

**NORD**canopy

OZ 3.0 Ozone Cleaning System Installation Guide

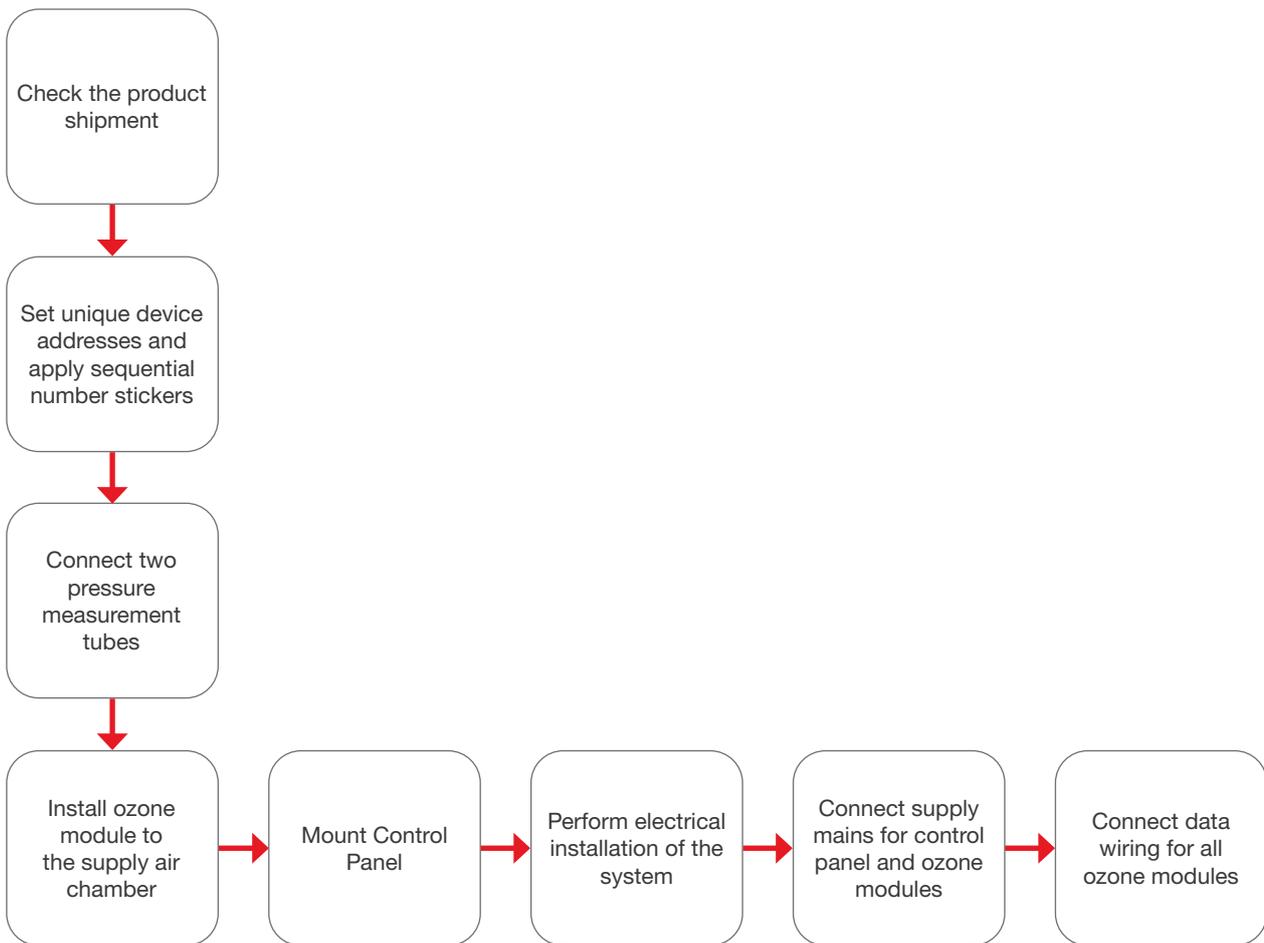
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## Safety notes

- This manual consists of important information on the instruction and safety of the Ozone Cleaning System. Read this manual carefully before installing, commissioning or performing maintenance or repair work on the system.
- Always wear appropriate protective clothing when handling the equipment.
- The Ozone Cleaning System is intended only for the treatment of exhaust air as described in these instructions.
- The Ozone Cleaning System uses high voltage to create an electric charge that generates ozone (O<sub>3</sub>). Ozone significantly reduces odor, grease, mold and bacteria. ETS NORD AS disclaims any liability in the case that the product is not used in accordance with the manufacturer's instructions contained in this manual.

## Installation flowchart



For ease of installation and service, it is suggested the installing contractor have the following tools on hand:

- Narrow 2mm flat-head screwdriver
- #1 Phillips screwdriver
- Small flashlight
- Electrical fish tape
- Silicone gun

**1. Check the product shipment**

Check that the parcel contains all components listed below and that there is no visible damage. Notify both the freight forwarder and supplier immediately of any damage or missing components. **Before installing the device read through the entire instruction material.**

The Ozone Cleaning System consists of two key components:

- One or more Ozone Modules
- Control Panel

Each OZ 3.0 package contains:

- OZ 3.0 Ozone Module
- Short pressure measurement hose (60cm)
- Long pressure measurement hose (3.5m)
- Power cable with IEC C13 plug (3m)



The Control Panel package contains:

