

深圳市睿联传感科技有限公司

SHENZHEN REALUNION TECHNOLOGY CO., LTD.

SPECIFICATION

(产品规格书)



LLM12DH05-HT

光电液位传感器高温款

(Photoelectric level sensor for high temperature)

版本 Version: V1.1

日期 Date: 2024/12/23

● 修订记录 / Revision History

No.	日期/Date	备注/Remark	修订/Revision
1	20250103	PP Version issue	A

● 应用邻域 / Application

1. 工业高温水位保护设备

此传感器可在-25-100摄氏度环境内持续工作

2. 水族设备 / Aquarium equipment

可配合远程设备或者其他设备，实时监测鱼缸里面的液位是否正常，例如在低水位监测点安装传感器，若水位到达此点则提示，或在高液位监测点，水位超过则提示，以确保鱼缸水位不会过低过高。

It can work with remote devices or other devices to monitor whether the water level in the aquarium is normal in real time. For example, a sensor is installed at the low water level monitoring point to prompt if the water level reaches this point, or at the high water level monitoring point to prompt if the water level exceeds this point, so as to ensure that the water level of the aquarium is not too low or too high.

3. 液位控制设备 / Liquid level control equipment

4. 漏液保护设备 / Leakage protection equipment

5. 缺液保护设备 / Lack of liquid protection equipment

6. 带水箱的产品 / Products with water tank

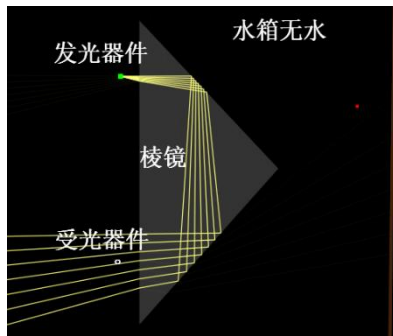
● 原理及优势/ Principle and Advantages

1. 光学式液体传感器的原理

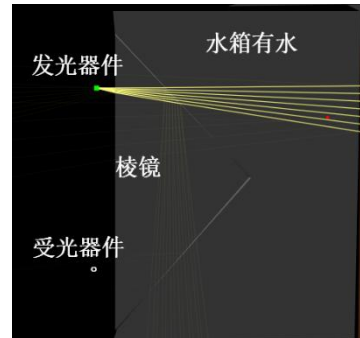
传感器利用光电效应和光的棱镜的折射效应进行检测容器内是否有液体的存在，当容器内有液体时，传感器的红外发光源发出的光照射到棱镜上，由于棱镜的折射率和液体相似，不会或有少量的红外光被反射回来。当容器内没有液体，传感器的红外发光源发出的光照射到棱镜上，会进行反射光电二

极管接收到红外光后，阻值发生改变，从而使电路中的电压随发生改变

无水状态光线模拟



有水状态



2. 优势

- ① 高温耐受性好，使用优质元器件，良好电路设计使温度漂移抑制好，可在100度的高温环境下持续运行

Good high temperature tolerance, the use of high-quality components, good circuit design to suppress temperature drift, can continue to operate in a high temperature environment of 100 degrees

- ② 采用内置MCU进行算法处理，输出数字IO信号，用户无需在采集和处理数据。

The built-in MCU is used for algorithm processing and outputs digital IO signals, so users do not need to collect and process data

