FOORIR
Smart Counter Provider

Specification

TOF People Counter

FP221

Version 2025-1.4

❖ Product Introduction

TOF people counter (FP221) is a professional-grade, accurate people counting sensor. It utilizes advanced 3D Time of Flight (TOF) technology to accurately identify and count people in real time, with an accuracy rate of up to 98%. It effectively filters out non-target objects, ensuring data accuracy. The device is highly adaptable to various environments, maintaining high accuracy even in low-light or dark environments. It supports bidirectional line-crossing and area-based counting, with customizable detection lines and areas for comprehensive and accurate counting.

The product focuses on privacy protection and only collects depth map information to protect personnel privacy. At the same time, it has functions such as employee identification, adult/child differentiation, stay time detection, and wandering filtering, providing valuable information for data analysis. It supports the generation of heat maps to intuitively display the movement and stay distribution of the crowd, helping to optimize data analysis.

The product supports multiple communication protocols, pushes data to the server in real time, and is equipped with a free cloud platform to view data anytime and anywhere. The cloud platform provides a wealth of passenger flow analysis reports and supports export analysis. The product has open docking capabilities to meet the needs of deep customization and secondary development. In addition, the product also has large-capacity data storage and network disconnection data transmission functions to fully ensure data integrity.

    With its powerful functions and stylish design, FP221 is widely used in retail stores, shopping malls, supermarkets, buildings, public transportation (subways, high-speed railways, buses) and other occasions.

❖ Product Features

◆ **Real-time and accurate statistics:** It adopts advanced 3D TOF technology and uses the time-of-flight principle to obtain the environmental depth map. It can accurately identify the human body in real time with an accuracy rate of up to 98%, and effectively filter out non-target objects such as children and large objects to ensure the accuracy of the data.

◆ **Strong environmental adaptability:** The performance of the device is not affected by no light or low light environments. Even in a completely dark scene, it can still maintain high accuracy and demonstrate strong stability.

◆ **All-round people counting:** Supports two-way counting of people passing through the line, and can draw custom entry and exit detection lines (up to 4 detection lines can be drawn); at the same time, it also supports regional people counting function, and users can draw custom detection areas as needed (up to 4 detection areas can be drawn). In addition, the device can count the number of people entering and leaving multiple lines and the number of people in the area at the same time to achieve all-round and accurate people counting.

◆ **Good privacy protection:** Only depth map information is collected, and the depth map and grayscale map of the object are obtained directly, rather than the RGB image, which can effectively and thoroughly protect the privacy of personnel.

◆ **Employee identification function:** By identifying specific tags, it helps filter out invalid data of employees entering and leaving, and obtains more accurate customer flow information.

◆ **Distinguish between adults and children:** Supports counting adults and children separately, providing more valuable segmentation information for data analysis.

◆ **Stay time detection (area optimization):** Multi-dimensional statistics of the stay time of people in a specified area, accurately record the user's waiting time and the corresponding headcount, and realize digital management.

◆ **Wandering filtering (cross-line optimization):** effectively filter targets wandering at the entrance to avoid repeated counting and ensure the accuracy of cross-line data.

◆ **Heat map analysis:** supports the generation of movement heat maps and stay heat maps, using color blocks to intuitively display the density of crowd movement and the distribution of stay time, thereby facilitating rapid data analysis and optimization.

◆ **Real-time data push:** The device supports multiple communication protocols such as HTTP(S), MQTT and API, and can push data to the server in real time, ensuring that users can obtain and grasp the latest statistical data information at any time.

◆ **Remote data control:** Equipped with a free cloud platform, you can view real-time and historical data through the cloud platform anytime and anywhere, support multi-dimensional data query, and help make decisions more intelligently. (The cloud platform supports viewing data every 5 minutes, every half hour, every hour, every day, every week, every month, and every year, and supports data query for different architectures, such as single device, single store, multiple stores, regions, etc.)

◆ **In-depth passenger flow analysis:** The cloud platform provides a wealth of passenger flow analysis reports, including festivals, KPIs, peaks and low peaks and other key indicators, presented in visual charts and supported by EXCEL export for further analysis.

