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ZANTINGH

# OPERATING AND INSTRUCTION MANUAL

# ZANTINGH FORCEDGASBURNER TR/RKB – LMV26 – 3,5” SAMBA

YOU CAN COUNT ON OUR EXPERTISE

**IMPORTANT read this first!**

The operating instructions are an integral part of the product. The instructions contain important information on the commissioning, usage and operation of the product. Please read the operating instructions carefully.
The guarantee becomes null and void if the operating instructions are not followed. Zantingh B.V. cannot be held liable for these damages.

Store this manual carefully near the system!

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## 1. INTRODUCTION

Dear Customer,

We would like to thank you for purchasing our product.

We provide this manual to ensure the distribution of all important information for your safety, optimal profit and product lifetime.
Please read the instructions carefully before installing or operating the product.
The safety and instructions in this manual must be followed to ensure that installation, commissioning, operation and maintenance are safe and in accordance to (local) standards and regulations..

Our technical department can provide additional information and support.
If you have any questions, please contact us.

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**Phone service:** **+31(0)297 – 219 125**
**E-mail:** **info@zantingh.com**

## 2. REGULATION

**IMPORTANT:**
A certified heating or electrical installer should instal the product. The instructions meet the applicable (local) standards and regulations. Please contact your Zantingh representative or local service department in case of doubt.

## 3. IMPORTANT NOTES

- Commissioning a Zantingh burner ought to be performed with the utmost precision and by Zantingh authorized personnel.

- Any commissioning work or change of settings of the burner system by somebody other than by the people mentioned above, can lead to a dangerous situation and have consequences on product liability and warranty.

- Changes to the burner system may only be implemented conform instructions after receiving confirmation in writing from Zantingh.

- A burner system is a combination of:
  - **Electrical engineering**
  - **Gas engineering**
  - **Central heating engineering**
  - **Measurement and control engineering**

- Take care of your burner system as if it is the heart of your company. Restrict authorization to trained personnel only.

Always switch off the main switch and make sure that it cannot be switched on when performing any activity on the system!

In case of fire or any other emergency:

- **When accessible close the gas valve (A1) of the gas train and switch off the main switch on the burner panel.**
- **When there's a fire in the boiler room you need to switch off the electric power using the "fire switch" mounted on the wall outside the boiler room.**

## 3.1 Maintenance

To assure the safe and proper operation of the burner, it is recommended that the burner be inspected and serviced at least once a year by a qualified service engineer.

Never perform any maintenance or any other activity on the burner (system) without adequate knowledge and understanding of the system.

**Remarks:**

- De burner system is supplied according to applicable safety regulations, but it is the end user's responsibility to ensure safety through annual maintenance work on the system, according to applicable regulations.
- To ensure the good operation of the heating system, the boiler room has to be kept clean. It may not be used for storage purposes. The parts which may need maintenance work need to be accessible at all times.
- Keep the air supply grille and air extraction openings free and clean. Inadequate air ventilation can lead to hazardous situations.
- The boiler room has to be illuminated using mounted electrical lighting, to make sure that all parts of the system can be properly maintained even without daylight.
- Any water leaks have to be repaired immediately.
- If you have any doubts concerning the control or operation of the system, please contact your burner technician or supplier.

## 3.2 Instruction manual instructions

To understand this manual better you need to know which type of burner has been installed (TR or RKB) and which type of system it controls. This information is provided on the nameplate on the right-hand side of the burner.

## 4. SYSTEM COMPONENTS

### 4.1 Burner component

The burner component is in welded steel-plated housing. Under the burner housing there's an air valve section, it controls the air supply to the burner. A servomotor drives the valves. The load controller or burner controller controls the servomotor. The combustion air level is measured and monitored using air-pressure switches (LD2). If you have a burner type TR the pressure switches are located on the upper side of the burner. If you have a burner type RKB the switches are mounted under the burner housing. The primary and secondary burner combustion devices are situated in the cylindrical part of the burner. The flame monitoring device is mounted on the side of the cylindrical part. The pilot burner is positioned at the centre of the burner head. The pilot burner includes an electrical ignition. A high-voltage transformer is included in the burner housing for electrical ignition. The gas supply connection to a servomotor-driven gas quantity control valve is located under the cylindrical part of the burners.

