

Liquid leakage detector manual

**AD-AS-1WM**

Thank you for purchasing TATSUTA's liquid leakage detector.  
Please read and understand this manual thoroughly before using it.  
Please keep this manual carefully with a detector, so that you can refer to it any time.

**! Cautions**

Ignoring the cautions in below and handling the product in incorrect manners may cause death or serious injuries as well as fire, electrical shock, or failures.

**! Important points in handling the product**

**Cautions concerning the environment**

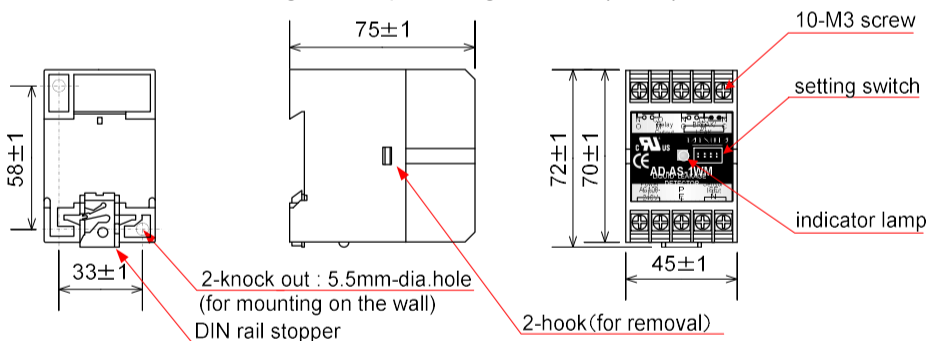
- Do not touch the product with wet hands.
- Do not insert any foreign object into openings.
- Use the product within the specified ratings of the ambient temperature and humidity and storage temperature.
- Keep dry! Do not install the product in a place where the temperature and humidity are high.
- Avoid using the product in a place where there is much dust and dirt.
- Avoid using the product in a place in proximity to vibration, organic gases, and sources of strong electromagnetic induction.
- This product is intended for built-in use, such as to install inside of control panel; do not install it in a place where people come in contacts with it easily.
- Install a detector in a sturdy box (like a control panel) or things alike.

**Cautions in using this product**

- Install, and wire as specified in this manual.
- Do not supply power before completing installation and wiring.
- Do not use solvents such as alcohol, benzene, and thinner to clean the product.
- Do not disassemble or modify the pieces of the detector.
- Should the product fail, contact your dealer.
- Dispose a detector as industrial waste, when disposing.
- Careful not to injure when carrying out separation processing for disposal.
- Do not touch live metal parts such as terminals.
- Do not install or remove the detector with the power supply on.

This device has been delivered to you after strict quality control and inspections. Should this device fail under normal condition of use, we will repair or replace it for free of charge within the guarantee period (up to one year after delivery).  
\* The guarantee is not applicable to failure of the device due to a natural disaster, a fire, unauthorized repair/modification, or dropping/damage after the purchase.  
You are kindly requested to ask your dealer for a guarantee document.  
When you ask for a guarantee document, please provide the serial number of the detector to your dealer.

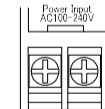
**■ Outside dimension drawing for the liquid leakage detector (in mm)**



**■ Description of the terminal block**

Use the specified size of crimped terminals.

- ① Input power supply  
100 to 240 VAC, 50/60Hz

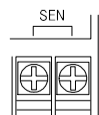


- ② Protective earth  
To protect from electric shock, PE terminal should be connected to ground.



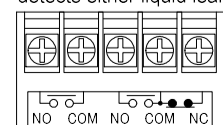
- ③ Liquid leakage sensor

Please connect the sensor to SEN terminals.  
When wire break detection function is effective, connect wire break detection terminal (ZT-2 or ZT-B) at the end of the sensor.  
When wire break detection terminal is not connected properly, the detector will indicate wire break.

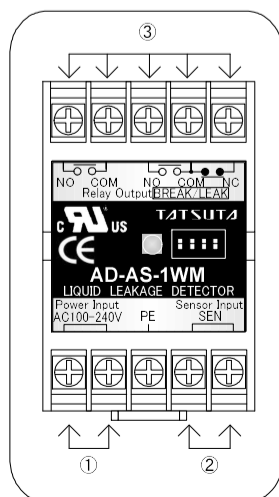
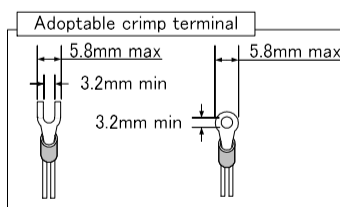


- ④ Relay output

Non-voltage output contact will be make or break when the detector detects either liquid leakage or wire break.

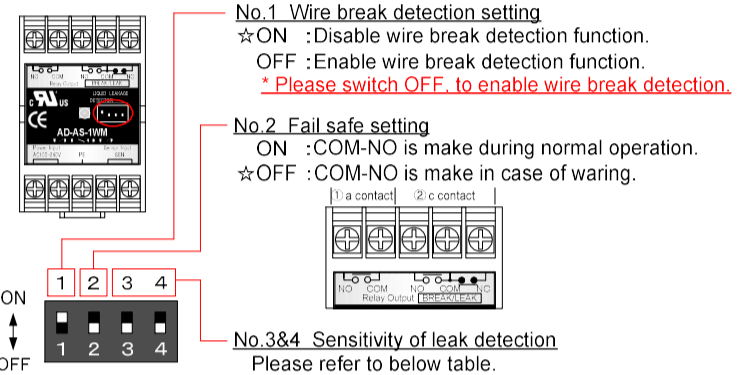


COM-NO is make in case of warning.  
COM-NC is break in case of warning.



