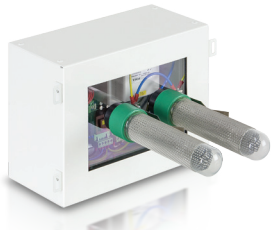
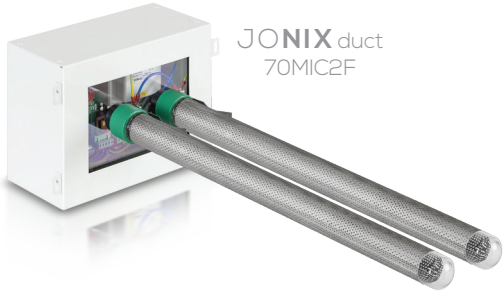
JONIX duct

USE AND MAINTENANCE MANUAL

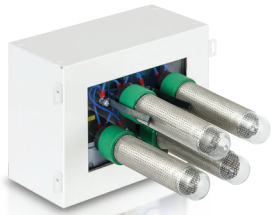
JONIX duct
70MIC2C



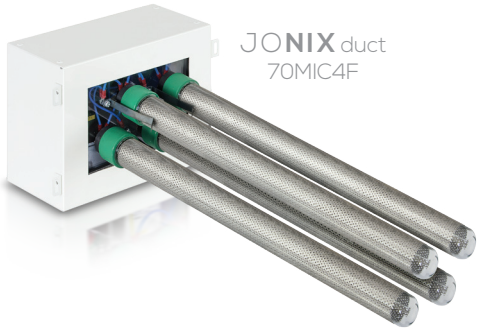
JONIX duct
70MIC2F



JONIX duct
70MIC4C



JONIX duct
70MIC4F



DUCTABLE IONISING MODULE

MADE IN ITALY

These instructions are translated from Italian (the original language).

TABLE OF CONTENTS

Thank you purchasing the JONIX duct device.

This manual contains the information and all that is required for the transportation, installation, use and maintenance of the Ductable Ionising Module JONIX duct.

Improper installation of the device and/or failure to comply with the instructions in this manual, may invalidate the warranty that the Manufacturer issues for its products.

The Manufacturer is not liable for any direct and/or indirect damage caused by incorrect installation or damage caused by the units installed by inexperienced and/or unauthorised staff. At the time of purchase, check that the device is intact and complete.

The Manufacturer declines any liability in case of personal injury or property damage resulting from any improper use of the device or from the failure to observe the use and safety instructions specified in this manual. In any such case, any warranty claim will be void.

Any complaints must be submitted in writing within **8 days** of receiving the goods.

For more information, download of the manual or video tutorial, we invite you to visit www.jonixair.com.

1 - GENERAL INFORMATION

1.1 SERIAL NUMBER PLATE

The equipment described in this manual is provided with a plate containing the equipment and Manufacturer data:

Fabbricante	**JONIX S.R.L.** Viale Spagna, 31/33 35020 Tribano (PD)
Nome del prodotto	JONIX duct
Descrizione del prodotto	Dispositivo per la sanificazione attiva e purificazione dell'aria
Codice prodotto	REF 70MICxx
Numero di serie	SN xxxxxxxxxxxx
Alimentazione	230V / ~1 / 50Hz
Max Corrente assorbita	xx A

The Ductable Ionising Module JONIX duct is in compliance with Directives 2011/65/UE, 2014/30/UE, 2014/35/UE and subsequent amendments.

IMPORTANT WARNING

The JONIX duct device is designed and made to sanitise the air in residential environments that are incompatible with toxic and flammable gases. It is therefore strictly forbidden to use the device in environments where the air is mixed with and/or altered by other gaseous compounds and/or solid particles. Using the device for purposes other than those intended and that do not comply with those described in this manual, will immediately relieve the manufacturer and its distributors from any direct and/or indirect liability.

1.2 LIABILITY

Failure to comply with the instructions contained in this Use and maintenance manual relieves the Manufacturer from any liability. For any information not included or that cannot be deduced from the Manual, consult the Manufacturer directly.

JONIX srl
Viale Spagna 31/33
35020 Tribano - PD - Italy
http://www.jonixair.com

In particular, if equipment maintenance is carried out in a way that is not in compliance with the instructions supplied, or in a way to jeopardise integrity or modify features, JONIX srl is relieved from any liability inherent to safety of persons and faulty operation of the equipments.

1.3 SYMBOLS

Please pay utmost attention to the following symbols and their meaning. They emphasise specific information, such as:

WARNING: It refers to integrations or suggestions concerning the proper use of the device.

HAZARD: It refers to dangerous situations that may result from the use of the device, in order to ensure personal safety.

FORBIDDEN: This symbol refers to operations that must be avoided under any circumstances, and hence forbidden.

HIGH VOLTAGE HAZARD!
Do not open or remove any doors or protections before disconnecting the voltage supply.

WARNING!
It is mandatory to use protective gloves.

WASTE FROM ELECTRICAL AND ELECTRONIC EQUIPMENT.
The crossed-out wheelie bin symbol on the equipment label indicates that the equipment is compliant with the Waste Electrical and Electronic Equipment (WEEE) Directive. Disposing of the equipment freely in the environment or illegally disposing of the equipment are punishable by law.

2 - WARNINGS AND GENERAL PROHIBITIONS

This instruction manual is an integral part of the device and therefore must be kept carefully and must ALWAYS accompany the device, even in the event that it is sold to another owner or user or transferred to another facility. In the event that it is damaged or lost contact JONIX srl for another copy or download the document from www.jonixair.com.

Repairs and maintenance work must be carried out by JONIX srl authorised staff or by qualified staff according to the provisions set out by this manual. Do not alter or tamper with the device as it can lead to hazards and the manufacturer of the device shall not be liable for any damage caused.

After removing the packaging check that the contents are intact and complete. In the event of a noncompliance please contact the Company that sold you the device.

When installing, commissioning and operating this product, it is mandatory to observe the requirements and instructions specified in this manual.

JONIX srl disclaims any liability for damage caused to people, animals or property due to installation, adjustment and maintenance errors or by improper use.

Please note that the use of products that require electricity, involves the observance of some crucial safety rules such as:

This device is not intended for use by people (including children) with reduced physical, mental or sensory capabilities or without experience and knowledge, unless they are supervised or are given instructions to use the appliance by a person responsible for their safety. Take suitable precautions to prevent children from playing with the device.

Do not touch the device if you are barefoot and with parts of the body that are wet or damp.

Do not carry out any maintenance or cleaning operations without having first disconnected the device from the mains, by turning the main system switch to "OFF".

Do not alter the safety or adjustment devices without prior authorisation and instructions from the manufacturer of the device.

Do not pull, detach or twist the electrical wires coming out of the device, even when it is disconnected from the mains.

Do not stand, sit and/or rest any type of object on the device.

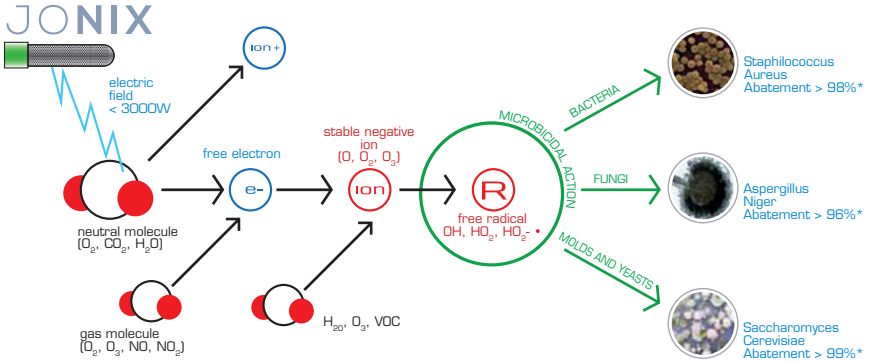
Do not spray or throw water or other liquids directly onto the device.

Do not open the panels for accessing the internal parts of the device without having first turned the system switch to "OFF".

Not dispose of or leave the packaging materials within reach of children because it can be potentially dangerous.

3 - THE OPERATING SYSTEM

This sanitization device, by exploiting the physical process of ionisation, promotes the controlled formation of particular ionic species (electrically charged species) in the air, through an electrostatic field that simulates the natural process that normally occurs through solar radiation, mechanically or by means of other physical phenomena.
The particular ionic species produced have proved to be particularly effective as sanitizing agents in the air and on surfaces, moreover are historically and scientifically proven to be beneficial in people, especially those with a negative electrical charge (arising from individual or small groups of molecules that receive an electron).



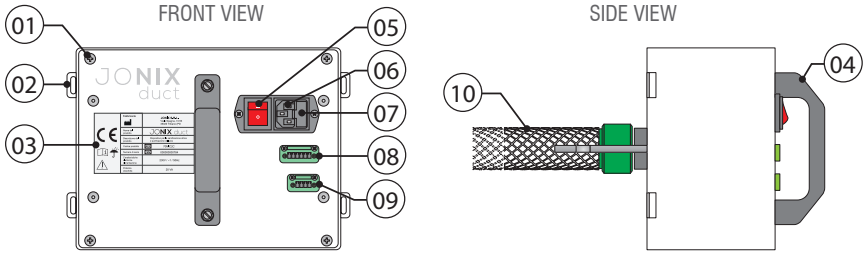
The most significant features of JO**NIX** duct are:

- **High efficiency**: reduction of bioburden and of volatile organic compounds up to 99% compared to the initial concentration;
- **Low power consumption**: from 20 to 40 VA;
- **Strong deodorizing action**: it eliminates odours from the air flowing through;
- **Natural process**: it does not use nor produces residual chemical substances.

New generation ionising units are used in the JO**NIX** duct module, characterised by high efficiency and selectivity, which do not produce any significant increases in undesirable by-products such as ozone or nitrous compounds, in irritating or even toxic amounts.
The function of JO**NIX** duct sanitising systems, designed for installation inside different types of aeration systems, is to reduce the bacterial load and to sanitise air introduced into the environments, improving Indoor Air Quality.
They can be used to sanitise machines and aeration ducts or to reduce odours in environments such as kitchens, fish and meat processing facilities, etc.
JO**NIX** duct modules are composed of control electronics, inside an insulated enclosure, and of actuators: the ionising units exposed to the air flow.
The electronics on the device are capable of sending alarms to the central control system, in real time, in case of failures to the ionising system.

As a result, it is easy to implement a software interface capable of displaying messages requesting maintenance when this signal is received.
The the JONIX duct modules can therefore be perfectly integrated in aeration systems commanded by a central control unit.

4 - TECHNICAL DATA JONIX duct



4.1 COMPONENT DESCRIPTION JONIX duct

01	Opening/closing box screws	06	Power supply socket
02	Attachment form stirrup	07	Protection fuse holder
03	Technical statistics label	08	Input and serial signal connector
04	Handle	09	Output and alarm reporting connector
05	Bright ON/OFF switch	10	Ionising tubes with grounding

4.1.1 Technical features JONIX duct

Mod.*	Article	Dimensions (LxPxH) [mm]	Power Supply	Plasma generators	Max sprayed airflow (m^3/h)	Max power absorption [W]	Weight [Kg]
JONIX duct	70MIC2C	290 x 350 x 200	230 V/~1/50Hz	2 x type 175	500	20	4
	70MIC4C	290 x 350 x 200	230 V/~1/50Hz	4 x type 175	1000	20	5
	70MIC2F	290 x 700 x 200	230 V/~1/50Hz	2 x type 520	2000	20	5
	70MIC4F	290 x 700 x 200	230 V/~1/50Hz	4 x type 520	4000	40	6

*): Various models can be assembled in group of the same type or comined according to the airflow to deal with.

4.2 SPARE PARTS AVAILABLE ON ORDER JONIX duct

Code	Description	Notes
70CONDTIPO175	CONDENSER TYPE 175	2 Ionising generators
70CONDTIPO520	CONDENSER TYPE 520	4 Ionising generators
JX40000009	SINGLE-PHASE PROCESSOR 20VA 230V/2850V	1 processor
JX40000010	SINGLE-PHASE PROCESSOR 40VA 230V/2850V	1 processor
JX11000002	SENSING CONDENSATION CARD 175-520	1 electronic card
HF40000778	GLASS FUSE 5x20 2.5A 'F' quick	1 quick blow glass fuse

5 - RECEPTION, TRANSPORT AND STORAGE

5.1 PACKAGING

JONIX duct and its accessories are delivered in specific protective packaging and must remain intact until they are assembled. The materials that were not installed for technical requirements are supplied with suitable enclosure secured to the inside or outside of the device itself. The package includes:

- N° 1 JONIX duct Ductable Ionising Module.
- N° 1 power supply connector, n° 2 serial connectors.
- Operating and maintenance manual (with dimensional diagrams, wiring diagrams, Declaration of Conformity).

5.2 HANDLING AND TRANSPORT

To handle the device use appropriate means, depending on the weight, as required by Directive 89/391/EEC and subsequent amendments.

Please take great care while unloading and positioning the devices, to prevent damaging the casing or components. Avoid uncontrolled rotations.

The weight of every single device is given in this manual.

5.3 INSPECTION UPON RECEPTION

When you receive the device please check all its parts, in order to make sure that it has not been damaged during transport.
Any damage must be reported to the carrier, by filling in the relevant section on the delivery note and specifying the type of damage.

Any type of complaint must be sent in writing within eight days from receiving the goods.

5.4 STORAGE

In the event of extended storage keep the devices away from dust and sources of vibration and heat.

The Manufacturer disclaims any liability for damage due to incorrect unloading failure to protect the device from the elements.

5.5 HANDLING DEVICE IN OPERATING CONDITIONS

JONIX duct device is easy movable in various environments, because it is provided with handle and reduced clearances (see Chapter 4 "Technical Data").

We recommend you the highest attention in handle the plasma generators uin the device.

6 - INSTALLATION AND COMMISSIONING

ATTENTION! Before carrying out any operation on the devices read ALL the instructions in this manual carefully.

Definitions:		
USER: Person, organisation or company who or which has purchased or rented the device and is going to use it for the intended purposes.	**USER/OPERATOR:** Individual who has been authorised by the user to operate the device.	**QUALIFIED STAFF:** Individuals who have completed a specific course and are therefore able to recognise the hazards arising from the use of this device and are able to prevent them.

6.1 SAFETY STANDARDS

The Manufacturer disclaims any liability for failure to comply with the safety and prevention standards as described below.
The Manufacturer also disclaims any liability for damage caused by improper use of sanitisers and/or alterations carried out without prior authorisation.

- The device must be installed in strict accordance with the instructions contained in this manual.
- Wear suitable accident prevention clothing when installing the device, such as: goggles, gloves, etc. as instructed in standard 686/89/EEC and subsequent amendments.
- While performing installation, operate in full safety, in a clean environment clear of obstructions.
- Comply with the laws in force in the country in which the device is installed, regarding the use and disposal of the packaging and products used for cleaning and servicing the device; you should also observe the recommendations given by the manufacturer of such products.
- **Before switching the device on check the integrity of the various components and of the electrical mains to which it is connected, making sure that it is fitted with a circuit breaker upstream of the power line as shown in this manual.**
- Never insert objects of any kind into the device, as coming into contact with live parts or electrical terminals may cause fires or electric shocks.
- Do not service or clean the device without first unplugging it from the mains.
- Worn or damaged parts must only be repaired or replaced by qualified staff and by following the instructions given in this manual.
- The spare parts must be approved by the Manufacturer.
- In the event of decommissioning or disposing of the device, follow the anti-pollution regulations set out by the country in which the device is installed.
- In doing puncture in walls be sure of not interfere with electric ropes, plumbing and whatever can be damaged.
- Do not pour water or any kind of liquids on the device.

- Place the device so that the power cable cannot be stepped on.
- Do not connect the device to power lines connected to any other electric utilities or devices.
- **Use the type of power supply shown on the label. If you are not sure about the type of power supply available, ask your local retailer or electricity provider for assistance.**
- Do not touch the inside of the device, unless specified otherwise in the instructions contained in this manual.
- Never force the components when assembling: although it is made with high strength materials, the parts of the device can be damaged if handled incorrectly.
- Do not try to perform maintenance work on the device, except where specified in this manual. Opening or removing the outer casing may expose you to dangerous live parts or may involve other risks. All maintenance work must be carried out by authorised staff, except where specified in this manual.
- Unplug the device from the mains and contact qualified staff for assistance in one of the following cases:
  - The device has come into contact with water or liquids of any kind.
  - The device has been exposed to the elements.
  - A malfunction persists despite all the installation and/or maintenance procedures have been performed properly.

