firebase
Smoke Generators

Instruction Manual

SG-1700/3100
Smoke Generator

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1. Introduction

The SG-1700 and SG-3100 are powerful fog machines with classic accumulating evaporators. The large storage volume allows large amounts of fog to be generated. Likewise, the smallest fog clouds can be generated.

The SG-3100 also has an alternating nozzle system. Here, a choice can be made between a wide-jet nozzle and a noise-reducing nozzle.

The diverse control options enable use in a wide variety of scenarios.

The machines are designed to create copious amounts of water based artificial fog.

2. Package Contents

1 SG-1700/3100 Smoke Generator
1 5L empty canister
1 tank cap with quick coupling
1 fluid hose with quick coupling and grommet
1 Power cord with TrueOne plug
1 Tank holder
1 Wide jet nozzle (Only SG-3100)
1 Noise-reducing nozzle (Only SG-3100)
1 Operating instructions

Please check the completeness of the delivery

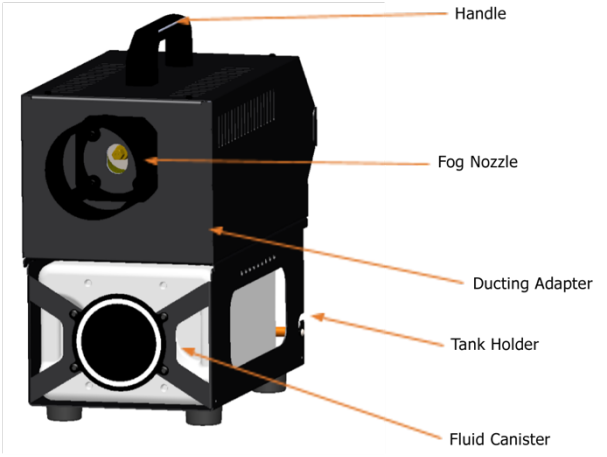
3. Safety instructions

- Very hot steam escapes from the mist outlet. **Caution: Danger of burns**! During the fogging process, very hot fluid droplets may occasionally escape from the fog outlet opening. Therefore, there must be no persons or heat-sensitive objects within 1.5 m from the fog outlet opening.
- Never handle the mist outlet during operation or when activated.
- Keep a minimum distance of 60 cm from flammable, combustible, and heat-sensitive objects.
- Never open the device connected to a power source.
- During operation, sporadic leakage of hot fluid droplets is possible. Care should therefore be taken to ensure that these cannot become a hazard to people. Keep a safety distance of 3m to the fog outlet nozzle.
- Do not ingest the fog fluid and keep away from children. In case of eye contact, rinse with plenty of water. In case of accidental ingestion, consult a doctor.
- Spilled or splashed fluid can cause slipping hazards. Absorb the fluid and dispose of it in accordance with the regulations.
- Do not let visibility drop below 2m, you are responsible for people moving in obscured room.
- The mist produced can set off smoke detectors.

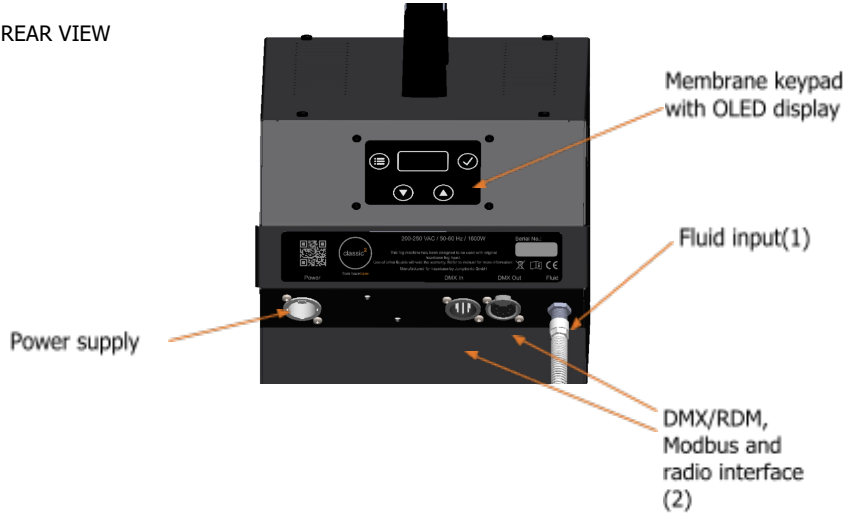
The method used here to generate artificial fog is largely harmless and is used worldwide in the entertainment sector. We are not aware of any case in which a healthy person has been harmed using artificial fog. **Nevertheless, we recommend that ill persons or persons with previous damage to the respiratory tract or a tendency to allergies avoid contact with artificial fog!**

