FG-DTM
Modbus Interface

Product Datasheet

► Merge Analog and Digital Systems
► Compatible with TTK's 3 Digital Panels
► Easy to Configure and Operate
► Real-Time Status Indication via LED

Description

FG-DTM is a Modbus interface, designed to merge the product line of digital and analog systems. It collects information from analog panels and integrates them into the digital system. Therefore, the digital panel acts as central monitoring unit on which analog panels and all connected sense cables circuits can be supervised. Meanwhile, each analog panel acts as an independent local detection module.

In the event of a leak being detected on a local panel, it sounds an alarm, activates local relays, displays the location on the module and simultaneously sends signals to the digital panel, where all circuits are monitored. As a result, alarms are displayed at the same time on both the local panel and central monitoring panel. When the BMS is configured, all alarms will also be reported on this.
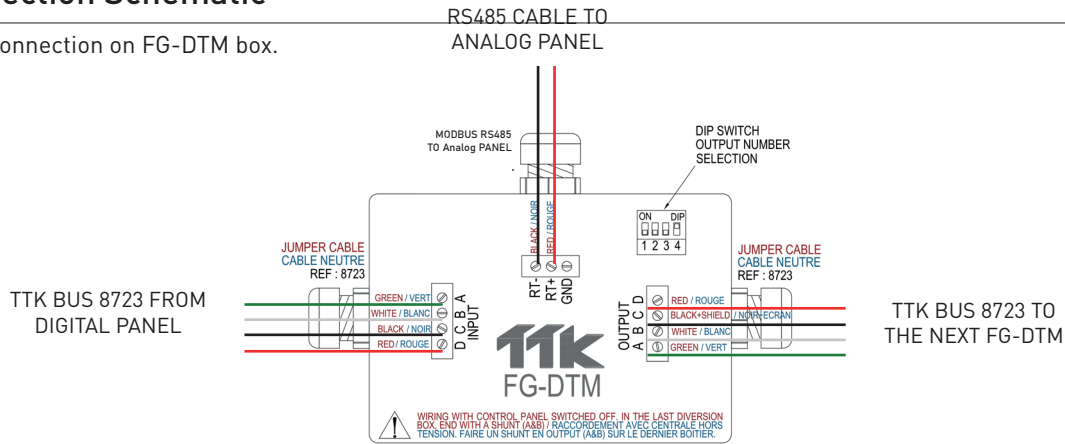
Key Advantages

- The LED on the front of the enclosure displays its real-time status:
  - Blinking green: successful response from the Modbus slave (analog control panel);
  - Blinking red: no response from the Modbus slave (analog control panel).
- FG-DTM is capable of monitoring up to 196 ft (60 m) of sense cables on each analog circuit of the FG-ALS8 panel; and up to 147 ft (45 m) for the FG-ALS4 panel.
- Up to 10 FG-DTM boxes can be connected on a FG-NET / FG-SYS / FG-BBOX circuit.
- Up to 98 ft (30 m) of distance of the RS485 line between a FG-DTM box and an analog panel.
- In the event of loss of the link with the analog control panel, all the activated addresses will transmit a cable break alarm.

- FG-DTM is ideally suited for medium and large facilities where both centralized interface and local interface are required.
- In the event of alarm, both analog panel (local detection module) and digital panel (central monitoring unit) can display the alarm information simultaneously.
- Redundancy: In the event of a connection failure with the digital monitoring panel, the analog panel continues to operate independently.
- Fail-Safe: In the event of a system failure, the BMS continues to receive information through the local relays.
- Local relays can be activated automatically by the analog panel allowing the system to drive the external equipment such as a solenoid valve.