### 4.2 Air fan component

The air fan is positioned under the burner. The air fan supplies the required combustion air. This air fan has a directly coupled and balanced fan wheel. The fan wheel is driven by an electromotor. The air fan of a TR burner is directly connected to the air-valve section. The air van of an RKB burner is separate and stands on the floor.
The connection is made using a flexible sleeve. Vibration isolators are used when mounting the air fan on the floor. An electrical circuit in the burner control panel and the frequency controller provide the variable speed of the electromotor. The air fan can, therefore, provide the required air quantity based on the measured air quantity. The standard air fan includes an inlet grid to prevent coming into contact with moving parts. A plate silencer is provided on the air fan inlet for noise reduction purposes. Cylindrical noise silencers are available as an option.

### 4.3 Gas train

The gas train controls the gas supply from the distribution network. Several monitor and control units are mounted on the gas train to control the burner gas supply.
**The maximum supply pressure for the system is indicated on the burner nameplate.**

**Shut-off valve (pos. A1)**
De shut-off valve (A1) shuts off the gas supply to the burner system in case of:

- Fire or other emergencies.
- Maintenance work on the gas train equipment.
- Leakage of or between parts after the valve.
- Shutting down the burner system for a long period of time.

**Filter (pos. F1)**
The filter (F1) prevents dirt and welding globules from the gas supply line from getting into the equipment of the gas train. This protects the equipment from damage caused by contamination.

**Safety valves (pos. VA1 and VA2)**
These safety valves automatically open/close the gas supply to the burner. Two gas safety valves (VA1 + VA2) are used for safety reasons.
The second safety valve (VA2) has an integrated gas pressure regulator that makes sure the gas pressure on the burner head is constant.

**Minimum gas pressure safety device (pos. LD1)**
The pressure switch (LD1) is activated when the main gas pressure reach under the minimum limit value. The setting value is determined during the commissioning of the burner.

**Maximum gas pressure safety device (pos. HD)**
The HD pressure switch monitors the maximum burner/boiler capacity and is mounted on the burner head to control the burner load by means of air pressure.
The settings of the pressure switches is determined when commissioning the burner system.

**Manometer (pos. M) en press-button valve (pos. K2)**
By pushing on the press-button valve the supplied inlet pressure can be read off the manometer.

**Manometer (pos. M) and push button valve (pos. K2)**
Press the push button valve to read the supplied inlet pressure on the manometer.

## 4.4 Pilot gas line

**Shut-off valve (pos. K1)**
The ball valve (K1) is used to bleed the gas supply line. The bleed line has to include a separate pipe through the roof to the outside air. The opening has to be protected against contamination, dirt and rain.
Plug off the ball valve if there is no bleeding line.

**Pilot gas solenoid valves (pos. MK1/MK2)**
The pilot gas solenoid valves automatically open or close the gas supply to the pilot burner (pos. AB).

## 4.5 Control panel

The control panel includes all electrically controlled operation, monitoring and control units of the burner, air fan, gas train, boiler and other secondary connected devices. The electric circuits of all devices and units are connected to the control panel in such a way that the total system can operate safely.
These circuits can be classified into the following main groups:

- Boiler/safety circuit.
- Thermostat (start) circuit.
- Burner control.
- Load control.
- External control (Fiduface).
- Failure indicator lights.
- Motor groups/fuses.
- Control switches and reset buttons.
- Optional $CO_2$-circuit and CO-detector circuit.

## 4.6 Control switches and reset buttons on the control panel

The control panel includes a few switches and press button valves:

- Fire on/off switch.
- Selector switch for load control with the following two options:
  1 = Automatic, modulated by load controller.
  2 = External, the burner load and on/off status is controlled by the climate or process computer.
- Reset, resets all failures.

