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# Water Leak Detection

## Design Guideline



**Oceania Gas Safety**

[www.oceaniagassafety.com](http://www.oceaniagassafety.com)

# WLM Puck Attachments

## Water Leak Pucks

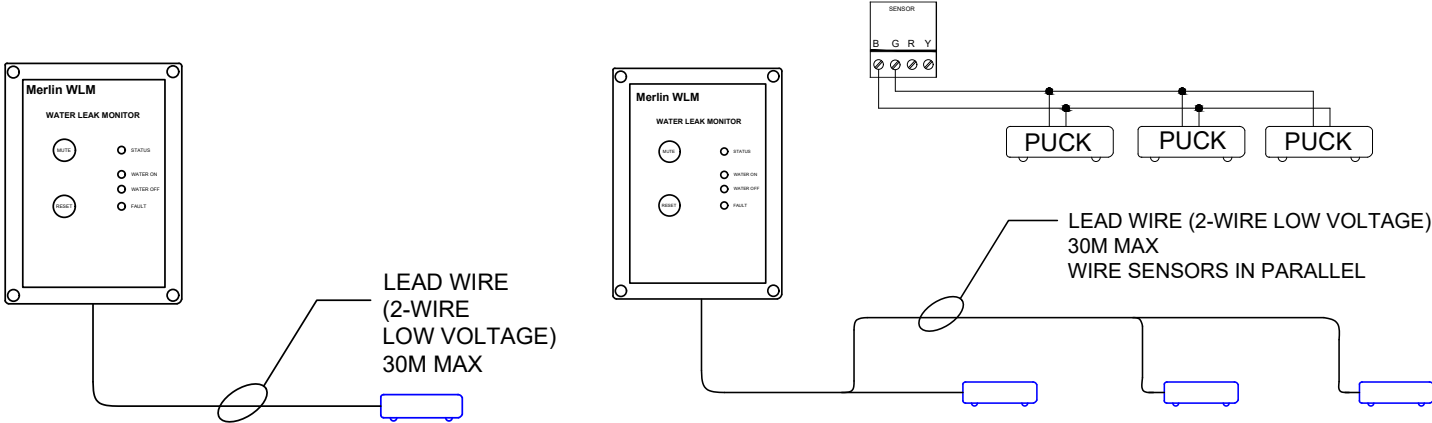
A water leak detection puck is a compact and highly sensitive device designed to identify water leaks or flooding in precise locations. The puck uses a set of metal probes located on the underside to detect the presence of water. When the probes come in contact with water, they complete an electrical circuit, which triggers an alarm on the WLM.

It is important to note this device cannot detect distilled water, as it does not conduct electricity.

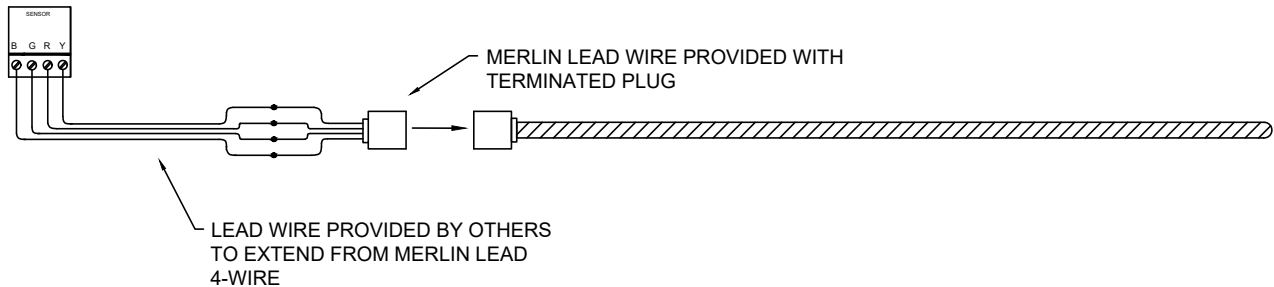
Water leak pucks **do not** include fault detection.