4. Machine Diagram

FRONT VIEW



REAR VIEW



5. Preparation

5.1. Selection of the site

The location where the SG-1700/3100is operated must be

1. Have good ventilation, with cold and fog-free air
2. Be dry
3. Be vibration and shock free
4. Consist of a non-flammable footprint
5. Be far enough away from easily flammable objects
6. Have an ambient temperature between 5 °C and 45 °C
7. Have a relative humidity of less than 80%.

5.2. Changing the canister

1. Release the plug-in nozzle from the quick coupling by pressing the locking button
2. Remove the canister lock
3. Take the canister out of the tank holder
4. Unscrew the tank cap from the empty canister and screw it onto a new, or full, canister.
5. Push the canister back into the tank holder.
6. Reattach the canister lock to the tank holder
7. Put the plug-in nozzle back into the tank cap.

5.3. Ducting adapter

The SG-1700/3100is equipped with a ducting adapter (100 mm). Please only use hoses that can cope with the temperatures. The hose may only be pushed a maximum of 50 mm onto the adapter so that the fog nozzle is surrounded by sufficient fresh and cold air.

5.4. Interchangeable nozzle (SG-3100 Only)

The SG-3100 has an interchangeable nozzle system.

ATTENTION! Please change the nozzle only when the heating element is cold, danger of burns!

To do this, unscrew the nozzle from the front using a 14 mm nut with extension and ratchet. Make sure that the copper sealing ring is still on the nozzle adapter. Now

screw the new nozzle onto the nozzle adapter. The nozzle should be screwed on tightly without overtightening the thread. If leaks occur at the copper sealing ring, tighten the nozzle again. If necessary, replace the sealing ring if it is worn.

5.5. Fluid Selection

Three different fluids are available for the SG-1700/3100

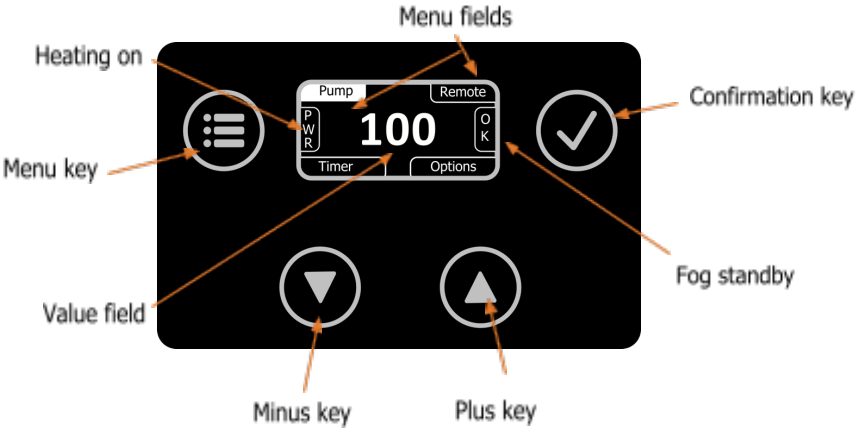
- TS-XD is a high density, whiteout fluid
- TS-FR is a long lasting medium density fluid
- TS-Q is a very fast dissolving high density fluid

6. Working with the SG-1700/3100

The SG-1700/3100 is a series of fog machine with powerful output. From a small cloud of fog to dense, room-filling fog, any desired effect can be achieved. The fine adjustment of the pump allows fog output settings between 1% and 100%.

After plugging in the power plug, the machine heats up the heating element. This takes between 8 and 12 minutes, depending on the machine.

6.1. Control panel of the SG-1700/3100



The SG-1700/3100is operated via the four keys (menu, minus, plus, confirmation) and the OLED display. The menu field tabs are in the corners of the display, and the value field, which displays the value of the selected menu field, is in the center. The menu key is used to select the individual menus counterclockwise. The corresponding value can then be changed with the help of the plus and minus keys and then saved with the confirmation key.

