

Water Leak Detector Specifications/Instructions



Overview

The model WLS402 water leak detector can be used, along with appropriate system design and operation, to prevent accidental water leakage in buildings.

The detector receives signals from a detecting band installed below the floor, on the floor, or on the water pipe, and outputs contact signals. This compact and lightweight product has flexible power requirements.

Restrictions on Use

This product was developed, designed, and manufactured for general air conditioning use.

Do not use the product in a situation where human life may be at risk or for nuclear applications in radiation-controlled areas. If you wish to use the product in a radiation-controlled area, please contact Azbil Corporation.

Particularly when the product is used in applications like the following where safety is especially required, implementation of fail-safe design, redundant design, regular maintenance, etc., should receive appropriate consideration so that the product can be used safely and reliably.

- Safety devices for protecting the human body
- Start/stop control devices for transportation machines
- Aeronautical/aerospace machines

For system design, application design, instructions for use, or product applications, please contact Azbil Corporation. Azbil Corporation bears no responsibility for any result, or lack of result, deriving from the customer's use of the product.

Recommended Design Life

It is recommended that this product be used within its design life. The design life is the period during which you can use the product safely and reliably based on the design specifications. If the product is used beyond this period, its failure ratio may increase due to time-related deterioration of parts, etc. The design life during which the product can operate reliably with the lowest failure ratio and least deterioration over time is estimated scientifically based on acceleration tests, endurance tests, etc., taking into consideration the operating environment, conditions, and frequency of use as basic parameters.

The design life of this product is 10 years.

The design life specified for this product assumes that maintenance, such as replacement of the limited-life parts, is carried out properly. Refer to the section on maintenance in this manual.

Safety Precautions

Please read instructions carefully and use the product as specified in this manual. Be sure to keep this manual nearby for quick reference.



WARNING

Alerts users that improper handling may cause death or serious injury.



CAUTION

Alerts users that improper handling may cause minor injury or material loss.

Symbols



Notifies users that specific actions are prohibited to prevent possible danger. The symbol inside • graphically indicates the prohibited action. (For example, the sign on the left means that disassembly is prohibited.)



Instructs users to carry out a specific obligatory action to prevent possible danger. The symbol inside • graphically indicates the actual action to be carried out. (For example, the sign on the left indicates general instructions.)

⚠ WARNING



Before wiring, setting, maintenance, or replacement, be sure to turn off the power to this product. Failure to do so may result in electric shock or device failure.

⚠ CAUTION



Install, wire, and use this product under the conditions specified by this manual. Failure to do so may cause fire or device failure.



Installation and wiring must be performed by personnel qualified to do instrumentation and electrical work. Mistakes in installation or wiring may cause fire or electric shock.



Tighten the terminal screws with the specified torque. Insufficient tightening of the terminal screws may cause fire or overheating.



Be careful that your hand does not slip when installing the metal brackets. There is a danger of injury.



Provide a circuit breaker for the power source of this product. The product does not have a power switch.



Do not disassemble this product. Disassembly may cause electric shock or device failure.

- IMPORTANT**
- Do not use this product for purposes other than water leak detection.
 - Make sure that the water leak detector is set on high sensitivity.

For details, see "Operation inspection using water droplets" under "Maintenance"

Model Number

Model number	Description
WLS402C0000	Water leak detector and metal brackets

● Options

Model number	Item	Order	Remarks
PF085A	Socket	Available from Azbil	Made by Omron
YLSW-R	Detecting band (recommended products)	Available from Azbil	Refer to AB-5901
AD-RS		Can be ordered from Tatsuta Electric Wire and Cable Co., Ltd.	Colored when wet and returns when dry.
AD-HS		Can be ordered from Tatsuta Electric Wire and Cable Co., Ltd.	Colored when wet.

Note: If a detecting band other than one of the above is used, the product may not operate properly.

Specifications

Item	Specification	
Power	100–240 V AC, 50/60 Hz	
Allowable voltage	85–110 % of the rated voltage	
Voltage between the detecting band terminals	30 V AC max. (at the rated voltage)	
Resistance triggering alarm ON (at 23 °C ambient temperature)	Low sensitivity	10 kΩ or below Note: An alarm may not be triggered around 0 °C. The resistance may change depending on the ambient temperature.
	High sensitivity	40–60 kΩ
Resistance triggering alarm OFF	Resistance triggering alarm ON + 50 kΩ or less	
Power consumption	3.2 VA max.	
Contact output rating	Resistive load	250 V AC, 3A (cosφ = 1.0)
	Inductive load	250 V AC, 1A (cosφ = 0.4)
		DC24 V 1A
Environmental conditions	Allowable ambient temperature	–10 to 55 °C (without condensation)
	Allowable ambient humidity	25–85 % RH

Item	Specification	
Weight	Approx. 150 g	
Materials	Case	ABS
	Base	PBT
	Bracket	SUS301
Connection	Screw terminal block socket (M3.5) Tightening torque: 0.78–1.18 N·m	

Behavior

- If the detecting band gets wet, the resistance drops and the contacts become de-energized (ON between terminals 3 and 4), resulting in an alarm.
- When the water leak stops and the detecting band gets dry (OFF between terminals 3 and 4), the status returns to normal.
- If the power is turned OFF (ON between terminals 3 and 4), the alarm is triggered.

