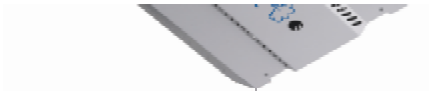
Curtarolo (Padova) Italy
www.avselectronics.com

FOG GENERATOR



FOGGY 30

FOGGY 50



CE

FOGGY Fog generator

NOTE: WHERE NOT EXPRESSLY INDICATED, THESE INSTRUCTIONS ARE REFERRED TO ALL MODELS

General information

In a few seconds Foggy is able to create a fog effect that makes it impossible to move within rooms, forcing the ill-intentioned person to immediately search an escape route. Combined with an intrusion detection system, it completes effectiveness of the detection through and “active” protection of the area.
The continual system monitoring always keeps liquid level, boiler temperature, battery status and network presence under control; Foggy is also equipped with a safety thermostat that deactivates the system in case of overheating.

Harmless to persons and property

The fog created by Foggy is completely harmless and suitable for use in residential, commercial, industrial and military field of application. It is ideal for protecting property that is sensitive and valuable such as what is found at jewellers, electronics ands computer stores and warehouses.
The fog disperses without leaving any residue. Intense verifications, carried out at specialised analysis laboratories, guarantee the non toxicity of this effect that is also used bylaw enforcement agencies for fire simulations.

Duration of the fog effect

It will take approximately 20 / 30 minutes to recuperate complete visibility. In order to obtain a fog effect that lasts over time, it is possible to enable a particular function that activates a maintenance deployment impulse.

Connections

Foggy can be the natural completion of any installed intrusion detection system. It is pre-set with a series of free inputs that allow interfacing with any control unit.
Foggy has an available equipping input that allows following the on/off status of the control unit in order to guarantee that it cannot be activated while the system is shut off. Besides this, there is also a double consent that acts as a guarantee against accidental activation of the fog generator. For example, it is possible to activate the pre-alarm using the relay from the intrusion detection control unit and connect the actual alarm input to an autonomous sensor in the environment protected by Foggy.
Besides these inputs, Foggy includes free contact control outputs dedicated to:
Anti-removal alarm, Liquid level, System disbursing, Technical malfunction with an indication on the display for No network, Battery level, Battery failure, Pump malfunctioning, Board temperature, Boiler temperature.



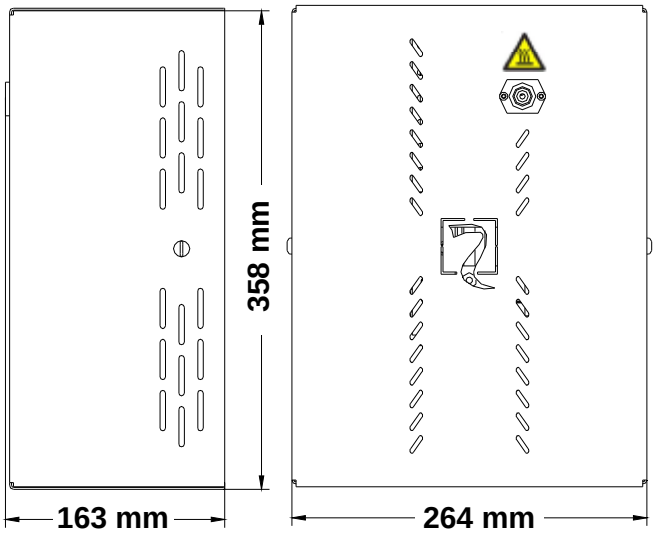
HOT COMPONENTS, DANGER OF BURNS



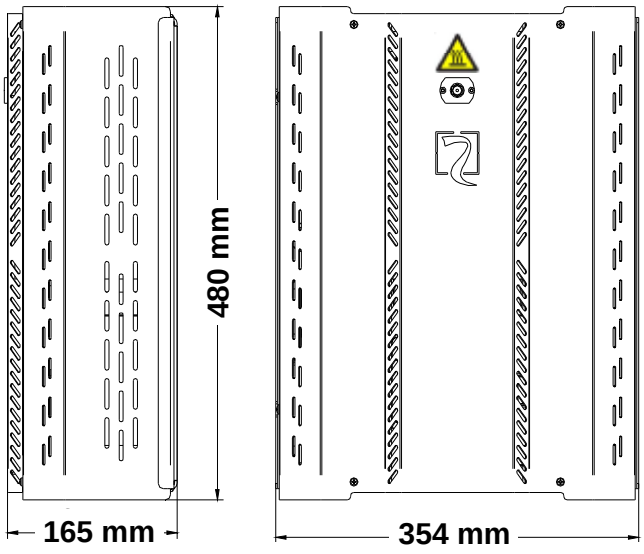
CAUTION! The caution indications highlight procedures which if not observed or partially observed could cause damage to the device or the connected equipment.

FOGGY Dimensions

FOGGY 30



FOGGY 50



Technical features

	FOGGY 30	FOGGY 50
Tank capacity	• 1 litre	• 1.5 litre
Number of activations	• 30 activations of 10'' each • 5 activations of 60'' each	• 23 activations of 20'' each • 7 activations of 60'' each
Special function	• Management Activation and Deactivation through remote controls	• Management Activation and Deactivation through remote controls
Available dispensers	• No. 1: 90° tent with a jet • No. 3 with different angles and deployments (optional)	• No. 1: 90° tent with a jet • No. 3 with different angles and deployments (optional)
Power supply	• 230 V ~	• 230 V ~
Heating consumption	• 700 Watt	• 1100 Watt
Maintenance consumption	• 120 Watt	• 200 Watt
Buffer battery	• Yes	• Yes
Initial heating time	• 12 minutes	• 20 minutes
Heating time after an activation	• Maximum of 5 minutes	• Maximum of 5 minutes
Operation without 220AC network	• At least 1 hour with B setting (deployment 20 sec.)	• At least 1 hour with B setting (deployment 20 sec.)
Dimensions in mm (WxHxD)	• 358 x 264 x 163	• 480 x 354 x 165
Weight	• 14Kg	• 22Kg
Environmental conditions	• environmental class II - inside- general	• environmental class II - inside- general
Temperature and Humidity	• from - 10 °C to + 40°C with average humidity of about 75% and not subject to condensation	• from - 10 °C to + 40°C with average humidity of about 75% and not subject to condensation
Status indicator	• Through led and display	• Through led and display
Inputs	• System arming: follows alarm system on/off· • Primary Alarm: pre-alarm· • Secondary alarm: alarm; jet activation • Total block • Block due to fire	• System arming: follows alarm system on/off· • Primary Alarm: pre-alarm· • Secondary alarm: alarm; jet activation • Total block • Block due to fire
Outputs	• Deployment in progress • Tampering • Liquid Level • Technical malfunction: No network – Battery level – Battery fault - Pump malfunctioning - Board temperature - Boiler temperature	• Deployment in progress • Tampering • Liquid Level • Technical malfunction: No network – Battery level – Battery fault - Pump malfunctioning - Board temperature - Boiler temperature
12 volt = output	• Yes, maximum current issued 50 mA	• Yes, maximum current issued 50 mA
Connections	• Universal standards· • Serial RS485 dedicated to AVS systems	• Universal standards· • Serial RS485 dedicated to AVS systems
Events memory	• n° 1000 events can be memorised with date and time	• n° 1000 events can be memorised with date and time
Check Status and Programming	• Local USB connection • GSM dial-up (with mod. XGSM optional)	• Local USB connection • GSM dial-up (with mod. XGSM optional)
Firmware update	• Yes - by PC	• Yes - by PC
IMQ	• EN 50131-8 Class II	• EN 50131-8 Class II

The products must be used according to the intended use and in compliance with the rules applicable to the various plant engineering types.
However, before commissioning the installed products, the system must be tested in order to verify its functioning and compliance with the safety rules according to that indicated by Law n. 46 dated 05/03/90 and by Standard CEI 79-3.

The equipment must not be exposed to dripping or water sprays and no object full of liquid must be placed on it.

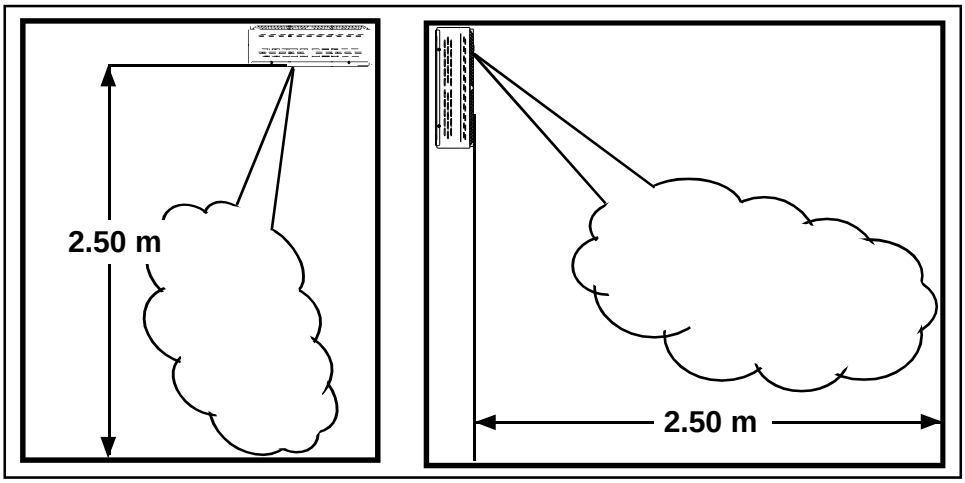
Consider the environmental consequences deriving from the elimination of the batteries

To prevent injury, this device must be secured to the ceiling/wall according to the installation instructions.

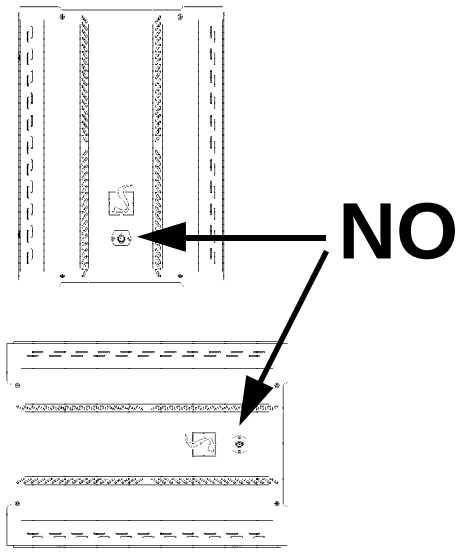
INSTALLATION AND MAINTENANCE MUST BE EXECUTED BY QUALIFIED PERSONNEL

Installation

Foggy can be installed both on the wall and on the ceiling. Its installation is simplified thanks to a support bracket that the central block of the fog generator is attached to and a pulley (optional KIT MOD.LFT)
that makes a ceiling installation easier.
In order to lessen the aesthetic impact, Foggy can also be installed inside drop ceilings or wall cupboards, as long as sufficient aeration is guaranteed in order to disburse the heat and a small opening is left in correspondence of the nozzle in order to allow the fog spray to come out. In order to achieve this, if necessary, it is possible to use the extension (optional KIT MOD. PRL10).

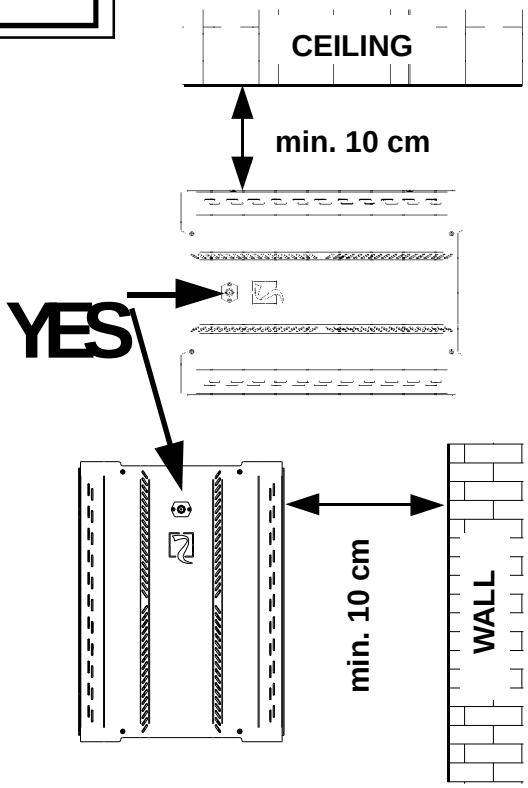


In order to achieve optimal performance, it is recommended to keep FOGGY at a minimum distance from the objects to be protected.

