MERLIN WLMZ4

4-Zone Water Leak Detection Controller

Installation, Operation & Maintenance

Please read this manual carefully and retain for future use.

S&S Northern provide a range of detection panels which can be used in many applications such as factories, server rooms, shopping centres and boiler houses. The WLMZ4 is used with up to six (6) Water Leak Monitors in a single cable run for detection of water leaks in up to 4 zones.

⚠ *The information contained within this manual should be referenced for typical installation and operation only.*
⚠ *For specific requirements that may deviate from the information in this guide – contact your supplier.*

Contents

Important Warning Statements 3

Installation 4

Typical Application, Location & Positioning 4
Access & Mounting 4
Internal Board Overview 4
Board Connections Overview 5
Wiring your Detector 5
BMS Switch 5
Auto Reset Switch 6
Zone 1 - 4 Set-Up Switches 6
Factory Set Condition 6
Trouble Shooting 6

Operation 6

Initial Power-Up (Commissioning) 6
LED Indicator Status 7
Mute & Reset Buttons 7

Specification 7

Important Warning Statements

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Where this symbol is used, the manual must be consulted to understand the nature of any potential hazards and how to avoid them.

⚠ Before any installation, use or maintenance read this manual carefully.
⚠ The information contained within this manual should be referenced for typical installation and operation only.
⚠ For site specific requirements that may deviate from the information in this guide – contact your supplier.
⚠ If the equipment is used in a manner not specified by the manufacturer, the safety and protection provided by the equipment may be impaired.
⚠ Installation must be in accordance with recognised standards in the country concerned.
⚠ This product is designed for indoor operation only unless used in conjunction with a weatherproof cover.
⚠ Cables must be protected against mechanical damage.
⚠ The internal fuse should be replaced only with the same type. Anti-surge fuse 3.15A 250Vac 5x20.
⚠ This device requires a continual supply of electrical power – it will not work without power.
⚠ A switch or circuit breaker must be fitted, it must be accessible and marked as the disconnecting device!
⚠ Your product should reach you in perfect condition, if you suspect it is damaged, contact your supplier.

Manufacturer's Warranty Statement

Warranty coverage: The manufacturer warrants to the original consumer purchaser, that this product will be free of defects in material and workmanship for a period of twelve months (1 year) from date of purchase.

The manufacturer's liability hereunder is limited to replacement of the product with repaired product at the discretion of the manufacturer. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material or workmanship. This warranty extends to the original consumer purchaser of the product only.

Warranty disclaimers: Any implied warranties arising out of this sale, including but not limited to the implied warranties of description, merchantability and intended operational purpose, are limited in duration to the above warranty period. In no event shall the manufacturer be liable for loss of use of this product or for any indirect, special, incidental, or consequential damages, or costs, or expenses incurred by the consumer or any other user of this product, whether due to a breach of contract, negligence, strict liability in tort or otherwise. The manufacturer shall have no liability for any personal injury, property damage or any special, incidental, contingent, or consequential damage of any kind resulting from water leakage. This warranty does not affect your statutory rights.

Warranty Performance: During the above warranty period, your product will be replaced with a comparable product if the defective product is returned together with proof of purchase date. The replacement product will be in warranty for the remainder of the original warranty period or for six months – whichever is the greatest.

Information on waste disposal for consumers of electrical & electronic equipment.

When this product reaches the end of its life it must be treated as Waste Electrical & Electronics Equipment (WEEE). WEEE marked products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used. Please contact your supplier or local authority for details of recycling schemes in your area.

Installation

Typical Application, Location & Positioning

The Merlin WLMZ4 is a 4-zone water detection panel which can be used in many applications such as factories, shopping centres, boiler houses and most commonly – server rooms. It can be used with up to 12 Merlin Water Leak Detection Monitors (3 monitors per zone terminal) for detecting water leaks.
The controller panel can be integrated with, but not limited to, a BMS (building management system), external alarms and remote emergency shut-off buttons.

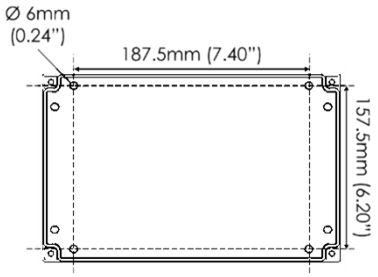
The control panel should be located in an accessible area for both status observation and alarm purposes.

Access & Mounting

Unpack all the parts!
Designed for surface mounting, it must be installed by a licensed, insured contractor or competent person.

