casualties or serious injuries.



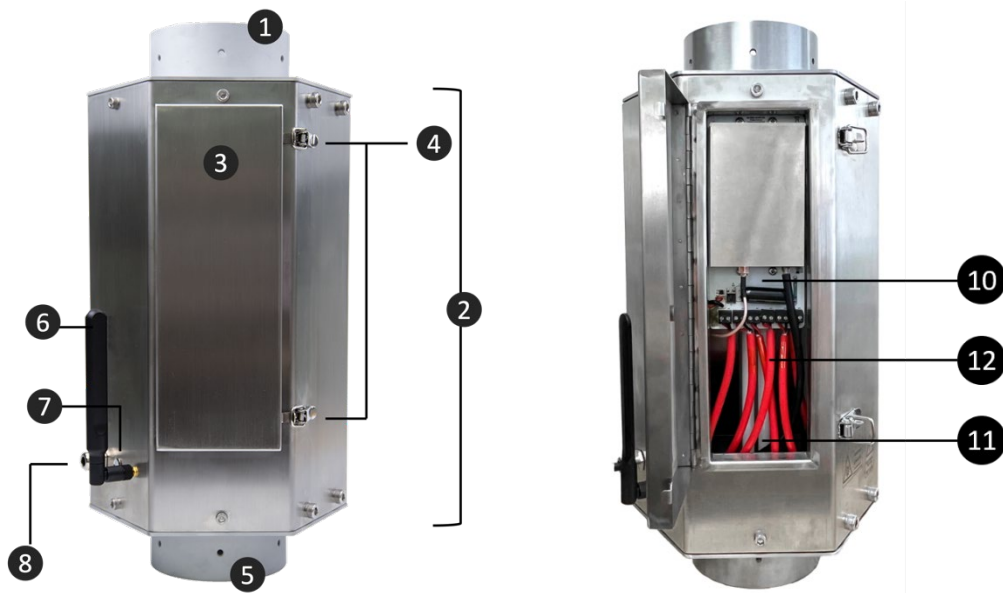
Caution

This symbol indicates failure to follow the instruction may lead to injuries.

1 About UV-C VentGuard

1.1 Components

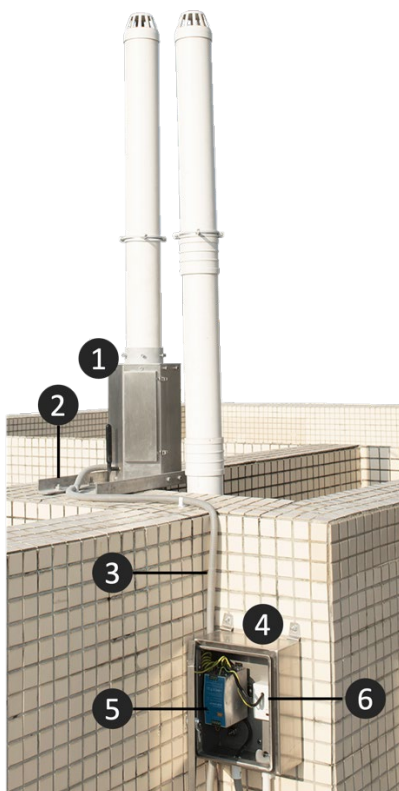
The following is an overview of the device components.



- | | | | |
|---|------------------------|----|----------------|
| 1 | Top connector | 9 | Control boards |
| 2 | Device body | 10 | Wires |
| 3 | Door | 11 | Light tube |
| 4 | Door lock | | |
| 5 | Bottom connector | | |
| 6 | Antenna | | |
| 7 | Status light indicator | | |
| 8 | Connection to power | | |

1.2 Typical set-up

The figure below demonstrates the typical electrical connection of the device to the power source.



