

3

ADVANCE

Easy Moving

ASSEMBLY, USE AND MAINTENANCE MANUAL

CONTROL PANEL

DRIVE





INSTRUCTION MANUAL

- Type: feeding system for solid fuel boilers
- Model: Drive
- Revision 1.0.8

CONTROL PANEL DRIVE

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1 INTRODUCTION

Dear customer,
the manufacturer would firstly like to thank You for the choice you made in buying an our product, whose technical features will certainly meet Your needs.

Our products have been designed and manufactured in total compliance with the current regulations, by choosing the best materials to obtain durability and ease of use of the product.

We ask you, therefore, to read this manual carefully and completely, following strictly the instructions contained herein.

1.1 USE OF THIS MANUAL

The instruction manual is a document drawn up by the manufacturer and it is part of the product: it integrates the specific rules of application and general rules for people, animals and objects safety. In the event that the product is resold, handed over, rented or sold to others, it must always be accompanied by this manual; therefore, it is recommended to use and keep it with care for the entire operative life of the product.

The main purpose of this manual is to make known the proper and the safe way to use the equipment. No part of this manual may be reproduced, copied, or shared in any way, without the written permission of the manufacturer.

The manufacturer reserves the right to make improvements or modifications to this manual and to the equipment at any time, without obligation to advise third parties.

2 WARNINGS

- Do not use the product for improper uses.
- This product must not be used by children or persons without the appropriate knowledge.
- Only use original spare parts.
- In order to be able to operate the product easily, it must be installed leaving a space around it completely free of any obstructions.
- This product can be installed on pneumatic conveying systems for granular fuels derived from biomass for other uses ask your seller for advice.
- Before first ignition, check that it is carefully installed.
- Never use the structure of the product as a supporting or fixing element for any other support or equipment.
- It is essential to ventilate the room where the product is installed when loading fuel into the tank.
- Remove the inspection doors only to carry out repairs and maintenance after disconnecting the power supply.
- The manufacturer disclaims all liability or warranty if the purchaser or anyone on his behalf makes any changes or adjustments, however slight, to the product purchased.

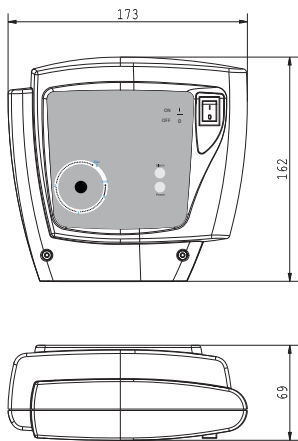
2.1 Installer's responsibilities

To ensure proper operation of the product, follow these guidelines:

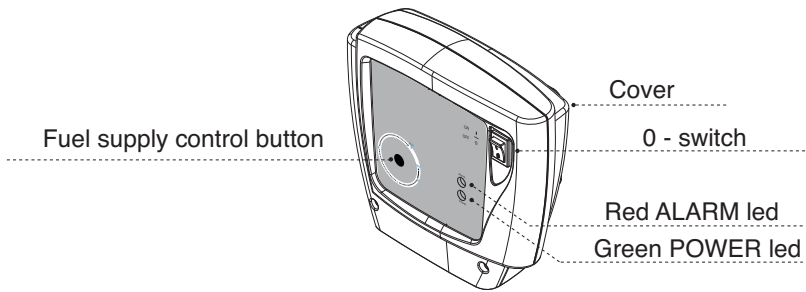
- Only perform the activities described in these instructions
- Perform all activities in accordance with applicable regulations
- Explain to the user the operation and use of the product
- Explain to the user how to maintain the product
- Report to the user the potential dangers related to the use of the product

3 TECHNICAL DATA, EXPLODED VIEW DRAWINGS AND DIMENSIONS

English



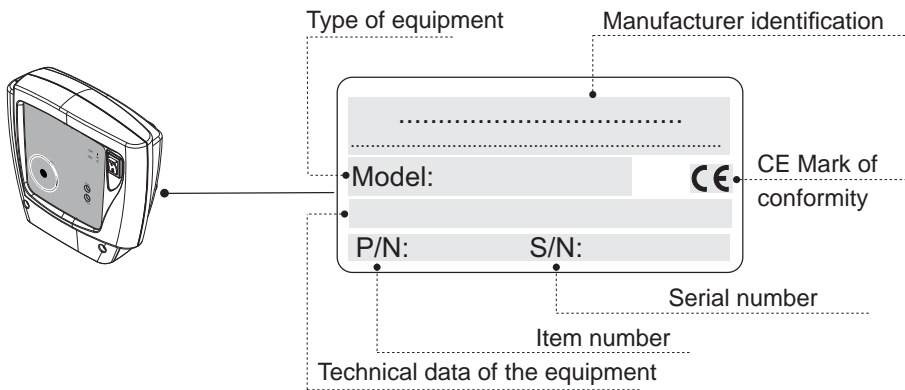
Control Panel Drive		
Article		AP4200.00.01
Power supply	V	220
Frequency	Hz	50/60
Absorption (max)	mA	15
Auxiliary power	VDC	12
Output max charge		16A 250VAC
Fuse		5x20 T3.15A
Insulation class		1
Protection degree	IP	40
Operating temperature min/max	°C	0 ÷ 40
Degree of humidity min/max	%	30 ÷ 95
Weight	kg	0,5



It is recommended to pay full attention to pictograms and warnings of danger and prohibition in the different parts of the equipment: if not respected, hazardous situations may occur.

3.1 IDENTIFICATION PLATE

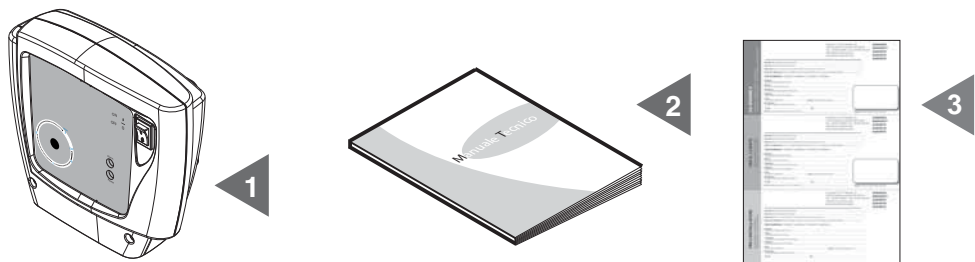
Do not remove or damage the identification plate.



4 PACKAGING CONTENT

Check that the product corresponds to what was ordered and that there is no obvious damage caused by transport, otherwise notify the retailer immediately. After opening the packaging, check that the material contained in the package is conforms to the list below:

- 1) Control Panel
- 2) Installation, use and maintenance manual
- 3) Warranty form



5 PROPER USE OF THE PRODUCT

The control panel has been designed to regulate and manage systems for pneumatic transport of pellet or other biomass fuels.

