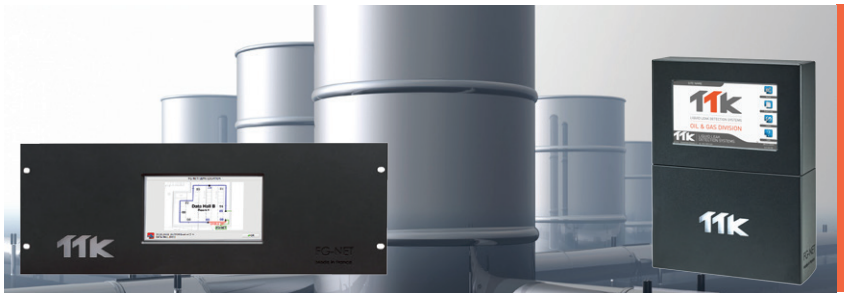
LIQUID LEAK DETECTION SYSTEMS
OIL & GAS DIVISION

FG-NET-LL

Long Line Digital Unit for Hydrocarbon Leak Detection Sense Cables

Product Datasheet



- Digital, Fully Addressable
- Monitoring Up to 2400 meter FG-OD Sense Cables
- Touch Screen Interface
- Dynamic Leak Evolution Analysis
- TCP/IP & MODBUS/JBUS Connection
- Exclusive for FG-OD Rang of Sense Cable

Description

The FG-NET-LL Digital Unit is designed to be used with TTK FG-OD range of Digital Sense Cables, for industry Long Line application.
In the event of a fault on the sense cables (leak or cable break):

Primary responses from the FG-NET-LL:

- An audible alarm is triggered and a relay is activated.
- The touch screen of the panel displays the location of the leak (to the concerned sense cable) and details of the fault (the type of fault leak or cable break), including the time and date the fault is registered.
- Optional – integrated maps of the leak detection installation highlighting the location of the fault, available on the touch screen display of FG-NET-LL.

Secondary advanced responses :

- Report to the DCS / SCADA / Safeguarding System via a JBUS/MODBUS protocol. The FG-NET-LL can drive dynamic drawings on the host DCS / SCADA /Safeguarding System.
- Send email alerts and SNMP traps to a LAN-connected DCS / SCADA / Safeguarding System, via a standard Ethernet connection.

Features & Benefits

FEATURES

- 7" (175mm) touch-screen gives a clear and detailed indication of the system status.
- User-friendly system - users can customise the system with the sub menus accessible from the home screen, to set up the panel.
- Up to 120 lengths of sense cables can be managed independently.
- The system's reaction time to faults is adjustable cable by cable.
- Temporal isolation (72 hours maximum) a or several sense cables.
- Up to 5000 events stored in the history log.
- Non-volatile memory (SD), for storing user settings and drawings.
- Three types of interface for communication with a BMS available.
  - TCP/IP connection via an Ethernet port.
  - JBUS/MODBUS RS232 or RS422/485 serial links.
  - 9 relay contacts: 8 configurable relays + 1 specific relay for power interruption.
    - Dual relay drive (e.g. 1 for BMS and 1 for solenoid valve);
    - Relay positions are defined by a LED indicator.
- Different security levels to provide maximum security.

BENEFITS

- Dynamic Leak Evolution Analysis - The magnitude of a leak and its evolution in time can be analysed through the alarm logs. The number and sequence of addressable sections which report a leak, together with their timestamp, allow to monitor the leak's progression in time.
- Precise location of a leak and cable break to the concerned sense cable.
- Each sense cable is addressable and can be assigned a specific name.
- Multiple simultaneous leaks can be detected (120 cables = 120 potential alarms).
- When a cable break occurs, the system maintains its integrity by continuing to monitor all preceding cables for faults.
- Compatible with existing monitoring systems (Trend DCS etc.)
- Extension and upgrade of the system is easy.

Touch Screen Menus

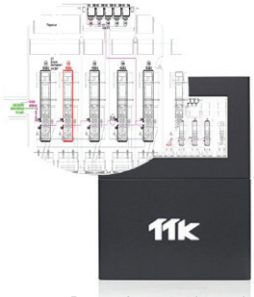
Four menus available for configuration of the FG-NET-LL:

Setup	Main page for setting up the system architecture, cable isolation and reaction time rules, acknowledge mode, user access, relay status, time zone, language, sound alarm, serial links and network functionalities. An administrator level password is required to access this menu.
Event log	For viewing the recorded alarm history. A maximum of 5000 events can be stored in the event log.
Cables	To give the user a general overview of the site installation. The interactive floor plan can be viewed under this menu as an optional feature.
Help	Provides troubleshooting procedures, contact details of the manufacturer and the reference number of the unit.

Screen Shots



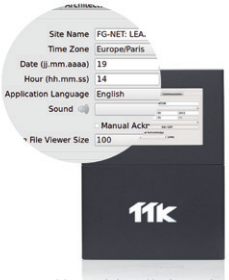
Simultaneous alarms displayed on one screen



Dynamic map shows leak in real time



Easy setup of relays for each cable



User-friendly interface of configuration

Technical Data

Compatibility	Digital sense cable: FG-OD, FG-ODL Satellite devices: FG-BBOX, FG-BBOX-LL, FG-RELAYS Diversion box: FG-DEx Accessories: ''TTK 8771'' jumper cable, FG-CLOD, FG-TMOD, FG-NOD (x)
Dimensions & Weights	Wall mounted W: 228 mm H: 303 mm D: 67 mm Weight: 2.3kg Rack mounted W: 483 mm H: 177 mm D: 74 mm Weight: 3kg
Maximum Length of Sense Cable	2400 meters (3 circuits x 40 cables x 20 m) (connected with 1000m jumper cable and Zener barrier MTL7760ac or equivalent)
Accuracy	Concerned sense cable
Operating Languages	English, French, German
Voltage Input	100 to 240 VAC, 50-60 Hz
Power Consumption	36VA Max
Working Temperature Range	5°C to 40°C
Working Humidity Range	5% to 80% non-condensing
Relay Types	Volt free dry contact (NO, NC, COM)
Realy Numbers	9 (8 + 1 power failure relay)
Serial Connection	MODBUS/JBUS RS232 or RS422/485
Maximum Switching Voltage	125 V AC and 60 V DC
Maximum Switching Capacity	60 VA or 30 W
Ingress Protection	IP40 - Indoor use only

Identification Codes

FG-NET-LL (Wall mounted / Rack mounted)	Long line digital unit for hydrocarbon leak detection sense cables in wall mounted in plastic enclosure / in rack mounted in 19" & 4U
FG-BBOX	Digital black box 100-240V
FG-RELAYS	Digital 24 external relays box 100-240VAC 1.3A 50/60Hz
FG-OD3, 7, 12, 20	Digital sense cables in lengths of 3m, 7m, 12m, 20m
FG-ODLxxyy/xxyy/xxyy	Customerized Hydrocarbon sense cable, with connectors at each end xx= section length (3, 7, 12 or 20); yy= section numbers i.e.: FG-ODL2004: the mounting of 4 section cables FG-ODL : 4 sections of 20m
Accessories:	
FG-DEx	ATEX bus diversion box for FG-OD hydrocarbon sense cable
FG-NOD (x)	''OD bus 8771'' jumper cable x meters with connectors

Certificates

FG-NET-LL digital unit meets the TÜV requirements.
FG-NET-LL leak detection and locating system is UL Listed.
FG-OD sense cables which are certified by ATEX can be connected to the FG-NET-LL digital unit.

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

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