## Puck Set Ups From Controller



## Lead Cable

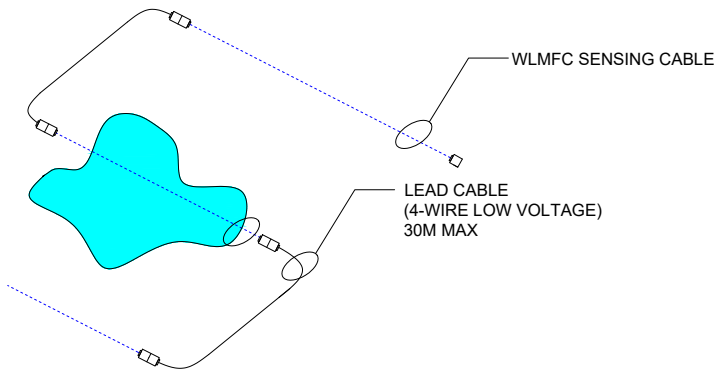


## Part Codes

Attachment Description	Part Code
Detection Probe / Puck	
Merlin Water Leak Puck / Probe	WLMC Probe

## Leak Detection Cable Overview

Water leak detection cables are designed to identify leaks in large spaces. They are commonly used along water piping or in buildings, data centers, and industrial facilities. When water contacts any part of the cable, it establishes a conductive path, causing a change in electrical resistance or capacitance. The WLM detects this change and enters alarm.



## Pre-Defined Length 2-Core Leak Cable

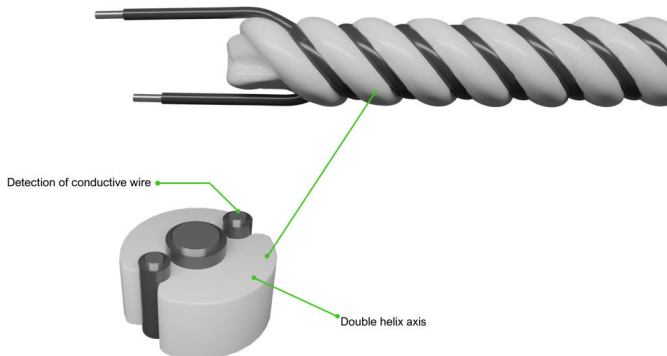
2-core leak detection ropes include a 2m lead wire, however this wire may be extended using low voltage alarm cable.

The total length of lead wire and sensing cable may not exceed 30M. If more than 30M is required, use multiple WLM controllers.