Carefully remove the front cover from the unit by unscrewing the four bolts located at each corner. To do this – use the socket wrench provided. Mark the four screw holes located on the back of the enclosure to the wall and ensure the wall surface is flat to prevent base distortion.

After executing the mounting and the connections – replace the front cover and insert the security caps over the four bolts.



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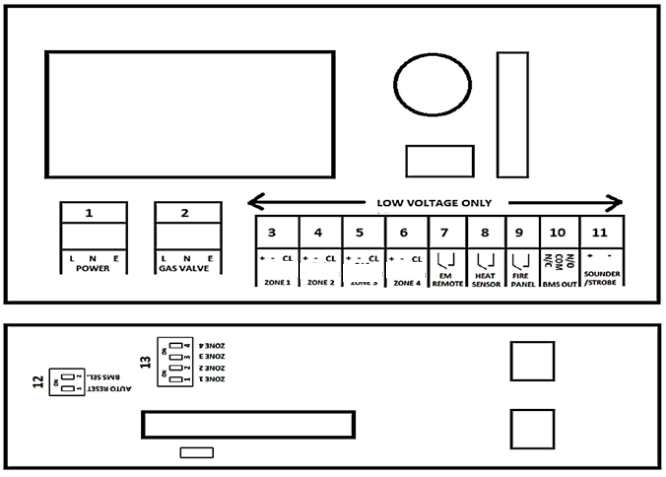
Access to the interior of the panel, when carrying out any work, must be conducted by a competent person.
Before carrying out any work ensure local regulations and site procedures are followed.
We recommend all Merlin water detection equipment and systems are commissioned by a competent/trained engineer to ensure correct installation and operation. Contact S&S Northern for more information.

Internal Board Overview

1. 100-240VAC Mains power Input
2. 100-240VAC Water Solenoid Valve Output.
3. 24VDC Water Leak Monitors Supply (Zone 1)
4. 24VDC Water Leak Monitors Supply (zone 2)
5. 24VDC Water Leak Monitors Supply (Zone 3)
6. 24VDC Water Leak Monitors Supply (zone 4)
7. General Alarm input
8. **NOT USED**
9. **NOT USED**
10. BMS output contacts
11. 24VDC Sounder/ Strobe alarm
12. Switch - BMS Selection & Auto Reset
13. Switch - Zone 1/2/3/4 enable/disable



Note: Terminal blocks are plug/socket type and may be removed to ease wiring.

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Be careful when creating access for cables – Damage to circuit boards will void any warranty!
Water leak Monitors are sold separately.

Board Connections Overview

POWER/LINE IN 100-240vac mains power is supplied to the [POWER/LINE IN] connector using a 3-core cable fused at 3A. On connecting the mains supply to the panel the power LED indicator will light up – this is located on the front.

WATER VALVE 100-240vac electrical power output from the [VALVE OUT] terminal using a 3-core cable to a water solenoid valve, which can shut the water supply on alarm status.

WATER LEAK MONITOR (Zones 1 – 4) 24vdc power supply to Water Leak Monitors are wired to [DETECTOR ZONE] terminals. For more information, see section*:* Wiring your detector.

GENERAL ALARM An open/close input for external alarm (i.e. remote emergency shut-off buttons).

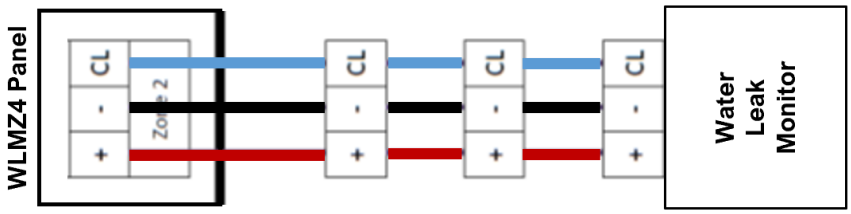
BMS OUTPUT Connections are available on the board for Building Management Systems. These are volt free connections. This is a relay that changes state in alarm or when the water supply is on/off and used in conjunction with the 24vdc output and other external relays that affect other devices and controls such as purge fans and audible alarms etc.

SOUNDER-STROBE 24vdc output for an external sounder alarm/ strobe lighting to activate on alarm.

Wiring your Detector

Power is supplied to a WLM via the [PANEL] terminal [+ / -] and using the WLMZ4 panel [DETECTION ZONE] terminal.

If you are using a WLMZ4 panel you will need to use the detector [C/L] terminal as an alarm relay.