- 1 UV-C VentGuard
- 2 Support mounting frame
- 3 Soft conduit protecting the power cord
- 4 Water resistant electrical box
- 5 Transformer
- 6 Fused spur

1.3 Other information

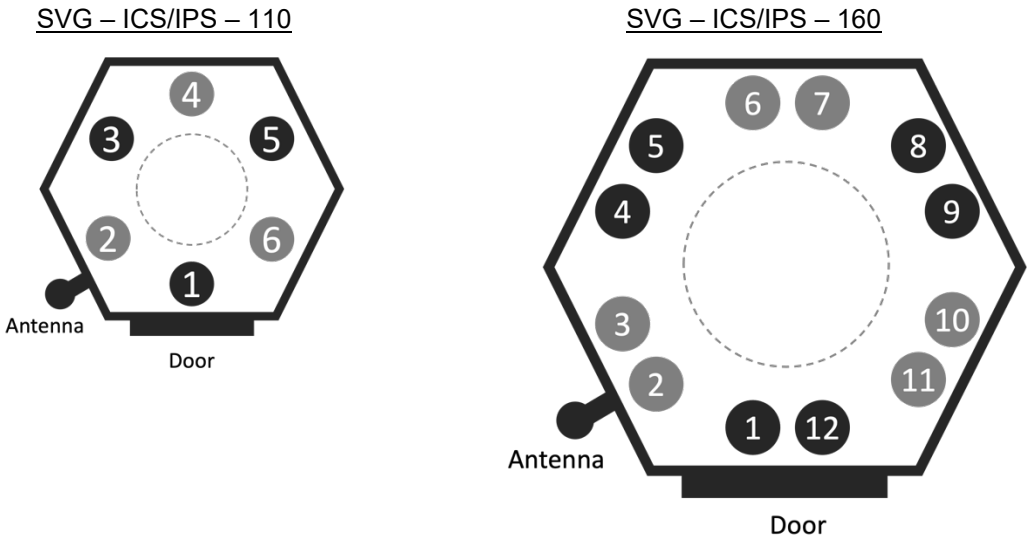
a. Transformer

The transformer steps down the power source from 220V to 24V for the device to operate. On the front of the transformer, there is a light indicator marked with "DC OK". If electricity is provided to the device, the indicator will light up in green. If there are issues with the electricity supply, the indicator will not be lit up.



b. Tube position

The two figures below illustrate the tube positions inside the OD110 and OD160 devices respectively. The circled number corresponds to the “Tube X” (X is the number) on the cloud platform. Therefore, you can use the number as a reference and count the tube starting from the door in the clockwise direction to identify the tube that requires replacement. The colour difference is for ease of reading only. It does not represent any physical differences between the tubes.



c. Consumables

	Item	Details
1	UV-C Light tube	Specification: 2G7 11W

2 Operations

2.1 Before using the device

ⓘ Check the followings before use.

- The door is closed tightly
- Both door locks are closed properly
- No loosening of the cable connection to the stainless steel enclosure
- Antenna is tightly mounted

2.2 Cloud platform

It is recommended to log in to the cloud platform prior to switching on or off the device.

Cloud platform link: <https://ura.uvcventguard.com>

2.3 Using the device

a. Switch on the device

Every time when you switch on the device, the device will undergo initialization and light up the UV-C tubes one-by-one. Then the device will connect and report data to the cloud platform automatically.

The entire set-up process takes about 2 minutes. Pay attention to the light indicator on the device body as it will help you identify which stage the set-up process is at and indicate any issue if exists. To switch on the device, follow the steps below:

1. Switch on the fused spur inside the electrical box.
2. If the power supply is normal, the “DC OK” light indicator on the transformer will light up in green.
3. Then check the light indicator on the device: it should start flashing in red. The below table outlines the different patterns you will see during the set-up process.