The following control panel switches are optional:

- Selector switch gas/oil.
- Selector switch heat/steam.
- $CO_2$ dosing on/off.
- Flue gas valve open/closed.

## 4.7 Frequency control

A circuit in the control panel controls the air fan electromotor. A frequency control unit, not included on the control panel, controls the air fan rotational speed based on the burner load. The speed is controlled directly from the burner control unit by sending a 0-10 V/4-20 mA signal to the frequency control unit.

**Common settings:**

Frequency for low flame approx. 25 Hz (= ± 1400 cycles).
Frequency for high flame approx. 50 Hz (= ± 2800 cycles).

## 5. START SEQUENCE

When the gas pressure is nominal, the correct power is supplied to the control panel, the safety valves are closed, the on/off thermostat emits an “on” signal and all other boiler values are within the limits, the burner will start when the burner on/off switch is set to 1.
The start-up sequence is as follows:

**A.** After switching the system on, the air fan starts at low speed, sometimes after a short delay.

**B.** Once the air fan is at nominal speed, the servomotor of the air quantity control valve (pos. HR2) opens fully. When the servomotor that controls the air quantity control valve doesn’t make the complete pre-set stroke, the air quantity control valve will not be sufficiently opened. The burner will be shut off and the system goes into lockout. An error message is displayed. The air fan will be set to maximum speed (50 Hz) approximately linear to the air valves to ventilate the system.

**C.** If the air quantity control valve is opened the pre-purge cycle starts. During the 30 seconds pre-purge cycle the boiler furnace is ventilated, to clear any remaining flue gas. During the pre-purge cycle the position of the air quantity control valve and of the air pressure are checked continuously.

**D.** At the end of the pre-purge cycle the air fan is set to low speed (+/- 25 Hz) and the air quantity control valve is positioned to the start/low flame position.
The gas quantity control valve (pos. HR1) controlled by a servomotor is also positioned to the start/low flame position. The minimum air pressure is checked during operation by a second air pressure switch (pos. LD2 low).

**F.** All the air and gas controls are in now in the start position. The next step is to light the pilot flame. A few seconds after reaching the start position the ignition transformer is switched on. It make an electrical spark between the ignition electrodes.

**G.** After three (3) seconds the pilot gas valve (pos. MK) opens and the spark lights the gas. After another five (5) seconds the flame monitoring device checks whether the UV scanner detects a pilot flame. The 5 seconds period during which the pilot flame is lighted is called the first safety time. At the end of the first safety time the pilot flame should be burning stable and the electrical spark is switched off. The flame monitoring unit checks the flame continuously during operation.
If the flame is not formed in the first safety time the flame monitoring unit goes into lockout and an error message is displayed on the electronic module.

**G.** If the flame monitoring unit detects the pilot flame, the system continues the ignition procedure after a short time period. The main safety valves (pos. VA1 and VA2) open to ignite the main flame. The pneumatic gas pressure regulator,

which is mounted on the second safety valve (pos. VA2), makes sure the correct output gas pressure for the burner load is obtained.
Five (5) seconds after opening the safety valves the pilot gas is shut off.
The main flame has to be stable, itis checked by the flame monitoring unit continuously.
The 5 seconds during which the pilot valve (pos. MK) and the main valves (pos. VA1 and VA2) are in the open position is called the second safety time. If the flame is not formed within this time the flame guard goes into lockout and an error message is displayed on the electronic module.

The maximum gas pressure switch (pos. HD1) ensures an easy steady start of the main flame. It is only active when starting the flame. The minimum gas pressure switch (pos. LD1) monitors the supply gas pressure continuously at the lowest applicable level.

**H.** After the main flame has formed and the start sequence of the burner control panel is successfully gone through, the burner is “in operation” on low flame. Approx. 35 seconds after opening the main valves the load controller starts setting the load.

**I.** If the load control switch on the control panel is set to 1 Auto, the burner load and switching on and off will be controlled by the load control unit.
The maximum gas pressure switch (pos. HD) monitors the maximum burner load by measuring the gas pressure.