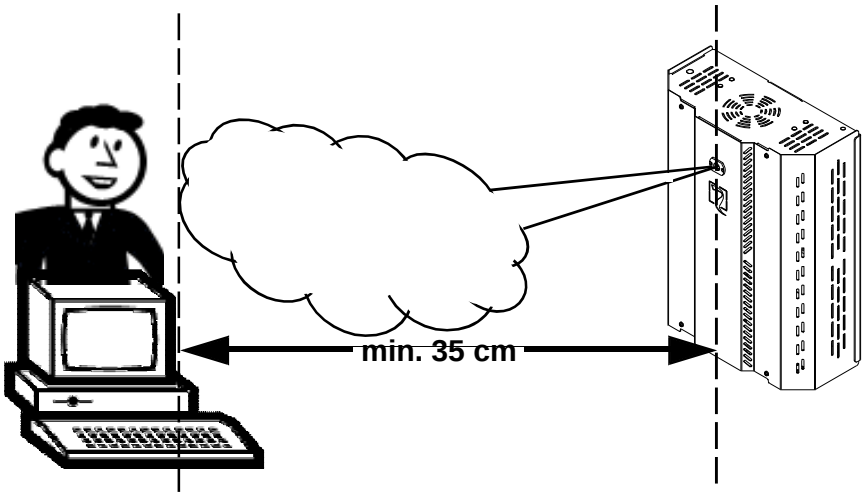


!!! ATTENTION !!!

For horizontal wall installation, the nozzle must be positioned on the left side while for vertical wall must be positioned on top side.



For correct ventilation,based on the type of installation, keep a minimum distance of at least 10 cm from the wall or ceiling.

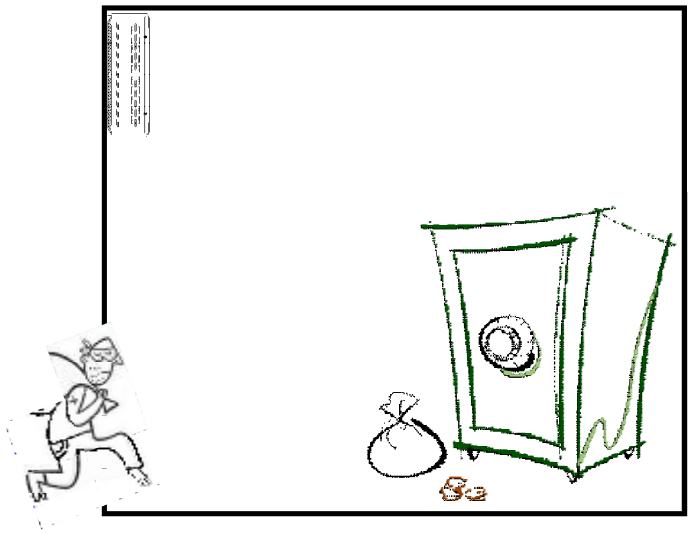


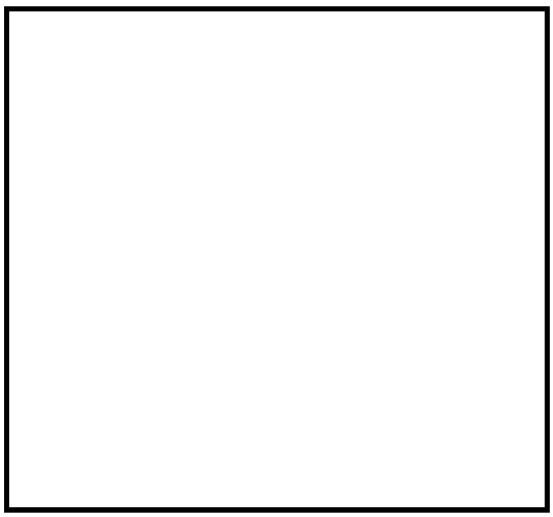
!!! ATTENTION !!!

Due to the high temperature at which the fog is disbursed, it is necessary to respect a minimum safety distance from persons or equipment in order to avoid buns or damage.

Warnings

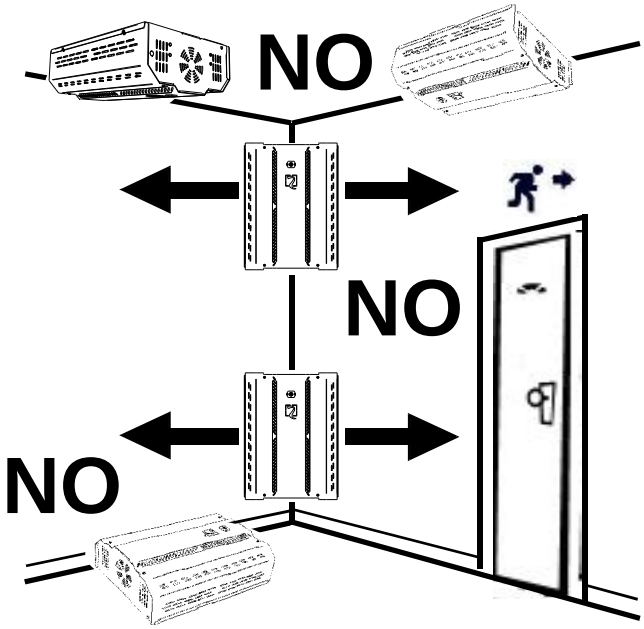
For a correct deployment, make sure that there are no obstacles between the FOGGY and the area to protect





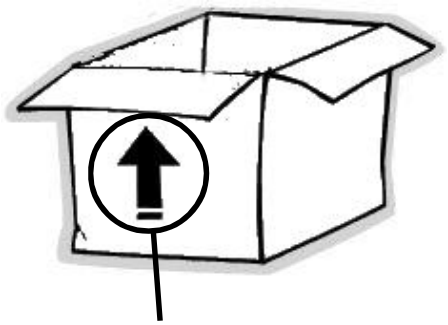
FOGGY must be installed installed in a way that guarantees minimum covering of the object to be protected

Install FOGGY in positions where they cannot be reached in order to avoid possible tampering.
During deployment, FOGGY must keep the escape routes visible.

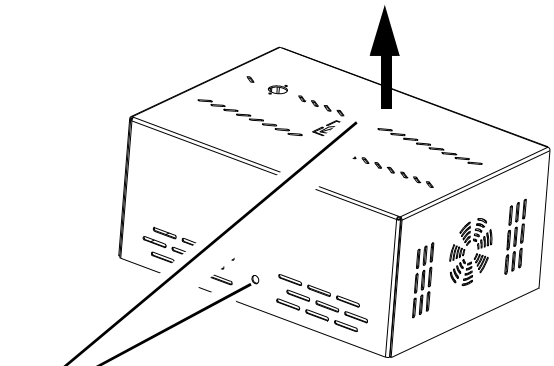




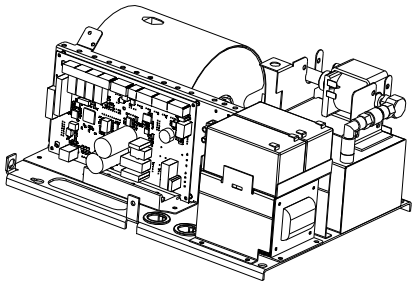
Mounting FOGGY 30

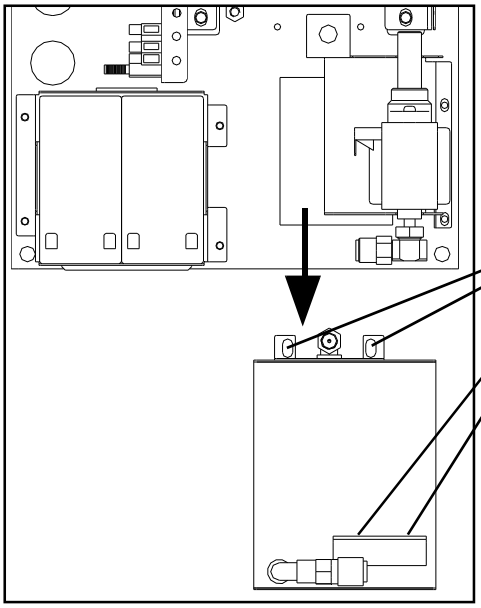


Verify that package has been positioned in the correct direction before opening the package.



Once the equipment is unpacked remove the two M6x10 screws and remove front cover



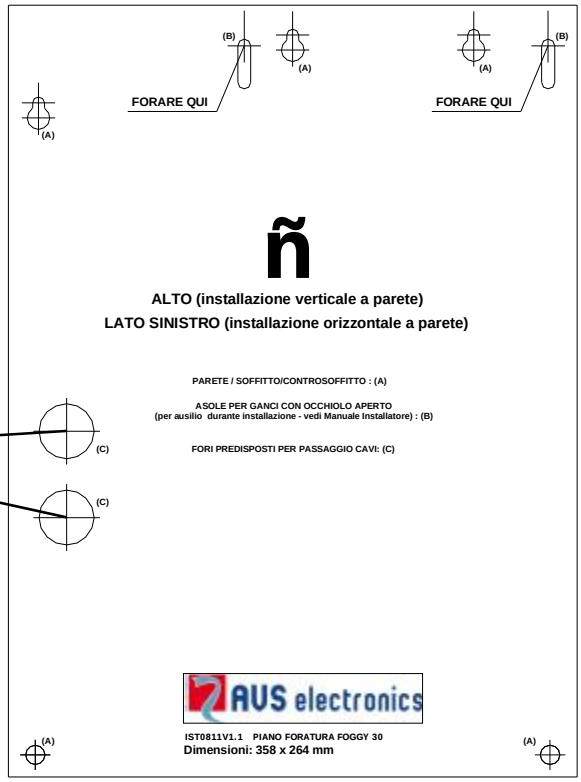


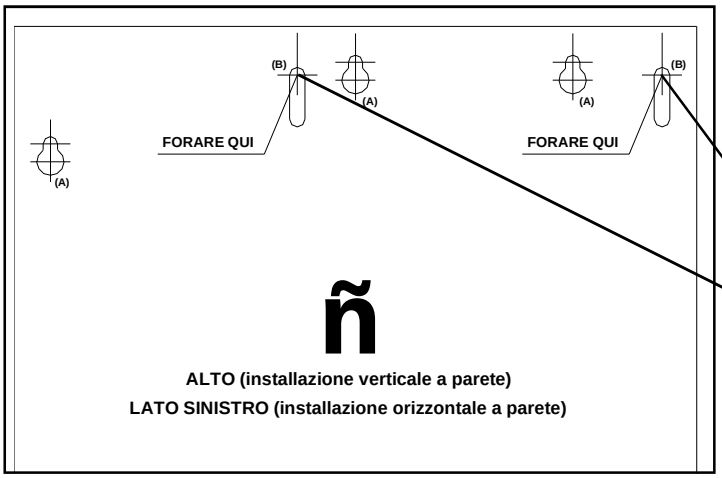
Disconnect the cable of the Liquid Sensor from the F. SENSOR in the management board.

Remove 4 screws M4x6 holding the fluid tank

Remove the tank in order to avoid liquid leakage during the installations phases.

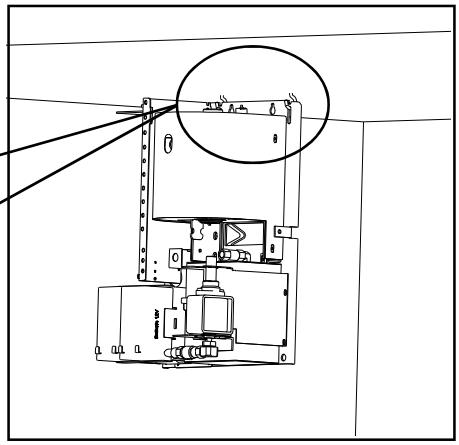
For correct positioning of FOGGY 30 either at wall or at roof, use the drilling plan supplied. Mark the holes according to preferred installation, keeping as reference the position of the **two big holes for cables passing**

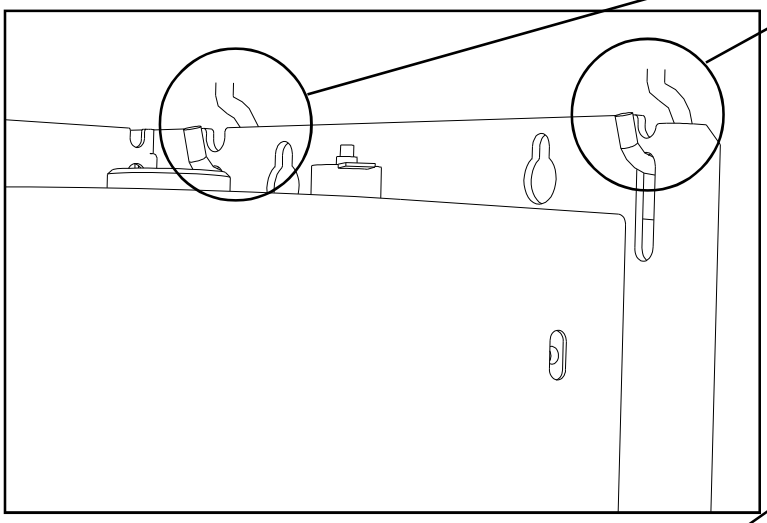


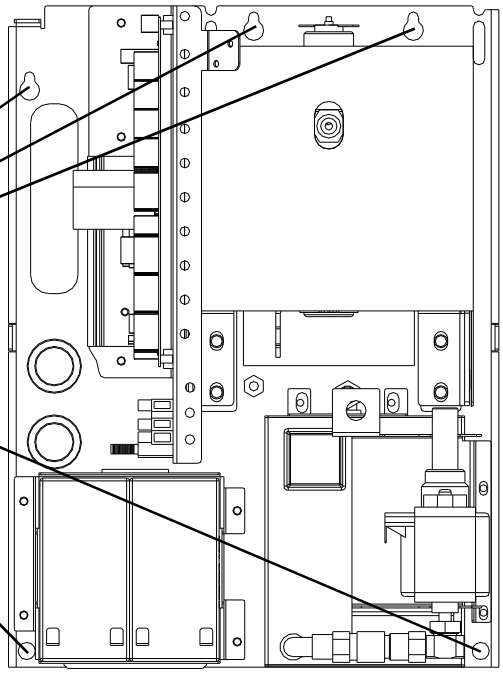


To ease the roof installation it is recommended to plug on the roof proper hanging hooks to hang the FOGGY30 by the two special eyelets indicated in the figure. This simplifies the wiring and connections before fixing the device to the roof.