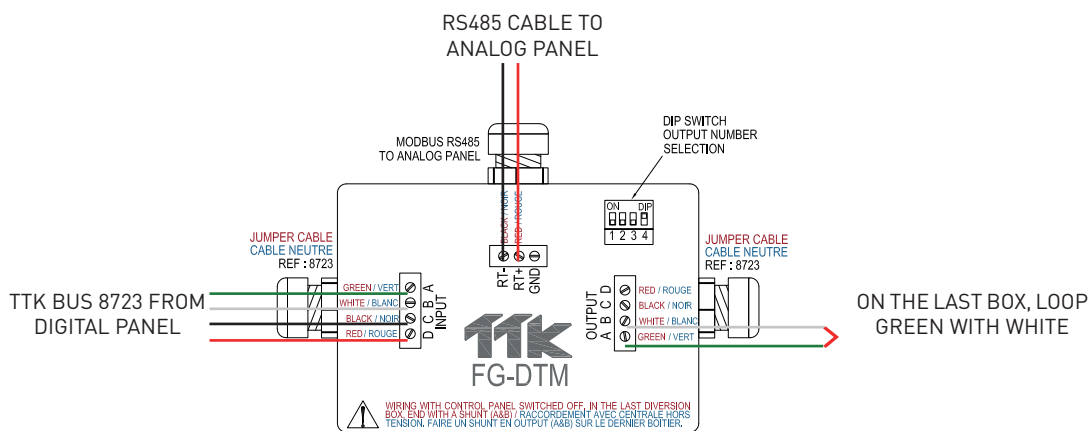## Technical Data

Compatibility	Digital units: FG-NET, FG-SYS, FG-BBOX Analog units: FG-ALS4, FG-ALS8 FG-DTM can be mixed on a digital system along with the following material: • FG-EC water sense cable • FG-ECP water point sensor • FG-AC acids sense cable • FG-OD sense cables via FG-DOD, OD bus interface box Diversion boxes: • FG-DTCS addressable box • FG-DCTL addressable box • FG-DTC bus diversion box
Enclosure Type	ABS POLYAC 707 (a natural ABS) Rated UL94 HB
Ingress Protection	IP68
Dimensions (W,H,D)	4.13'W x 2.95'H x 2.16'D (105 x 75 x 55mm)
Operating Temperature	5°F à 131°F (-15°C to 55°C)

Connection Schematic

Wires connection on FG-DTM box.

RS485 CABLE TO ANALOG PANEL

MODBUS RS485 TO Analog PANEL

DIP SWITCH OUTPUT NUMBER SELECTION

ON DIP
1 2 3 4

JUMPER CABLE CABLE NEUTRE REF : 8723

JUMPER CABLE CABLE NEUTRE REF : 8723

TTK BUS 8723 FROM DIGITAL PANEL

TTK BUS 8723 TO THE NEXT FG-DTM

GREEN / VERT
WHITE / BLANC
BLACK / NOIR
RED / ROUGE

D C B A
INPUT

RT- RT+ GND

OUTPUT A B C D

RED / ROUGE
BLACK+SHIELD / NOIR+ECRAN
WHITE / BLANC
GREEN / VERT

TTK FG-DTM

⚠ WIRING WITH CONTROL PANEL SWITCHED OFF. IN THE LAST DIVERSION BOX, END WITH A SHUNT (A&B) / RACCORDEMENT AVEC CENTRALE HORS TENSION. FAIRE UN SHUNT EN OUTPUT (A&B) SUR LE DERNIER BOITIER.

Wires connection and loop on the last FG-DTM box on a circuit.