- Control Panel
- One sheet of Ozone Module device address identification labels

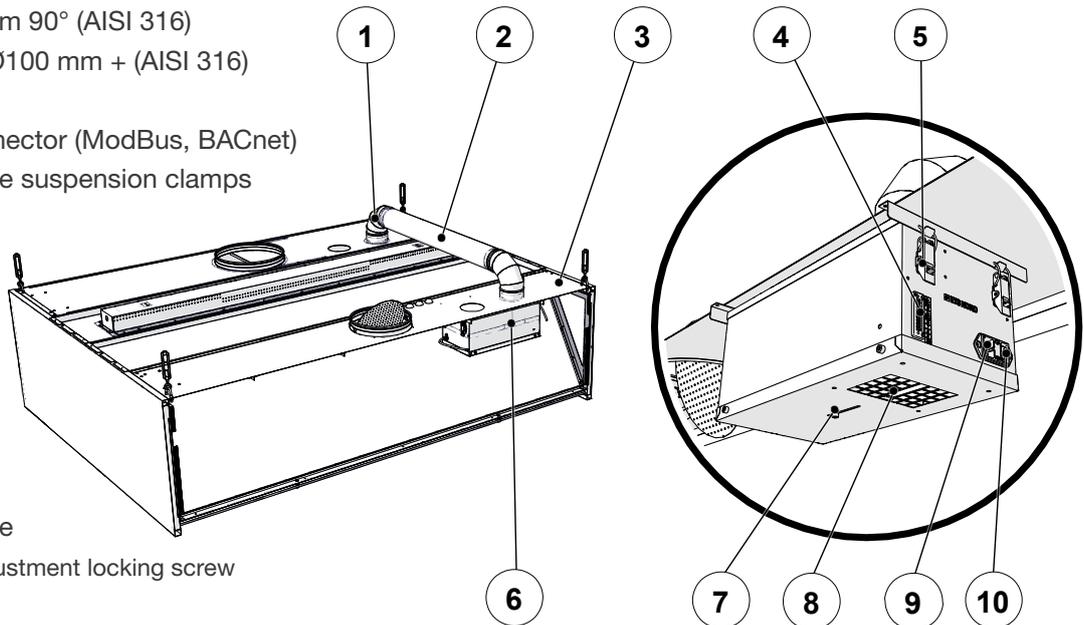
There is typically one Control Panel for each kitchen. The number of Ozone Modules is dependent on the design of the kitchen and the canopy as well as the equipment used for cooking. This is decided when planning the kitchen.

**2. System overview**

The Ozone Modules produces ozone gas. Ozone (O<sub>3</sub>) is a very effective oxidant, and when mixed into a kitchen exhaust airstream it breaks down grease and odor particles to water vapor, carbon dioxide and dry minerals, all natural products of oxidation which exit the exhaust system.

**Note!** For best results with odor reduction, the reaction time for ozone within a kitchen exhaust system should be at least two seconds. However, longer exposure can further improve results. This time should be taken into account during the design phase of the kitchen exhaust system

- 1 – Bend Ø100 mm 90° (AISI 316)
- 2 – Ozone duct Ø100 mm + (AISI 316)
- 3 – Canopy
- 4 – Network connector (ModBus, BACnet)
- 5 – Ozone Module suspension clamps
- 6 – Ozone Module
- 7 – Air intake adjustment locking screw
- 8 – Air intake
- 9 – On/Off switch
- 10 – Power plug socket for IEC C13 plug



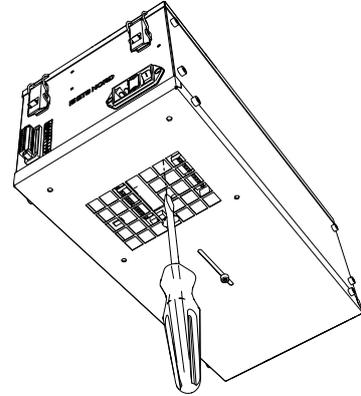
**NOTE!** Installation may only be carried out by specialist and authorized persons in accordance with local , regional, national standards and regulations.

### 3. Prepare the Ozone Modules

#### 3.1 Set the device addresses

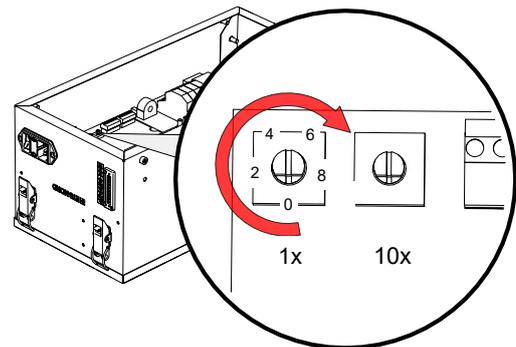
Each OZ module must be set to a unique device address

A flashlight and a long, narrow 2mm flat-head screwdriver will be needed for this procedure. The unit will not need to be opened as the necessary rotary switches can be accessed through the air intake at the bottom of the chassis as shown in the picture.



**NOTE!** Before installing any Ozone Module, please ensure that its air intake adjustment plate, if installed, is adjusted for full airflow through the perforated holes and the fixing screw is tightened.

Set the device address for each Ozone Module by turning the rotary address switches located on the upper left corner of the air intake grid. The address is set using the switches marked “1x” and “10x”. The “1x” switch is positioned nearest the corner of the circuit board.



**Example:**

Ozone Module one (Adress 1):

- Switch 1x = 1
- Switch 10x = 0

Ozone Module thirteen (Adress 13):

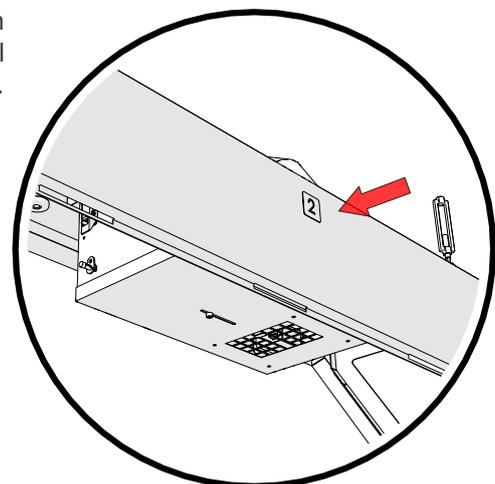
- Switch 1x = 3
- Switch 10x = 1

Addresses should be set in ascending order begin with the Ozone Module closest to the Control Panel and increasing by one for each sequential module. The first connected Ozone Module should have the address 1.

#### Mark the installation positions of each Ozone Module

The location of each Ozone Module shall be marked by placing an identification label on the upper front panel of the canopy. The label should match the device address of the module installed beneath it. You will find a sheet of labels in the Control Panel package.

**Do not attach the sticker to the perforated area of the canopy.**



## 4. Installation

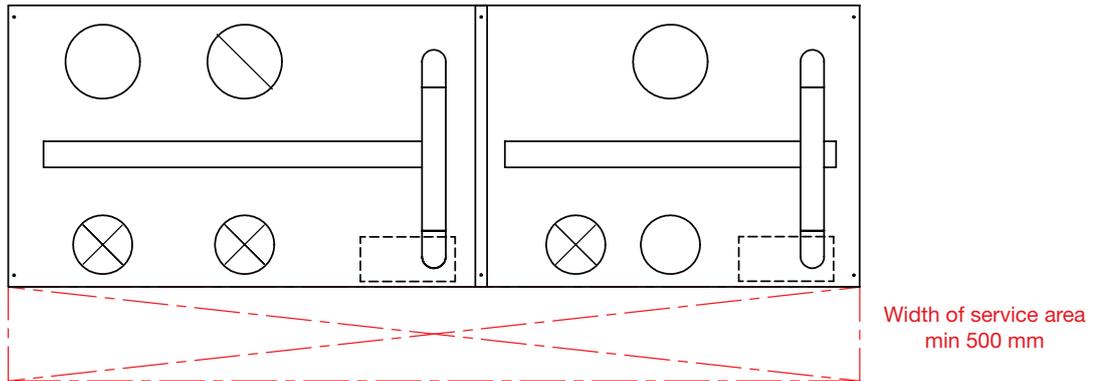
### 4.1 General information

Ozone is drawn into the grease chamber through the ozone duct, which is located on the ceiling of the canopy. The ducting and bends necessary for connection are included with the canopy.

