

Nidec
All for dreams



WL10

LIQUID LEAK SENSORS

NIDEC COPAL ELECTRONICS

LIQUID LEAK SENSORS

WL10



CE marking
Compatible with
EMC directive

UL US

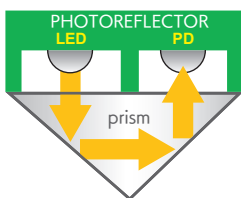
In normal condition (no leak), the switch output is ON and the LED light is GREEN. When leak is detected, the switch output turns OFF and the LED light turns RED.

[Features]

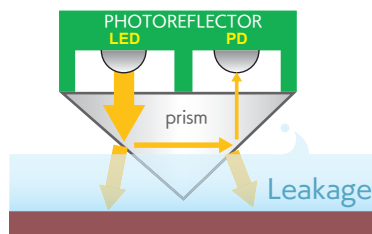
- Unique optical design for quick and accurate leak detection.
- Easy installation. No reflection control plate or additional amplifying circuits are required.
- Compact (25mm dia., 10.6mm height)
- Compatible with water (PP housing) and corrosive liquids (PFA housing)

Detection principle

Normal condition (No leak)

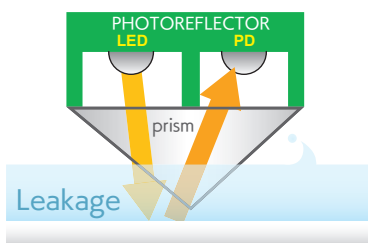


Leak



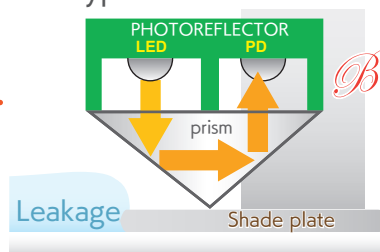
Optical liquid leak sensors are equipped with a photorelector. The light from the LED reflects off of the prism into the light detector. When the leakage makes contact with the prism, some portion of the light is transmitted toward the leakage. The light detector recognizes the reduced brightness of the light and sends a signal from the sensor that there is a leak.

Problem

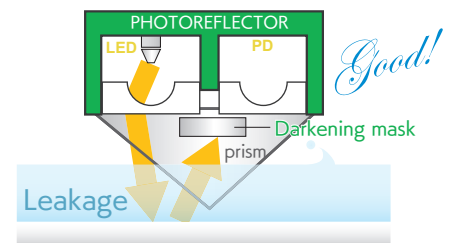


Solution

Typical leak sensor



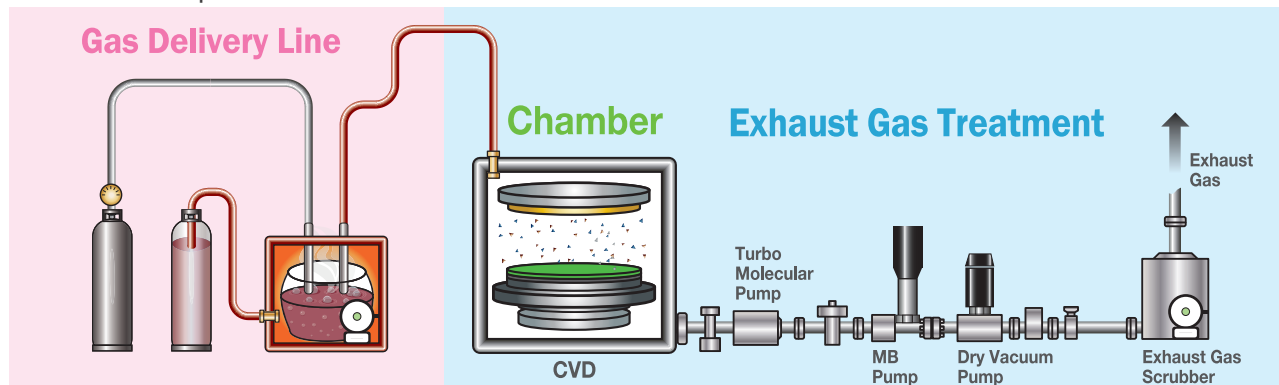
WL10



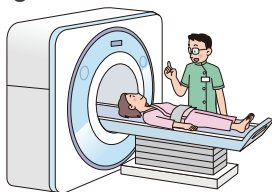
When used in a high ambient light environment (especially when the floor is a mirror-like surface), the amount of light received by the light detector will increase, leading to false detection. A typical leak sensor requires a plate below the photorelector to control excessive light disturbance. However, if the amount of leakage is small, leakage may not be able to get over the plate due to surface tension. Our unique optical design enables the WL10 to detect leakage quickly and accurately without using a plate to control light disturbance.

Applications

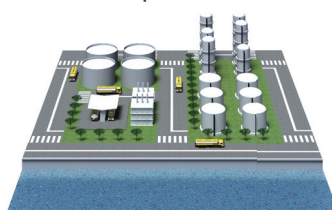
● Semiconductor production line



● Medical equipment e.g. MRI



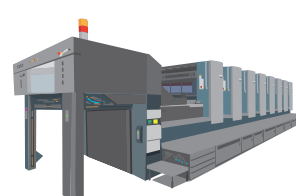
● Chemical plant



● Industrial robot



● Printing press



List of Model Numbers

Series	WL10			
Switch output interface	NPN		PNP	
Material of housing	PP	PFA	PP	PFA
Cable length	WL10-NP-2	WL10-NF-2	WL10-PP-2	WL10-PF-2
	WL10-NP-4*	WL10-NF-4*	WL10-PP-4*	WL10-PF-4*

