LEAD
LEAK DETECTION SYSTEM

- Water Leakage Detection System
- Detection Panel
- Sensing Cable
- Point Type Sensor
- Product List

APPLICATION

- Data centre for banks, finance, logistics & etc.
- Fiber optic switch sites
- Control rooms
- Communications and server equipment rooms, museums and historic buildings
- Libraries and aquariums
- Raised floor office areas
- Elevator pits
- Semiconductor fabrication plants and packing and testing plants
- Water treatment plant
- Underground hot water piping



LEAD LEAK DETECTION SYSTEM LTD.

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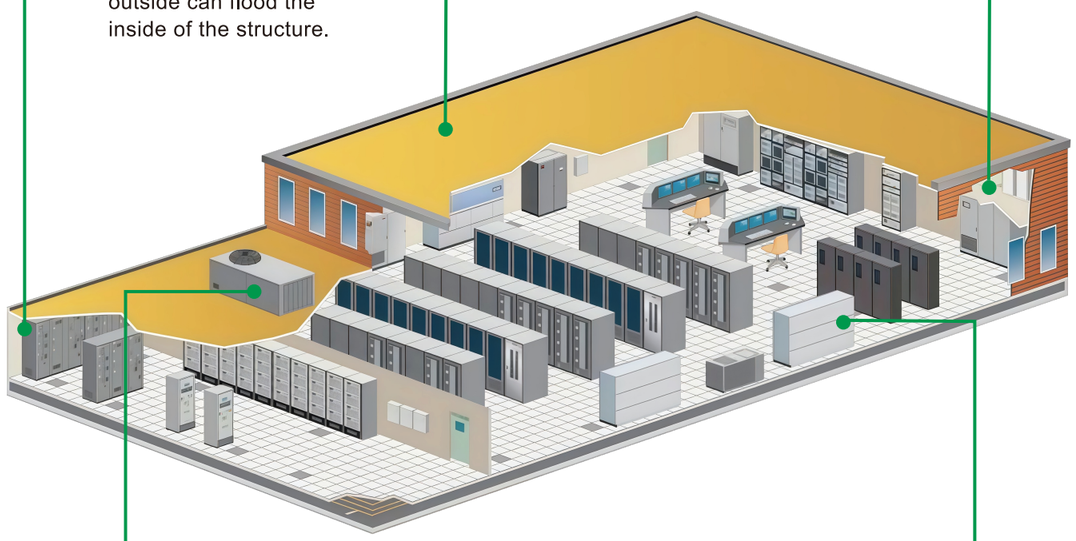
Introduction

Leaking roof can allow substantial amounts of water to enter the shelter over time.

Plumbing and water piping located near critical equipment creates a risk if leaks developed.

Flooding water from the outside can flood the inside of the structure.



Flat rooftop standing water may penetrate and make its way into critical areas, causing damages.

Drip pans of air conditioners or humidifiers may get overflow if they are not emptied regularly.

LEAD water leakage detection system (WLDS) is the optimum solution that can help you to avoid liquid leak problems with a full range of leak detection and reporting systems.

Master Panel

The LEAD leak detection system deploys the advanced Touch Panel Technology as its centre hub. It acts as a master control connecting up to 100 slave devices including locating panel LD-LPD-2RLB or Master Panel LP-LPM.

On top of event logging capability, LEAD Master Panel records every leak point occurs in any connected panel and display the exact location on a detail device address location plan.

LP-LPM

Specification

Model no.	LP-LPM
Power supply	DC12-24V 1A 10W
Length of sensing cable	Up to 800m
Accuracy	±0.5m
Relay output	1 x SPDT 1NO+ 1NC (Contact Rating 220V AC/1A 30VDC/1A)
Sensitivity	< 3s
Communication port	1 nos. of RS485 for upstream, 1 nos. of RS485 for downstream and 1 nos. of LAN port
Display	Touch Screen Display
History / event log	Up to 500 events
I/O	DI 4 channel
Communication protocol	Modbus RTU
Sound alarm	80dB minimum (Mute function included)
Operating environment	Temperature: -20-60°C Humidity: 95% non- condensing
Altitude	1000m max.
Degree of protection	IP65
EMC/EMI	CE approved
Dimension	L200 x WI22 x H65(mm) with mounting kit L240 x WI45 x H65(mm)

