

Technical Overview

The **WD-RS1** range of rain sensors are used to detect rain. The surface of the detector can be heated to avoid false detection alarms resulting from dew forming. The detector can be swivelled on the mounting bracket and is held in place by a wing-nut. This device cannot be connected directly to a BMS controller, a **WD-AM** module must be used. **NB** The cable excitation used from the WD-AM is an isolated AC signal which ensures the detectors will not be subject to oxidation or erosion over time, avoiding the degradation problems associated with DC systems.



Features

- Heater to avoid nuisance alarms
- Accurate switching

Specification

Housing:	
Material	ABS
Dimensions	70 x 30 x 45mm
Bracket	Stainless steel
Country of origin	UK

Product Codes

WD-RS	Rain sensor with integral heater 2 meter flying lead
WD-RS1/5	Rain sensor with integral heater 5 meter flying lead

Installation

1. Fix the **WD-RS** in a suitable location, fix the bracket with suitable screws.
2. In a junction box terminate the cores at the terminal block. Leaving some slack inside the unit.
3. From the junction box connect the cable to the **WD-AM** alarm module and terminate the red and blue to the sensor input (polarity independent), and the yellow and green to a 24Vac/dc supply (if required).
4. Power the **WD-AM**, and adjust the pot on the PCB clockwise until the LED comes on, and then back until the LED goes off (when a short cable run is used the LED may not even come on when set to max sensitivity).
5. Test the sensor by placing a wet cloth over the stainless steel probes to simulate an water leak, the relay will come on. Remove the rag and the relay will go off.

Dimensions

Red	To detector
Blue	To detector (polarity independent)
Yellow	Heater 24Vac/dc (40mA max.)
Green	Heater 0V

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 is 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-AA1-F**.



Features

- LED Indication of leak status
- Auto reset alarm output
- Audible alarm

Specification

Supply Voltage:	
WD-AMX-1	24Vac/dc $\pm 10\%$
WD-AMX-2	230Vac @ 50Hz
Supply current	50mA max.
Output	12A @ 250Vac
LED Status indication for:	
Error condition	
Input sensitivity	
Learning Mode	
Response time	<1 sec. after exposure
Max. sensor cable length	200m (with leader cable)
Alarm hysteresis	Dependent on sensitivity
Audible alarm output	85dB@2.3Hz @ 10cm
Electrical	Terminals for 0.5-2.5 ² cable
Connections	Rising cage
Ambient:	
Temperature	-10°C to 50°C
RH	0-80% non-condensing
Dimensions	72 x 64 x 55mm
Country of origin	UK

NB 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



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.



Installation

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, 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. After this time, the unit will enter "run" mode, so that any adjustment of the trimmer has no effect.

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. 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**.

LED status

Green LED:

The green LED should be on continuously during normal operation, except in the "off" mode (see page 3) 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 (see page 3) or, **if the green LED is off**, because the unit has discovered an error (see "Error Indication").

Learning mode

Changes in alarm threshold **can only be made while the unit is in "learning" mode**.

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.

Adjusting the alarm threshold

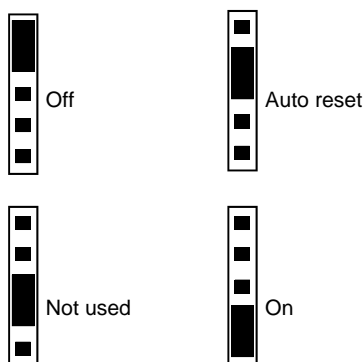
With the sensor connected, power the unit power up which will then allow you to enter learning mode and then slowly adjust the threshold trimmer. As the input becomes more sensitive, the yellow, orange and finally red LEDs will progressively light. If the red LED is lit, the sensitivity is set too high, and the unit is in alarm.

Jumper settings

Sounder link:



Relay Mode Link:



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.

Auto reset:

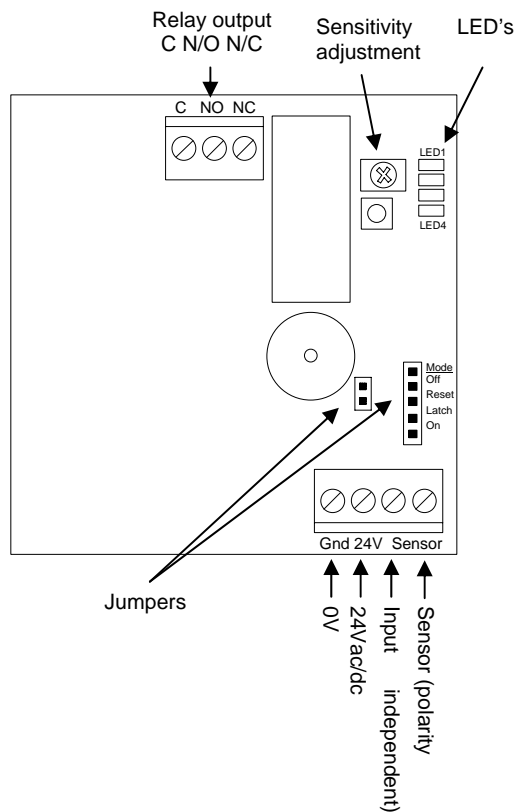
The **WD-AMX** will report all flood alerts by releasing the relay and activating the sounder (if enabled). Any transition will be reported for a minimum of two seconds. When the sensor stops indicating a flood, the unit resets automatically.

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.

Connections

WD-AMX-1:



WD-AMX-2:

