Milesight

Al Stereo Vision People Counter

VS125

User Guide



Safety Precautions

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Milesight will not shoulder responsibility for any loss or damage resulting from not following the instructions of this operating guide.

- The device must not be disassembled or remodeled in any way.
- To avoid risk of fire and electric shock, do keep the product away from rain and moisture before installation.
- Do not place the device where the temperature is below/above the operating range.
- ***** Do not touch the device directly to avoid the scalds when the device is running.
- The device must never be subjected to shocks or impacts.
- Make sure the device is firmly fixed when installing.
- Do not expose the device to where laser beam equipment is used.
- Use a soft, dry cloth to clean the lens of the device.

Gender Recognition Statement

Milesight respects and embraces all dimensions of diversity, including gender identity anywhere along or beyond the spectrum of gender expression.

For technical reasons, the algorithm embedded in the people counter recognizes only easily discernible, visual indications when determining whether a person is more likely to be female or male, A reliable detection of the biological sex of a person is nether possible nor intended. we intend no disrespect to the gender with which a person identifies. The counts are merely a statistical measurement of a large number of people.

Declaration of Conformity

VS125 is in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



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Revision History

Date	Doc Version	Description	
Jul. 17, 2024	V1.0	Initial version	
Sep.30, 2024	V1.1	1. Add Multi-Device Stitching;	
		2. Add Staff Detection;	
		3. Add Group Counting;	
		4. Add Heatmap;	
		5. Support TCP/IP Communication for cellular	
		version.	

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1. Product Introduction

1.1 Overview

VS125 is a professional people counting sensor that is based on deep learning AI and Binocular Stereo Vision technology. This sensor possesses an impressive accuracy of up to 99.8% in people counting, and it delivers exceptional performance even in low light environment and total darkness. Besides that, it can achieve rich attributes recognition including gender and facial expressions. It is designed with privacy protection that complies with GDPR.

VS125 offers various connectivity options (Cellular and PoE) for seamless connectivity and efficient space management across applications. Additionally, it provides rich interfaces for versatile connection options (RS485/DO/DI), expanding the possibilities for integration and customization. The VS125 can be easily installed, making it ideal in retail stores, malls, offices, subways, and other locations.

1.2 Key Features

- Up to 99.8% people counting accuracy with AI and stereo vision technology
- Great lighting adaptability that allows it to work well in low light environments and complete darkness
- With high ceiling mounting of up to 6m, support automatic tilt correction and automatic infrared light adjustment
- Customer-defined preview privacy settings, no data with personal information is transmitted, complies with GDPR
- Support line crossing people counting, regional people counting and dwell time detection
- Rich attribute recognition abilities including gender, facial expression (Under development), group counting, children & staff identification etc, provide deeper insights
- Support shopping cart counting with different fill levels (Under development)
- Support Heat Map function for foot traffic intensity and distribution analysis
- Support Multi-Device Stitching which enables the linking of multiple devices, allowing for up to 16 device stitching to expand coverage
- Support local data storage and data retransmission function for secured data collection
- Supports RS485/DI/DO multiple interfaces and has strong scalability
- Quick and easy management with Milesight Devicehub and Milesight Development Platform
- High compatibility of data transmission with HTTP(s)/MQTT(s) protocol and API, supports customized push content and push method

2. Hardware Introduction

2.1 Packing List

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4 × Ceiling Mounting Kits



1 × Multi-interface Cable









- 1 × Warranty Card
- $1 \times Quick Guide$
- 1 × VB01 Multifunctional Bracket Kit (Optional)

8 × Staff Lanyards (Optional)

Cellular Version Only Accessories





- 1 x Power Adapter
- 1 x SIM-eject Tool

PoE Version Only Accessories



1 x Power Adapter (Optional)



If any of the above items is missing or damaged, please contact your sales representative.