Light indicator		Stage
Red light starts blinking		Set-up process has begun
Red light blinking continuously		Tubes are being lit up The blinking process will continue until the system has run through all the light tubes
<u>Identifying tubes ON/OFF</u>		
a.	Red light blinking continuously, then green light appears for 1s	A light tube is on

b.	Red light blinking continuously, then red light appears for 1s	A light tube cannot be turned on
	Red light stops blinking, and green light blinks for 3 times	Light tube set-up is completed
	Green light blinking every 2 to 3s	Device is communicating with the cloud platform
	Green light blinking with alternating brightness	Device is trying to communicate with the cloud platform

- When the set-up process is completed, the light indicator will flash green light every 2 to 3 seconds.
- The device is now running.

NOTE	<p>If the signal strength is weak in the area, the communication between the device and the cloud platform might delay. The device will flash green light in alternating brightness regularly. This does not affect the normal functioning of the device.</p> <p>You may visit the <i>project page</i> on the monitoring platform and check the status of the device you just switched on. You may need to wait for the next update to see if the device goes online. The default report time is 10 minutes interval.</p>
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b. Switch off the device

- Switch off the fused spur inside the electrical box.
- The “DC OK” green light on the transformer goes off automatically.
- The light indicator of the device automatically stops flashing.
- After both lights are off, the device is switched off completely.

NOTE	<p>You may visit the <i>project page</i> on the monitoring platform and check the status of the device that you just switched off. You may need to wait for the next update to see the device goes offline. The default report time is 10 minutes interval.</p>
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3 Maintenance

Warning

Maintenance work related to electricity may only be carried out by registered electrical workers.

Wear appropriate personal protective equipment whenever carrying out maintenance.

3.1 Personal protective equipment list

- Electrically insulated gloves: Prevent electrocution
- Face mask: Prevent viruses or bacteria from entering the respiratory system
- Face cover: Prevent viruses or bacteria from entering the respiratory system
- Safety harness: Prevent falling from height when accessing the device

3.2 If opening the door is required for maintenance

Complete the following before maintenance work begins:

- Follow 2.3b to switch off the device.
- Allow the device to cool down for at least 30 minutes before opening the door for inspection.
- Prepare a net with a diameter slightly larger than the vent pipe. After the cool down period, open the device door and place it over the opening of the vent pipe to prevent any tools or components from falling into the vent pipe. Keep the net there throughout the maintenance and remove it before closing the door.

3.3 Light tube

The average lifespan of the UV-C light tube is around 7,000~ 8,000 hours. When the tube is close to the end of its recommended service life or no longer functions, an error message will be displayed on the monitoring platform.

- Refer to 1.3b to identify the tube that requires replacement.
- Do not swap the positions of the light tubes if they are not the ones that require replacement. For example, if tubes 1 and 2 need to be removed in order to access tube 3, after replacing tube 3, tubes 1 and 2 should be inserted back into their original positions. Swapping the positions will cause inaccuracy in estimating the life span of the tubes.

a. Remove light tube

Follow the preparation procedure in sections 3.1 and 3.2 before replacing any tube. Make sure to label the tube if it's going to be inserted back into the device.

1. Open the door locks with care.
2. After opening the door, you will see a bunch of wires. Do not pull, unscrew or cut the cables. Avoid twisting or applying strong force on the cables when doing internal maintenance work.

3. Place the safety net on top of the vent pipe opening. Make sure the net is secured properly.
4. To remove the light tube, slowly pull it down until it is detached from the socket.
5. Rotate the tube 90° and remove it from the metal clip.
6. Carefully take out the tube from the device.
7. If Tube 1 does not require replacement, identify the one that needs to be replaced.
8. Repeat step 4 to 6 until you have removed the required tube.

b. Insert light tube

1. Insert the tube into the device with the 4 pins white plug facing upwards.
2. Angle the tube to slide it into the metal clip.
3. Rotate the tube 90° and gently push the tube into the socket.
4. Repeat steps 1-3 until all tubes are inserted into their respective sockets.

c. Cleaning the tube

Cleaning the tube surface is optional. If needed, use a soft cloth soaked with water to wipe the glass surface of the tube with care.

