LANBAO

槽型超声波标签传感器LAU系列

使用说明书

www.shlanbao.cn

注意事项

- 通电前请确保电源电压在额定范围内
- 传感器接通电源100ms后可正常检测
- 传感器与负载使用不同电源时，请确保先接通传感器的电源
- 不使用传感器时，建议优先切断负载上的电源，再切断传感器的电源
- 安装时请勿使传感器受剧烈外力（如锤 击打等），这以免破坏传感器性能
- 清洗时避免使用稀释剂、酒精或其他有机溶剂

安全警告

- 请勿在具有易燃性、爆炸性或腐蚀性气体的环境下使用
- 请勿在具有油或化学品的环境下使用
- 请勿在湿度高的环境下使用
- 请勿在日光直射的环境下使用
- 请勿在其他超过额定值的环境条件下使用
- 请勿擅自拆卸、修理、改造本产品

报废处理

- 产品报废时，请作为工业废弃物进行处理

LAU-Ver. 1.1 Y0823

上海兰宝传感科技股份有限公司
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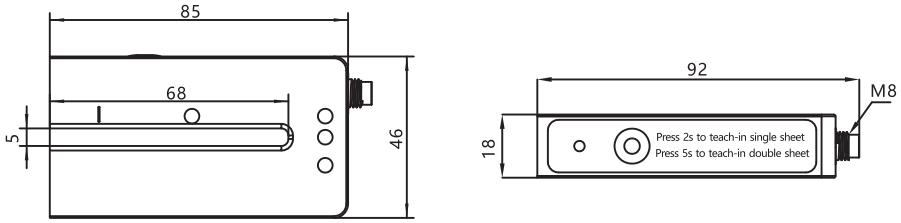
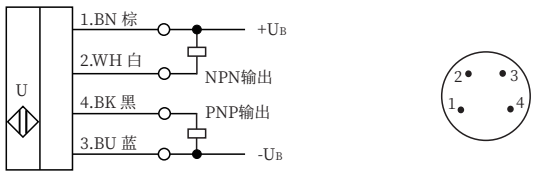
■ 产品规格

型号	NPN+PNP	LAU-TR05DFB-E3
槽宽		5mm
槽深		68mm
最小检测物		标签最小间隔≥2mm
工作电压		10…30VDC
输入类型		带同步功能和学习功能
响应时间		250μs
输出电流		100mA
开关频率		1.2KHz
指示灯		黄灯：无目标(空气)；红灯：检测到双张； 绿灯：检测到单张
保护回路		逆极性保护
环境温度		-25…70℃(248-343K)
储存温度		-40…85℃(233-358K)
防护等级		IP67
重量		105g
材料		金属、铝
连接方式		4芯 M8接插件

■ 外形尺寸图

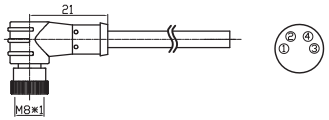


■ 电气接线图

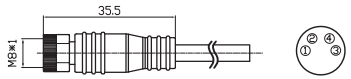


■ 配件尺寸图

M8连接器 QE8-N4G2（另售）



M8连接器 QE8-N4F2（另售）



■ 学习示教功能

上电状态：
空气黄灯，单张绿灯，双张红灯；

上电状态：
①长按按键时间>2s时开始闪绿灯，此时松开自动学习单张（若成功继续闪烁3次绿灯；若失败闪烁3次红灯）；
②长按按键时间大于5s时由闪烁绿灯切换为黄灯闪烁，此时松开自动学习双张（若成功闪烁3次绿灯；若失败闪烁3次红灯）；
③学习单张时自动完成双张门限，学习完成自动开始工作，学习功能不限时间。

■ 功能说明

超声波槽型传感器用于识别标签和载体材料的印刷方式及透明度和表面粗糙如何的材料，并能识别材料是一层还是两层。如透明载体材料上的透明标签和标签上不同印刷的图案。超声波槽型传感器可识别最小间距为2mm的标签且定位准确度高、响应时间短，体积小，这使得槽型传感器应用非常普遍。
超声波传感器的原理基于不同材料厚度所导致的信号衰减。

