HYD TECHNOLOGY

TOF · Spatial Intelligence

PASINS I/O

Integration and Operation of Default Functions

User Guide

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Table of Contents

Document Information **3**

1. System Description **3**

2. PASINS I/O Interface Layout **3**

3. PASINS 3D Interface Layout & Installation Requirements **3**

3.1 PASINS 3D Interface Layout 3

3.2 PASINS 3D Installation Requirements 3

4. Communication Link Between PASINS 3D and PASINS I/O **3**

4.1 Hardware Connection Instructions 3

5. More Information **3**

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Document Information

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1. System Description

The 3D vision module is designed for pedestrian passage behavior detection. It integrates a ToF sensing module and an edge computing module. Mounted above the passage, the module uses the built-in ToF optical sensor to collect 3D spatial data of the passage area. With proprietary embedded algorithms, it detects the count, position, and direction of movement of pedestrians and objects within the monitored zone, and outputs pedestrian passage event results.

This document is intended for customers using the PASINS 3DV series module together with the PASINS I/O board. It describes equipment installation and wiring procedures.

Before proceeding, ensure the PASINS 3D module has been deployed as instructed in PASINS 3D Vision Module User Manual_EN_V1.0.

2. PASINS I/O Interface Layout

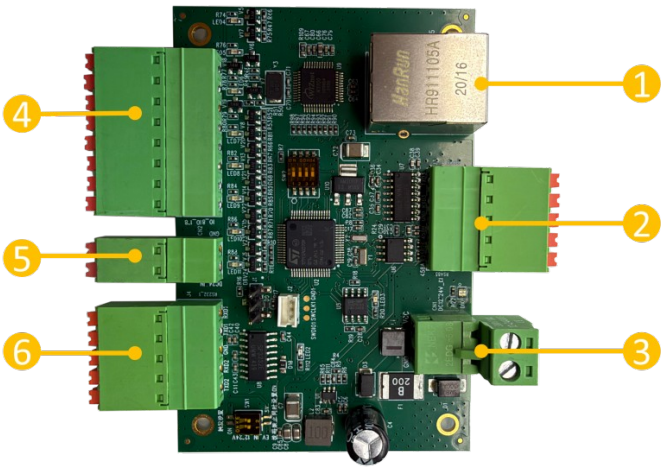
The appearance, interface overview, and detailed interface information of PASINS I/O are shown below.

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Figure 1 External Interfaces of PASINS I/O



Size: 60×90×19 mm

① Ethernet Port: RJ45

② Serial Port: RS485/RS232

③ Power Supply: 12V~24VDC, 5W

④ IO Interface: 8ch IO Out*

⑤ IO Interface: 24V IO Input

⑥ Reserved Serial Port: Dual RS232

*This interface has two hardware versions: 8 OUT or 4 IN + 4 OUT. When using the default functions, both share the same operation method. For non-default functions, contact the manufacturer for confirmation.

Figure 2 Detailed Interface Diagram

PASINS I/O Interface Details

① The RJ45 Ethernet port is used for communication with the PASINS 3D module.

② The RS485/RS232 serial ports are used to connect to customer devices that require serial communication.

③ Power Supply Interface: Accepts 12–24 VDC input. The power consumption of the device is 5 W. (The default I/O output voltage is consistent with the power supply input voltage.)

④ 8-channel I/O output. This interface is the positive terminal of the I/O signal, and its negative terminal shares the GND of the 24V input signal interface. (*This interface has two hardware versions: 8 OUT or 4 IN + 4 OUT. When using the default functions, both share the same operation method. For non-default functions, contact the manufacturer for confirmation.)

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⑤ 1-channel 24 V I/O signal input port

⑥ 2-channel RS232 serial port

3. PASINS 3D Interface Layout & Installation Requirements

3.1 PASINS 3D Interface Layout

The panel layout of the PASINS 3D module is shown below.