RS485 CABLE TO ANALOG PANEL

MODBUS RS485 TO ANALOG PANEL

DIP SWITCH OUTPUT NUMBER SELECTION

ON DIP
1 2 3 4

JUMPER CABLE CABLE NEUTRE REF : 8723

JUMPER CABLE CABLE NEUTRE REF : 8723

TTK BUS 8723 FROM DIGITAL PANEL

ON THE LAST BOX, LOOP GREEN WITH WHITE

GREEN / VERT
WHITE / BLANC
BLACK / NOIR
RED / ROUGE

D C B A
INPUT

RT- RT+ GND

OUTPUT A B C D

RED / ROUGE
BLACK / NOIR
WHITE / BLANC
GREEN / VERT

TTK FG-DTM

⚠ WIRING WITH CONTROL PANEL SWITCHED OFF. IN THE LAST DIVERSION BOX, END WITH A SHUNT (A&B) / RACCORDEMENT AVEC CENTRALE HORS TENSION. FAIRE UN SHUNT EN OUTPUT (A&B) SUR LE DERNIER BOITIER.
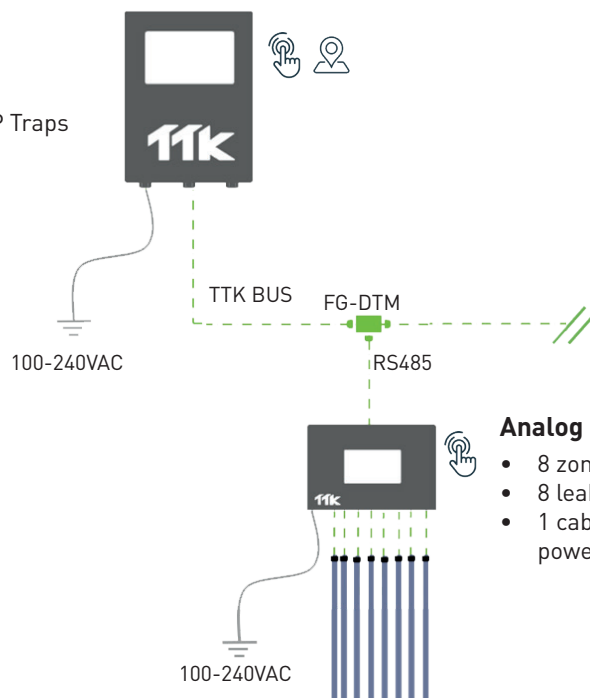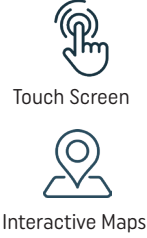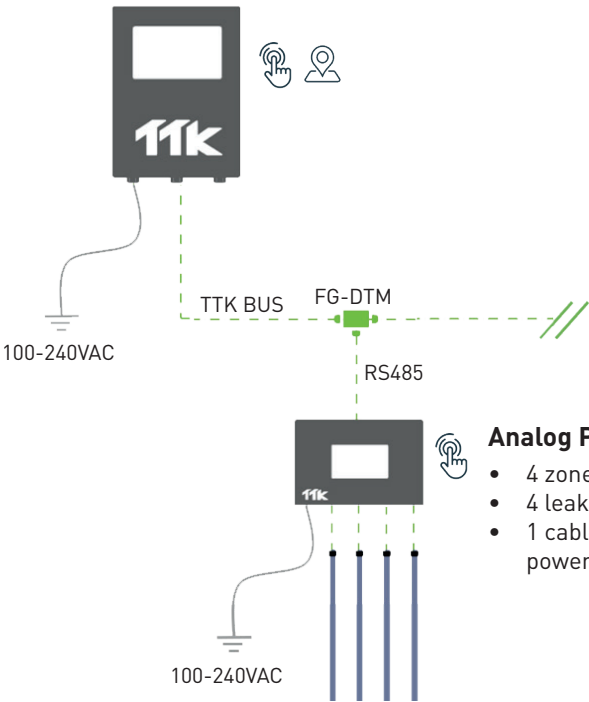
Design Schematic

Schematic 1

Basic integration of one analog detection panel FG-ALS8 and analog sense cables into a circuit of FG-NET digital panel.

Digital Panel FG-NET Features:

- 8 configurable Relays
- 1 power Fail Relay
- 1 Ethernet Port (TCP/IP)
  ↳ Modbus TCP/Emails/SNMP Traps
     Web Interface
- 1 Serial Port
  ↳ RS232/RS422/RS485
     Modbus RTU

Touch Screen

Interactive Maps

TTK BUS

FG-DTM

100-240VAC

RS485

Analog Panel FG-ALS8 Features:

- 8 zones (up to 196 ft (60 m))
- 8 leak relays
- 1 cable break relay (common) + power fail relay

100-240VAC

Design Schematic

Schematic 2

Basic integration of one analog detection panel FG-ALS4 and analog sense cables into a circuit of FG-NET digital panel.