Locating Panel

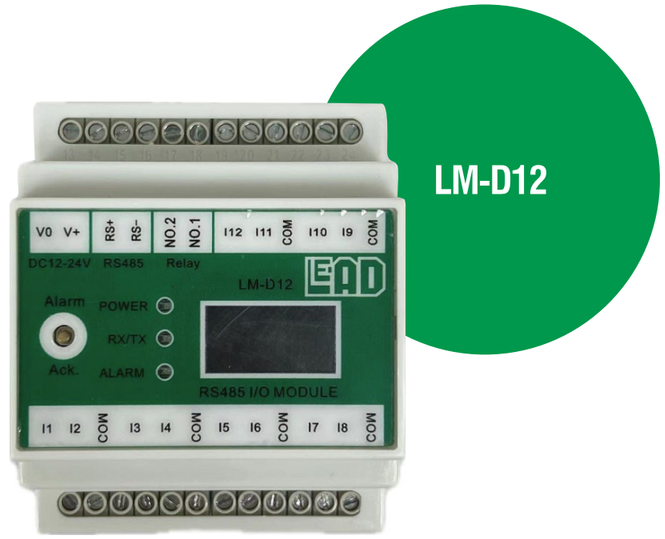
LEAD leak detection system uses Locating Panel to detect the liquid leak and communicates to BMS system. The alarm, fault and power LEDs display the current system status while the built-in distance locating feature can identify where the leak occurs.

Able to connect in a fail-safe loop back configuration.

Specification

Locating panel model no.	LD-LPD -2RLB
Power supply	DC12-24V 150mA 5W
Length of sensing cable	Up to 800m
Accuracy	±0.5m
Relay output	2 x SPDT 1NO + 1NC (Contact Rating 220V AC/1A 30VDC/1A)
Sensitivity	< 3s; The system can be reset by the locating panel within 15 records upon complete removal of leaked water.
Communication port	RS485
Display	LCD color screen with the length of sensing cable, device address, sound alarm and the status of sensing cable.
Communication	Modbus RTU
Sound alarm	80dB minimum (Mute function included)
Operating environment	Temperature: -20-60°C Humidity: 95% non-condensing
Altitude	1000m max.
EMC/EMI	CE approved
Dimension	L93mm x W93 mm x H52 (mm)
Mounting	35mm DIN Rail

I/O Module



Technical data

Product type number	LM-D12
Power supply	DC12-24V 3W max. current at standby <70mA, with Alarm< 120mA
Quantity of point type sensors connected	12
Relay output	one dry contact output AC220V 1A or DC30V IA
Sensitivity	< 3s
Communication port	RS485
Display	LCD color screen with Sound Alarm for the addressable point type senor
Communication protocol	Modbus RTU
Sound alarm	80dB minimum (Mute function included)
Operating environment	Temperature: -20-60°C Humidity: 95% non-condensing
Altitude	1000m max.
EMC/EMI	CE approved
Dimension	L86mm x W70mm x H58 (mm)
Mounting	35mm DIN Rail

Accessories - ordering information

- **CK-MF:** Male/Female connector kit
- **P-Box:** IP65 plastic enclosure for controller
- **M-Box:** IP54 metallic enclosure for controller
- **HG50:** Hold down clip of 50 pieces and glues per pack

Multiple Leak Detection Panel

Multiple Water Leakage Detection System uses locating panel to detect the multiple leak location and communicates to BMS system. The alarm, fault and power LEDs display the current system status while the built- in distance locating feature can identify the multiple leak points where the leak occurs.

It needs to be used in conjunction with the sensor module for multi-point detection.

Specification

Product type number	LD-LPD -MPDM
Power supply	DC12-24V 5W
Length of sensing cable	Up to 800m
Accuracy	±0.5m
Relay output	2 x SPDT 1NO + 1NC (Contact Rating 220V AC/1A 30VDC/1A)
Sensitivity	< 3s; The system can be reset by the locating panel within 15 records upon complete removal of leaked water.
Communication port	RS485
Display	LCD color screen with the length of sensing cable, device address, Sound alarm and the status of sensing cable.
Communication	Modbus RTU
Sound alarm	80dB minimum (Mute function included)
Operating environment	Temperature: -20-60°C Humidity: 95% non-condensing
Altitude	1000m max.
EMC/EMI	CE approved
Dimension	L85mm x W68 mm x H58 (mm)
Mounting	35mm DIN Rail

Sensor Module

Multiple Leak Detection System uses sensor module to connect sensing cables for multi-point detection.

