



LIQUID LEAK DETECTION SYSTEMS

FG-SYS

Digital Unit for Leak Detection and Location

Product Datasheet



- ▶ Digital, Fully Addressable
- ▶ Instant Locating of Fault
- ▶ Dedicated Monitoring Software
- ▶ MODBUS/JBUS Connection

Description

The FG-SYS digital unit is designed to be used with TTK digital sense cables for water, bases and acid leak detection.

In the event of a fault on the sense cables (leak or cable break):

Primary responses from the FG-SYS unit:

- An audible alarm is triggered, the indicator light changes from green to red and a relay is activated.
- The display on the panel shows the leak location (to the nearest 1 metre) and fault's details (type of fault, leak or cable break), with time and date.

Secondary optional advanced responses:

- Dedicated monitoring software: TOPSurveillance installed on a computer will show dynamic drawings highlighting the location of the faults;
- Report to the BMS via a JBUS/MODBUS protocol.

The FG-SYS digital unit will reset automatically once the leak or the default is cleared.

Features & Benefits

FEATURES

- Wall mounted.
- 3 outputs are available, can be used independently.
- Up to 120 lengths of sense cables can be managed independently by the unit.
- 30 events history log allows to track leaks and cable breaks.
- 2 interface types for connection to building management and process control systems:
 - Two independent serial interfaces, each of them can be set for RS232 or RS422/485.
 - 9 relay contacts: 8 configurable relays + 1 specific relay for power interruption.
 - 8 relay positions are defined by a LED indicator.
 - Total programmable relays.
- Password is required for security.

BENEFITS

- Pin-point location of a leak (to 1 metre).
- Each sense cable is addressable and can be customized by assigning a specific identity and name.
- Multiple simultaneous leaks can be detected (120 cables = 120 alarms).
- Two different types of sense cables (for detecting water and acid liquids) can be connected on the same panel for a truly bespoke system.
- Cable break faults can be detected (to the nearest cable).
- When a cable break occurs, the system maintains its integrity and keeps monitoring all cables installed before that break.
- Compatible with existing monitoring systems (Trend BMS etc.)
- Extension and upgrade of the system is easy. No additional power source or zoning panels are required.
- Minimum maintenance required.

Buttons Functions

"ACQ"	Allows manual acknowledgement of the audible alarm. This key is also used in the main menu and history record, to validate and to return to the previous screen.
"T"est	Launches the FG-SYS system test and cables scan. The display will show the numbers, names and lengths for each connected sensing cable.
"M"enu	Settings menu for cables names, date & time, sound alarm, relays, language, passwords and others. This menu is password protected.
"H"istory	Access to the events log registering the 30 last alarms sorted by date in a FIFO memory.

Technical Data

Compatibility	Sense cables (digital): FG-EC, FG-AC Sense cables (analog through FG-DTCS box): FG-ECS, FG-ACS Diversion boxes: FG-DTC, FG-DTCS, FG-DCTL Accessories: TTK 8723 jumper cable, FG-CLC, FG-TMC
Dimensions & Weights	W: 200mm H: 250mm D: 100mm Weight: 3kg
Maximum Length of Sense Cable	1800 meters (600 meters per circuit)
Accuracy	+/- 1 meter
Operating Languages	English, French, German
Dimensions	200x250x100mm (Wall mounted, F)
Supply Voltage	100-240VAC, 50/60Hz, 15W
Working Temperature Range	0°C to 50°C
Working Humidity	5% to 95% non-condensing
Relay Types	Single contact NO-NC
Alarm Relays	Eight programmable relays for leaks and/or breaks with status LED, plus one power fail relay
Supported Protocol	Modbus RS232, RS422, RS485, available on two independent interfaces
Maximum Switching Voltage	125 V AC and 220 V DC
Maximum Switching Capacity	60 W (30V x 2A)

Digital Unit Status

- **Normal Operating Condition:** The FG-SYS digital unit doesn't detect any alarm.
- **Leak Detection:** a leak occurs on one of the monitored zones; a signal light turns to red, an audible alarm sounds, a de-energized relay is activated; the LCD display shows the time and date of the alarm with the area name and the leak location in metres.
- **Cable Break:** When the FG-SYS digital unit detects a circuit break on one of the monitored circuits; a signal light turns to red, an audible alarm sounds, a de-energized relay is activated; the LCD display shows the time and date of the alarm with the area name and the damaged cable number.

Technical Information

Terminal Block Wiring :

- Power: 100-240VAC 50/60Hz 15W. Power connector M+F.
- Circuits 1,2,3: 4 pts connector for leader cable FG-CLC.
- Relays: 8 relays with 3 pts connectors(COM, NO, NC) programmable.
- Serial interfaces 1&2: Screw terminals with RS232 or RS422/485 for JBUS/MODBUS communication to BMS, and for external relays or PC Computer.

Identification Codes

FG-SYS F (Wall Mounted)	FG-SYS digital unit wall mounted in metal enclosure
FG-EC, FG-AC	Digital sense cables in 3m, 7m and 15m lengths
Accessories	
FG-CLC	Leader cable (Belden ref. 8723 in 3.5m lengths)
FG-TMC	End termination plug
FG-DTC	"T" branch, diversion box
FG-DTCS	Addressable box for FG-ECS, FG-ACS sense cables
FG-DCTL	Digital cut to length diversion box

Certificates



FG-SYS digital unit meets the requirements of all European Standards in EN 50081-1 (92) and EN 50082-1 (92) (report reference n° 8080612-CQPE/1 dated 14/09/1998)
FG-SYS digital unit meets the TÜV requirements, according to IEC 61010-1/A2.
FG-SYS leak detection and locating system is UL Listed.

All the connections in the FG-SYS digital unit must be done with the power supply switched off.
Read carefully the installation procedure for the FG-SYS digital unit.

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