The control panel provides calibration and operation of all the components of the system, while ensuring safety. It can be connected to: the vacuum unit, the dosing unit, the extraction system, the sensors, the timer, the suction inlets, the sectioning valve, a remote alarm and any other present component.

6 INSTALLATION

It is the installer's responsibility to verify the presence of any risk of danger in the installation area and to determine the suitability in accordance with both the applicable laws and the product characteristics described in this manual.

The installer must also comply with the requirements of this manual as well as inform the user of the operation and maintenance of the installed products and report any dangers related to their use.

It is necessary to leave a free space of adequate size all around the product, in order to permit any repair, maintenance or inspection operation.

The product should not be exposed to atmospheric agents and should not be installed in areas subject to high humidity, possible flooding, high temperatures and dust presence.

6.1 INSTRUCTION FOR THE INSTALLATION OF SYSTEMS

Consider that in pneumatic fuel transport systems there are two different types of pipe features:

A sections of pipes where only air and eventually dust pass through

B- sections of pipes where both air and fuel pass through

Mandatory all sections of piping through which the fuel passes must be made with PU or steel pipe and they must be connected to be antistatic.

We remind you that the lengths of the various pipe sections described in our manuals and catalogs are purely indicative: when we speak of "available length" we mean the total development of the various sections.

It is always advisable to make mainly straight and horizontal piping sections and, in any case, with the least number of changes of direction and vertical paths.

For all the sections where fuel passes, it is recommended to follow these simple rules:

the maximum length allowed for the various sections of piping depends on the components chosen for your system:

1- the characteristics and technical data provided for each component must always be evaluated in advance, so that the system works at its best and has the required characteristics.

2- in two-pipe systems (fuel suction and air return to the silo) the limits on the lengths are generally much lower and never exceed 10 meters. With some products pipe length cannot be more than 3 meters.

3- in single-pipe systems, the maximum length allowed for the various sections of pipe, despite being limited by the components chosen for your system, is more generous, but even in these cases it is necessary to evaluate in advance the characteristics and technical data provided for each component installed.

4- paths with many curves or with very close curves should always be avoided.

5- the minimum radius of the curves must be equal to or greater than 0.5 meters.

6- sections of pipes that include both positive and negative siphons must be avoided.

7- the sections of horizontal pipes must be kept perfectly leveled.

8- vertical pipe sections longer than 3.5 meters must always be avoided and at the bases of these the minimum radius of the bends must be equal to or greater than 1 meter

9- the sections of piping where fuel passes must be well fixed at least every 1.5 meters.

10- the pipe sections may be built-in or installed under flooring, but only for very short linear traces and only by inserting them into an additional casing pipe of properly larger diameter.

It is recommended to use only pipes, fittings and accessories present in our catalog, as they have been designed, tested and built specifically for these systems.

Before installation and start-up of the system, it is essential to carefully read the instructions supplied with the various components and in case of doubts it is advisable to contact specialized personnel.

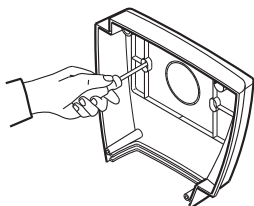
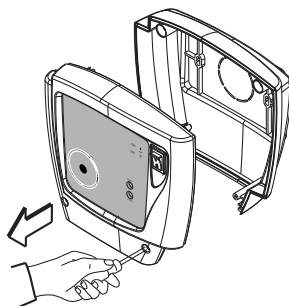
The realization of the systems and the installation of the components must always meet the safety standards corresponding to the type of rooms in which they are positioned.

6.2 FIXING THE CONTROL PANEL ON THE WALL

The Control Panel must be fixed in a stable and permanent manner using appropriate dowels. To do this operation it is necessary:

To separate the two half-shells that compose the panel by unscrewing the fixing screws

1

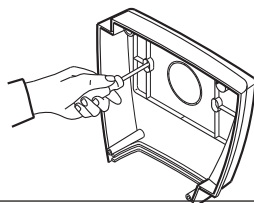


2

To trace the drilling points on the wall, by using the back half-shell

To do the drilling

3



4

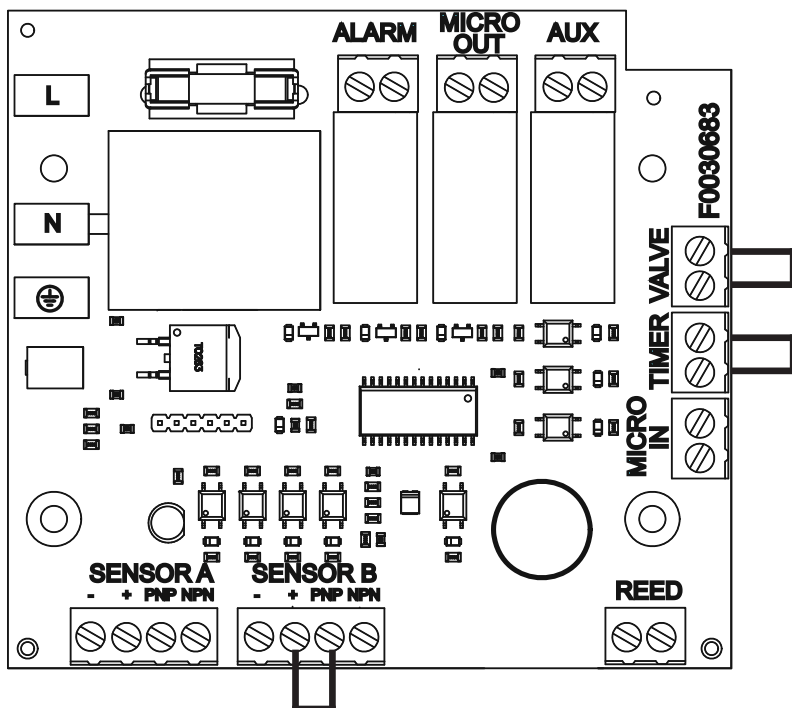
To fix the half-shell on the wall

6.3 ELECTRICAL CONNECTION

Before making the electrical connection, check that the supply voltage corresponds to the one required and that the electrical system to which the product is connected is done in compliance with current regulations.

Before making the connections to the electronic board, please check the correct positioning of the electrical wirings (as in the next figure).

