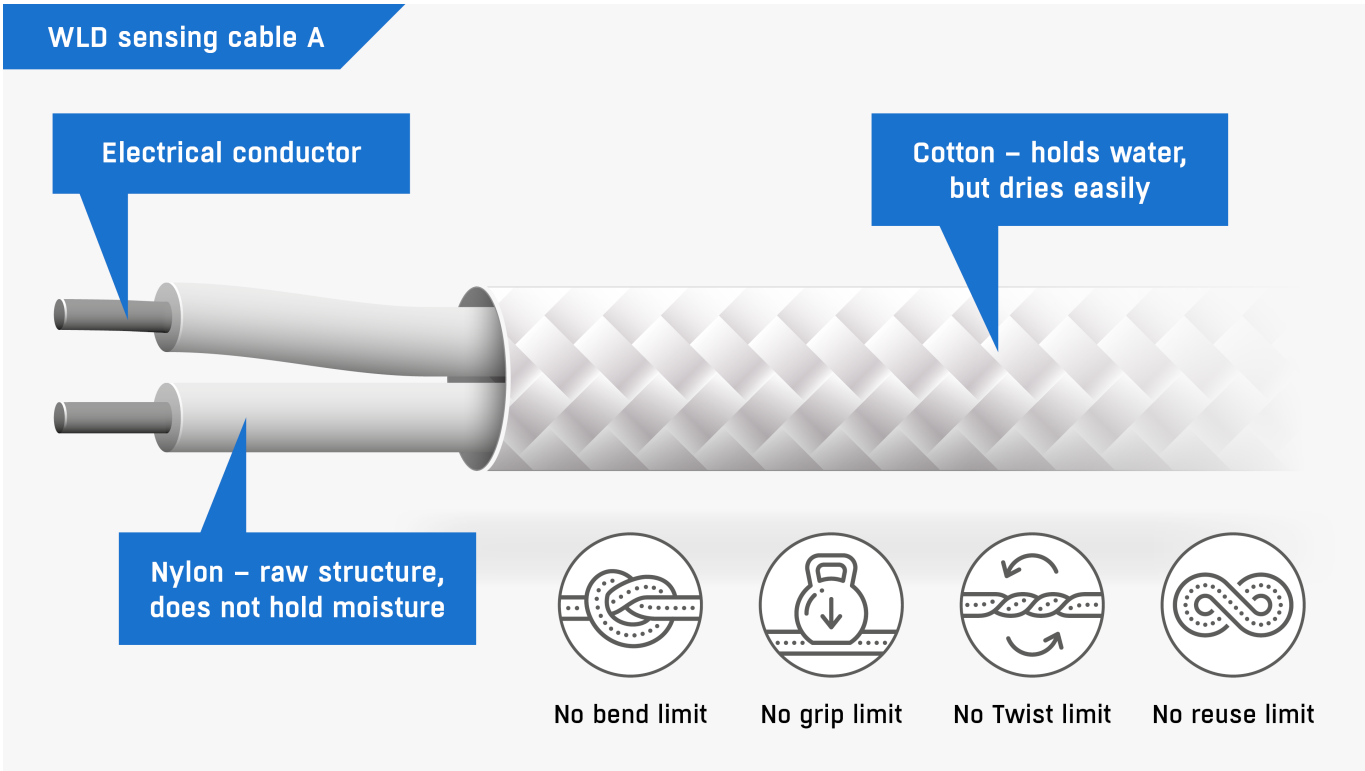
WLD Sensing Cable: The Heart of the WLD System

Fast & reliable detection of the first drops of water in remote locations is critical for many businesses. Early water leak detection isn't just important for data centers and medical labs, it also saves significant money in industrial facilities, physical archive storage, hotels, museums and more. To bring you reliable & early water leak detection, in HW group we created the sensing cable type A - the heart of the water leak detection system.



Different Philosophy of Water Detection - Water Leak Detection Sensor Cable

There are 2 ways of water detection that we use in HW group for remote site monitoring:

1) SPOT Water Detection;

2) WLD (Water Leak Detection) with the sensing cable.

The SPOT water detection is much, much cheaper from a sensor point of view, but the physical environment should be adjusted to deliver water in minimum volume to the water detection sensor. The physical environment adjustment is typically much more expensive than the sensor itself.

The WLD (Water Leak Detection) with sensing cable uses the sensing cable placed at locations where you first expect the water. Water (liquid) is detected along the entire length of the WLD sensing cable. It's more expensive from the sensor?s price perspective, but you can detect really few drops of water in real installations.

Yes, we are talking about a 20x higher price from the installation cost point of view, but time is critical in these applications. Are you paying for early water detection (within 15 minutes) or swimming invitation (within 15 hours)?