* Manufactured upon receipt of order basis

Specifications

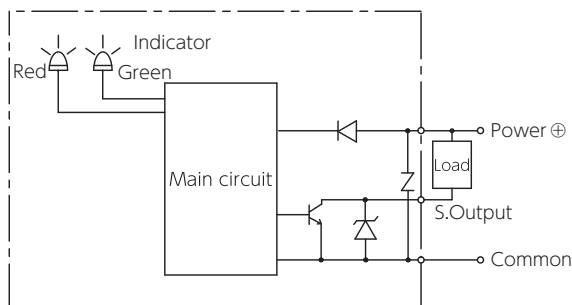
Series	WL10	
General specifications		
Operating temp. range	-10 ~ 60℃	
Operating humidity	35 ~ 85%RH (No condensation)	
Storage temp.	-20 ~ 70℃ (Atmospheric pressure, humidity 65%RH maximum)	
Pressure medium	Water (PP) / Corrosive fluids compatible with PFA	
Material of housing	PP / PFA	
Net weight	Approx. 30 g (WL10- *P-2), Approx. 50 g (WL10- *P-4, WL10- * F-2), Approx. 80 g (WL10- *F-4)	
Power		
Supply voltage	12 ~ 24 VDC ±10 %	
Consumption current	10 mA maximum (Except open collector output)	
Output		
Switch output interface	NPN	PNP
Switching capacity	Voltage endurance: 30 VDC Sink current: 50 mA maximum (Over current protection)	Voltage endurance: 24 VDC Sourced current: 50 mA maximum (Over current protection)
Residual voltage	1.0 V maximum	2.0 V maximum
Leak indication	Normal condition: Switch ON, Green LED ON Leak detection: Switch OFF, Red LED ON	

Environmental Characteristics

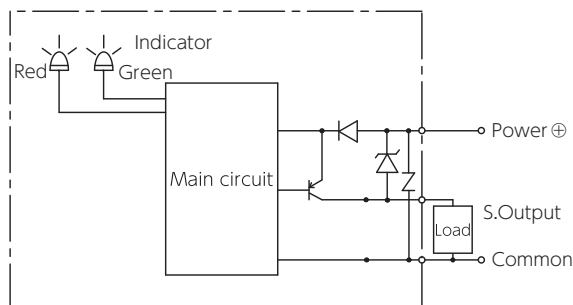
Test item	Test conditions	Specification
Vibration	10 ~ 500 Hz, 1.5 mm maximum / 98.1 m / S ₂ , 3 directions for 2 hours each	Meets standard specifications
Shock	490 m/s ² , 3 directions for 3 times each	
Protection grade	IP67	
EMC	CE marking	

Internal Electrical Schematics

●NPN



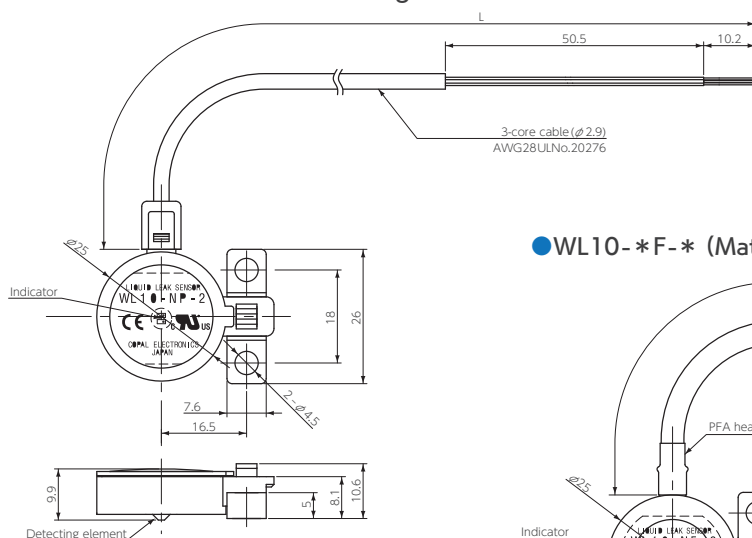
●PNP



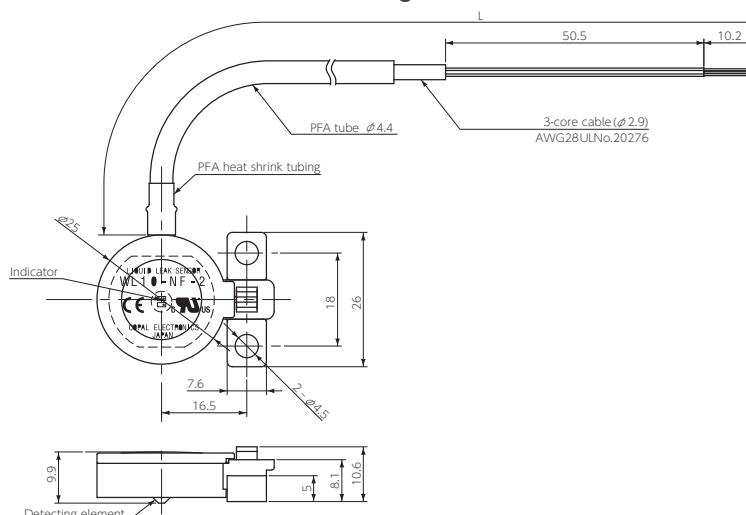
Outline Dimensions

(Unit: mm)

●WL10-*P-* (Material of housing - PP)



●WL10-*F-* (Material of housing - PFA)



Wire color	Connection
Brown	Power ⊕
Black	Output
Blue	Common

Model number	Cable length (L)
WL10-**-2	2000 ±100 mm
WL10-**-4	4000 ±200 mm

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■ Specifications are subject to change without notice.

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