Features

- Maximum 50m sensing cable per each module
- Maximum 16 sensor modules LP-SM for each LD-LPD-MPDM
- RUN LED operation status
- BREAK LED status for cable disconnection alarm
- LEAK LED for water leakage point detected

Non-Locating Panel

LEAD leakage detection system uses non-locating panel to detect liquid leak and communication to BMS system. The Alarm and power LEDs display the current system Status.

Specification

Power supply	DC12-24V150mA 5W
Length of sensing cable	Up to 200m
Relay output	Relay SPDT x 1, dry contact, AC 110-AC 230 / DC 30V 1A
Sensitivity	<3s
Communication port	RS485
Communication	Modbus RTU
Sound alarm	80dB minimum (Mute function included) 90dB maximum
Operating environment	Temperature:-20°C-60°C Humidity: 95% non-condensing
Altitude	1000m max.
Dimension	L93mm x W93 mm xH52(mm)
Mounting	35mm DIN Rail
Degree of protection	NEMA 1, Standard IP00 (option IP56)
Dimension	93mm x 93mm x 52mm (L x W x H)

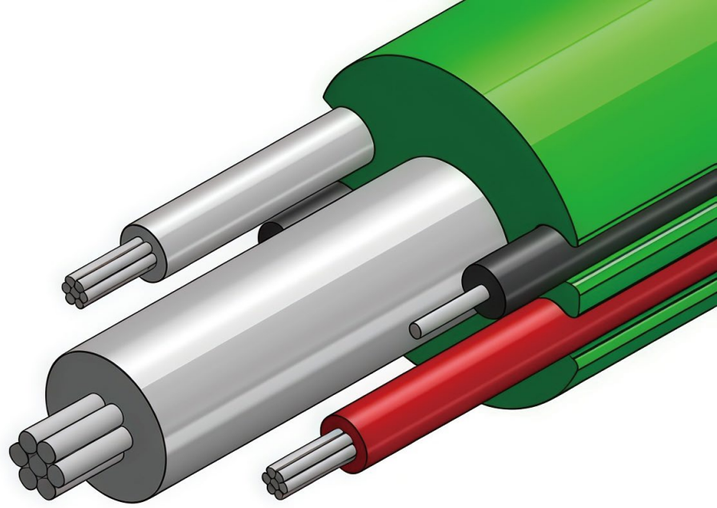
Water Sensing Cable

LEAD water sensing cable (WS) is designed for using with locating or non-locating detection panels.WS detects any presence of water and changes some of its characteristics which are analyzed by a detection panel. The panel will then generate an alarm and pinpoints the exact location of the leak or spill along the cable's length. Sensing cables are designed for the highest accuracy and maximum reliability.

Jumper cables are used to extend the control panel' s leader cable to an area where sensing cable is not required. Invisible to the control panel, the jumper cable does not affect the accuracy of readings or limit the amount of water detection cable that can be connected to a control panel. Jumper cables are only compatible with systems using WS water detection cables.

- Strong, durable
- Expansion with mating end connectors
- Available in pre-measured and custom lengths with pre-installed end connectors
- Plenum to CL2P per UL rated and UL 910 listed
- RoHS compliance to EU DIRECTIVE 2011/65/EU
- Non-flame propagating and self-extinguishing
- Made in USA

All cables are highly durable and flexible hence they can be laid flat after installation. The cables are plenum rated and UL listed making them ideal for use under raised floors and areas where plenum rated cables required.