2.2 Hardware Overview

• Cellular Version:

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Reset/Wi-Fi Button

2.3 Button Descriptions

Function	Action	LED Indication
Turn On/Off Wi-Fi	Press and hold the power button for more than 3 seconds.	Turn On/Off: Blue light blinks for 3 seconds. Wi-Fi On: Blue light on. Wi-Fi Off: Green light on.
Reset to Factory Default	Press and hold the power button for more than 10 seconds.	Green light blinks until the reset process is completed.

2.4 Dimensions (mm)



2.5 SIM Card Installation (Cellular Version Only)

Step 1: Remove the cover plate.



Step 2: Use the SIM-eject tool to pop open the SIM tray.



Step 3: Place the Nano SIM card into the sim card slot and insert it back to device.



3. Power Supply

• Powered by DC Power Adapter (12V, 1A)



• Powered by PoE Switch (PoE Version Only, 802.3af standard)



Note: Ensure the length of the Ethernet Cable crystal head is less than 40mm.



4. Access the Sensor

VS125 provides user-friendly web GUI for configuration access via Wi-Fi or Ethernet port. Users need to customize the password when using the device for the first time. The default settings are as below:

Wi-Fi SSID: People Counter_xxxxxx (can be found on the device label)

Wi-Fi IP: 192.168.1.1

Ethernet IP: 192.168.5.220

Step 1:

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- Wireless Method: Enable the Wireless Network Connection on your computer, search for corresponding for Wi-Fi SSID to connect it, then type 192.168.1.1 to access the web GUI.
- Wired Method (PoE Version Only): Connect the device to computer via Ethernet port, change the IP address of computer to 192.168.5.0 segment as below:
 - a. Go to Start → Control Panel → Network and Internet → Network and Sharing
 Center → Ethernet → Properties → Internet Protocol Version 4 (TCP/IPv4).

→ * 个 茎 > Control F	Panel > Network and Internet > Network and	Sharing Center
Control Panel Home	View your basic network inform	ation and set up connections
	View your active networks	
Change adapter settings		
Change advanced sharing	Milesight 5G	Access type: Internet
settings	Public network	Connections: U Ethernet
Media streaming options		
	Change your networking settings	Ethernet
	Set up a new connection or net	work
	Set up a broadband, dial-up, or	VPN connection; or set up a router or access point.
	Troubleshoot problems	
	Diagnose and repair network pro	oblems, or get troubleshooting information.

b. Enter an IP address that in the same segment with sensor (e.g. 192.168.5.61, but please note that this IP address shall not conflict with the IP address on the existed network).

eneral	
You can get IP settings as: this capability. Otherwise, for the appropriate IP sett Obtain an IP address	signed automatically if your network supports you need to ask your network administrator ings. automatically
• Use the following IP a	address:
IP address:	192.168.5.61
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192 . 168 . 5 . 220
Obtain DNS server ac Obtain DNS server ac Obtain DNS server: Preferred DNS server: Alternate DNS server:	ddress automatically 5 server addresses: 8 . 8 . 8 . 8
🗌 Vaļidate settings upo	on exit Ad <u>v</u> anced

Then open the Browser and type 192.168.5.220 to access the web GUI.

Step 2: Users need to set the password and three security questions when using the sensor for the first time.

Step 3: Configure the privacy settings to select preview image modes on the dashboard.

Note: If you need to reset the privacy settings, hold on reset button for 10s to reset device to factory default.



Parameters	Description	
	Select video stream preview, static image preview or no image preview as	
	needed.	
Scene Preview	Video Stream: Live preview of the video, displaying dynamic scenes and	
	people.	
	Static Image: A still image to view the scene.	
	No Image: No image displayed.	
	Select Monochrome or Pseudo-color image type.	
Image Type	Monochrome: Black, white and gray image.	
	Pseudo-color: Color-enhanced image.	
	Select Low or High.	
Resolution	Low: Display blurred images, but still allow viewing of scenes and moving	
	people	
	High: Display clear scenes and people faces	

Step 4: After configuration, log in with username (admin) and custom password.