LANBAO

Fork Ultrasonic Label Sensor LAU Series

Operation manual

www.lanbaosensor.com

Precautions

- Please make sure that the power supply voltage is within the rated voltage range before powering on
- The sensor can be detected normally after 100ms of power charged on
- When using different power sources for the sensor and load, be sure to turn on the power of the sensor first
- When the sensor is not used, it is recommended to cut off the power of the load first and then turn off the power of the sensor
- Do not subject the sensor to severe external forces (such as hammer hits,etc.) during installation, so as not to damage the sensor performance
- Avoid using thinner, alcohol or other organic solvents when cleaning

Safety Warning

- Do not use in an environment with flammable, explosive or corrosive gases
- Do not use in oil or chemical environments
- Do not use in a high humidity environment
- Do not use in direct sunlight
- Do not use in other environmental conditions that exceed the rated value
- Do not disassemble, service or modify this product without authorization

Scrap Treatment

- When the product is scrapped, please dispose of it as industrial waste

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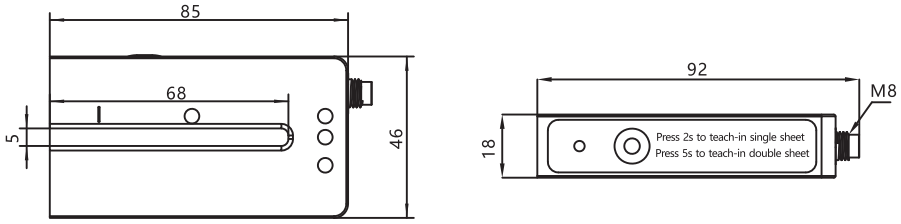
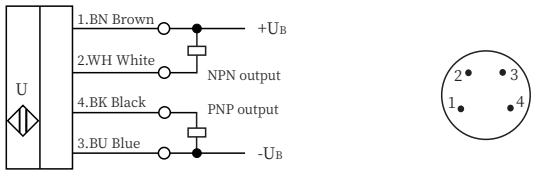
Technical specifications

Model	NPN+PNP	LAU-TR05DFB-E3
Width		5mm
Depth		68mm
Min. target		Label spacing⩾2mm
Supply voltage		10...30VDC
Input type		With synchronization function and teach-in function
Response time		250μs
Output current		100mA
Switching frequency		1.2KHz
Indicator		Yellow LED: no target (Air); Red LED: double sheets detected Green LED: single sheet detected
Circuit protection		Reverse polarity protection
Ambient temperature		-25...70℃(248-343K)
Storage temperature		-40...85℃(233-358K)
Protection degree		IP67
Weight		105g
Material		Metal, aluminum
Connection		M8 4-pin connector

Dimensions

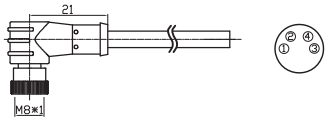


Wiring diagram

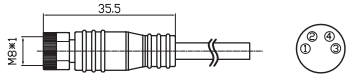


Accessory Dimensions

M8 Connector:QE8-N4G2(Purchase separately)



M8 Connector:QE8-N4F2(Purchase separately)



Teach-in function

Power-on status:
Air yellow light, single-sheet green light, double-sheet red light;

Power-on status:
①When the button press time > 2s, start flashing green light, then release the automatic learning sheet (If successful continue to flash green for 3 times; If it fails, flash red for 3 times);
②If press the button for more than 5s, the green light will be switched to the yellow light, and the automatic learning will be released at this time (If the green light is flashing for 3 times successfully; If it fails, flash red for 3 times);
③when learning a single sheet, the double sheet threshold is automatically completed, and the teach-in function is unlimited in time.

Functional description

Ultrasonic fork sensors are used to identify the printing mode of labels and carrier materials and how transparent and rough the surface of the material, and can identify whether the material is one layer or two layers. For example, transparent labels on transparent carrier materials and different printed patterns on labels.Ultrasonic fork sensors recognize labels with a minimum pitch of 2mm, high positioning accuracy, short response time and small volume, which makes fork sensor applications very common.
The principle of ultrasonic sensors is based on the attenuation of signals caused by different material thicknesses.