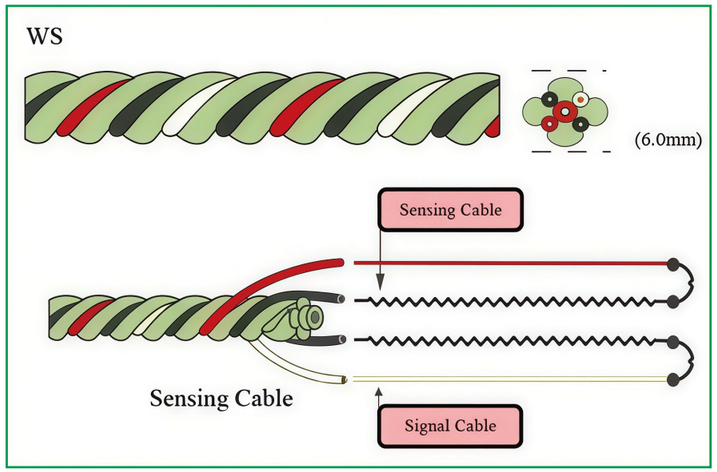
Features

- **Continuity and signal wire:** 2 x 28 AWG black conductive ETFE insulation
- **Sensing wire:** 2x 24 AWG ETFE insulation
- **Core:** fire resistant Fluoropolymer

Operating environment

- **Operating temperature:** -20℃ to 75℃
- **Humidity:** 5% to 95% non-condensing
- **Storage environment:** -20℃ to 75℃

Configuration



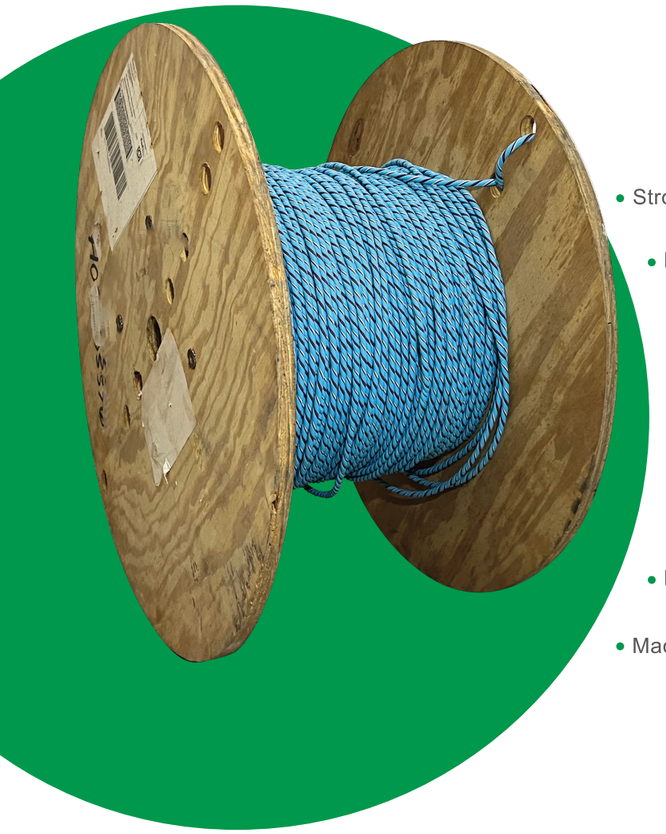
Ordering information

- WS-LXXX: XXX is the length of water sensing cable in meter
- NS-JXXX: XXX is the length of jumper cable (Belden 8723) in meter

Chemical Sensing Cable

LEAD chemical sensing cables (CS) are used to reliably sense the presence of acid and other conductive liquid, The cables can endure and function properly after seven days exposure to the following.

Chemical sensing cables are available in standard and custom length. Each end of the cable contains mating connectors to make installation and extension of existing leak detection system quicken and easier.



- Strong, durable
- Expansion with mating end connectors
- Available in pre-measured and custom lengths with pre-installed end connectors
- Plenum to CL2P per UL rated and UL 910 listed
- RoHS compliance to EU DIRECTIVE 2011/65/EU
- Non-flame propagating and self-extinguishing
- Made in USA