IMPORTANT The installer and the user, when using the JONIX duct device, must take into account and solve all the other types of risk associated with the system. For example, risks arising from foreign bodies getting into the device or risks due to dangerous flammable or toxic gases at high temperature.

6.2 GETTING STARTED

- Check that the various components of the device are fully intact.
- Check that the documentation and any accessories for installation are contained in the package.

- Carry the device in its packaging as close as possible to the installation site.
- Do not rest weights or tools on the device, or place it on an unstable surface.

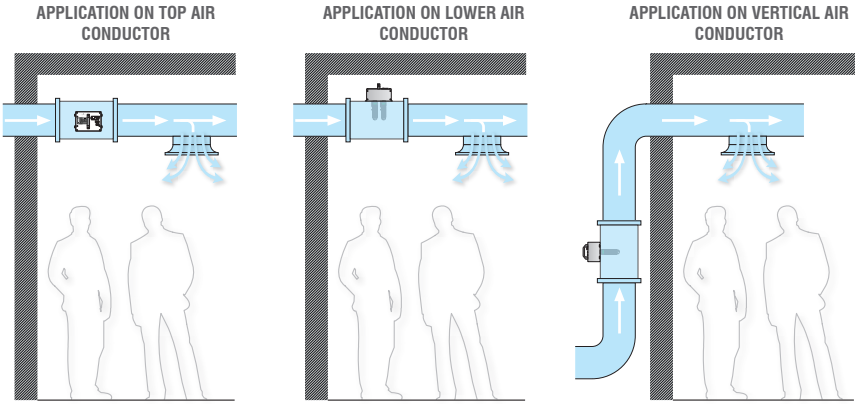
6.3 CHOOSING THE INSTALLATION SITE

- Do not put the device in places where there are flammable gases, acidic, aggressive and corrosive substances that can damage the various components beyond repair.
- Provide a minimum clearance, in order to install the device and carry out routine and special maintenance.

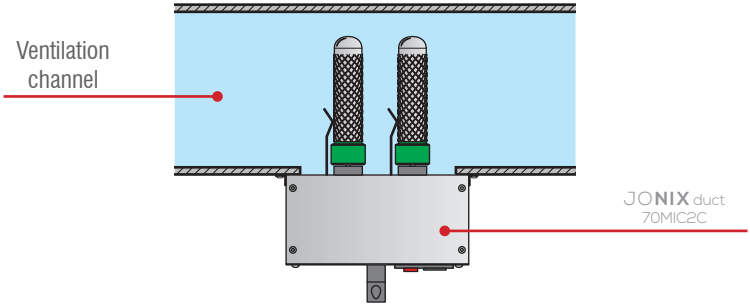
6.4 INSTALLING THE DEVICE

The device JONIX duct is designed to be secured directly onto the surface in contact with the air to be treated, using specific brackets. Therefore, that surface must be provided with a 175 mm x 120 mm rectangular hole and holes for applying the screws, as indicated in the dimensional drawing attached to the device.

Easy to install in any ductwork and with any material.
JONIX duct devices – thanks to their adaptability and to their space-saving designs - can be easily fixed on either side of the duct. All you need is an opening on a wall (in horizontal or vertical position): the device can be fastened using the eyelets supplied as standard.



Fastening example of the JONIX duct module on ventilation pipes.



IMPORTANT:
With tissues duct, provide an attachment plenum in installation phase of the JONIX duct device.

6.5 ELECTRICAL CONNECTIONS

ATTENTION! BEFORE STARTING ANY OPERATION, MAKE SURE THAT THE MAIN POWER SUPPLY IS DISCONNECTED!

- The electrical connections must be carried out following the instructions provided in this manual.
- **Make sure that voltage and frequency of the electric line correspond to those provided on the name plate.**

WARNING!
Using power supply that does not meet the requirements requested by the device could resolve in damaging the device or part of it.

- The electrical mains of the JONIX duct device must be used for the device only, there must be no other devices powered by the same power line. Do not use adapters, power strips and/ or extension cords.
- Make the connection with cables with a suitable cross-section and in compliance with local standards.
- **The installer must see to it to assemble the device as close to the power disconnector as possible, according to standards in force and as far as necessary to protect the electrical parts.**

6.6 ELECTRIC POWER SUPPLY

The JONIX duct device leaves the factory fully wired. It only needs to be plugged into the electric mains, 230V/ ~1 / 50Hz + PE. Power must be brought to the socket installed on the module by an IEC 60320 C13 type plug. A residual current device must be installed upstream according to standards in force. The socket on the panel is equipped with a fuse.

ATTENTION!
Using the supplied rope for the link to the net or provide one of equal section always composed by F,N and T. Before making any connections, make sure the mains voltage complies with what is shown on the label.

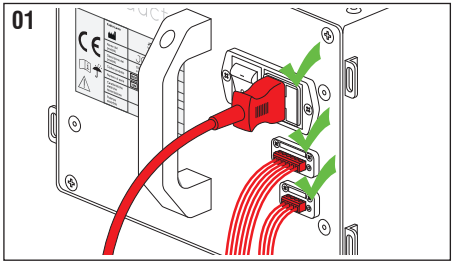
The ON/OFF switch indicates when the device is powered.

It has also to be provided:
- A four polar linking rope on alarm contact not in tension for the takeover of the state signal of the device.
- A six polar linking rope on signal contact of alarm reset and of the comunication serial line.

The plugs of these contacts are provided with the form.

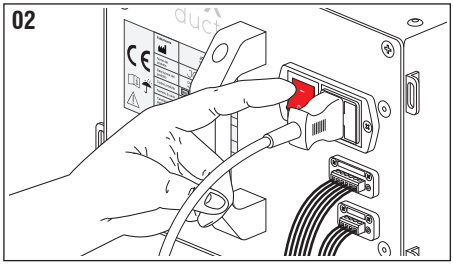
6.7 USING THE DEVICE

Fig. 01: Connect the device to the mains using the power cable with suitable cross-section.
Connect the alarm contact to the machine's control system. This contact is normally closed when operating properly and is only triggered when the system detects a fault.

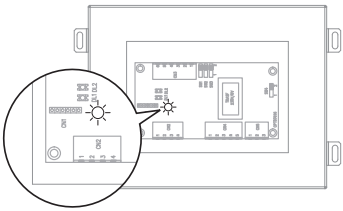


We recommend you to link the contact of input signal and serial interface RS485.

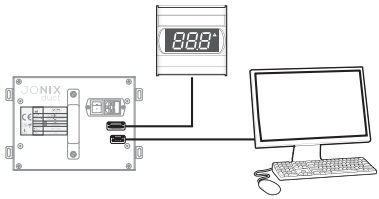
Fig. 02: Once connected to the mains supply, the JONIX duct module is ready to work.
In order to turn on the device act on the red switch **0/I** turning it to **I**; you will hear a slight hissing sound coming from the ionising tubes and the corresponding LED will light up, indicating that the unit is switched on.



JONIX duct devices are made up of electronic control, enclosed in an insulating shell, and of actuators:the ionising unity are exposed to airflow. The electronics in the device is prepared to the sent at the central system, in real-time, of an eventual alarm signal in case of failure of the ionisation system. For this reason, it is easy to implement a software interface that can throw on video, from this signal, a request message of maintenance.
The exchange of informations in entrance and in exit is full managed by 2 sockets, one of 6 poles for input and control signals (RS 485) and one of 4 ploes for output signals (anomalies signals).



Reporting led functioning state on electronic card



Example of remote connection reporting functioning state

The alarms are split up into type and marked through 2 clean contact usually opened:

1. **RL1 Maintenance alarm periodic/replacement.**
   It is enabled after 1000 hours of functioning to indicate the necessity of a periodic cleaning of plasma generators (flashing way 5 sec on, 2 sec off) or after 14000 hours to ask the sostitution of generators themselves (fixed way)..Once done the requested operations the relay can be reset through command on serial line or through IN1 entrance. In this last one case you have to apply a short-circuit of 2 seconds.

2. **RL2 Broken alarm.**
   It is enabled if the control voltage in HV generators gets out from a defined range. Once done the requested operations the relay can be reset through a commmand on serial line or through IN1 entrance. In this last case you have to appluy a short-circuit of 5 seconds.

Two leds, one red and one blue, in the electronic card inside the module provide indications of the type of the active alarm.

	BLUE	RED
NUMBER OF FLASH	DESCRIPTION	
1		Necessity of periodic.
2	Active ionisation.	Necessity of sostitution of generators.
3	error equipement (blocked ionisation until the next reboot) - SHORT-CIRCUIT (removed power supply to the processor)	Possible lack/breakup of one or more generators.
4		Possible presence of short-circuit in one or more generators.

It exists a relay that allows to activate or disactivate the ionisation through Modbus protocol:

3. **RL3 (F OUT) Activation Generator of HV.**
   It is enabled after 1000 hours of functioning to indicate the necessity of a periodic cleaning of plasma generators (flashing way 5 sec. on, 2 sec. off) or after 14000 hours to ask the sostitutions of generators themselves (fixed way)..Once done the requested operations the relay can be reset through command on serial line or through IN1 entrance. In this last one case you have to apply a short-circuit of 5 seconds.

There is a serial line RS485 with Modbus protocol (4800N81) for the programming of the main parameters and the remote diagnosis of the equipement.

The registers with variables are the following:

N°	VARIABLE DEFINITION	UNITY	NOTES	TYPE
0	Firmware code	-	-	Lecture
1	Firmware version	-	-	Lecture
2	Modbus destination	-	-	Lecture / Scripture
3	Selected configuration	-	0: 2 short size generators 1: 2 long size generators 2: 4 short size generators 3: 4 long size generators 4: 1 short size generators	Lecture
4	ND	-	-	Lecture
5	ND	-	-	Lecture
6	Current generators voltage	cV	-	Lecture
7	Threshold MIN voltage	cV	-	Lecture
8	Alarm MIN voltage generators	-	0: not active 1: active (type 0 to reset)	Lecture / Scripture
9	Threshold MAX voltage generators	cV	-	Lecture
10	Alarm MAX voltage generators	-	0: not active 1: active (type 0 to reset)	Lecture / Scripture
11	Count hours maintenance	Hours	Hours	Lecture
12	Threshold count hours alarm maintenance	Hours	If 0 the control is not active	Lecture / Scripture
13	Alarm count hours maintenance	-	0: not active 1: active (type 0 to reset)	Lecture / Scripture
14	Count hours replacement	Hours	Hours	Lecture
15	Threshold count hours alarm replacement	Hours	If 0 the control is not active	Lecture / Scripture
16	Count hours alarm maintenance	-	0: not active 1: active (type 0 to reset)	Lecture / Scripture
17	Pilotage rating Modbus On/Off	-	0: not enabled 1: enabled	-
18	Pilotage Modbus On/Off	-	0: not active ionisation 1: active ionisation	-
19	Manual threshold for MAX voltage alarm generators	cV	-	Lecture / Scripture

The device is controllable and monitorable by using the only serial line.

7 - MAINTENANCE

7.1 WARNINGS

BEFORE CARRYING OUT ANY MAINTENANCE OPERATION MAKE SURE THAT THE DEVICE IS NOT AND CANNOT ACCIDENTALLY BE POWERED ELECTRICALLY.
YOU MUST THEREFORE UNPLUG THE DEVICE BEFORE CARRYING OUT ANY MAINTENANCE.

- It is the duty of the user to perform all the maintenance operations on the device listed below.
- If you experience a malfunction, unplug the device from the mains and contact qualified staff (retailer, the Manufacturer).
- Only trained and qualified personnel can perform maintenance operations.

Use work gloves to protect your hands when performing maintenance.

The frequency of the operations to be performed to ensure proper maintenance of the device JONIX duct depends mainly on the quality of the treated air.

Air can be especially harmful for condensers when it contains polluting or aggressive substances such as:
- Industrial flue gas
- Sale
- Chemical smoke
- Heavy powders

By coming into contact with the inside or outer surfaces of the device by means of the air flow or by direct exposure, these substances can lead to a structural and functional failure of the device and of its performance as time passes and without proper, systematic maintenance.

7.2 ROUTINE MAINTENANCE

The JONIX duct device requires a small amount of maintenance consisting in regularly cleaning the glass and outside mesh of the condenser.
The device signals the need for maintenance of the generators, by means of a special alarm contact, every 1000 hours of operation.

7.2.1 Cleaning the Ionising Tubes

Fig. 03: Switch off the ionising module JONIX duct by turning the luminous On/Off switch to **0**.
Remove the plug connected to the mains and other plugs from the JONIX duct module.

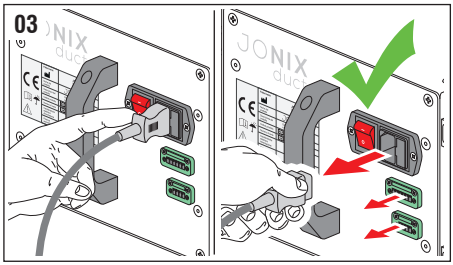


Fig. 04: Unscrew the four screws which, by means of the brackets, secure the module to the wall and pull it out by the handle.

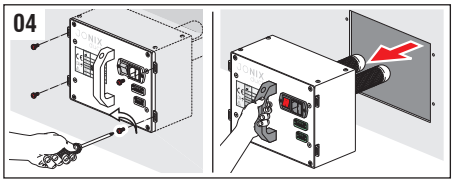


Fig. 05: Gently unscrew the tubes, **using the green plastic base**. If you have trouble, first pull off the outer mesh.

If the operation is difficult to perform, pull slightly the earthing spring so that it is not in contact with the surface of the tube.

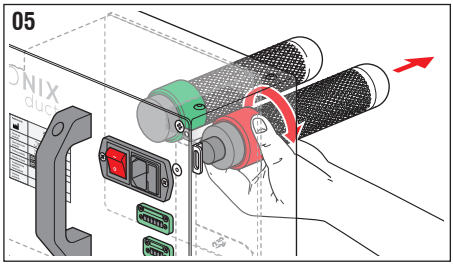
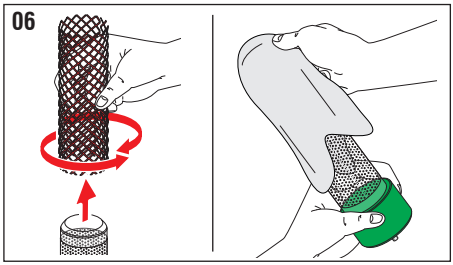


Fig. 06: Pull off the outer mesh from the tube if you have not already done so in the previous point.

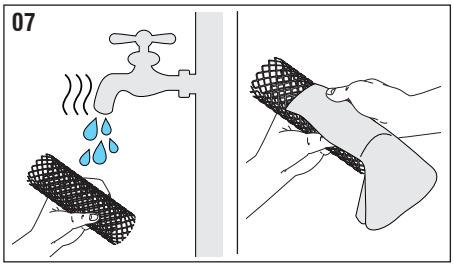
If this is difficult to do, turn the mesh around the glass while pulling to remove it.

Clean the glass using a damp cloth.



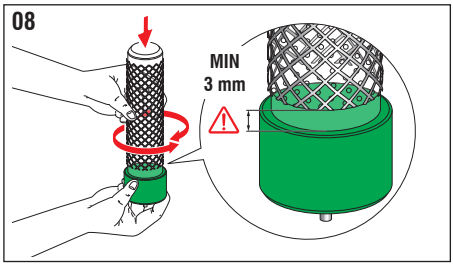
Check that the tube is in good conditions: there must not be any cracks or other damage; otherwise it must be replaced. As soon as you notice a whitish layer on the perforated metal plate inside the glass it means that the ionising tube needs replacing.
The tubes must usually be replaced within 18 months of use.

Fig. 07: Wash the mesh under running hot water and dry it thoroughly with a cloth.



Do not put back the mesh on the ionising tube if it is even partially wet.

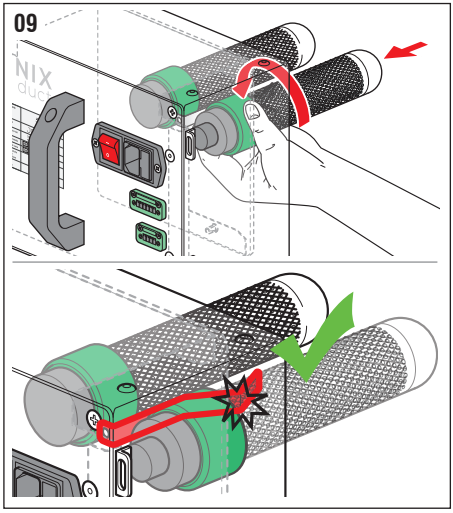
Fig. 08: Put the outer metal mesh back on the glass tube so that it fully overlaps the internal plate.



