LIQUID LEAK DETECTION SYSTEMS

FG-ALS

Alarm Location Unit With Adjustable Sensitivity

CE

Installation Notice

Installation Notice FG-ALS

1 FG-ALS Alarm Location Unit: Description

- The FG-ALS Alarm Location System is designed for use with TTK analog sense cables; FG-ECS, FG-ACS and FG-ECX, FG-ACX. It instantly detects leaks of liquid (water, acid or base). If a leak is detected, the FG-ALS will act as follows:
  - A sound alarm is triggered.
  - The LCD display on the front panel of the alarm unit shows the distance to the leak in meter, the red LED comes on and the leak relay is activated.

  If a cable break occurs, a sound alarm is triggered, the yellow LED comes on and the cable break relay is activated.
- To stop the sound alarm, press the "reset" button. The diode and the dry contact remain activated for as long as the fault is present. When the fault disappears, the diode is switched off, the relay returns to its original normal status and the content of the display disappears.
- The FG-ALS is equipped with a potentiometer to allow easy adjustment of sensitivity.
- Maintenance of the system is recommended at least every six months.

2 Panel Mounting

- The FG-ALS is available in a wall-mounted unit.
- Two of the three cable glands are positioned on the FG-ALS Alarm Locating Unit, the last one can be screwed in the position of plug PG7.
- Use the four fixing holes in the lower part of the unit box. Release the upper part of the box from the lower part, which is maintained by four screws. These two parts can be easily dismounted after mural fixing. Remove the upper part with the PCB (printed circuit board) carefully.
- **The FG-ALS Alarm Locating Unit contains:**
  - 1 FG-ALS Alarm Unit
  - 3 PG cable glands: 2 PG7 + 1 PG9
  - 1 Installation Notice

3 Connection and Adjustment

1. Power Connection	The FG-ALS Alarm Unit is powered into 12-24 V AC, 15-30 V DC or 100-240 V AC, 50/60 Hz 0.25 A. For power, relays and Modbus connection, the maximum cable section cable is of 12 AWG. Use the PG9 cable gland for the cable 230 V. There is no need to respect polarity with a low voltage connection.
2. Relays Connection	The dry relays are free of potential. **Dry Contact for Leak:** The leak contact transfers information regarding a leak to a PC (or controller), allowing automated control of the equipment. **Dry Contact for Cable Break or Power Failure:** A specific contact will be activated when a cable break occurs. Loss of power supply will also activate the contact. Relays: NO-COM-NC Maximum voltage commutated: 125 V AC / 60 V DC
3. Serial Interface Physical Support	Opto-isolated, two-wire RS485
4. Serial Link Parameters	9600 baud, 8 bits, 1 bit stop, no parity
5. Supported Protocol	Modbus, Functions 3 and 4

4 Connecting the Sense Cable

Connecting Sense Cables FG-ECS or FG-ACS:

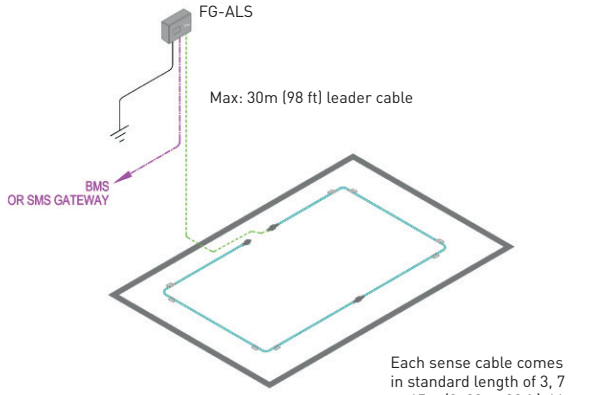
A junction with a length of 3.5 metres (11.5 ft) of Belden jumper cable on each length of FG-ECS and FG-ACS allows a simple connection to the FG-ALS alarm location unit.

Connecting Sense Cables FG-ECX or FG-ACX:

Connect the FG-CLC leader cable, refer to "FG-SYS installation guide" chapter 1, section 3.3 "Connection of FG-CLC leader cable".

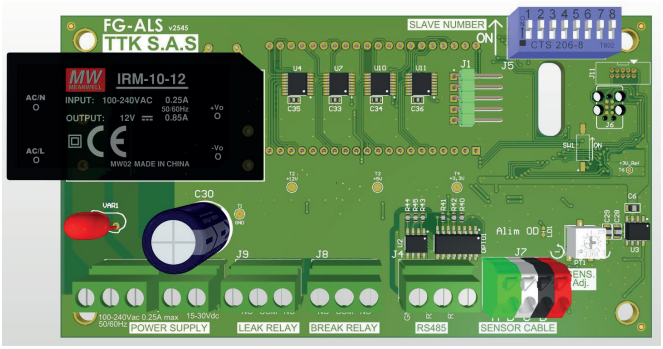
The FG-CLC leader cable, connected to the FG-ALS alarm locating unit with a female connector, at its extremity. The beginning of the sense cable thus corresponds with a male connector at its far end.

Connect the first sense cable to the leader cable coming from the FG-ALS alarm unit.



Each sense cable comes in standard length of 3, 7 or 15m (9, 22 or 39 ft). Max 150m (490 ft) of sense cable in total.

5 Connecting the Motherboard



Connect the various cables (leader cable, power supply and relays) at the corresponding connector block.	
Power supply	N: Neutral P: Live ⏚: Earth
Power supply 12-24 V AC, 15-30 V DC	No polarity, no insulation
Leak Relay	NO-COM-NC
Cable Break / Power Failutre Relay	NO-COM-NC
RS485	1: COM 2: RT+ 3: RT-
FG-ECS or FG-ACS or FG-ECX or FG-ACX	A: Green wire B: White wire C: Black wire D: Red wire
Potentiometer P1 for adjusting level of sensitivity of detection. **Counter-clockwise = less sensitive** **Clockwise = more sensitive**	

6 Start-Up Guide

Normal Operation	- Switch on the FG-ALS alarm location unit. - An audible alarm is triggered, all three LEDs illuminate, and the display shows the total length of the installed sense cable. - The audible alarm then stops, the green LED remains illuminated, and the display switches off. - The alarm location unit is now in normal operating mode.
↓	
Simulation of Leak	- Apply water directly onto the sense cable. - The red LED illuminates, the audible alarm and the leak relay are activated, and the display indicates the location of the leak origin. - Press the button to mute the audible alarm. - Remove the water using a dry cloth. - The red LED turns off, the display switches off, and the relay returns to its normal state.
↓	
Simulation of Cable Break	- Disconnect the sense cable from the FG-ALS alarm location unit to simulate a cable break. - The yellow LED illuminates, and the audible alarm and the break relay (dry contact) are activated. - Press the button to mute the audible alarm. - Reconnect the sense cable to the FG-ALS alarm location unit. - The yellow LED turns off, and the relay returns to its normal state.

7 After Installation: ABC Steps

A. Produce a clear and precise installation drawing and place it close to the FG-ALS Alarm Location Unit.

B. Make sure that the following documents are available to the Client:
- FG-ALS Alarm Location Unit data sheet
- Drawing of the installation
- Installation Notice

C. Inform the Client that it is advisable to perform maintenance operation twice per year on the system.

Company _____

Operator name _____

Date____ /____ /____

Caution: Connector blocks must always be connected with the FG-ALS Alarm Location Unit supply switched off.