BMS Switch

The WLMZ4 can be integrated with a BMS to make or break a circuit on water supply on/off, (valve open or valve closed). This will tell the BMS whether or not electrical power is being sent to the solenoid. There is a dip-switch located on the WLMZ4 circuit board labelled [BMS]. This is factory set to 'OFF' position which signals the BMS on water supply on/water supply off. When switched to 'ON', the WLMZ4 will only signal the BMS on an alarm, i.e. water leak detected, EM Stop pressed, etc.

BMS SWITCH	BMS SIGNAL
OFF	Water supply on or off only.
ON	Error condition i.e. water leak detected, emergency stop pressed.

Auto Reset Switch

The panel has a built-in auto reset feature. There is a dipswitch located on the circuit board labelled [AUTO RESET]. This is factory set in the 'Off' position i.e. when power is restored after a power cut or loss, the panel has to be restarted manually. When enabled, the system will restart automatically when power is restored.

AUTO SWITCH	CONDITION
OFF	Panel has to be restarted manually following a power cut/loss and/or alarm.
ON	Panel will automatically restart when power is restored.

Zone 1 - 4 Set-Up Switches

There are dipswitches located on the WLMZ4 circuit board labelled [ZONE 1] and [ZONE 2].
This is factory set in the 'Off' position. For each of the water detection zones you are using please ensure that the relevant zone has being enabled. The zone you are not using should be left disabled.

ZONE 1/2/3/4 SWITCH	CONDITION
OFF	Water leak detection zone disabled.
ON	Water leak detection zone enabled.

Factory Set Condition

SWITCH	CONDITION
BMS	OFF
AUTO RESET	OFF
ZONE 1	OFF
ZONE 2	OFF
ZONE 3	OFF
ZONE 4	OFF

Trouble Shooting

Fault.	Possible Cause/Correction.
Water Leak Monitor not responding.	o Incorrect wiring o Zone switches not properly configured
WLMZ4 Panel not responding.	o Incorrect Wiring o No Power o Auto-Reset not properly configured

Operation

Initial Power-Up (Commissioning)

On connecting mains power, press reset to start. The system will close the solenoid valve when an emergency stop has been pressed, water leak has been detected or any alarm signal has been triggered.
When the system is connected to the mains power supply, the Power LED will illuminate RED.

LED Indicator Status

Power
Power LED will illuminate RED when power is supplied. When no power is present, this LED will not light up.

Water On
On start up, if no water leak or any other alarms are detected, the water valve will open and the Water On LED will illuminate. GREEN = Water Supply On OFF = Water Supply Off

General Alarm
If an external alarm is triggered, the LED will illuminate AMBER and the water supply will be turned off. The error condition must be re-set before restarting the system.

Zones 1-4
Under normal working conditions these LEDs are GREEN.
If the Water Leak Monitor connected detects a fault with the water leak rope, this will show AMBER. If the Water Leak Monitor connected detects a water leak this will illuminate RED, and the water solenoid valve will close.

Mute & Reset Buttons

MUTE The mute button is located on the front fascia of the WLMZ4 and is used to mute the sounder inside the board when in alarm. The internal buzzer operates at approximately >60db measured 30cm (1ft) from a closed panel and the LED illuminates.

RESET The reset button is located on the front fascia of the WLMZ4 and is used to turn the system on and to reset the system following alarm.

Specification

General	
Product:	WLMZ4 Water Detection Controller
Use:	Indoor, Safe Areas (not to be used in potentially explosive atmospheres)
Indicators	LED
Mounting	Wall Mounting
Electrical	
Max. Power Consumption	20W Max (Full Load)
Power Voltage Input Range	100-240vac
Water Valve Output Range	100-240vac
I/Os	24vdc Outputs (WLM / Strobe or Sounder) General Alarm Open/Close input
BMS	Volt Free (Normally Closed / Common / Normally Open) 3A Max
Terminal Wire ratings	Copper 18AWG (0.75mm2) Min. x29 screw terminals.
Fuse	3.15A
Construction	
Dimensions (H x W x D)	140 x 190 x 62mm (5.51 x 7.48 x 2.44")
Unit Weight (Approx.)	0.7kg / 24.7oz
Housing Material	Polylac - PA765
Environmental	
Ingress Protection	IP65 (Pre-installation)
Storage Conditions	Dry. Cool. Flat
Operating Conditions	-10 ~ 50°C / 14 ~ 122°F 30 ~ 80% rf
Compliance	
CE / UKCA	EN 61326-1 / BS EN IEC 61010-1

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