On the left edge of the screen, "PWR" indicates whether the heating is active. On the right edge of the screen, "OK" indicates that the machine is ready to fog.

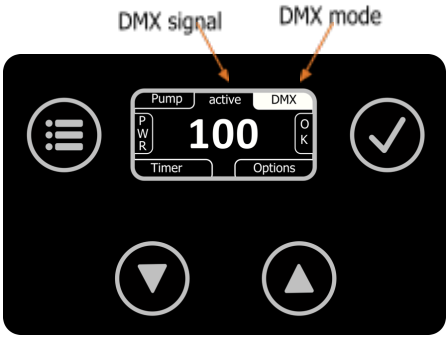
6.2. Operation in stand-alone mode

The simplest case of control is the stand-alone mode. For this, the pump value is set to the desired value and the confirmation key is pressed. If fogging readiness is displayed, the fogging process starts immediately.

The pump value can also be changed during the fogging process.

Pressing the confirmation key again stops the fogging process.

6.3. Operation via DMX512/RDM



When operating via DMX512, the XLR input (2) must first be set to DMX (see chapter Options).

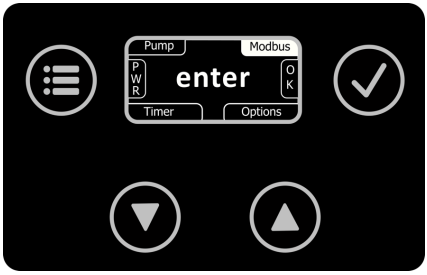
As shown, "DMX" appears in the upper right menu field. The DMX address can be changed with the plus and minus keys and must then be saved with the confirmation key.

If a valid DMX signal is present, this is displayed at the top center with "active". The currently read pump value can be displayed by selecting the pump menu item. If the received value is greater than zero, the SG-1700/3100starts the fogging process and stops it accordingly at the value zero.

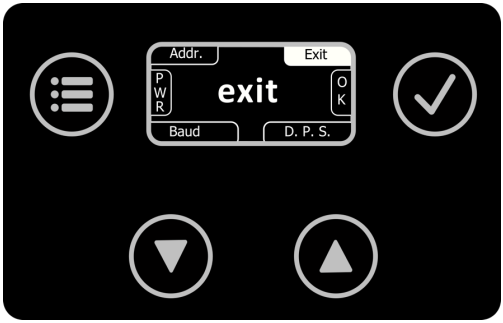
Via RDM the SG-1700/3100 is configurable (DMX address) as well as readable (error or temperature data). Furthermore, a firmware update can be done via this RDM input.

6.4. Operation via Modbus RTU

When operating via Modbus RTU, the XLR input (2) must first be set to Modbus (see chapter Options). The interface is designed as RS485 half-duplex connection.



The communication parameters of the connection can be set in the "Modbus" submenu. First, the Modbus menu item must be selected. Enter" is displayed in the value field. The confirmation key is used to access the submenu for Modbus.

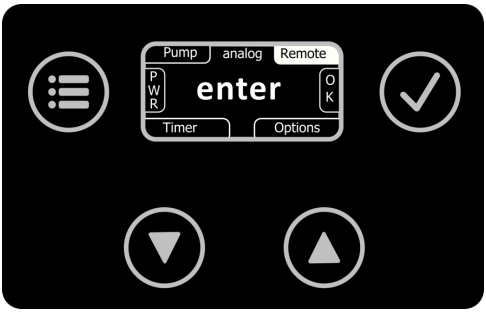


In the Modbus submenu the menu fields are replaced. At the top left the address of the device can be set. At the bottom left the baud rate of the communication is set and at the bottom right the data width, parity and stop bits. The setting is done analog to the main menu.

To exit the submenu, the menu item "exit" must be selected and confirmed with the confirmation key.

In the appendix you will find the definitions of the registers that are necessary for programming the PLC.

6.5. Operation via cable remote control

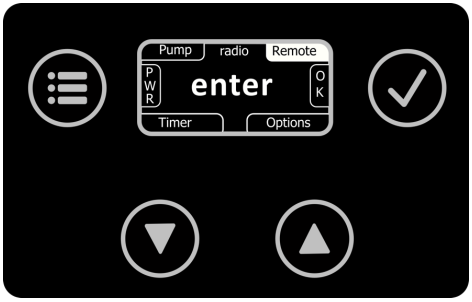


When operating via the cable remote, the XLR input (2) must first be set to Remote

(see chapter Options).