Always install the ozone ducting according to the manufacturer's drawings.

The ozone duct must be made of acid-resistant stainless steel (AISI 316).

Before starting the Ozone Module, check visually that all ozone duct connections are airtight.



Always leave a minimum of 500mm free space in front of a canopy to allow access for maintenance.

Never drill or screw into the Ozone Module chassis.

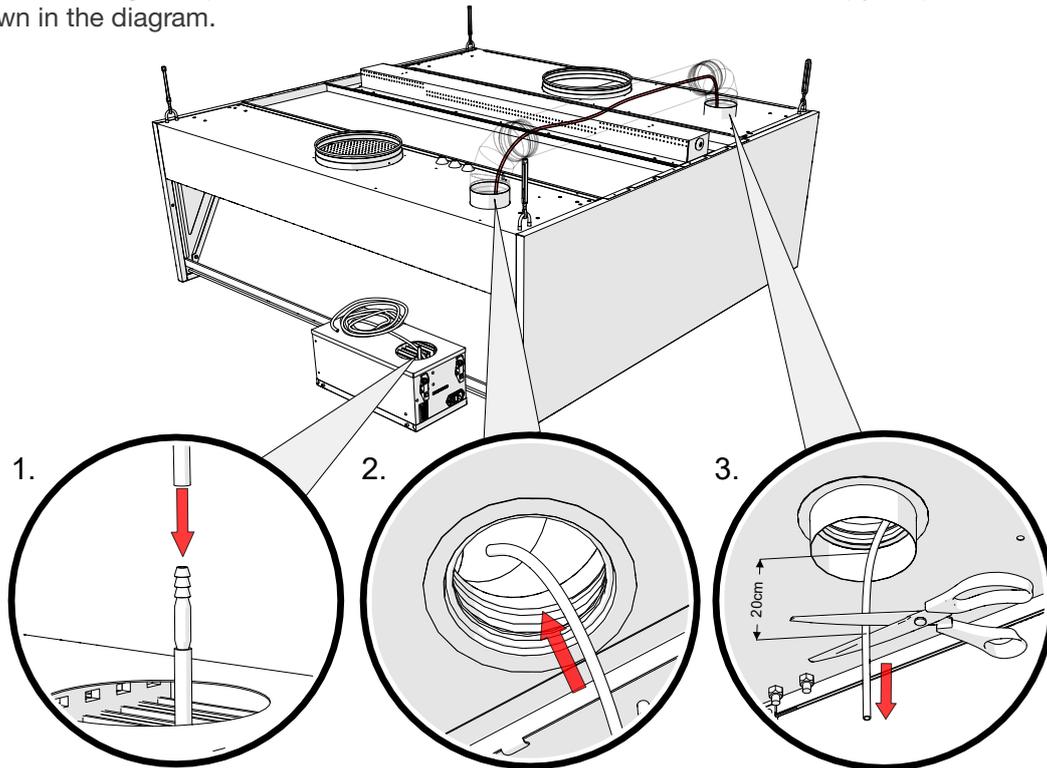
If the kitchen has already been operational before installation of any Ozone Modules, the exhaust ducts should be thoroughly cleaned from grease and soot to achieve the best results.

4.2 Connect the pressure measurement hoses

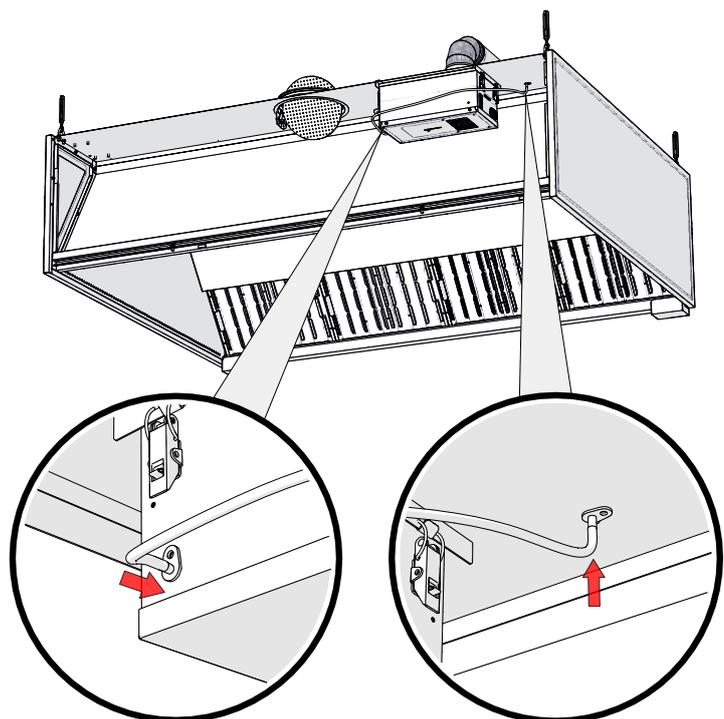
For an Ozone Module to operate properly its two pressure measurement hoses must be connected.

**NOTE!** There are two hoses that need to be connected to each module.

- Two hoses, one long and one short, are provided in the shipping carton. Feed the long hose through the Ø100mm ozone duct into the exhaust chamber.
- While lifting the module into place, securely attach one end of the hose to the hose located in the Ozone Module 100mm flange. Raise the module into place, gently pulling the hose from its other end to ensure it does not become kinked or disconnected in the process.
- Secure the 4 fixing clamps to fasten the module to the inside roof of the canopy. Clip off the excess hose as shown in the diagram.



