

深圳市能點科技有限公司

SHENZHEN EPT TECHNOLOGY CO., LTD.

規格書 SPECIFICATION



工業用光電液位傳感器

Industrial photoelectric liquid level sensor



版本/Version : C-L

日期/Date : 2020.09.07

www.eptsz.com

www.eptsensor.com

目錄頁/Table of Content

1. 修訂記錄/Revision History
2. 重點規格說明/ Key specifications
3. 應用領域/Application
4. 產品特徵/General Features
5. 電氣參數特性/Electrical Specification
6. 推薦應用電路/Recommended Application Circuit
7. 應用及檢測/Application & Detection
8. 尺寸和推薦安裝/Outline Drawing and Recommended installation



本規格書為相應產品作業之標準，在客戶確認後，會作為生產、供貨的依據。如有特殊要求，可告知联系你的市场部人员，并出具承认书。

This specification is the standard for the operation of the corresponding products. It will be used as the basis for production and supply after confirmation by the customer. If you have special requirements, please contact our sales and issue an acknowledgement.

1. 修訂記錄/Revision History

No.	日期/Date	備註/Remark	修訂/Revision
1	20200624	MP Version issue	A
2	20200819	細節修改	B
3	20200907	線材細節修改，氣泡袋包裝	C

2. 重點規格說明/Key specifications

電源電壓：5V

線材型號：22AWG

線材長度：500mm±20mm

端子型號：無端子

線序：1. 紅 (VCC) 2. 白 (Signal) 3. 黑 (GND)

與常規電路不同，請注意線號、線序以及輸出電路

包裝方式：气泡袋包裝



3. 應用領域/Application

醫療設備/Medical devices or equipment

機電設備/ Electrical equipment

需要偵測液體的電器，設備等/Electrical appliances and equipment's etc. requiring liquid-level control

4. 產品特徵/Product features

無機械運動部件、可靠性高

No mechanical moving components and with high reliability

防腐蝕性強

Strong corrosion resistance

液位控制精度高

High liquid level control precision and can be installed from any direction

符合 RoHS 要求

The sensor itself satisfies RoHS requirements

防水等級 IP67

Waterproofing standard IP67

5. 電氣參數特性/ Electrical Specification (Ta=25°C)

參數/Parameter	符號/Symbol	條件/Condition	最小值/Min	典型/Typ	最大值/Max	單位/Units
工作電壓/Working Voltage	VDD		4.7	5	25	V
電流/current	IDD	VDD = 5V 有水狀態(無負載)/in water	—	<12	—	mA
		VDD =5V 無水狀態(無負載)/in air	—	<12	—	mA
消耗功率 power consumption	PD	VDD =5V 有水狀態(無負載)/in water	—	<60	—	mW
		VDD =5V 無水狀態(無負載)/in air	—	<60	—	mW
輸出方式/output configuration	IOL	開漏輸出/Open Collector Output	—	18	—	mA
響應時間/response time		VDD = 5V Ta = 25°C	—	<1	—	S



本規格書為相應產品作業之標準，在客戶確認後，會作為生產、供貨的依據。如有特殊要求，可告知联系你的市场部人員，并出具承认书。

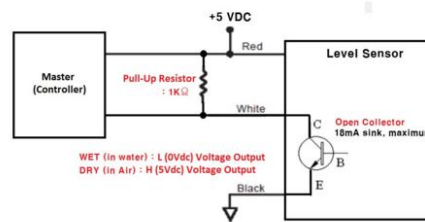
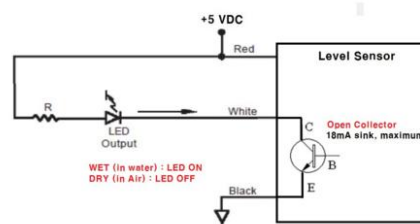
This specification is the standard for the operation of the corresponding products. It will be used as the basis for production and supply after confirmation by the customer. If you have special requirements, please contact our sales and issue an acknowledgement.

能點科技有限公司 EPT TECHNOLOGY CO., LTD.

極限值/limit value	工作溫度/Operating Temperature	Topr	VDD =5V	-20	—	80	°C
	儲存溫度/Storage Temperature	Tstg	—	-25	—	85	°C
	工作壽命/Working Time	Wt	VDD =24V Totg = 25°C	—	50000	—	h
	壓力範圍/pressure range			-1	80	170	bar

6. 推薦應用電路/Recommended Application Circuit

Customer Application Circuit



重要說明：

1. 負載電流不能超過200mA, 否則內部驅動三極管將過流損壞。
2. 在PCB佈線時，數字信號地（DGND）通過0R電阻與電源地（GND）單點連接；功率地（PGND）與電源地（GND）單點連接；否則功率地電流將會影響傳感器正常工作，甚至損壞。
3. 功率地電流太大，單點接地也無法消除功率地電流對傳感器的干擾時，傳感器需採用獨立供電，信號輸出採用光電耦合驅動。

Note:

1. The current can't be over 200mA.
2. When drawing PCB layout, there should be an 0R resistance between DGND and GND
3. When the PGND current is too big, connecting it to GND can't avoid the influence on sensor, then the sensor need to be powered independently. The output signal is suggest to be Optocoupler drive



本規格書為相應產品作業之標準，在客戶確認後，會作為生產、供貨的依據。如有特殊要求，可告知联系你的市场部人员，并出具承认书。

This specification is the standard for the operation of the corresponding products. It will be used as the basis for production and supply after confirmation by the customer. If you have special requirements, please contact our sales and issue an acknowledgement.