After plugging in the cable remote control, the SG-1700/3100automatically recognizes that an analog cable remote control has been plugged in. On the cable remote control there is an on switch and a potentiometer for setting the pump value.

6.6. Operation via radio remote control (option)



When operating via the radio remote control, the XLR input (2) must first be set to Remote (see chapter Options).

After the radio remote control has been plugged in, the SG-1700/3100automatically detects that a radio remote control has been plugged in.

Up to 60 different handheld transmitters can be programmed on the machine. For this purpose, the "Remote" submenu must first be selected.

In the Remote submenu, the menu fields are replaced. The channel (key on the handheld transmitter) can be selected at the top left. At the bottom left, a new hand-held transmitter is taught-in and at the bottom right, the taught-in hand-held transmitters are deleted again.

A new hand-held transmitter is taught-in as follows. First select the menu item add and confirm this with the confirmation key. Adding" now appears at the bottom left. The machine now waits for a valid radio signal. To do this, press any key on the handheld transmitter. The teach-in process is now complete and "adding" appears again at the bottom left. You can then select the key and save it.

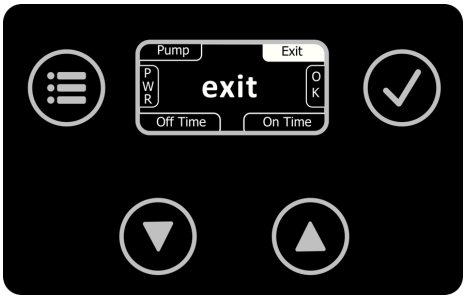
To delete the handheld transmitters already taught-in, select the "del" menu item and confirm it. Deleting" now appears at the bottom right. The deletion process is now in progress. The display changes back to "del" after a successful deleting process.

To exit the submenu, the menu item "exit" must be selected and confirmed with the confirmation key.

6.7. Operation via the internal timer

To set and activate the internal timer, you must first switch to the Timer submenu.

Here, too, the menu fields are changed accordingly. At the top left, the pump value used in timer mode can now be set.
Bottom left



the waiting time can be set in 0.1 minute (6 sec.) steps. Analogously, the fogging time can be set in steps of seconds at the bottom right.

To activate the timer, the confirmation key can be pressed for both the waiting time or the fogging time. This activates or deactivates the timer. Depending on the selected menu item, the timer starts with the waiting time or the fog time.

The pump value can still be changed even when the timer is activated.

If the "Timer" submenu is exited again, the timer is also deactivated again.

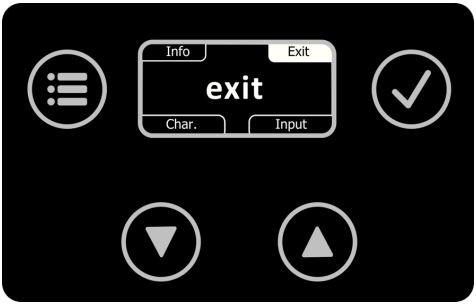
7. Options Menu Tab

In the submenu "Options" the pump characteristics can be set, as well as the protocol of the XLR sockets can be selected.

7.1. Setting the pump characteristics

After activating the submenus, the menu fields in the corners are changed.

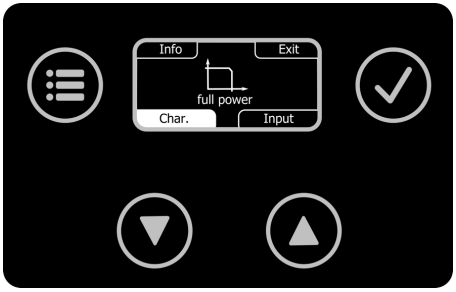
The menu item "Char." now appears at the bottom left and the menu item "Input" at the bottom right.



In the menu item "Char." you can choose between the pump characteristics "full power", "max. time" and "non stop".

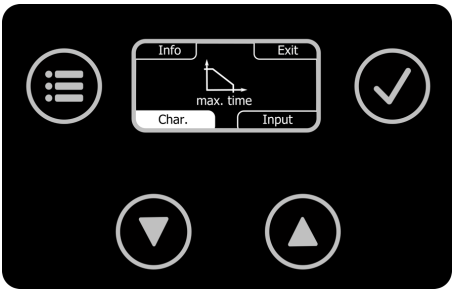
7.2. Full power

The pump is not regulated down, regardless of the falling temperature in the heating element.