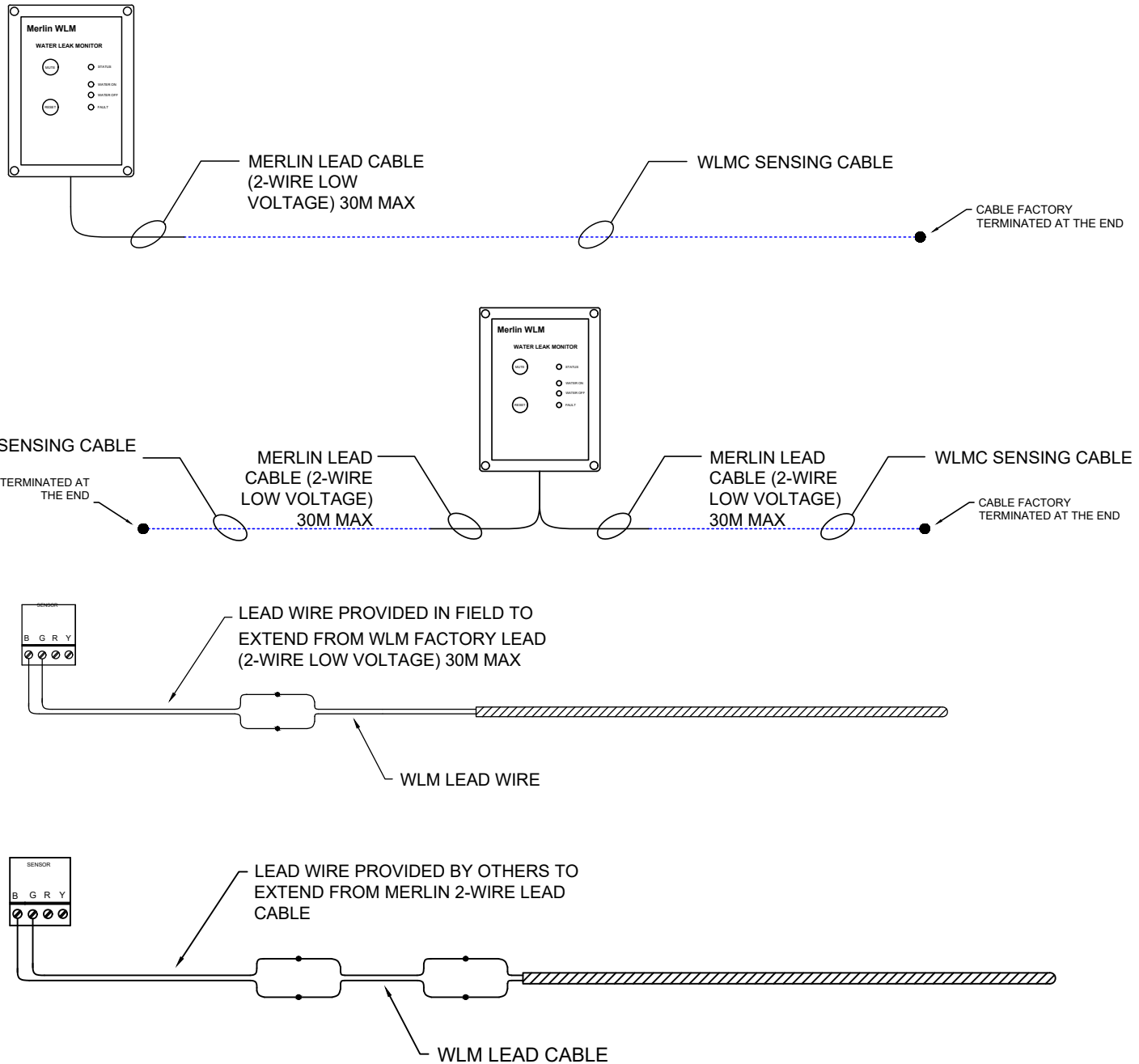
Pre-defined 2-core **do not** include fault detection.

The 2-core sensing cable is an inexpensive option if only a single desired length is required for the project.

Available lengths: 2M, 5M, 10M, 15M, 25M



## 2-Core Example Set Ups



## Part Codes - 2-Core

Attachment Description	Part Code	Length (M)	Fault Detection (Y/N)
<b>Detection Ropes - Pre Defined Lengths 2-Core</b>			
2M Sensing Cable w/ 2M Lead Cable	WLMC2	2	N
5M Sensing Cable w/ 2M Lead Cable	WLMC5	5	N
10M Sensing Cable w/ 2M Lead Cable	WLMC10	10	N
15M Sensing Cable w/ 2M Lead Cable	WLMC15	15	N
25M Sensing Cable w/ 2M Lead Cable Custom	WLMC25	25	N
Pre-Defined Length Call S&S For Pricing	WLMC**	xx	N

