AI ToF People Counting Sensor

VS133-P

VS133-P is a sensor that uses second-generation ToF technology to accurately count people and transmit data via PoE (Power over Ethernet). Benefit from 2nd generation ToF technology, this product can provide more precise depth maps and longer detection distances while maintaining an excellent privacy protection. The advanced ToF technology combined with an AI algorithm enables the sensor to handle complex scenes and distinguish non-human objects with up to 99.8% accuracy.

VS133-P offers enhanced detection capabilities by allowing the stitching of multiple devices to cover a larger detecting area. Additionally, it provides rich interfaces for versatile connection options, expanding the possibilities for integration and customization. With easy installation and automatic detection of installation height, the VS133-P is ideal for entrances or corridors in retail stores, malls, offices, subways, and other locations.

◆ Features

Highly-efficient Sensing Ability

- Up to 99.8% accuracy combining the 2nd generation ToF technology and AI algorithm
- Support Multi-Device Stitching which enables the linking of multiple devices, allowing for up to four-device stitching to expand coverage
- Allow to collect people counting data by differentiating children and adults and detecting staffs via identification like staff lanyards for clearer people analysis

- Smart U-turn detection to filter redundant counting of people wandering in the area
- Support queuing management via dwell time detection and regional people counting
- Support both motion and dwell time heat map for anonymous customer tracking
- Support the counting of shopping cart with different fill levels
- Support Group Counting function to gain deeper insights into customers' behaviors
- Support advanced Heat Map function which provides deeper insights by visually representing the distribution and intensity of foot traffic
- Wider field angle to obtain longer-distance depth maps and cover a larger area
- Working well even in low-light or completely dark environments with great lighting adaptability
- Compliant with GDPR without images collected, free from privacy concerns
- Automatically detect the optimal installation height, facilitating fast deployment and intelligent detection

Highly-compatible Connectivity

- High compatibility of data transmission via Ethernet port (HTTP/MQTT/CGI/BACnet)
- Equip with various serial ports like Alarm I/O and RS485
- Support local data storage and data retransmission to collect data securely
- Easy configuration via Ethernet port for web GUI configuration
- Quick and easy management with Milesight DeviceHub and Milesight Development Platform

◆ Specifications

People Counting	
ToF FoV	98 ° Horizontal, 80 ° Vertical
ToF Light Beam	940nm (Invisible)
Distance Measuring Accuracy	± 3.5cm
Detection Range	0.5 to 3.5 m
Installation Height	≤ 3.5m
Advanced Function	
Bi-Directional People Counting	Up to 4 counting lines for bi-directional people counting
U-turns Filtering	Filter redundant counting of people wandering in the bi-directional people counting areas
Regional People Counting & Dwell Time Detection	Up to 4 detection areas (up to 10 sides for each area) for regional people counting and dwell time detection
Group Counting	Support
Children/Adults Differentiation	Support
Staff Detection	Support
Shopping Cart Fill Level Detection	Support
Occlusion Detection	Support
Heat Map	Motion Heat Map, Dwell Heat Map