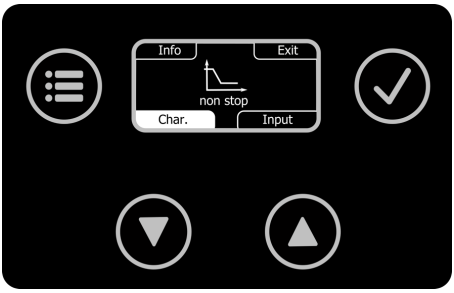
7.3. Max. Time

The pump is regulated down depending on the temperature in the heating element. This extends the time of the fogging process. Nevertheless, the pump switches off as soon as the temperature falls below the evaporation temperature.



7.4. Non stop

The pump is regulated down to continuous fog mode.



7.5. Setting the communication protocol of the XLR sockets

In the menu item "Input" the communication protocol of the XLR sockets can be selected. The following protocols can be selected here:

- DMX/RDM
- Modbus

- Remote (cable or radio)

Please select the desired protocol and confirm it with the confirmation button.

8. Care and maintenance

Avoid running the SG-1700/3100without fluid. The pump will otherwise run dry.

Avoid overheating the device due to direct sunlight or direct spotlight. The permissible ambient temperature can be found in the technical data.

Make sure that the ventilation slots of the machine are not clogged with dust deposits. If necessary, the ventilation slots must be cleaned.

Wipe up leaked fluid immediately.

Check the suction strainer in the tank from time to time. Clean it or replace it.

If you use the same fluid canister frequently, you should rinse it thoroughly before each filling with fresh fluid. This will prevent contamination.

The tank holder can be unscrewed for permanent installation. **Please note:** The difference in height between the external canister and the machine must not exceed 1.5 meters, otherwise the pump will no longer be able to suck in the fluid)!

Clean the surface of the device, if necessary with a suitable, solvent-free cleaning agent

Make sure that sufficient mist-free cooling air permanently surrounds the machine. Otherwise, moisture damage could occur inside the machine.

PLEASE NOTE: The vaporizer of our fog machines does NOT need to be cleaned! Cleaning liquids offered on the market can damage the vaporizer! The warranty will be void in this case.

9. Troubleshooting

The SG-1700/3100 does not fog

- Check external control
- Check power source
- Check fluid quantity
- Check connection at fluid tank for tightness

- Check suction strainer in tank for contamination
- Check fluid hose and connector for tightness

The SG-1700/3100 hums loudly when fogging

- Refill fluid
- The pump runs dry. This must be avoided at all costs.
- Check hose and coupling, engage again if necessary.

The SG-1700/3100 shows the error message "machine too hot" in the display

- The temperature inside the device is too high. After cooling down, the error disappears again.

The SG-1700/3100 shows the error message "thermocouple broken" in the display

- One of the thermocouples is broken. The machine switches off for safety reasons.

10. Technical data

10.1. SG-1700 - 115V

Device type	Water Based Smoke Generator
Power	115V~, 60 Hz, 1700 W (PowerCON TRUE1)
Heating time	approx. 12 min
Fluid consumption	up to 240 ml/min (full power mode), up to 40 ml/min with continuous mist
Tank capacity	5 liters
Operation	1.3" OLED display, membrane keypad
Interfaces	5pin XLR In/Out
Fog output	Adjustable 1-100% in 1% steps
Ejection distance	Up to 15 m

Supported protocols	DMX512, RDM, Modbus RTU, JT-Remote
Control	DMX/RDM, cable remote control, radio remote control, integrated timer, stand alone
Accessories (option)	Radio remote control, cable remote control
Fog Time	up to 20 sec. at full power mode, up to 50 sec. in Full-Time mode, Permanent fog with non-stop mode
Fluid types	TS-XD TS-FR TS-Q
Dimensions (LxWxH)	480 x 212 x 240 mm (height with tank holder 388mm)
Weight	14 kg

