



Protecting your high-tech assets with innovative, user-friendly technology for liquid leak detection

LeakFilm



The most reliable, durable, cost-effective solution

Unlike some other forms of liquid leak detection, LeakFilm stands up to the challenges of your facility:

- **Durable and flexible.** You can walk on it, roll carts over it, wrap it around pipes, and subject it to varying levels of temperature, humidity and dust — with no false alarms.
- **Fast response.** When LeakFilm senses a liquid leak, the LeakFilm controller immediately notifies you so you can address the situation without delay. Additionally, certain LeakFilm configurations can measure the distance from the leak point to the controller giving you increased visibility to the location of the leak.
- **Long life.** Unlike sensing cables, which may need to be replaced after exposure to some liquids, LeakFilm withstands water and conductive liquids*. In the event of exposure, just wipe off the ribbon and reuse it — no replacement costs.
- **Easy to install and maintain.** Use the adhesive backing and supplied connectors to install LeakFilm wherever you need it. And if it tears, simply cut and reconnect the film — no need to replace the whole section. You can even write on the ribbon if needed.

***NOTE:** Conductive and Conductive_D are reusable. Chemical and hydrocarbon LeakFilm detection must be replaced at the spot of the leak after contact.

What happens if a leak causes liquid to come into contact with the sensitive equipment in your semiconductor facility? Would you know about it? Would you have time to correct the problem, preventing damage and costly downtime?

LeakFilm uses innovative technology to alert you to leaks of water, chemicals and hydrocarbons — so you can take immediate action to protect your assets, manage costs and ensure constant uptime.

In addition to protecting your equipment, LeakFilm helps you protect your people — by monitoring for liquid leaks that cause life-safety hazards such as slips, falls and inhalation of dangerous vapors.

Flexible applications for liquid leak detection

LeakFilm is a liquid leak detection system that combines unique liquid-sensing film which can be networked into broader building alarm systems. When liquid comes into contact with the LeakFilm, your controller will alarm within a few seconds, allowing you address the situation without delay.

LeakFilm sensors can detect water, conductive liquids, strong acids, and hydrocarbons. The sensor can easily be installed with the adhesive tape backing, and in the event a sensor needs to be replaced LeakFilm can be easily spliced using the available connectors allowing easy and cost efficient replacement of LeakFilm sensors.

Thanks to its flexible form and adhesive backing, our patented LeakFilm is easy to install in numerous applications — on floors, walls, pipes, equipment and other areas that could be susceptible to leaks of hazardous chemicals. Use LeakFilm to monitor for liquid leaks around:

- Wet benches
- Photolithography equipment
- Chemical storage rooms
- Gas cabinets
- Boilers
- Distribution boxes

And if your facility has a computer room or communications room, use LeakFilm to monitor for one of the biggest threats — water. Leaks can come from such sources as air conditioning systems, concealed piping and plumbing in adjacent rooms.



LeakFilm System Components



LeakFilm Sensor



LeakFilm Conductive
Water and conductive liquids leak detection film sensor



LeakFilm Conductive_D
Water and conductive liquids leak detection film sensor with leak location detection



LeakFilm Chemical
Strong acid liquids leak detection film sensor with leak location detection



LeakFilm Hydrocarbon
Hydrocarbon liquids leak detection film sensor

LeakFilm Controller



LeakFilm Mini
One channel mini conductive liquid leak detection controller with broken sensor detection



LeakFilm 5
Five channels conductive liquid leak detection controller with broken sensor detection



LeakFilm Pro
One channel conductive and chemical liquid leak detection controller with leak location detection



LeakFilm HC
One channel hydrocarbon liquid leak detection controller with broken sensor detection



LeakFilm MC
Master liquid leak detection controller

LeakFilm Connector



Start Connector
Connects controller and sensor



Jump Connector
Connect the sensor and sensor



Elbow Connector
Connect the sensor and sensor

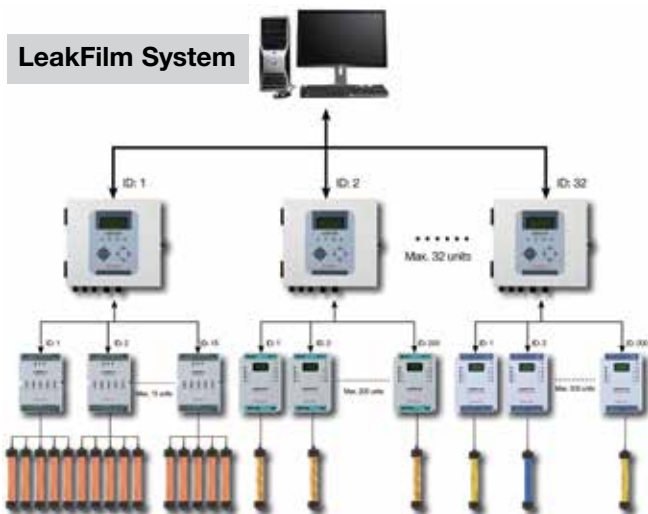


End Connector 4 Lines
End connector to LeakFilm Conductive_D, LeakFilm Chemical and LeakFilm Hydrocarbon film sensor



