

Easiness 
 Reliability 
 Intelligence 
 Performance

# Photoelectric / Capacitive / Electrode Leakage Sensor

## Features

- High Reliability
- High Noise Resistance
- Rare leakage detectable
- Small compact structure
- Corrosion-resistant housing material



## Electrode Leakage sensor / 電極式漏液檢測器

### EPLS Series

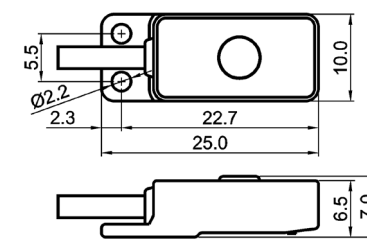
- ※ High Reliability 高穩定性
- ※ High Noise Resistance 高抗干擾力
- ※ Rare leakage detectable 微量漏液檢出
- ※ Small compact structure 小型堅固外形

### Specification / 規格

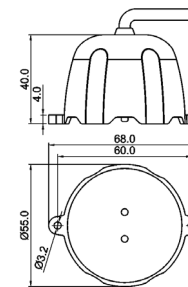
Product (產品)		Mini Electrode Leakage Sensor		Mini Electrode Leakage Amplifier		Free power Electrode Leakage Sensor	
Model	型號	EPLS-01N	EPLS-01P	EPLS-A1N	EPLS-A1P	EPLS-F1	EPLS-FX
Output method	輸出方式	NPN	PNP	NPN	PNP	Relay	Relay
Output status	輸出狀態	Leakage ON		Leakage ON		Leakage ON	Leakage ON
Degree of protection	保護等級	IP-67		IPX0		IP-67	IP-67
Attached function	附加功能	Non		Sensor break ON		Non	Timer
Operating resistance	動作阻抗	ON < 1.6 MΩ ; OFF > 2.0 MΩ				ON < 1.6 MΩ ; OFF > 2.0 MΩ	
Housing material	外殼材質	ABS intensive				Nylon intensive	
Operating voltage	工作電壓	10 ~ 30VDC				24~250 VAC/DC	
Current consumption	消耗電流	20 mA max.				3.0VA max.	
Output current	輸出電流	150mA max.				5A /250VAC max.	
Protection circuit	保護迴路	Short circuit & polarity reversed				Non	
Voltage drop	輸出壓降	0.8V max.				Non	
Residual voltage	殘餘電壓	0.1V max.				Non	
Leakage current	洩漏電流	0.1mA max.				Non	
Pilot	指示燈號	Normal status : Green LED (PW) on ; Leakage status : Green LED (PW) & Red LED (OP) on both					
Dielectric strength	電介強度	2.5kv / 1 minute min.					
Insulation strength	絕緣強度	100 MΩ / 500vdc					
Cable	電線	3Φ/3c-2m (22AWG)					
Approval	安規	CE / RoHS					

### Operation diagram / 操作圖

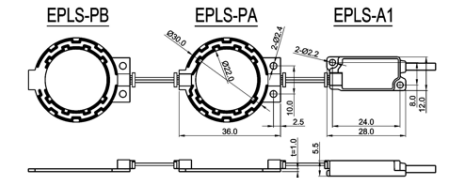
EPLS - 01



EPLS - FX

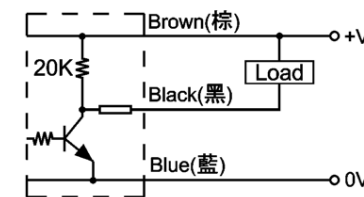


EPLS-A1N+ EPLS-PA + EPLS-PB

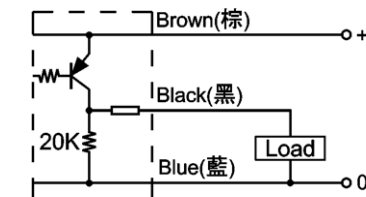


※ Electrode plate :  
 1. 「EPLS-PA」 & 「EPLS-PB」 Several pieces of electrode plate could be connected in series, but 「EPLS-PB」 must be the final one.  
 2. Other shape of electrode plate may be ODM.