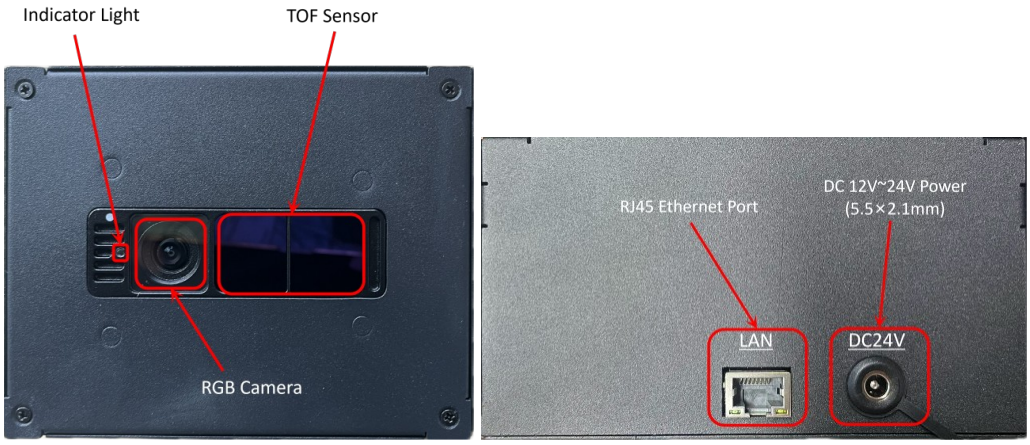


Figure 3 PASINS 3DV Panel & Interface Layout

3.2 PASINS 3D Installation Requirements

The 3D vision module must be installed directly above the passageway, with its long side aligned parallel to the direction of the passageway. The installation height should be between 2.3 meters and 3.5 meters, with an optimal range of 2.8 to 3 meters. The module must be positioned along the centerline of the passageway; a deviation of up to ±100 mm is permitted in both the longitudinal and lateral directions. The device must be kept level, with a deviation from the horizontal plane of less than 5°.

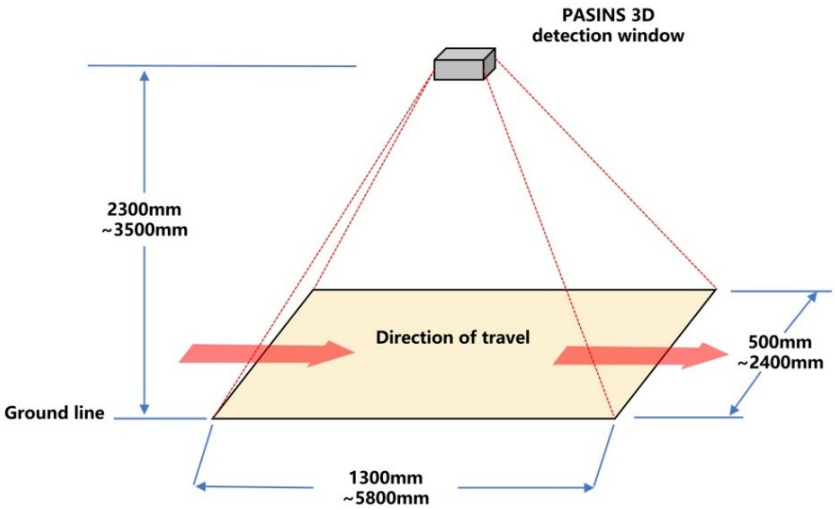


Figure 4 Device Deployment Diagram

4. Communication Link Between PASINS 3D and PASINS I/O

4.1 Hardware Connection Instructions

PASINS I/O communicates with PASINS 3D over the network interface. PASINS I/O acts as the TCP server, with a default IP address of 192.168.1.2 and communication port 5000. The default IP address of the PASINS 3D module is 192.168.1.221.

Connect the LAN ports of the two devices; PASINS 3D will then establish communication with PASINS I/O.

Under the default function, if two or more persons are detected within the detection zone configured in PASINS 3D, Channel 3 of the PASINS I/O 8-channel output will assert a high-level signal. The output voltage of the high-level signal is the same as the input supply voltage of PASINS I/O by default.

Detailed connection steps are shown below:

Step 1: First, apply external power to both modules, then connect the Ethernet port of PASINS I/O to the Ethernet port of PASINS 3D using a network cable. (PASINS 3D and PASINS I/O must have IP addresses on the same subnet.) Communication between PASINS 3D and PASINS I/O will then be established, and the default function described above will be enabled automatically.