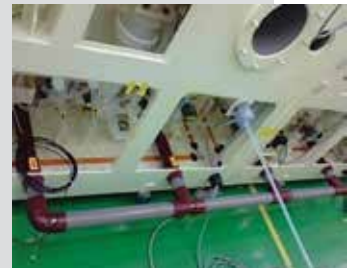
End Connector 2 Lines
End connector to LeakFilm Conductive film sensor

LeakFilm System



How LeakFilm Works

LeakFilm is a one-inch wide ribbon with tiny holes on top and a conductive solution inside. When liquid passes through the holes and touches the circuit film's wires, a change in the electrical resistivity will be detected by the LeakFilm controller's algorithm, and will signal a leak detection — so you can protect your assets and prevent downtime.



The perfect complement to your toxic gas monitoring system

Monitoring for liquid leaks is another important way to prevent costly downtime and ensure life safety, and LeakFilm delivers the best combination of accuracy, flexibility and ease of use.

LeakFilm Specifications



Specifications - Sensor

Product Name	LeakFilm Conductive	LeakFilm Conductive_D	LeakFilm Chemical	LeakFilm Hydrocarbon
Target	Water and conductive liquid	Water and conductive liquid	Sulfuric acid, Hydrofluoric acid, Nitric acid	Liquid organic solvent
Material	PET	PET	PET	PET
Circuit Thickness	5 to 10 µm	5 to 10 µm	5 to 10 µm	5 to 10 µm
Film Thickness	Base Film 120 to 200 µm Cover Film 100 to 200 µm	Base Film 120 to 200 µm Cover Film 100 to 200 µm	Base Film 120 to 200 µm Cover Film 100 to 200 µm	Base Film 120 to 200 µm Cover Film 100 to 200 µm
Connector Material	PBT	PBT	PBT	PBT
Storage Temperature	-10 to 80 °C	-10 to 80 °C	-10 to 80 °C	-10 to 60 °C
Operating Temperature	-10 to 55 °C	-10 to 55 °C	-10 to 55 °C	-10 to 55 °C
Operating Humidity	5 to 85 %RH	5 to 85 %RH	5 to 85 %RH	5 to 85 %RH
Weight	Under 20 g/m	Under 20 g/m	Under 20 g/m	Under 20 g/m
Response Time for Leakage*	Under 4 sec	Under 4 sec	Under 10 sec	Toluene: under 1min Benzene: under 1min Gasoline: under 1min Diesel: under 5min Kerosene: under 5min Chloroform: under 1min
Response Time for Open	Under 4 sec	Under 10 sec	Under 10 sec	Under 17sec
Leak Location Accuracy	N/A	±1 m (above 10 m)	±1 m (above 10 m)	N/A
Length	0.5 m to 50 m	3 m to 200 m	3 m to 200 m	0.5 m to 50 m

Specifications - Controller

Product Name	LeakFilm Mini	LeakFilm 5	LeakFilm Pro	LeakFilm HC	LeakFilm MC
Applicable Sensor	LeakFilm Conductive	LeakFilm Conductive	LeakFilm Conductive_D LeakFilm Chemical	LeakFilm Hydrocarbon	N/A
Applicable Controller	N/A	N/A	N/A	N/A	LeakFilm Pro, LeakFilm 5, LeakFilm HC
Display	N/A	N/A	8 X 2 Character LCD / LED back light	8 X 2 Character LCD / LED back light	20 X 4 Character LCD / LED back light
Power	20 to 36 VDC	20 to 36 VDC	20 to 36 VDC	20 to 36 VDC	100 to 240VAC 50/60 Hz
Power Consumption	Max 1 Watt	Max 4 Watt	Max 4 Watt	Max 4 Watt	Max 10 Watt
LED Indication	Green - Power On Yellow - Fault Red - Leak	Green - Power On Yellow - Fault Red - Leak	Green - Power On Yellow - Fault Red - Leak	Green - Power On Yellow - Fault Red - Leak	Green - Power On Yellow - Fault Red - Leak
Sound Level	Over 80dB @ 10 cm	Over 80dB @ 10 cm	Over 80dB @ 10 cm	Over 80dB @ 10 cm	Over 80dB @ 10 cm
Output	Relay (NO) 30 VDC 5A, or 250VAC 5A	Relay (NO) 30 VDC 5A, or 250VAC 5A	Relay (NC, NO) 24VDC 2A or 120 VAC 1A (Max. Switching voltage 60VDC or 240VAC)	Relay (NC, NO) 24VDC 2A or 120 VAC 1A (Max. Switching voltage 60VDC or 240VAC)	Relay (NC, NO) 24VDC 2A or 120 VAC 1A (Max. Switching voltage 60VDC or 240VAC) LEAK Relay (NC, NO) BROKEN Relay (NC, NO) Com Err Relay (NC, NO)
Communication	N/A	RS485 (**Modbus®)	RS485 (**Modbus®)	RS485 (**Modbus®)	RS485 (**Modbus®)
Communication Function (Status Transmission)	N/A	<ul style="list-style-type: none"> Leak Detection Leak Clearance Broken Detection Broken Clearance 	<ul style="list-style-type: none"> Leak Detection Leak Location Leak Clearance Broken Detection Broken Clearance 	<ul style="list-style-type: none"> Leak Detection Leak Clearance Broken Detection Broken Clearance 	<ul style="list-style-type: none"> Leak Detection Leak Location Leak Clearance Broken Detection Broken Clearance Communication Error and Clearance
Data Recording	N/A	N/A	9 event - year / month / day / hour / min / Leak location	9 event - year / month / day / hour / min / Leak or Broken message	999 event - Detector ID / Leak and Leak location or Broken or Communication error/ year - month - day hour : min : sec /
Storage Temperature	-10 to 65 °C	-10 to 65 °C	-10 to 65 °C	-10 to 65 °C	-10 to 65 °C
Operating Temperature	-10 to 55 °C	-10 to 55 °C	-10 to 55 °C	-10 to 55 °C	-10 to 55 °C
Operating Humidity	5 to 85 %RH	5 to 85 %RH	5 to 85 %RH	5 to 85 %RH	5 to 85 %RH
Leak Location Accuracy	N/A	N/A	±1 m (above 10 meter)	N/A	N/A
ID Setting	N/A	1 to 15	1 to 200	1 to 200	1 to 32
IP Rating	IP20	IP20	IP20	IP20	IP43
EMC Directive 2004/108/EC		EN61000-6-4/A1:2011, EN61000-6-2:2005, EN61000-3-2/A2:2009, EN61000-3-3:2008			
Electrical Safety		<ol style="list-style-type: none"> Low Voltage Directive 2006/95/EC:EN 61010-1:2010 US:UL 61010-1 3rd Edition Canada: CAN/CSA-C22.2 No.61010-1 3rd Edition 			