Configuration of the electronic board



6.4 ELECTRICAL CONNECTION OF THE ACCESSORIES AND THE COMPONENTS OF THE SYSTEM

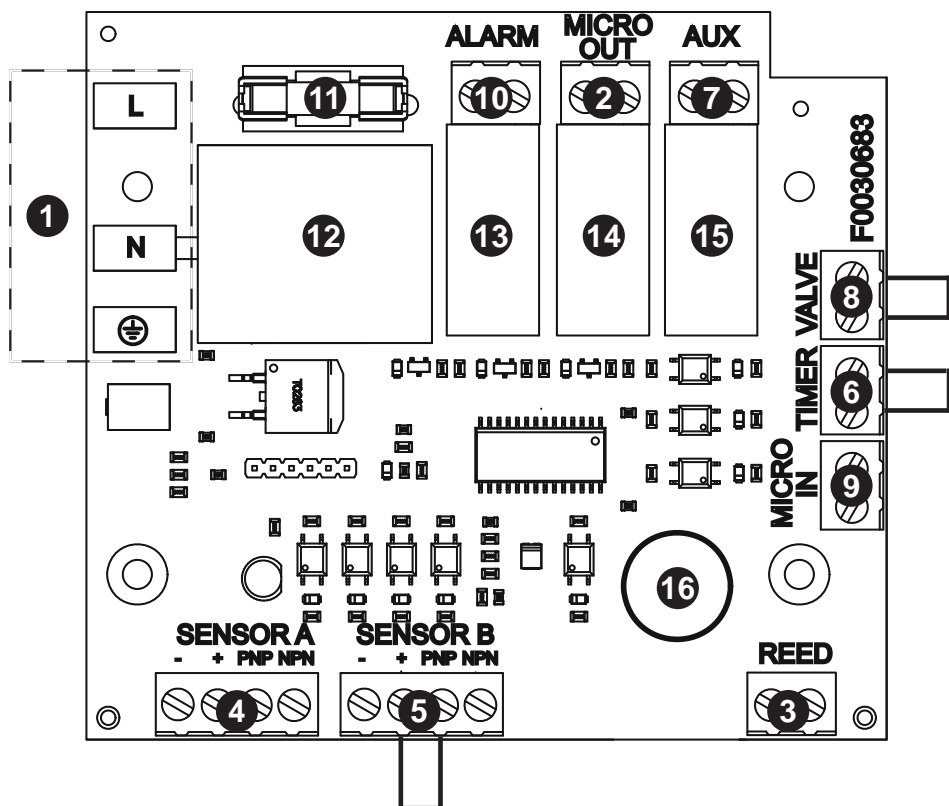
Before carrying out any electrical connection, check that the supply voltage corresponds to the one on the product identification plate and that the connection of the grounding wire complies with the regulations on the subject in force.


Carry out the connections methodically, keeping the low voltage signals (detectors, contacts etc.) separated from the high voltage ones (power supply, charges etc.). Keep them away from the PVC pipe network in order to reduce the problems caused by electromagnetic interferences and by possible damages to the electrical and electronic parts, caused, in turn, by electrostatic charges.

It is not recommended to supply the device with supply voltage arising from provisional switchboards (for instance, site switchboards) to prevent possible damages to the electronic parts.

The Manufacturer declines all responsibilities for damages caused to people and/or things resulting from a substandard electrical installation.

Electronic board layout



- 1** L - N-  Electrical supply connection of the electronic board
- 2** MICRO OUT
Activation signal connection clip for the suction unit (free contact normally open max 16A 250Vac)
- 3** REED
Clip for connecting the Dispenser reed
- 4** SENSOR A - optional
Clip for connecting the proximity sensor high level supply tank (boiler)
- 5** SENSOR B - optional
Clip for connecting the proximity sensor low level fuel storage tank
- 6** TIMER - optional
Clip for connecting the time switch
- 7** AUX - optional
Clip for connecting the fuel extraction device (free contact normally open max 16A 250Vac)
- 8** VALVE - optional
Clip for connecting the microswitch of the valve for manual section (if a suction inlet for cleaning is present)
- 9** MICRO IN - optional
Clip for connecting the suction inlet contact
- 10** ALARM - optional
Clip for connecting the alarm warning remote device (free contact normally open max 16A 250V ac)
- 11** Fuse for the protection of the electronic board main circuit
- 12** AC/DC switching power supply of the electronic board
- 13** ALARM contact relay (max 16A 250V AC)
- 14** MICRO OUT contact relay (max 16A 250V AC)
- 15** AUX contact relay (max 16A 250V AC)
- 16** Potentiometer for fuel supply time setting

2 MICRO OUT

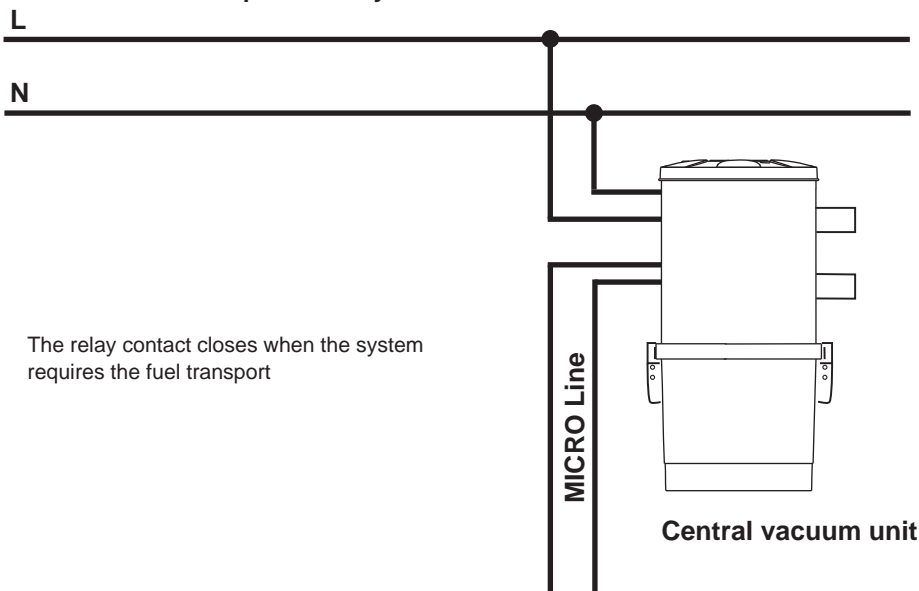
Free contact connection for MICRO OUT relay

The MICRO OUT relay free contact has the function of turning on/off the suction device of the fuel transport system.

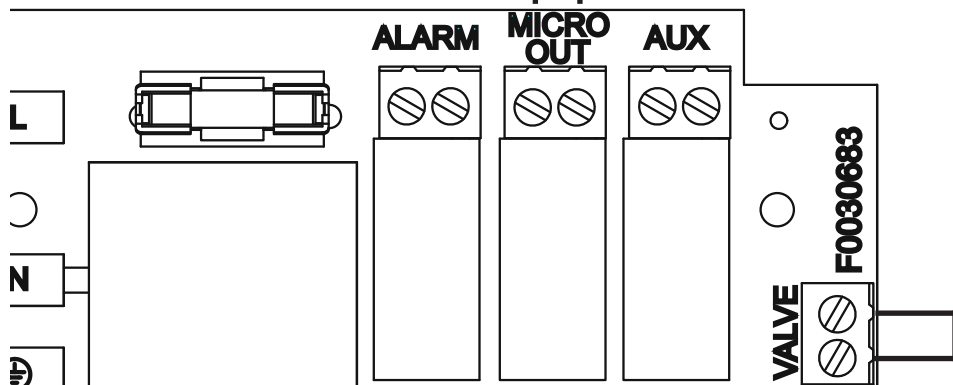
This contact can support a maximum charge of 16A 250Vac.