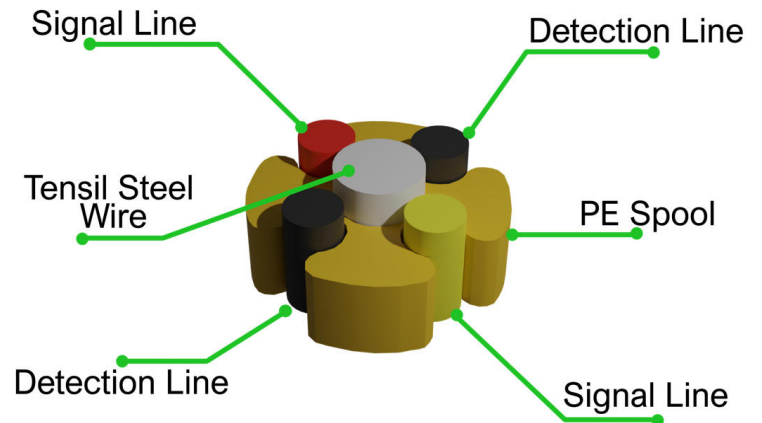
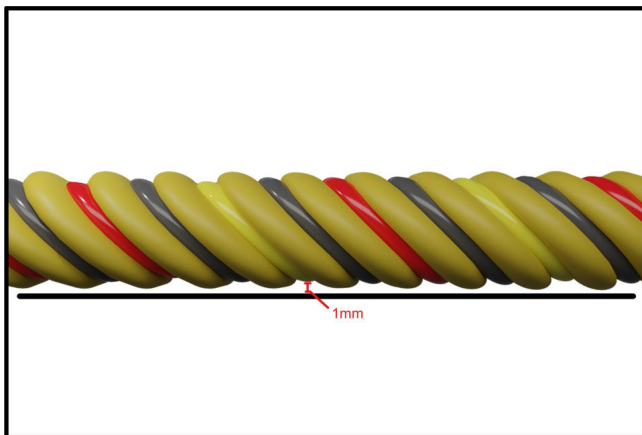
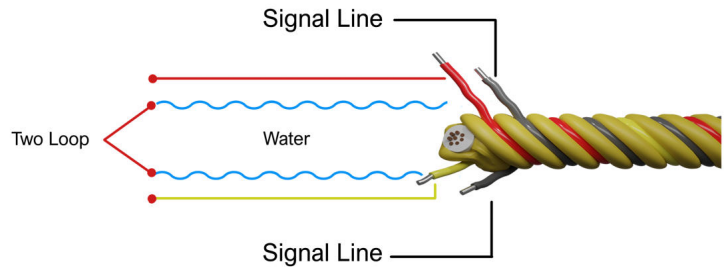
## Pluggable 4-Core Leak Cable

4-Core ropes **do** include fault detection and many adaptable set ups to fit custom applications.