## 6. SIEMENS BURNER CONTROL LMV26 OPERATION

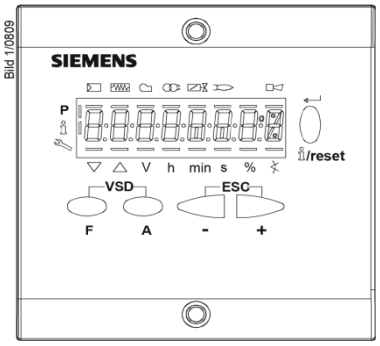
The burner is equipped with a Siemens electronic burner control type LMV26 integrated in the burner housing.

### 6.1 Operation Siemens AZL

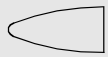
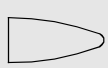
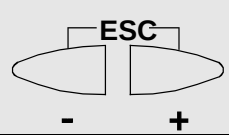
The corresponding control unit type AZL is mounted on the outside of the switch panel and has an LCD display with a simple menu structure, which displays the status in plain text. In order to diagnose possible malfunctions, the operation mode, failure type and moment are displayed.

In case of failure, before resetting, write down the text/code which appears in the display of the AZL unit. See “Display and error messages” (separate AZL manual).

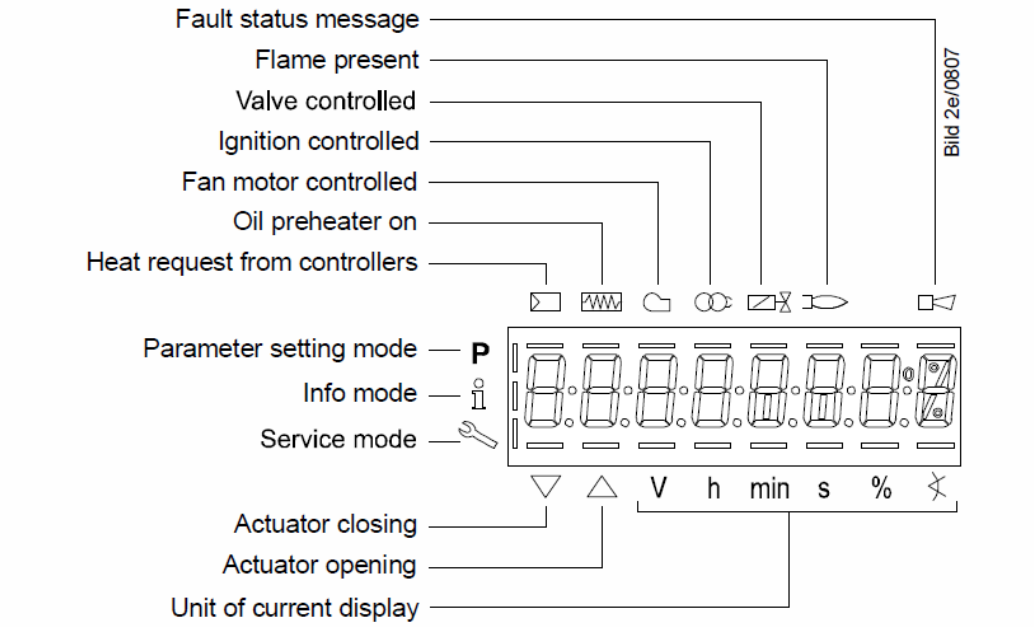
Please also write down the burner type and manufacturing year. Please contact our service department. They will first attempt to solve the problem via the telephone call.




