How To Find the Fault on an Open Circuit

This step-by-step guide helps you identify the exact location of an open circuit fault using the Axis EN fault finding features and explains how to fix it.

When your Axis EN panel indicates an **open circuit** on one of the loop loads (first, second, third or fourth), the panel normally displays a fault similar to the following:

'First Loop Load Open Circuit – Address 7.0'

Please note that the address shown (e.g. 7.0 above) does **not** refer to a loop address. Instead it refers to one of the panel's internal addresses. You can verify the panel's internal addresses by navigating to commissioning mode.

Commission > Next Menu > Next Menu > Panel

Here you'll find the internal addresses:

- **7.0** – First loop load
- **7.1** – Second loop load
- **7.2** – Third loop load
- **7.3** – Fourth loop load

Step-by-step guide

To identify the exact location of the open circuit within the loop, we recommend one of the following options:

1. **Access level 3 (commissioning)**
   This will result in the loop drivers in the panel only supporting an output voltage on the 'out' pair of terminals**.**

OR

2. **Physically break the loop into a radial** (rather than a closed ring)
   Remove the return wires from the terminal block and secure in a spare terminal block.

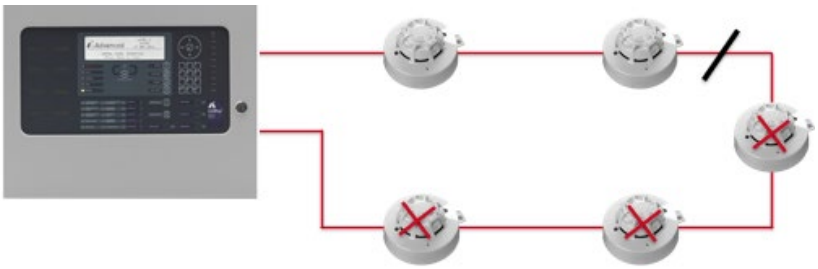

Figure 1: Example of a 5-device loop with a break in the middle

Using the **LOOPS->Select Loop->VIEW/EDIT** function it is possible to view the devices (in loop address order) to determine which devices are still being detected on the loop (normal status).

As the loop is now acting as a simple radial, using the 'as wired drawings' option (if available). It should be possible to determine where the break is present in the loop wiring. Please bear in mind that the address order may not be the same order that the devices are wired in.

Once an area is identified, investigate the devices in that location for cabling issues or isolator activations.

If it is still difficult to locate a fault and there could be more than one issue, it is possible to swap the connections to the loop driver, connecting the return cables to the output and driving the signaling the other way around the loop. Again, using the **VIEW/EDIT** option, determine which devices are correctly on this radial.

In all instances, the task of locating open circuit faults is made much easier with the aid of drawings to track cabling. However, if these are not available, tools within the panel such as turning the device LEDs on can be of great assistance.