



- ▶ FG-NET Satellite Device
- ▶ Monitoring up to almost 4000m Sense Cables
- ▶ Dynamic Leak Evolution Analysis
- ▶ Location of Faults on Cable
- ▶ Exclusive for FG-OD Sense Cable

Description

The FG-BBOX-LL is a satellite device of the TTK FG-NET Digital Unit. It is designed to be connected with FG-OD oil leak detection sense cables only, for industry Long Line application.

Same function principal as FG-BBOX, the FG-BBOX-LL is monitored by FG-NET via a standard Ethernet network. It expands FG-NET to manage two additional circuits of sense cables with up to 198 (2 x 99) addresses of additional Sense Cables.

The FG-BBOX-LL detects multiple simultaneous leak location to the concerned sense cable. All command and control is centralised to the FG-NET, FG-BBOX-LL is not equipped with display so it can be discretely located.

FG-BBOX-LL connects to the FG-NET through the facilities Ethernet network, eliminating the need for additional connections.

In the event of a fault on the sense cables connected to the FG-BBOX-LL, the relevant relay contact is activated and the LED on the relevant circuit switched to red.

On the FG-NET unit, the alarm appears on its touch screen, the responses are identical as a fault on the sense cable physically connected on the FG-NET unit.

Features & Benefits

FEATURES

- Up to 198 FG-OD Sense Cables can be managed independently providing a maximum protected length of 3960m (198 x 20m) for the both circuits.
- No physical jumper cable or distance limit between FG-NET unit and FG-BBOX-LL.
- Up to 16 FG-BBOX-LL can be connected to one FG-NET unit without exceeding a total number of 500 Digital Sense Cables per FG-NET.
- TCP/IP connection via standard RJ45 socket.
- Relay type: Volt Free Contact NO/NC.
- 4 Relay contacts: 2 leak relays (1 for each circuit), 1 cable break relay and 1 power failure relay.

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.
- Multiple simultaneous leaks can be detected and located (198 cables = 198 potential alarms).
- Each sense cable is addressable and can be assigned a specific name.
- Cable break faults can be detected (to the concerned cable). When a cable break occurs, the system maintains its integrity by continuing to monitor all preceding cables for faults.
- Extension and upgrade of the system is easy.

Product Diagram



FG-BBOX-LL

Technical Data

Compatibility	Digital units: FG-NET, FG-NET-LL Sense cables: FG-OD, FG-OD-LL
Dimensions	W: 175 mm H: 220 mm D: 55 mm
Maximum Length of Sense Cable	Up to 3960m (2 circuits x 99 lengths x 20m) per unit
Accuracy	To the concerned sense cable
System Capacity	Up to 16 FG-BBOX-LL can be monitored by 1 FG-NET or FG-NET-LL
Supply Voltage	100-240VAC 0.35A 50/60Hz
Maximum Power Consumption	15W
Working Temperature Range	-15°C to 55°C
Working Humidity Range	5% to 80% non-condensing
Relay Types	Volt free contact (NO, NC, COM)
Relay Numbers	4
Connectivity	RJ45
Maximum Relay Switching Voltage	125 V AC and 60 V DC
Maximum Relay Switching Capacity	60 VA or 30 W
Ingress Protection	IP50 - indoor use only

Identification Codes

FG-BBOX-LL	Long Line digital black box for hydrocarbon leak detection 100-240V
FG-BBOX	Digital black box 100-240V
FG-NET (Wall mounted / Rack mounted)	FG-NET digital unit wall mounted in plastic enclosure / rack mounted in 19" & 4U
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-OD 3, 7, 12	Hydrocarbon sense cable in 3, 7, 12m
FG-OD-LL	Hydrocarbon sense cable in 3, 7, 12, ..., 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-OD sense cables which are certified by ATEX can be connected to the FG-BBOX digital black box.

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

This brochure has been carefully prepared to ensure technical accuracy but is only intended for promotional use. TTK cannot guarantee that the information contained herein contains no errors or omissions, and hence does not accept responsibility related to the use of its equipment. TTK maintain its obligations set forth in the Standard Terms and Conditions of Sale and will not, under any circumstances, assume liability for any incidental damages, indirect or consequential, arising from the sale, resale, use or misuse of this product. The purchaser(s) accept their responsibility as the sole judge(s) of the adaptability of the product for the intended use.
FG-NET, FG-SYS and TOPSurveillance are trademarks of TTK S.A.S. © TTK 2010

- **TTK Headquarters** / 4 rue du Chemin Vert, 92110 Clichy, France / T : +33.1.56.76.90.10 / F : +33.1.55.90.62.15 / www.ttk.fr / ventes@ttk.fr
- **TTK UK Ltd.** / 3 Luke Street London EC2A 4PX - United Kingdom / T : +44 207 729 6002 / F : +44 207 729 6003 / www.ttkuk.com / sales@ttkuk.com
- **TTK Pte Ltd.** / #09-05, Shenton House, 3 Shenton Way / Singapore 068805 / T: +65.6220.2068 / M: +65.9271.6191 / F: +65-6220.2026 / www.ttk.sg / info@ttk.sg
- **TTK Asia Ltd.** / 2107-2108 Kai Tak Commercial Building / 317 Des Voeux Road Central / Hongkong / T: +852.2858.7128 / F: +852.2858.8428 / www.ttkasia.com / info@ttkasia.com
- **TTK Middle East FZCO** / Building 6EA, Office 510 PO Box 54925 / Dubai Airport Free Zone / UAE / T: +971 4 70 17 553 / M: +971 50 259 66 29 / www.ttkuk.com / cgalmiche@ttk.fr
- **TTK Deutschland GmbH** / Berner Strasse 34, 60437 Frankfurt, Deutschland / T : +49(0)69-95005630 / F : +49(0)69-95005640 / www.ttk.fr/de/ / vertrieb@ttk-gmbh.de