Experience from real installations

There are several water detection sensing cables on the market. The problem is to choose a system that is suitable not for long pipelines, but for real buildings:

a) Sensing cables with a bend limit must be installed under all other cables in the building and well fastened to the ground. It's hard to guarantee this with an external installation company.
b) Finding a water spot based on distance of detection on the sensor cable is a great feature for the pipes, but not for the buildings. There is zone system much easier to understand in the real installation.
c) Some sensing cables use capacitive detection and use non-insulated wires as part of the sensing cables. It's a significant limitation factor for installations on the metal floors.
d) Sometimes you need to extend the water sensing cable with non-sensing cable. And you need to realize when on site, not based on the prepared project. Easy to cut/extend non-sensing cable offers great help in these scenarios.

HWg WLD sensing cable

HW group's WLD (Water Leak Detection) Type A sensing cable is a three-state sensor designed to detect any conductive liquid along its surface.

The maximum length of a WLD zone is 185 meters of sensing cable. The liquid is detected along the entire length of the WLD sensing cable. This means that the entire zone (area) is monitored at one time as an entire area. We can't say at which exact point (distance) of the cable the water was detected, but we are able to detect water quickly and reliably.

It is recommended that multiple WLD zones be used to detect water stains, even within the same room.

Each WLD zone reports 3 states to the monitoring unit:

- 0 = Not flooded
- 1 = Flooded
- 2 = Disconnected

This means that you will also know if something happens to the cable that maintains the monitored zone. Since our sensing cable is robust and can be installed in a variety of ways due to its characteristics, we want to be sure that the operator knows not only if water is detected, but also if something happens to the cable itself.

The WLD sensing cable from HW group has several unique features

- **No Bend Limit**

Unlike many water detection cables, the WLD sensing cable doesn't have a bend radius limit. It can be knotted and still work, which means installation is easy and doesn't require special training. HW group's WLD sensing cable can be installed with the other cables in the cabling system. This can save you a lot of money during installation.
No bend limit for the WLD sensing cable also means no cable movement would cause false alarms.

- **No Grip Limit**

Point pressure within a reasonable range won't change the functionality of the cable. You can step or press on the cable without triggering an alarm. It could be routed even over the door sill.

- **No Twist Limit**

Like any other electrical cable, the WLD sensing cable can be twisted. No twist limit for the WLD sensing cable also means that no cable movement after installation would cause a false alarm.

- **No Reuse Limit**

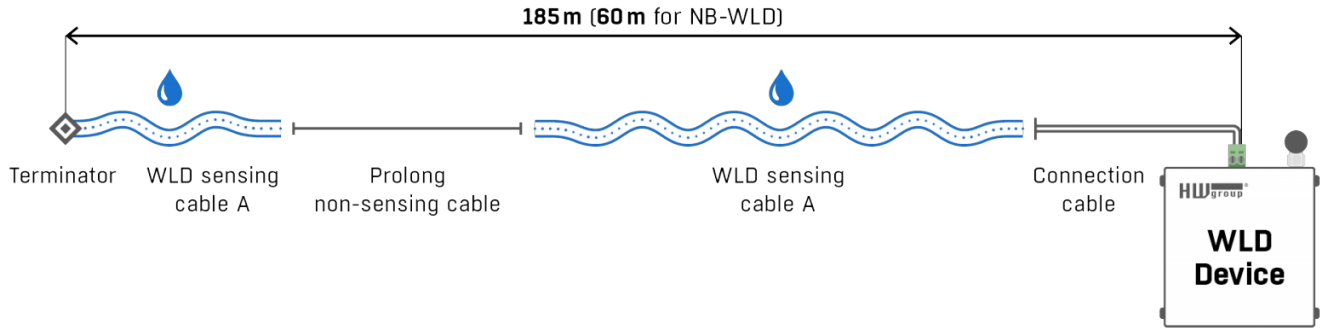
After the liquid is detected and hopefully stopped from flooding the monitored facility, the cable simply dries out and resumes its primary function.

WLD Project Design

The WLD sensing cable makes it possible to implement a surface water detection monitoring system, not just spot detection. One or two spot detectors are not enough to monitor a large area, while with the sensing cable and various WLD devices you can create as many zones as you want - real world scenarios in larger facilities could have up to 50 separate zones with the cable installed around the entire perimeter of a room or any other given space.

Yes, the WLD sensing cable is more expensive compared to spot-detector based leak monitoring, but it's also much faster and more reliable in delivering the alarm when the water is present - it's a 15-minute reaction alarm instead of hours of waiting for the two contacts on the detector to be properly flooded along with everything else on the floor.

With the simple and quick installation and long-term reliability of the WLD system and its components, the combination of sensing cable with non-sensing cable segments ultimately makes it a cost-effective solution for those organizations where early detection of just a few drops of liquid could mean saving the entire business.



Summary

The WLD (Water Leak Detection) system is based on the WLD sensing cable type A for detection. The whole WLD system consists of different products (with WLD zone inputs) aimed at different usage scenarios - from smaller installations to the really huge ones. Sites with LAN / WiFi or with LTE / NB-IoT connectivity. But as the heart of any WLD system, the WLD sensing cable connected to the WLD zone connector is its most critical part.