TATSUTA

Leakage Detection System Solution

For quick detection of even the smallest leaks

TATSUTA
Leakage Detection
System Solution

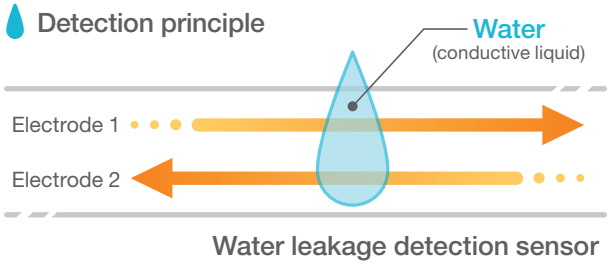
TATSUTA's liquid leakage detection sensor

Sensor technology plays an essential role in protecting precious properties against water leakage

This technology is used for not only buildings or manufacturing plants, but also in an area gaining attention recently, data centers handling IoT and Big Data. TATSUTA continues to create new sensing technologies based on our unique, basic technology of compounding.

Water leakage detection system

Detection principle

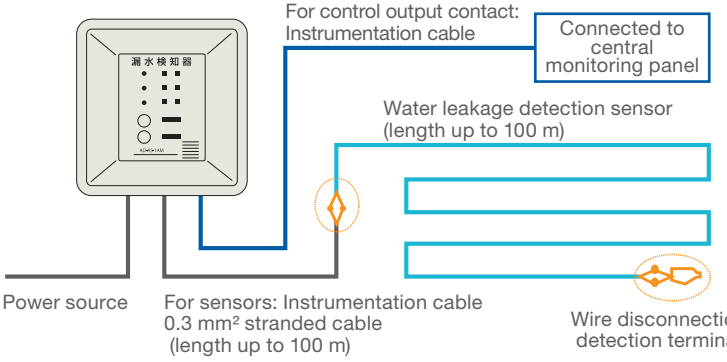


Water leakage detection sensor

An electrical path is formed between electrodes 1 and 2 using water (conductive liquid) as a medium and the resistance lowers, which allows liquid leakage detection.

technology provides safety and peace of mind

Example of system configuration



System devices

Our long-selling products, widely used for 30 years after their launch, detect water leakage and issue an alarm immediately.

Features of TATSUTA's Technologies

1 Safe and Reliable Sensors Utilizing Cable-making Expertise

Our line sensors do not fail to detect any water leakage at all points on its full length while remaining free from malfunction due to humidity.
Our sensors can detect pure water, acid and alkaline solutions.

Superior environmental characteristics

A double-layered configuration is adopted that enables sensors to operate normally even at high temperature and humidity (60°C, 95%RH).

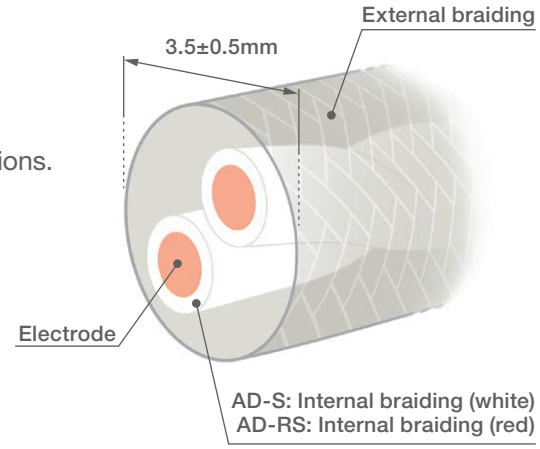
Small amount detection

(3 mL or less: TATSUTA's standard sensitivity)

Due to its excellent absorption characteristics, external braiding never fails to catch water leakage.

Cross section of leakage detection sensor

■ AD-S (AD-RS) Sensor



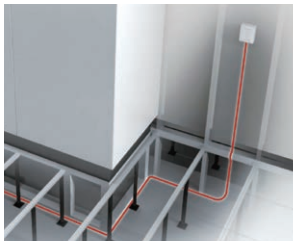
2 Easy Installation

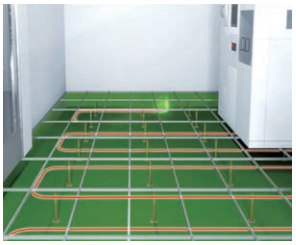
Our sensors are made of flexible materials and so are easy to install and use. They are located in low power circuits operating at a maximum of 12.5 VAC, which means they are very safe.

Made by TATSUTA

Our sensors can be installed anywhere, including piping, floors, walls, and ceilings, contributing to creating a thorough detection network that has no blind spots.


Attached to piping


Installed around machinery


Attached under free access areas

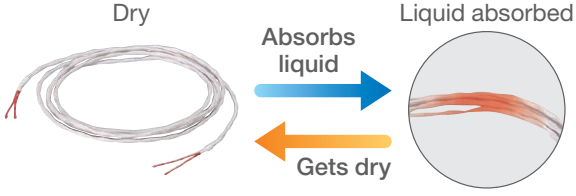
3 Easy Identification of Leakage Points

Leak location detection

The detector has a digital display function that indicates the detected leak locations in meters.
It can also output data on leak positions.

