

# PA-930 AIR DIFFERENTIAL PRESSURE SWITCH



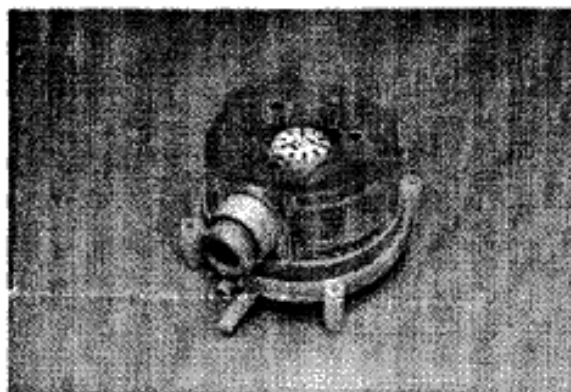
## Technical Overview

The PA-930 range are high sensitivity air differential pressure switches for low differential pressure switching applications. Suitable for use in air-conditioning systems for to provide an indication of fan status and 'filter dirty' condition.

The switching setpoint is adjusted by means of a calibrated knob, mounted under the main cover to avoid tampering. Units are supplied complete with a duct fixing kit and mounting bracket.

### Features:

- Close switching differential
- Duct fixing kit included
- IP65 housing option



### Specification:

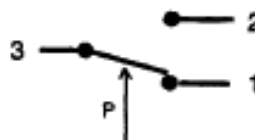
Type	Adjustment range	Switching differential
PA-930-81	40 to 100Pa	20Pa
PA-930-82	40 to 200Pa	20Pa
PA-930-83	50 to 500Pa	20Pa
PA-930-84	100 to 500Pa	50Pa
PA-930-85	200 to 1000Pa	100Pa

The trip pressure refers to horizontal mounting. In case of vertical mounting the trip pressure differs by -20Pa.

Max. operating pressure	5000Pa
Pressure connections	6mm ID push-on tubing
Electrical rating	1.5A (0.4)/250Vac AgCdO contacts
Approvals	Switch according to VDE 0630 UG1652
Connections	Spade terminals + screw terminal adaptors for cable up to 1.5mm <sup>2</sup> max.
Dimensions	85mm dia. x 56mm
Housing material	Plastic moulding
Fixing	Metal mounting bracket
Protection	IP54 (IP65 box option)
Ambient range	0 to +80°C
Installation category	IEC 664 Category II
Pollution degree	IEC 664 Degree 1
Weight	250g
Origin	Germany

A duct fixing kit<sup>1</sup> is supplied with the PA-930. It consists of 2m of 6mm dia. plastic tubing, 2 x pitot tubes, and 4 x fixing screws.

### Connections:



All connections to BEMS controllers, data recorders etc. should be made using screened cable. Normally, the screen should be earthed at one end only (usually the controller end) to avoid earth hum loops which can create noise. Low voltage signal and supply cables should be routed separately from high voltage or mains cabling. Separate conduit or cable trays should be used. Where possible, the screen of the cable feeding the sensor should be connected to a FUNCTIONAL EARTH, rather than the mains safety earth. This will provide better immunity to high frequency noise. Most modern buildings have a separate earth for this purpose.



This product bears the CE mark for compliance with the Low Voltage Directive 73/23/EEC. This does NOT include the Directives for EMC compliance. The product is classed as a component without intrinsic function to end user, and therefore is not subject to CE marking for EMC compliance.

### Product codes:

	IP65 = IP65 box option	
Pressure	PA-930-81	20/40* to 100 Pa
ranges	PA-930-82	20/40* to 200 Pa
	PA-930-83	20/40* to 500 Pa
	PA-930-84	30/50* to 500 Pa
	PA-930-85	80/100* to 1000 Pa

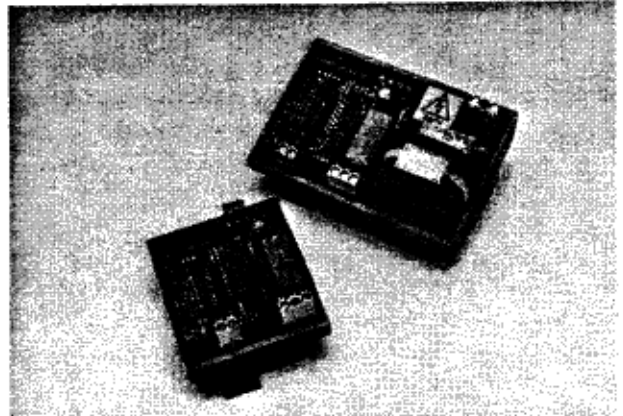
Data sheet: PA-930 Iss. 3.0 23.9.97

Sontay Limited,  
Four Elms Road, Edenbridge  
Kent TN8 6AB England  
Tel.: (01732) 865548 Fax.: (01732) 867164

Whilst every effort has been made to ensure the accuracy of this specification, Sontay cannot accept responsibility for damage, injury, loss or expense resulting from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.

### Technical overview

The **WD-AM** is a single zone water leak detection module, designed for DIN rail mounting inside AHU's power distribution units, or other equipment where localised leak detection is required. Up to 200m of detector tape **WD-TS1** or cable **WD-CS1** can be connected, or up to 4 rain detectors **WD-RS1** or point detectors **WD-PS1**. The cable excitation used is an isolated AC signal which ensures the detector tape will not be subject to oxidation or erosion over time, avoiding the degradation problems associated with DC systems. A relay output provides an alarm signal for connection to a BEMS controller, or remote alarm annunciation panel such as the **UI-AA1**. LED alarm indication is also provided. Detection sensitivity is adjustable to allow fine tuning to suit local conditions.