For higher charges, the use of an auxiliary power relay with a contacts flow higher or equal to 16A is required.

The contact is not protected by a fuse



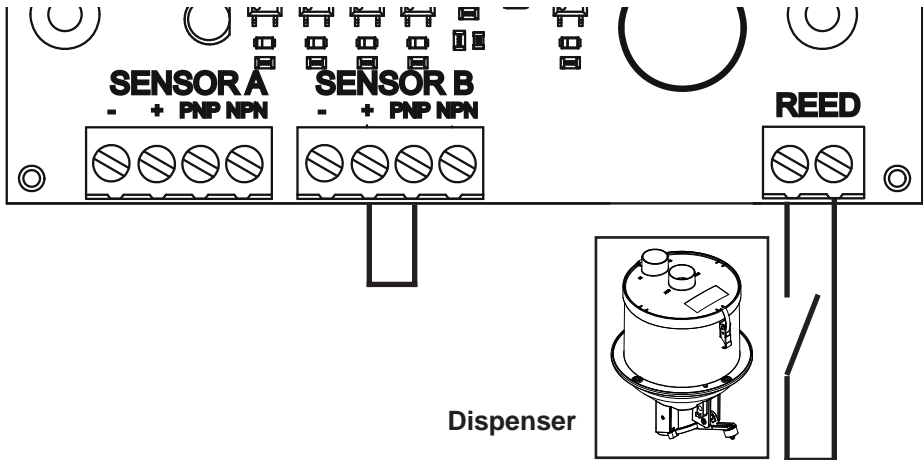
The relay contact closes when the system requires the fuel transport



3**REED**

Connection of the reed sensor to the Dispenser door.

English



The entry contact closes when the Dispenser door is closed.

If the entry contact remains open, the system stays in standby mode.

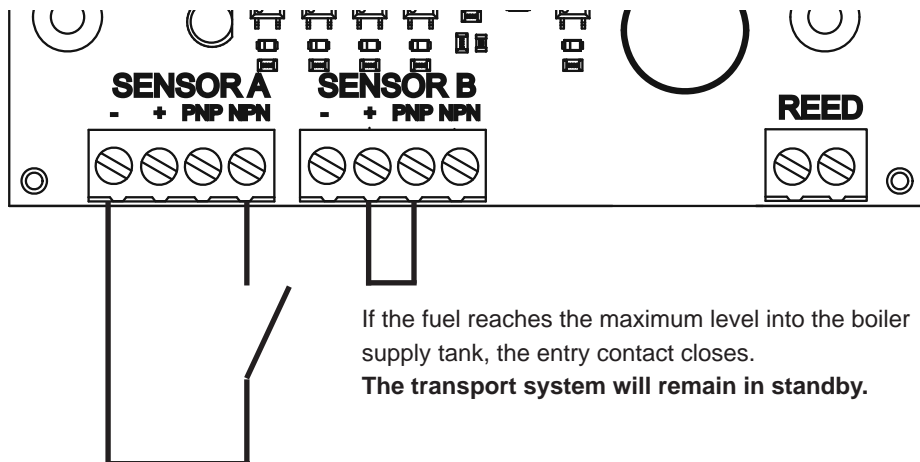
If the entry contact remains closed for three consecutive load cycles, the system stays in standby, the red led lights up, and the **alarm** relay contact closes.

To reset the alarm, turn the Control Panel off for at least 10 seconds by pressing the red button, then turn it on again.

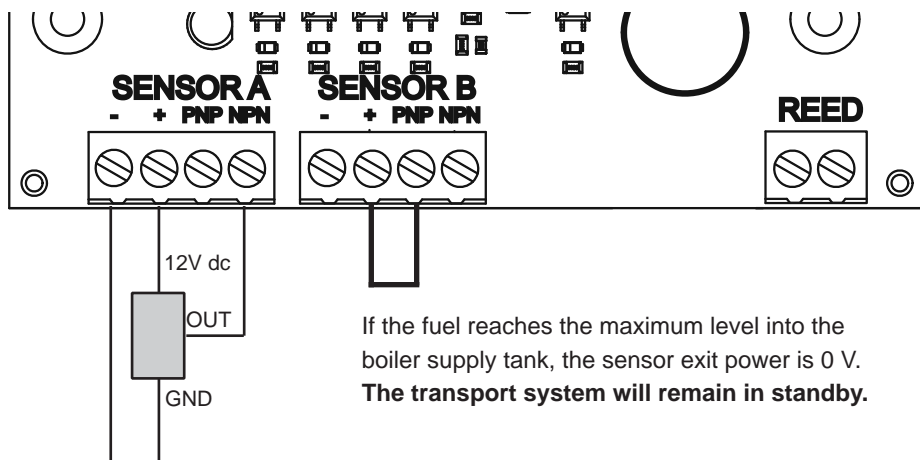
4 SENSOR A - optional

Connecting fuel maximum level sensor of the boiler supply tank.