In any case ensure a minimum distance of at least 3 mm from the base of the tube.

Fig. 09: Gently screw the ionising tube holding on to the base (green part).
If the operation is difficult to perform, pull slightly the earthing spring so that it is not in contact with the surface of the tube.

ATTENTION: do not overtighten the screw after reaching its end stop.



Check that the earthing spring is in contact with the outer mesh once the ionising tubes have been screwed back into place. Otherwise contact the manufacturer.

Fig. 10: Reposition the device JONIX duct by inserting the ionising tubes horizontally into the specific hole using the handle and screw in the 4 screws which secure the brackets to the wall.

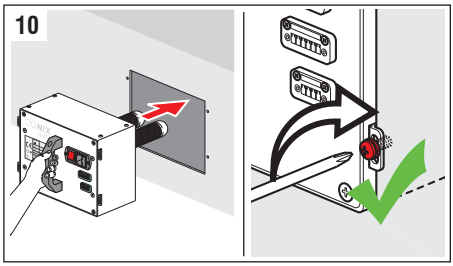
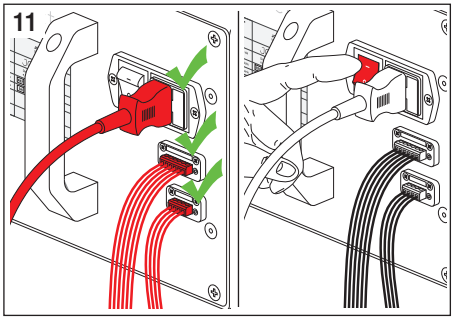


Fig. 11: Reinsert the power supply plug and all other plugs in the appropiate sockets of the JONIX duct module.
Switch on the moduleby turning the On/Off switch to **I**.
Verify the functioning of the device, it has to be hear a light sizzle coming from the tubes.

Reset the alarm reporting through corresponding entrance.



Failure to clean the ionising tubes leads to a drop in system performance.

7.2.2 External cleaning of the equipment

Clean the outside of the device with a damp cloth.

Do not use liquid cleaners or sprays, soap or the like.

7.3 SPECIAL MAINTENANCE

The only part that is subject to wear is the **ionising tube**, whose performance deteriorates over time.
When signs of wear appear, it is necessary to replace the component. They are evident with the appearance of oxide in the condenser internal mesh that will make it whitish, and that will render the glass opaque. The device will signal the need of replacement of the component after 14000 hours of operation.

7.2.1 Replacing the Ionising Tubes

Fig. 12: Switch off the ionising module JONIX duct by turning the luminous On/Off switch to **0**.
Remove the plug connected to the mains and other plugs from JONIX duct module.

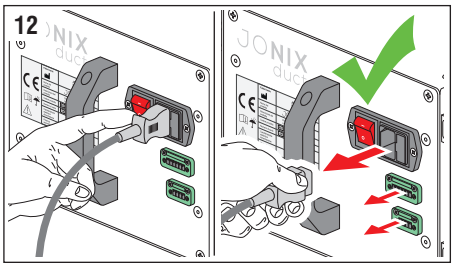


Fig. 13: Unscrew the four screws which, by means of the brackets, secure the module to the wall and pull it out by the handle.

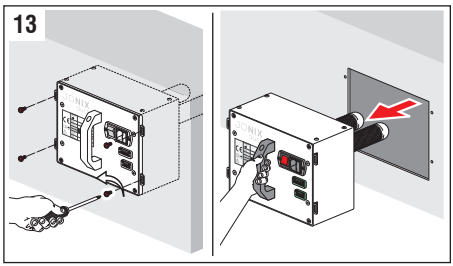


Fig. 14: Gently unscrew the tubes, **using the green plastic base**. If you have trouble, first pull off the outer mesh.

If the operation is difficult to perform, pull slightly the earthing spring so that it is not in contact with the surface of the tube.

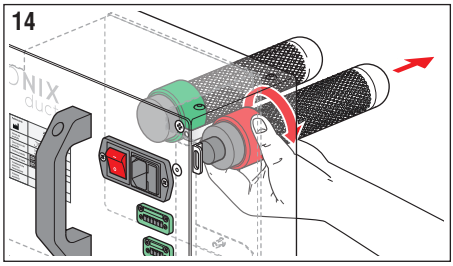
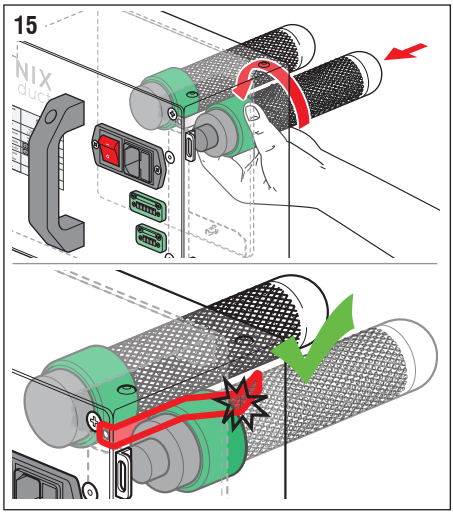


Fig. 15: Screw delicately the ionising tube holding on to the base (green part).
If the operation is difficult to perform, pull slightly the earthing spring so that it is not in contact with the surface of the tube.

ATTENTION: do not overtighten the screw after reaching its end stop.



Check that the earthing spring is in contact with the outer mesh once the ionising tubes have been screwed back into place. Otherwise contact the manufacturer.

Fig. 16: Reposition the device JONIX duct by inserting the ionising tubes horizontally into the specific hole using the handle and screw in the 4 screws which secure the brackets to the wall.

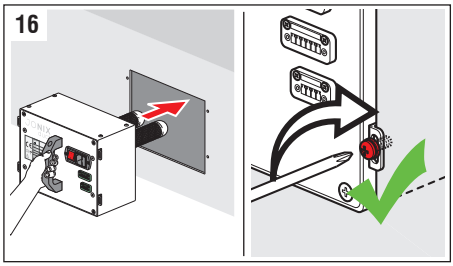
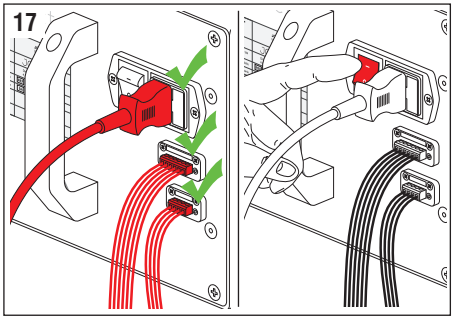


Fig. 17: Reinsert the power supply plug and all other plugs in the appropiate sockets of the JONIX duct module.
Switch on the moduleby turning the On/Off switch to **I**.
Verify the functioning of the device, it has to be hear a light sizzle coming from the tubes.



Reset the alarm reporting through corresponding entrance.

Failure to replace the ionising tubes leads to a decrease in system performance until they actually break. From that moment on, they will have no more effect on treated air.

8 - OPERATIONAL CHECK AND TROUBLESHOOTING

This section summarises the most common problems that may arise when using the unit. Before contacting customer services, carry out the checks listed below.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The switch does not light up when set at I.	The unit is not powered.	Check that the plug is connected to the mains power socket.
		Verify that the plug is connected to thepower supply socket on the module.
		Verify that the socket where the device is connected works.
		Verify the presence of power in distribution system.
		Verify that the protection fuse isn't burnt.
The alarm contact 1 notes the presence of a malfunctioning and the spy is on. The red led of the internal electronic card emits an intermittent flashing.	The system detects the need of cleaning the ionising tube.	Follow the cleaning of the ionising tubes procedure in paragraph afo 7.2.1.
The alarm contact 1 notes the precence of a malfunctioning and the spy is on. The red led of the internal electronic card emits two intermittent flashing.	The system detects the need of replacing the ionising tube.	Follow the replacement of the ionising tubes procedure in paragraph 7.3.1.
The alarm contact 2 notes the precence of a malfunctioning and the spy is on. The red led of the internal electronic card emits three intermittent flashing.	Cleaning necessity or sostitution of ionising tubes.	Follow the cleaning procedure; in the event that the alarm continues, follow the replacement procedure for the ionising tubes in paragraph 7.3.1.
The alarm contact 2 notes the precence of a malfunctioning and the spy is on. The red led of the internal electronic card emits four intermittent flashing.	The system detects the need of replacing the ionising tube.	Follow the replacement of the ionising tubes procedure in paragraph 7.3.1.

In the event that you experience a malfunction other than those described above contact qualified staff (retailer, Manufacturer).

Unplug the device from the mains and contact qualified staff for assistance even in the event of one or several of the cases below:

- The power cable is damaged or worn.
- The plug is damaged or worn.
- Water or liquid has been poured onto the device.
- In the event that there is a malfunction despite all the installation procedures have been carried out properly.

9 - DISPOSAL

When JONIX duct devices are no longer used they must be disposed of in compliance with the regulations in force in the country of installation. The unit consists of the following materials:

- Stainless steel.
- Aluminium.
- Glass.
- Nylon.
- Plastic.
- Paper and Cardboard.
- Wood.

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT MANAGEMENT

This product falls within the application scope of the Directive 2012/19/EU concerning the management of waste electrical and electronic equipment (WEEE). Equipment must not be disposed of with household waste as it is made of different materials that can be recycled at special facilities. Please inquire through your municipal authorities as to the location of the eco-friendly waste management sites where waste can be received for disposal and its subsequent recycling as recommended. Furthermore, please note that, when an equivalent appliance is purchased, the seller is expected to collect free of charge the old product to be disposed of. The product is not potentially dangerous for human health and the environment, as it does not contain any harmful substances according to the Directive 2011/65/EU (RoHS), but if disposed of freely in the environment, it might adversely affect the ecosystem.

Read the instructions carefully before using the equipment for the first time. It is strongly recommended not to use the product for any purpose other than that for which it was designed, to prevent the risk electric shock if the product is used incorrectly.

NOTES

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WARRANTY CONDITIONS

The Manufacturer guarantees the repairs of the systems that you have purchased and that are distributed throughout the country, in the event that the system shows signs of faulty materials or incorrect manufacture, subject to the following conditions:

1. The warranty starts from the date of purchase and lasts for 12 months.
2. No warranty is provided for the breakage of the ionising tube.
3. Failure to comply with operating and maintenance instructions contained in the manual attached to the device voids the warranty.
4. The purchaser has the right to benefit from the 12 month warranty only if the warranty certificate is filled in correctly in all parts and sent within 10 days of purchase to:

   JONIX S.r.l., Viale Spagna, 31/33 – 35020 Tribano (PD) Italy

5. The warranty is only valid if the system is purchased from an authorised retailer.
6. The warranty includes free repair or replacement of the components which are faulty due to incorrect manufacture and does not include the replacement of the device under any circumstances.
7. Warranty repairs are carried out solely by the retailer or the manufacturer.
8. The warranty does not cover systems that are damaged or faulty due to: replacement of components or accessories with others of a type that is not explicitly approved by the manufacturer, interventions carried out by unauthorised or unqualified staff, non-compliance with the environmental conditions, neglect, lightning, floods, fire, acts of war, riots. Malfunctions due to incorrect installation are not covered.
9. The warranty does not cover systems with illegible, missing or altered serial numbers or labels.
10. To benefit from the warranty, the purchaser must contact the supplier, delivering the device at a later stage, accompanied by a document proving the purchase.
11. All transport costs and the relative risks are under the purchaser's responsibility.
12. Carrying out one or several repairs during the warranty period does not change the warranty expiry date.
13. The manufacturer disclaims any liability for any direct or indirect damage caused to people or property due to defects resulting from the product being used incorrectly.

The user authorises the manufacturer and related customer support services to store and use personal data in accordance with Italian Legislative Decree No. 196 dated 30/06/2003. In accordance with Art. 7 of Italian Legislative Decree No. 196/2003 you may exercise your rights at any time with regard to the data controller (JONIX srl).

EC DECLARATION OF CONFORMITY

JONIX S.R.L.

Legal site Viale Spagna, 31/33 – 35020 Tribano (PD)
Scientific site Via Tegulaia 10/b - 56121 Pisa
Operative site Via Romagnoli, 12/A - 40010 Bentivoglio (BO)

declares that
the following products

DESCRIPTION	***active sanitation and air purification modules***	
MODELS	• **Duct** ○ **DuctR** ○ **VMC**	*Select the model to which the declaration refers to*
product code	**xxx**	
serial n°	**xxx**	

E' CONFORME
/ F U L F I L S

2011/65/EU ROHS Directive
2014/30/EU EMC Directive (ex 2004/108/EC)
2014/35/EU LVD Directive (ex 2006/95/EC)

reference standard
EN 60335-2-65:2003/A11:2012
Household and similar electrical appliances. Safety. Particular requirements for air-cleaning appliances

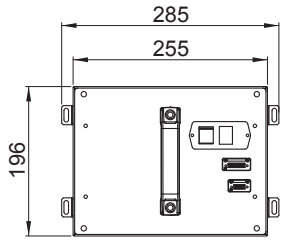
This declaration of conformity is issued under the total sole responsibility of the manufacturer