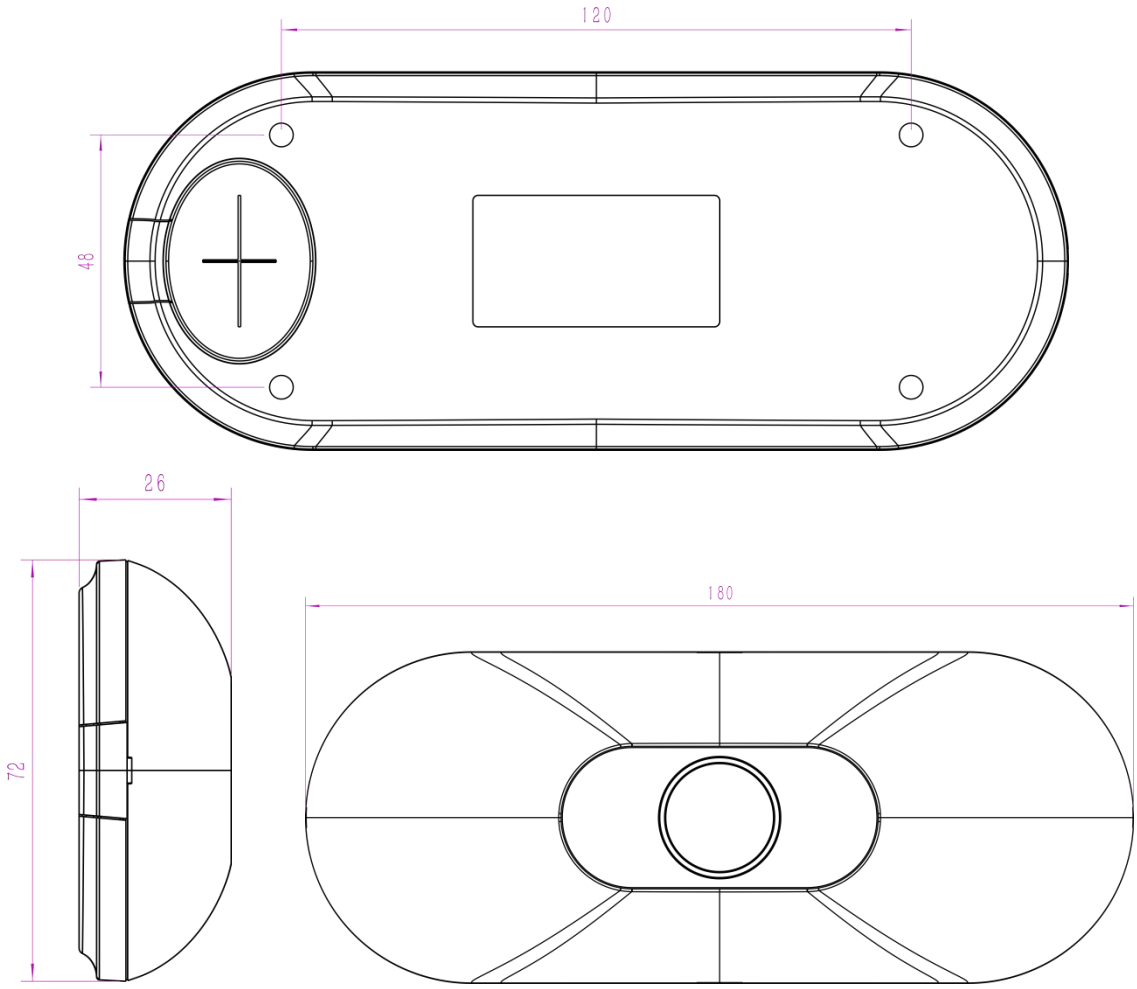
Data Retransmission	Support 6 x 30000 data retransmission packets
Multi-Device Stitching	Support up to 4 devices stitching to expand coverage. Support automatic detection of the deflection angle.
Wireless Transmission	
Ethernet Port	1 × RJ45 10/100 Mbps (PoE PD)
Ethernet Isolation	1.5 kV RMS
Network Protocol	HTTP(s), MQTT(s), NTP, 802.1x, SSH, LLDP, BACnet/IP, etc.
VPN	OpenVPN
Other Interfaces	
Alarm I/O	1/1
Serial Interface	1 × RS485 *(Under development)*
Button	1 × Reset Button
LED Indicators	1 × RGB LED Indicator
Physical Characteristics	
Local Storage	Store up to one million data records and supports to export csv file
Power Supply	802.3at PoE+
Power Consumption	Typical 9.4 W, max 23.8 W
Operating Temperature	-20°C ~ +50°C
Relative Humidity	0 ~ 95% (Non-condensing)
Ingress Protection	IP40
Dimension	180 × 26 × 72 mm
Housing&Color	PC + Aluminium alloy, White
Weight	226g
Installation	Ceiling Mounting, Extended Ceiling Mounting & Lintel Mounting (with Optional Multifunctional Bracket)
Approvals	
Regulatory	CE, FCC, GDPR
Environmental	RoHS

◆ Monitored Area

Installation Height (m)	Monitored Area[1] (m^2)	Detection Area[2] (m^2)
2.5	5.75 × 4.20	1.84 × 1.34
2.6	5.98 × 4.36	2.07 × 1.51
2.7	6.21 × 4.53	2.30 × 1.68
2.8	6.44 × 4.70	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	7.59 × 5.54	3.68 × 2.69
3.4	7.82 × 5.71	3.91 × 2.85
3.5	8.05 × 5.87	4.14 × 3.02

[1]**Monitored area:** The range visible to the device (FOV), which is displayed on the live view.

[2]**Detection area:** The range within the monitored area where the device can detect changes in the number of people.

◆ Dimensions (mm)