- ③ 内置LED显示，可以实时观察当前状态

检测到有水，LED闪烁，检测到无水，LED常亮

Built-in LED display, which can observe the current status in real time

Water is detected, LED flashes, no water is detected, LED is solid

- ④ 体积小，M12螺纹方便安装

Small size, M12 thread for easy installation

- ⑤ 无机械运动组件，不会出现机械磨损卡死等情况

Mechanical motion components, will not appear mechanical wear stuck and so on

- ⑥ 内置算法，用户无需处理复杂逻辑，只需一个IO口检测即可使用

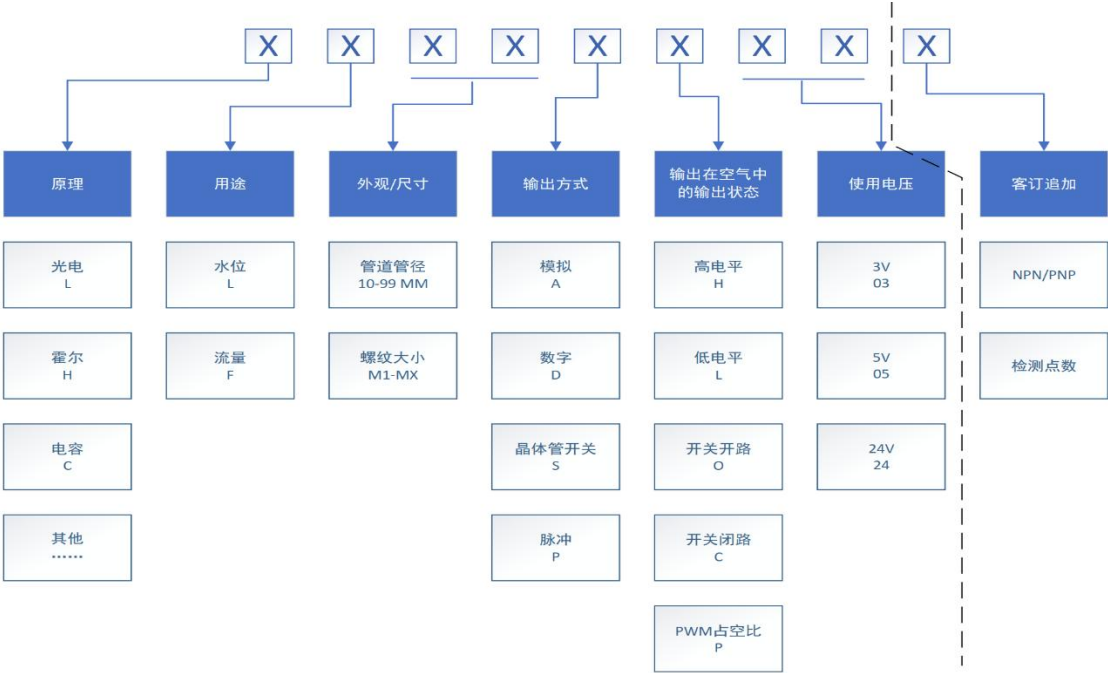
Built-in algorithm, users do not need to deal with complex logic, only one IO port detection can be used

● 选型表 / Selection Table

型号（Model）：LLM12DH05-HT (HT代表高温)

电压 voltage 螺紋编号/ type num	3V	5V	12V	24V
M12	LLM12DH03	LLM12DH05	LLM12DH12	LLM12DH24
其他螺紋	-	-	-	-

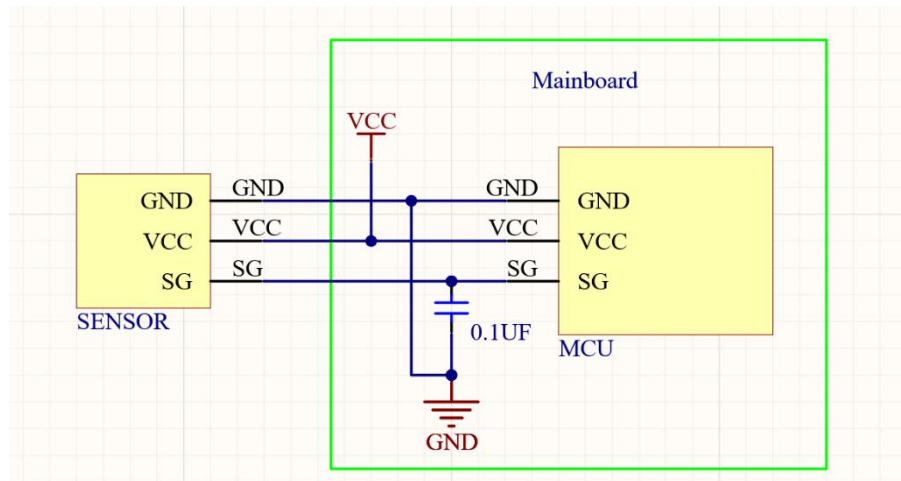
根据螺紋大小和电压进行选择，常用螺紋M12，常用电压3.3V和5V
如需其他特殊螺紋可联系我们，如需12V/24V电压输入输出请联系我们司



● 特性/Specification (Ta=25°C)

参数//Parameter	符号/Symbol	值/ value	单位/units
工作电压/Working Voltage	Vdd	5	V
功率/Power consumption	Pd	300	mW
在液体中输出电压/in Water Voltage	Vol	数字低 TTL LOW	-
在空气中输出电压/ in air Voltage	Voa	数字高 TTL HIGH	-
输出特性/Output Specification	Os	数字 IO	-
工作温度/Operating Temperature	Ot	-20 ~ +100（表面无结霜）	°C
存储温度/Storage Temperature	St	-20 ~ +125	°C
工作寿命/ Operating life	OI	>50000	H
相应时间/Response Time	Rt	<500	Ms

- 推荐应用电路 / Recommended Application Circuit



注意/ attention:

信号线（SG）需要接主板的输入检测口，当传感器在液体中时，SG输出TTL 低电平。当传感器离开液体后，SG输出TTL高电压。

The signal line (SG) needs to be connected to the detection port of the motherboard, and when the sensor is in liquid, the SG output TTL low voltage. When the sensor leaves the liquid, the SG outputs TTL high voltage.

