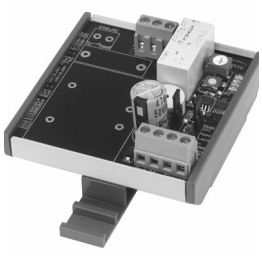
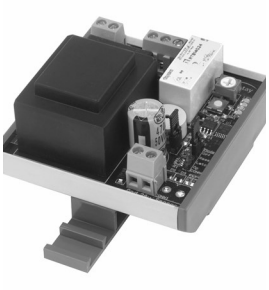
Sontay®
Four Elms Road - Edenbridge
Kent - TN8 6AB - UK

WD-AMX
Water Detection Controllers

Issue Number 7.4
30/09/2021





Features and Benefits

- LED Status of leak status
- VFC output
- Audible alarm
- Auto or manual reset alarm output
- Uses an isolated AC signal which prevents oxidation or erosion of sensing modules

Technical Overview

The WD-AMX water leak detection modules are designed for use with the WD-CS, WD-PS and WD-RS water leak detection sensors.

The modules have LED Indication of the water leak status and a sounder that can be enabled or disabled. The relay output can be used in manual or auto reset, and can be used as an alarm signal for connection to a BMS controller or remote alarm annunciation panel, such as the UI-AA-1-F.

The cable excitation used is an isolated AC signal which ensures the detector cable will not be subject to oxidation or erosion over time, avoiding the degradation problems associated with DC systems

Product Codes

WD-AMX-1	24Vac/dc water detection alarm module with audible alarm and LED status indication
WD-AMX-2	230Vac water detection alarm module with audible alarm and LED status indication

Specification

Supply Voltage:	
WD-AMX-1	24Vac/dc ±10%
WD-AMX-2	230Vac @ 50Hz
Supply current	50mA max.
Output	12A @ 250Vac
LED Status indication for:	
Error condition	
Input sensitivity	
Relay output mode	
Learning Mode	
Response time	<1 sec. after exposure
Max. sensor cable length	200m with leader cable
Alarm hysteresis	Dependent on sensitivity
Clockwise	Minimum
Anticlockwise	Maximum
Audible alarm output	85dB@2.3Hz @ 10cm
Electrical	Terminals for 0.5-2.5² cable
Connections	Rising cage
Ambient:	
Temperature	0°C to 40°C
RH	0-80% non-condensing
Dimensions	74 x 76 x 50mm
Weights:	
WD-AMX-1	100g
WD-AMX-2	240g
Country of origin	China
Conformity	EMC, LVD, CE & UKCA Marked

Warning!
When installed, the output relay contacts may carry 240Vac. Special care must be taken to isolate the switched voltages prior to any work being undertaken.

WEEE Directive:

At the end of the products useful life please dispose as per the local regulations.
Do not dispose of with normal household waste.
Do not burn.

CE UKCA

Tel: +44 (0)1732 861200 - E-mail: sales@sontay.com - Web: www.sontay.com

Do's & Don'ts

Do's

- Keep the WD-CS in their original containers prior to installation.
- Installation of WD-CS sensors should be carried out after major construction is finished to avoid and damage to the cables or point sensors.
- Cut off excess water leak detection cable, do not leave this coiled up.

Don'ts

- Allow any contaminates to come into contact with the sensing cables.
- Use damaged sensing cables.
- Avoid soldering or welding work near the cable, if this has to be done cover sensing cable.
- Use non-conductive fixings like the WD-FC, do don't use any conductive fixings or glues.
- If used on pipe work, place a non-conductive barrier between the cable and pipe work.

Installation Tips

In a server room or data centre a typical installation would be to install the sensor cable around the air conditioning equipment or any other areas that might be a source of a water leak, Fig a.

Another possible configuration is to install the water leak cable around the server(s) that you want to protect, fig b.

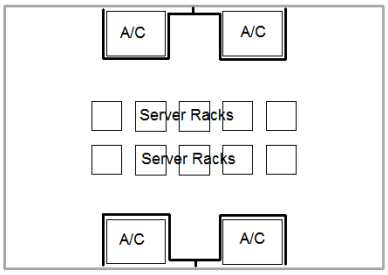


Fig a

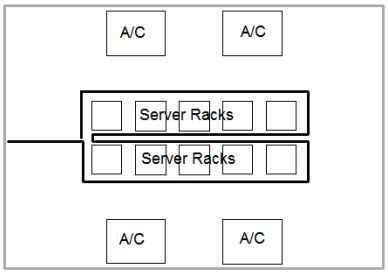


Fig b

Under floor installation can be either by setting the cable around the room, fig c, or by coving the entire area for maximum protection. Fig d. For maximum protection sensing cable snakes up and down the room.