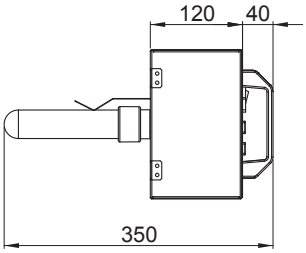
General manager *Mauro Mantovan*

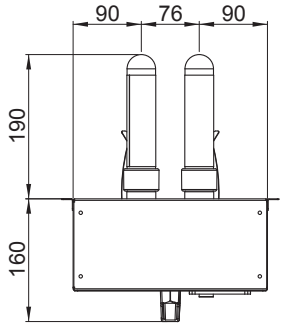
function *signature*

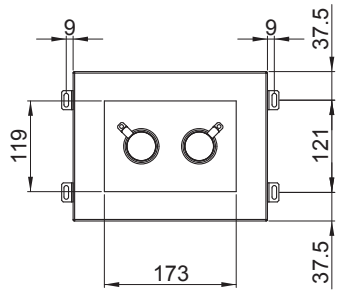
ATTACHMENTS

OVERALL DIMENSIONS JONIX duct 70MIC2C

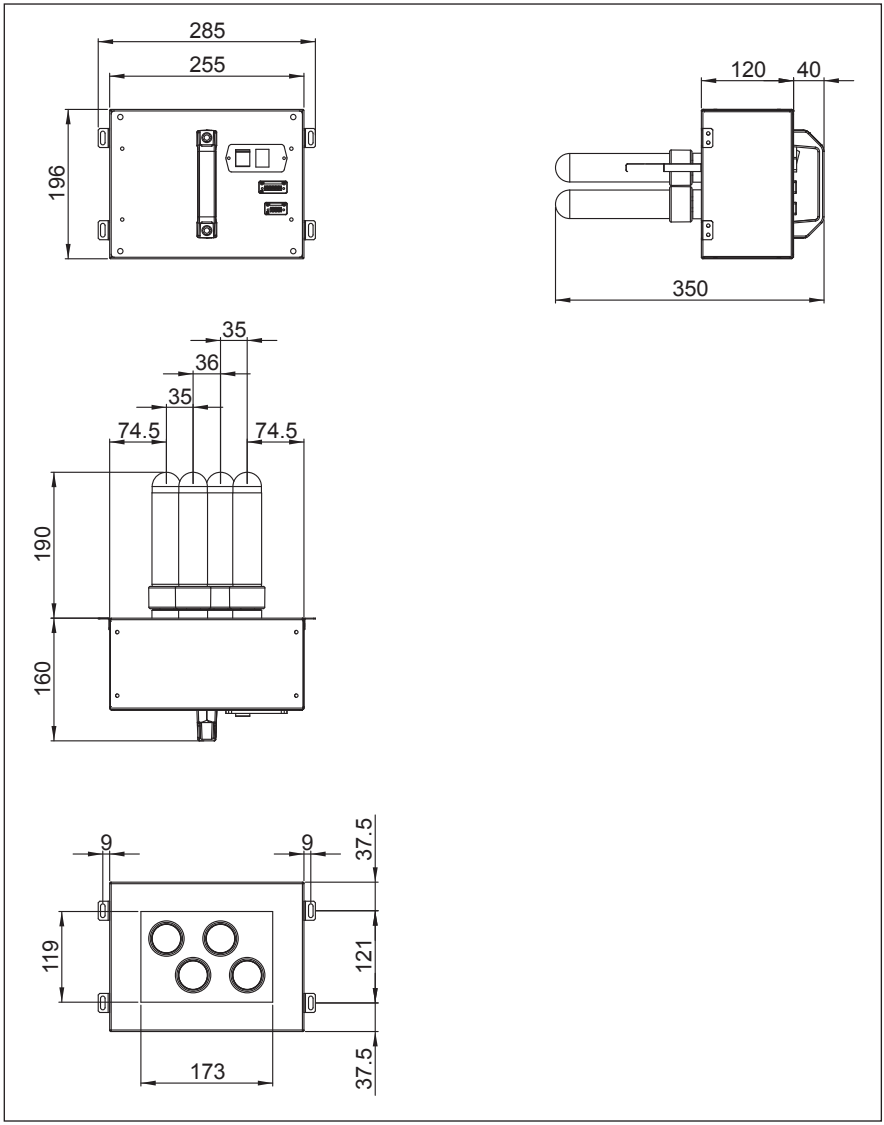




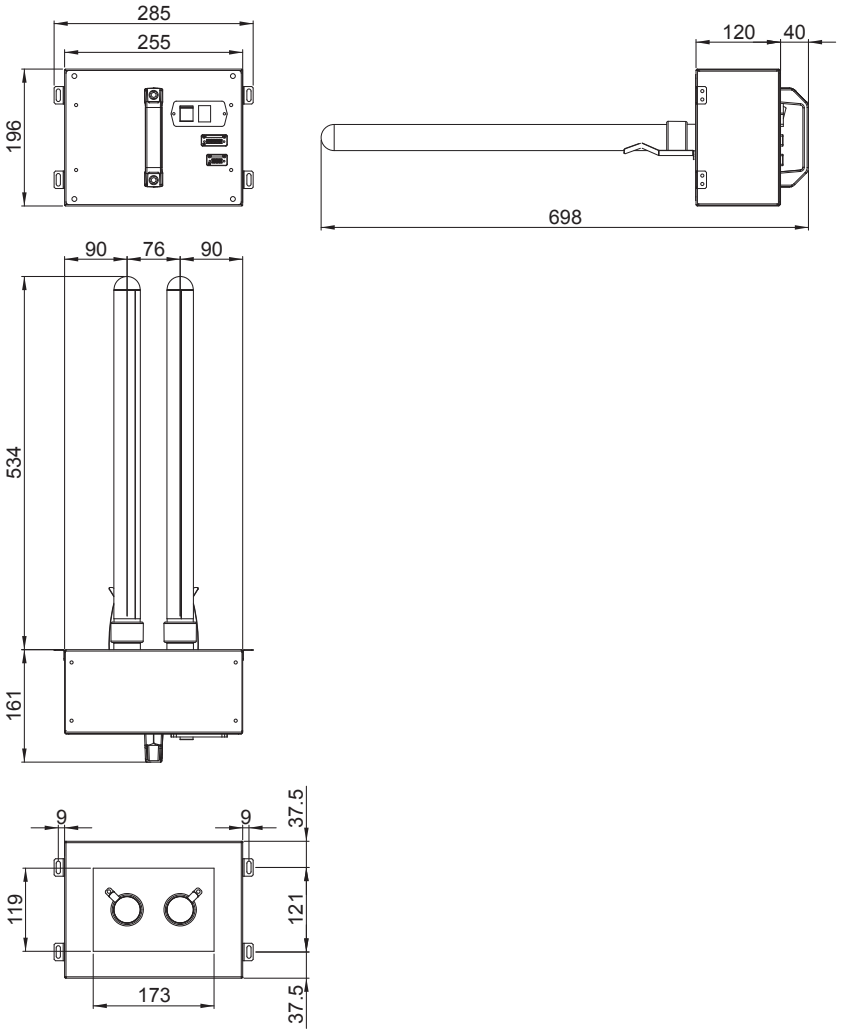




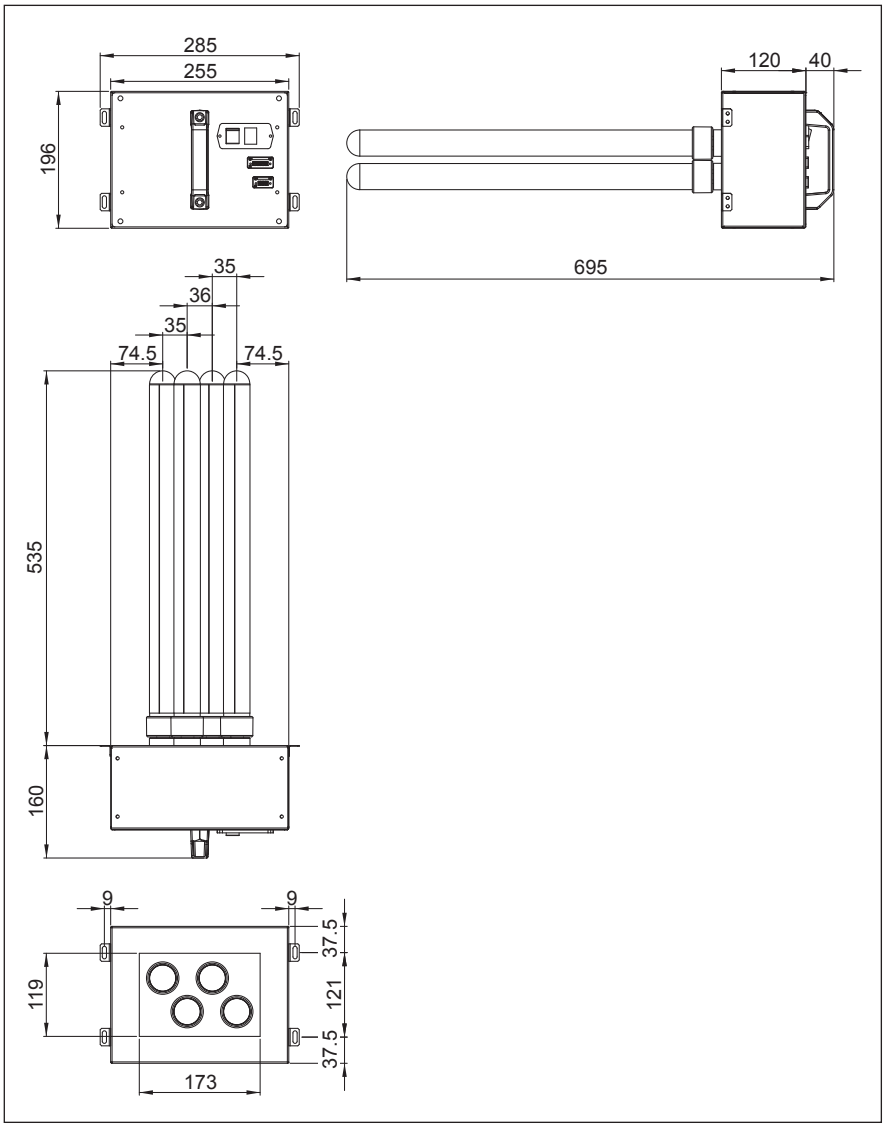
OVERALL DIMENSIONS JONIX duct 70MIC4C



OVERALL DIMENSIONS JONIX duct 70MIC2F



OVERALL DIMENSIONS JONIX duct 70MIC4F



JONIX

Manufactured by HiRef S.p.a.
Viale Spagna, 31/33
35020 Tribano (Padova) Italy
tel: ++39 049 9588511
fax: ++39 049 9588522
web: www.hiref.it
e@mail: info@hiref.it

Serie	70MIC
Model	2C

Drawing code	HF620R2539	Controller	CPT07616

Power supply	230V/1~/50Hz+N	–
Auxiliary supply	24VAC	–

Created by	FM1	Revision by	FF1	Index	C
Date	04/10/2014	On	12/12/2016		

Max power (kW)	SEE TABLE ON PAGE 2
FLA (A)	SEE TABLE ON PAGE 2
LRA (A)	SEE TABLE ON PAGE 2
Main protection	SEE TABLE ON PAGE 2

REVISION			DATE	04/10/2014	JONIX			TOTAL SHEET	10
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	2
C	12/12/2016	FF1	CHECK	GP1	70MIC 2C	HF620R2539		SHEET	1
			APPR.	MM					

REFERENCE NORMATIVE EN 60204

MODEL	OPERATION	POWER SUPPLY	MAX ABSORBED POWER (W)	MAX ABSORBED CURRENT (A)	LRA (A)	MAIN SUGGEST PROTECTION gG FUSE TYPE	MIN SUGGEST CROSS SECTION LINE (mm) VS MAX LENGTH (m) AIR TEMPERATURE 30°C - MULTICORE CABLE - CABLE INSIDE TUBE ON AIR			
							PVC INSULATED		EPR (G7-G10) INSULATED	
							CABLE WORKING TEMPERATURE 70°C	MAX LENGHT VOLTAGE DROP<4%	CABLE WORKING TEMPERATURE 90°C	MAX LENGHT VOLTAGE DROP <4%
70MIC2C			7,0	0,03	/	2,5	1,5	12440	1,5	12440

REVISION			DATE	04/10/2014
LAST	DATE	BY	DRAW.	FM1
C	12/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

NORMATIVE REFERENCE

70MIC 2C

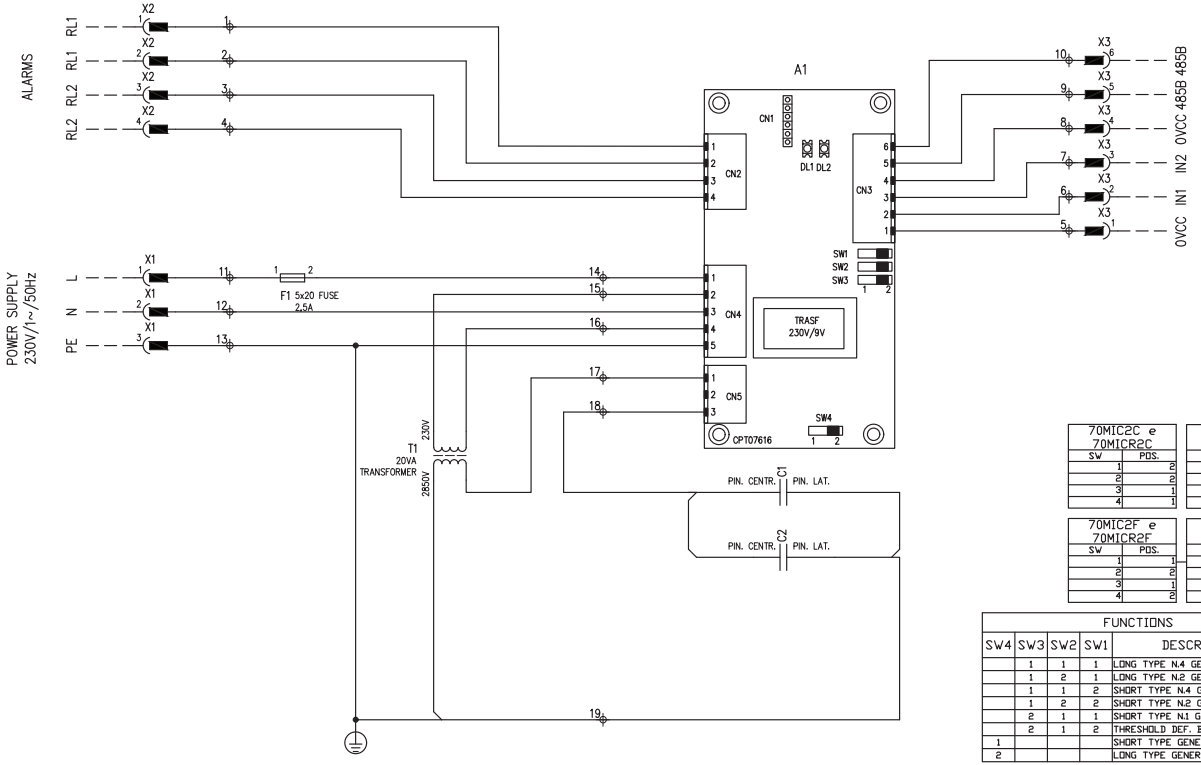
HF620R2539

TOTAL SHEET 10

CONTINUE. 3

SHEET 2

UNIT CONNECTIONS



70MIC2C e 70MICR2C		70MIC4C e 70MICR4C	
SW	POS.	SW	POS.
1	2	1	2
2	2	2	1
3	1	3	1
4	1	4	1

70MIC2F e 70MICR2F		70MIC4F e 70MICR4F	
SW	POS.	SW	POS.
1	1	1	1
2	2	2	1
3	1	3	1
4	2	4	2

FUNCTIONS				
SW4	SW3	SW2	SW1	DESCRIPTION
	1	1	1	LONG TYPE N.4 GENERATORS
	1	2	1	LONG TYPE N.2 GENERATORS
	1	1	2	SHORT TYPE N.4 GENERATORS
	1	2	2	SHORT TYPE N.2 GENERATORS
	2	1	1	SHORT TYPE N.1 GENERATORS
	2	1	2	THRESHOLD DEF. BY MODBUS REG. 19
1				SHORT TYPE GENERATORS
2				LONG TYPE GENERATORS

REVISION			DATE	04/10/2014
LAST	DATE	BY	DRAW.	FM1
C	12/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

UNIT CONNECTIONS

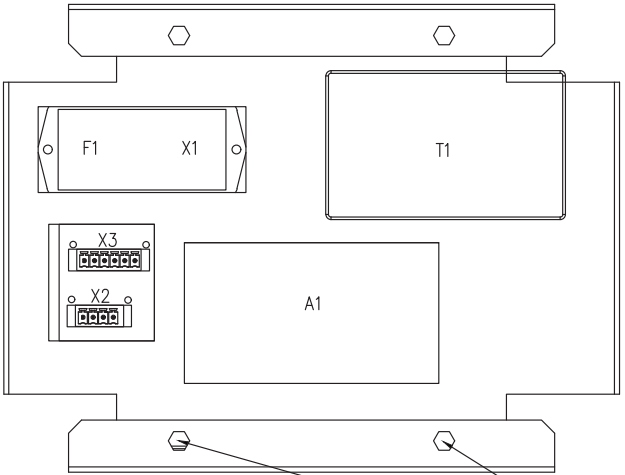
70MIC
2C

HF620R2539

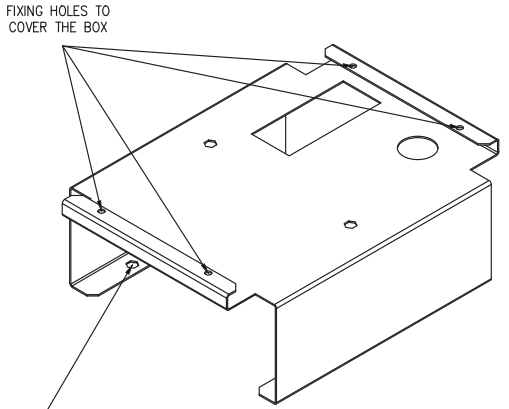
TOTAL SHEET 10
CONTINUE. 4
SHEET 3

UNIT LAYOUT

INSIDE VIEW



OUTSIDE VIEW



PLEXIGLASS
FIXING HOLES

REVISION			DATE	04/10/2014
LAST	DATE	BY	DRAW.	FM1
C	12/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

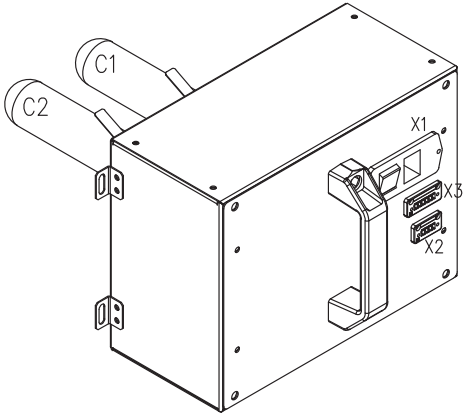
UNIT LAYOUT

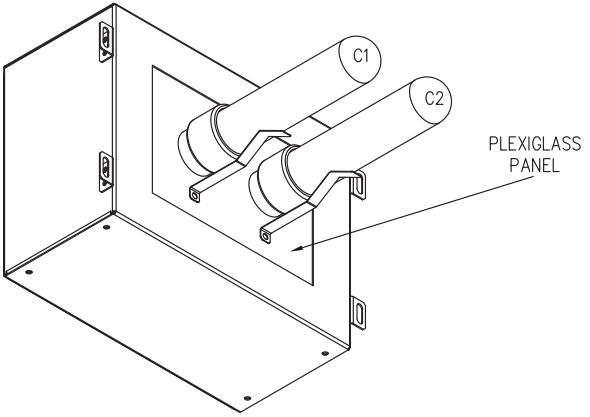
70MIC
2C

HF620R2539

TOTAL SHEET 10
CONTINUE. 5
SHEET 4

UNIT LAYOUT





REVISION			DATE	04/10/2014
LAST	DATE	BY	DRAW.	FM1
C	12/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

