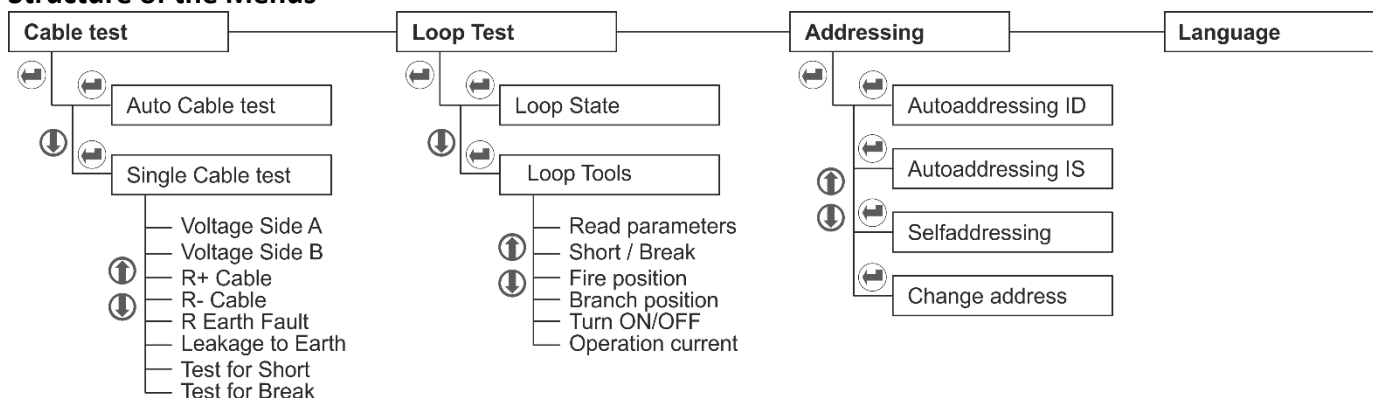# Loop Tester – Quick Operation Guide

The Loop Tester is a diagnostic tool specially designed for operation with addressable devices SensoIRIS series. The device is suitable for testing the continuity and the technical characteristics of the fire cable and also the operability of the loop and the connected devices.

Important notes:
- **During the test the loop line must be disconnected from the control panel!**
- **DO NOT connect the fire control panel and the Loop Tester to the loop line simultaneously!**
- **The cable tests have to be done without connected devices to the loop line!**
- **For exact results in searching short circuits faults, breaks in the loop line and existing branches is mandatory all devices in the loop/line to be with built-in isolator module.**

Structure of the Menus

Cable test — Auto Cable test — Single Cable test — Voltage Side A, Voltage Side B, R+ Cable, R- Cable, R Earth Fault, Leakage to Earth, Test for Short, Test for Break

Loop Test — Loop State — Loop Tools — Read parameters, Short / Break, Fire position, Branch position, Turn ON/OFF, Operation current

Addressing — Autoaddressing ID, Autoaddressing IS, Selfaddressing, Change address

Language

Searching for Cable Faults

Run "Auto Cable Test" menu. If an error message "Yes" is displayed for any of the tests you must run some separate single test again and locate the exact place of the fault. Run "Loop tools" menu, select a test using the arrows and press ENTER button.

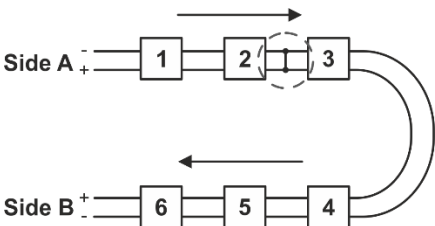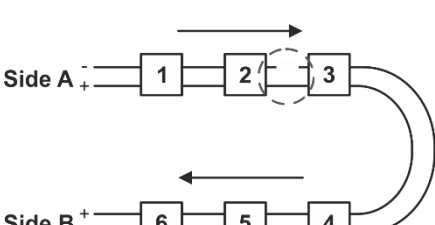| Fault Diagram	Description	Solution
Short-circuit in the cable Side A + — Side B	Run singe test "Test for Short" again to confirm the presence short-circuit in the cable. In case of fault the tester will display message "Short in Cable".	To locate the place of the short-circuit fault use Bisection method as dividing the cable in equal parts (1/2, 1/4, 1/8, etc), until finding the faulty section.
Break in the cable Side A - Side B Side A + Side B	Run singe test "Test for Break" again to confirm the presence break in the positive or negative cable wire. In case of fault the tester will display message "Break in Cable".	To locate the place of the break use Bisection method as dividing the cable in equal parts (1/2, 1/4, 1/8, etc), until finding the faulty section.
Earth fault in the cable Side A + Side B Side A + Side B	Run singe test "Leakage to Earth" again to confirm the presence earth fault in the positive or negative cable wire. In case of fault the tester will display message "Earth fault".	Search the earth fault as inspect the grounding components in the cable line, corrupted shield of the cable, etc. You can also use and the Bisection method.
Too High resistance Side A + — Side B	According the result in the Auto Cable Test menu run the single test for: "R+ Cable" "R- Cable" "R Earth Cable" In case of unusual high resistance found the tester will display message "R+/R-/Re=Too High".	The error message "Too High" is displayed when the detected resistance in the positive cable wire (R+), negative cable wire (R-) or earth cable (Re) is higher than 400 Ohm. In such cases, it is recommended to check the cable and the joint connections (terminals, base contacts). Check also the cable length – it might be too long.