To made easy the cabling and roof mounting it is possible, using appropriate eyelets, to hang the Foggy 30 on two hook fixing plugs

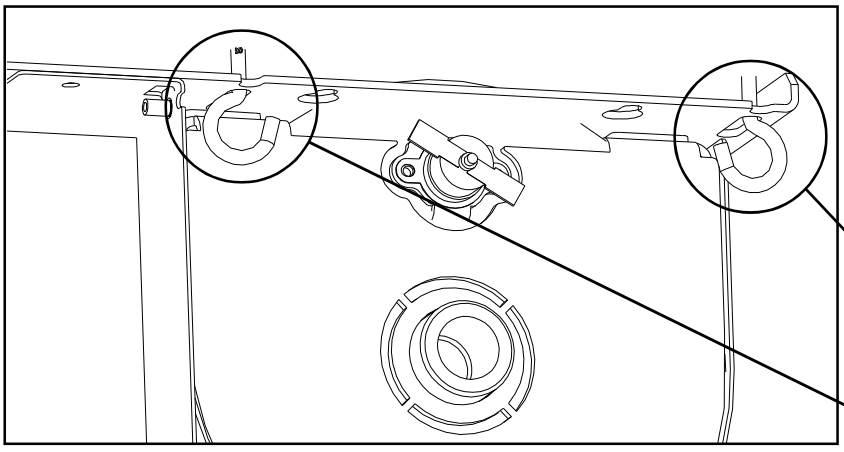


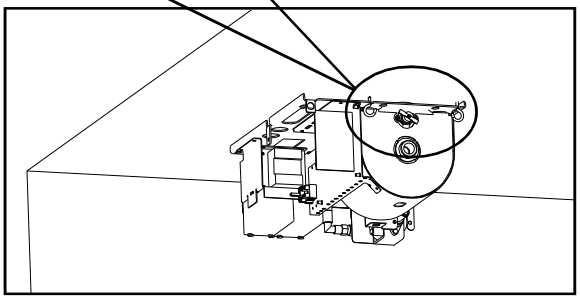




Fixing points

Use screw anchors that can withstand a weight of at least 75 Kg each. They must be suitable for the characteristics of the wall or ceiling to which they are secured. **Installation must be executed by qualified personnel**



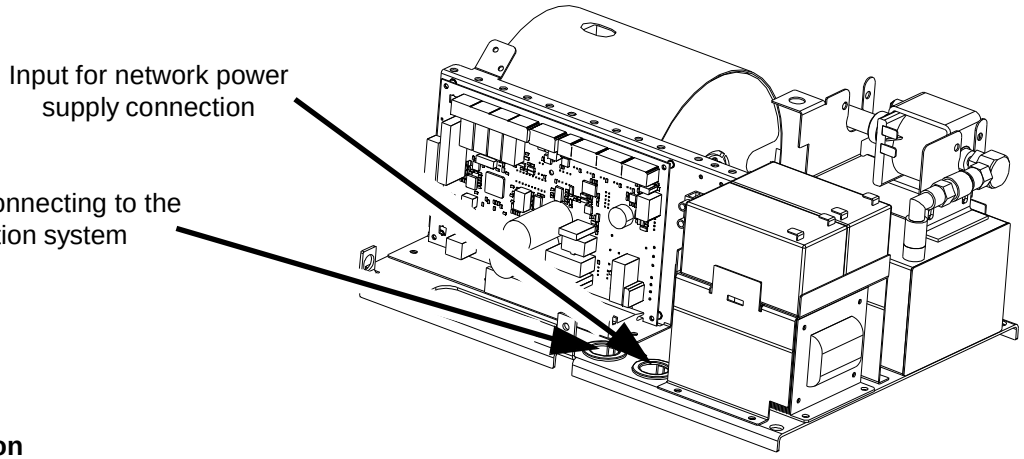


After fixing the equipment to the roof with proper plugs, rotate the two hooks in order to enhance the placement of the front cover.

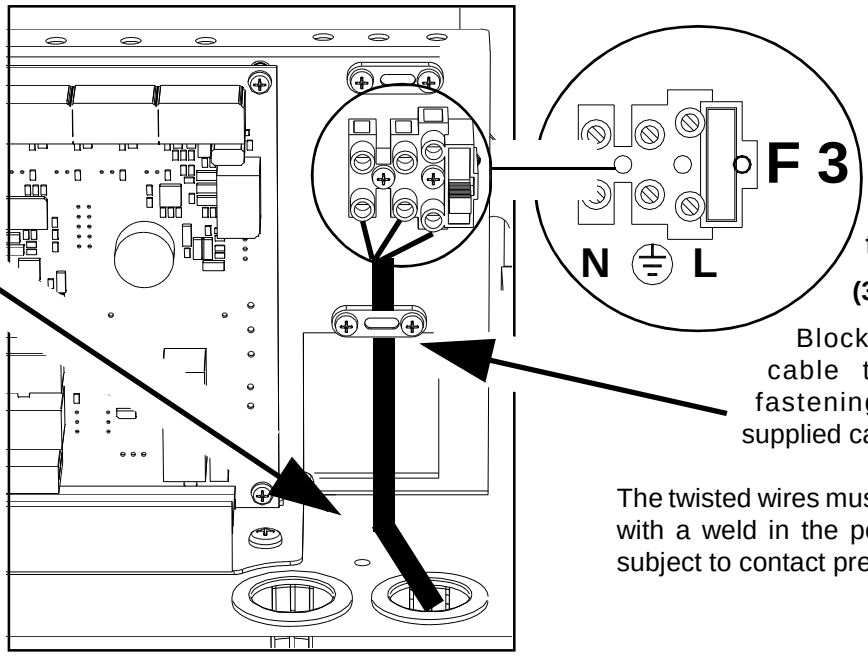
Outdoor connections FOGGY 30

Insert an easily accessible 16 A C-curve multi-pole mains switch and having a minimum distance between the contacts of at least 3 mm in the electrical installation of the building.

For electric network power supply input, use double insulation cables.



Network connection



(1 L - Phase 230V ~

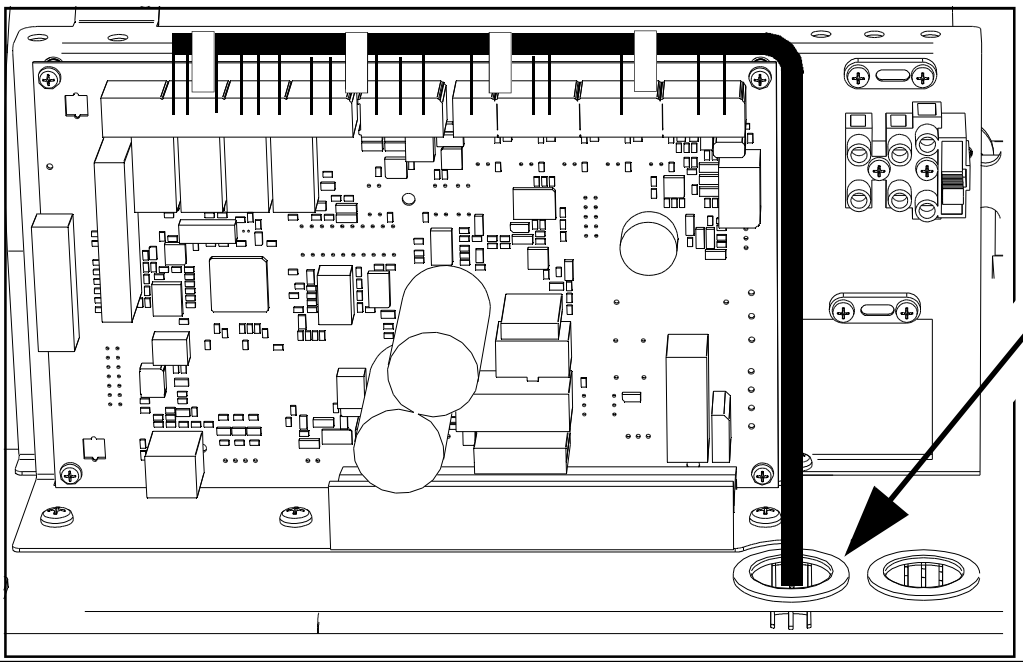
(2) Earthing - Input for earthing

(3) N - Neutral 230V ~

Block the power supply cable to the predefined fastening point using the supplied cable gland

The twisted wires must not be consolidated with a weld in the points where they are subject to contact pressure.

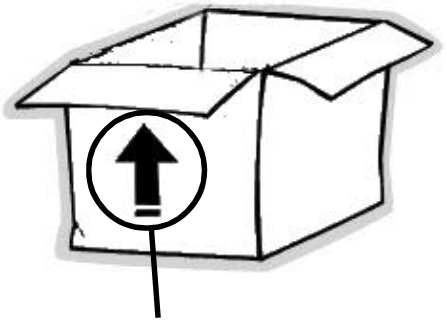
Connections to the security system



The TAMPER wires must be installed so that they do not come into contact with mains-powered parts, otherwise they must be directly tubed.

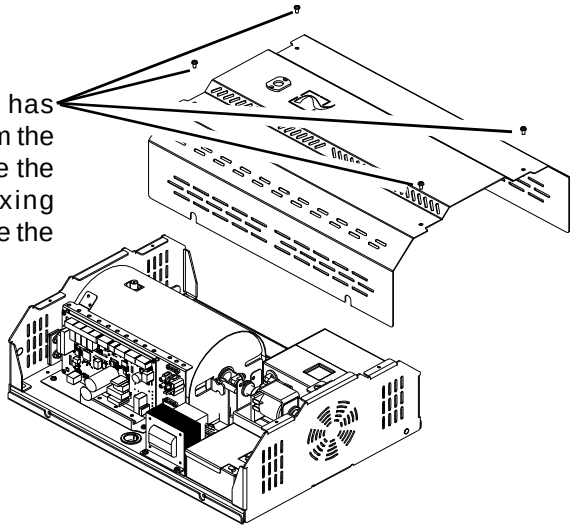
Passing control and signal cables

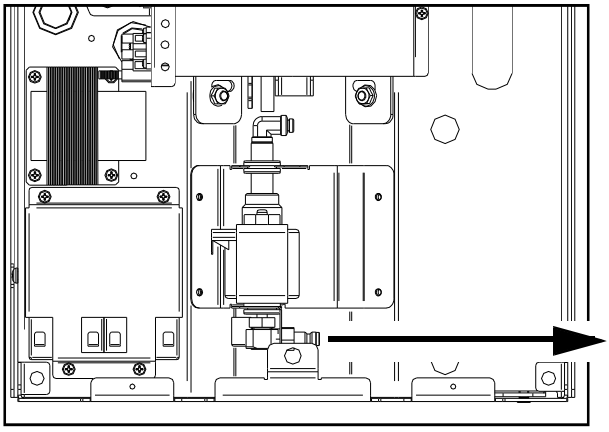
Block the cables to the predefined fastening points using suitable strips to ensure they do not come into contact with mains-powered parts.