Table 1 Power status and product operation

Power status	Water leak	LED (red)	Alarm contacts (terminals 3 and 4)
Power ON	Detected	OFF	ON
	Not detected	ON	OFF
Power OFF	Power OFF	OFF	ON

Dimensions

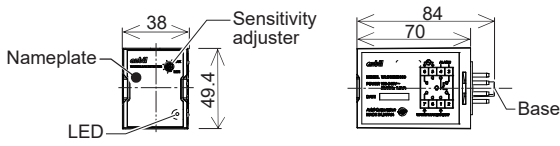


Figure 1 Dimensions (mm)

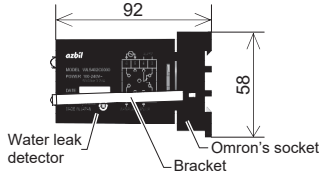


Figure 2 Dimensions (mm) of the product with socket connected

Installation

● Installation on DIN rail

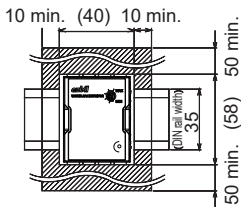


Figure 3 DIN rail mounting dimensions (mm)

CAUTION

Be careful that your hand does not slip when installing the metal brackets. There is a danger of injury.

- For mounting, read this document as well as the document of the device to be connected to this product.
- The socket can be mounted directly on a panel, etc., with screws (mounting hole dimension M4 [2 places] or dia. 4.5).
- Do not install the product in the presence of:
 - corrosive gas, organic solvent, or other chemicals in the air.
 - water droplets or excessive damp air.
 - high temperatures.
 - long-lasting vibration.
 - rainwater, etc., that may collect at the connection between the detector and the socket.

● Installation procedure

- Insert the brackets into the slits on the socket to hold the product in place, and check for looseness or wobble of the product.
Be careful when using the thin metal brackets. Mishandling may cause an injury.
- Install the product with the attached brackets and make sure that the product is steady and does not move.

● Precautions for detecting band installation

- Install in places where a water leak is likely to occur, paying attention to the following points.
- Adhere it to the desired surface (underfloor, the floor, or water pipe).
 - Protect it using the cable cover if it might be stepped on or get wet during floor cleaning or other work.
 - If the product is far from the detecting band, use 600 V PVC-insulated wire (if the wire is 2 mm² and the detecting band is 100 m long [the maximum length], the maximum wiring length is 300 m).
- Ref. AB-5901, Detecting Band YLSW-R Specifications/Instructions

● Trial operation

See "Operation inspection using water droplets" in "Maintenance"

Wiring

CAUTION



Tighten the terminal screws with the specified torque.

Insufficient tightening of the terminal screws may cause fire or overheating.

- For wiring, read this document and the instructions for the connected device.
- Wiring must comply with applicable codes and ordinances.
- Check again that the wiring is done according to the design.

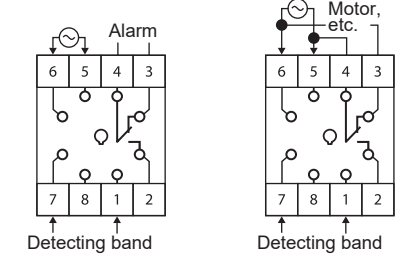


Figure 4 Wiring diagram

Maintenance

● Regular inspection

Periodically clean the terminals and check that all the wires are tightly connected and that the product is securely held by the bracket.

● Operation inspection using water droplets

Inform the customer of the operation check in advance. Also, the building owner or manager, etc., and the contractor who installs this product must agree on the details of the inspection in advance.

- Make sure that the water leak detector is set on high sensitivity.
 - For the first use, turn the adjuster clockwise until it stops.
 - For the second time and later, check for poor contact every time. Slowly turn the adjuster counterclockwise until it stops and then slowly turn it clockwise until it stops.
- Drop water on a 50 mm length of the band near the end. If the detecting band for one system is long, check at several spots (in the middle and at the ends).
- Check the alarm information on the product installed in the panel. If the product is used with the central monitoring unit, check the alarm status for the points.
- Wipe off the detecting band using a dry cloth, and check that the alarm of this product turns off. If the product is used with the central monitoring unit, check that point alarms are canceled.

Disposal

When this product is no longer needed, dispose of it as industrial waste in accordance with local regulations.

Do not reuse all or part of this product.

■基于 SJ/T11364-2014 「电子电气产品有害物质限制使用标识要求」的表示样式

产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
主体	X	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。
○ : 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。
x : 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

环境保护使用期限
含量标识年限：10 年
产品型号：WLS402C0000



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Specifications are subject to change without notice.

Azbil Corporation
Building Systems Company

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