3.4 Antenna

a. Cleaning the antenna

Cleaning the antenna is optional. If needed, use a soft cloth soaked with water to wipe the antenna with care.

b. Replace the antenna

1. Lower the vertical/ upper section of the antenna.
2. Hold the connector of the antenna. Slowly unscrew it from the device.
3. Align the connector of the new antenna with the mount on the device. Slowly rotate the antenna and fasten it on the mount.
4. Adjust the upper section of the antenna if necessary.

3.5 Power supply / conduit

 Wear electrically insulated gloves.

Fixing detached soft conduit

The soft conduit might detach from the device body after prolonged use in an outdoor environment. If this happens, you can fix it with electrical tape.

1. Follow 2.3b to switch off the device before fixing the soft conduit.
2. Use electrical tape to wrap around the detached section. Ensure no gap in the connection.

3.6 Device body

a. Cleaning the device

The device is designed for outdoor use. Cleaning the device body is optional. Use a soft cloth soaked with water to wipe the device body, top connector, and bottom connector if necessary.

b. Removing the device from the vent pipe

1. Follow 2.3b to switch off the device and let it cool down for 30 minutes.
2. Secure the top section of the vent pipe with rope.
3. Check if there is any caulk around the edge of the bottom connector, which is in contact with the lower vent pipe. Use a putty knife to remove the caulk.
4. Unfasten the screws holding the device on the mounting frame. These screws are located at the lower half of the device body.
5. Loosen the screws that are fastened to the bottom connector.
6. After these two sets of screws are removed, slowly pull the device upwards. You might need to rotate the device left and right while pulling upwards.
7. After removing the device, you can remove the mounting frame by unfastening all the screws if necessary.

3.7 Vent pipe replacement

If the upper vent pipe connected to the top connector requires replacement, you can remove the pipe without uninstalling the device.

Replace vent pipe

1. Follow 2.3b to switch off the device and let it cool down for 30 minutes.
2. Secure the top section of the vent pipe with rope.
3. Check if there is any caulk around the edge of the top connector, which is in contact with the upper vent pipe. Use a putty knife to remove the caulk.
4. Loosen the screws that are fastened to the top connector.
5. Pull the upper vent pipe upwards to detach it from the device. You might need to rotate the pipe left and right while pulling upwards.
6. Insert the new vent pipe into the top connector.
7. Fasten the screws on the top connector.
8. Use sealant to fill the gap between the top connector and the new vent pipe.

Troubleshooting

	Problem	Solution
	TUBE	
1	Tube is broken	Follow section 3.3 to replace the tube.
	One single light tube not lit up	<p><i>Potential issue: Tube is not inserted correctly into the socket</i></p> <p>Switch off the device. Open the door and check to ensure the tube is inserted into the socket. Restart the device.</p> <p><i>Potential issue: Tube is broken</i></p> <p>Follow section 3.3 to replace the tube.</p>
	Tubes not lit on	<p><i>Potential issue: No power</i></p> <p>Make sure the fused spur is switched on and the power supply in the plant room is on.</p> <p>If the “DC OK” light indicator is on, but the light indicator on the device doesn’t blink, and the device does not go online on the cloud platform for a long period, contact customer services to arrange for an inspection.</p>
	DEVICE	
	Device body is damaged by a hard object	If there’s obvious deformation of the device body or the gaps between the connectors, contact customer support to purchase replacement.
	ANTENNA	
	Antenna is damaged	<p>Depending on the severity of the damage, the antenna might still function and does not require replacement.</p> <p>Visit the cloud platform to check the online status and the report time of the device. If the device reports regularly, then the antenna does not require replacement.</p>
	Antenna is lost	Contact customer services to arrange for a replacement.
	POWER SUPPLY	
	Fused spur is on, but the light indicator “DC OK” on the transformer does not light up	Check the cable connection between the transformer and the fused spur. If the cable is loosened, switch off the fused spur before reconnecting the cables.

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