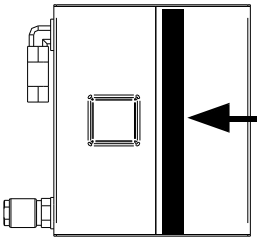


Verify that package has been positioned in the correct direction before opening the package.

Once the Foggy has been removed from the packaging, remove the 4 M4x6 type fixing screws and remove the cover.







Disconnect the cable of the Liquid Sensor from the F. SENSOR in the management board.

Unhook the fastening clamp of the tank.

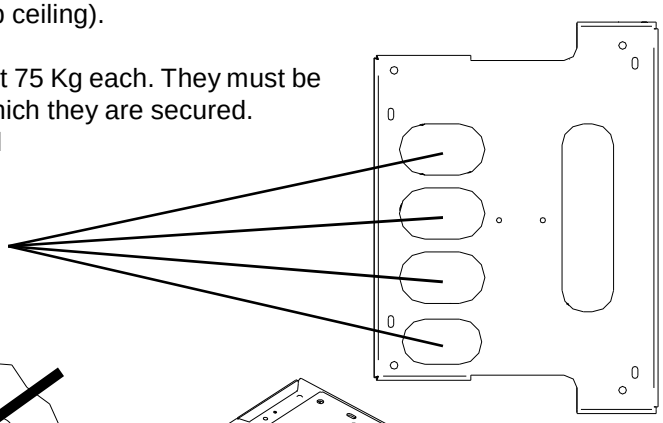
Remove the tank in order to avoid liquid leakage during the installations phases.

Use the supplied drilling template for positioning the plate, both on the wall and on the ceiling. Mark the holes based on the predefined type of installation (wall/ceiling or drop ceiling).

Use screw anchors that can withstand a weight of at least 75 Kg each. They must be suitable for the characteristics of the wall or ceiling to which they are secured.
Installation must be executed by qualified personnel

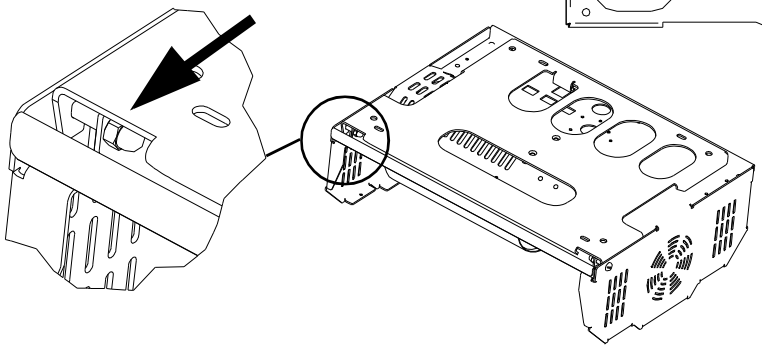
Check that the pipes are inserted in the pre-set holes.

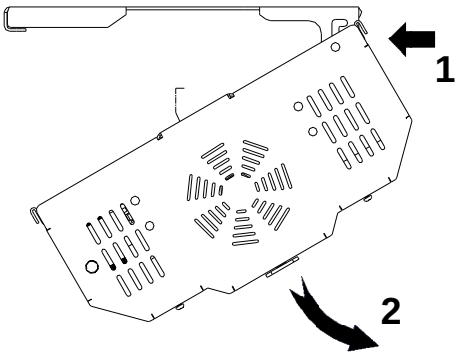
The hanging hooks are represented by two couples of screws with blocking nuts.



The screws are factory mounted and blocked against their respective nuts using a special blocking glue.

The installer must carefully check that these screws and corresponding nuts are perfectly blocked before mounting the equipment





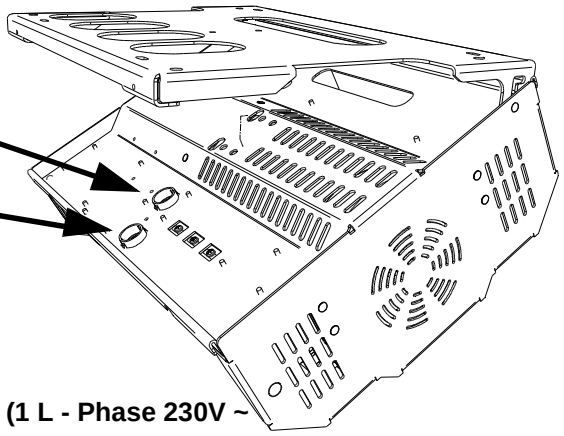
Hook the upper pivot and the lower pivot of the Foggy to the specific plate guide by sliding it sideways.

Both when fixing to the wall and the ceiling, rotate the equipment on the pivots in order to easily access the inside of the Foggy with the various cables.

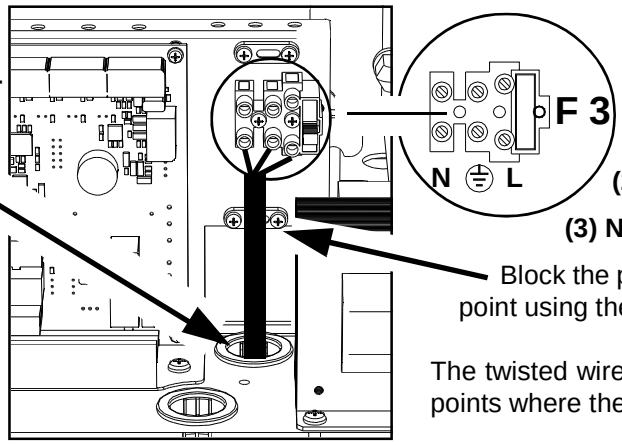
Outdoor connections

Insert an easily accessible 16 A C-curve multi-pole mains switch and having a minimum distance between the contacts of at least 3 mm in the electrical installation of the building.

For electric network power supply input, use double insulation cables.



Network connection



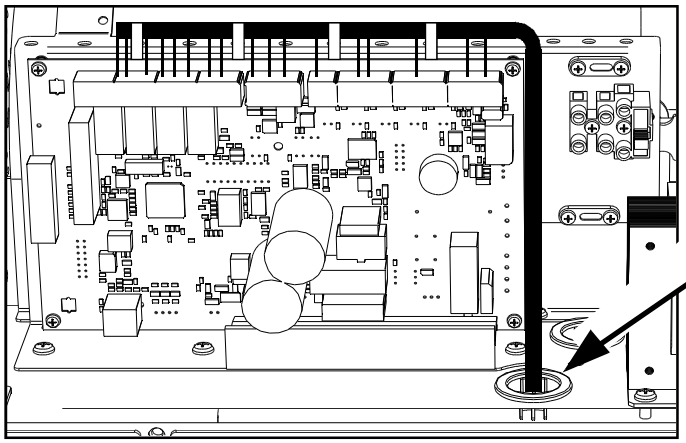
(1 L - Phase 230V ~

(2) Earthing - Input for earthing

(3) N - Neutral 230V ~

Block the power supply cable to the predefined fastening point using the supplied cable gland

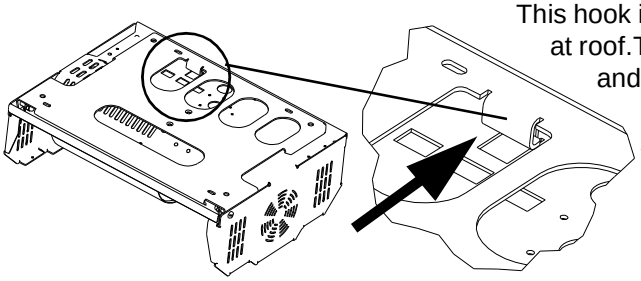
The twisted wires must not be consolidated with a weld in the points where they are subject to contact pressure.



The TAMPER wires must be installed so that they do not come into contact with mains-powered parts, otherwise they must be directly tubed.

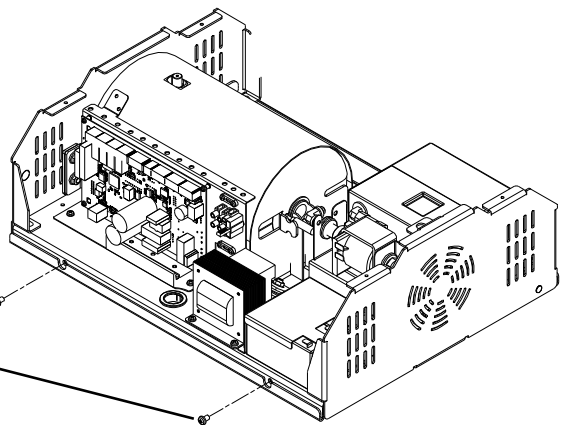
Passing control and signal cables

Block the cables to the predefined fastening points using suitable strips to ensure they do not come into contact with mains-powered parts.



This hook is intended to help the installer when mounting the equipment at roof.The fog generator can temporarily hang from it to easily place and block the lateral screws.

N.B. never leave the fog generator hanging from the hook B without blocking it with the lateral screws.



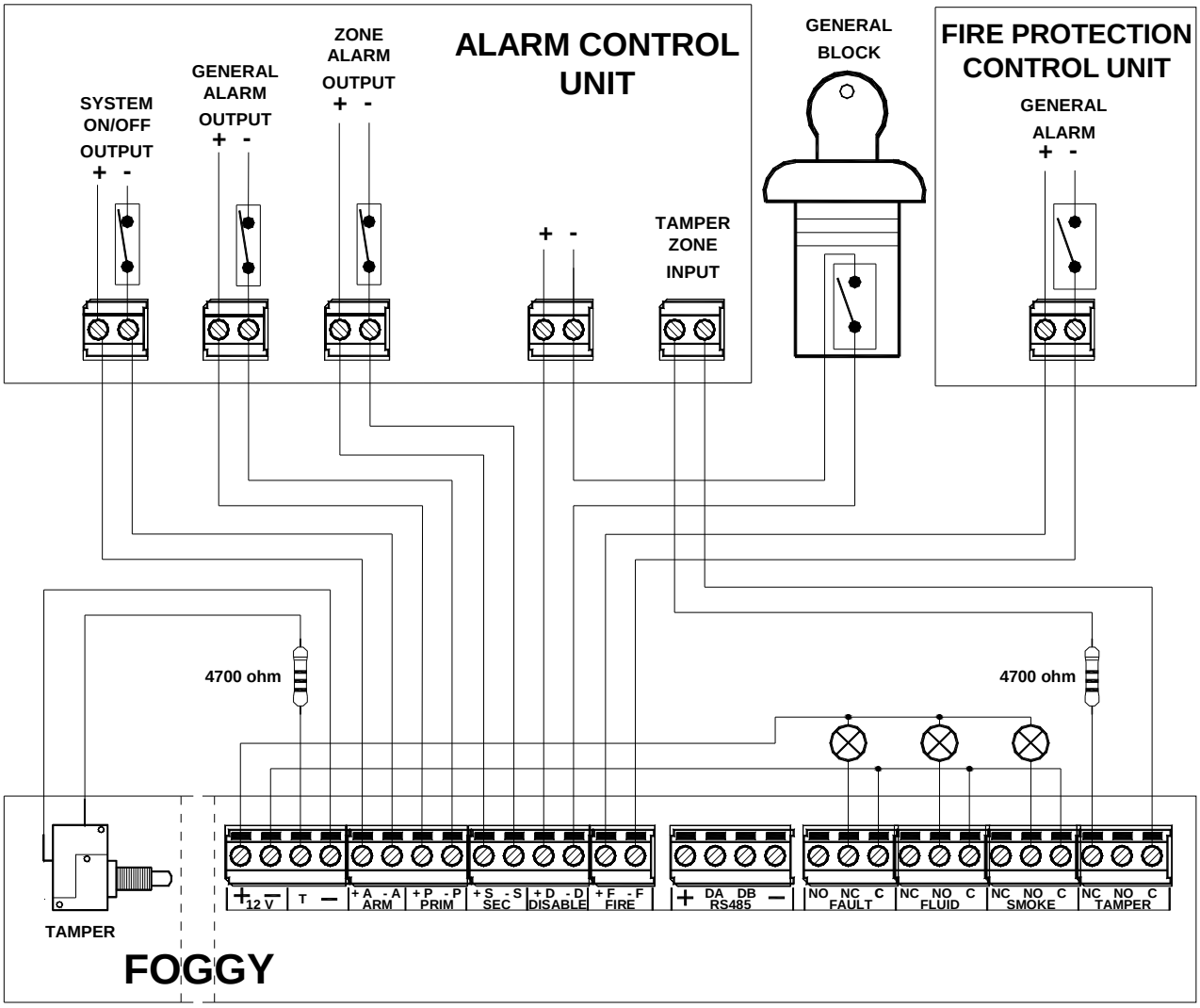
Fix the equipment to the plate using the two supplied M5x10 screws