10.2. SG-3100 230V

Device type	Water Based Smoke Generator
Power	230V~, 50 Hz, 3100 W (PowerCON TRUE1)
Heating time	approx. 8 min
Fluid consumption	up to 300 ml/min (full power mode, wide jet nozzle), up to 70 ml/min with continuous fog
Tank capacity	5 liters
Operation	1.3" OLED display, membrane keypad
Interfaces	5pin XLR In/Out
Fog nozzles (changeable)	Wide jet nozzle Noise reduction nozzle
Fog output	Adjustable 1-100% in 1% steps
Ejection distance	Up to 20 m with wide jet nozzle Up to 15 m with noise-reducing nozzle
Supported protocols	DMX512, RDM, Modbus RTU, JT-Remote

Control	DMX/RDM, cable remote control, radio remote control, integrated timer, stand alone
Accessories (option)	Radio remote control, cable remote control
Fog Time	up to 20 sec. at full power mode, up to 50 sec. in Full-Time mode, Permanent fog with non-stop mode
Fluid types	TS-XD TS-FR TS-Q
Dimensions (LxWxH)	480 x 212 x 240 mm (height with tank holder 388mm)
Weight	14 kg

11. Warranty

For the purchased fog machine SG-1700/3100, Froggy's Fog provides warranty according to the following conditions:

1. We shall remedy free of charge in accordance with the following conditions (Nos. 2 to 6) damage or defects to the device which are demonstrably due to factory defects if they are reported to us immediately upon discovery and within 24 months of delivery to the end user. A warranty obligation is not triggered by minor deviations from the nominal condition which are insignificant for the value and usability of the device, by damage from the effects of water and generally from abnormal environmental conditions or force majeure.

2. The warranty claim expires if repairs or interventions are carried out by persons who are not authorized by us to do so or if our devices are equipped with supplementary or accessory parts that are not matched to our devices. Furthermore, the warranty claim expires if other than the original Training Smoke or Froggys Fog fog fluid was used. Please empty all fluid containers before shipment for service.

3. We do not grant any performance claims for components or component groups that are subject to natural wear or normal wear. All fluid-conveying parts such as pumps and heating elements are considered to be wearing parts. A goodwill settlement will be checked in each individual case.

4. Warranty services do not cause an extension of the warranty period, nor do they start a new warranty period. The warranty period for installed spare parts ends with the warranty period for the entire device.

5. If a damage or defect cannot be remedied by us, or if the remedy is refused or unreasonably delayed by us, within 6 months from the date of purchase/delivery, at the request of the end user either

   a. replacement delivered free of charge or

   b. the reduced value is remunerated or

   c. take back the device for a refund of the purchase price, but not more than the market price.

6. Further or other claims, in particular those for compensation for damage occurring outside the device, are excluded - unless liability is mandatory by law.

12. Appendix

Modbus-Interface

Discrete Inputs

Number	Name	Description
1	Ready	This input is 1 if the machine is ready to produce fog. If an error occours the Input will be zero.
2	Thermocouple 1 error	This input will be 1 if there is an error in the thermocouple 1 otherwise it will be zero.
3	Thermocouple 2 error	This input will be 1 if there is an error in the thermocouple 2 otherwise it will be zero.
4	Overtemperature	This input will be 1 if the enviorenment temperature is higher than 70°C. Otherwise it will be zero.

Coils

Number	Name	Description
1	Enable	This coil enables the fog output with the amount of fog wich is set in holding register 1

Input Registers

Number	Name	Description
1	Status	This register is the status register. It is used to inform the application about the state of the machine. *Note: The bits contained in this register are the same as the discrete inputs.* 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 - - - - - - - - - - - - OVRT T2 T1 RDY **Bits 16:4** **not used** These bits are not used and read as zero **Bit 4** **OVRT** Overtemperature flag This bit is set by the machine if a temperature over 70°C is detected 0: Environment Temperature in range 1: Temperature to high **Bit 3** **T2** Thermocouple 2 Error flag 0: No Error detected 1: The Thermocouple 2 is broken **Bit 2** **T1** Thermocouple 1 Error flag 0: No Error detected 1: The Thermocouple 1 is broken **Bit 1** **RDY** Ready flag 0: Machine not ready due to an error 1: Machine ready to produce fog
2	Temperature	This register hold the environment temperature. It is a signed 16-bit number

Holding Register

Number	Name	Description
1	Fog	The fog output value: allowed values are from 0 to 255