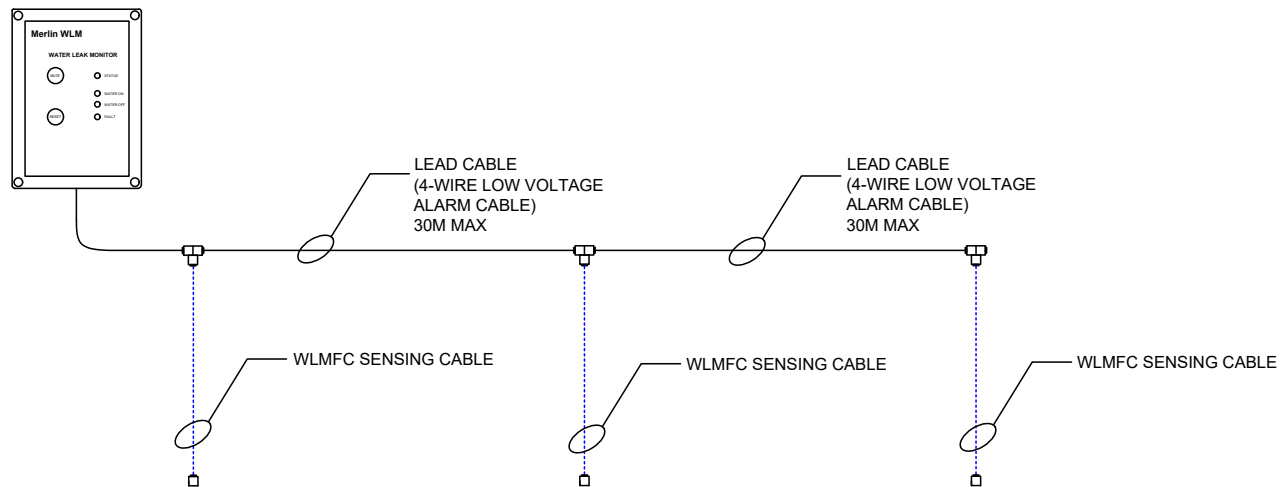
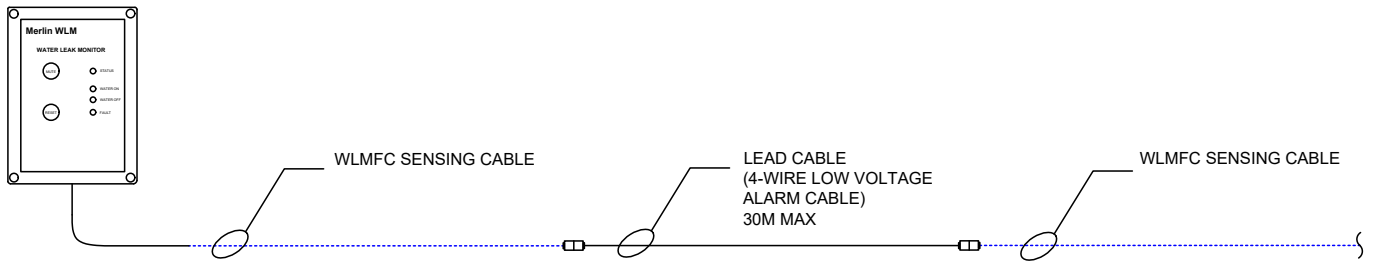
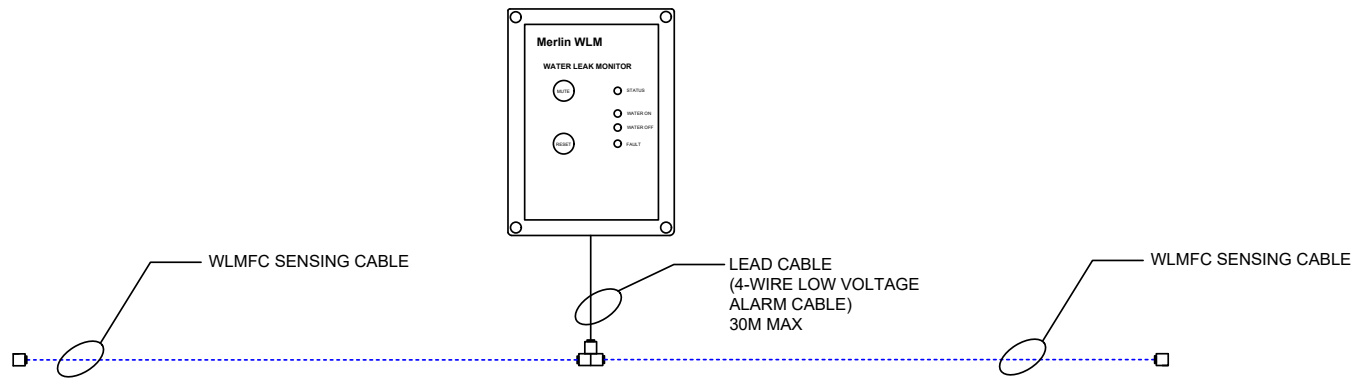
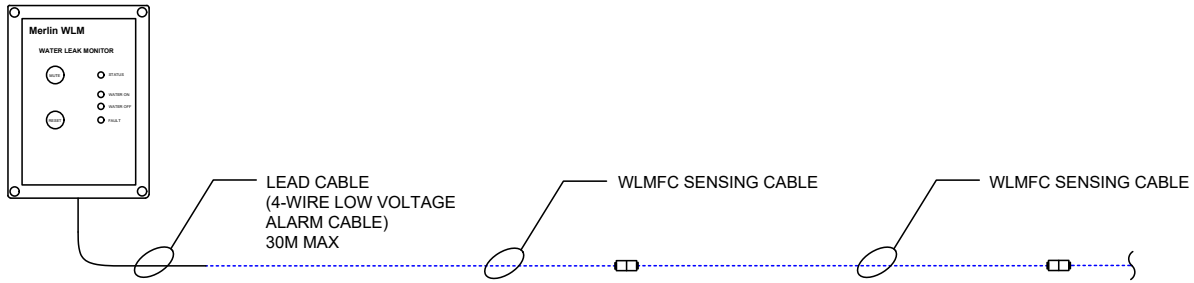
4-Core ropes are terminated with plugs that allow you to link multiple sensing cables together. This can be used for branching the rope into tees or adding lead cables in between sensing cables.

The pluggable ropes come with less options for length due to the ability to link multiple smaller cables together to create a larger rope.

