MANUAL

FLOALARM A6

MAIN FEATURES:

Alarm system up to 6 analog inputs (4-20mA) and 4 digital inputs.
It is possible to configure up to 2 alarm thresholds for each analog input.
This module is equipped with two RS 485 interfaces.
All parameters are configurable using the touchscreen display.
2 output relays are available for possible reporting or control of external devices.

CAREFULLY READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL BEFORE INSTALLING AND USING THE SYSTEM.

THE MANUFACTURER UNDERTAKES TO MAINTAIN THE CONFORMITY OF THE HARMONIZED STANDARDS OF THE SECTION.

1. General information

This device complies with the safety requirements of current legislation and has been designed and tested in order to guarantee its prescriptions.
The scrupulous observance of the instructions contained in this manual is essential for the installation, use and maintenance of the product in complete safety.
Please note that the employer is obliged to ensure that the work equipment is installed, used and maintained in accordance with the manufacturer's instructions.
We therefore decline any responsibility for damage caused by non-observance of the instructions given in this instruction manual and anything else not covered in the same.
It should also be remembered that medical gas systems must be built in compliance with specific regulations; the malfunction of this device must not affect the gas supply to the system outlets. We therefore decline any civil or criminal liability of any kind towards people or things.
The device does not require periodic calibration and calibration. It must be subjected to a function check within the system in which it is installed.
The useful life of the device is 5 years.

2. Product identification

2.1. Package Contents

- Alarm device FLOALARM A6;
- This manual

2.2. Product identification

Name: Alarm device with TFT touchscreen display
Template: **FLOALARM A6**
Power supply: 100-240 VAC / 24 VAC
Inputs: 4x digital - 6x 4-20mA
Relay: 1 A Max
Fuse features:

- F 1A L 250V (5x20 mm)

Sound pressure level generated by the buzzer: 64dB
Temperature range: 10° C ... 42° C
Humidity of use: 15% - 90%
Operating pressure: 860hPa and 1060hPa

2.3. Labelling

On the device these information are present:

- Serial number for an identification of the module in compliance with the directive
- Progressive numbering to identify the terminals
- The "DO NOT REMOVE" warning
- Power supply label
- CE mark

3. Target purpose

The device is produced as a central or department alarm module with TFT touchscreen display.

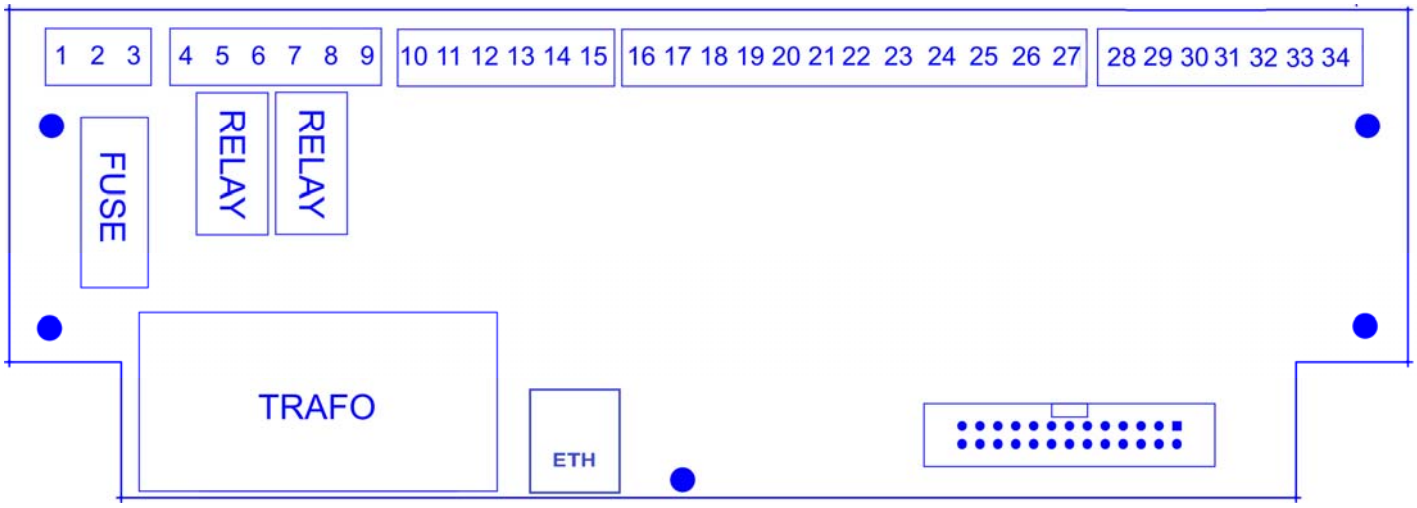
It is strictly forbidden to use the alarm for purposes other than those for which it was produced and in any case not contained in this instruction manual.