Adhesive labels



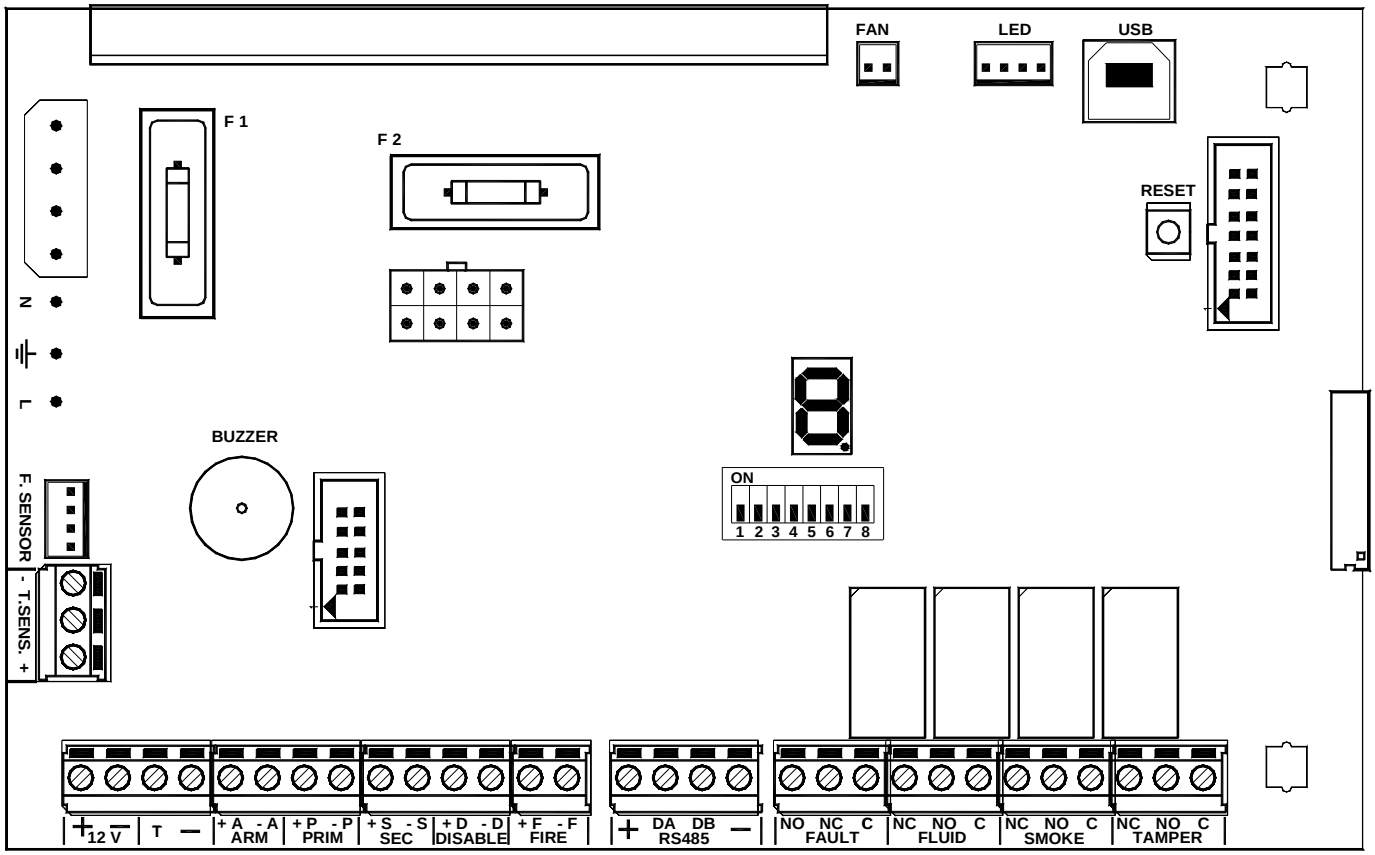
As recommended in the example figure, in proximity of access points to rooms protected by Foggy, locate the ideal position where the adhesive warning label (supplied), as obliged by European Directive 92/58/EEC, at a minimum visual distance of 9 metres.

Connection layout



The control contacts ARM, PRIM and SEC can be NC or NO type (configurable using DIP SWITCHES 4, 5 and 6. The example layout shown in figure refers to stand by functioning with NC control contacts (normally closed, DIP 4, 5 and 6 in ON).

Board



Terminal board

+ DA DB -		**Not used. Reserved for future use.**
NO NC C	**FAULT**	**Auxiliary output signalling FAULT:** positive safety exchange relay free of voltage with a 2A capacity at 12Vdc, that changes state in case of system anomaly. Anomalies that activate this output are those included in the "Error signal" table. Indications for clamps are meant for equipment that is powered and correctly operating: (C) common exchange (NC) normally closed exchange (NO) normally open exchange. The reset is automatic as soon as what activated it ends.
NC NO C	**FLUID**	**Auxiliary output signalling FLUID LEVEL:** exchange relay free of voltage with a capacity of 2A at 12Vdc, that changes state to signal "Fluid running out" and "No connection of the fluid level sensor". Instructions on clamps are meant for powered and correctly operational equipment: (C) common exchange (NC) normally closed exchange (NO) normally open exchange. The reset occurs automatically as soon as what caused it to activate ends.
NC NO C	**SMOKE**	**Auxiliary output signalling FOG DISPENSING:** exchange relay free of voltage with a capacity of 2A at 12Vdc, which changes state to signal that the equipment has activated "Fog Dispensing".. Instructions on clamps are meant for powered and correctly operational equipment: (C) common exchange (NC) normally closed exchange (NO) normally open exchange. The reset occurs automatically as soon as what caused it to activate ends.
NC NO C	**TAMPER**	**Auxiliary output signalling TAMPER:** exchange relay free of voltage with capacity of 2A at 12Vdc, which changes status in order to signal offset of the "Tamper" input. Indications for clamps are meant for equipment that is powered and correctly operational: (C) common exchange (NC) normally closed exchange (NO) normally open exchange. The reset is automatic as soon as what caused it to activate ends**.**
⚠	**The FAULT, FLUID, SMOKE and TAMPER output contacts must only be connected to circuits operating at SELV voltage.**	
- +	**T.SENS.**	Temperature probe input. Factory wiring
+ -	**12 V**	Output protected by self-resetting fuse. Max disbursed current 50 mA. Provides power in case of a possible external low power load.

Terminal board

T		**Tamper input** must be balanced with a 4700 Ohm with negative reference; it is disabled when the ARM input signals system OFF, or when the signal DISABLE is active; in all other cases, offsetting this clamp causes fog machine activation. **NOTE: The unbalance of this input always triggers the TAMPER relay output, quite apart from the configuration and state of the other inputs.**
-		Negative
+A **- A**	**ARM**	**ON/OFF System:** Input that, through the presence or not of 12 Vdc power recognises the ON/OFF status of the alarm system. Using **DIP 4** it is possible to configure that the power present at the clamps signals system ON or system OFF status: **System ON:** the **PRIM, SEC** (if configured) and **FIRE** inputs are constantly monitored to manage the possible fog disbursement **System OFF**: it blocks fog disbursement independently from the status ofinputs **PRIM, SEC** and **FIRE**
+P **- P**	**PRIM**	**Primary alarm:** Input that, through the presence or not of 12 Vdc power recognises the general alarm status of the alarm system. Its function is subordinate to that of the **ARM** and **SEC** inputs. Typically the alarm output is connected to a anti-theft control unit. Using **DIP 5** it is possible to configure presence of powerat the general alarm signal clamps or the stand-by status of the alarm system.
+S **- S**	**SEC**	**Secondary alarm:** Input that, through the presence or not of 12 Vdc power it recognises the alarm status of the dedicated sensor. **Alarm (DIP9 OFF):** its function is subordinate to that of the **ARM** and **PRIM** inputs; normally it is connected to a dedicated volumetric sensor that is positioned in the area interested by fob machine activation **Panic (DIP9 ON)**: its function is independent from the **ARM** and **PRIM** inputs; it is typically connected to an anti-robbery device. Using **DIP 6** it is possible to configure the presence of power at the alarm signal clamps or stand-by status of the dedicates sensor.
+D **- D**	**DISABLE**	**Total block:** Input that, with 12 Vdc power present, causes the complete block of the device. To be used for example for carrying out maintenance. If previously engaged, independently from the configuration and status of the various inputs, fog disbursement is not activated while, if disbursement is in progress, it immediately blocks deployment.
+F **- F**	**FIRE**	**Block in case of fire:** Input that, with 12 Vdc power present, causes the equipment to be blocked unless the **TAMPER** is offset with **ARM** activated and if the **SEC** command is unbalanced if configured as **Panic.** In both cases deployment occurs the same. To be connected to a fire protection control unit in order to receive the alarm signal in case of fire.

Connectors

F. SENSOR.	Connection of the Fluid Sensor. Factory wiring
FAN	Future use
LED	Connection to led board. Factory wiring.
USB	PC connection to program the Foggy and/or update the firmware.

Fuses

F1 - T 500mA 250V	Protection of the transformer primary
F2 - F 5A 250V	Protection of the positive output of the buffer batteries
F3 - F 6.3A 250V	Fuse protecting 220 V network input

Buttons

RESET	Press and release to reset the microprocessor

Dip Switch

DIP SWITCH		DESCRIPTION	DEFAULT
1 - 2 - 3		For configuring the fog deployment time. See related table.	**OFF**
4	**OFF**	Management of **ARM** input: with power present is signals system **ON** Status	**OFF**
	ON	Management of **ARM** input: with power present is signals system OFF Status	
5	**OFF**	Management of **PRIM** input: **active** with power present	**OFF**
	ON	Management of **PRIM** input: **not active** with power present	
6	**OFF**	Management of **SEC** input: **active** with power present	**OFF**
	ON	Management of **SEC** input: **not active** with power present	
7	**OFF**	Boiler heating lock disabled when the system is not armed	**OFF**
	ON	Boiler heating lock enabled when the system is not armed	
8	**OFF**	Normal operation	**OFF**
	ON	Firmware update. See related description.	
9	**OFF**	Management of **SEC** input: Secondary Alarm	**OFF**
	ON	Management of **SEC** input: Panic	
10	**OFF**	Buzzer disabled	**OFF**
	ON	Buzzer enabled	

FOG DEPLOYMENT TIME

According to our experiences in laboratory and in real sites, this equipment shows a capacity of blocking visibility correspondent to the values listed in the following table

				FOGGY 30			FOGGY 50		
SETTI-NG	**DIP**			**Deployment time**	**Coverage in m³**	**Maximum number of deployments**	**Deployment time**	**Coverage in m³**	**Maximum number of deployments**
	1	**2**	**3**						
A	**OFF**	**OFF**	**OFF**	**DEMO: deployment occurs continuously from the moment that the alarm is activated to the moment when it is reset or from the moment when the alarm is activated until boiler temperature falls below the minimum useful for generating the fog.**					
B	**OFF**	**OFF**	**ON**	**10 CONTINUOUS SECONDS**	**100 (28)**	**about 30**	**20 CONTINUOUS SECONDS**	**250 (90)**	**about 23**
C	**OFF**	**ON**	**OFF**	**20 CONTINUOUS SECONDS**	**200 (56)**	**about 15**	**40 CONTINUOUS SECONDS**	**500 (180)**	**about 11**
D	**OFF**	**ON**	**ON**	**60 CONTINUOUS SECONDS**	**300 (167)**	**about 5**	**60 CONTINUOUS SECONDS**	**750 (270)**	**about 7**
E	**ON**	**OFF**	**OFF**	**10 CONTINUOUS SECONDS + 1 PULSED MINUTE**	**200 (70)**	**about 12**	**60 CONTINUOUS SECONDS + 1 PULSED MINUTE**	**950 (338)**	**about 6**
F	**ON**	**OFF**	**ON**	**10 CONTINUOUS SECONDS + 2,5 PULSED MINUTES**	**250 (112)**	**about 7**	**60 CONTINUOUS SECONDS + 3 PULSED MINUTES**	**1300 (470)**	**about 4**
G	**ON**	**ON**	**OFF**				**60 CONTINUOUS SECONDS + 5 PULSED MINUTES**	**1650 (600)**	**about 3**
H	**ON**	**ON**	**ON**	**10 CONTINUOUS SECONDS + 2,5 PULSED MINUTES And permits programmation with FWIN software**	**250 (112)**	**about 7**	**60 CONTINUOUS SECONDS + 7 PULSED MINUTES And permits programmation with FWIN software**	**1900 (740)**	**about 2**

At the end of the deployment cycle, Foggy remains in Stand-By until:

- the temperature does not return to level

-the alarm that generated deployment does not reset

In settings E, F, G and H, after generating the fog continuously for the pre-set time, Foggy starts a pulsed sequence where it staggers deployments of about 5 seconds to pauses of about 20 seconds

Note: The coverage values in brackets are those certified in accordance with EN 50131-8

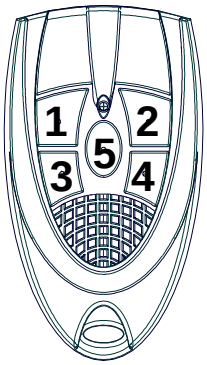
Firmware update

It is possible to update equipment firmware carrying out the following procedure:

1) Bring **DIP 10** to **ON** to activate buzzer operation
2) Bring **DIP 8** to **ON**
3) Press the RESET button, the buzzer goes off for a few seconds and then shuts off
4) After about ten seconds, as soon as the buzzer goes off again, bring **DIP 8** to **OFF**
5) After approximately 5 seconds press the RESET button again
6) Bring **DIP 10** to **OFF** to silence the buzzer
7) Connect the USB cable between the board and the PC; update using the FWIN software installed on the PC
8) At the end of the update, disconnect the USB cable and press the RESET button
9) Bring **DIP 10** to **ON** to enable buzzer operation

Remote controls

Foggy handles a maximum of 16 remote controls and for each remote control it is possible to singularly enable the 4 combined functions described below:



Key 1: Activates smoke dispensation (with system entered by Key 2 or by ARM inlet).
- Functioning in demo mode (the activation lasts 60")
- Functioning in normal mode (impulsive control).