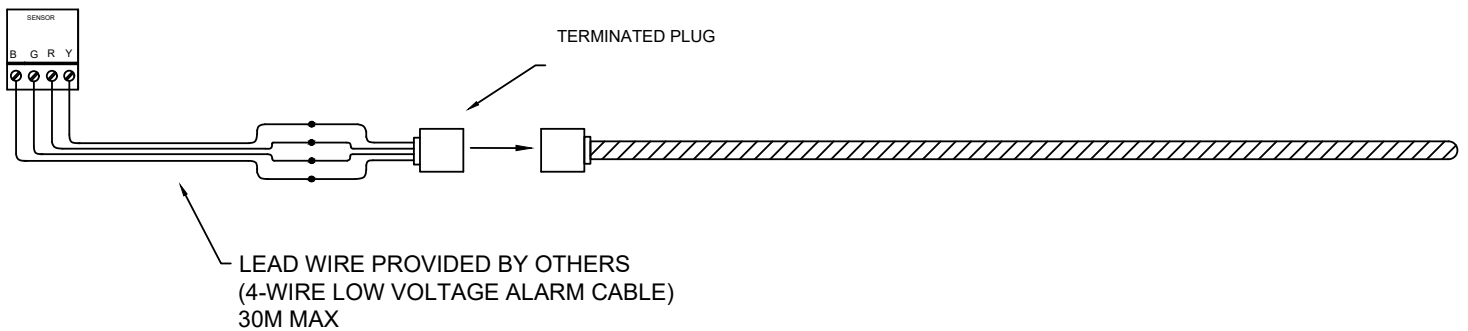
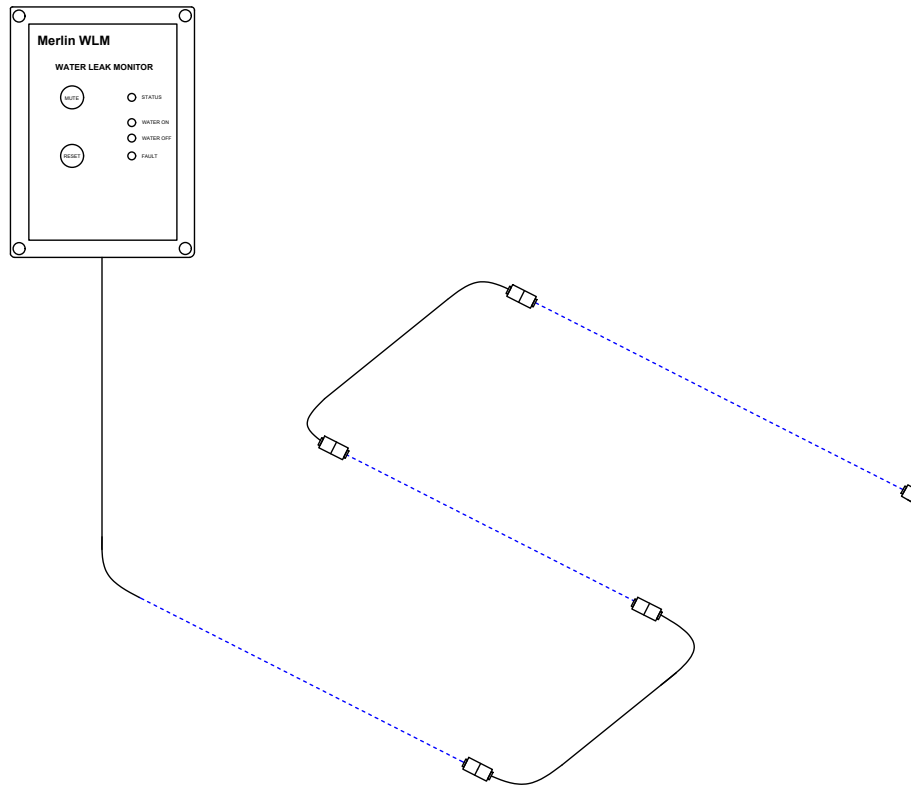
4-Core leak detection ropes do not include any WLM lead cable. Low voltage alarm cable should be used. The total length of lead cable and sensing cable may not exceed 30M.