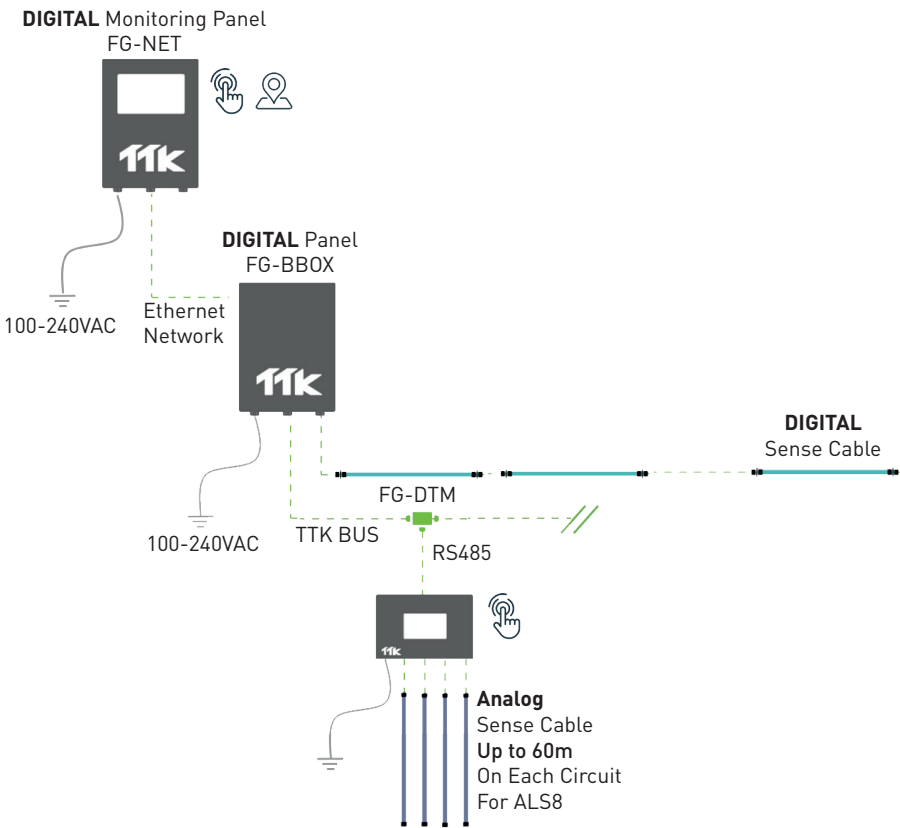**DigitalPanel FG-NET Features:**
   Idem as in FG-ALS8 schema

Touch Screen

Interactive Maps

TTK BUS   FG-DTM

100-240VAC

RS485

Analog Panel FG-ALS4 Features:
- 4 zones (up to 147 ft (45 m))
- 4 leak relays
- 1 cable break relay (common) + power fail relay
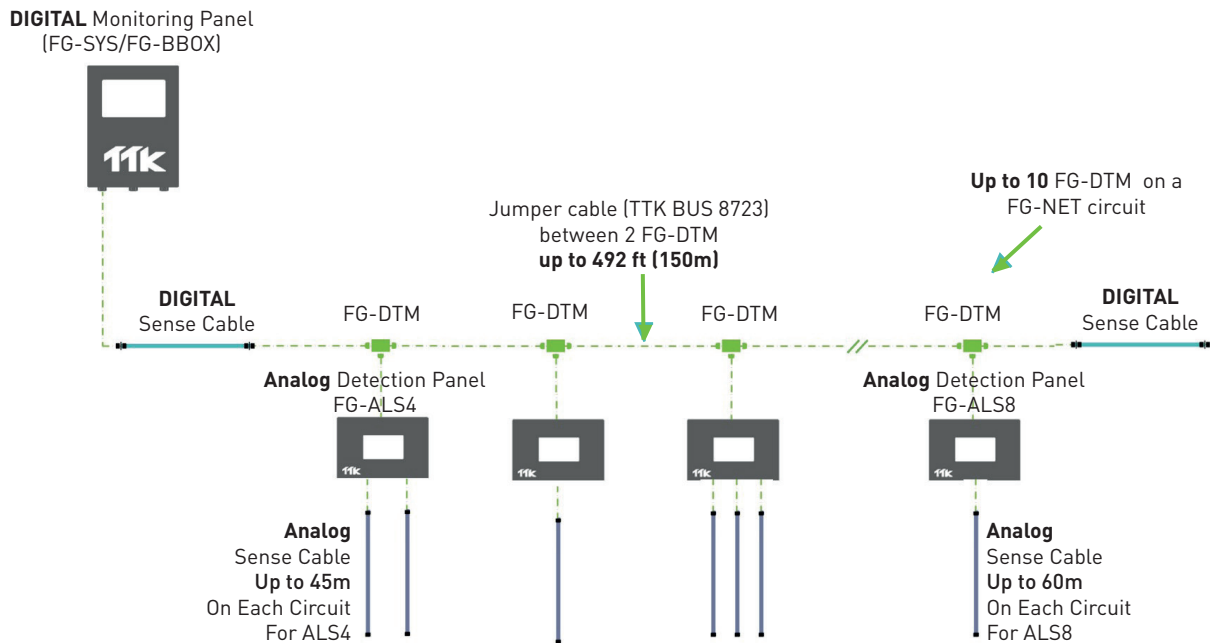
100-240VAC

