FG-AC

Digital Acid and Water Sense Cable

Product Datasheet

► Digital Pin-Point Leak Location
► Embedded Microprocessor
► Detects Water, Acid and Corosive Chemical Liquids
► Pre-connected in Standard Lengths
► Unique Dust-Proof Feature Efficiently Preventing False Alarms

Description

- The TTK digital sense cable FG-AC detects and pin-points the location of water, acid and corrosive chemical liquids at any point along its length.
- The FG-AC sense cable is designed for the FG-SYS or the FG-NET digital units to respond intelligently in the event of any leaks of liquids.
- The FG-AC sense cable is installed in critical areas in order to provide permanent protection to limit the financial consequences of an undetected water and acid leak. The typical application are in laboratories, fab plants, semi-conductor plants, cleanrooms, etc.
- The FG-AC sense cable is made in corrosion and abrasion resistant cable that can be reused after cleaning. It is recommended to install FG-AC in a dry and clean environment for an efficient detection.

Features & Benefits

FEATURES

- Available in standard and pre-connected lengths of 9, 22 and 49 ft (3, 7 and 15 m). They can be interconnected to provide an expandble network of leak detection.
- Each FG-AC sense cables contain an embedded microprocessor, it intelligently monitors the cable status, it provides continuous real-time communication to the TTK digital units.
- Each cable has a high visibility LED to provide quick green/red identification of the cable status:
  - Green LED: normal status, no alarm raised;
  - Red LED: leak detection on the cable;
  - LED off: cablebreak on this or any upstream cable.
- Small diameter, light, flexible and in an easily identifiable green and white colour.
- Ingenious design: four sensing wires of helical construction, compressed and connected on an extruded central core, **insensitive to dust contamination**.

- Fixing clips available to fasten the sense cables.
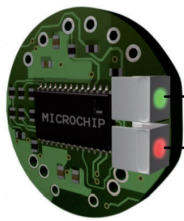- Minimum bend radius for FG-AC sensing cable: 1.38'' or 35mm.

BENEFITS

- Detects and pin-points the location of water and acid leak to the nearest meter along the length of the cable.
- Detects and localizes cablebreak on the cable.
- Short drying time.
- The FG-AC sense cable is a non-absorbent design that **can be reused** after cleaning, reducing the maintenance costs.
- **Efficiently prevent false alarms** that have been triggered by **dust, condensation and metal parts**, thanks to the unique and patented cable structure.
- Easy installation with pre-finished male and female connectors.
- Flexible design: in both liner and sector mode (via FG-DTC box).
- Belden 8723 for plenum rated applications.

Technical Data

Compatibility	Digital units: FG-SYS; FG-NET; FG-BBOX Diversion box: FG-DTC
Operating Temperature	-40° to 140°F (-40° to 60°C)
Minimum Bend Radius	0.79 in (20 mm)
Maximum Length of Digital Sense Cable per Unit	Up to 120 lengths of FG-AC, connected to 3 circuits
Connector Type	FCI-Clipper
Weight	0.0168 lb/ft (25 g/m)
Min. bending radius	1.38'' (35mm)
Breaking Strengh for Sense Cable	Minimum 165.35 lb (75 kg)
Sense Cable Diameter	0.31 in (8 mm) with PVDF jacket
Four Sensor Wires Diameter	0.047 in (1.2 mm) with PVDF jacket
Core Material	Flame-retardant low-smoke PEBD-based polymer
Liquid Quantity to Active Alarm	1.97-3.94 in (50-100 mm) on the sense cable
Drying Time	10 seconds after drying the sense cable
FG-AC Color	White and green