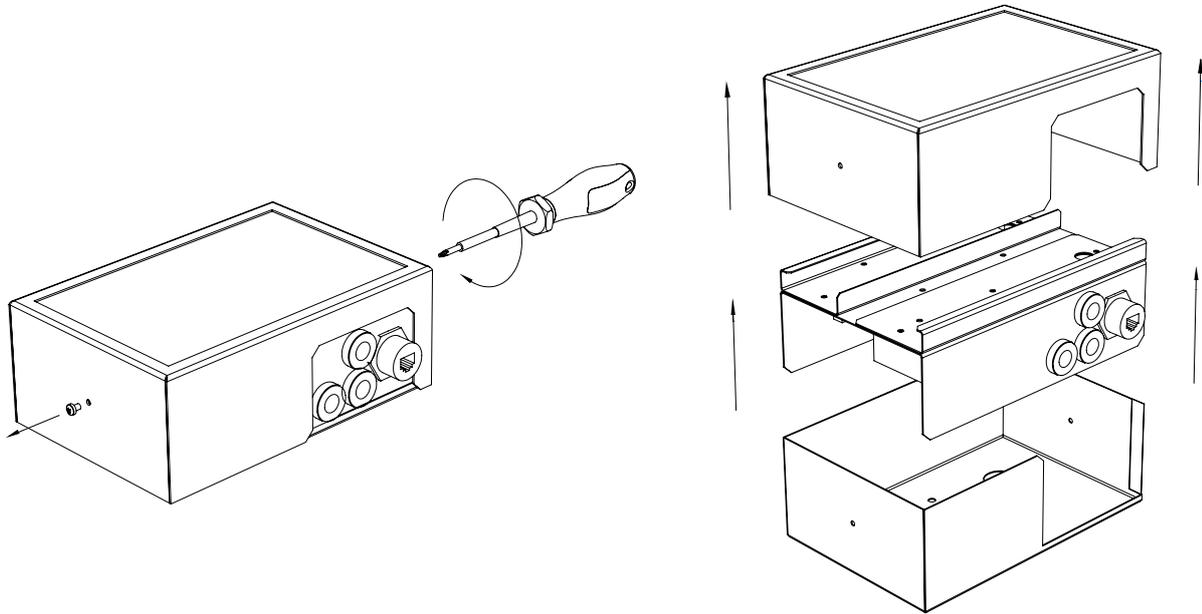
Note the location of the pressure nipple near the module mounting bracket inside the canopy. Securely attach the shorter hose between the nipples on the module and the canopy.



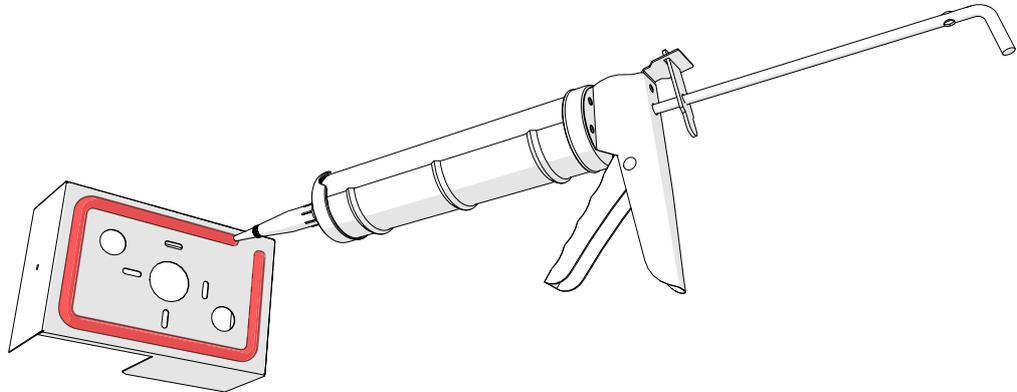
**4.3 Mount the Control Panel**

Choose a visible and easily accessible location in the kitchen suitable for the Control Panel. Avoid positioning it near any sources of moisture or heat.

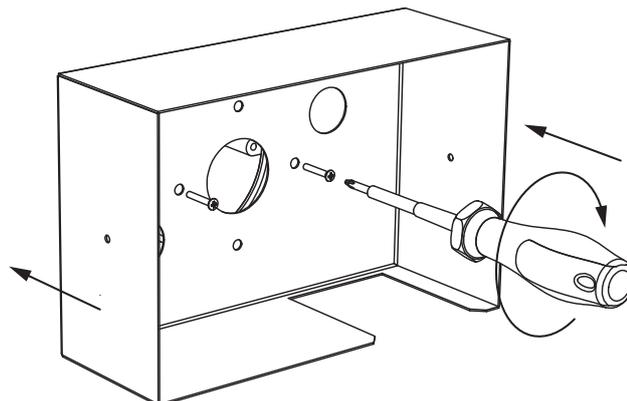
The housing must be disassembled into three parts.  
Remove the two fixing screws on the sides of the case.



Before mounting the backplate apply an even strip of waterproof silicone along the rear of the backplate as pictured below.



Fasten the back plate to the wall with its cable cutout facing downward, preferably at eye level but not higher than 180 cm from the floor.



