

# 深圳市睿联传感科技有限公司

SHENZHEN REALUNION TECHNOLOGY CO., LTD.

## SPECIFICATION

(产品规格书)



**RLG1234Q1A**

工业级光电液位传感器

(Industrial-grade photoelectric liquid level sensor)

版本 Version: V1.0

日期 Date: 2025/10/11

● 修订记录 / Revision History

| No. | 日期/Date  | 备注/Remark        | 修订/Revision |
|-----|----------|------------------|-------------|
| 1   | 20251011 | PP Version issue | V1.0        |
|     |          |                  |             |
|     |          |                  |             |
|     |          |                  |             |
|     |          |                  |             |
|     |          |                  |             |

● 应用邻域 / Application

1. 广泛应用于工业过程中得各种液体液位测量 （水箱、油箱、化学液体等） /

Widely used for measuring the liquid levels of various liquids in industrial processes. (Water tanks, oil tanks, chemical liquids, etc.)

可选传感器可在-25-100摄氏度环境内持续工作/

This sensor can operate continuously in environments ranging from -25 to 100 degrees Celsius.
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

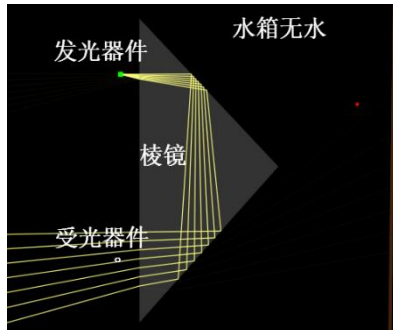
● 原理及优势/ Principle and Advantages

1. 光学式液体传感器的原理

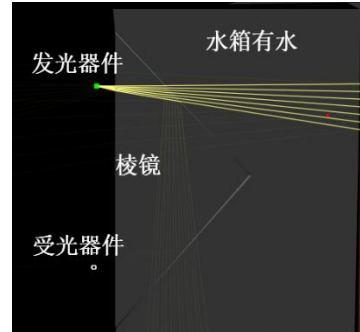
传感器利用光电效应和光的棱镜的折射效应进行检测容器内是否有液体的

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 百分百替代国产进口。全生产国产自主可控

100% replacement of imported products with domestic ones.

Entire production is domestically controlled and self-reliant.

### ② 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，可选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

### ③ 采用内置MCU进行算法处理，输出驱动能力大，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

### 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

● 选型表 / Selection Table

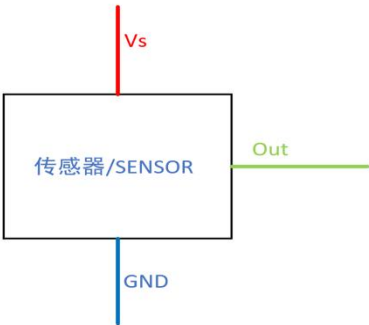
型号（Model）：RLG1234H1A

| RL   | G           | 12   | 34    | Q                      | 1                             | A                                   |
|------|-------------|------|-------|------------------------|-------------------------------|-------------------------------------|
| 公司简称 | 产品类型，G代表光电式 | 螺纹直径 | 结构件长度 | 安装方式：<br>Q为前装，<br>H为后装 | 空气中信号为：<br>1为高电平输出<br>0为低电平输出 | 电压，<br>A： 5V；<br>B： 12V；<br>C： 24V； |
|      |             |      |       |                        | 可选                            | 可选                                  |

本传感器为常规备件。螺纹直径12mm、结构件长度34mm。无特殊要求在空气中输出高电平  
水中输出低电平。电压为5V NPN型

如需其他特殊螺纹可联系我们，如需12V/24V电压输入输出请联系我司

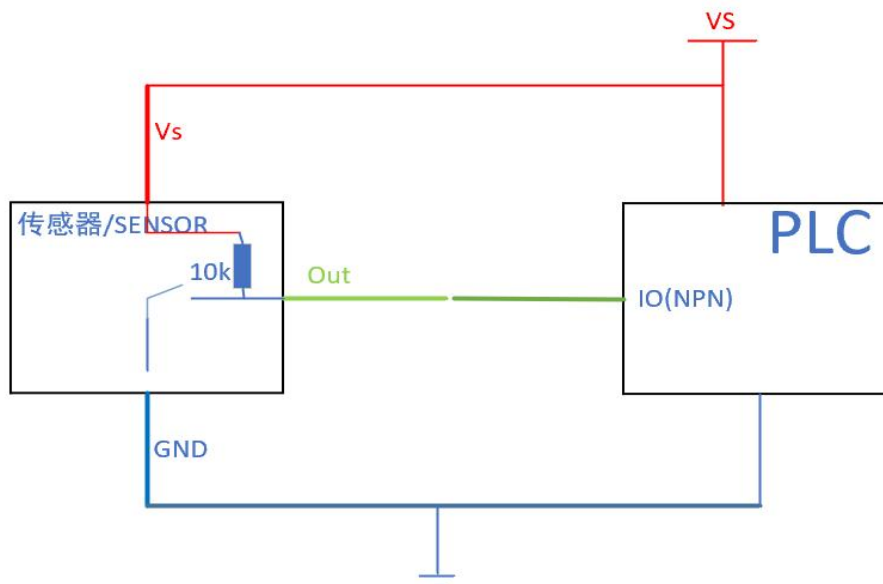
传感器接线示意图：



● 特性/Specification（Ta=25℃）

| 参数//Parameter              | 符号/Symbol | 值/ value         | 单位/units |
|----------------------------|-----------|------------------|----------|
| 工作电压/Working Voltage       | Vdd       | 5(空载)            | V        |
| 功率/Power consumption       | Pd        | 50(空载)           | mW       |
| 在液体中输出电压/in Water Voltage  | Vol       | 低电平（接地）          | -        |
| 在空气中输出电压/ in air Voltage   | Voa       | 高电平（上拉）          | -        |
| 输出特性/Output Specification  | Os        | NPN              | -        |
| 工作温度/Operating Temperature | Ot        | -20 ~ +85（表面无结霜） | ℃        |
| 存储温度/Storage Temperature   | St        | -20 ~ +125       | ℃        |
| 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:**

使用不可超过规格书标识的值。请确保使用传感器按照规则进行操作。仔细阅读并遵循接线说明

接线错误可能会造成传感器永久损坏

Do not use values that exceed those specified in the datasheet. Ensure that the sensor is operated according to the rules. Carefully read and follow the wiring instructions. Incorrect wiring may cause permanent damage to the sensor.

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

