# FG-BBOX

## Digital Black Box

Product Datasheet

► FG-NET Satellite Device
► Digital, Fully Addressable
► Monitoring Up to 1200m Sense Cables
► Location of Faults to 1m

## Description

The FG-BBOX is a satellite device of the TTK FG-NET Digital Unit. It 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 1200 metres of additional Sense Cables.

The FG-BBOX can be connected with all TTK Digital Sense Cables, for water, acids and oil leak detection.

The FG-BBOX has the same advanced functionalities as FG-NET with multiple simultaneous leak location to 1m accuracy. All command and control is centralised to the FG-NET, FG-BBOX is not equipped with display so it can be discretely located.

FG-BBOX 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, 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 80 Digital Sense Cables can be managed independently providing a maximum protected length of 1200m for the both circuits.

- No physical jumper cable or distance limit between FG-NET unit and FG-BBOX.

- Up to 25 FG-BBOX 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

- Multiple simultaneous leaks can be detected and located (80 cables = 80 alarms).

- Different types of sense cables can be connected on the same panel for a truly bespoke system (Water, Acids, Oils)

- Each sense cable is addressable and can be assigned a specific name.

- Cable break faults can be detected (to the nearest 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



L: 175mm  P: 55mm  H: 220mm

# Technical Data

| | |
|---|---|
| **Compatibility** | Digital unit: FG-NET<br>Sense cables (digital): FG-EC, FG-AC, FG-OD range<br>Sense cables (analogue through FG-DTCS box): FG-ECS, FG-ACS |
| **Dimensions** | W: 175 mm H: 220 mm D: 55 mm |
| **Maximum Length of Sense Cable** | 80 lengths of sense cable (40 per circuit) |
| **Accuracy** | +/- 1 meter |
| **IT Security** | TCP/IP connection (IPv4, IPv6) & MODBUS/JBUS<br>Secure connection (Log-In Trap, HTTPS with TLS1.2, RFC 5280: X.509 (PKIC and CRL profile), IEEE 802.1X support, RADIUS or EAP-TLS) |
| **System Capacity** | Up to 25 FG-BBOX can be monitored by 1 FG-NET |
| **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 220 V DC |
| **Maximum Relay Switching Capacity** | 60 W (30V x 2A) |
| **Ingress Protection** | IP40 - indoor use only |

# Identification Codes

| | |
|---|---|
| **FG-BBOX (Wall mounted)** | FG-NET's Satellite Device - 2 Circuits Black Box (wall mounted) 100-240VAC |
| **FG-NET (Wall mounted / Rack mounted)** | Digital Touchscreen Leak Detection Panel 100-240VAC |
| **FG-EC, FG-AC, FG-OD** | Digital sense cables in 3m, 7m and 15 lengths (3m, 7m and 12m for FG-OD) |
| **Accessories** | |
| **FG-DTC** | Diversion Box for 'TTK Bus 8723' |
| **FG-DTCS** | Addressable Box for one Water or Acids Cable, on 'TTK Bus 8723' (Sector Mode) |
| **FG-DCTL** | 'Cut-To-Length' Addressable Box for one Water or Acids Cable, on 'TTK Bus 8723' (Sector Mode) |
| **FG-DOD** | Bus Interface, for Integration of FG-OD Cables |
| **FG-CLC** | Leader Cable 3,5m, on 'TTK Bus 8723' |
| **FG-TMC** | Digital End Plug for Water or Acids Cables |

# Certificates

CE  TÜV GS  Ex

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

■ **TTK Headquarters /** 19, rue du Général Foy / 75008 Paris / 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 / sales@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**