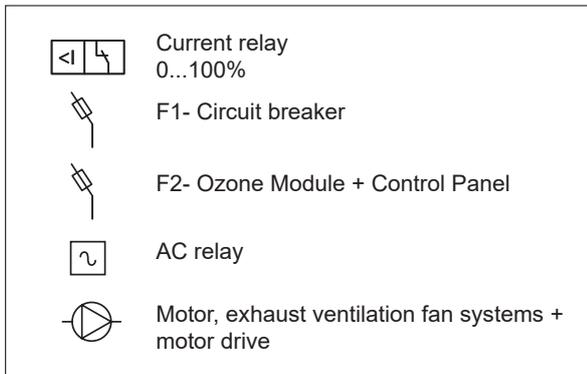
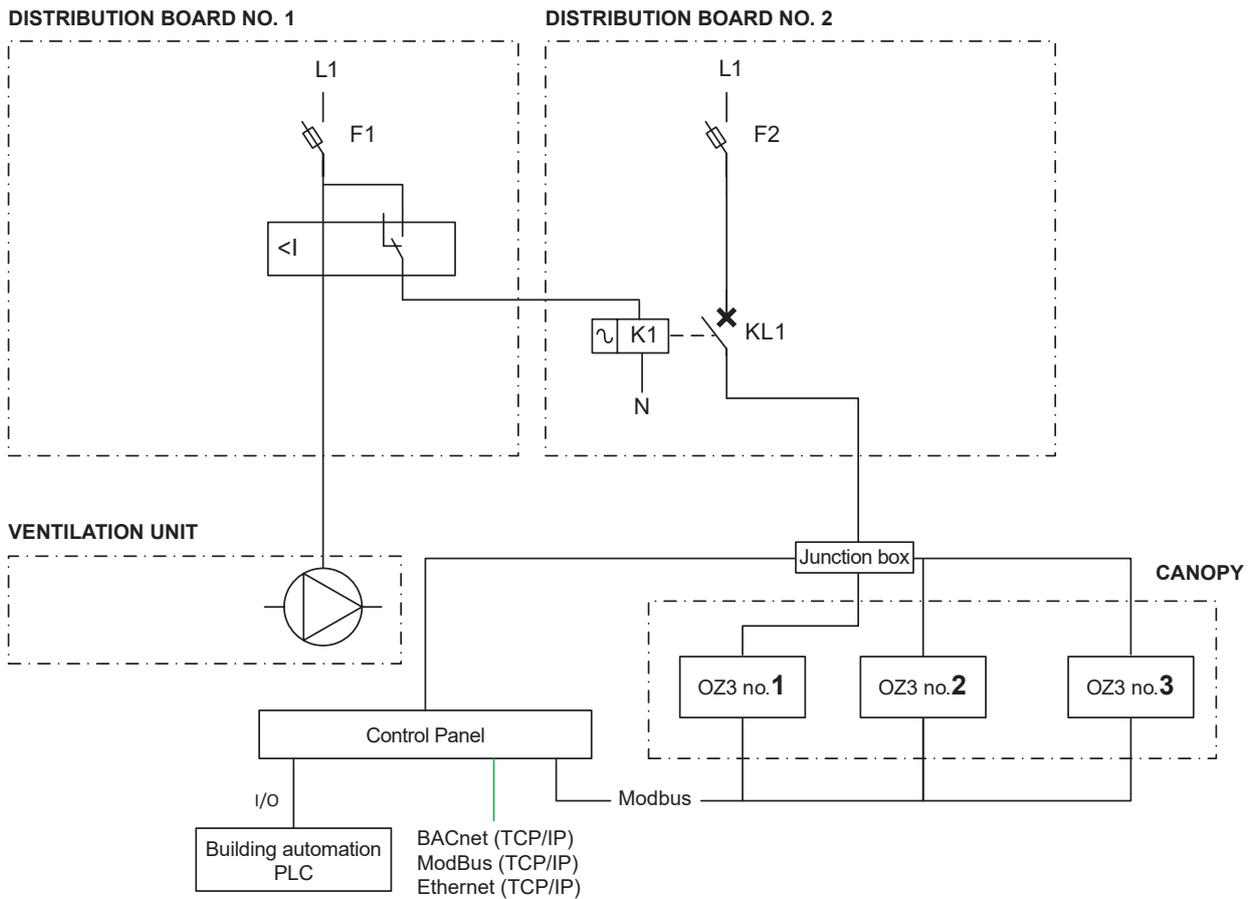
### 5. Electrical Installation

**NOTE!** Electrical installation must be performed by an authorized electrician and follow local, regional and national standards and regulations.

The ozone generator system must be interlocked with the exhaust system, so that when the exhaust ventilation is not running, no electrical power is supplied to the ozone system. See the sample diagram below as one possible option to accomplish this function.

A maximum of 4 Ozone Modules and one alarm panel may be connected a single 10A C-type (slow) circuit breaker.

**Remember to label the circuit breakers used in the distribution board**

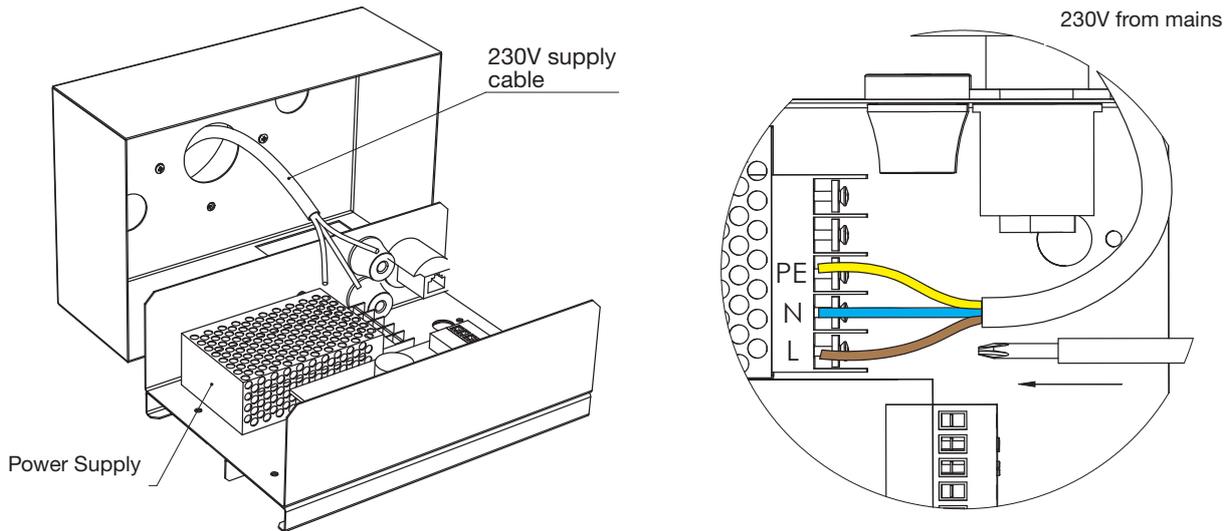


5.1 Connect the main electrical supply

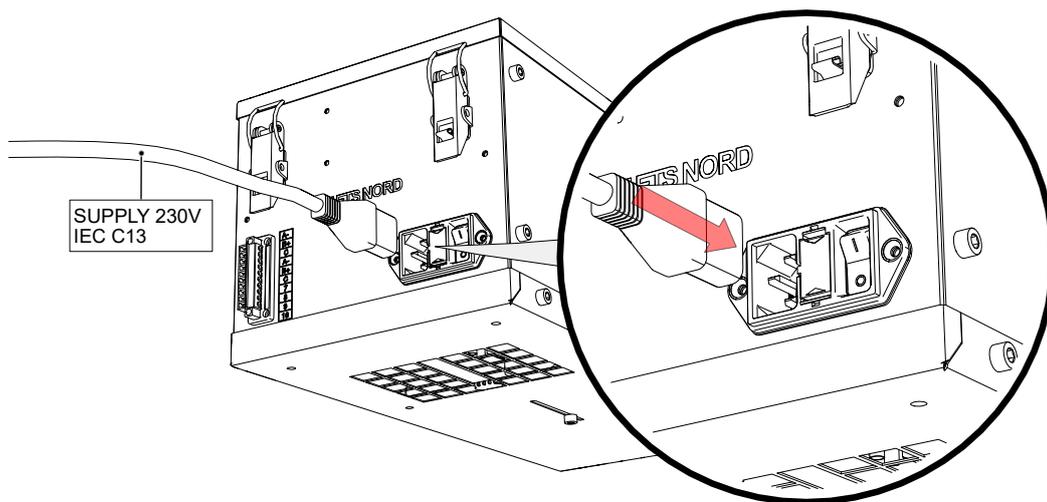
Each ozone generator has its own power supply connection:

- A maximum of 4 ozone generators and one alarm panel may be connected a single 10A low-speed circuit breaker.
- Please label the circuit breaker number used on each generator as would normally be done for external appliances.