For more information visit: www.teletek-electronics.com

Searching for Loop Faults

According the organization of the system configuration there are two approaches to start test:

- `Addressed loop` – Use this option, when the devices in the loop are with already set address numbers. The searching will follow the set addresses in the loop and will display the faults according their order.
- `Unaddressed loop` – Use this option, when all or some devices are undressed. Before starting the test, the tester will erase the current addresses and will set new to all devices according the ID number.

After choosing an approach to proceed the tester starts consistent tests for short-circuit and break faults. The test is started with pressing the ENTER button. During analysing, a message "Please wait" and a process bar are displayed on the screen. The time for analysing can vary according the length of the loop and the number of faults.

The results are displayed with text messages pointing the place of the fault. Below is presented a quick table for possible faults.

Fault Diagram	Description and Display	Solution
Short-circuit in the loop 	A short-circuit is detected between devices 2 and 3 in the loop. Short at: Dev.Type 002 Dev.Type 003	Locate the place of the displayed devices and check the cable section between them. *Tip: You can locate the exact place of a device as turning ON its LEDs.*
Break in the loop 	A break in the loop is detected between devices 2 and 3 in the loop. The tester will locate the place searching from both sides A and B. Break between: 002 dev from SideA 004 dev from SideB Find location >>> The displayed numbers are the counted devices from the two sides of the found break. To find the exact location of the break fault, press ENTER button and confirm with "Yes" command to continue. When the test is over, the screen displays the address of the device after which the break is detected. Break after: Dev.Type 002	Locate the place of the displayed devices and check the cable section between them. The break in the loop may be caused and from bad connections to the device terminals (bad joint contacts to the base terminals for detectors and sounders also). *Tip: You can locate the exact place of a device as turning ON its LEDs.*

Bisection Method for Faults Searching
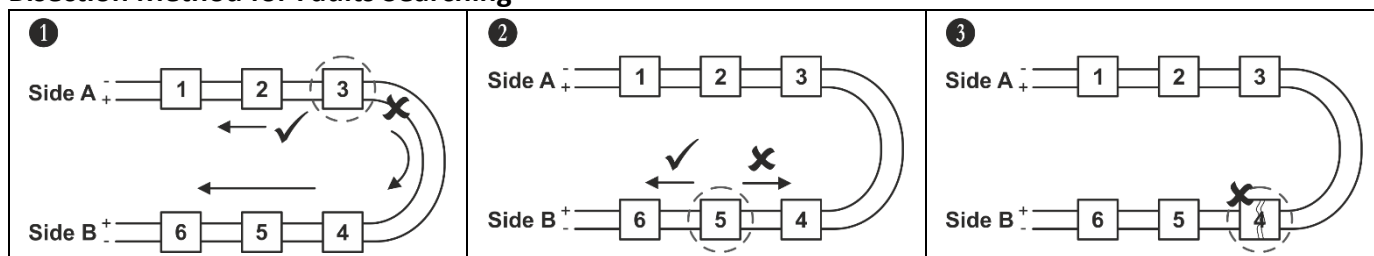
1. Divide the loop into two separate equal lines. Measure the voltage at each line.
2. Divide the faulty line in the center. Restore the earlier connection in the correct line. Measure again the voltage at each line. Thus, you will be able to locate the fault section.
3. Proceed in this way of dividing the faulty section in the center reducing the possible area with fault.

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