Schematic 3

Integration of one analog detection panels FG-ALS8 and analog sense cables into a circuit of FG-BBOX panel, monitored by FG-NET panel via a standard Ethernet network.

DIGITAL Monitoring Panel
FG-NET

100-240VAC

Ethernet Network

DIGITAL Panel
FG-BBOX

DIGITAL
Sense Cable

FG-DTM

100-240VAC   TTK BUS

RS485

Analog
Sense Cable
Up to 60m
On Each Circuit
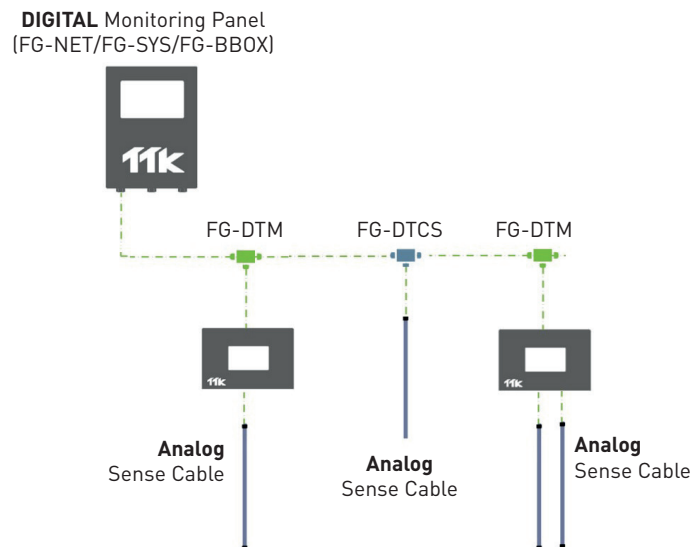For ALS8

Design Schematic

Schematic 4

Integration of 4 analog detection panels and analog sense cables into a circuit of FG-SYS digital panel, where other digital sense cables are connected.

DIGITAL Monitoring Panel
(FG-SYS/FG-BBOX)

Jumper cable (TTK BUS 8723)
between 2 FG-DTM
up to 492 ft (150m)

Up to 10 FG-DTM on a
FG-NET circuit

DIGITAL
Sense Cable

FG-DTM   FG-DTM   FG-DTM   FG-DTM

DIGITAL
Sense Cable

Analog Detection Panel
FG-ALS4

Analog Detection Panel
FG-ALS8

Analog
Sense Cable
Up to 45m
On Each Circuit
For ALS4

Analog
Sense Cable
Up to 60m
On Each Circuit
For ALS8

Schematic 5

Integration of 2 analog detection panels into a circuit of FG-NET digital panel where a diversion box and analog sense cables are connected.

DIGITAL Monitoring Panel
(FG-NET/FG-SYS/FG-BBOX)

FG-DTM   FG-DTCS   FG-DTM

Analog
Sense Cable

Analog
Sense Cable

Analog
Sense Cable

Certification

$C\epsilon$

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