Control Panel power cables may be fed through either the rear wall or the cable bushings in the bottom of the case. Connect the 230V supply cable to the power supply terminals L, N and PE, as shown in the diagram.



Each Ozone Module has its own power cable that can be found inside the packaging. Connect it to the Ozone Module as seen in the picture below.

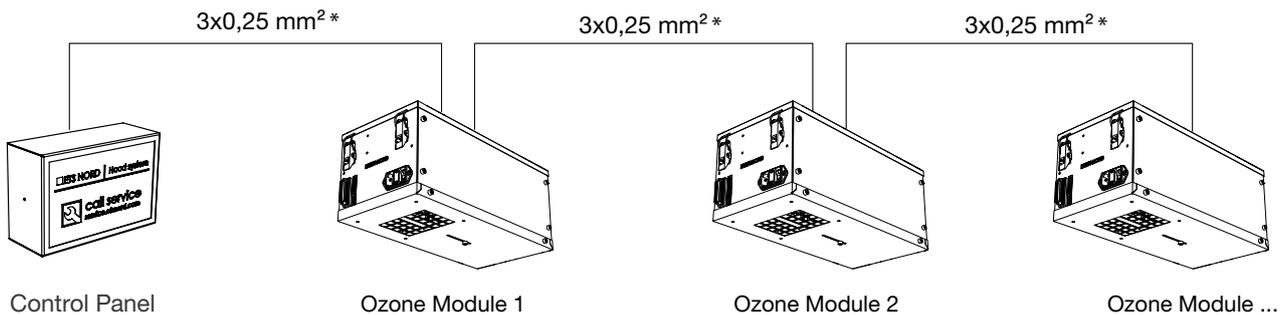


5.2 Control Panel and the Ozone Modules data wiring

Three cables are connected to the Control Panel. Data cable (3x0,25mm<sup>2</sup>) for communication between Control Panel and EOZ unit, I/O cable (5x0,5mm<sup>2</sup>) for connecting to the building automation and LAN cable to access the Control Panel via internet.

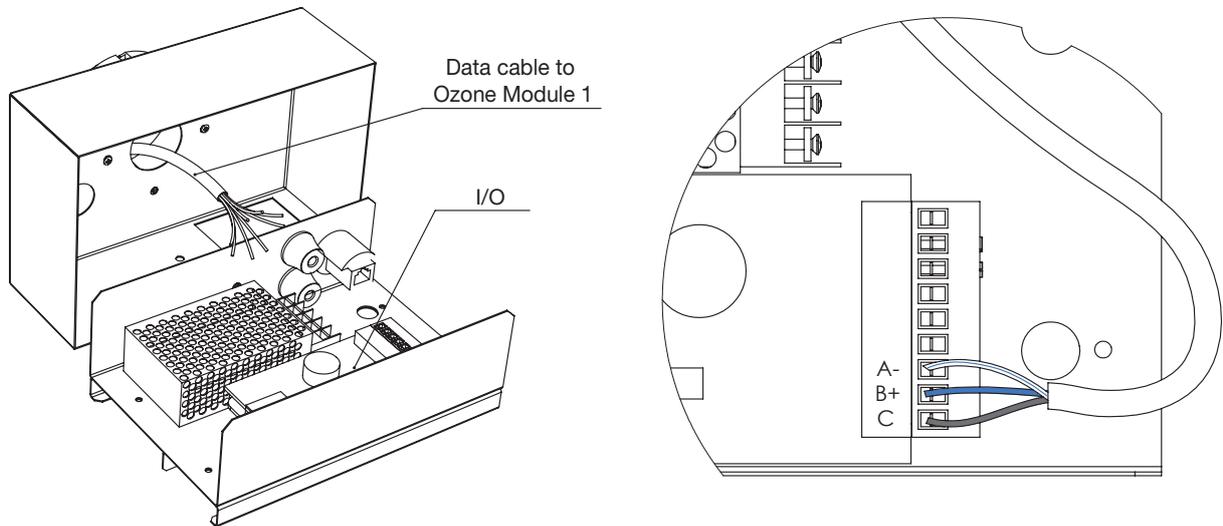
Ozone Modules are connected sequentially ("daisy-chained") from the Control Panel to the nearest Ozone Module, then to the next module and so on. However, please note that although the physical cabling is "chained" from one device to the next, the data cables are connected together in a parallel format. That is, similar terminals between devices are connected together; there are no specific "in" or "out" data terminals on the various components.

Maximum limit for the number of Ozone Module connected to the Control Panel is 99 and maximum length of the data cable is 500m. However, it may be advantageous to have multiple Control Panels in larger facilities. Cable bushings come preattached inside the supply chambers.



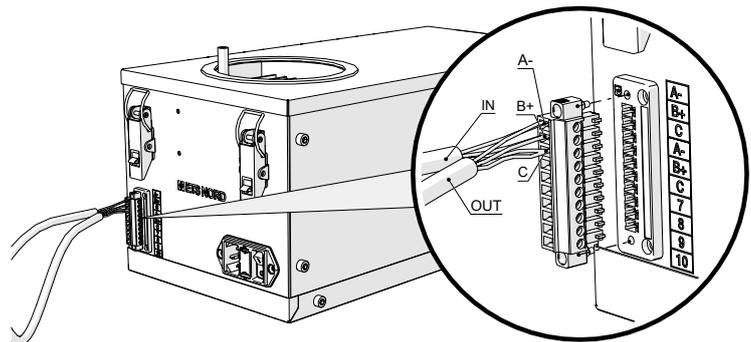
\*3x0,25 mm<sup>2</sup> or another shielded data cable with at least 3 conductors.