* Typical response time at 20°C(68°F).

** To use the digital communication, please contact a Honeywell Analytics Representative for further details.

Order Information and Configuration Rules



Order Information

1. LeakFilm Controller

Part Number	Product Name	Description
HLFC1MNN	LeakFilm Mini	1 Channel Mini Conductive Controller with Broken Sensor Detection
HLFC5CRN	LeakFilm 5	5 Channel Conductive Controller with Broken Sensor Detection
HLFC1HRN	LeakFilm HC	1 Channel Hydrocarbon Controller with Broken Sensor Detection
HLFC1DRD	LeakFilm Pro	1 Channel Conductive & Chemical Controller with Leak Location Detection
HLFCMSRD	LeakFilm MC	Master Controller with RS485

2. LeakFilm Sensor

Part Number	Product Name	Description
HLFSSCNN-100	LeakFilm Conductive	100 m Conductive Sensor
HLFSSCNN-050		50 m Conductive Sensor
HLFSSCNN-001		Custom Length Conductive Sensor (per meter)
HLFSSCND-100	LeakFilm Conductive_D	100 m Conductive Sensor with Leak Location Detection
HLFSSCND-050		50 m Conductive Sensor with Leak Location Detection
HLFSSCND-001		Custom Length Conductive Sensor with Leak Location Detection (per meter)
HLFSSAND-100		100 m Chemical Sensor with Leak Location Detection
HLFSSAND-050	LeakFilm Chemical	50 m Chemical Sensor with Leak Location Detection
HLFSSAND-001		Custom Length Chemical Sensor with Leak Location Detection (per meter)
HLFSSHNN-100	LeakFilm Hydrocarbon	100 m Hydrocarbon Sensor
HLFSSHNN-050		50 m Hydrocarbon Sensor
HLFSSHNN-020		20 m Hydrocarbon Sensor
HLFSSHNN-001		Custom Length Hydrocarbon Sensor (per meter)

3. LeakFilm Connector

Part Number	Product Name	Description
HLFNCSD-005	Start Connector	Start Connector with 5 meters Lead Wire
HLFNCJND-000	Jump Connector	Jump Connector with 15 cm Lead Wire
HLFNCJND-001	Jump Connector	Jump Connector with 1 meter Lead Wire
HLFNCLND-000	Elbow Connector	Elbow Connector
HLFNCEND-000	End Connector 4 Lines	End Connector 4 Lines with Leak Location Detection
HLFNCENN-000	End Connector 2 Lines	End Connector 2 Lines

Configuration Rules

Master Controller	LeakFilm MC	Leak Film MC	Leak Film MC	
Controller	LeakFilm Pro	LeakFilm HC	LeakFilm 5	LeakFilm Mini
Sensor	LeakFilm Conductive_D LeakFilm Chemical	LeakFilm Hydrocarbon	LeakFilm Conductive	LeakFilm Conductive
End Connector	End Connector 4 Lines	End Connector 4 Lines	End Connector 2 Lines	End Connector 2 Lines
Other Connectors	Start Connector Jump Connector Elbow Connector	Start Connector Jump Connector Elbow Connector	Start Connector Jump Connector Elbow Connector	Start Connector Jump Connector Elbow Connector