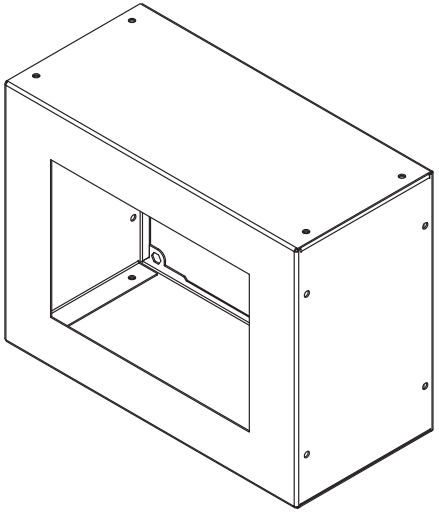
UNIT LAYOUT

70MIC
2C

HF620R2539

TOTAL SHEET 10
CONTINUE. 6
SHEET 5

UNIT LAYOUT



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LAST	DATE	BY	DRAW.	FM1
B	12/12/2016	FC1	CHECK	GP1
			APPR.	MM

JONIX

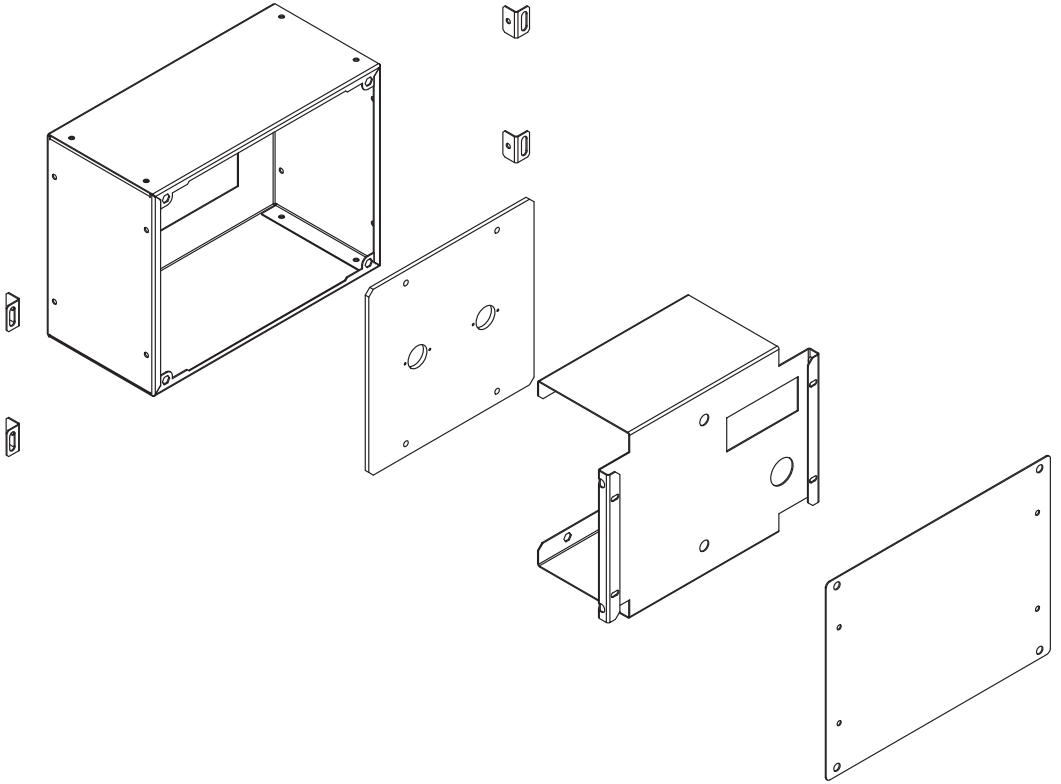
UNIT LAYOUT

70MIC
2C

HF620R2539

TOTAL SHEET 10
CONTINUE. 7
SHEET 6

ASSEMBLING VIEW



REVISION			DATE	04/10/2014	JONIX	ASSEMBLING VIEW		TOTAL SHEET 10
LAST	DATE	BY	DRAW.	FM1				CONTINUE. 8
C	12/12/2016	FF1	CHECK	GP1		70MIC 2C	HF620R2539	SHEET 7
			APPR.	MM				

REVISIONS LIST

REVISION	DATE	MODIFICATIONS	BY
/	04/10/2014	FIRST EMISSION	FM1
A	22/10/2014	CONNECTED SECONDARY TRANSFORMER TO EARTH CIRCUIT	FC1
B	05/12/2014	MODIFIED LAYOUT	FC1
C	12/12/2016	MODIFIED LAYOUT, MICROPROCESSOR CONTROL BOARD AND CONNECTORS	FF1

REVISION			DATE	04/10/2014	JONIX	REVISIONS LIST		TOTAL SHEET	10
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	9
C	12/12/2016	FF1	CHECK	GP1		70MIC 2C	HF620R2539	SHEET	8
			APPR.	MM					

ELECTRICAL PANEL MATERIALS

	SYMBOL	FUNCTION	BRAND	CODE	DESCRIPTION	QUANTITY	M.U.	HF CODE
C/L		ELECTRICAL BOX		HF17012711	ELECTRICAL BOX	1	PCE	HF17012711
C/L		ELECTRICAL PANEL COVER		HF17012712	ELECTRICAL PANEL COVER	1	PCE	HF17012712
C/L		GROUND PLATE		HF17012714	GROUND PLATE	1	PCE	HF17012714
C/L		BRACKET ELECTRICAL BOX		HF17012715	BRACKET ELECTRICAL BOX	4	PCE	HF17012715
C/L		PLEXIGLASS		HF55000229	PLEXIGLASS	1	PCE	HF55000229

ELECTRICAL CONNECTION MATERIALS

	SYMBOL	FUNCTION	BRAND	CODE	DESCRIPTION	QUANTITY	M.U.	HF CODE
	X1	POWER SOCKET	OMEGA FUSIBILI	BVA01011	POWER CONNECTION	1	PCE	HF40001496
	X1	POWER PLUG	BULGIN	PX0587	POWER CONNECTION	1	PCE	HF40001234
	F1	POWER PROTECTION	ITALWEBER	102502	POWER PROTECTION	1	PCE	HF40000778
	X2	SIGNAL PLUG	PHOENIX	DFK-MC1.5/3-GF-3.81	SIGNAL PLUG (BRAND CODE: 1829358)	1	PCE	HF40001457
	X2	SIGNAL CONNECTOR	PHOENIX	MC1.5/3-ST-3.81	SIGNAL CONNECTOR (BRAND CODE: 1803581)	1	PCE	HF40001458
	X2	SIGNAL CABLE HOUSING	PHOENIX	KGG-MC 1,5/3	SIGNAL CABLE HOUSING (BRAND CODE: 1834356)	1	PCE	HF40001459
C/L	T1	TRANSFORMER	BOTTER	TM1423257	TRANSFORMER VIN=230V VOUT=2850V P=20VA	1	PCE	HF40001525
C/L	A1	SENSING BOARD	JONIX	CPT07616	SENSING BOARD	1	PCE	HF11000814
C/L	C1/C2	CAPACITOR	JONIX	70CONDTIPOC	CAPACITOR	2	PCE	70CONDTIPOC

REVISION			DATE	04/10/2014
LAST	DATE	BY	DRAW.	FM1
C	12/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

MATERIALS LIST

70MIC
2C

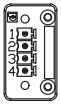
HF620R2539

TOTAL SHEET 10

CONTINUE.

SHEET 9

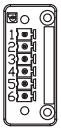
CONNECTORS



ALARMS

X2
Phoenix Contact
Famale Connector
4 Poles
DFK_MC 1,5/4-GF-3,81

Pin	Wire	Position
1	1 – RL1	3/A1
2	2 – RL1	3/B1
3	3 – RL2	3/B1
4	4 – RL2	3/B1



SIGNALS

X3
Phoenix Contact
Famale Connector
6 Poles
DFK_MC 1,5/6-GF-3,81

Pin	Wire	Position
1	5 – 0VCC	3/C7
2	6 – IN1	3/B7
3	7 – IN2	3/B7
4	8 – 0VCC	3/B7
5	9 – RS485A	3/B7
6	10 – RS485B	3/B7

REVISION			DATE	04/10/2014
LAST	DATE	BY	DRAW.	FM1
C	12/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

CONNECTORS

70MIC
2C

HF620R2539

TOTAL SHEET 10
CONTINUE.
SHEET 10

JONIX

Manufactured by HiRef S.p.a.
Viale Spagna, 31/33
35020 Tribano (Padova) Italy
tel: ++39 049 9588511
fax: ++39 049 9588522
web: www.hiref.it
e@mail: info@hiref.it

Serie	70MIC
Model	4C

Drawing code	HF620R2436	Controller	CPT07616

Power supply	230V/1~/50Hz+N	–
Auxiliary supply	24VAC	–

Created by	FM1	Revision by	FF1	Index	D
Date	16/06/2014	On	07/11/2016		

Max power (kW)	SEE TABLE ON PAGE 2
FLA (A)	SEE TABLE ON PAGE 2
LRA (A)	SEE TABLE ON PAGE 2
Main protection	SEE TABLE ON PAGE 2

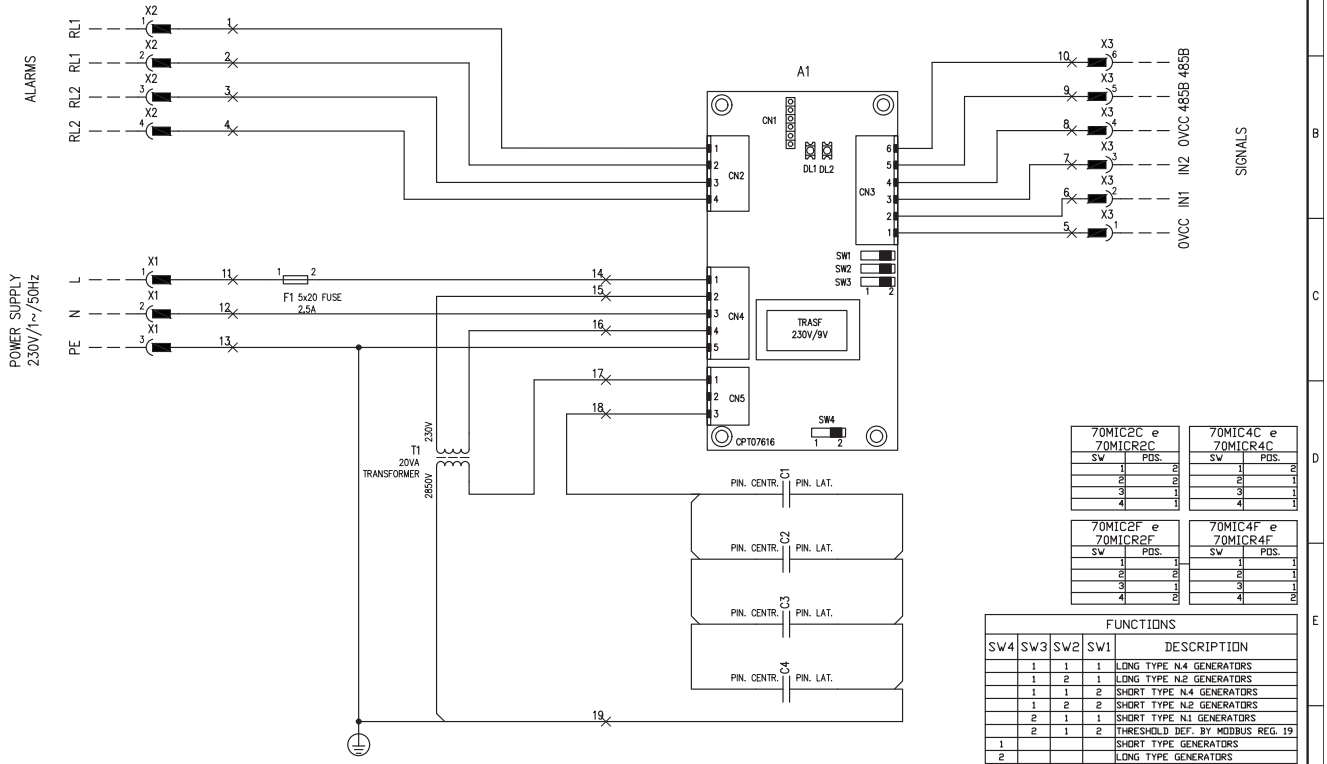
REVISION			DATE	16/06/2014	JONIX			TOTAL SHEET	10
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	2
D	07/11/2016	FF1	CHECK	GP1	70MIC 4C	HF620R2436		SHEET	1
			APPR.	MM					

REFERENCE NORMATIVE EN 60204

MODEL	OPERATION	POWER SUPPLY	MAX ABSORBED POWER (W)	MAX ABSORBED CURRENT (A)	LRA (A)	MAIN SUGGEST PROTECTION gG FUSE TYPE	MIN SUGGEST CROSS SECTION LINE (mm) VS MAX LENGTH (m) AIR TEMPERATURE 30°C - MULTICORE CABLE - CABLE INSIDE TUBE ON AIR			
							PVC INSULATED		EPR (G7-G10) INSULATED	
							CABLE WORKING TEMPERATURE 70°C	MAX LENGHT VOLTAGE DROP<4%	CABLE WORKING TEMPERATURE 90°C	MAX LENGHT VOLTAGE DROP <4%
70MIC4C			15,0	0,07	/	2,5	1,5	5805	1,5	5805

REVISION			DATE	16/06/2014	JONIX	NORMATIVE REFERENCE		TOTAL SHEET	9
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	3
D	07/11/2016	FF1	CHECK	GP1		70MIC 4C	HF620R2436	SHEET	2
			APPR.	MM					

UNIT CONNECTIONS



70MIC2C e 70MICR2C		70MIC4C e 70MICR4C	
SW	POS.	SW	POS.
1	2	1	2
2	2	2	1
3	1	3	1
4	1	4	1

70MIC2F e 70MICR2F		70MIC4F e 70MICR4F	
SW	POS.	SW	POS.
1	1	1	1
2	2	2	1
3	1	3	1
4	2	4	2

FUNCTIONS				
SW4	SW3	SW2	SW1	DESCRIPTION
	1	1	1	LONG TYPE N.4 GENERATORS
	1	2	1	LONG TYPE N.2 GENERATORS
	1	1	2	SHORT TYPE N.4 GENERATORS
	1	2	2	SHORT TYPE N.2 GENERATORS
	2	1	1	SHORT TYPE N.1 GENERATORS
	2	1	2	THRESHOLD DEF. BY MODBUS REG. 19
1				SHORT TYPE GENERATORS
2				LONG TYPE GENERATORS

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	07/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