Data terminal A-, B+ and C (GND) are connected similarly between the Control Panel and each Ozone Module. Note the cable colors used on each terminal to ensure all devices are connected similarly.

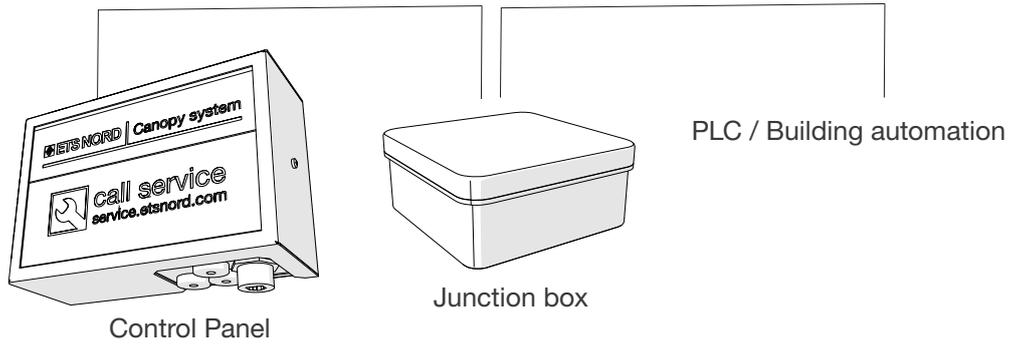


As stated above, the data cables are typically run through the facility in a daisy-chained format, although the individual communications wires themselves are connected in parallel. In this way data communications between devices will remain active even in the case one of them is powered off, malfunctioning, or unplugged and removed.

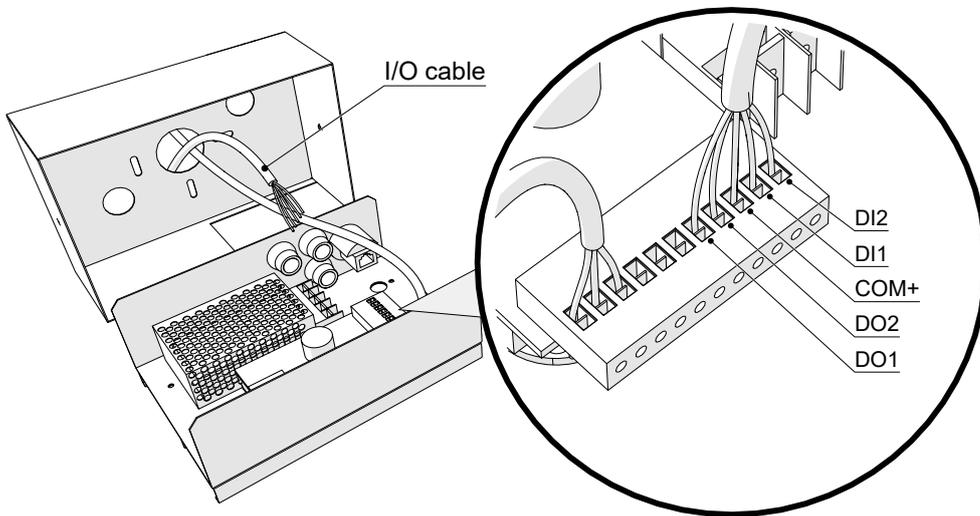
Thus, each A-, B+ and C data wire leading in from devices on both sides of any Ozone Module in the chain should share the same terminal screw in its respective connector. In this way the three extra unused terminals just below on the connector block can be reserved for future expansion.



Next, install the I/O data cable for your building automation system or for future upgrades.

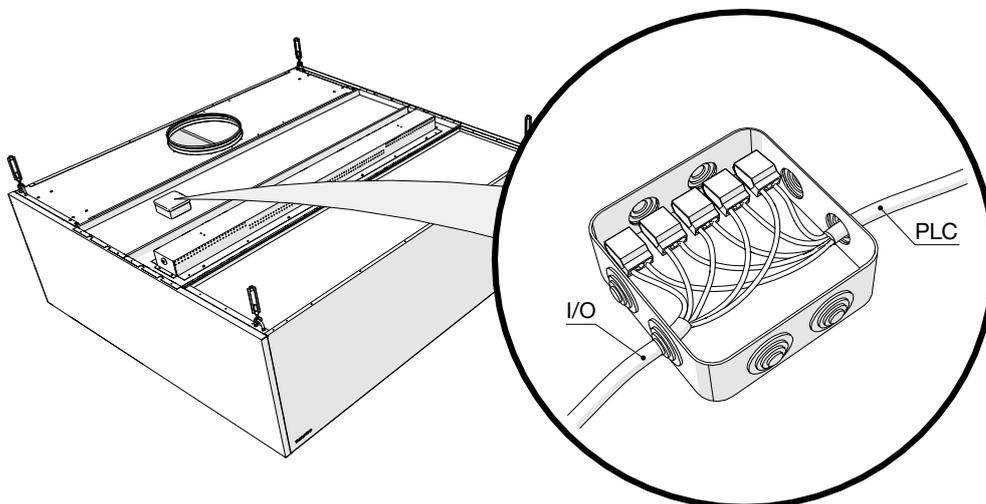


Connect the five (5) terminals DI1, DI2, DO1, DO2 and COM+ and mark the other ends of the wires within the junction box with their corresponding terminal assignments.

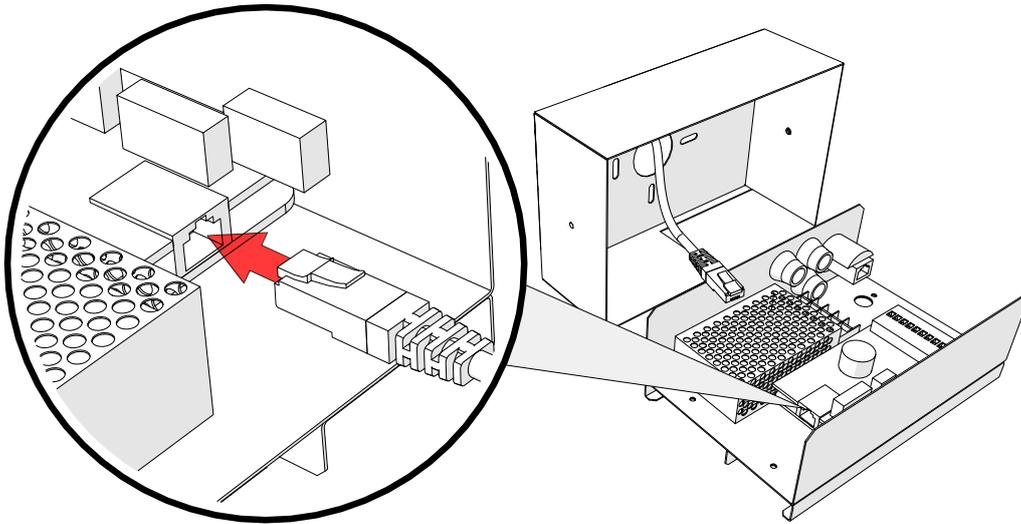


**For more technical information, please check our website or contact your ETS NORD representative.**

Rout the other end to a junction box that is situated near or on top to the canopy.

