LIQUID LEAK DETECTION SYSTEMS

FG-ALS4

Four-Zone Alarm & Location System Unit

Installation Notice

Installation Notice FG-ALS4

1 Panel Mounting

- Fix the panel to the wall using 4 screws (not included).
- Five push-through holes are provided for installing the PG11 glands.
  1. Power supply
  2. Relays
  3. Outputs 1&2
  4. Outputs 3&4
  5. JBUS/MODBUS
- Knock out the push-through holes from the outside.
- Connect all plug-in terminals (refer to step 2).
- Plug the terminals.
- Close the box, starting by inserting the top side, and then push the bottom down. Lock, using the two available screws.
- Power up from the circuit breaker.

2 Electrical Connections

- Connect the sense cables following this color code:
  - A: Green
  - B: White
  - C: Black
  - D: Red

  Terminate unused outputs with two loops between connectors A & B and C & D.

  The wiring diagram is on the back page.
- Connect the relays:
  - COM: Common
  - NC: Normally Closed
  - NO: Normally Open
- Five relays are available on FG-ALS4:
  - Relay 1 = leak zone 1
  - Relay 2 = leak zone 2
  - Relay 3 = leak zone 3
  - Relay 4 = leak zone 4
  - Relay 5 = cable-break all zones
- Connect the power supply following the signs:
  - Ground sign: Ground
  - N: Neutral
  - L: Live

  Power supply : 100-240 V AC 50/60 Hz 0.25 A

3 Capacity

The FG-ALS4 panel is designed to receive up to 45m (147 ft) of sense cable (FG-ECS, FG-ACS, FG-ECX, FG-ACX) per zone.

4 Powering-on the System

Power on from the circuit breaker:
The panel will sound and show "SYSTEM TEST" for 20 seconds on the display, and will then show the "home" screen:

- Touch the first button (flag) to change the language:
  - English
  - French
  - German

  The language setting will affect the bottom banner and the texts in the alarm screen.
- Touch the second button (arrows) to show the lengths installed in each of the 8 zones (please refer to step 5).
- Touch the third button (gears) to change the MODBUS slave number.

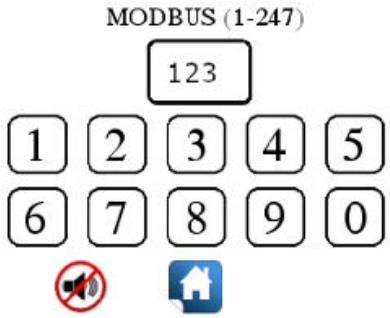
5 Settings

- Touch the second button (arrows), the touch screen shows the lengths installed on each of the four zones:

- Touch the "home" button to return to the main page.
- Touch the "refresh" button (arrows) to update the lengths displayed.

The system will return to the "home" screen after 30 seconds of inactivity.

- Touch the third button (gears) to change the Modbus slave number.



- Alarm screen:

If a fault occurs (leak or cable-break), the leak alarms are represented by a drop of liquid;

Cable-break alarms are represented by scissors and the "sensor" label.

The system will come back to the "home" screen after 30 seconds of inactivity.

Sensitivity

- The sensitivity of the unit is adjustable via the potentiometer on the PCB.
  - Clockwise : more sensitive
  - Counter-clockwise : less sensitive

6 MODBUS

The MODBUS protocol implemented on FG-ALS4 allows the current status of the system to be supervised. The two types of alarm (leak and cable-break) are coded using different Modbus registers for each individual zone.

The physical support of the MODBUS is two-wire RS485.

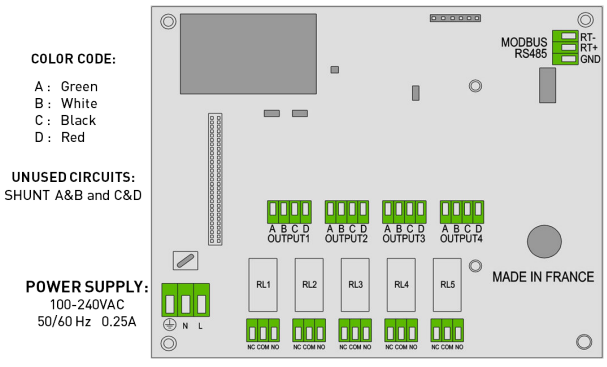
Serial port configuration	9600 B, 8 data bits, 1 stop bit, no parity
Communication protocol	MODBUS or JBUS, functions 3 or 4
Maximum number of FG-ALS connected to the same controller	31
Slave number	1 to 247
Maximum number of reading registers	16
MODBUS addresses in the memory	Register 1 = length zone 1 Register 2 = leak zone 1 Register 3 = cable-break zone 1 Register 4 = leak location zone 1 Register 5 = length zone 2 Register 6 = leak zone 2 Register 7 = cable-break zone 2 Register 8 = leak location zone 2 Register 9 = length zone 3 Register 10 = leak zone 3 Register 11 = cable-break zone 3 Register 12 = leak location zone 3 Register 13 = length zone 4 Register 14 = leak zone 4 Register 15 = cable-break zone 4 Register 16 = leak location zone 4

Format of the solution:

Slave number	Function	No. of bytes read	Byte 1	Byte 2	...	Byte N	CRC 16
1, 2, ..., 247	3 or 4	up to 32	XXh	XXh	...	XXh	XXXXh

- Remarks:

- The last panel on the serial link should be terminated with a 120 Ohms / 1W resistor between points RT- and RT+. The shielding of the data transmission cable should be connected to the controller's earth and to the terminal COM of each FG-ALS panel.
- Slave number 0 inhibits the MODBUS operation.
- It is advisable to leave at least 200 ms between the successive requests.



FG-ALS4 wiring diagram