Key 2: Deactivates smoke dispensation (impulsive control)
Key 3: System insertion (impulsive control), as by ARM inlet imbalance.
If the system results to be already activated by the imbalance of the ARM inlet, the commands sum up, in this case, to deactivate the system, it is necessary to balance the ARM inlet and deactivate through key 4 of the remote control. In case of lack or power supply or board reset, the eventual previous activation through Key 3 is maintained.
Key 4: Deactivate the activation executed by Key 3 of the remote control (impulsive control).

Operation:
During normal system operation, the reception of a command executed by the remote control is signaled on the display through a symbol made of three horizontal dashes followed by the number of the pressed key.
Only the acquired key can control the associated function and be seen on the display.
The function is carried out in the same moment of the reception of the command, while the display view happens in sequence to the other eventually already present messages.

Remote controls acquisition:
1. Bring DIP 10 to ON to activate the buzzer and bring DIP 8 to ON to activate remote controls programming mode
2. For each remote control to acquire, configure the address through the dip switches on board and press the keys relative to the functions one wishes to activate in sequence.
3. The successful acquisition is shown on the display through two horizontal dashes followed by the remote control number, 0 to 9 for the first ten and A, B,C,D,E,F for remote controls 11 to 16.
4. Repeat step 2 for all the remote controls to acquire
5. Bring DIP 8 to OFF to exit programming mode and act on DIP 10 according to buzzer operation needs.

NOTE: Single keys of the remote control may also be acquired at different times.

Deletion:
1. Bring DIP 10 to ON to activate the buzzer and bring DIP 8 to ON to activate remote controls programming mode
2. Press key 5 and keep it pressed, in sequence press key 4. The buzzer will emit a brief confirmation sound.
3. Release keys 4 and 5.
4. As soon as the buzzer begins to sound again, press key 5 and keep it pressed, press key 4 in sequence. The buzzer will deactivate and the display will show two horizontal dashes as confirmation of successful deletion.
5. If the procedure described in the previous step is not executed, the buzzer will nevertheless stop sounding after a few seconds and deletion will not occur. In this case repeat the operation from step 2.
6. Bring DIP 8 to OFF to exit programming mode and act on DIP 10 according to buzzer operation needs.

NOTE: It is not possible to delete the single remote control nor the enabling of a single key.

ATTENTION: DIP 8 in ON also enables the firmware update procedure, therefore avoid executing a board reset while in remote controls programming mode.

XGSM

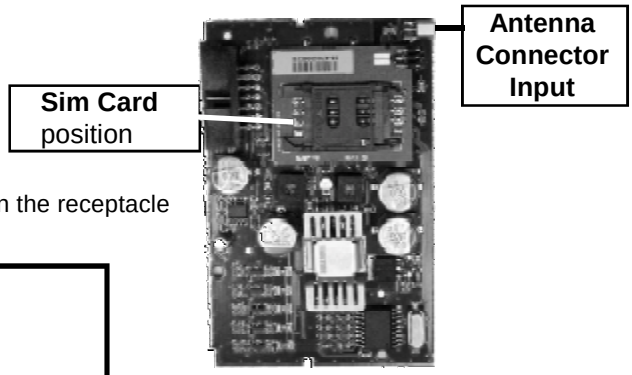
Using the XGSM module (optional) it is possible to send commends and receive status information from the FOGGY via SMS messages (from version 2.0), in addition it is possible to remotely interact with the equipment to monitor the status and to change some functionning parameters

Technical characteristics

External connections	• GSM module connector
Telephone numbers	• 6
Supply voltage	• Nominal 12V=
Current consumption	• Stand by 50mA • Transmission 400mA
Environmental conditions	• Temperature: -10°C / +55°C - humidity 95%
Dimensions	• 93x15x60mm
Declaration	• The GSm module used is conform to the R&TTE 99/05/EC directive as declared by the manufacturer

Installation

a) Remove power from FOGGY equipment, mains and battery
b) Place the plastic holders into the square holes of the PCB with the rails to the inner side
c) Insert the XGSM module in the connector sliding it inside the two rails all the way long
d) Open the antenna hole in the enclosure
e) Pass the antenna cable through the hole
f) Insert the antenna and block the nut
g) Connect the antenna cable to the XGSM module connector
h) Power up the FOGGY



SIM card inclusion / Antenna connector

To place the SIM card:
1. Open the SIM card holder
2. Insert the SIM card in the correct position following the mark on the receptacle
3. Click close the SIM card holder

Disable the PIN code of the SIM card
Disable all the call transferring functions
Disable autoanswering service
Erase all the SMS messages from the SIM

Before placing or removing the SIM card please remove power completely

The short credit WARNING message is issued when prepaid credit of the SIM card goes below 8 euros

Events transmission with SMS messages

FOGGY can be programmed to transmit specific SMS messages corresponding to events occurring in the system

INFORMED EVENTS	
GROUP	**EVENT**
ARMING	• Arming and disarming from terminal input, remote keyfob or RTC (via GSM telephone)
FAULTS	• Temperature control adjustment error, low battery, battery unconnected, pump fault, high PCB temperature, low PCB temperature, high temperature of heating cylinder, low temperature of heating cylinder, fluid tank PCB not connected
TAMPER	• System tamper
GSM	• Short credit, SIM validity expiring
FLUID	• Low level of fluid, fluid validity expiring
DEPLOYMENT	• Smoke deployment start, smoke deployment end
MAINS	• Mains 230VAC fault, restore

Control via SMS messages

It is possible to cause the execution of commands in FOGGY sending opportune SMS messages.

The command messages are accepted if the following conditions are fulfilled:
- The originating telephone number is recognized and enabled
- The syntax is correct

NOTE: The System status request returns also the prepaid credit of the SIM card still available

The sending of a command is followed by a text message of state relating to the controlled, even if the telephone number is not associated with the reception events

MESSAGE TYPE	SYNTAX
arming	#arm#
disarming	#disarm#
System status	#status#
Arming status	#arming status#
Deployment status	#emission status#
Start deployment	#begin emission#
Stop deployment	#stop emission#

Signals

LED

RED	- **DISARMED:** System not armed - **ARMED:** System armed
GREEN	- **DISARMED:** cold liquid - impossible to supply in case of alarm - **FLASHING:** low liquid temperature - with this signal, dispensation is possible only if it has already started with the liquid in appropriate temperature - **ARMED:** Foggy is operating regularly and the boiler is at operating temperature **The led indicates the temperature and not the boiler heating activity, signaled instead on the display with the letter H**
YELLOW	- **DISARMED:** no anomaly - **FLASHING:** non serious anomalies (see System anomalies chart) - **ARMED:** signal for serious anomalies or TAMPER (see System anomalies chart) **In case of more simultaneous signals, the yellow led indicates the most important**

LED DISPLAY

-	Separator: if there are multiple simultaneous signals, this symbol is placed between messages

IMPUT STATUS

A	**ARM** input active - Alarm system engaged.
P	**PRIM** input active - General alarm active
S	**SEC** input active - Zone alarm or Panic Alarm active
d	**DISABLE** input active - Total system block active
F	**FIRE** input active - Fire Protection Alarm active
t	**TAMPER** input active - System tamper active

BOILER STATUS

H	**Heating: Boiler heating in progress**
r	**Ready: System ready to start smoke deplyment**

ERROR SIGNAL

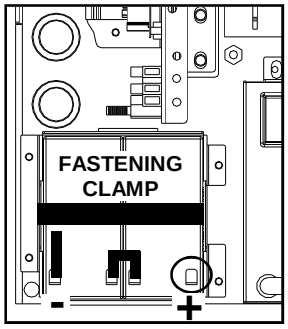
	Led Yellow	
E0	On steady	**220V network power supply missing**
E1	On steady	**Error in temperature control calibration.** In the presence of this signal, boiler heating will be blocked.
E2	Flashing	**Battery low or missing**
E3	On steady	**PUMP Malfunctioning**
E4	On steady	**PCB temperature not correct**
E5	On steady	**GSM module fault**
E6	On steady	**Excessive BOILER temperature**
E7	On steady	Boiler temperature too low. This indication is signaled at the first power supply or after a dispensation if the temperature does not return to normal within a certain pre-established time or during normal function when the boiler temperature drops below the minimum working temperature threshold. In presence of this signal, dispensation will not occur.
E8	Flashing	**Liquid low or exhausted**
E9	On steady	**Card tank is not connected**
t		**Tamper**

Battery

During the first installation the 2 **12V - 1,2Ah** batteries supplied are disconnected.

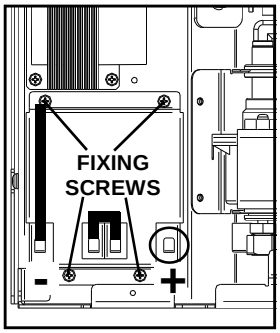
FOGGY 30

To replace the battery losen the fastener indicated in the figure



Connect the cable to the available positive pole of the battery indicated in figure.

From this moment Foggy is powered with the exception of the boiler.



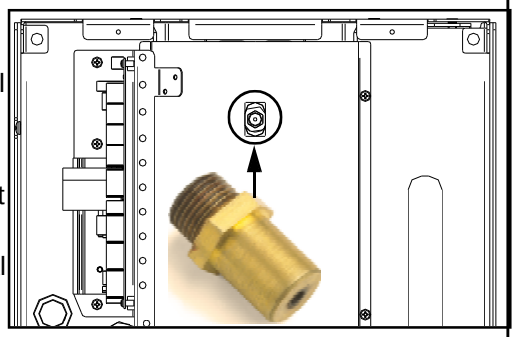
FOGGY 50

In order to change the batteries, remove the support ring nut fastened with the 4 screws indicated in figure.

Dispensers

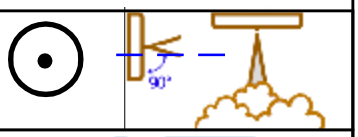
To replace the dispenser, proceed as follows:

- Remove the white Teflon insulating that protects the dispenser
- Remove the nozzle to be replaced with an 11-mm wrench (optional accessory item KEY ER, code PM11-00004-76)
- Carefully clean the threaded seat in the boiler
- Carefully cover the thread of the dispenser with high-temperature sealant to ensure the seal and prevent the nozzle from moving
- Slowly screw the nozzle to be used until it is positioned at the nominal height (see picture to the right)
- Replace the white Teflon insulating plate
- Test the dispenser to check the correct direction of the (Note: if necessary, make small height adjustments without compromising the seal).

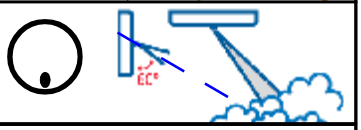


Foggy is supplied with dispenser Mod. **ER 190** but it is possible to replace it with one of the other models (optional) described here below:

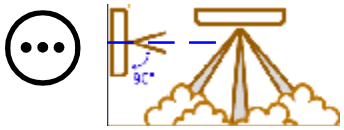
ER 190 (1 x 90°) Supplied: this nozzle is the one installed by the manufacturer, it has a straight spray, uniform and long range.



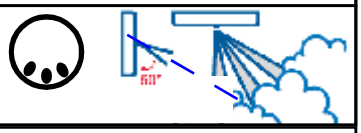
ER160 (1x60°) Optional: it has a jet tilted 60°, long range; this type of dispenser nozzle makes it possible to install Foggy in different positions.