NPN



PNP



EPLS - F1 / FX Relay



# Photoelectric Leakage sensor / 光電式漏液檢測器

## PHLS Series

- ※ Circular 360° detecting 圓形 360 度偵測
- ※ Solid compact structure IP-67 IP-67 堅固結構
- ※ 「PTFE」 High anti-corrosiv 高抗腐蝕「PTFE」外殼材質
- ※ Detecting by photo-electric sensor 光電式偵測
- ※ High sensitivity easy to detect rare leakage 高靈敏度易偵測微量漏液
- ※ Without sensitivity adjuster to simplify application 使用簡單不須感度調整

## Specification / 規格

Model (型號)	PHLS-01N-TF	PHLS-01NB-TF	PHLS-01P-TF	PHLS-01PB-TF	PHLS-01N	PHLS-01NB	PHLS-01P	PHLS-01PB
Output status 輸出狀態	NO	NC	NO	NC	NO	NC	NO	NC
Output method 輸出方式	NPN		PNP		NPN		PNP	
Housing material 外殼材質	PTFE							
Connection wire 出線方式	3Φ/3c-2m (PTFE)				3Φ/3c-2m (PVC)			

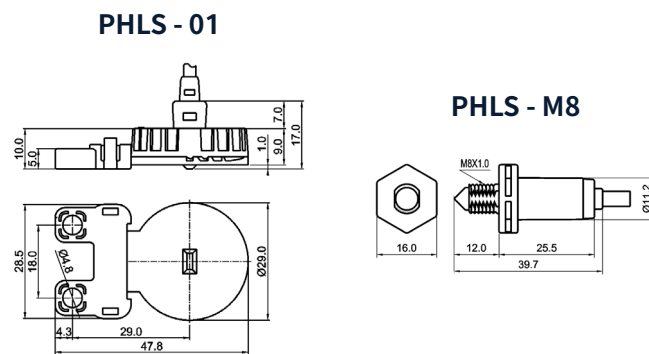
  

Model (型號)	PHLS-M8N	PHLS-M8NB	PHLS-M8P	PHLS-M8PB
Output status 輸出狀態	NO	NC	NO	NC
Output method 輸出方式	NPN		PNP	
Housing material 外殼材質	PSU (Polysulfone)			
Connection wire 出線方式	3Φ/3c-2m (PVC)			

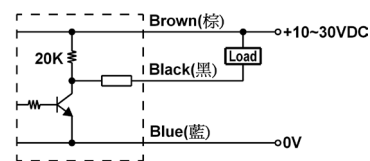
## General data / 共同規格

Specification (規格)	Data
Emitter 發射光源	IR (940λ)
Operating voltage 工作電壓	10 ~ 30VDC
Ripple of power 電源漣波	10 % peak to peak
Current consumption 消耗電流	20 mA max.
Output current 輸出電流	150mA max.
Protection circuit 保護迴路	Short circuit & polarity reversed
Voltage drop 輸出降壓	0.8V max.
Residual voltage 殘餘電壓	0.1V max.
Leakage current 洩漏電流	0.1mA max.
Dielectric strength 電介強度	2.5kv / 1 minute min.
Insulation strength 絕緣強度	100 MΩ / 500vdc
Degree of protection 保護等級	IP-67
Operating circumstances 工作環境	-20°C ~ +80°C ; 35 ~ 85% RH
Approval 安規	CE / RoHS

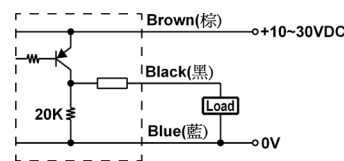
## Operation diagram / 操作圖



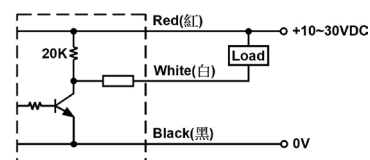
### NPN (PVC)



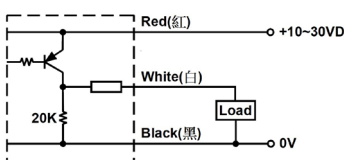
### PNP (PVC)



### NPN (TF)



### PNP (TF)



※ Note : 「NO type」 : Normal status : Green LED ON & Output OFF ; Leakage status : Red LED ON.& Output ON 「常開型」 : 正常狀態 : 綠色燈亮著 & 輸出 OFF ; 漏液狀態 : 紅色燈亮著 & 輸出 ON  
 ※ Note : 「NC type」 : Normal status : Green LED ON & Output ON ; Leakage status : Red LED ON.& Output OFF 「常閉型」 : 正常狀態 : 綠色燈亮著 & 輸出 ON ; 漏液狀態 : 紅色燈亮著 & 輸出 OFF