# WLM 4-Core Rope Attachments



# WLM 4-Core Rope Attachments



## Part Codes 4-Core

Attachment Description	Part Code	Length (M)	Fault Detection (Y/N)
<b>Detection Ropes - Pluggable 4-Core With Fault Detection</b>			
5M 4-Core Sensing Cable	WLMFC5	5	Y
10M 4-Core Sensing Cable	WLMFC10	10	Y
20M 4-Core Sensing Cable	WLMFC20	20	Y
50M 4-Core Sensing Cable	WLMFC50	50	Y
100M 4-Core Sensing Cable	WLMFC100	100	Y

## Valve Options



The GoldSeal GSW is a direct acting solenoid valve for reliable long-term operation, and faster closing.

### Normally Open vs. Normally Closed

Normally open and Normally closed valve options are available.

If there is any power outage, or system failure, a normally closed valve will shut and isolate the water supply whether it is warranted or not. This must be considered when selecting orientation. Opting for a normally open valve enables independent water supply, eliminating dependence on the WLM and it's operational status.

It is unlikely that a WLM would inadvertently de-energize a normally closed solenoid valve. Interruption of the controller power supply, or physical damage to the unit are the only two factors that would cause inadvertent closing of the valve.

A normally open solenoid allows for a faulty system to potentially go un-serviced. If there is a subsequent power cut and water leakage, the WLM will not be able to close a normally open solenoid.

For critical applications, a normally closed valve is recommended.

### 24V or 230V Solenoid Valves

24V and 230V solenoid valves are available. The WLM must be powered with the same voltage as the valve selected.



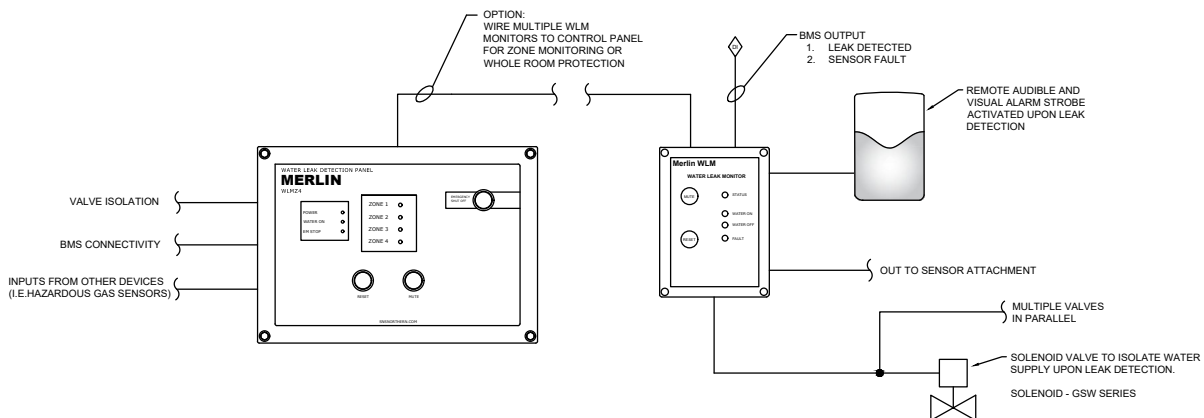
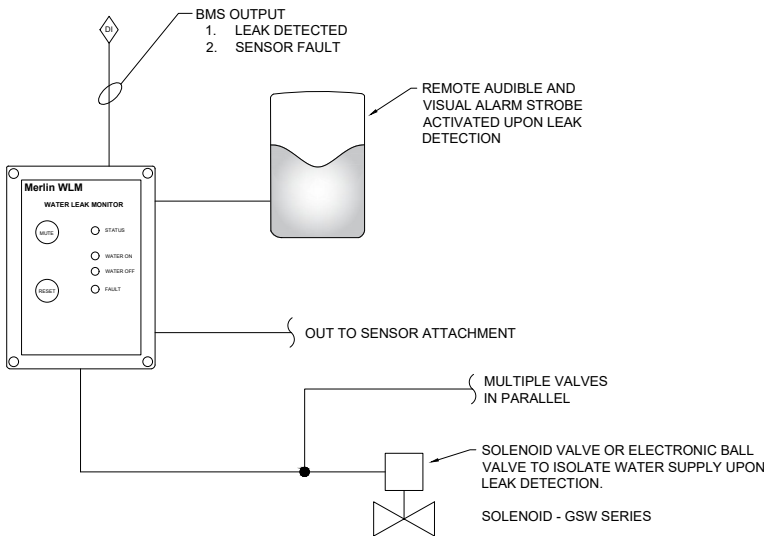
## Controller Capabilities