UNIT CONNECTIONS

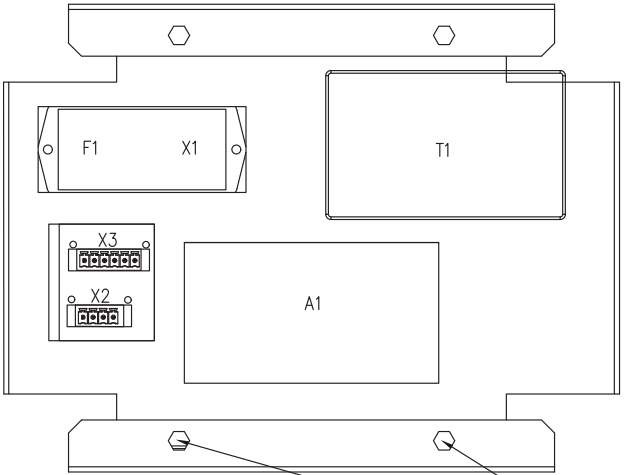
70MIC
4C

HF620R2436

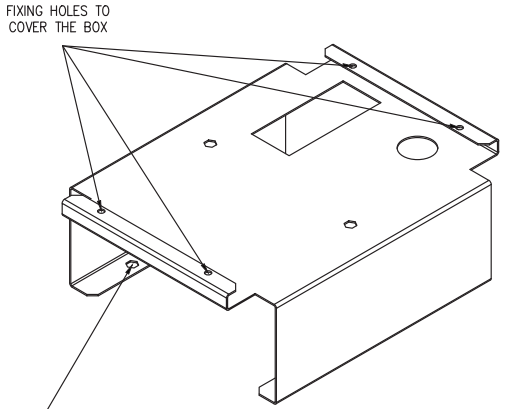
TOTAL SHEET 9
CONTINUE. 4
SHEET 3

UNIT LAYOUT

INSIDE VIEW



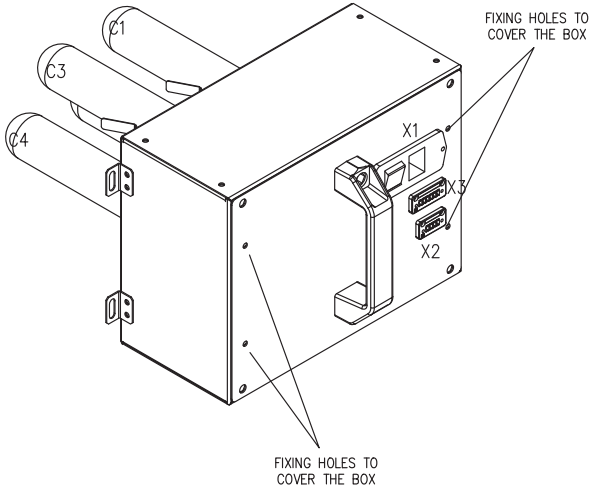
OUTSIDE VIEW

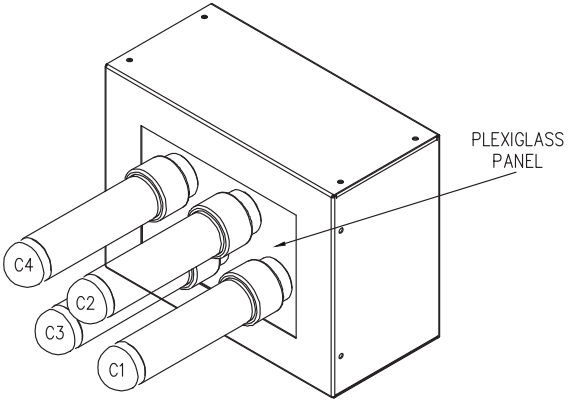


PLEXIGLASS
FIXING HOLES

REVISION			DATE	16/06/2014	JONIX	UNIT LAYOUT		TOTAL SHEET	9
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	5
D	07/11/2016	FF1	CHECK	GP1		70MIC 4C	HF620R2436	SHEET	4
			APPR.	MM					

UNIT LAYOUT





REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	07/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

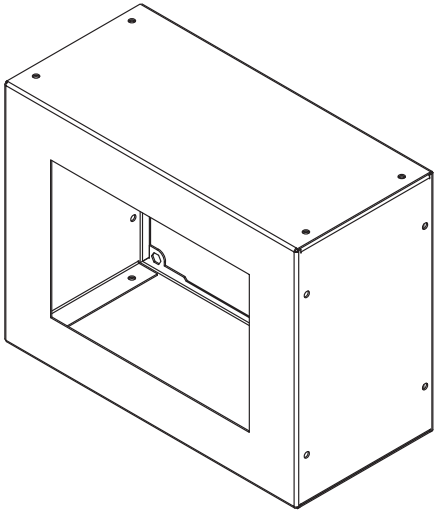
UNIT LAYOUT

70MIC
4C

HF620R2436

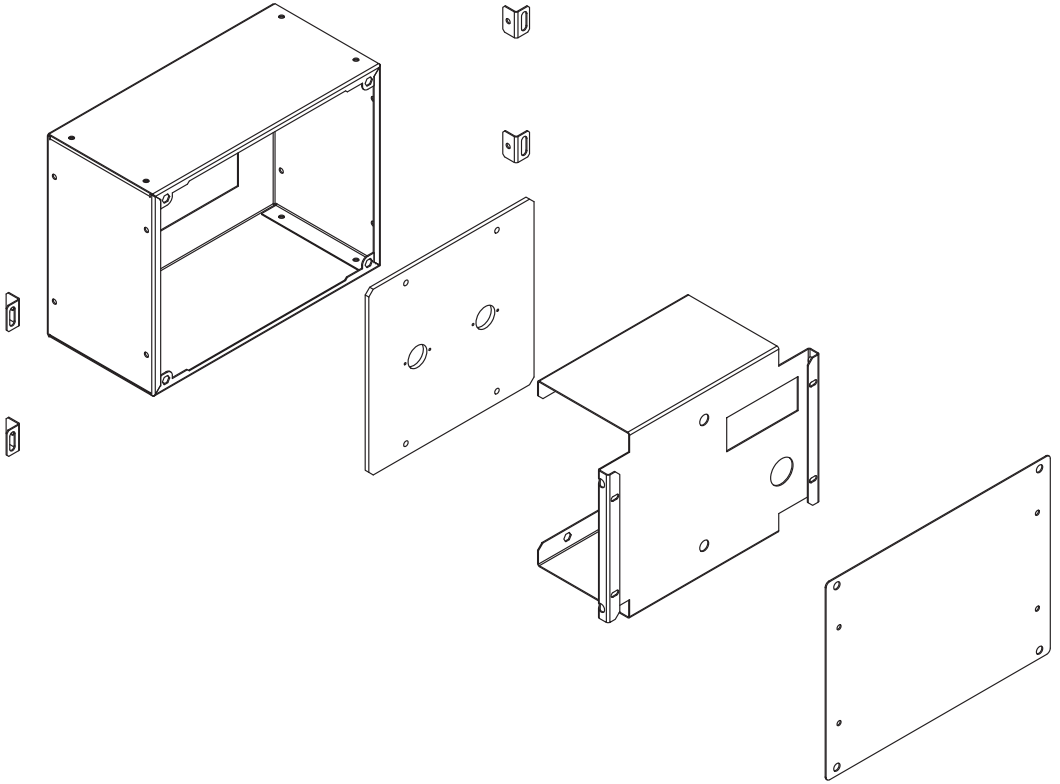
TOTAL SHEET 9
CONTINUE. 6
SHEET 5

UNIT LAYOUT



REVISION			DATE	16/06/2014	JONIX	UNIT LAYOUT		TOTAL SHEET	9
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	7
D	07/11/2016	FF1	CHECK	GP1		70MIC 4C	HF620R2436	SHEET	6
			APPR.	MM					

ASSEMBING VIEW



REVISION			DATE	16/06/2014	JONIX	ASSEMBLING VIEW		TOTAL SHEET	9
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	8
D	07/11/2016	FF1	CHECK	GP1		70MIC 4C	HF620R2436	SHEET	7
			APPR.	MM					

REVISIONS LIST

REVISION	DATE	MODIFICATIONS	BY
/	16/06/2014	FIRST EMISSION	FM1
A	22/10/2014	CONNECTED SECONDARY TRANSFORMER TO EARTH CIRCUIT	FC1
B	05/12/2014	MODIFIED LAYOUT	FC1
C	27/07/2016	MODIFIED LAYOUT AND MICROPROCESSOR CONTROL BOARD	FF1
D	07/11/2016	MODIFIED CONNECTORS	FF1

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	07/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

REVISIONS LIST

70MIC
4C

HF620R2436

TOTAL SHEET 9
CONTINUE. 9
SHEET 8

ELECTRICAL PANEL MATERIALS

	SYMBOL	FUNCTION	BRAND	CODE	DESCRIPTION	QUANTITY	M.U.	HF CODE
C/L		ELECTRICAL BOX		HF17012711	ELECTRICAL BOX	1	PCE	HF17012711
C/L		ELECTRICAL PANEL COVER		HF17012712	ELECTRICAL PANEL COVER	1	PCE	HF17012712
C/L		GROUND PLATE		HF17012714	GROUND PLATE	1	PCE	HF17012714
C/L		BRACKET ELECTRICAL BOX		HF17012715	BRACKET ELECTRICAL BOX	4	PCE	HF17012715
C/L		PLEXIGLASS		HF55000230	PLEXIGLASS	1	PCE	HF55000230

ELECTRICAL CONNECTION MATERIALS

	SYMBOL	FUNCTION	BRAND	CODE	DESCRIPTION	QUANTITY	M.U.	HF CODE
	X1	POWER SOCKET	OMEGA FUSIBILI	BVA01011	POWER CONNECTION	1	PCE	HF40001496
	X1	POWER PLUG	BULGIN	PX0587	POWER CONNECTION	1	PCE	HF40001234
	F1	POWER PROTECTION	ITALWEBER	102502	POWER PROTECTION	1	PCE	HF40000778
	X2	SIGNAL PLUG	PHOENIX	DFK-MC1.5/3-GF-3.81	SIGNAL PLUG (BRAND CODE: 1829358)	1	PCE	HF40001457
	X2	SIGNAL CONNECTOR	PHOENIX	MC1.5/3-ST-3.81	SIGNAL CONNECTOR (BRAND CODE: 1803581)	1	PCE	HF40001458
	X2	SIGNAL CABLE HOUSING	PHOENIX	KGG-MC 1,5/3	SIGNAL CABLE HOUSING (BRAND CODE: 1834356)	1	PCE	HF40001459
C/L	T1	TRANSFORMER	BOTTER	TM1423257	TRANSFORMER VIN=230V VOUT=2850V P=20VA	1	PCE	HF40001525
C/L	A1	SENSING BOARD	JONIX	Q0003_0	SENSING BOARD	1	PCE	HF11000814
C/L	C1/C2/C3/C4	CAPACITOR	JONIX	70CONDTIPOC	CAPACITOR	4	PCE	70CONDTIPOC

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	07/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

MATERIALS LIST

70MIC
4C

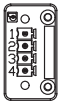
HF620R2436

TOTAL SHEET 9

CONTINUE.

SHEET 9

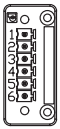
CONNECTORS



ALARMS

X2
Phoenix Contact
Famale Connector
4 Poles
DFK_MC 1,5/4-GF-3,81

Pin	Wire	Position
1	1 – RL1	3/A1
2	2 – RL1	3/B1
3	3 – RL2	3/B1
4	4 – RL2	3/B1



SIGNALS

X3
Phoenix Contact
Famale Connector
6 Poles
DFK_MC 1,5/6-GF-3,81

Pin	Wire	Position
1	5 – 0VCC	3/C7
2	6 – IN1	3/B7
3	7 – IN2	3/B7
4	8 – 0VCC	3/B7
5	9 – RS485A	3/B7
6	10 – RS485B	3/B7

REVISION			DATE	
LAST	DATE	BY	DRAW.	
D	07/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

CONNECTORS

70MIC
4C

HF620R2436

TOTAL SHEET 9
CONTINUE.
SHEET 9

JONIX

Manufactured by HiRef S.p.a.
Viale Spagna, 31/33
35020 Tribano (Padova) Italy
tel: ++39 049 9588511
fax: ++39 049 9588522
web: www.hiref.it
e@mail: info@hiref.it

Serie	70MIC
Model	2F

Drawing code	HF620R2437	Controller	CPT07616

Power supply	230V/1~/50Hz+N	–	
Auxiliary supply	24VAC	–	

Created by	FM1	Revision by	FF1	Index	C
Date	16/06/2014	On	07/12/2016		

Max power (kW)	SEE TABLE ON PAGE 2
FLA (A)	SEE TABLE ON PAGE 2
LRA (A)	SEE TABLE ON PAGE 2
Main protection	SEE TABLE ON PAGE 2

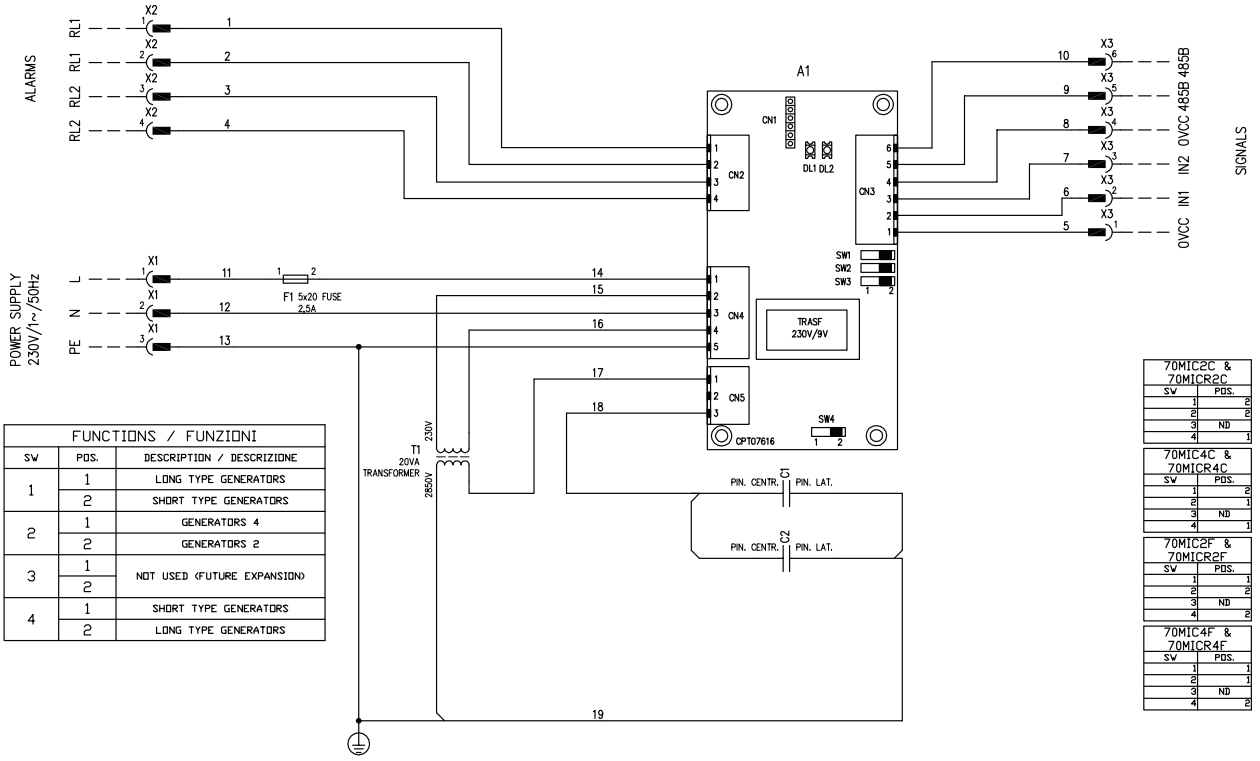
REVISION			DATE 16/06/2014	JONIX			TOTAL SHEET 9
LAST	DATE	BY	DRAW. FM1				CONTINUE . 2
C	07/12/2016	FF1	CHECK GP1		70MIC 2F	HF620R2437	SHEET 1
			APPR. MM				

REFERENCE NORMATIVE EN 60204

MODEL	OPERATION	POWER SUPPLY	MAX ABSORBED POWER (W)	MAX ABSORBED CURRENT (A)	LRA (A)	MAIN SUGGEST PROTECTION gG FUSE TYPE	MIN SUGGEST CROSS SECTION LINE (mm) VS MAX LENGTH (m) AIR TEMPERATURE 30°C - MULTICORE CABLE - CABLE INSIDE TUBE ON AIR			
							PVC INSULATED		EPR (G7-G10) INSULATED	
							CABLE WORKING TEMPERATURE 70°C	MAX LENGHT VOLTAGE DROP<4%	CABLE WORKING TEMPERATURE 90°C	MAX LENGHT VOLTAGE DROP <4%
MIC2F			20,0	0,09	/	2,5	1,5	4354	1,5	4354

REVISION			DATE 16/06/2014	JONIX	NORMATIVE REFERENCE		TOTAL SHEET 9
LAST	DATE	BY	DRAW. FM1				CONTINUE. 3
C	07/12/2016	FF1	CHECK GP1		70MIC 2F	HF620R2437	SHEET 2
			APPR. MM				

UNIT CONNECTIONS



FUNCTIONS / FUNZIONI		
SW	POS.	DESCRIPTION / DESCRIZIONE
1	1	LONG TYPE GENERATORS
	2	SHORT TYPE GENERATORS
2	1	GENERATORS 4
	2	GENERATORS 2
3	1	NOT USED (FUTURE EXPANSION)
	2	
4	1	SHORT TYPE GENERATORS
	2	LONG TYPE GENERATORS