Note:

- 1) Password must be 8 to 16 characters long, which contains at least two kinds or more in combination with numbers, lowercase letters, uppercase letters and special characters.
- It is recommended that users regularly update their passwords to enhance device security and prevent unauthorized access.
- 3) You can click the "forgot password" in login page to reset the password by answering three security questions when you forget the password if you set the security questions in advance.

		E English 3
I Activation Username admin Password Confirm A least: • 8 characters • 2 types of characters: Number, letter and	symbol	
Set Security Questions		English >
Security Question1 What is yn Answer1 Security Question2 What is yn Answer2 Security Question3 What is yn Answer3	Nur lucky number?	

5. Operation Guide

5.1 Dashboard

After logging on to the device web GUI successfully, user is allowed to view live video as following.

 English > amin > 	1,95 Linatin Linati	Image: Point of the second		
Paramete	ers	Description		
1 🔝	0	Hide Capacity: Hide the total count data capacity; Children Excluded: Exclude children data from statistical data. Staff Excluded: Exclude staff data from statistical data.		
Reset Cou	unt	Clear all accumulated entrance and exit people counting values.		
e 7 9	S.	Click to show detection lines, U-turn areas, detection regions and tracking lines as needed.		

5.2 Rule

5.2.1 Basic Counting Settings

Draw Detection Lines

Users can draw detection lines to record the people count values which indicate the number of people enter or exit.

Step 1: Find the list of detection lines. Click **+Add** to draw a new detection line or click to edit the existed detection line on the live view.

Milesight		Hacking mode (g) Prec Hacking Prec Hacking
E Rule		Gender Recognition
 Report Image 		U-turn Filtering
System	Time 12 Ruge2 (1	No.1 Line1 C C No.2 Line2 C C
		Region Monitoring
	Refresh Image	Region No. Region Name Advanced Properties Operation
		No.1 Region1 Region People Counting(0s) D 🗗 🖸 🗇
		No.2 Region2 Region People Counting(0s) D 🍞 🖄 🛱
🛤 English 🔸		+ Add
🛔 admin >		Reset Cumulative Count on Schedule ①

Step 2: Left-click to start drawing and drag the mouse to draw a line, left-click again to continue drawing a different direction edge, and right-click the mouse to complete the drawing. The line can be dragged to adjust the location and length. One device supports at most 4 broken lines with maximum 4 segments each.

Step 3: If users want to redraw this line, click **Clear This Line** or drag the vertices of the broken line to adjust. The arrow direction of the detection line depends on your drawing direction. If

Milesight			×
di Dashboard		Counting Strategy	
E Rule		Tracking Mode ① Heads Trac	king Feet Tracking
Communication	and the second s	Children&Adult Differentiation	
e Report	Linet	Gender Recognition	
🖾 Image	and the second se	Line Cross Counting	
System	Line2	U-turn Filtering	
		Line No. Line Name	Operation
		No.1 Line1	
		Please finish drawing on the left	canvas.
		+ Add	
🔊 English >		Region Monitoring	
🛓 admin 🔸		Reset Cumulative Count on Schedule ①	

users need to flip the line, click **Flip Direction**. Then click to finish drawing.

Step 4: Users can click \square to customize the name of line. If users need to delete a certain line,

click 🗍.

Note:

 Ensure that the detected target can pass through the detection line completely. It's recommended that the detection line is perpendicular to the In/Out direction and on the center of the detection area without other objects around. Redundant identification spaces are needed on both sides of the detection line for the target detection. It ensures the stable recognition and tracking of the target before passing the detection line, which will make the detection and count more accurate.

Draw U-turn Area

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VS125 supports the U-turn filtering function, filtering out the people who are actually not in / out of the entrance, to avoid repeated counting. Users can draw an area for every line and the device will count the In and Out values only when people pass this area.







Step 1: Enable U-turn Filtering. Users can click ^(*) to edit U-turn areas for existed detection line on the live view.