4. Precautions

Attention: make all the connections described in the manual with the module NOT powered.
Before powering the module, make sure that all connections have been made correctly; no liability is accepted in the event of damage to the device due to inattention.
The device must also be connected to the emergency power distribution network.
The optimal conditions of use are with external air temperature from 10°C to 42°C
The storage of the device must guarantee the original integrity of the packaging, and in any case be in a clean environment with a temperature from -25°C to 70°C.
Exposure to environmental conditions with humidity levels different from those specified may cause premature deterioration of the device or malfunction of the device.
Failure to comply with the EMC conditions specified below or proximity to medical devices that generate high frequency, high electric and / or magnetic fields can cause a reduction in performance or malfunction of the device.
Use is reserved for suitably trained specialized personnel.
The replacement, modification and / or restoration of the mains connection cable can only be carried out by authorized technical assistance personnel.
The connection cable to the electrical network must be fixed with means that hold it in position avoiding that the screw terminal is the only point of fixing the cable in order to reduce the effects deriving from traction or other movements.
The Manufacturer will provide, upon request and only to authorized technical assistance personnel, electrical connection circuits, diagrams, additional instructions to support maintenance operations.
Do not tamper with the device.
Contact your dealer for installation or service on the device.

5. Device installation

5.1. Connection



LEGEND OF CONNECTIONS			
Clamp	**Description**	**Clamp**	**Description**
Supply		**Analogue inputs**	
1-3	100-240 VAC	**16-17**	Transmitter 1
2	Not used	**18-19**	Transmitter 2
Relay		**20-21**	Transmitter 3
4-5	Carry relay 1 output	**22-23**	Transmitter 4
6-7	Carry relay 2 output	**24-25**	Transmitter 5
		26-27	Transmitter 6
8-9	24 V	**Communication**	
		28	Not used
Digital inputs		**29**	BUS SLAVE (+)
10	Common inputs ON/OFF	**30**	BUS SLAVE (-)
11	Input ON/OFF 1	**31**	Ground
12	Input ON/OFF 2	**32**	RS485 (+)
13	Input ON/OFF 3	**33**	RS485 (-)
14	Input ON/OFF 4	**34**	Ground RS485
15	Ground		

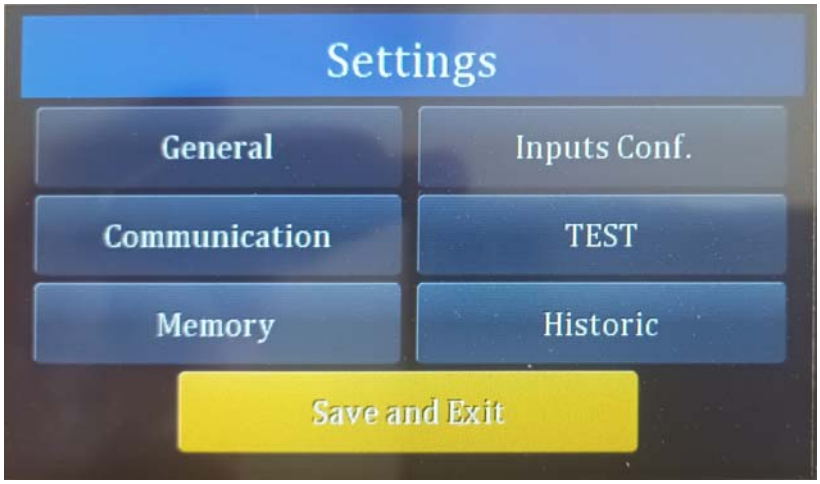
6. FLOALARM A6 device configuration

When the device is turned on it presents a screen as follow:

The activated gases and their pressures are displayed here.
On the side of the screen there are buttons to access the settings, to silence the alarm sound and to view the history of the alarms that have occurred.