70MIC2C & 70MICR2C	
SW	POS.
1	2
2	2
3	ND
4	1

70MIC4C & 70MICR4C	
SW	POS.
1	2
2	1
3	ND
4	1

70MIC2F & 70MICR2F	
SW	POS.
1	1
2	2
3	ND
4	2

70MIC4F & 70MICR4F	
SW	POS.
1	1
2	1
3	ND
4	2

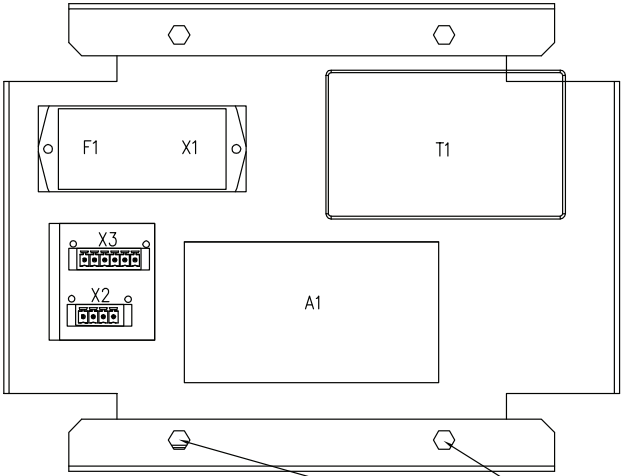
REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
C	07/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

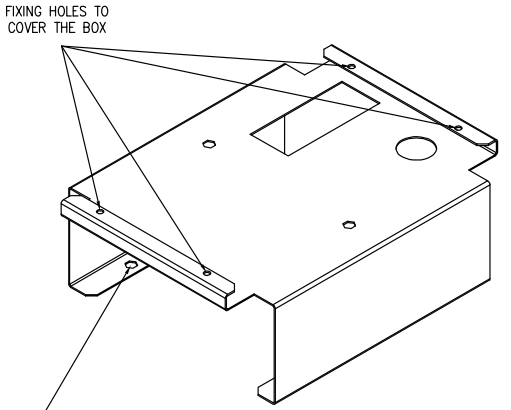
UNIT CONNECTIONS		TOTAL SHEET	9
		CONTINUE.	4
70MIC 2F	HF620R2437	SHEET	3

UNIT LAYOUT

INSIDE VIEW



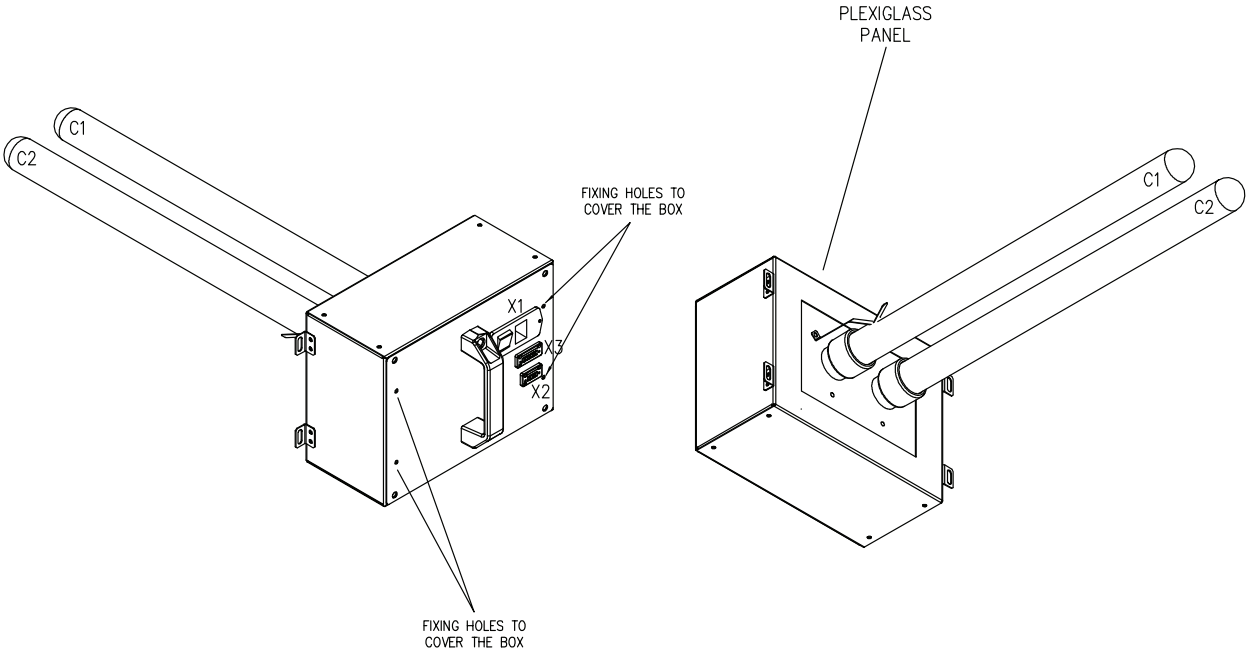
OUTSIDE VIEW



PLEXIGLASS
FIXING HOLES

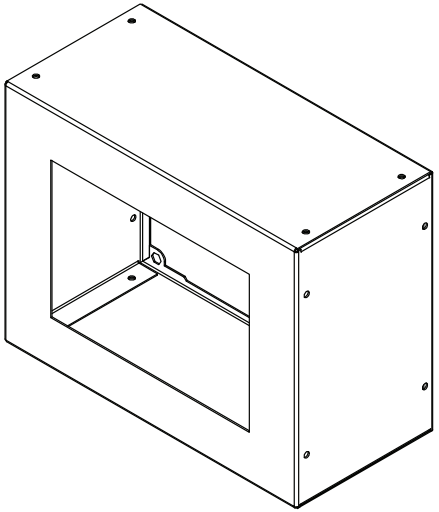
REVISION			DATE	16/06/2014	JONIX	UNIT LAYOUT		TOTAL SHEET	9
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	5
C	07/12/2016	FF1	CHECK	GP1		70MIC 2F	HF620R2437	SHEET	4
			APPR.	MM					

UNIT LAYOUT



REVISION			DATE	16/06/2014	JONIX	UNIT LAYOUT		TOTAL SHEET	9
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	6
C	07/12/2016	FF1	CHECK	GP1		70MIC 2F	HF620R2437	SHEET	5
			APPR.	MM					

UNIT LAYOUT



REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
C	07/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

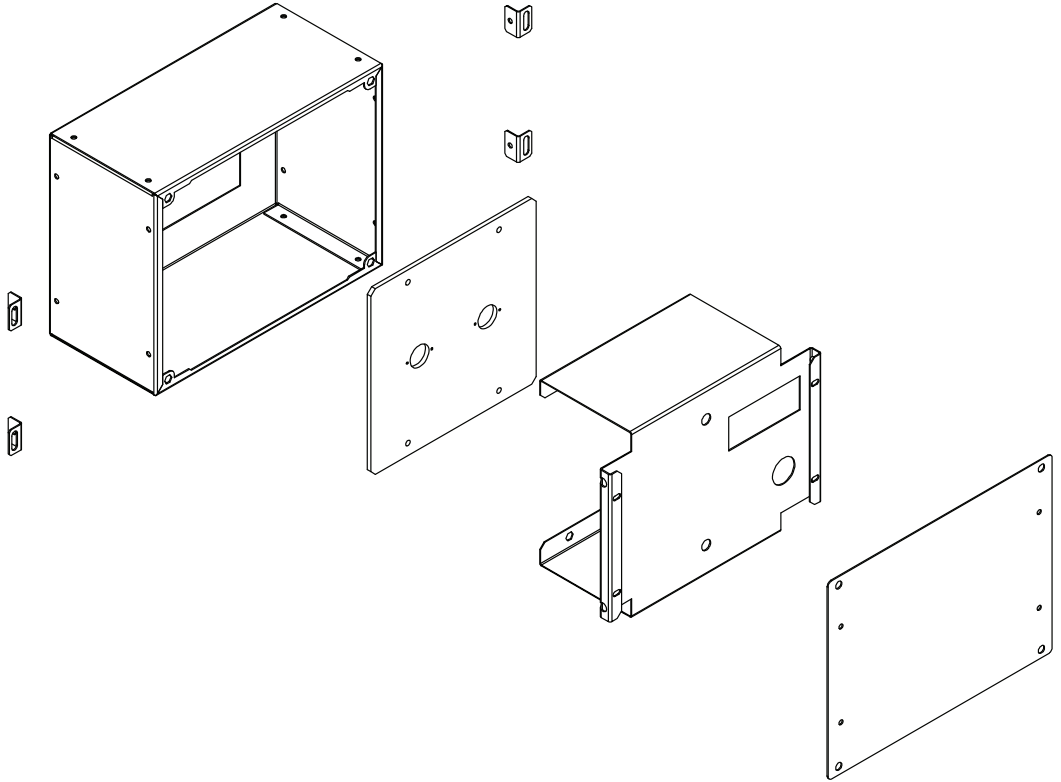
UNIT LAYOUT

70MIC
2F

HF620R2437

TOTAL SHEET 9
CONTINUE. 7
SHEET 6

ASSEMBLING VIEW



REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
C	07/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

ASSEMBLING VIEW

70MIC
2F

HF620R2437

TOTAL SHEET 9
CONTINUE. 8
SHEET 7

REVISIONS LIST

REVISION	DATE	MODIFICATIONS	BY
/	16/06/2014	FIRST EMISSION	FM1
A	22/10/2014	CONNECTED SECONDARY TRANSFORMER TO EARTH	FC1
B	05/12/2014	MODIFIED LAYOUT	FC1
C	07/12/2016	MODIFIED LAYOUT, MICROPROCESSOR CONTROL BOARD AND CONNECTORS	FF1

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
C	07/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

REVISIONS LIST

70MIC
2F

HF620R2437

TOTAL SHEET 9
CONTINUE. 9
SHEET 8

ELECTRICAL PANEL MATERIALS

	SYMBOL	FUNCTION	BRAND	CODE	DESCRIPTION	QUANTITY	M.U.	HF CODE
C/L		ELECTRICAL BOX		HF17012711	ELECTRICAL BOX	1	PCE	HF17012711
C/L		ELECTRICAL PANEL COVER		HF17012712	ELECTRICAL PANEL COVER	1	PCE	HF17012712
C/L		GROUND PLATE		HF17012714	GROUND PLATE	1	PCE	HF17012714
C/L		BRACKET ELECTRICAL BOX		HF17012715	BRACKET ELECTRICAL BOX	4	PCE	HF17012715
C/L		PLEXIGLASS		HF55000229	PLEXIGLASS	1	PCE	HF55000229

ELECTRICAL CONNECTION MATERIALS

	SYMBOL	FUNCTION	BRAND	CODE	DESCRIPTION	QUANTITY	M.U.	HF CODE
	X1	POWER SOCKET	OMEGA FUSIBILI	BVA01011	POWER CONNECTION	1	PCE	HF40001496
	X1	POWER PLUG	BULGIN	PX0587	POWER CONNECTION	1	PCE	HF40001234
	F1	POWER PROTECTION	ITALWEBER	102502	POWER PROTECTION	1	PCE	HF40000778
	X2	SIGNAL PLUG	PHOENIX	DFK-MC1.5/3-GF-3.81	SIGNAL PLUG (BRAND CODE: 1829358)	1	PCE	HF40001457
	X2	SIGNAL CONNECTOR	PHOENIX	MC1.5/3-ST-3.81	SIGNAL CONNECTOR (BRAND CODE: 1803581)	1	PCE	HF40001458
	X2	SIGNAL CABLE HOUSING	PHOENIX	KGG-MC 1,5/3	SIGNAL CABLE HOUSING (BRAND CODE: 1834356)	1	PCE	HF40001459
C/L	T1	TRANSFORMER	BOTTER	TM1423257	TRANSFORMER VIN=230V VOUT=2850V P=20VA	1	PCE	HF40001525
C/L	A1	SENSING BOARD	JONIX	Q0003_0	SENSING BOARD	1	PCE	HF11000814
C/L	C1/C2	CAPACITOR	JONIX	70CONDTIPOF	CAPACITOR	2	PCE	70CONDTIPOF

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
C	07/12/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

MATERIALS LIST

70MIC
2F

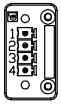
HF620R2437

TOTAL SHEET 9

CONTINUE .

SHEET 9

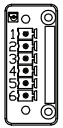
CONNECTORS



ALARMS

X2
Phoenix Contact
Famale Connector
4 Poles
DFK_MC 1,5/4-GF-3,81

Pin	Wire	Position
1	1 – RL1	3/A1
2	2 – RL1	3/B1
3	3 – RL2	3/B1
4	4 – RL2	3/B1



SIGNALS

X3
Phoenix Contact
Famale Connector
6 Poles
DFK_MC 1,5/6-GF-3,81

Pin	Wire	Position
1	5 – 0VCC	3/C7
2	6 – IN1	3/B7
3	7 – IN2	3/B7
4	8 – 0VCC	3/B7
5	9 – RS485A	3/B7
6	10 – RS485B	3/B7

REVISION			DATE	
LAST	DATE	BY	DRAW.	
C	07/12/2016	FF1	CHECK	
			APPR.	

JONIX

CONNECTORS

70MIC
2F

R

TOTAL SHEET
CONTINUE.
SHEET 10

JONIX

Manufactured by HiRef S.p.a.
Viale Spagna, 31/33
35020 Tribano (Padova) Italy
tel: ++39 049 9588511
fax: ++39 049 9588522
web: www.hiref.it
e@mail: info@hiref.it

Serie	70MIC
Model	4F

Drawing code	HF620R2438	Controller	CPT07616

Power supply	230V/1~/50Hz+N	–
Auxiliary supply	24VAC	–

Created by	FM1	Revision by	FF1	Index	D
Date	16/06/2014	On	08/11/2016		

Max power (kW)	SEE TABLE ON PAGE 2
FLA (A)	SEE TABLE ON PAGE 2
LRA (A)	SEE TABLE ON PAGE 2
Main protection	SEE TABLE ON PAGE 2

REVISION			DATE	16/06/2014	JONIX			TOTAL SHEET	10
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	2
D	08/11/2016	FF1	CHECK	GP1	70MIC 4F	HF620R2438		SHEET	1
			APPR.	MM					

REFERENCE NORMATIVE EN 60204

MODEL	OPERATION	POWER SUPPLY	MAX ABSORBED POWER (W)	MAX ABSORBED CURRENT (A)	LRA (A)	MAIN SUGGEST PROTECTION gG FUSE TYPE	MIN SUGGEST CROSS SECTION LINE (mm) VS MAX LENGTH (m) AIR TEMPERATURE 30°C - MULTICORE CABLE - CABLE INSIDE TUBE ON AIR			
							PVC INSULATED		EPR (G7-G10) INSULATED	
							CABLE WORKING TEMPERATURE 70°C	MAX LENGHT VOLTAGE DROP<4%	CABLE WORKING TEMPERATURE 90°C	MAX LENGHT VOLTAGE DROP <4%
70MIC4F			40,0	0,17	/	2,5	1,5	2177	1,5	2177

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	08/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