# Capacitive Leakage sensor / 靜電容式漏液檢測器

## CPLS Series

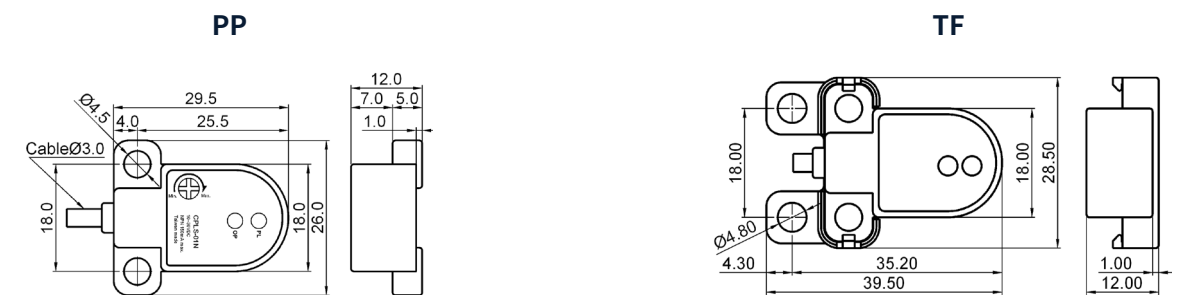
- ※ High Reliability 高穩定性
- ※ High Noise Resistance 高抗干擾力
- ※ Rare leakage detectable 微量漏液檢出
- ※ Small compact structure 小型堅固外形
- ※ Corrosion-resistant housing material 耐腐蝕外殼材質



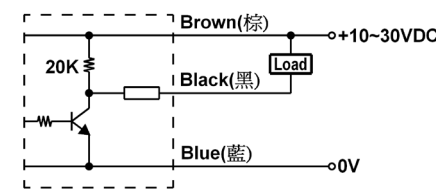
## Specification / 規格

Model (型號)	CPLS-01N	CPLS-01NB	CPLS-01P	CPLS-01PB	CPLS-01N-TF	CPLS-01NB-TF	CPLS-01NS-TF	CPLS-01NBS-TF
Housing material 外殼材質	PP				TF			
Output status 輸出狀態	NO	NC	NO	NC	NO	NC	NO	NC
Output method 輸出方式	NPN		PNP		NPN			
Installing site 安裝場所	Normal				Plastic site		Stainless steel site	
Sensitivity adjuster 感度調整	270° Trimmer				Non			
Fixed bracket 固定底座	Non				Attached			
Operating voltage 工作電壓	10 ~ 30VDC (10 % peak to peak)							
Current consumption 消耗電流	20 mA max.							
Output current 輸出電流	150mA max.							
Protection circuit 保護迴路	Short circuit & polarity reversed							
Voltage drop 輸出壓降	0.8V max. max.							
Residual voltage 殘餘電壓	0.1V max.							
Leakage current 洩漏電流	0.1mA max.							
Pilot 指示燈號	Normal status : Green LED (PW) on ; Leakage status : Green LED (PW) & Red LED(OP) on both							
Dielectric strength 電介強度	2.5kv / 1 minute min.							
Insulation strength 絕緣強度	100 MΩ / 500vdc							
Cable 電線	3Φ/3c-2m (22AWG)							
Degree of protection 保護等級	IP-66							
Approval 安規	CE / RoHS							

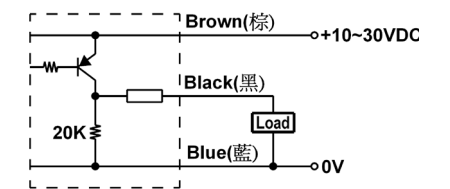
## Operation diagram / 操作圖



### NPN



### PNP



■ How to adjust the trimmer (PP type) : After fixing the leakage sensor, please adjuster the trimmer clockwise up to the OP LED on, Then adjuster the trimmer counterclockwise down to the OP LED off to finish the sensitivity adjustment.

將漏液檢測器固定在適當位置後，先將感度調整器 (Trimmer) 順時針方向調至動作燈 (OP) 亮起後，再將感度調整器 (Trimmer) 反時針方向調至動作燈 (OP) 熄掉即可完成感度調整。

※ Note : Normal status : Green LED (PW) on ; Leakage status : Both Green LED (PW) and Red LED (OP) on. 正常狀態 : 綠色電源燈亮著 ; 漏液狀態 : 綠色電源燈及紅色動作燈都亮著