ER390 (3x90°) Optional: allows short range dispensing in 3 different directions; it divides the jet into two tilted at 30° and one tilted 90°. This type of dispenser allows installing Foggy and creating a tent effect protection, for example for protecting full length windows.

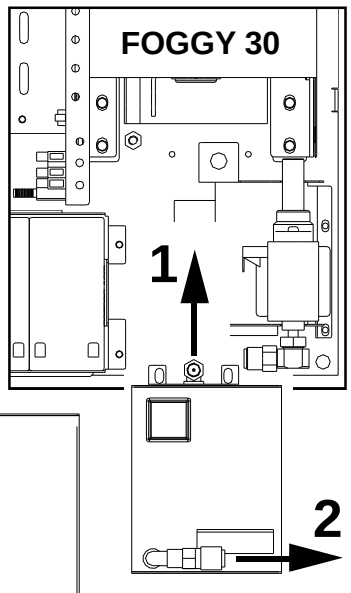


ER360 (3x60°) Optional: allows dispensing a short range triple jet with the characteristic of spreading the fog effect uniformly.



Tank

The 1.5 litre tank guarantees autonomy for multiple activations; it is made in steel and allows recharging the fog fluid (to be carried out by the manufacturer). The fluid is not under pressure, but it is kept under vacuum, this in order to safeguard its duration over time, avoiding alteration of chemical characteristics.
Fluid level is constantly monitored thanks to a dedicated sensor that communicates with the electronic board and warns if the level is low.

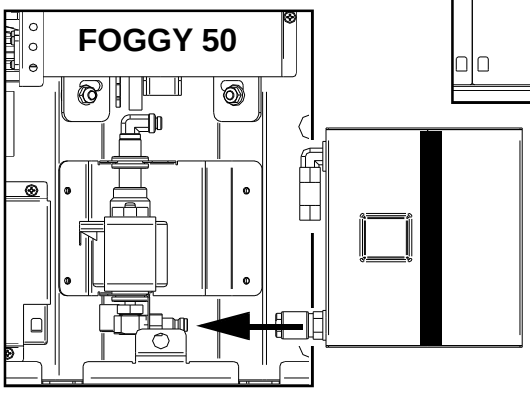


Installation

a. Connect the tank to the specific coupling.

b. Fix the tankx the tank:
- FOGGY 30: with screws included
- FOGGY 50: with supplied reusable strap

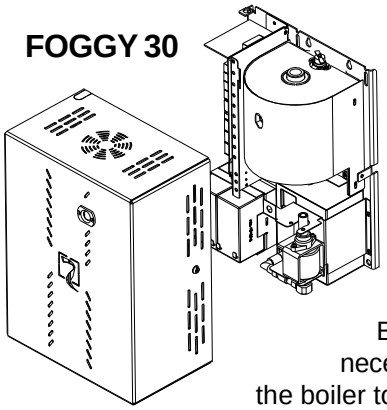
c. Connect the cable of the Liquid Sensor on the F. SENSOR in the management board.



After carrying out operational tests, it is recommended to replace the tank with one that has not yet been used in order to guarantee the maximum number of deployments based on the selected type of operation.
The tank must be regenerated exclusively by AVS Electronics therefore, in order to avoid having an environment unprotected by Foggy while waiting for a recharge, it is recommended to keep an emergency tank.

Commissioning

FOGGY 30

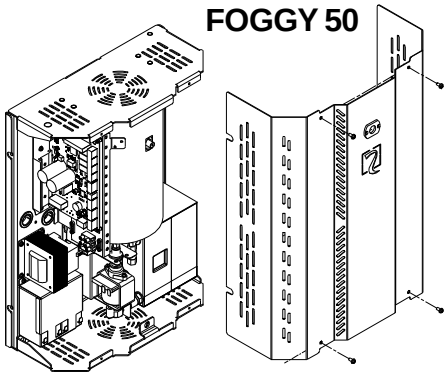


Close the cover using the 4 supplied screws.

Supply power to the network only after closing the cover.

Before testing or using Foggy, it is necessary to wait at least 20 minutes to allow the boiler to reach operating temperature.

FOGGY 50



Initial power-up precautions

Check that:

- the DIP SWITCHES are positioned according to the chosen operational mode.
- connections related to control inputs keep the equipment in standby status.
- after connecting the batteries the display must signal “H” (Heating in progress).
- about 20 minutes after supplying power from the network, the display must signal “r” (Operational).

Note: the alternate “H” and “r” signal on the display occurs in the period when the boiler is heated in order to maintain operating temperature.

Precautions for the installer

The installer must:

- install Foggy out of the range of children and animals and in an area that is not accessible to unauthorised persons.
- install Foggy making sure that escape routes are not blocked while dispensing the fog.
- do not install Foggy outside or in humid environments.
- check Foggy using adeguate controls is there is a fire extinguishing system present in the protected area.
- before installing Foggy make sure that there are no local regulations or standards that prohibit its use.
- train personnel in charge before hand regarding precautions to be used during regular use and on how to assist, in case of accidental deployment, other persons that may be in the rooms.
- must communicate with competent agencies that the device was installed.
- before any maintenance intervention on connected safety systems, activate the general block of the Foggy.
- before each maintenance intervention on the device, disconnect form the power mains.
- AVS Electronics is not liable for damage caused by an incorrect installation or by improper use of the equipment.

General precautions

- Avoid stopping for long periods of time in fog saturated environments, this may cause an irritation of the mucous membranes of airways and eyes.
- Do not touch and do not come too close to the dispenser as long as the equipment is in operation in order to avoid burns.
- Avoid positioning flammable material at less than 35 centimetres from the dispenser.
- Exclusively use a damp cloth when cleaning the Foggy externally. Do not use water or other liquids.
- In order to avoid condensation, air out the rooms for a long time after dispensing the fog.

First-aid measures:

- **General indications**: replace soaked clothing.
- **Contact with skin**: wash thoroughly immediately using water and soap.
- **Contact with eyes**: rinse thoroughly for 15 minutes under running water keeping eyelids open.
- **Swallowing**: do not swallow the fluid and keep it away from children and animals, if swallowed, rinse mouth immediately and drink abundant water.

Fire prevention measures:

- **Suitable fire extinguishers**: nebulised water, dry extinguisher, foam, carbon dioxide.

Note: Water used to for fighting the fire must be disposed of according to local legislation.

Measures in case of accidental leakage:

- **Precautionary measures**: one must observe the usual precautionary measures when manipulating chemical substances.
- **Precautional measures**: if fluid leaks from the tank onto the ground, it is necessary to remove it immediately form the floor because, due to its slipperiness, it may cause falls.
- **Ecological information**: do not pour residue into the sewer, more in general, do not disperse into the environment.
- **Cleaning and collection systems**: use absorbent materials such as sand, infusorial earth, acid binders, universal binders, sawdust. Dispose of according to current local regulations.

Special functions

Thanks to the FWIN software, the potential of digital technology can be best exploited from PC.

- FWIN permits:

  - **Checking**:
  - system state
  - input state
  - boiler state
  - liquid state
  - faults found
  - boiler features
  - SIM credit
  - historical record with 1000 memorized data complete with date and time

- **Management**:

  - setting the test parameters
  - programming SIM credit management
  - programming liquid management
  - programming telephone parameters
  - programming remote-control functions
  - upgrading firmware (not active in GSM)

These functions are active with local USB connection, i.e., connected directly on FOGGY or in GSM phone connection. Once the management software has been installed, a “New numerical code” must be created in “Client Records” with indication that this is FOG SYSTEM (FOGGY).



Return to initial display page



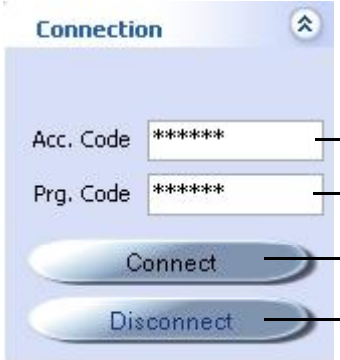
Activation of USB /Telephone connection for viewing and managing the FOGGY settings

Activation of the USB /Telephone connection for viewing and managing the FOGGY events record

Activation of the USB /Telephone connection for the personalization of the parameters programmable in FOGGY



Activation of the FOGGY firmware update procedure



Access code: numerical password consisting of 6 figures

Programming code: numerical password consisting of 6 figures

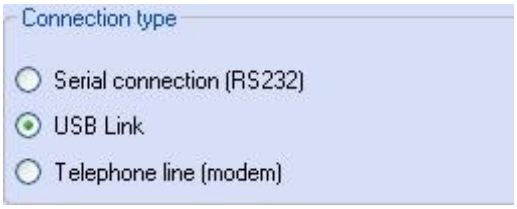
To access the connection

To exit the connection

The “Access Code” and the “Programming Code” are automatically transferred at every FOGGY connection via USB and are then used in the remote connections on GSM line.

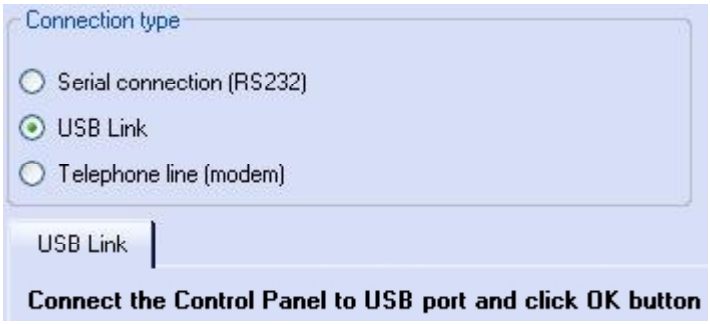
Type of connection for management with FWIN software

The sensor can be connected to the PC by means of:



- Serial connection RS232 (not used)
- USB connection
- Telephone line (modem)

USB connection

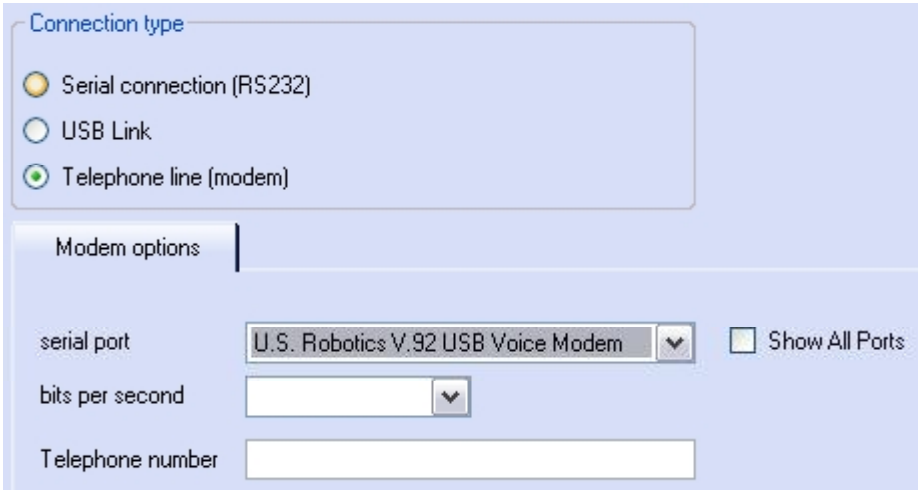


This type of connection allows connecting the fog-forming unit to the PC by means of the USB port of the **FOGGY**

To make the connection:
1. Select the "**USB Connection**" type
2. Press "**OK**" at bottom right of the display page

Phone line (modem)

This type of connection permits connecting the FOGGY to the PC in remote by means of the modem in both PSTN and GSM line.



To make the connection:

1. select "**Phone line (modem)**" type

2. in "**serial port**" select the modem connected to the pc or, if "**Show all ports**" is selected, the number of the serial port to which the modem is connected

3. in "**bit per second**" select **9600**

4. in "**phone number**" enter the telephone number to be called

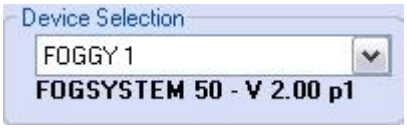
5. press "**OK**" at bottom right of the display page

Real Time

Access to this menu requires following the procedure according to the type of connection to be made

NOTE: in case of a USB connection, the installation of the drivers could be required in order to recognize the peripheral. If the drivers are not automatically recognized, the following path must be indicated to the system: **C:\Programmi\Xwin\Driver** and the file **fs-vcom.inf** must be selected

Once connection has been made, a number of FOGGY parameters will be displayed. Besides these, the information will be displayed in real time relating to the state of the System, of the Inputs, of the boiler, of the liquid and any faults in existence.



Choice of Device: displays the device model, Foggy30 or Foggy50, and the installed firmware version.