**Device description / keypad and display meaning:**

| Knop | Functie |
|---|---|
|  F | **F button**<br>- For driving the fuel actuator to another position<br>(keep F depressed and adjust the value by - or + pressing |
|  A | **A button**<br>For driving the air actuator to another position<br>- or +<br>(keep **A** depressed and adjust the value pressing |
|  F A | **A-button and F-button: arameterization Function**<br>- For changing to parameter setting mode **P**<br>(press simultaneously **F** and **A** plus +<br>- For readjusting the speed of the VSD operation<br>(press **F** and **A** with - or + simultaneously) |
|  /reset | **Info and Enter button**<br>- For navigating in info and service mode<br>* Incrementing the selection (flashing symbol) (press button for <1 s)<br>* Going one menu level down (press button for 1…3 s)<br>* Going one menu level up (press button for 3…8 s)<br>* Changing to operating mode (press button for >8 s)<br>- **Enter** in parameter setting mode<br>- **Reset** in the event of fault<br>- One menu level down |
|  - | **- button**<br>- For decreasing the value<br>- For navigating during curve adjustments in info and service mode |
|  + | **+ button**<br>- For increasing the value<br>- For navigating during curve adjustments in info and service mode |
|  - + | - **and + buttons: Escape function**<br>(press - and + simultaneously)<br>- No adoption of value<br>- One menu level up |

**Meaning of the symbols used in the display:**




**IMPORTANT NOTICE:**

For a detailed function description and meaning of the error and diagnosis codes, refer to the attachment. (AZL user interface )

## 6.2 Operation of the Unitronics SAMBA display

The Unitronics "Samba" failures display (further called Samba) is a digital display viewing the status of the precondition circuit (safety chain / boiler preconditions).

**Main screen:**

Below an image of the main screen of the display:


**Safety chain**
At this screen is displayed whether the boiler preconditions circuit is closed or not. If **"Safety chain OK"** is indicated; the precondition circuit is closed. Without this indication the precondition circuit is not closed or a failure occurred.

**Setting time, date and language.**
Press the **'gear wheel' icon** at the left bottom corner of the main screen and the following screen is displayed:


Follow the instructions to set time, date and language.

**Failures display.**
Press the **'booklet' icon** at the right bottom corner of the main screen and the following screen is displayed:



**Arrow buttons ▼ and ▲**
Use the arrow keys to view other notifications.

**Back**
Press the arrow pointing to the left to return to the previous screen.

**Home**
Press the home button to return to the main screen.

**Actual failures.**
A current failure is displayed as shown below:


| Failure description |
|---|
| ACTIVE |
| BURNER FAILURE |
| MAX. TEMPERATURE / PRESSURE CONDENSER |
| LOW BOILER WATER LEVEL |
| MAX. BOILER WATER TEMPERATURE |

## 6.3. Operating instructions diraTRON load controller

The burner load is typically controlled by the climate computer (through Fiduface). **The burner selector switch is set to “external”.**

When the burner load is not controlled by the climate computer, it is controlled by a the diraTRON 108H load controller. This is the case when the **burner selector switch is set to “automatic”** or when there’s an error in the climate computer’s system (then the diraTRON automatically takes over).

The diraTRON 108H is a modulating burner load controller. It initiates the burner start/stop and controls its load based on the requested boiler temperature (setpoint).


The corresponding display, integrated in the burner’s switch panel casing shows the following values:

(1) The requested boiler water temperature in °C (setpoint).
(2) The actual boiler water temperature in °C (actual value).

Press the up and down arrow keys (▲ ▼) to change the setpoint. Using the keys automatically brings you to the change setpoint section in the menu. Use the menu/OK key (3) to set the setpoint.

Note: the burner starts when the boiler temperature is 2°C under the requested value and stops 6°C above the requested value.

In the case that the burner load is controlled externally by the climate computer, the diraTRON still shows the actual value for burner load.

## 7. BURNER FAILURE REPORT

### Gas valves/leak test

Before and during every burner start the safety valves (pos. VA1 en VA2) and pilot valve (pos. MK1) are checked for leaks.
Possible causes:

- Failure of the “leak test” can indicate that one of the safety valves or the pilot valve was not closed during standstill/start period.

Check:

- If bleed valve K1 is closed/gas-tight.
- External gas leakage visible (smell/”leak finder”/soap and water solutiony).
- Write down the diagnostic code from the burner display.