98% Sulfuric Acid

50% nitric acid

37% hydrochloric acid

10% sodium hydroxide

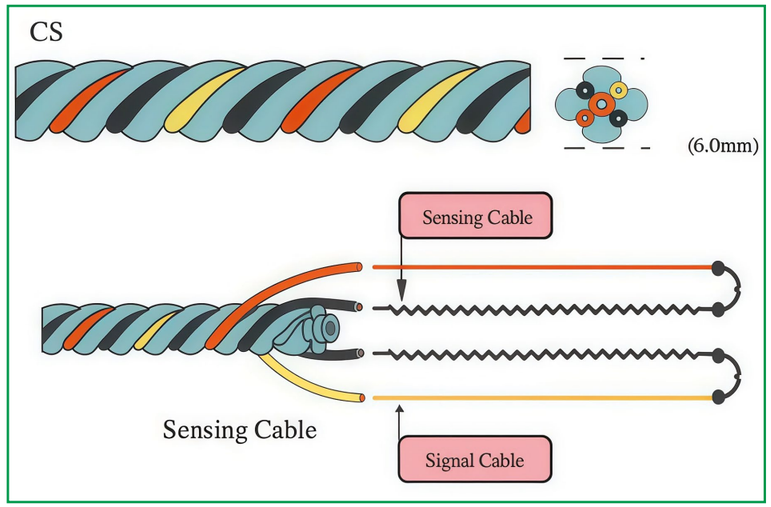
Features

- **Continuity and signal wire:** 2 x 28 AWG black conductive PVDFinsulation
- **Sensing wire:** 2x 24 AWG PVDF insulation
- **Core:** fire resistant Fluoropolymer

Operating Environment

- **Operating temperature:** -20℃ to 75℃
- **Humidity:** 5% to 95% non-condensing
- **Storage environment:** -20℃ to 75℃

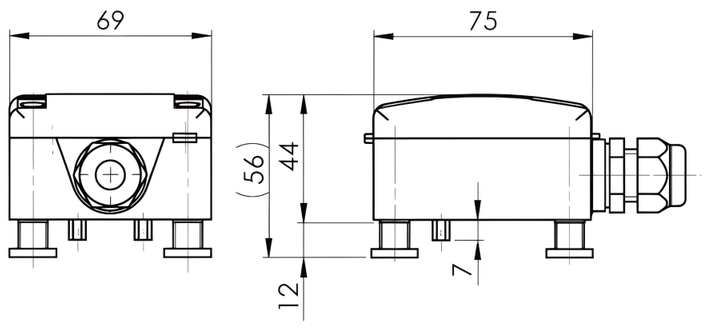
Configuration



Ordering information

- CS-LXXX: XXX is the length of water sensing cable in meter
- NS-JXXX: XXX is the length of jumper cable (Belden 8723) in meter

Point Type Sensor



Characteristic features

- Safe operation, impedance measuring principle
- Screw clamping
- Adjustable sensitivity
- Simple mounting
- Operating voltage 24V AC/DC +/-10%

Functional description

The leakage monitor works as per the operating principle of electro-lytic conductance measurement There are two electrodes beneath the device which are evaluated by means of AC impedance measure-ment. As soon as the conductance value between the electrodes rises over an adjust- able limit, the relay contact closes. The measur-ing procedure via electrolytic AC voltage allows the leak-age-sensor LP-LGM to detect various kinds of conductive liquids. Thanks to the installed passive potentiometer the circuit sensitivity can be ad-jested optimally to the required field of application.

Leakage monitor

In order to detect small liquid quantities, the spring-loaded electrodes are placed directly on an insulating base of absorbent material (for example hardboard, cardboard, cloth). As soon as the leaking out liquid is absorbed by the base, the device gives out an alarm. Con-struction or wood humidity monitor:
For this application, the springy electrodes are put directly on the material to be monitored. If there is high humidity in the underground, the device gives out an alarm.

Technical data

Material	PA6, similar RAL 9010
Temperature sensor	Electrolytic AC measuring
Application temperature	-30…70°C; 0…98% r.H.
Operating voltage	24V AC / DC+ 10 %
Cable inlet	M16x1.5 for wire diameter 4…10 mm
Switching power	approx. 2.60 kΩ (type. 15 kΩ)
Power consumption	20 mA
Switching output	Relay 60 V / 1A, potential free changer
Protection class	IP65
Sensitivity	Adjustable via potentiometer
CE-Conformance	2014/30/EU
Dimensions (WxHxD)	75x69x56

Point Type Sensor

LD-SDS-RO:
Dry contact relay output

LD-SDS-485:
RS485 output

Characteristic features

- Safe operation, impedance measuring principle
- Screw clamping
- Adjustable sensitivity
- Simple mounting
- Can be installed on the wall
- Connected with sensing cable
- Operating voltage 24V AC/DC +/-10%

Functional description

The water immersion sensor is an integrally designed water leakage alarm device. The sensor has an integral structure. The connecting wire and the probe are all placed outside, which is easy to install and has no internal adjustable parts. You only need to adjust the detection height of the probe.