FREE CONTACTS SENSOR

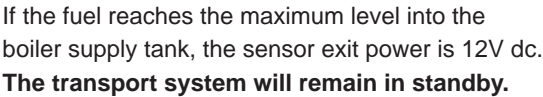


NPN NO SENSOR



PNP NO SENSOR

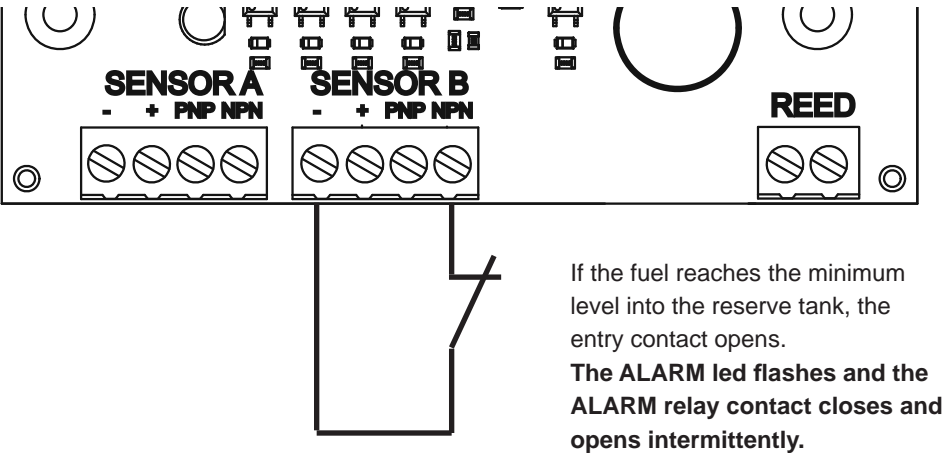
English



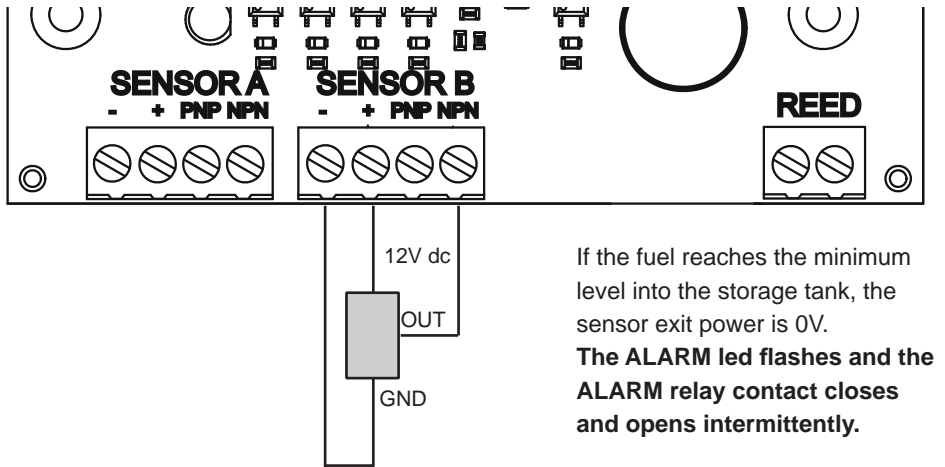
5 **SENSOR B - optional**

Connecting the sensor of fuel minimum level into the storage tank.

FREE CONTACTS SENSOR

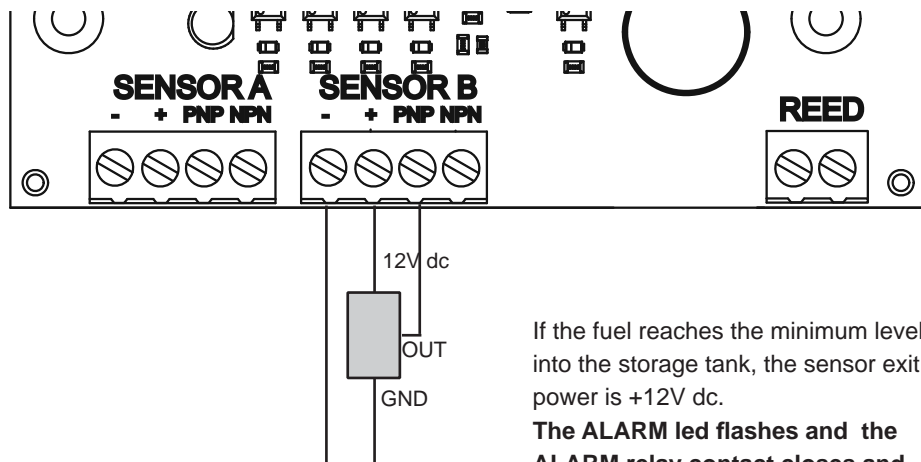


NPN NO SENSOR



PNP NO SENSOR

English



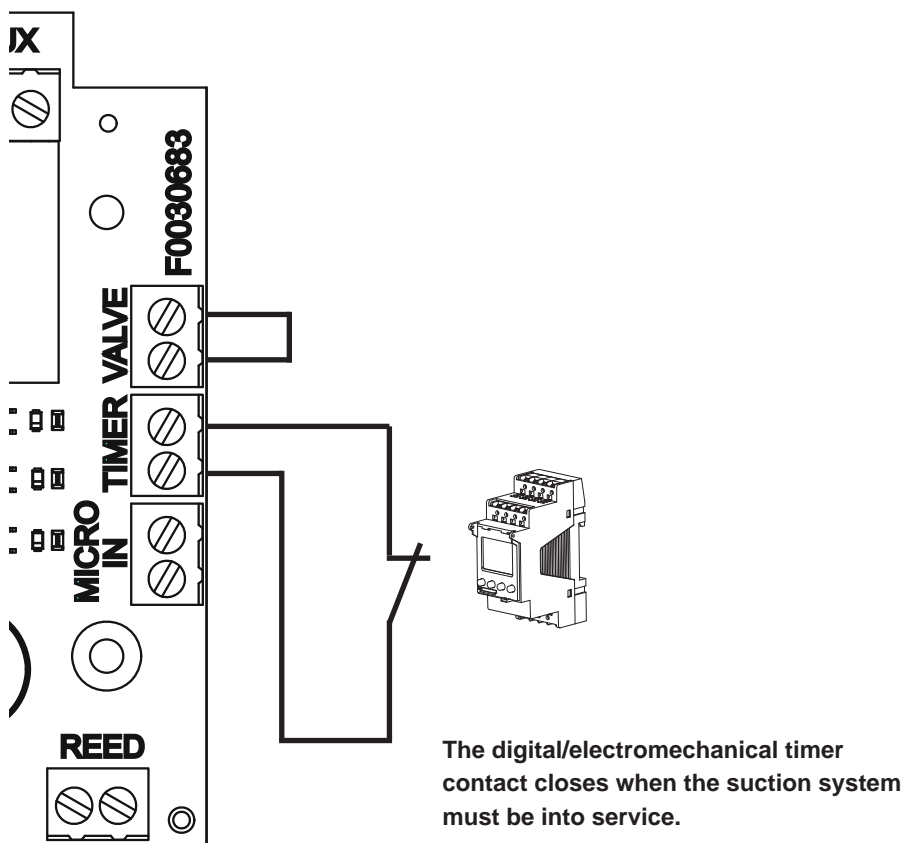
If the fuel reaches the minimum level into the storage tank, the sensor exit power is +12V dc.

The ALARM led flashes and the ALARM relay contact closes and opens intermittently.

6 TIMER

Connecting the digital clock timer

If necessary, it is possible to connect the digital/electromechanical timer with a normally open contact, in order to activate the fuel transport system only in the preestablished schedules which can be established according to user's needs.