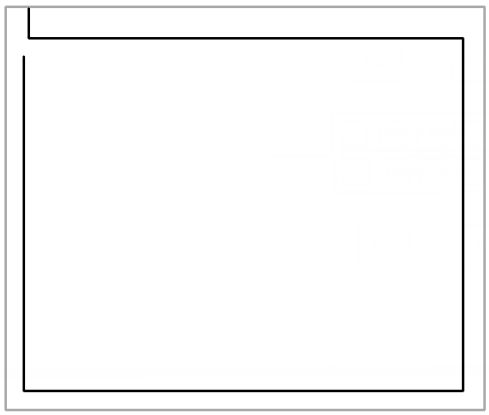


Fig c

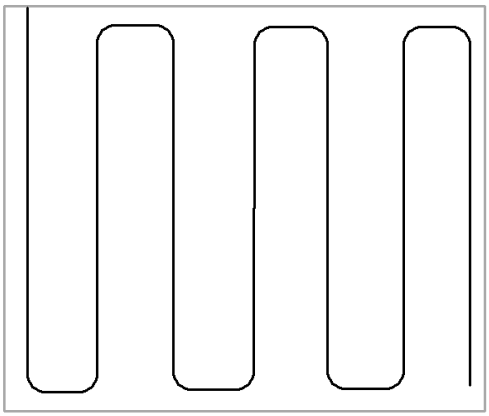


Fig d

These are all examples, actual installation would depend on the size and shape of the room that needs to be monitored.

Using Multiple Sensors

You can connect more than one WD-PS or WD-CS to a single WD-AMX input, and connections are made in parallel.

This will result in a common alarm so should any of the sensors detect a water leak an alarm will be raised. The only limitation of connecting multiple detectors is that the total cable run should not exceed 200 meters. This includes sensor cable and any 2-core cable between this and the WD-AMX.

Installation

Antistatic precautions must be observed when handling these sensors. The PCB contains circuitry that can be damaged by static discharge.

1. The WD-AMX should only be installed by a competent, suitably trained technician, experienced in installation with hazardous voltages. (>50Vac & <1000Vac or >75Vdc & 1500Vdc)

2. Ensure that all power is disconnected before carrying out any work on the WD-AMX.

3. Maximum cable is 2.5mm², care must be taken not to over tighten terminals.

4. When mounting the WD-AMX care should be taken not to stress the PCB when fitting to the DIN rail. If it is necessary to remove the module from the DIN rail, be sure to use a flat bladed screwdriver to release the DIN clips.

5. The WD-AMX-1 is designed to operate from a 24Vac or 24Vdc supply (so that power can be drawn from a 24Vac transformer used for other purposes if a 24Vdc supply is not available). The WD-AMX-2 is designed to operate from a 230Vac mains supply.

6. The relay output is an SPDT type, allowing either a Normally Open (NO) or Normally Closed (NC) connection.

Operation

On power-up or by pressing the reset button, the unit enters “learning” mode, the mode jumper can be set to the required operating mode. In “learning” mode, the sensor sensitivity trimmer can be adjusted, and the level used as the threshold at which the unit will report an alarm. The unit will only be in “learning” mode for approximately 20 seconds after power-up or reset. After this time, the unit will enter “run” mode, so that any adjustment of the trimmer or change to the relay mode jumper has no effect. Note that if the reset button is pressed, the alarm will sound (if enabled) for at least two seconds as part of the initialisation function. In this event, the mode jumper and trimmer setting should be checked before the unit is left to monitor the sensor autonomously.

When the unit is first powered up, the sounder will be activated (if enabled) and the LED’s demonstrated. The relay will be left de-energised for a minimum of two seconds. This is so that there will be an alert reported over the relay if the reset button is pressed.
Once the relay has been energised, it will be held in this state for a minimum of two seconds, even if a flood is detected immediately.

Learning Mode

Changes in alarm threshold and relay output mode can only be made while the unit is in “learning” mode. Enter “learning” mode by pressing the reset switch.

LED Status

Green LED:
The green LED should be on continuously during normal operation, except in the “off” mode or there is an error (see “Error Indication”).
Yellow LED:
This will be on if the sensor reading is more than 33% of the threshold setting.
Orange LED:
This will be on if the sensor reading is more than 66% of the threshold setting.
Red LED:
This will be on solidly if the sensor reading exceeds the threshold setting. If the red LED is flashing, it is either because the unit is in “test” mode or**, if the green LED is off**, because the unit has discovered an error (see “Error Indication”).