### Gas pressure too low

The minimum gas pressure switch (pos. LD1) mounted before the safety valves ensures the supplied minimum gas pressure is continuously checked. If the gas supply pressure drops lower than 20% of the standard pressure (or another setpoint which is considered to be a safe setting by the authorized burner engineer), the safety device triggers a system lockout.
Check:

- If manual gas valve (A1) is fully opened.
- The gas supply pressure before the gas train, by pressing the press-button valve (pos. K2) under the manometer to read the current pressure on the manometer (pos. M). Or check the manometer on the gas supply gas train. This pressure has to be approximately the same as indicated in the contract.
- If the gas supply pressure is ok, check the gas filter (pos. F1) for dirt (close gas valve A1 manually first).

### Maximum gas pressure

The maximum gas pressure switch (pos. HD), mounted on the burner gas inlet, protects the boiler against overloading. The gas pressure on the burner head is measures for this purpose. If the pressure is higher than the setpoint value the system is locked out.
Possible causes:

- Abnormal outlet pressure of pressure regulator.
- Dirty condenser.
- Abnormal gas supply pressure.

Check:

- The position of the burner control box (if applicable) were the failure occurs.
- The condensate drain of the condenser.

### Motor overload

The control panel includes overload relays to protect the electromotors. In case of failure the overload relays have to be reset manually. The overload relay types included on our panels, are combined thermal and maximum current protection relays.

Check:

- If all three phases (L1, L2 and L3) still have normal loads.
- If all fuses are intact Replace the fuses when required (we recommend replacing all three fuses at the same time).
- Write down which overload relay triggers a lockout, if after resetting the motor makes a sound similar to an animal growl and doesn't run smoothly one phase may still not be working properly.

**Air pressure too low**

The air pressure is monitored using air pressure switches (pos. LD2 low and LD2 high) mounted on the burner. The pressure is checked 30 seconds after the air fan is started.

Possible causes:

- The air inlet of the air fan is blocked (plastic bag).
- The air fan is very dirty.
- The air valves are very dirty.
- The flexible measuring hose to the pressure switch is broken or blocked.
- The overload relay is locked out (see previous item).

Check:

- The air fan inlet.

**Maximum temperature and/or pressure**

The boiler is protected against high temperatures and/or pressure. A maximum thermostat or maximum pressostat device forms the basis for the protection. When the temperature or pressure exceeds the maximum value setting of the device the burner locks out. The maximum thermostat supplied by Zantingh is locked mechanically and has to be reset both on the thermostat itself and on the burner control panel.

Possible causes:

- Configured setpoint may be too high.
- Too little water and/or air bubbles in the boiler, fill it up and bleed it.

**Low water**

The water level in the boiler is monitored to protect the boiler against serious damage caused by overheating when the water level in the boiler is too low.
This safety device is supplied as one of two options:

- One or two electrodes mounted in the boiler.
- Mechanical float switch.

Possible causes:

- Water level too low (for example due to a system leak).
- Feed water pump malfunction.
- Expansion system low pressure.

**Max. temp. condenser (when applicable)**

This failure occurs when the water temperature in the flue gas condenser is too high.

Check:

- Condenser water flow: Check whether the circulation pump is operating properly and whether the manual shut-off valves are closed.
- That the condenser and the connected system do not have air in them.
-

**WARNING!! Watch out for hot parts and spraying hot water in case of leaks!**

**Max. pressure condenser (when applicable)**

The condenser is checked for contamination using a pressure switch which measures the condenser backpressure. If the backpressure measured at the switch is too high, the burner is locked out. The pressure switch is mounted on the flue gas duct between the boiler and the condenser.

Possible causes:

- Condenser is dirty.
- Flue gas valve(s) is/are not in the correct position.
- Condensate drain is blocked.

Check:

- Open the inspection cover to check for contamination.
- The position of the flue gas valves.
- The condensate drain and syphon under the condenser.

**Frequency control code F**

When an internal or external frequency control error is triggered the frequency control is switched off and the “F” symbol error code is displayed followed by a number including a brief description.

Warning! If you contact our service department because of a failure, please write down the error code and description. Once the cause of the failure is removed the error can be reset by pressing the “reset/enter” button.