6.1.1. Settings

To access the settings, press the relevant button and enter the password. (default = '000000')



At this point it is possible to navigate in the various menus using the keys:

- **General**
- **Inputs Conf.**
- **Communication**
- **Test**
- **Memory**
- **History**

General

In this menu it is possible to set the system parameters:

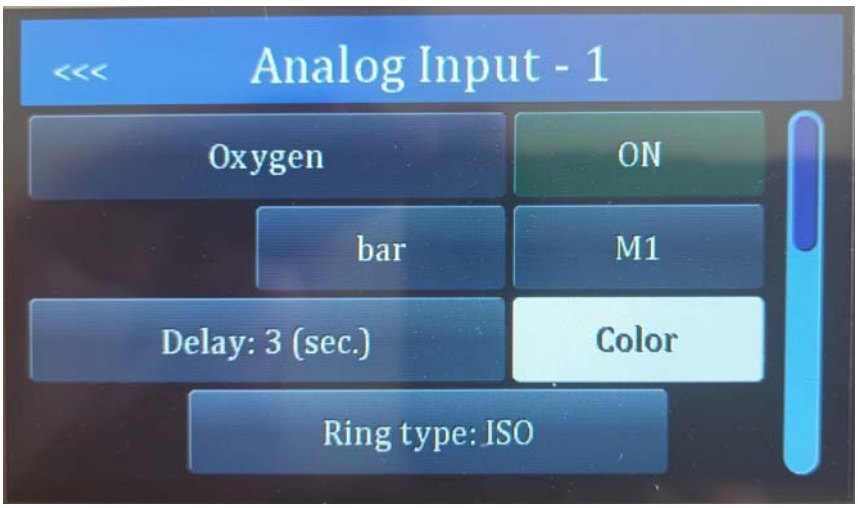
- **Date and time**
- **Password**
- **Audio buttons**
- **Alarm sound reset**

Inputs Conf.

In this menu it is possible to enable the analogue and digital inputs and set their parameters.

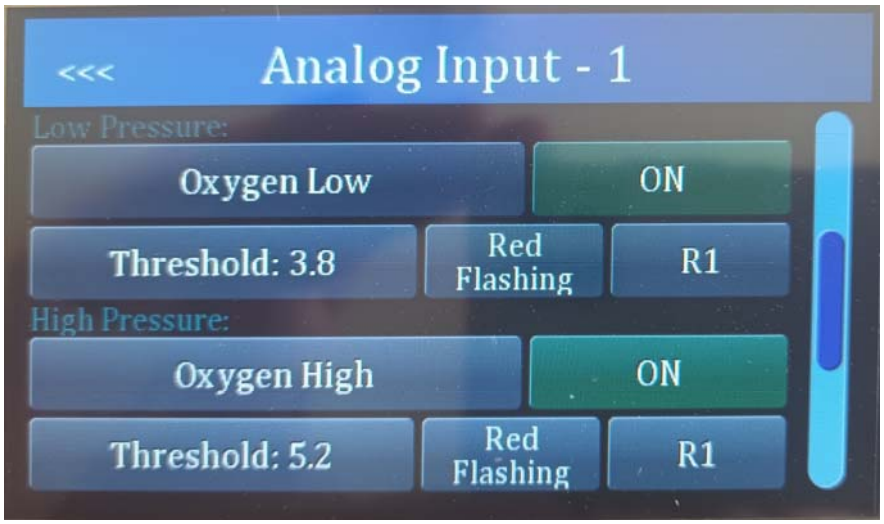
The configuration of the analogue inputs is divided into three screens.