7. 應用及檢測/Application & Detection

將液位感測器按下述方式之一安裝，再將其按如上電路連接，信號端將輸出與水位狀況一致的電壓信號，此信號作為液位感測器高度控制信號接入 MCU（單片機）I/O 口，當液位超過臨界液位而淹沒感測器本體時，此時信號輸出為低電壓，當液位低於臨界液位而顯露感測器本體時，此時信號輸出為高電壓，具體參數如上表所示。

Install level sensor according to one of the mentined modes and connect it according to above circuit, the signal end will output voltage signal consistent with the water level, the signal will be accessed to MCU or I/O port. When the level is over the critical level and the sensor body is submerged, output signal is low vottage; When the level is below the critical level and the sensor body is exposed, output signal is high voltage. Please refer to specific parameters as above table.

注意：

1. 長期使用過程中，感測器表面因液體雜質產生污垢，輕微的污垢不會影響到感測器的效能，如有嚴重的污垢產生，導致感測器整體覆蓋，則需要提前告知特殊性，以便我方技術部做優化處理。
2. 感測器在陽光直射下會受到干擾，請安裝在避免陽光照射的位置內。
1. In the long-term of using, the surface of the sensor is dirty due to liquid impurities, slight dirt will not affect the performance of the sensor. If dirt would cover all the surface of sensor, please inform us the particularity in advance, our technical department can optimize the treatment.
2. The sensor will be effected when exposed to direct sunlight. Please install it away from direct sunlight.

8. 尺寸和推薦安裝/Outline Drawing and Recommended installation



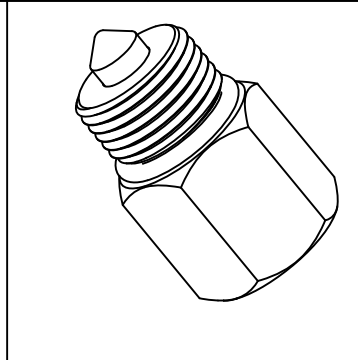
本規格書為相應產品作業之標準，在客戶確認後，會作為生產、供貨的依據。如有特殊要求，可告知联系你的市场部人员，并出具承认书。

This specification is the standard for the operation of the corresponding products. It will be used as the basis for production and supply after confirmation by the customer. If you have special requirements, please contact our sales and issue an acknowledgement.

1 2 3 4 5 6

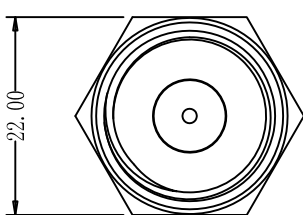
A

A



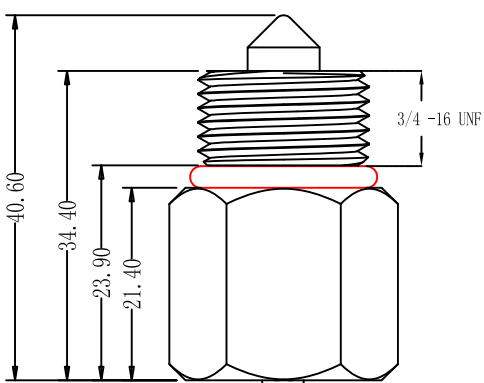
B

B



C

C

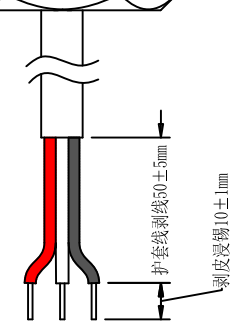


D

D

E

E



VCC Red
SG White
GND Black



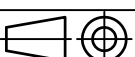
F

F

耐温 Temperature resistance	80°	耐压 Withstand voltage	300V
镀锡 Tin plating	10±1	长度 Length	500±20
线号 Line number	22AWG	编号 Numbering	*
颜色 Colour	Black	型号 Model	*
线材规格 Wire specification			

G

G

設計 Designer	Chen	材料 Material	*	單位 Unit	mm	 能點科技有限公司 EPT technology co., LTD			
檢查 Checked	Chen	表面處理 Finish	*	比例 Scale	*				
審批 Approver	Wei	數量 Quantity	*	篇幅 Size	A4	產品名 Product Name	FS-IR2003D-KIC	日期 Date	20-09-07
一般公差 Tolerances	0-10	±0.25		備註 Remarks	*	頁面內容 Page content	產品圖	版本 REV	C
	10-35	±0.35		視圖 View		圖號 DWG NO.	*	頁數 Pages NO.	1/1
35-70	±0.45								

H

H

1 2 3 4 5 6