NORMATIVE REFERENCE

70MIC 4F

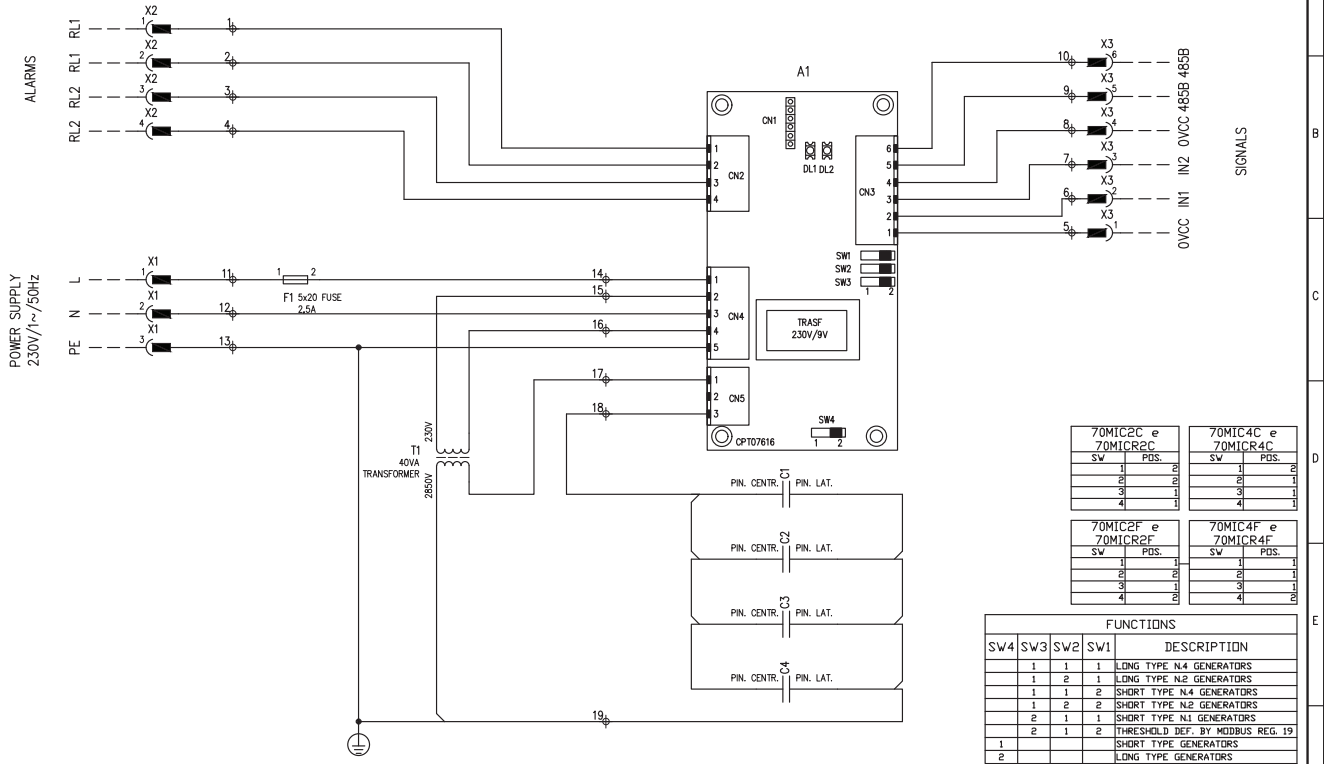
HF620R2438

TOTAL SHEET 10

CONTINUE . 3

SHEET 2

UNIT CONNECTIONS



70MIC2C e 70MICR2C	
SW	POS.
1	2
2	2
3	1
4	1

70MIC4C e 70MICR4C	
SW	POS.
1	2
2	1
3	1
4	1

70MIC2F e 70MICR2F	
SW	POS.
1	1
2	2
3	1
4	2

70MIC4F e 70MICR4F	
SW	POS.
1	1
2	1
3	1
4	2

FUNCTIONS				
SW4	SW3	SW2	SW1	DESCRIPTION
	1	1	1	LONG TYPE N.4 GENERATORS
	1	2	1	LONG TYPE N.2 GENERATORS
	1	1	2	SHORT TYPE N.4 GENERATORS
	1	2	2	SHORT TYPE N.2 GENERATORS
	2	1	1	SHORT TYPE N.1 GENERATORS
	2	1	2	THRESHOLD DEF. BY MODBUS REG. 19
1				SHORT TYPE GENERATORS
2				LONG TYPE GENERATORS

REVISION			DATE	16/06/2014
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			APPR.	MM

JONIX

UNIT CONNECTIONS

70MIC
4F

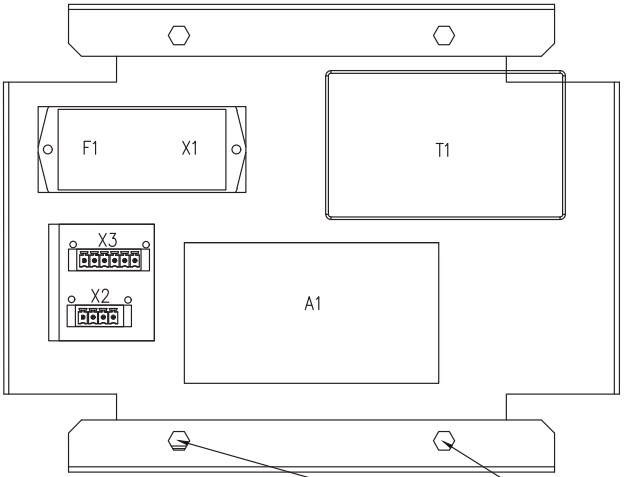
HF620R2438

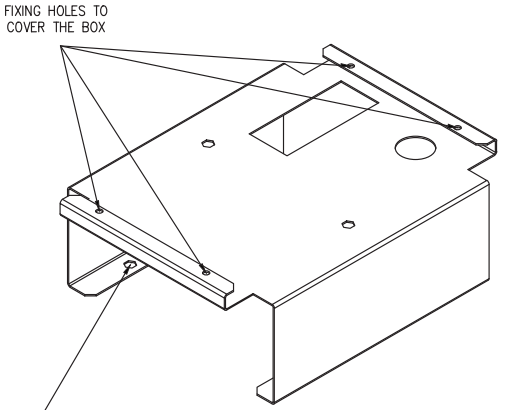
TOTAL SHEET 10
CONTINUE . 4
SHEET 3

UNIT LAYOUT

INSIDE VIEW

OUTSIDE VIEW





PLEXIGLASS
FIXING HOLES

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	08/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

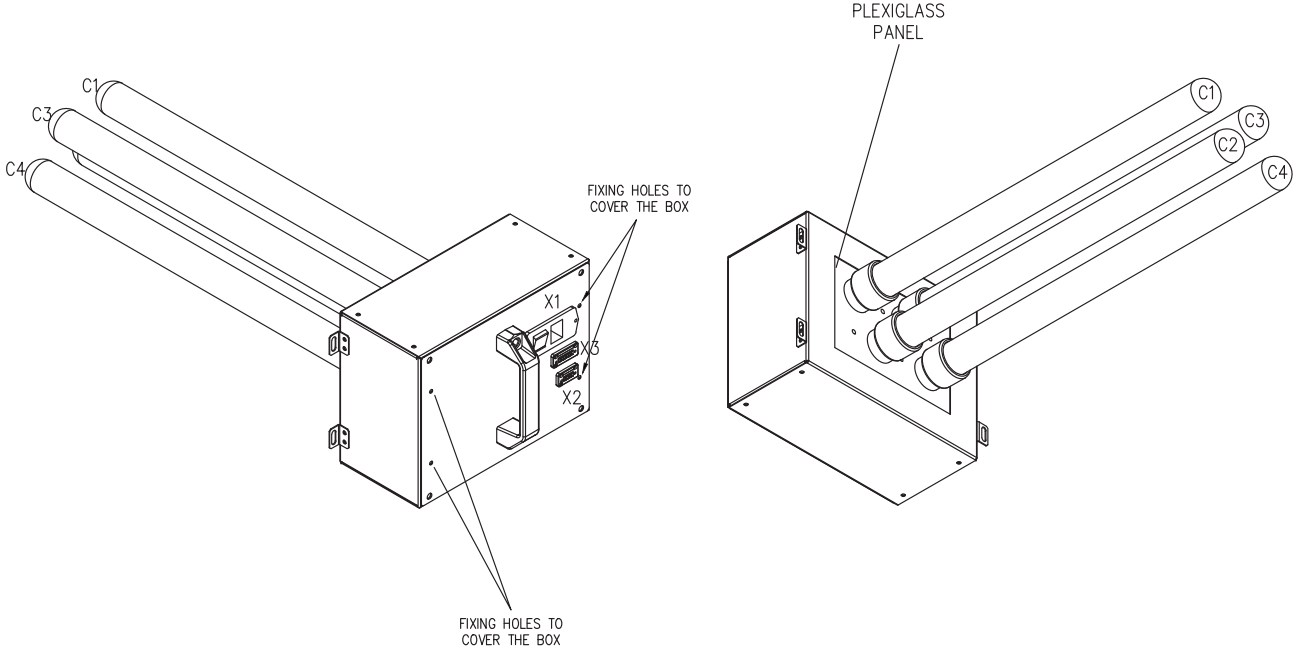
UNIT LAYOUT

70MIC
4F

HF620R2438

TOTAL SHEET 10
CONTINUE. 5
SHEET 4

UNIT LAYOUT



REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	08/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

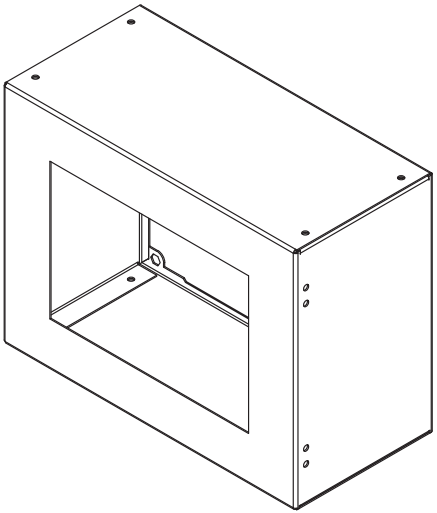
UNIT LAYOUT

70MIC
4F

HF620R2438

TOTAL SHEET 10
CONTINUE. 6
SHEET 5

UNIT LAYOUT



REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	08/11/2016	FC1	CHECK	GP1
			APPR.	MM

JONIX

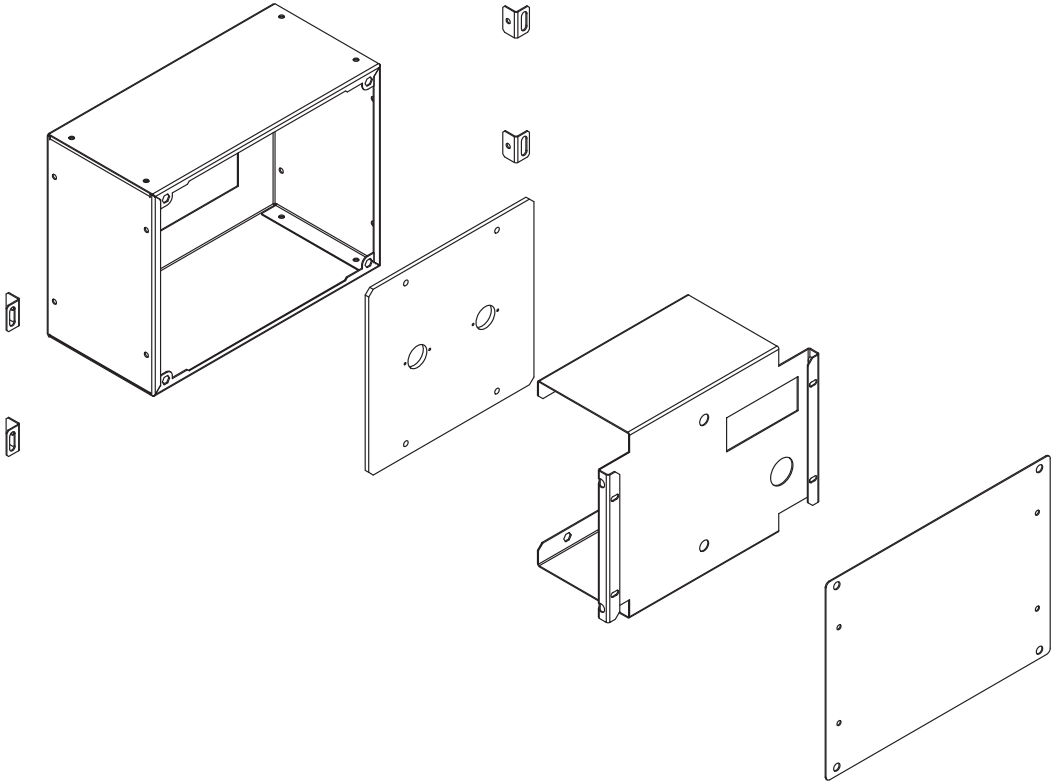
UNIT LAYOUT

70MIC
4F

HF620R2438

TOTAL SHEET 10
CONTINUE. 7
SHEET 6

ASSEMBLING VIEW



REVISION			DATE	16/06/2014	JONIX	ASSEMBLING VIEW		TOTAL SHEET	10
LAST	DATE	BY	DRAW.	FM1				CONTINUE.	8
D	08/11/2016	FF1	CHECK	GP1		70MIC 4F	HF620R2438	SHEET	7
			APPR.	MM					

REVISIONS LIST

REVISION	DATE	MODIFICATIONS	BY
/	16/06/2014	FIRST EMISSION	FM1
A	22/10/2014	CONNECTED SECONDARY TRANSFORMER TO EARTH CIRCUIT	FC1
B	05/12/2014	MODIFIED LAYOUT	FC1
C	27/07/2016	MODIFIED LAYOUT AND MICROPROCESSOR CONTROL BOARD	FF1
D	08/11/2016	MODIFIED CONNECTORS	FF1

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	08/11/2016	FF1	CHECK	GP1
			APPR.	MM

JONIX

REVISIONS LIST

70MIC
4F

HF620R2438

TOTAL SHEET 10
CONTINUE. 9
SHEET 8

ELECTRICAL PANEL MATERIALS

	SYMBOL	FUNCTION	BRAND	CODE	DESCRIPTION	QUANTITY	M.U.	HF CODE
C/L		ELECTRICAL BOX		HF17012711	ELECTRICAL BOX	1	PCE	HF17012711
C/L		ELECTRICAL PANEL COVER		HF17012712	ELECTRICAL PANEL COVER	1	PCE	HF17012712
C/L		GROUND PLATE		HF17012714	GROUND PLATE	1	PCE	HF17012714
C/L		BRACKET ELECTRICAL BOX		HF17012715	BRACKET ELECTRICAL BOX	4	PCE	HF17012715
C/L		PLEXIGLASS		HF55000230	PLEXIGLASS	1	PCE	HF55000230

ELECTRICAL CONNECTION MATERIALS

	SYMBOL	FUNCTION	BRAND	CODE	DESCRIPTION	QUANTITY	M.U.	HF CODE
	X1	POWER SOCKET	OMEGA FUSIBILI	BVA01011	POWER CONNECTION	1	PCE	HF40001496
	X1	POWER PLUG	BULGIN	PX0587	POWER CONNECTION	1	PCE	HF40001234
	F1	POWER PROTECTION	ITALWEBER	102502	POWER PROTECTION	1	PCE	HF40000778
	X2, X3	SIGNAL PLUG	PHOENIX	DFK-MC1.5/6-GF-3.81	SIGNAL PLUG (BRAND CODE: 1829387)	2	PCE	EC400010669
	X2, X3	SIGNAL CONNECTOR	PHOENIX	MC1.5/6-ST-3.81	SIGNAL CONNECTOR (BRAND CODE: 1803617)	2	PCE	EC400005725
	X2, X3	SIGNAL CABLE HOUSING	PHOENIX	KGG-MC 1,5/6	SIGNAL CABLE HOUSING (BRAND CODE: 1834385)	2	PCE	EC400010672
C/L	T1	TRANSFORMER	BOTTER	TM1421157	TRANSFORMER VIN=230V VOUT=2850V P=40VA	1	PCE	HF40001507
C/L	A1	SENSING BOARD	JONIX	CPT07616	SENSING BOARD	1	PCE	HF
C/L	C1/C2/C3/C4	CAPACITOR	JONIX	70CONDTIPOF	CAPACITOR	4	PCE	70CONDTIPOF

REVISION			DATE	16/06/2014
LAST	DATE	BY	DRAW.	FM1
D	08/11/2016	FF1	CHECK	GP1
			APPR.	MM

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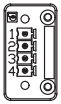
MATERIALS LIST

70MIC
4F

HF620R2438

TOTAL SHEET 10
CONTINUE. 10
SHEET 9

CONNECTORS



ALARMS

X2
Phoenix Contact
Famale Connector
4 Poles
DFK_MC 1,5/4-GF-3,81

Pin	Wire	Position
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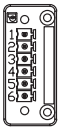
3	3 – RL2	3/B1
4	4 – RL2	3/B1



SIGNALS

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Phoenix Contact
Famale Connector
6 Poles
DFK_MC 1,5/6-GF-3,81

Pin	Wire	Position
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3	7 – IN2	3/B7
4	8 – 0VCC	3/B7
5	9 – RS485A	3/B7
6	10 – RS485B	3/B7

REVISION			DATE	
LAST	DATE	BY	DRAW.	M
D	08/11/2016	FF1	CHECK	
			APPR.	

JONIX

CONNECTORS

70MIC
4F

HF620R2438

TOTAL SHEET 10
CONTINUE.
SHEET 10

JONIX

pure living

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JX61GR0002 - R00