Red coloration (TATSUTA's original function)

The sensor part that has absorbed liquid turns red so you can visually confirm leaks more quickly, which enables prompt recovery.



* The image is for illustration only.

4 Our Extensive Product Lineup

Detectors with different sensitivities can be used in combination with coloration or other sensors to meet our customers' needs.

Standard type

Leak location detection type

Detectors

Wall-mounted

For single-circuit systems (AD-AS-1AM)

Designed for a single detection circuit. The detector indicates any water leakage or disconnection by illuminating an LED lamp and sounding a buzzer. (A control output contact is also available.)

5DRM

10DRM

For multiple-circuit systems (AD-AS-5DRM and AD-AS-10DRM)

A standard model contains five or ten detection circuits. The detector indicates any abnormalities, such as water leakage and disconnection, by illuminating an LED lamp and sounding a buzzer. A control output contact is available individually or as a batch.

1LCM-A

Leak location detection model for single-circuit systems
(AD-AS-1LCM-A) (AC power type analog output)

By using with a dedicated sensor, this detector digitally displays leak locations.

Embedded

For single-circuit systems
(AD-AS-1AM)

This detector can be mounted to the DIN track in the panel and provided with a wire disconnection detection function.

High-sensitivity model for single-circuit systems
(AD-AS-1C-SR)

This high-sensitivity detector can be mounted to the DIN track in the panel or embedded in the equipment. This can detect high-resistance fluids (pure water, chemicals, etc.).

For single-circuit systems
(AD-AS-1DM)

This detector can be mounted to the DIN track in the panel and connected with DC power.

1LDMA

Leak location detection model for single-circuit systems
(AD-AS-1LDMA) (combined AD/DC power)

By using with a dedicated sensor, this detector digitally displays leak locations.

Sensors

Non-coloration model
(AD-S Sensor)

This line sensor detects even the slightest leakage of conductive liquids.

Coloration return model
(AD-RS Sensor)

The part that has absorbed liquid turns red and then turns back to white when it dries.

Coloration model
(AD-HS Sensor)

The sensor surface that has absorbed liquid turns red. The color remains even when the sensor dries.

Heat-resistant, flame-retardant model
(FR-AD Sensor)

Featuring flame-retardant fibers, the sensor is resistant to heat up to 120°C.

Flat model
(AD-FH Sensor)

This flat sensor is highly resistant to condensation and moisture, and has excellent restitution characteristics.

Chemical-proof model
(AD-FH-S Sensor)

This highly durable sensor features stainless steel (SUS) electrodes.

Point sensor (AD-PA-N)

This floor-mounted type sensor can be installed in places where water tends to accumulate.

Point sensor (AD-PA-R)

This floor-mounted type sensor can be installed in places where water tends to accumulate.

* With a built-in wire disconnection detection terminal

Leak location detection model
(AD-LS Sensor)

This is a dedicated sensor used for detecting water leak locations.

Wire disconnection detection terminals

Wire disconnection detection terminal (ZT-2)

This is a sensor terminal used for on-site installation.

Wire disconnection detection terminal for high-sensitivity detectors (ZT-SR)

This terminal is dedicated to be used with high-sensitivity detector.

Wire disconnection detection terminal for leak location detection
(ZT-L2)

This is a sensor terminal for on-site installation and dedicated to leak location detection sensors.

Sensor mounting brackets

Adhesive tape sticker

This sticker is used to attach sensor wiring with adhesive tape.

Bridge-type sticker

This bridge-type sticker is provided with adhesive tape.

Pin saddle (with concrete pegs)

This pin saddle is provided with concrete pegs. *Made by Sekisui

A line leading to
today's security and tomorrow's innovation

As a wire and cable manufacturer, we have long supported the stable supply of power.
Using our expertise acquired in this core business, we are now advancing into various other business areas.
Not being complacent about the current situation, we utilize our advanced R&D environment to
continuously meet the needs of the times, widely contributing to society's development.