Error Indication

If the unit thinks that there is an error (for example, the sensor reads such an extreme level that a short circuit is suspected) then the red LED will flash continuously, the relay will be de-energised, and the sounder will be activated (if enabled). The sounder pattern will be three tones followed by a gap, to differentiate it from the flood warning. The green LED will be off to differentiate between an error report and the “Test” mode. The error report will be held until the reset button is pressed, although this function could reset automatically if the unit is in “Reset” mode.

Sensitivity Adjustment

To adjust the sensitivity press the reset switch, the green LED will rapid flash

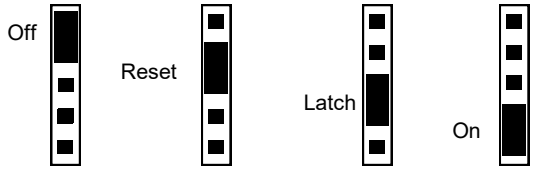
- Potentiometer fully anticlockwise Most sensitive
- Potentiometer fully clockwise Least sensitive

Relay Output Modes

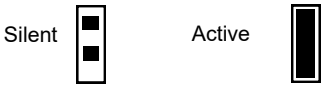
Off:
The relay will be de-energised and the sounder silent, no matter what the sensor condition. The green and yellow LEDs will flash alternately while in "learning" mode, and then just the green LED will flash continuously to show that this mode is selected. The other three LED's will indicate as normal.
Reset:
The WD-AMX will report all flood alerts by releasing the relay and activating the sounder (if enabled). Any transition will be reported for a minimum of two seconds. When the sensor stops indicating a flood, the unit resets automatically.
Latch:
In latching (manual reset) mode the WD-AMX reports the initial flood alert by releasing the relay and activating the sounder (if enabled). The relay and sounder will continue to indicate the alarm until the reset switch on the unit has been pressed.
NB The LED's will indicate the true status of the sensor.
On:
This is a mode used to test the installation without needing to wet the sensor. The sounder and relay will be energised and the green and red LEDs will flash alternately for approximately 2 minutes to show that this mode is selected. After this time, the green LED will be ON while the red LED will continue to flash.

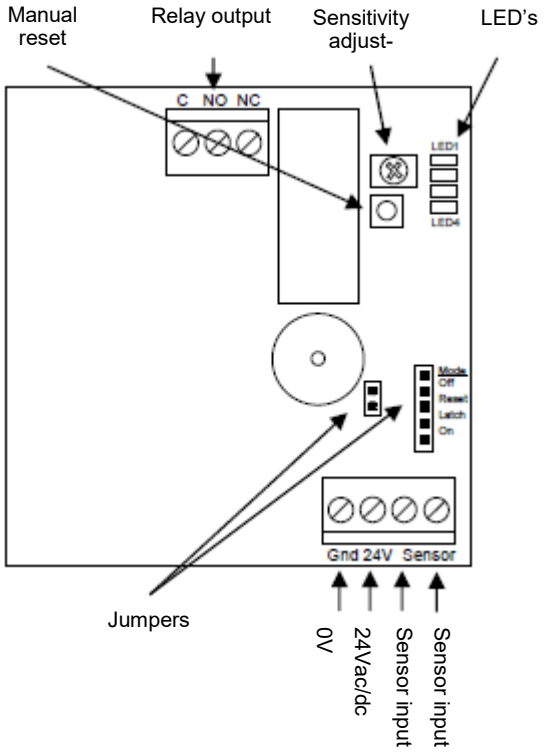
Jumper Settings & Connections

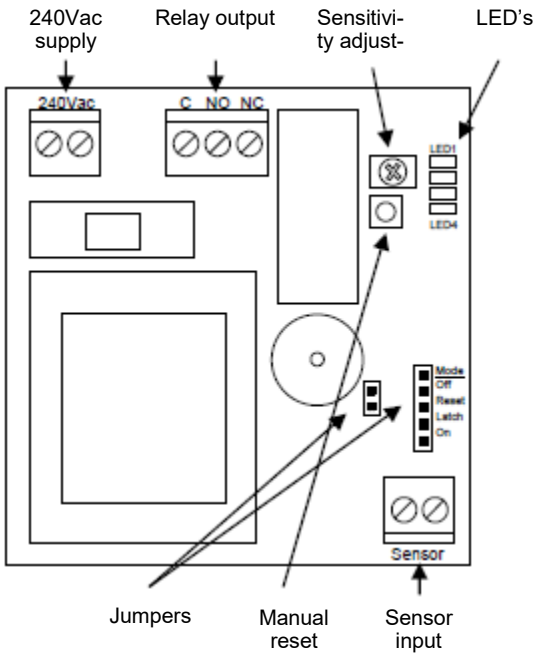
Relay Mode Link:



Sounder link:







Tel: +44 (0)1732 861200 - E-mail: sales@sontay.com - Web: www.sontay.com