Through its output relay contact signals, remote alarms and remote device control can be realized, The module circuit system adopts a highly sensitive detection principle and is designed with a unique anti-surge protection function, which can not only ensure high sensitivity during detection, but also avoid false alarms caused by various external factors.

Leakage monitor

The point type sensor is waterproof and can be used in humid environments for a long time (stainless steel probes are more favourable). The point type sensor can also be installed on the wall through two fixing screws.

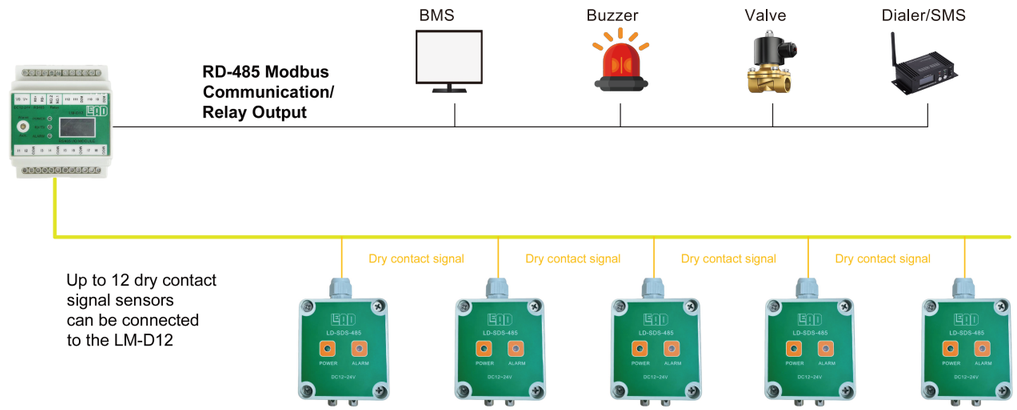
When installing the point type sensor, please be make sure with power OFF, follow the operation instructions with the correct wiring and check if it is correct before power ON.

Water sensing cable can be also mounted at probe position as an U-shape detection zone (loop shape detection). Or the water sensing cable can be mounted at probe position along the detection area.