- Can be used with tape, cable or remote sensors
- AC detector excitation for reliability
- LED indication of alarm condition
- 24Vac/dc powered (230Vac option)
- DIN rail mounting
- Adjustable sensitivity
- Audible alarm option

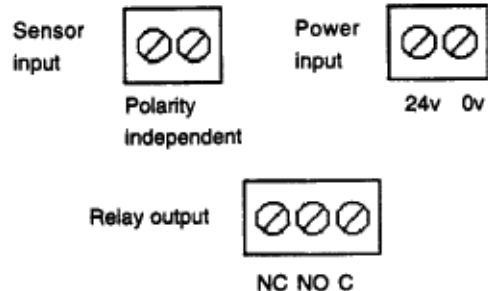
### Specification:

Supply voltage	15 - 30 Vac/dc ( $\pm 10\%$ ) 230 Vac mains option
Supply current	50 mA max
Output	Relay (see connection details)
Relay contacts	12A @ 240Vac L.E.D. indication
Response time	< 1 sec. after exposure
Max. sensor tape length	200 Metres
Max. sensor cable length	200 Metres
Alarm hysteresis	Dependent on sensitivity
Audible alarm output (where fitted)	85 dB @ 2.3kHz at 10 cms.
Housing	DIN rail carrier
Dimensions	(77H x 67W x 44D) mm
Ambient temp.	0 / +40 °C
Weight	125 g
Country of origin	UK

### Installation:

With the sensor connected to the input, apply power to the module. Adjust the 20-turn pot VR1 clockwise until the LED comes on, and the back until the LED goes off. Less sensitivity may be needed with long runs of sensor connection are used.

### Connections:



**N.B.** Where the audible alarm version is used, the jumper SK5 may be temporarily removed to silence the beeper. This **DOES NOT** take the LED or relay out of alarm. Only the clearing of the fault condition resets the relay output on any version of the unit.

### Product codes:

<b>WD-AM1</b>	24Vac/dc detector unit
<b>WD-AM1A</b>	24Vac/dc detector unit + sounder
<b>WD-AM2</b>	230Vac/dc detector unit
<b>WD-AM2A</b>	230Vac/dc detector unit + sounder
<b>WD-PS1</b>	Point sensor
<b>WD-RS1</b>	Rain sensor
<b>WD-TS1</b>	Sensor tape
<b>WD-CS1</b>	Sensor cable

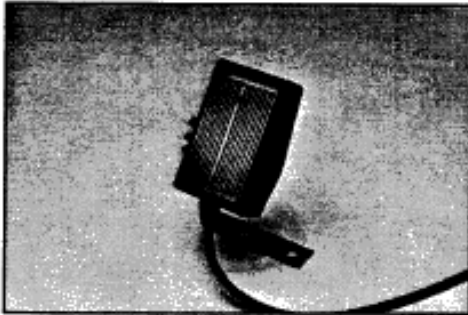
#### WD-RS1 Rain detector:

The **WD-RS1** is a bracket mounted device which can be connected to a **WD-AM** for the detection of 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.

The heater requires 24 volts @ 40mA max.

The **WD-RS1** is connected to the detector with standard leader cable.

**N.B.** Bird-cage detection is recommended.



#### Connections:

Connections are by 4-core flying lead and the terminations are as follows:

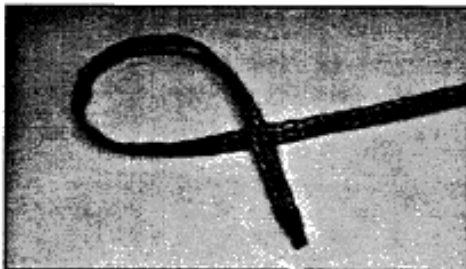
Red:-	To detector
Blue:-	To detector
Yellow:-	Heater 24 Vac/dc
Green:-	Heater 0V

#### Dimensions:

Body	72 x 45 x 32mm Max
S/S bracket:	65 x 65mm.

#### WD-TS1 Sensor tape:

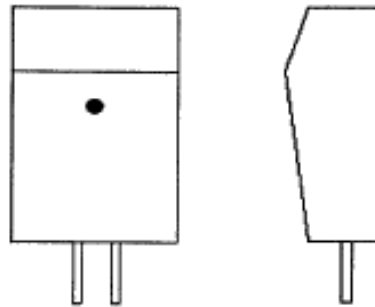
Flat sensor tape for use with the **WD-AM** detector. The tape is covered with a plastic netting to prevent short-circuits when used in metal trays or conduit, and enables the tape to be folded at right-angles to allow easy routing. The tape has an average width of 15mm when enclosed in the plastic netting.



#### WD-PS1 Point detector:

The **WD-PS1** is a wall mounted device which can be connected to a **WD-AM** for the detection of localised water at a specific point.

The **WD-PS1** is connected to the detector with standard leader cable. Up to 4 sensors can be connected, in parallel, into 1 **WD-AM** controller.



#### Connections:

Connections are by 2-way terminal block and are polarity independent.

#### Dimensions:

Body	70 x 43 x 30mm Max
Steel probes:	8mm long 8mm apart.

#### WD-CS1 Sensor cable:

Round sensor cable for use with the **WD-AM** detector. The cable has an average circumference of 10mm.