The first allows you to change the name of the gas, activate or deactivate it, modify the unit of measurement, the type of memory, the activation delay, the colour of the relevant button and the type of alarm sound.

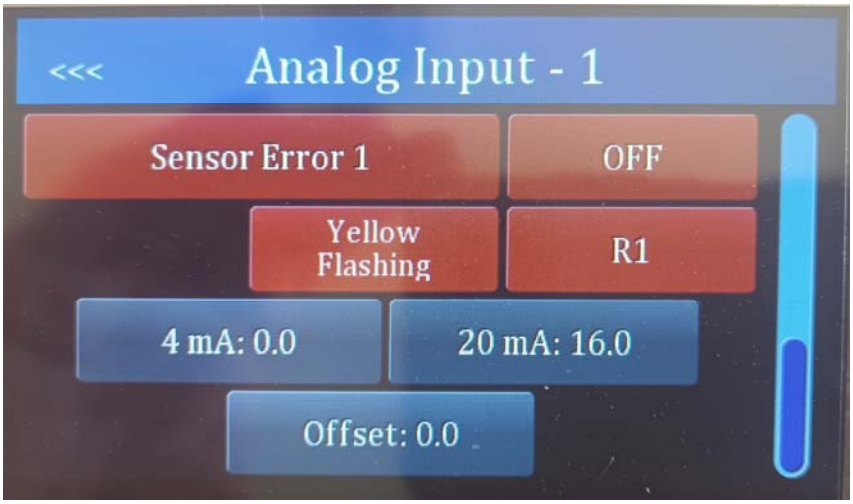


Type of Memory - there are 4 options (M1, M2, M3 and M4) that means as follow:
M1, that is the common setting - the device gives you the alarm when the max threshold is exceeded or the min threshold is underpassed.
M2, the device gives you the alarm when 2 min thresholds are underpassed (usually used with the emptying of cylinders).
M3, the device gives you the alarm when 2 max uphill thresholds are exceeded (usually used with the filling of tanks).
M4, the device gives you the alarm when 2 max downhill thresholds are exceeded (usually used with the vacuum).

The second allows to change the alarm message, the alarm thresholds, the LED to be activated, the activation of the relay.

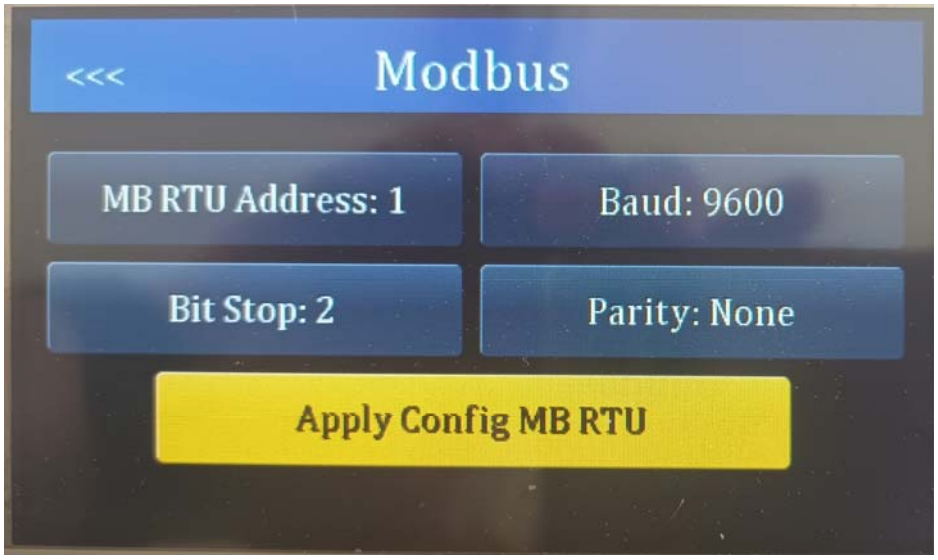


The third screen allows you to change the alarm message in the event of a transducer fault, the LED to be activated, the activation of the relay and the parameters of the sensor used.



The configuration of the digital inputs allows you to change the name of the input, activate or deactivate it, set if it has to be normally open or normally closed, the type of ringtone, the related LED to be activated, the activation of the relay and the delay of activation.

Communication
In this section it is possible to set the parameters for the Modbus RTU connection (address, baud rate, stop bit and parity)



Test
In this menu it is possible to carry out a function test of the device.

Memory
In this section it is possible to clear the history memory and reset the device to factory settings.

History
The log allows to view the list of alarms with the relative activation date and time and return to normal on a 12-page archive.

7. Device functioning

7.1. First installation

Once you have made all the necessary connections and powered up the device, you need to do the following:

- check that the display turns on
- configure the device
- carry out alarm simulation tests to verify the correct connection of the device.

7.2. Device functioning

The FLOALARM A6 unit is a TFT touchscreen display alarm.
During normal operation, the display shows the reading values of the transducers and the system status message.
If one or more alarm conditions occur, the related alarm messages are shown on the display.
If the connection to a transducer is interrupted or an anomaly occurs, the alarm messages are activated according to the set values.
The appliance has no power switches.
To stop operation, it is necessary to act on the disconnector of the system to which it is connected.
The network on which the device is installed must be with a buffer power supply.

7.3. Maintenance

Any modification or alteration made to the device is prohibited. The Manufacturer declines any responsibility in case of unauthorized modifications of the same.
Maintenance operations must be carried out by authorized personnel:

Operation	Responsible	Frequency
Check general integrity	**Competent person (in accordance with ISO 7396-1 defined by the hospital) or technical assistance personnel authorized by the Manufacturer**	**Half yearly**
Audible alarm check	**Competent person (in accordance with ISO 7396-1 defined by the hospital) or technical assistance personnel authorized by the Manufacturer**	**Half yearly**

The replacement of parts of the device must be carried out only by the manufacturer. (Procedure for replacing the fuse: Disconnect the appliance from the mains switch, remove the terminal cover, remove the fuse holder and replace with a fuse of the same characteristics).

It is recommended to check the operation of the buzzer and LEDs by periodically pressing the TEST button.
In case of malfunction or deterioration contact the manufacturer.

7.4. Cleaning

For cleaning, use a cotton swab or soft cloth.
Do not use solvents, oils, abrasives or flammable substances.

7.5. Disposal

At the time of disassembly, it is necessary to separate the plastic parts, which must be sent for separate collection.

The electrical material must be disposed of in accordance with the regulations in force.
In particular, please note that WEEE (waste of electrical and electronic equipment) must not be disposed of as urban waste and must be subject to separate collection; it is possible to return the used equipment to the distributor when purchasing a new one; the presence of hazardous substances in the equipment or improper use of the same has potentially harmful effects on the environment and human health; the symbol alongside indicates unequivocally that the equipment was placed on the market after 13 August 2005 and that it must be disposed of separately.
Please note that failure to comply with the decrees in force will be punished with the sanctions provided for by law.

8.Reference laws

The following standards were taken into consideration:
EN 50081-1: Electromagnetic compatibility - Generic emission standard
EN 50082-1: Electromagnetic compatibility - Generic standard on immunity
EN 61000-3-2: Electromagnetic compatibility (EMC) Part 3: Limits.
EN 61000-4-3: Electromagnetic compatibility (EMC); Part 4-3: Test and measurement techniques - Immunity test to radiated radiofrequency electromagnetic fields
EN 61000-4-4: Immunity to fast transients.
EN 61000-4-2: Electrostatic discharge immunity
EN 60601-1: Medical electrical equipment - General safety rules.
EN60601-1-2: Medical electrical equipment - Electromagnetic compatibility
EN60601-1-8: Alarm systems for electro-medical equipment
EN14971: Application of risk management to medical devices
UNI EN 7396-1: Systems for the distribution of compressed medical gases and for vacuum