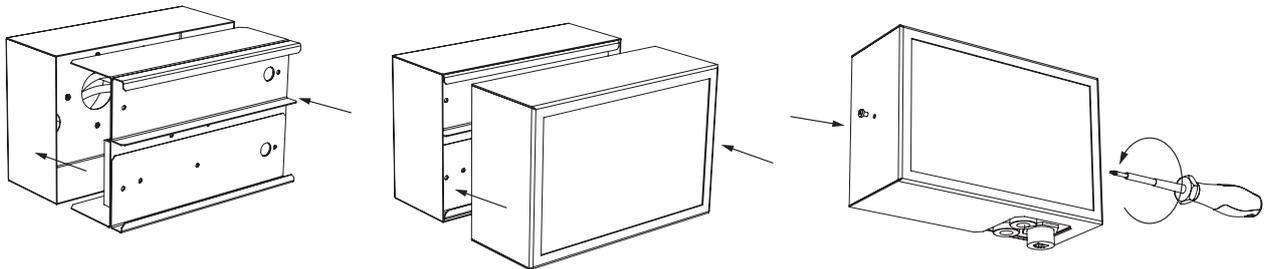


Finally, if it is desired to connect the system to the local area network, connect the LAN cable to the Control Panel by unplugging the existing short LAN jumper cable inside and connect your LAN cable straight to the port on the board as seen below.



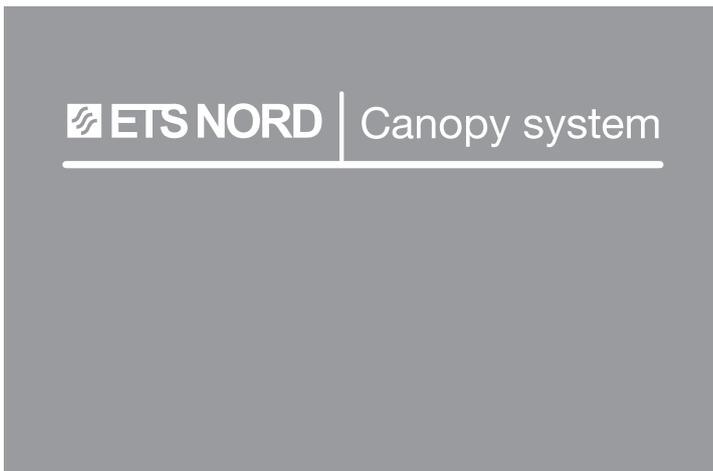
LAN cable must be connected to a network switch or to the closest LAN socket.

Reassemble the housing in reverse order, with the smaller LED display above the larger one. Ensure the text on the plexiglass is oriented correctly and fasten the housing with the two fixing screws on the sides.



 Please note! After powerup, starting up the Control Panel takes approximately 40 seconds. The system operating interface is unavailable until this boot process has completed.

Control Panel display messages



When "ETS NORD Canopy system" is lit in white, the system is operating normally.



**Call service is blinking:**

This indicates that the system is operating normally, but it is time for its annual maintenance.

**Call service is lit:** pressure warning.

This indicates the system is not operating due to a pressure warning. Check that all grease filters are correctly installed in the extraction chamber of the canopy, and that the bottom edges of all filters do not have any gaps.



**Call service is lit is red:**

This indicates a technical fault has been detected in the system. Contact your ETS NORD representative or nearest authorized service company as soon as possible at: [www.etsnord.com/service](http://www.etsnord.com/service)

For further assistance, contact your ETS NORD representative or nearest authorized service company. Visit: [www.etsnord.com/service](http://www.etsnord.com/service)

**NOTE!** Cooking in the kitchen may continue when Control Panel alarm is active as long as there is no sign of ozone. Still service is required and information must be provided to ETS NORD representative or nearest authorized service company

## Facts about ozone

- Ozone is a colorless gas, the sharp smell of which can be detected by a person at a concentration of 0.02 ppm (0,4 mg/m<sup>3</sup>).
- The smell of ozone is similar to the smell of chlorine used in swimming pools.
- The use of ozone is subject to the applicable protection legislation. For example, in Sweden, the Swedish Work Environment Authority provides the following hygienic limits for ozone:
  - 0,05 ... 0,2 ppm (during working time, 8 hours)
  - (Directive 2000/39/EC) 0.3 ppm (15 minutes)
- Acute exposure to ozone may result in the following damage:
  - skin irritation and burning sensation
  - severe irritation and burns in eyes and vision loss
  - pulmonary irritation in the respiratory tract and respiratory problems
- If the presence of ozone is detected indoors, the Ozone Module must be switched off immediately and the area must be ventilated.

## Limited warranty of device

Warranty conditions:

- General warranty conditions can be found on producers homepage
- The new device is covered by a 2-year warranty against defects and manufacturing defects, if:
  - the initial commissioning of the device has been performed by an authorized partner of ETS NORD AS
  - the equipment is serviced every 12 months after commissioning
  - specified components (eg ozone generating equipment) have been replaced as required
- The warranty for a new device covers the repair or replacement of a defective part
- The warranty for replacement parts for manufacturing defects is valid for ninety (90) days from the installation of the replacement part
- The warranty is valid from the date of commissioning and product registration

## Service and maintenance

Maintenance and configuration of Ozone Modules may only be carried out by ETS NORD trained personnel or its authorized contractors. Technical assistance or annual maintenance can be requested from the website: [www.etsnord.com/service](http://www.etsnord.com/service).

- An Ozone Module generates ozone. If an Ozone Module is used by people who have not read these instructions, there is a risk of damage, such as lung irritation or electrical shock. Always follow the rules and recommendations for the particular work environment issued by national authorities.
- This manual describes how to install a typical Ozone Module. Installation may differ according to local regulations related to building materials, ventilation systems or building/room design. Always contact the manufacturer before installation if something seems unclear.



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