The Merlin WLM Water Leak Monitor is designed to be a stand-alone controller or may be used with our range of Merlin WLMZ controllers.

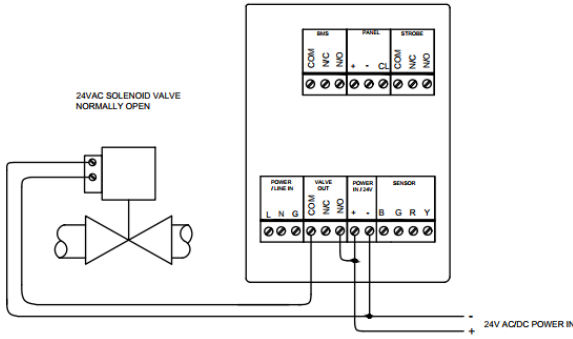
The Merlin WLM is designed to receive inputs from a variety of leak sensing attachments including pucks and sensing ropes.

The relays on the WLM can be adapted for unique applications, but serve standard functions as follows:

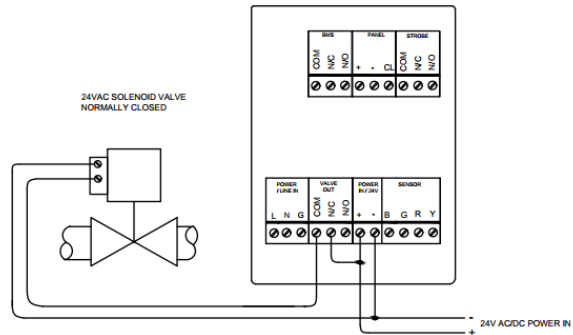
- Audible and Visual Strobe Output
  - For an additional alarm. The WLM has a built in audible alarm.
- BMS Connectivity
  - Fault detection and alarm signal.
  - Fault detection only works with 4-Core ropes.
- Valve Isolation
  - 24V or 120VAC Water Valves
  - Power the controller with the same voltage as specified solenoid for easy wiring.



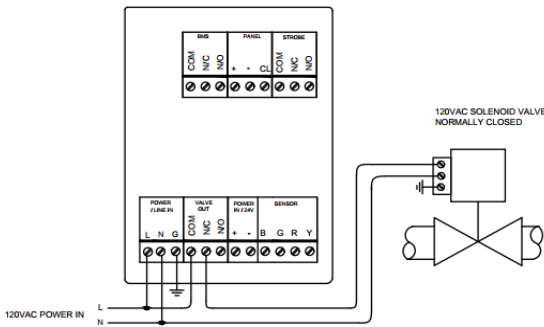
24VAC SOLENOID VALVE  
NORMALLY OPEN



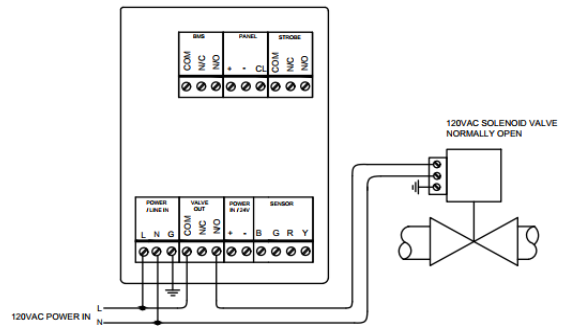
24VAC SOLENOID VALVE  
NORMALLY CLOSED



120VAC SOLENOID VALVE  
NORMALLY CLOSED



120VAC SOLENOID VALVE  
NORMALLY OPEN



## STROBE WIRING