Under normal conditions the frequency control unit does not require maintenance work. The frequency control unit includes a cooling fan to blow the surrounding air over the cooling body. Take care that the air openings are not blocked. If the cooling body becomes too hot the control will trigger an “F14” error.

**Flame failure**

Flame failure is the most difficult burner system error to trace. If the flame monitor does not locate a flame, depending on the start sequence phase, a flame failure may be triggered.

A flame failure can occur because the gas flame does not ignite. The problem can be the electric spark does not light the pilot flame or the pilot flame doesn’t ignite the main flame. The combustion may also be unstable causing the flame to go out during operation.

Because of the many potential causes it is very hard to determine why the flame failure occurs. The start sequence phase when the failure occurs may provide additional information. **Write down the error code indicated in the faults section on the display of the burner management system**.

Potential causes

No ignition spark:

- Defect ignition transformer.
- Defect or incorrectly adjusted ignition electrodes.
- Loose ignition cables.
- Spark not in the correct position (Refer to information on Earth/mass).

No pilot flame:

- Defect gas solenoid (pos. MK).
- No combustible gas mixture, does not ignite.
- Pilot valve isn't detected by flame monitoring unit or flame signal is too low.

No main flame:

- Defect safety valve(s) (pos. VA1 and VA2).
- The air-gas ratio is not appropriate, because of which the air-gas mixture does not ignite, or even goes out during operation.
- Main flame is not detected by the flame monitoring unit because the flame is too low.

Flame failure before gas valves have opened:

- Defect UV scanner.
  Inappropriate lighting, for example, through sight glass.

**IMPORTANT:**

After a failure the reset button has to be pressed to reset a failure.
Before reset, note the position or symbol in the screen of the burnercontrolbox.
**Attention!!** It's possible that maximum thermostat and lowwater float device are mechanical locked. The reset button is on the safety device itself and should be reset first. If the burner doesn't start it's possible that there's a failure on the $CO_2$-dosingunit and/or CO-detector.

## 8. TROUBLESHOOTING

**WARNING:**

**Set the main switch on the burner panel to "OFF" before performing any maintenance work. Lock the switch to ensure nobody can set the main switch to "ON" when performing the maintenance work. Never work on the system if the control panel is live (energized).**

When switching off the main burner control panel switch also switch off the power of any connected $CO_2$dosing unit control panel.

All safety devices have a signal light on the control panel. At every lockout of a safety device the corresponding signal light will be on. To reset the system press the reset button on the switch panel door. The burner will attempt to restart.

Note: The maximum thermostat and the low water protection device may be mechanically locked. The reset button on the safety device itself should be pressed first, before resetting the whole system. If the burner does not start a failure of the $CO_2$-dosing unit and/or CO-detector may have been triggered.

Keep a close eye on parts which may not operate appropriately when restarting. If the same error occurs again:

- Write down the text/code which appears in the display of the AZL unit. See "Display and error messages" (separate AZL manual).
- Write down the system number, burner type and manufacturing year (refer to the label on the burner control panel).
- Contact our local service department. They will first attempt to solve the problem via the telephone call.

## 9. SWITCH FROM GAS TO OIL AND BACK

(If applicable)

The burner is equipped with a gas valve and air valves for fuel air ratio control (1:7). When gas firing, the burner capacity is controlled by the stand alone modulating PID controller that is integrated in the Siemens LMV unit or by the climate computer through Fiduface.

For oil firing, the burner is equipped with a 2- or 3-stage oil combustion system (depending on the capacity) with oil valves for fuel air ratio control (1:3). The combustion capacity is controlled by the stand alone modulating PID that is integrated in the Siemens LMV unit.