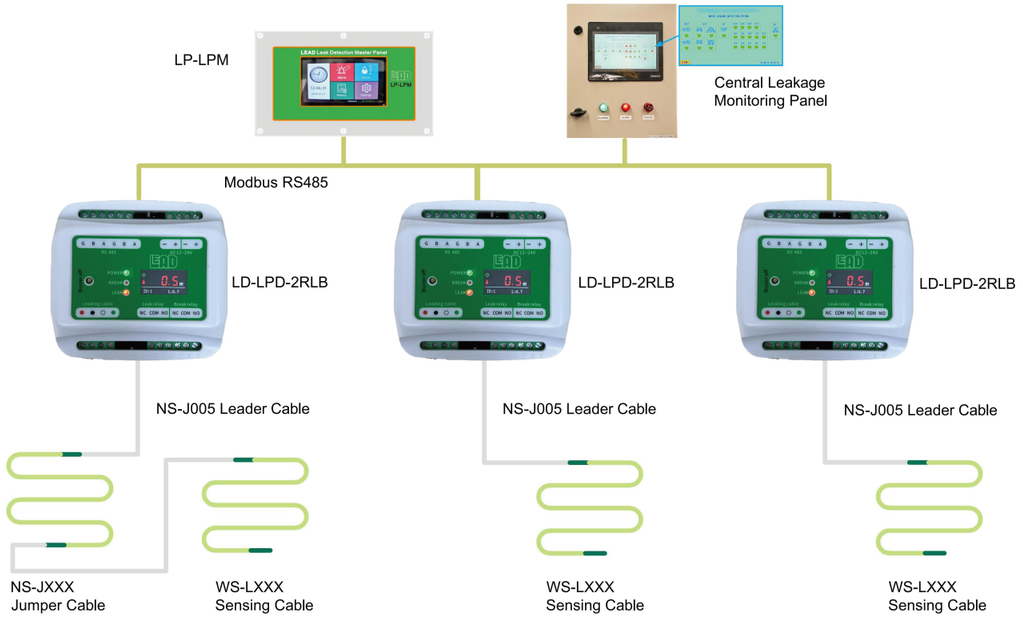
Technical Data

Detection probe	304 stainless steel, L-type probe or electrode or water sensing cable
Detect water level	Adjustable measuring level 0-15mm
Response time	< 3 seconds
Housing	White ABS
Protection class	IP67
Operating voltage	12-24V DC (non-polar connection)
Operating environment	Temperature: -20 ~ 70°C Humidity: 0 ~ 95% (non-condensing)
Relay output	1 x SPDT (Contact Rating 220V AC/0.5A 30V DC/1A)
Cable inlet	5 x 0.3mm RVV cable
Weight	80g
Power consumption	<1.5W

Typical application



System block diagram reference



Approval and Certification

Lead Leak Detection System Ltd. is approved and certified by UL, EMC, LVD and RoHS.

For a copy of the certification, please contact our Sales Engineer.

CERTIFICATE OF COMPLIANCE

Certificate Number: 20170123-E488643
Report Reference: E488643-20161108
Issue Date: 2017-JANUARY-23

Issued to: LEAD LEAK DETECTION SYSTEM LTD
#1 CHUN PIN STREET, 10/F, SOUTH CHINA IND. BLDG.
UNIT 1-2, KWAI CHUNG, N.T. HONG KONG

This is to certify that representative samples of: POWER-LIMITED CIRCUIT CABLE
Type CL2P

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 13, Power-Limited Circuit Cables
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Page 1 of 1

HTT TECHNOLOGY

Certificate of Conformity

Certificate No. : HTT2021054551R
Applicant : Lead Leak Detection System Ltd.
Applicant Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Manufacturer : Lead Leak Detection System Ltd.
Manufacturer Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Product : Water leak detection controller
Model No. : LP-LPM
Trademark : LEAD

This is to certify that, on the basis of the tests undertaken as per Report No. HTT2021054551CM, the submitted sample of the above item complies with:

IEC 62321-4:2013+A1:2017
IEC 62321-5:2013
IEC 62321-6:2015
IEC 62321-7-1:2015
IEC 62321-7-2:2017
IEC 62321-8:2017

And fulfills testing requirement of the RoHS directive 2011/65/EU Annex II amending Annex (EU)2015/863 and amending Annex (EU)2017/2102.

RoHS

Kevin Yang/Senior Manager

Date of Issue: May.31,2021

Shenzhen HTT Technology Co.,Ltd. Web: www.httprc.com
TEL: 0755-23595200 FAX: 0755-23595201 Hotline: 400-6655-351 Mail: info@httprc.com
1F, B Building, Huafeng International Robotics Industrial Park, Guxiu, Xixiang Street, Bao'an District, Shenzhen, China

HTT TECHNOLOGY

Certificate of Conformity

Certificate No. : HTT2021054550L
Applicant : Lead Leak Detection System Ltd.
Applicant Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Manufacturer : Lead Leak Detection System Ltd.
Manufacturer Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Product : Water leak detection controller
Model No. : LD-LPD-2RLB
Trademark : LEAD

The following products have been tested by us with listed standards and found in compliance with the council LVD (Low Voltage Directive) 2014/35/EU. It is possible to use CE marking to demonstrate the compliance with this Low Voltage Directive.

Test standards	Report(s) Number	Issued By	Issued Date
EN 62368-1:2014+A11: 2017	HTT2021054551E	HTT	May.31.2021

This certificate of conformity is not transferable and based on an evaluation of a sample of the above-mentioned product.