7 AUX - optional

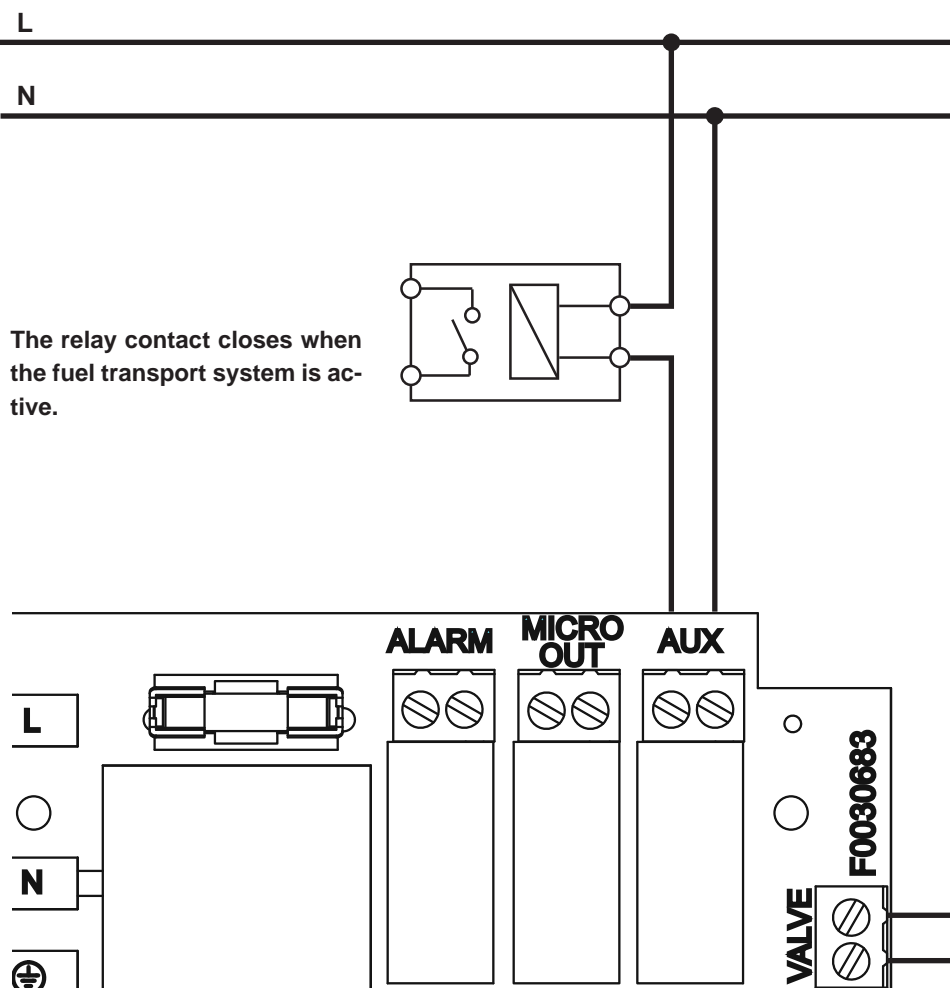
Connection of the relay free contact exit AUX

The AUX relay free contact has the function of turning on/off an auxiliary device for the extraction of the fuel from the storage tank simultaneously with the fuel suction.

The contact can support a maximum charge of 16A 250Vac.

For higher charges, the use of an auxiliary power relay with a contacts flow higher or equal to 16A is required.

The contact is not protected by fuse.

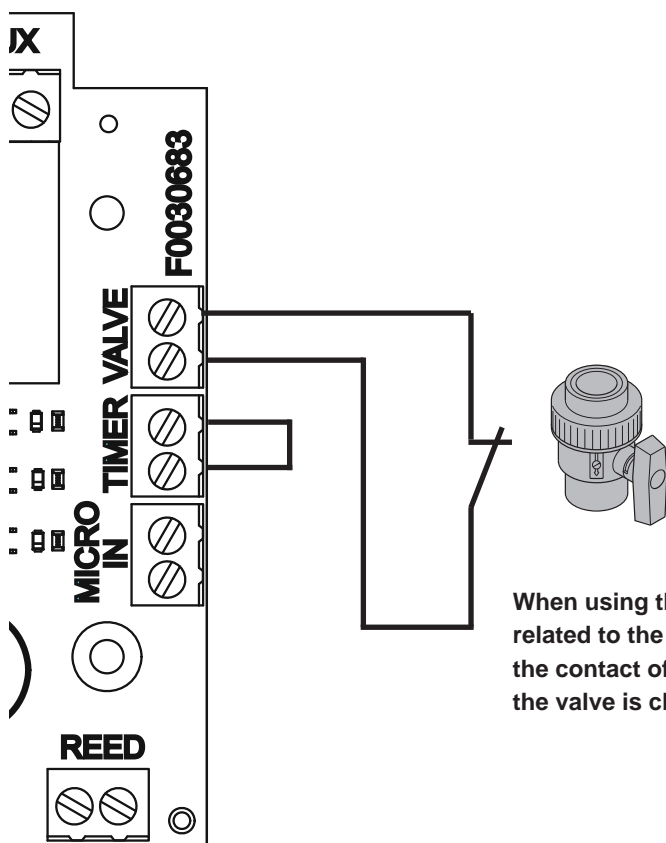


English

8 VALVE - optional

Connecting the contact of the valve for sectioning

In the presence of one or more suction inlets suitable for domestic cleaning and inserted in the system, the installation of a microswitch valve for sectioning is required in order to section the fuel transport system from the central vacuum one.



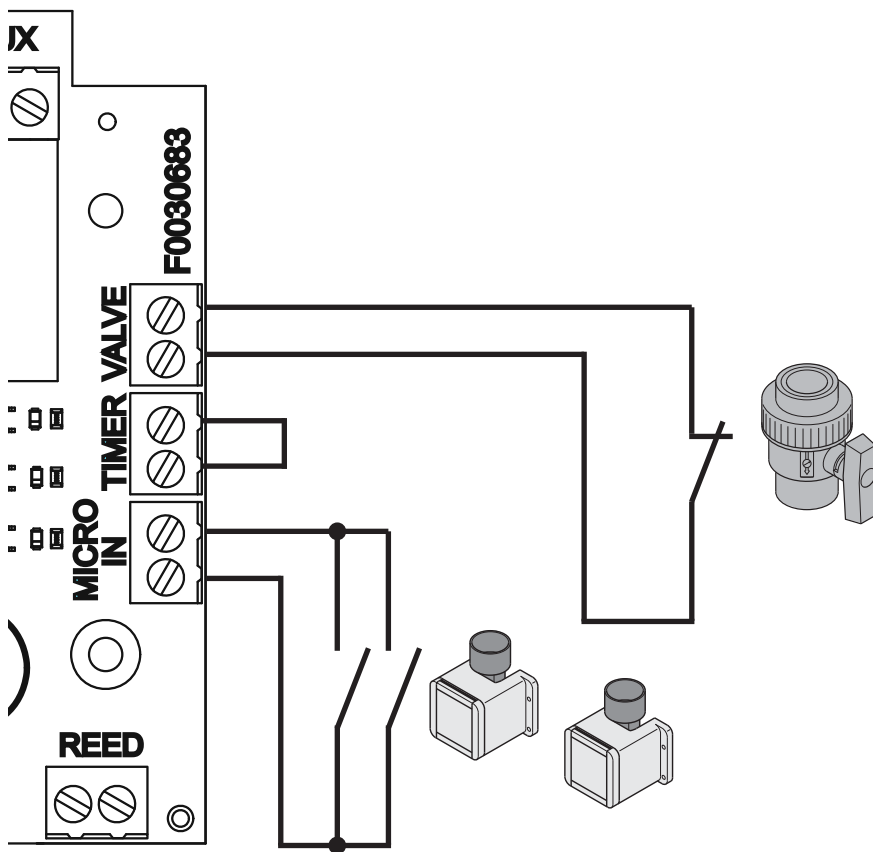
When using the installation section related to the central vacuum system, the contact of the valve is open and the valve is closed.