Specification		
Power supply	100VAC to 240VAC, 50/60Hz	
Power consumption	2 VA or less	
Ambient operating temperature	-10°C to 40°C, No freezing	
Ambient operating humidity	35%RH to 85%RH, No condensation	
Storage temperature	-10°C to 60°C, No freezing	
Applied voltage to the sensor	5.3 VAC (maximum)	
Altitude	2,000m max	
Liquid leak/ Wire break detection/ recovery resistance	Four-stage switchover; for more information, refer to "Sensitivity and applicable sensors" To adjust the setting in the individual range, adjust the settings of the dip switch in the upper part of the detector body.	
Indicator lamp	Power-on, leak and wire break indication in one lamp. (1 blink when leak, 2 blinks when wire break)	
Contact ratings ※Engineering Data	Resistance load	Inductive load
	125 VAC 0.4A 30VDC 2.0 A	125 VAC 0.2 A 30VDC 1.0 A
Contact ratings ※Approved Standards	Resistance load	Inductive load
	125 VAC 0.6 A (40°C) 30VAC 2A (40°C) 110 VDC 0.6 A (40°C)	
Allowable wiring distance (for the sensor section)	Instrumental cable: 100 m (328ft) max (conductor diameter: 0.4 mm min AWG26 or larger) Liquid leakage sensor: 100 m (328ft) max	
Approved standards	UL508 (File No. E480800) EN61010-1, (Pollution level 2, Overvoltage category II) EN61326-1 (Industrial electromagnetic environment applications)	

**■ Various settings (☆mark means factory settings)**

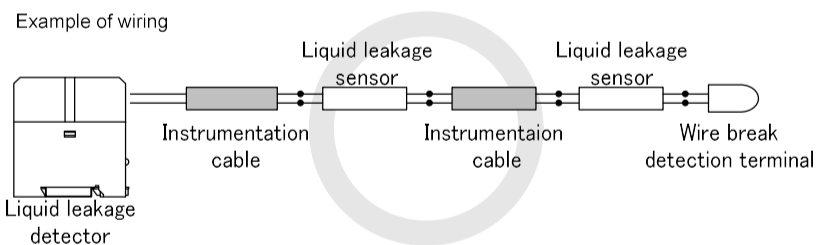


**■ Sensitivity and applicable sensors**

Sensitivity level settings	L	☆M	H	SH
DIP SW (No. 3/4) settings				
Leak detection resistance (No.1 ON)	2.0kΩ or less	5.0kΩ or less	25.0kΩ or less	110.0kΩ or less
Leak recovery resistance (No.1 ON)	5.0kΩ or more	8.0kΩ or more	30.0kΩ or more	150.0kΩ or more
Leak detection resistance (No.1 OFF)	1.8kΩ or less	4.0kΩ or less	14.0kΩ or less	50.0kΩ or less
Leak recovery resistance (No.1 OFF)	4.0kΩ or more	5.7kΩ or more	16.0kΩ or more	58.0kΩ or more
Wire break detection resistance (No.1 OFF)	30.0kΩ or more			150.0kΩ or more
Wire break recovery resistance (No.1 OFF)	25.0kΩ or less			110.0kΩ or less
Applicable sensors	AD-S, AD-RS, AD-HS, AD-FH, AD-FH-S, FR-AD			AD-BRS-S, AD-BFS, AD-BRS
Applicable wire break terminal	ZT-2 (White)			ZT-B (Black)

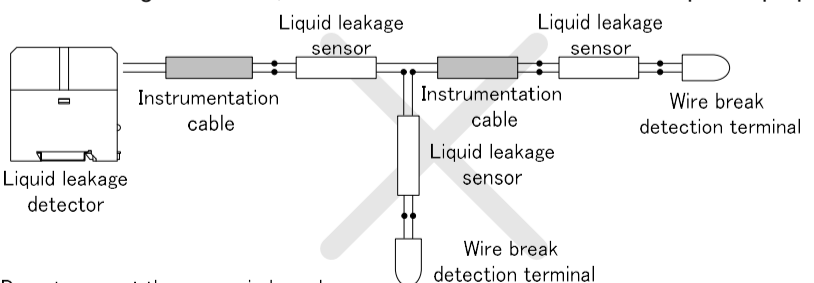
\*1 Resistance accuracy in above table is ±30%  
\*2 When AD-PA-N is used, please switch ON the DIP SW No.1.  
\*3 When AD-PA-R is used, please switch OFF the DIP SW No.1.

**■ Cautions in wiring**



To extend the sensor, connect the instrumentation cable in series.  
When the wire break detection terminal is not used, insulate each electrode with vinyl tape or similar material to avoid short-circuiting between the sensor electrodes.

In the following connection, the sensors and the detector do not operate properly.



Do not connect the sensor in branches.  
Do not use two or more wire break detection terminals.

**<<Customer service contacts>>**

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