Product Diagram

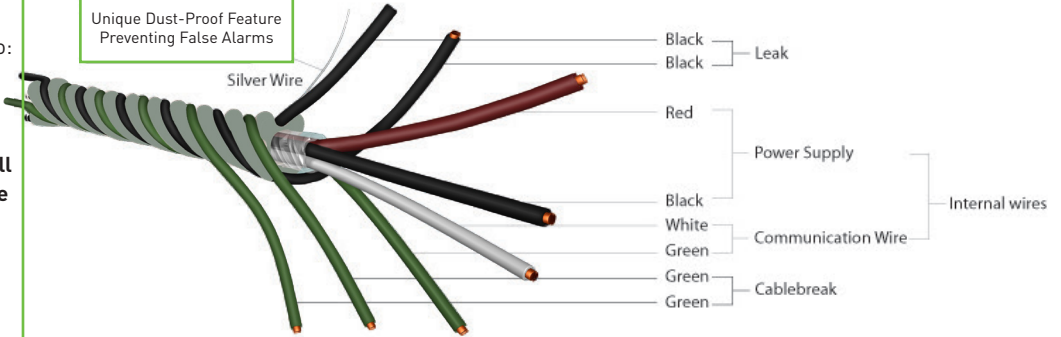**Embedded Microprocessor in Female Connector:**

→ Green LED: Normal Status

→ Red LED: Leak Detected on the Cable

MICROCHIP

Female Connector with Addressable Electronic Module:

This ingenious cable structure allows the cable to:
- **sense only ingress acid/ water**,
- and **not to be disturbed by the presence of dust and all kinds of conductive residue** from the environment that has accumulated on the cable surface;

thus, **efficiently preventing contamination alarms**.

Unique Dust-Proof Feature Preventing False Alarms

Silver Wire

Black / Black	Leak
Red	Power Supply
Black	
White	Communication Wire
Green	
Green / Green	Cablebreak

Internal wires

Technical Information

In an aqueous environment, the resistance of the following products is as follows:

- A = The cable completely resists in the presence of the liquid considered.
- B = The cable resists, but undergoes a slow corrosion.
- C = The cable corrodes rapidly in the presence of the liquid considered.

In all cases where a leak is detected, it is advisable to identify the source of the leak and to repair the leak quickly. In most cases the contaminated FG-AC cable can be washed and re-used.

This list is not exhaustive, for other chemicals, specific concentrations or temperatures please consult with your TTK representative.

Acetic acid	A	Hydrofluoric acid	A	Sea water	A
Ammonium hydroxide	B	Liquid Chlorine	A	Silver nitrate	A
Carbonic acid	A	Nitric acid	A	Sodium hydroxide	B
Caustic soda	A	Peracetic acid	B	Sodium hypochlorite	A
Formic acid	A	Phosphoric acid (95%)	A	Sodium sulfate	A
Glucose	A	Potassium hydroxide	B	Sulfuric acid	A
Hydrochloric acid	B	Salicylic acid	A		

Identification Codes

FG-AC15	Addressable Acids Sensing Cable in 15m (49 ft) With Connectors
FG-AC7	Addressable Acids Sensing Cable in 7m (22 ft) With Connectors
FG-AC3	Addressable Acids Sensing Cable in 3m (9 ft) With Connectors
Accessories	
FG-CLC	Leader Cable 11.5 ft (3.5 m), on 'TTK Bus 8723'
FG-NC(x)	Belden jumper cables in variety of lengths (x): 9, 22 or 49 ft (3, 7, or 15 m)
FG-TMC	Digital End Plug for FG-EC/AC Cables
FG-DTC	Diversion Box for 'TTK Bus 8723'
CF-EC100	100 Hold-down Clips with adhesive for Water & Acids Cables
ES-EC	40 Tags for Water & Acids Cables

Certificates

UL CE

FG-AC sense cable is plenum rated and compliant to NFPA 262 (known also as UL910 and). NFPA: National Fire Protection Association
FG-AC sense cable has passed successfully the UL719 test for abrasion resistance of jacket on flat cable.
All TTK sensing cables are designed as a part of the leak detection system thus included in the approval certification for TTK monitoring panels.
- **FG-NET and FG-SYS systems meet the requirements of all European Standards in EN 50081 and EN 50082 EMC.**
- **FG-NET and FG-SYS systems meet the TÜV requirements, according to IEC 61010-1/A2.**
- **FG-NET and FG-SYS systems are UL Listed.**