SYSTEM: displays the state of system operation and whether ready to smoke.
System ON: System **Switched on from Remote Control or SMS** (red light)
System STATE: System **Switched on from ARM input** (red light)
Ready: System ready to smoke (green light)



Boiler heating: shows whether boiler heating is **Continuous** (red light), **Pulsed** (green light), **Off** (grey light) or **disengaged due to overheating**(yellow light)



State of supply: shows whether the system is in **SUPPLY IN PROGRESS** (red light), **SUPPLY MAINTENANCE** (yellow light) or **no supply** (grey light).



Temperature: shows the boiler temperature in real time. In case the temperature is too high, **"err"** is indicated.



Operator name: shows SIM phone operator name.



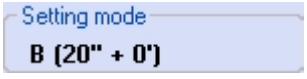
SIM Credit: shows the phone credit in SIM.



Level: shows the level of the liquid in the tank and the number of supply operations still possible.



Liquid expiry: shows the expiry date of liquid in tank set by AVS Electronics.



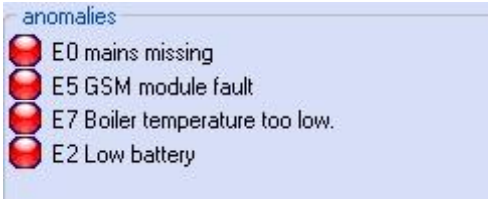
Operating Mode: displays the set operating mode.



LED state: remotization of the 3 LEDs on board FOGGY.



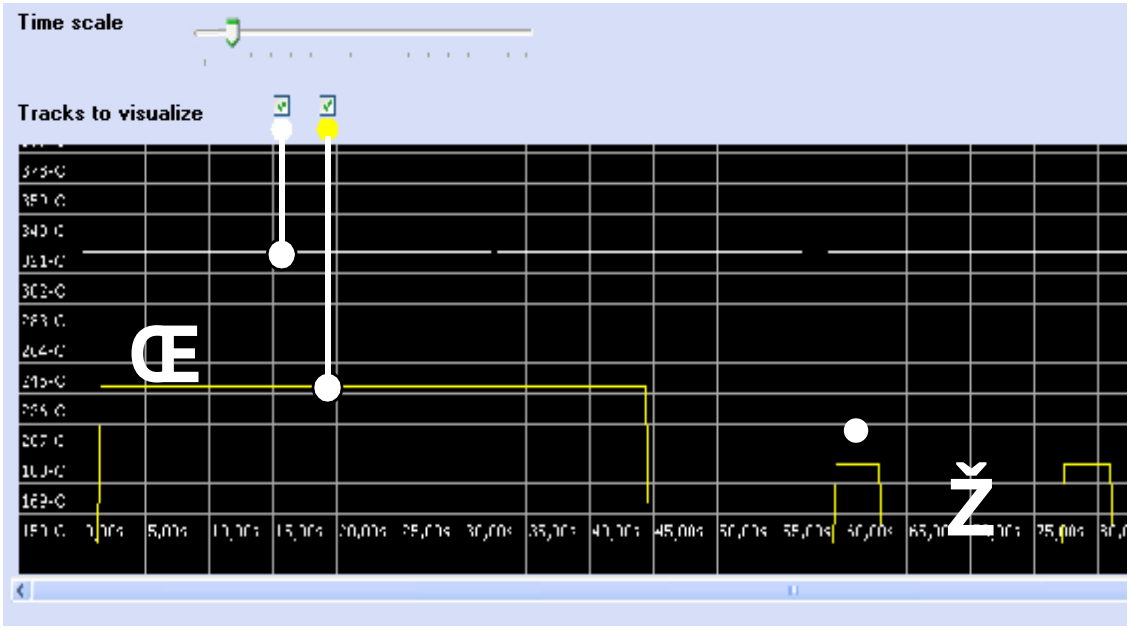
INPUTS: shows the state of the FOGGY inputs. An activated input is displayed with green light. The light is grey if the input is deactivated.
T: Tamper **; A:** ARM **; P:** Primary **; S:** Secondary **; D:** Disable **; F:** Fire



Faults found: shows the faults that could affect FOGGY in real time.

Oscilloscope function

This application permits checking the temperature and supply state of FOGGY at graphic level.
Time scale: selects the time scale on the vertical axis.
Traces to be displayed: enables trace display.



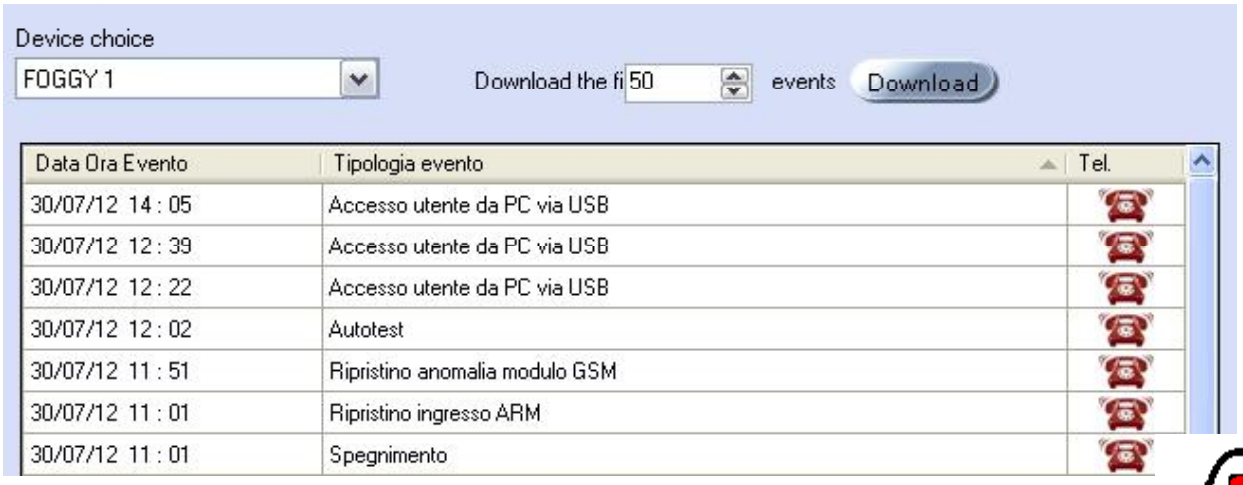
White line: indicates the current boiler temperature.
Yellow line: indicates whether the system is in **SUPPLY IN PROGRESS**(1), **SUPPLY MAINTENANCE** (2) or **no supply** (3).

Event records

Access to this menu requires following the procedure according to the type of connection to be made

NOTE: in the case of a USB connection, the installation of the drivers could be required in order to recognize the peripheral. If the drivers are not automatically recognized, the following path must be indicated to the system: **C:\Programmi\Xwin\Driver** and the file **fs-vcom.inf** must be selected

Once connection has been made, after selecting the number of events to be downloaded, by pressing the “Download” button, the system events will be displayed in chronological order.



By clicking with the Left button of the Mouse above the phone image, we can check whether that event has been communicated by TXT and to which phone profile (green box).



Show Change

Access to this menu requires following the procedure according to the type of connection to be made

NOTE: in the case of a USB connection, the installation of the drivers could be required in order to recognize the peripheral. If the drivers are not automatically recognized, the following path must be indicated to the system: **C:\Programmi\Xwin\Driver** and the file **fs-vcom.inf** must be selected

Once connection has been made, programmable parameters can be personalized in FOGGY.



Allows downloading the programming of a previously-saved client.



Allows downloading the programming of a previously-saved client.



Permits saving client programming.

Permits transferring the programming on the FOGGY to the computer.

Permits saving the programming on the computer without sending it to FOGGY. The programmings are automatically saved after each alignment.

Options
Choice of language for messages by TXT.

Operating mode
Permits setting the operating Mode of the supply and Stopping heating with the system off.
NOTE. These parameters are only active if the dips 1-2-3 of FOGGY have been placed on ON.

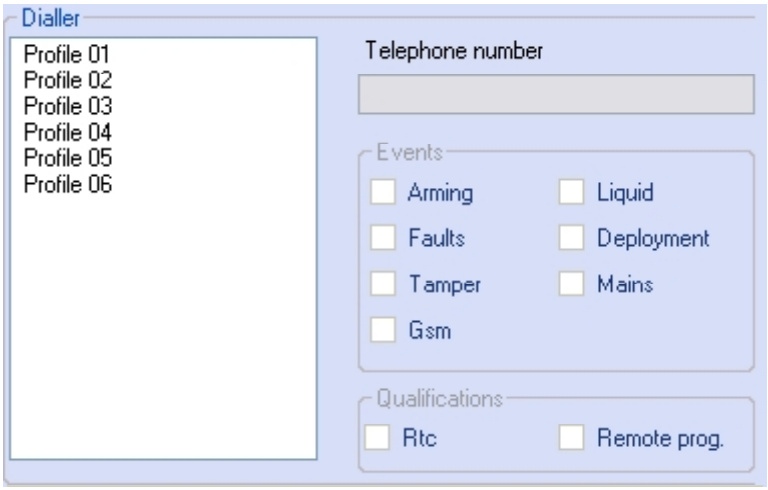
SIM credit
Sim credit management:
None: setting which disables outstanding credit management suitable for contract sim cards.
Automatic: setting to be selected in case of not having one of these 3 operators: Vodafone, TIM or WIND
Personalized: procedure for personalizing the credit request in case of changes by the operator.
Foggy is programmed to request credit from operators:
Vodafone > call number = 404
TIM > TXT = PRE CRE SIN \ TXT sending number = 40916
WIND > SMS = BALANCE \ TXT sending number = 4155
DO NOT USE THESE STEPS IF REQUEST PROCEDURE CORRESPONDS TO PROGRAMMED PROCEDURE
Credit threshold: this is the credit threshold which can be set between 10 and 2 euro below which FOGGY sends an exhausted credit TXT to the phone profiles enabled to receive the **Gsm** event.
Date of sim expiry notice: Allows manually setting the SIM expiry date. FOGGY, on midday of the first day of the set month/year, sends a SIM expiry notice TXT to the phone profiles enabled to receive the **Gsm** event.

TXT limiter
Defines the max number of TXT message to be sent within one hour. By entering 0, this is disabled, otherwise FOGGY sends at most that number of TXT messages in one hour.

Liquid management
Permits setting the date of liquid expiry manually. FOGGY, on midday of the first day of the set month/year, sends a liquid expiry notice TXT to the phone profiles enabled to receive the **Liquid** event.
If **Automatic** is set, the expiry date is that set by AVS Electronics.

Telephone

This menu permits entering up to at most 6 telephone numbers.



Events: Each telephone number can be enabled to receive the various selected **Events** by TXT.

Switch-on: Communication of Switch-on/Switch-off of system, generated by ARM Input, Remote Control or TXT message.

Faults: Communication of the various faults found by FOGGY:
- Low/Missing Battery
- Low/High Boiler Temperature
- Low/Excessive Card Temperature
- Pump Malfunction
- Tank card not connected

Tamper: TAMPER input Opening/Resetting message.

Gsm: Gsm Fault/Reset, SIM expiry, No more Credit messages.

Liquid: Low Liquid Level(<500ml) or No more Liquid(<150ml) message.

Emission: START and END of supply in progress message.

Network: Absence/Reset of mains power voltage message.

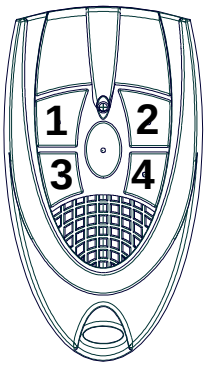
Rtc: Each phone number can be enabled for **Rtc**, i.e., the chance of sending FOGGY TXT system start/stop commands, supply start/stop commands or Switch-on/Supply/System state request.
At each state command/request, FOGGY will send a reply TXT message.

Remote management: Each phone number can be enabled for remote reprogramming of FOGGY.

TYPE	SYNTAX
switch - on	#arm#
switch - off	#disarm#
system state request	#status#
switch - on state	#arming status#
supply state	#emission status#
supply on	#begin emission#
supply off	#stop emission#

FOGGY manages a maximum of 16 remote controls and for each acquired remote control, the functions associated with the individual keys can be enabled/disabled individually.

Key 1: Fog ON
Key 2: Fog OFF
Key 3: ARM
Key 4: DISARM



Channel	Fog ON	Fog OFF	ARM	DISARM
Remote control n. 01	☑	☑	☑	☑
Remote control n. 02	☐	☐	☐	☐
Remote control n. 03	☐	☐	☐	☐
Remote control n. 04	☐	☐	☐	☐
Remote control n. 05	☐	☐	☐	☐
Remote control n. 06	☐	☐	☐	☐
Remote control n. 07	☐	☐	☐	☐
Remote control n. 08	☐	☐	☐	☐

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