9 MICRO IN - optional

Connecting the contact of the central vacuum system suction inlets

English

In the presence of different suction inlets, the connection must be parallel.
The contact closes when you insert the flexible hose into the socket.



10 ALARM - optional

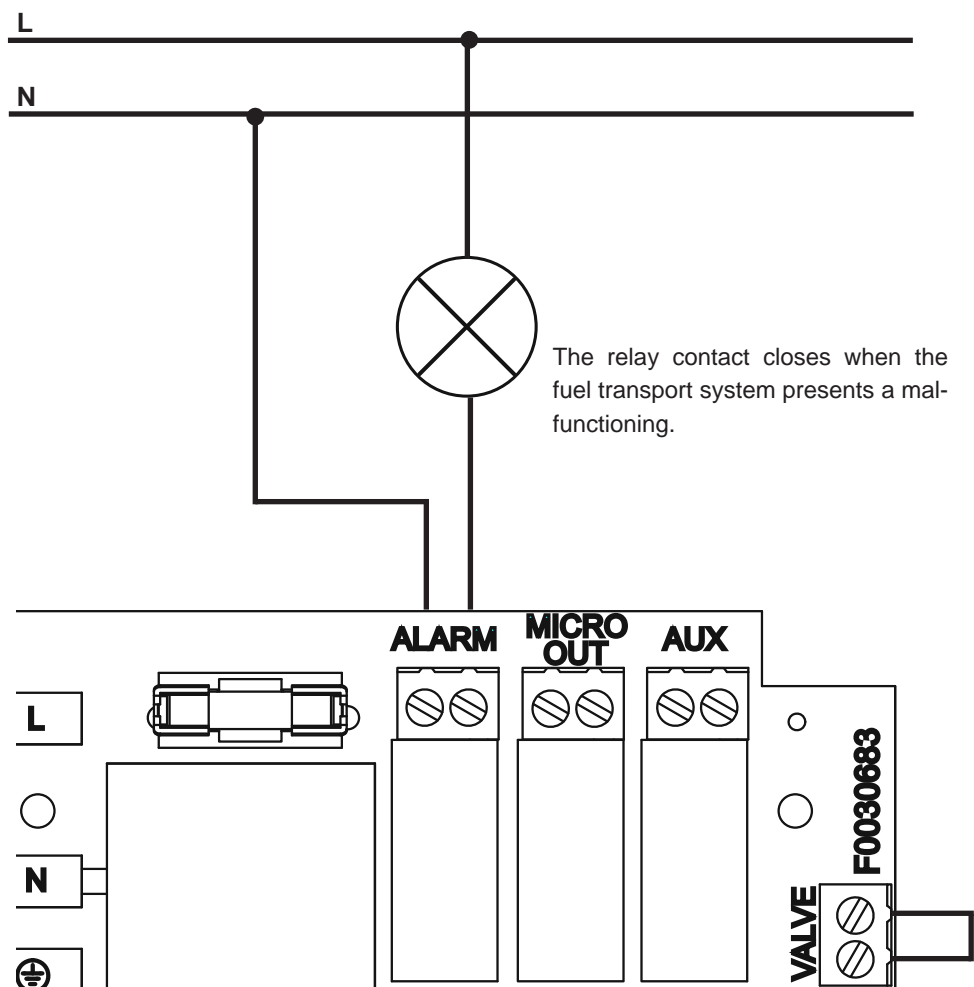
connecting the exit of the relay free contact ALARM

The relay free contact ALARM has the function of warn the user about a malfunctioning of the fuel transport system.

The contact can support a maximum charge of 16A 250V ac.

For higher charges, the use of an auxiliary power relay with a contacts flow higher or equal to 16A is required.

The contact is not protected by fuse.



7 START UP AND USE

Read also all the manuals of the different components of the system before proceeding.

The tools on the control panel are: a 0-1 switch, a potentiometer, a green POWER led, a red ALARM led.

To start up, proceed as follows:

Electrically supply all the components of the plant.

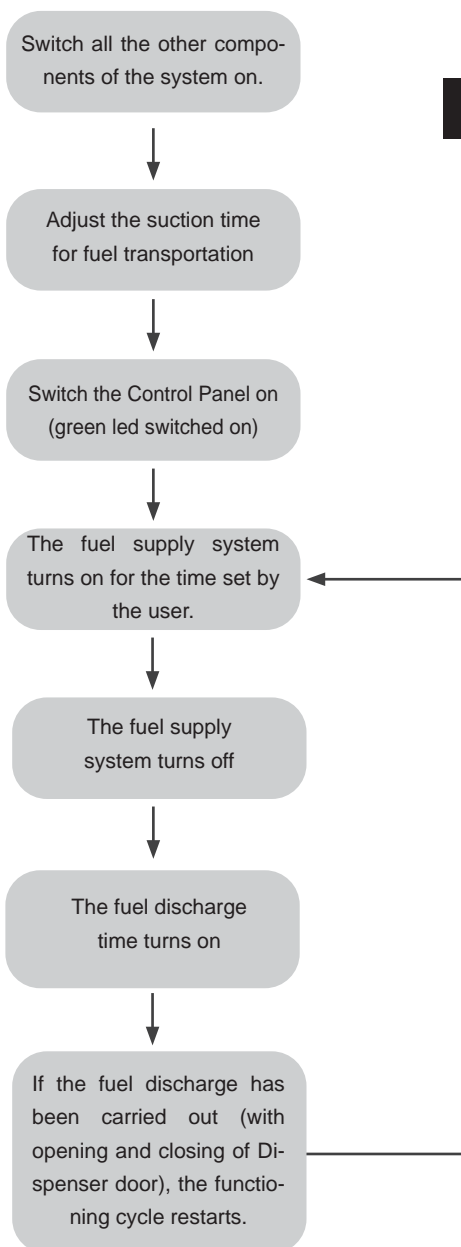
Remove the timer protective cap and turn the potentiometer anti-clockwise with a screwdriver, positioning it on OFF mode.

Turn the 0-1 switch on, the green "POWER" LED lights up.

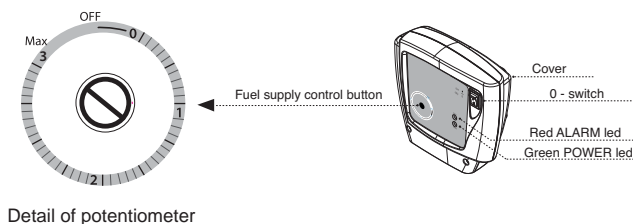
Turn the control button lightly clockwise and wait for the central unit to begin operations and complete a brief operating cycle.