Step 2: Left-click to start drawing and drag the mouse to draw an edge. Then left-click again to continue drawing a different direction edge. Right-click the mouse to complete the drawing. The area can be dragged to adjust the location and length. One device supports up to 4 areas with maximum 10 segments each.



Step3: If users want to redraw the area, click Clear This Area or drag the vertices of the area to adjust. Then click to finish drawing.

 $[\mathbf{f}]$

Step 4: If use	rs need to delete a certain U-turn area, click	🍐 , then	click Clear This	Area.
Communication C		Children&Adult Differ Gender Recognition Line Cross Counting U-turn Filtering Line No. No.1	entiation Line Name Line1	Operation
System	Lino2 Lino2 Clear This Area	No.2 Region Monitoring Region No. Regio	Une2 + Add on Name Advanced Properties + Add	Operation
l⊠ English > ▲ admin →		Reset Cumulative Cou	Leveryday 0 00:00	:00 ×

Draw Monitoring Region

VS125 supports monitoring the number and the dwell time of people in the region, providing more valuable analysis data.

Step 1: Enable Region Monitoring. Click +Add to add the region monitoring on the live view. Up to 4 regions are supported with maximum 10 segments each.



Step 2: Customize the zone name and enable Region People Counting or Dwell Time Detection as needed.

11

Advanced Propertie	25
Zone Name	Region1
Region People Counting	
Pass-by Filtering s(0~3600)	5
Dwell Time Detection	
Min. Dwell Time	5
	× v

Step 3: The configuration is displayed in the list after the configuration is complete. You can redraw the areas by clicking the redraw button in the list. Click the edit button to modify the advanced settings of the areas or click delete button to delete the areas separately.

No.	Region Name	Advanced Properties	Operation
No1	Pagion1	Pagion Pooplo Counting(5c)	

Rule Configuration

Users can set the rules to ensure accurate counting.



Parameters	Description				
	Set the device installation height. Click Detect to detect the current				
Installation Height	installation height automatically.				
	Note: When the ground lacks patterns or textures or during low-light				

	conditions at night, the automatic height detection may be inaccurate.
Max. Target Height	Set the maximum target height, then the device will ignore the objects higher than this setting value.
Min. Target Height	Set the minimum target height, then the device will ignore the object shorter than this setting value.
Tracking Mode	Select the tracking mode of counting, including Heads Tracking and Feet Tracking.
Children & Adult Differentiation	The device will detect the people shorter than child filter height as children.
Gender Recognition	The device will detect the people who are male or female.
Staff Detection	 The device will detect staff members who wear a dedicated Milesight Staff Lanyard around their necks. Staff Lanyard has two color options: black and red. If staff's clothes are more dark, it is recommended to use red staff lanyards, to improve detection accuracy. Note: For optimal detection, it is suggested to use the Staff Lanyards provided by Milesight. Please ensure that the lanyard is not obstructed by collars, scarves, hair, or other objects when worn, and try to keep it fully visible. Wearing clothing with patterns similar to the staff lanyard (such as striped clothing) may result in false detections.
Heat Map	Enable or disable Heat Map. Heat Map function can analyze person movement to reveal insights for better business management with the intuitive and accurate statistical analysis results in time or space pattern as needed. Support Motion Heat Map and Dwell Heat Map. The motion heat map shows where the most people flow. And the dwell heat map shows the areas where people stay for the longest time. You can see the effect through choose Time Range in Heat Map of Report .
U-turn Filtering	Enable or disable U-turn Filtering.

Click to enable the group counting function that based on the distance, moving direction and speed difference to gain deeper insights into customer' behaviors.

You can see the effect in Dashboard and generate report through choose Time Range in **Report**.