◆ **Efficient and convenient configuration:** Supports convenient configuration (detection range, communication configuration, etc.) through Wi-Fi or Ethernet interface, and is equipped with an intuitive and friendly user interface (UI) to make operation easier.

◆ **Open docking capability:** Provides SDK development packages for HTTP protocol and MQTT protocol, easily realizes the docking of device data with various servers, and supports deep customization and secondary development.

◆ **Resume data transmission after network disconnection:** It has large-capacity data storage capacity and can store up to 10 years of data locally. It also has the function of resuming data transmission after network disconnection, which supports 180 days of resuming data transmission after network disconnection, effectively preventing data loss and fully ensuring data integrity.

◆ **Diverse industrial serial ports:** Provides various types of interfaces such as I/O and RS485 to meet diverse data transmission application requirements.

❖ Product Parameters

Product Model		FP221
Accuracy		Up to 98%
Installation		Ceiling installation
Technical Parameters	Image Resolution	320*240
	Frame Rate	Up to 20fps
	Light Source Angle	120°(H)*90°(V)
	Imaging Field of View	105°(H)*75°(V)
	Infrared Light Source	940nm VCSEL 3W*2
	Security Level	Class1 (IEC/EN 60825-1:2014)
Communication Protocol		HTTP(S), MQTT(S), Modbus-TCP, Modbus-RTU, FTP, etc.
Height Range		2M~3.4M
Power		6W
Offline Cache		5 million
Power Supply Mode		12V/2A DC power supply (round DC plug/2pin power interface)
Interface		RS485 *1
		DI/DO *1
		RJ45 Ethernet port (PoE port) *1
		DC power supply*1
		DC power interface*1
Configuration		Web page configuration
Work Environment		Operating temperature (-20°C~55°C)
		Working humidity (10~80%RH (non-condensing))
		Storage temperature (-40°C~70°C)
		Storage humidity (5~90% RH (non-condensing))
Product Specifications		Dimensions (mm): 154x60x29 Net weight(Kg):0.78
Packing Specifications		Dimensions (mm): 240x100x95 Weight (Kg): 1.33 (including accessories)

Outer Box Specifications	Size (mm): 500x500x250 (20 units per box) Weight (Kg): 29/box
Employee Label Size	Dimensions (mm): 130x25x0.3

❖ Installation Height and Detection Range

Installation Height(m)	Field of View (m)	Detection Range(m)
2.0	4.6*3.34	0.69*0.5
2.1	4.83*3.51	0.92*0.67
2.2	5.06*3.67	1.15*0.83
2.3	5.29*3.84	1.38*1
2.4	5.52*4.01	1.61*1.17
2.5	5.76*4.2	1.84*1.34
2.6	5.98*4.36	2.07*1.51
2.7	6.21*4.53	2.3*1.68
2.8	6.44*4.7	2.53*1.85
2.9	6.67*4.87	2.76*2.01
3.0	6.90*5.03	2.99*2.18
3.1	7.13*5.20	3.22*2.35
3.2	7.36*5.37	3.45*2.52
3.3	7.57*5.51	3.68*2.67
3.4	7.82*5.68	3.91*2.84

Website	Technical Support	Sales hotline	Online purchase
www.foorir.com	info@foorir.com	+86 18981978865	huaxiniot.en.alibaba.com

We will publish the upgrade software or drivers of each product on the official website in time, you can get technical support on the www.foorir.com, and download the latest version of the latest software or driver for free. Huaxin Zhiyun Technology Co., Ltd. will make every effort to check for errors in printing and pictures, but please understand possible omissions. The appearance, specifications, parameters, prices and product availability of the products listed in this website are subject to change at any time and shall prevail according to the actual situation.

FOORIR

www.foorir.com

Phone/WhatsApp:+86 18981978865
Email Address： info@foorir.com
Address: Room 4021, Unit 1, Building 1, 88 Tianchen Road, High-Tech Zone, Chengdu, Sichuan, China