Adjust the potentiometer at this point, so that the operation time of the central unit is sufficient to fill the transparent dispenser with the fuel till the level indicated by the "MAX LEVEL" adhesive label.

After a few successful operating cycles, refit the protective cap of the timer.



Potentiometer from OFF to 0 = Suction off
Position 1 = suction on for 30 seconds
Position 2 = suction on for 60 seconds
Position 3 = suction on for 90 seconds



Detail of potentiometer

The control panel has a red ALARM led: when it stays on, the fuel transport system stops. This blockage may be due to various causes. The most frequent are:

- Lack of fuel in the storage tank.
- A blockage in the fuel transport pipe.
- An air leakage from the piping of the system
- the door of the Dispenser does not seal hermetically
- The vacuum unit does not work

After having solved the problem that produced the block, switch the control panel off for 10 seconds and then turn it newly on to reset the system.

The red "ALARM" led may also blink: this blinking occurs only when any sensor installed in the fuel storage tank detects a lack of fuel and then acts as a low fuel warning light.

When the tank is filled, the blinking stops automatically.

Now the system is operational: an additional potentiometer adjustment may be necessary if you change, even a little bit, the specific weight or type of the fuel which has to be transported. In these cases, it is sufficient to readjust the operating time of the vacuum unit so that it is appropriate to fill the transparent fuel dispenser, at each cycle, till the level indicated by the "MAX LEVEL" adhesive.

If the system will remain inoperative for a long time, switch the green led off.

8 MAINTENANCE AND END-OF-LIFE

Before carrying out any maintenance operation, it is obligatory to disconnect the power supply cable from the main socket and to aerate the premises in which it is installed for at least 15 minutes.

Complex or long maintenance operations must be done out of fuel storage and boiler premises. Any maintenance and repair operation must be carried out by experienced personnel and authorized by the manufacturer.

In the absence of a specific maintenance plan, a monthly inspection and an external cleaning of the product with a dust cloth are recommended.

8.1 SPARE PARTS

DESCRIPTION OF SPARE PART

Electronic board

8.2 END-OF-LIFE

The disposal of packaging, accessories and machine must be executed in accordance with applicable laws, ensuring the recycling of any of the core components.



9 SAFETY REQUIREMENTS FOR FUEL STORAGE TANKS

SAFETY REQUIREMENTS for pellet storage tanks with capacity up to 10 t



Keep the doors closed. Access is permitted only to authorized personnel under the supervision of a person outside



Do not smoke and approach flames or other sources of ignition.



Danger of death due to high concentrations of carbon monoxide (CO) and lack of oxygen.



In the 4 weeks after the fuel filling, enter only with a CO detector.



Aerate the storage room for at least 15 minutes before entering and keep the door open during your permanence.



Ensure an adequate and permanent aeration of the storage room through vent covers, openings or fans.



Wounding risk for moving systems



Turn off the boiler at least one hour before the pellet is delivered.



Proceed to the filling according to the requirements of the boiler manufacturer and the pellet supplier.



Protect pellets from humidity



In case of fire suspect keep the front door and any other opening of the storage room close and call the firemen.

10 WARRANTY

PRODUCT LIMITED WARRANTY CONDITIONS

The Manufacturer guarantees to the original purchaser the absence of defects in material and workmanship of the product for the period stated, from the date of purchase. Except as prohibited by applicable law, this warranty is non transferable and it is limited to the original purchaser. The present warranty gives the buyer specific legal rights and the possibility to claim rights which can vary under local laws.

Read all warnings and instructions before using the product purchased.

The entire liability of the manufacturer and your exclusive remedy for any breach of warranty will be at the discretion of the Manufacturer:

(1) To repair or replace the product, or (2) refund the purchase price, provided that the product has been returned to the point of purchase, or such other place as may be specified by the manufacturer, with a copy of the sales receipt or detailed and dated receipt. The shipping and handling are not free of charge, except in cases where this is prohibited by applicable law.

To repair and replace the product, the manufacturer may, at their own discretion, use new, refurbished or used parts in good working condition. Any replacement product will be warranted for the remaining time of the original warranty period, or for any period of time that complies with the provisions of the current law.

This warranty does not cover problems or damage resulting from (1) accident, abuse, misapplication, repair, alteration or unauthorized disassembly; (2) maintenance operation, use which is not in accordance with the product instructions or connection to an improper voltage supply; or (3) use of consumables and spare parts which are not supplied by the manufacturer or authorized service center.

Valid warranty claims are generally processed through the point of purchase of the product.

Please agree this detail with the retailer where you purchased the product.

The Warranty claims that cannot be processed through the point of purchase, as well as any other product related questions, should be addressed directly to the manufacturer. Addresses and contact information for customer support can be found at the internet website.

Except as stated by relevant laws in force, any implied warranty or condition of merchantability or suitability for a particular purpose relating to this product is limited to the duration of the Limited Warranty period for the specific product purchased.

Some jurisdictions do not allow limitations on the duration of implied warranties or the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights and you may have other rights that vary from state to state, or from jurisdiction to jurisdiction.

Consumers have legal rights under applicable national legislation governing the sale of consumer products. Such rights are not affected by the warranties in this Limited Warranty.

No dealer, agent, or employee of the manufacturer is authorized to make any modification, extension or addition to this warranty.

11 CERTIFICATION

Declaration of absence of harmful substances

The manufacturer declares that their products and equipment are made with materials compliant with the current regulations regarding protection of health and the environment and does not contain substances classified as SVHC (Substance of Very High Concern) in accordance with Regulation EC 1907/2006 (REACH, or registration, evaluation, authorization and restriction of chemical substances). Although in the working cycles of raw materials and our products such substances are not used, their presence in the size of p.p.m. (parts per million) cannot be excluded due to micro-pollution of raw materials.

EC declaration of conformity

The Manufacturer declares that its products and equipment comply with the following standards:

EN ISO 12100:2010 (Risk Assessment Calculator)

EN ISO 14121-1 (Safety of machinery)

And following directives:

N° 2006-42-CE

N° 2014/35/UE (LVD)

N° 2014/30/UE (EMC)

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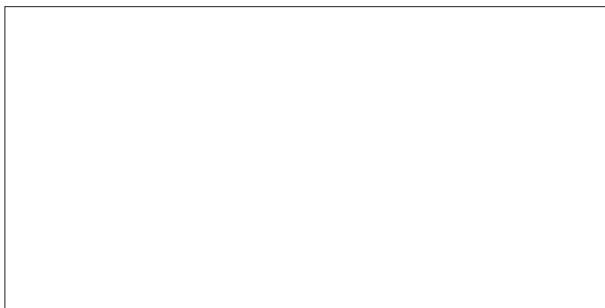
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