购买传感器时请与销售人员确认所需的电压

When purchasing a sensor, please confirm the required voltage with the sales representative

- 产品特性/ Product features

无机械运动结构，不存在卡死等诸多问题，检测可靠性高

There is no mechanical movement structure, there are no problems such as jamming, and the detection reliability is high

可选择多种材质应对您所需检测的液体

Choose from a variety of materials to suit the liquid you need

检测精度高，重复性好，相应快速

The detection accuracy is high, the repeatability is good, and the corresponding is fast

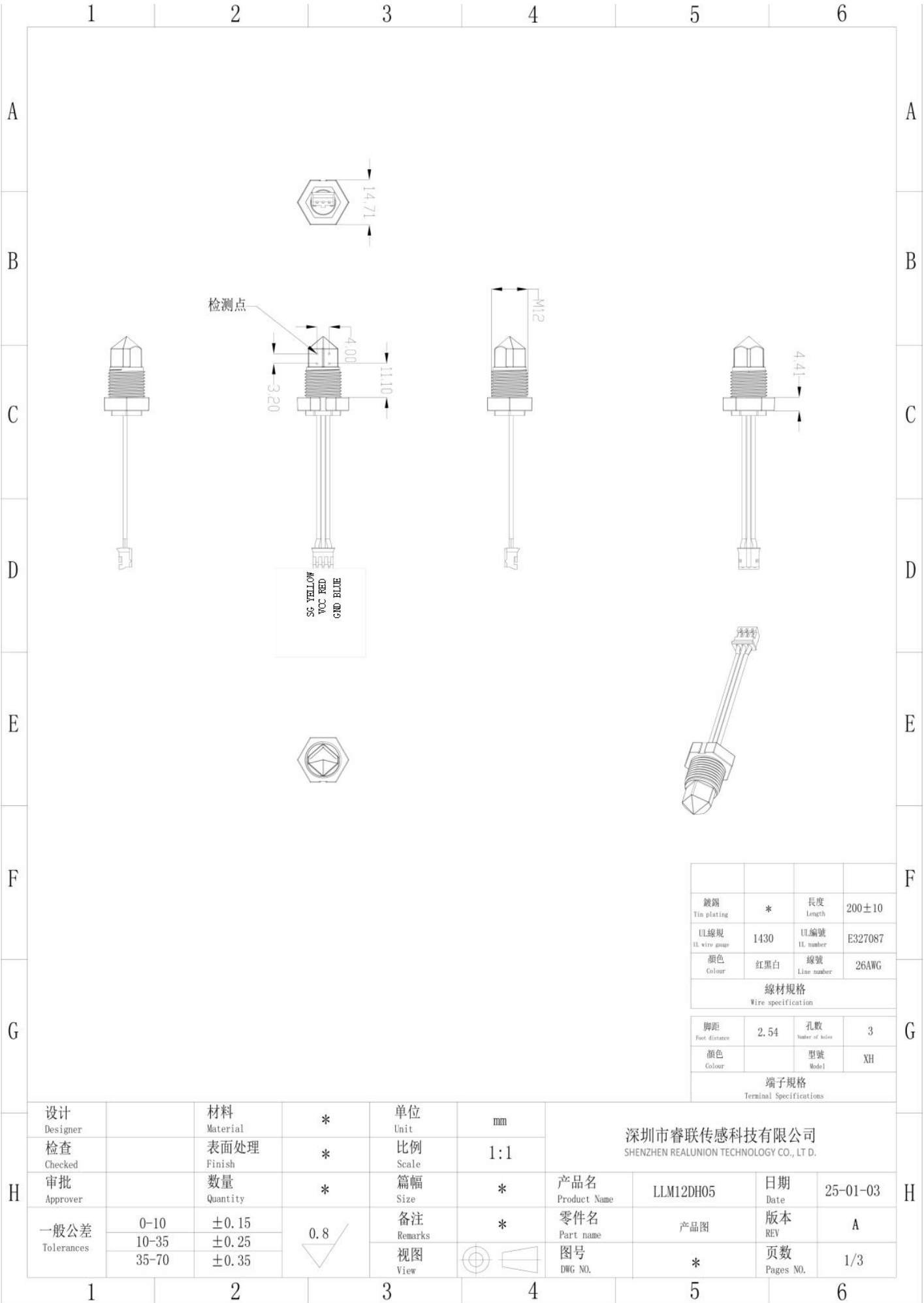
无需用户处理复杂数据，使用方便

It is easy to use without the need for users to deal with complex data

相比传统的单点传感器，内置安全准确的数据采集处理算法

Compared with traditional single-point sensors, it has built-in safe and accurate data acquisition and processing algorithms

- 尺寸和推荐安装 / Outline Drawing and Recommended Installatio



鍍錫	*	長度	200±10
Tin plating		Length	
UL線規	1430	UL編號	E327087
UL wire gauge		UL number	
顏色	紅黑白	線號	26AWG
Colour		Line number	
線材規格			
Wire specification			
腳距	2.54	孔數	3
Foot distance		Number of holes	
顏色		型號	XH
Colour		Model	
端子規格			
Terminal Specifications			

设计		材料	*	单位	mm	深圳市睿联传感科技有限公司 SHENZHEN REALUNION TECHNOLOGY CO., LT D.			
Designer		Material		Unit					
检查		表面处理	*	比例	1:1	产品名	LLM12DH05	日期	25-01-03
Checked		Finish		Scale		Product Name		Date	
审批		数量	*	篇幅	*	零件名	产品图	版本	A
Approver		Quantity		Size		Part name		REV	
一般公差	0-10	±0.15	0.8	备注	*	图号	*	页数	1/3
	10-35	±0.25		Remarks		DWG NO.		Pages NO.	
	35-70	±0.35		视图					
Tolerances				View					