Authorized Signer: Kevin Yang/Senior Manager

Date: May.31.2021

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Applicant : Lead Leak Detection System Ltd.
Applicant Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Manufacturer : Lead Leak Detection System Ltd.
Manufacturer Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Product : Water leak detection controller
Model No. : LD-LPD-2RLB
Trademark : LEAD

This is to certify that, on the basis of the tests undertaken as per Report No. HTT2021054550CM, the submitted sample of the above item complies with:

IEC 62321-4:2013+A1:2017
IEC 62321-5:2013
IEC 62321-6:2015
IEC 62321-7-1:2015
IEC 62321-7-2:2017
IEC 62321-8:2017

And fulfills testing requirement of the RoHS directive 2011/65/EU Annex II amending Annex (EU)2015/863 and amending Annex (EU)2017/2102.

RoHS

Kevin Yang/Senior Manager

Date of Issue: May.31,2021

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Certificate No. : HTT2021054516E
Applicant : Lead Leak Detection System Ltd.
Applicant Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Manufacturer : Lead Leak Detection System Ltd.
Manufacturer Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Product : Water leak detection controller
Model No. : LD-LPD-2RLB
Trademark : LEAD

The following products have been tested by us with listed standards and found in compliance with the council EMC 2014/30/EC. It is possible to use CE marking to demonstrate the compliance with this EMC.

Test standards	Report(s) Number	Issued By	Issued Date
EN 55032: 2015+AC:2016+A11:2020 EN 55035: 2017+A11:2020 EN IEC 61000-3-2: 2019 EN 61000-3-3:2013+A1:2019	HTT2021054516EB	HTT	May.31.2021

This certificate of conformity is not transferable and based on an evaluation of a sample of the above-mentioned product.

Authorized Signer: Kevin Yang/Senior Manager

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Certificate No. : HTT2021054515E
Applicant : Lead Leak Detection System Ltd.
Applicant Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Manufacturer : Lead Leak Detection System Ltd.
Manufacturer Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Product : Water leak detection controller
Model No. : LP-LPM
Trademark : LEAD

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Test standards	Report(s) Number	Issued By	Issued Date
EN 55032: 2015+AC:2016+A11:2020 EN 55035: 2017+A11:2020 EN IEC 61000-3-2: 2019 EN 61000-3-3:2013+A1:2019	HTT2021054515EB	HTT	May.31.2021

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Authorized Signer: Kevin Yang/Senior Manager

Date: May.31.2021

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Certificate No. : HTT2021054515L
Applicant : Lead Leak Detection System Ltd.
Applicant Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Manufacturer : Lead Leak Detection System Ltd.
Manufacturer Address : Unit 7, 11/F, South China Industrial Building, No.1 Chun Pin Street, Kwai Chung, N.T., H.K.
Product : Water leak detection controller
Model No. : LP-LPM
Trademark : LEAD

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Test standards	Report(s) Number	Issued By	Issued Date
EN 62368-1:2014+A11: 2017	HTT2021054515LE	HTT	May.31.2021

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Date: May.31.2021

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1F, B Building, Huafeng International Robotics Industrial Park, Guxiu, Xixiang Street, Bao'an District, Shenzhen, China

Product list

Product		Features	Order Model
Master panel		Can connect 500m sensor cable, 100 units of slave panels (LP-LPM, LD-LPD-2RLB, Point type sensor). Set the **address and sensitivity** of the locating panel.	LP-LPM
Detection panel		**Detect the leak location** Acceptable sensing cable length: **up to 800m**	LD-LPD-2RLB
		Collect **point type sensor** leakage signals Quantity of point type sensors connected: **up to 12**	LM-D12
	 	**Panel:** Detect the **multiple leak location** with **LP-SM** Acceptable sensing cable length: **up to 800m** **Senor module:** Maximum **50m** sensing cable per each module Maximum **16 sensor modules** LP-SM for each LD-LPD-MPDM	LD-LPD-MPDM & LP-SM
		Detect **liquid leak** and display the current system status	LP-NP
Sensing cable		**Water** sensing cable	WS-LXXX
		**Oil** sensing cable	LD-LLW5000-LXXX
		**Chemical** sensing cable	CS-LXXX
		**Organic solvent** sensing cable	LD-LLW5001-LXXX
		**Cotton base** water sensing cable	LD-LLW1002-LXXX
Point type sensor		Protection class: **IP65**	LP-LGM
		More flexible for wall mounting Fully sealed and waterproof structure Protection class: **IP65**	LD-SDS-RO/485