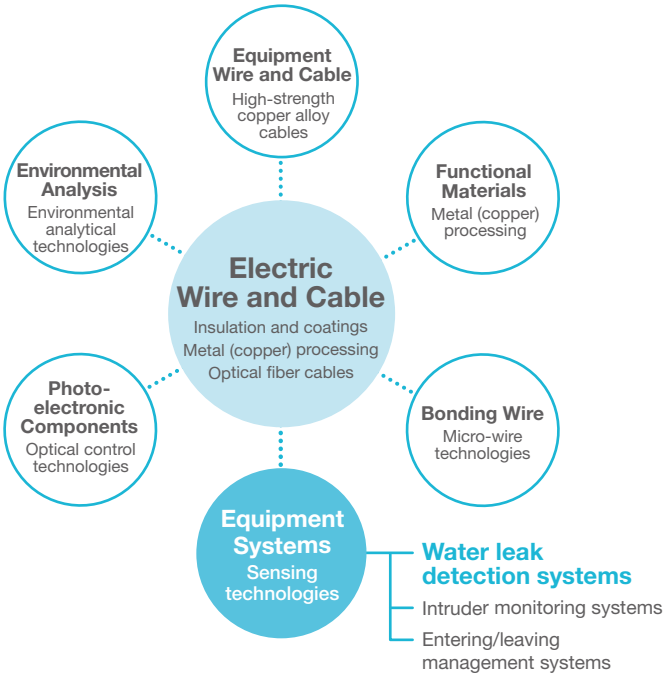
TATSUTA's business units

We are applying our wire and cable technologies to six other business domains.

▶Electric Wire and Cable

TATSUTA's high quality wires and cables bring us security, comfort, and convenience.

- **▶Equipment Wire and Cable**
  Our high-strength cable using special alloys provides super flexibility, contributing to various fields including factory automation (FA) and robots.
- **▶Functional Materials**
  Using our unique metal processing techniques, we support further advances in mobile devices.
- **▶Bonding Wire**
  We strive to meet the needs for downsizing and high precision in semiconductor and electronic equipment.
- **▶Equipment Systems**
  TATSUTA's cutting-edge sensing technologies are used to detect liquid leakage and human movement, delivering peace of mind.
- **▶Photo-electronic Components**
  TATSUTA applies its original photo-electronic technologies to explore the future in the medical and optical industries.
- **▶Environmental Analysis**
  With a diverse range of analytical technology, we care for and protect our environment.



Our major bases

Head Office, Osaka Works

Location of the headquarters, serving as TATSUTA's critical hub. Manufactures power cables and other products.

[Items produced] •Electric wire/cables •Bare wires/conductor stranded wires •Optical fibers

TATSUTA Technical Center

Serves as a new hub for TATSUTA's next-generation technologies. Consists of two divisions: Research Laboratory, the core of our R&D; and functional film plant, where we can start manufacturing newly developed products immediately after testing.

[Items produced] •EMI shielding films •Conductive bonding films •Bonding wires

Kyoto Works

Has newly built a manufacturing plant for conductive adhesives for our functional films to strengthen the product's mass production system. Serves as our main plant supporting TATSUTA's *monozukuri* (manufacturing).

[Items produced] •EMI shielding films/conductive bonding films •Conductive pastes •System components •Photo-electronic components

Sendai Works

Has strengthened the mass production system for our functional films. Our monthly production of these products at our Sendai Works, Kyoto Works, and TATSUTA Technical Center now totals 1.5 million sq. m.

[Items produced] •EMI shielding films •Conductive bonding films

TATSUTA Electronic Materials Malaysia Sdn. Bhd.

Manufactures and markets bonding wire products for Asian and other overseas markets. Also serves as a hub for our business continuity plan (BCP) in Japan and global customer services.

[Items produced] •Bonding wires

Chugoku Electric Wire & Cable Co., Ltd.

A dedicated cab-tire cable manufacturer that offers multi-standard cables complying with various regulations in Europe, North America and China, and that supports our industrial base.

[Items produced] •Equipment wires and cables

Tatsuta Tachii Electric Cable Co., Ltd.

Serves as a base for integrated manufacturing of instrumentation cables, coaxial cables, AV cables, and customized cables for various equipment. With our long-time experience and excellent performance, we have earned customers' trust in various fields.

[Items produced] •Equipment wires and cables

Changzhou TATSUTA Chugoku Electric Wire & Cable Co., Ltd.

Was established to achieve "Japan quality outside Japan." Locally manufactures and markets multi-standard cables and robot cables. Offers package services that include terminal processing to meet customers' diverse needs.

[Items produced] •Equipment wires and cables

Shanghai TATSUTA Co., Ltd.

Serves as a hub for expanding product sales, marketing, and offering customer services in the rapidly growing Chinese market, and supports TATSUTA's global development.

TATSUTA USA, Inc.

Serves as a hub for catching up with innovations in Silicon Valley, collecting information for TATSUTA's R&D, and supporting our sales partners.

■ For more information about water leakage detection, please contact: sensor@tatsuta.com.
We also develop custom-made sensor systems by request. Please contact us at any time for details.

TATSUTA

URL http://tatsuta.com

TATSUTA ELECTRIC WIRE & CABLE CO., LTD.
Electronic Materials & System Equipment Group System Equipment Optoelectronics Division

TATSUTA Product Center 3-17 Osadano-cho, Fukuchiyama City, Kyoto, Japan 620-0853 TEL +81-773-45-6500 FAX +81-773-45-6501
TATSUTA Technical Center 6-5-1, Kunimidai, Kizugawa City, Kyoto, Japan 619-0216 TEL +81-774-66-5550 FAX +81-774-66-5556