**From gas to oil:**

1. Before switching from gas to oil firing, set the burner load switch to “LOW” and wait until the burner flame is low. Now set the main switch on the burner panel to “OFF”.
2. Check that the boiler temperature setpoint is not below 70°C to prevent oil condensation. See chapter 6 on how to change setpoint.
3. Close shut off valve A1.
4. Set the flue gas inlet valve of the condenser on bypass.
5. Check that every valve to the oil pump is open and whether the oil pump is filled with oil. The complete system has to be filled with oil without any air. If this is not the case it may cause major defects. The oil pump is not a self-suction pump.
6. Set the selector switch from “GAS” to “OIL”.
7. Set the burner load switch to “AUTO” and switch the burner on.

**WARNING:**

When not specifically stated otherwise, the burner is made for oil as emergency fuel only. After more than 24 hours on oil firing the burner system may be dirty. Reliable and clean combustion can no longer be guaranteed.
If a flame failure occurs more than 3 times during start-up, check the furnace for oil. When the boiler temperature is higher than 65 ºC the oil in the furnace may gasify. At the next attempt to start, the ignition may ignite the gasified oil and may cause an **explosion**.

The annual maintenance work should include running the burner on oil!
Make sure you have enough oil on stock.

Note: installing, checking and filling the oil tank and oil piping from the oil tank to the oil pump is not within the scope of our service engineer. This is the responsibility of the user.

**From oil to gas:**

1. Set the main switch on the burner control panel to “OFF”.
2. Close all oil valves in the oil line.
3. Set the selector switch from “OIL” to “GAS”.
4. Switch the load switch to the required setting.
5. Set the flue gas inlet valve of the condenser to standard operation.
6. Open shut off valve A1.
7. Set the main switch on the burner control panel to “ON”.

**WARNING:**

Before starting the system, check the furnace for oil. If the boiler temperature is higher than 65 ºC the oil in the furnace may gasify. At the next attempt to start, the ignition may ignite the gasified oil and may cause an **explosion**.

*Ask the burner engineer to demonstrate the switch from gas to oil and back.*

## 11. WARRANTY CONDITIONS

Zantingh B.V. guarantees this Zantingh product for the installer under the following conditions. The installer guarantees this product to the user under the same conditions which are provided below.

1. The period of guarantee is valid as from the day of delivery on location. The guarantee has a fixed period of 12 months, based on the agreed sales price.
2. A recognized installer should install the system according to the applicable general and local standards and regulations based on the assembly and operation instructions provided by Zantingh.
3. The system may not be moved from the original location.
4. The guarantee becomes null and void if and when:
    - Defects of the system are not reported in writing to the installer and/or Zantingh B.V. immediately after having been discovered or these could reasonably be expected to have been discovered.
    - Defects are caused by errors, improper use or neglect by the installer and/or the user who has placed the order or his/her legal successor or caused by external causes.
    - During the period of guarantee a third party is requested to or implements changes to the system or when the user has done so without prior written consent by the authorized installer and/or Zantingh B.V.
    - During the period of guarantee the expert inspections and/or maintenance work are periodically not performed even though the equipment requires it.
    - Corrosion has been caused by polluted flue gas, to be determined by Zantingh B.V.
    - If after research is carried out, one or more of the above conditions were not taken into account and are the reason for any guarantee claim, the costs for the required research by Zantingh B.V. or third parties will be charged to the user.
5. The initial request based on the guarantee obligations described in this article should be submitted in writing to the installer within five working days after the error or defect has been observed or could reasonably have been observed.
6. The stipulations included in our general guarantee, sales and payment conditions, issued by the ORGALIME S 2012 “General conditions for the supply of mechanical, electrical and electronic products” are also applicable. Zantingh B.V. will not be liable for any consequential damage to the Zantingh system other than a defect covered by the guarantee as described above. Moreover, Zantingh B.V. will not be liable for any damage to income and/or loss of profit to the user of any nature whatsoever.
7. Any costs incurred by assembly or disassembly, travelling or accommodation expenses, constructional costs and such required to execute the terms of the guarantee are excluded from the terms of the guarantee.

Any dispute between Zantingh B.V. and the buyer regarding a claim based on the guarantee will be resolved by an expert and independent authority if so desired. The parties agree to abide by the binding decision of said authority.

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