Group Counting	Even Linei L	
	206 280 Male In Male Out	0 Male Capacity
	89 138	0
	78 81	o
	Staff In Staff Out	Staff Capacity 73
	Children In Children Out	Children Capacity
	113 117 Group In Group Out	0 Group Capacity
	Event Line Cross Counting Region	n People Counting Dwell Time Detection Heat Map Time Range © 25/09/2024 16:00:00 - 26/09/2024 16:00:00 Line1 0 Individuals Croups QSearch
Region Monitoring	Enable or disable	Region Monitoring.
	Enable to periodic	cally reset cumulative count on schedule.
Reset Cumulative	Cumulative Count	t includes:
Count on Schedule	Total In/Out coun	iting of each detection line.
	Max./Avg. Dwell	Time of each detection region.

5.2.2 Multi-Device Stitching

Multi-device stitching is mainly used to monitor a larger detection area than just the area covered by a single device. When using this feature, devices should be installed next to each other and ensure the **detection areas** are tangent or overlapping. VS125 supports stitching up to 16 devices, with both the cellular and PoE versions being compatible for seamless integration, regardless of the version.



Before using this feature, set one device as Master Mode and other devices as Node Mode.

Milesight		Working Mode	
E Rule		Working Mode	Standalone Master Node
	COST IN COST	Deployment Parameters	
Report Image		Installation Height ① mm(2000-6000)	3010 Detect
System	±	Max. Target Height mm(500–3000)	2500
		Min. Target Height mm(500-3000)	800
		Counting Strategy	×
	Refresh Image	Tracking Mode ①	Heads Tracking Feet Tracking
		Children&Adult Differentiation	
		Gender Recognition	
🗈 English >		Staff Detection ①	
📥 admin >		Heat Map	

- **Master Mode**: Receive target tracks and view from the device, responsible for all counts, rule setting, data push and other functions.
- Node Mode: Only extends the view of the master device.

Note:

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1) Ensure the head of one person can be seen on both live views at the same time.



2) The devices can also be installed without overlapping.



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Node Device Setting

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Step 1: Access the web GUI of the node device, ensure the IP address is on the same network as the master device, so that the master device can detect the node device.

M ilesight	TCP/IP		WLAN		
Dashboard	IP Assignment	Manual Automatic (DHCP)	Enable WLAN		
Rule	IP Address	192.168.44.127 Test	WLAN Settings		
Report	Subnet Mask	255.255.255.0	WI-FI SSID	People Counter_FA7918	
Image	Default Gateway	192.168.44.1	WLAN IP Address	192.168.1.1	
System	Primary DNS Server	8.8.8.8	Protocol	802.11n (2.4G)	\$
	Secondary DNS Server	114.114.114.114	Bandwidth	20MHZ	\$
		×	Channel	Auto	\$
	HTTP/HTTPs	~	Security Mode	No Encryption	\$
	нттр				×
	HTTP Port (1-65535)	80			1
	нттр				
	HTTPS Port (1~65535)	443			
	Certificate Installation Method	Create Self-Signed Certificate			
English >	Certificate	Update Show Properties			
admin >		×			

Step 2: Select work mode as Node and wait for the device to reboot.

Milesight		Working Mode	
ili Dashboard		Working Made	Standalone Marter Node
E Rule		Working Hode	Standarone Plaster Noue
Communication Report		Deployment Parameters	
Validation	Line1	Installation Height mm(2000-6500)	4000 Detect
System		Max. Target Height mm(500–3000)	2000
		Min. Target Height mm(500–3000)	1000
		Counting Strategy	× ~
	Refresh Image	Tracking Mode ①	Heads Tracking Feet Tracking
		Enhanced Detection Mode D	
		Children Distinction	
🗈 English 🔸		Staff Detection ①	
🚢 admin 🔸		Shopping Cart Fill Level Detection	

Below is an explanation of the page and parameters for the node devices after successful stitching:

Construction	l Working Mode Working Mode	Standatone Master Note
	Connection Stat	us Connected
	Master Device I	P Address 192.168.60.165
	Master Device S	N -
	Unbind Master	Jame volt2>1
■ English →		
≜ admin >		
≛ admin → Paramete	ers	Description
admin Arramete Connection S	ers Status	Description Show the connection status between the node device and master device.
admin Paramete Connection S Master Devi Address	ers Status ice IP s	Description Show the connection status between the node device and master device. Show master device's IP address. When this IP address is under the same network with the node device, the node device can be bind to the master device.
admin Paramete Connection S Master Devi Address Master Devic	ers Status ice IP s ce SN	Description Show the connection status between the node device and master device. Show master device's IP address. When this IP address is under the same network with the node device, the node device can be bind to the master device. Show the master device's serial number.
 ▲ admin → Parameter Connection S Master Devia Address Master Devia Master Devia Master Devia Master Devia Master Devia Master Devia 	ers Status ice IP s ce SN vice	Description Show the connection status between the node device and master device. Show master device's IP address. When this IP address is under the same network with the node device, the node device can be bind to the master device. Show the master device's serial number. Show master device name.
▲ admin → Parameter Connection S Master Devia Address Master Devia	ers Status ice IP s ce SN vice ster	Description Show the connection status between the node device and master device. Show master device's IP address. When this IP address is under the same network with the node device, the node device can be bind to the master device. Show the master device's serial number. Show master device name. Click Unbind to release the connection status, this device will be deleted

Master Device Setting

Step 1: Go to the master device web GUI, then click Bind Node in the Multi-Device List.

Manual: You can add a node device by the IP address, HTTP Port, Username or Password. Note: Please ensure that the device you want to add is on the same local network as the master device and has low latency.

Auto: The device will use multicast protocol to search for the unbound node devices under the same local network.

M ilesight	Master Settings	
Dashboard	Twoking Mode	
# Rule		
Communication		Standatone Moster Node
🖨 Report	Select a Node Device	
🔁 Image	Binding Method Manual Auto Ight @	3430 Detect
System	Node Devices List	2300
	IP Address SN Device Name ight	
	192.168.44.127 6834E23140560003 People Counter	
		×
	elected Node Device	
	I Multi-Device List	Heads Tracking Feet Tracking
	Device IP Address SN Universe name Operation	
	Master 192.168.44.103 6834E23 1500001 People Counter Gender Recognition	
	Node1 Staff Detection ©	
🖪 English >	Node2 #Blind Node2 Heat Map	
🛔 admin >	Node3 @Blind Node3	_

Step 2: Select the node device and type the login password of the node device.

I Confirm Authorization

Selected Node Device	192.168.44.127
Node Device Username	admin
Node Device Password	
	×××

Step 3: Fill in the **Installation Height** of the node device and relative position information if these parameters are already measured. If not, save the default settings.



Click the IP address on the right to access the preview of the stitched device.





Click on the parts that need to be overlapped on both frames to form a quadrilateral. If modifications are needed, please delete the corresponding points Point 3 . Click to complete the configuration.



overlapping areas. This makes devices stitching easier and aesthetically pleasing.

Below is the effect after stitching the two devices:



Step 4: For multiple devices, please follow step3 to stitch them sequentially. A small map in the upper left corner of the preview image shows the positions of the stitched devices.

Milesight	• * **		Master Settings I Working Mode	
E Rule		1 5	Working Mode	Standalone Master Node
🖨 Report			Deployment Parameters	
🖾 Image	To Alan A		Installation Height ① mm(2000-6000)	3357 Detect
System			Max. Target Height mm(500-3000)	2300
			Min. Target Height mm(500-3000)	1000
			Child Filter Height mm(500-3000)	1200
	I Multi-Device List	Refresh image	l Counting Strategy Tracking Mode ①	Heads Tracking Feet Tracking
	Device IP Address SN	Device Name Operation	Children&Adult Differentiation	
	Node12 192.168.44.124 6834E23938110004	People Counter 🖸 🔗	Gender Recognition	
🖬 English >	Node13 192.168.44.123 6834E23949360003	People Counter 🛛 🗞	Staff Detection ①	
🚢 admin >	Node14 192.168.44.125 6834E23957280005	People Counter 🗈 🗞	Heat Map	

Step 5: When all settings are completed, users can draw detection lines and even U-turn areas on the new stitching live view the same as standalone mode devices. The dashboard will automatically add two frames for viewing the stitching devices and the master device.