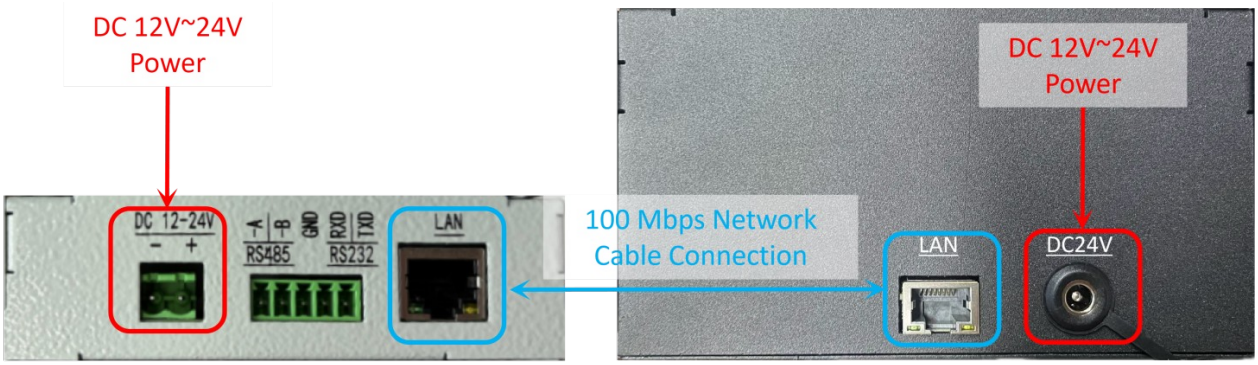


Figure 5 Connection of PASINS I/O to PASINS 3D

Step 2: After PASINS 3D completes registration in accordance with PASINS 3D Vision Module User Manual_EN_V1.0, open SV3DTools to preview the real-time image. When two target persons are present within the red detection zone, Channel 3 of PASINS I/O will output a high-level signal. (The output voltage is consistent with the input supply voltage of PASINS I/O.) The wiring method is shown in the figure:

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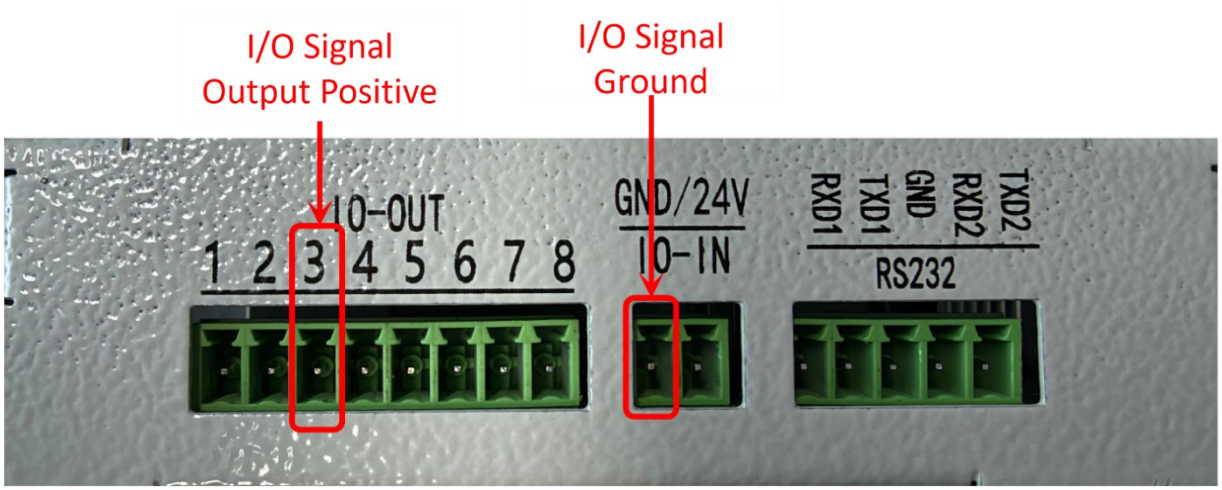


Figure 6 Signal Connection of PASINS I/O Output Port

5. More Information

When the connection is completed by referring to the description in this document, the high and low level signals output by the default function can be used to drive external devices to perform operations such as alarm and gate locking. PASINS I/O provides a wide range of output interfaces, and customized signal outputs can be supplied to meet specific customer requirements. Please contact the manufacturer if needed.

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