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Step 6: Click Unbind to disconnect the node device if necessary.

M ilesight				Master Settings	
di Dashboard		10 mar		Working Mode	
E Rule				Working Mode	Standalone Master Node
🖨 Report		8 8		Deployment Parameters	
🖾 Image				Installation Height ① mm(2000-6000)	3272 Detect
System				Max. Target Height mm(500-3000)	2300
		V 1		Min. Target Height mm(500-3000)	1000
				Child Filter Height	1700
					×
				Counting Strategy	~
			Refresh Image	Tracking Mode ①	Heads Tracking Feet Tracking
	Multi-Device List				
	Device IP Address	5N Device Name	Operation	Children&Adult Differentiation	
	Master 192.168.44.103	6834E23371500001 People Counter	Unbind	Gender Recognition	
🛤 English >	Node1 192.168.44.127	6834E23140560003 People Counter	60	Staff Detection ①	
🛓 admin >	Node2	d⁰Bind Node2		Heat Map	

5.3 Communication

5.3.1 Network Configuration

Cellular (Cellular Version Only)

A					
Milesight	I Cellular		I WLAN		
al Dashboard	Cellular Status	Disconnected Detail	Enable WLAN		
📰 Rule	Collular Sottings		WI AN Settings		
Communication	i centrui senniga		The stange		
Report	APN		WI-FI SSID	People Counter_343537	
🖾 Image	Username		WLAN IP Address	192.168.1.1	
System	Password		Protocol	802.11n (2.4G)	٢
	PIN Code		Bandwidth	20MHZ	\$
	Authentication Type	None	Channel	Auto	0
	Restart When Dial-up failed		Security Mode	No Encryption	\$
	ICMP Server	8.8.8.8			×
	ICMP Detection Max Retries	3			~
	ICMP Detection Timeout s(1-604800)	5			
	ICMP Detection Interval s(1-604800)	15			
🖬 English >		×			
🛓 admin >		<u> </u>			•

Parameters		Description
Cellular	Cellular Status	Display the connection status of the network, including "connect" and "disconnect". You can also click "Detail" button to view the cellular status.
	APN	Enter the Access Point Name for cellular dial-up connection provided by local ISP. The max length is 31 characters.
	Username	Enter the username for cellular dial-up connection provided by local ISP. The max length is 31 characters.
	Password	Enter the password for cellular dial-up connection provided by local ISP. The max length is 31 characters.
	PIN Code	Enter a 4-8 characters PIN code to unlock the SIM.
	Authentication	Select the Authentication Type. None, PAP, CHAP, PAP and
Cellular	Туре	CHAP are optional.
Settings	Roaming	Click to enable the Roaming.
Settings	Restart When Dial-up Failed	Enable automatic device restart when multiple dial-up failed.
	ICMP Server	Configure the IP address of the ICMP detection server.
	ICMP Detection	Set the maximum number of retries when ICMP detection
	Max Retries	failed.
	ICMP Detection Timeout	Configure ICMP detection timeout.
	ICMP Detection Interval	Configure ICMP detection interval.

Cellular Status

Parameters		Description
	Refresh	Click this button to manually refresh the above status.
Cellular Status	Modem Status	Show the corresponding detection status of the module and SIM card.
		No SIM Card

		SIM Card Error	
		PN Error	
		PIN Required	
		PUK Required	
		No Signal	
		Ready	
		Down SIM	
	Model	Show the model name of the cellular module	
	Version	Show the version of the cellular module.	
	Signal Level	Show the current signal strength of the network.	
	Register Status	Show the connection status of the network, including "connect" and "disconnect".	
	IMEI	Show the IMEI of the module.	
	IMSI	Show IMSI of the SIM card.	
	ICCID	Show ICCID of the SIM card.	
	ISP	Show the network provider which the SIM card registers on. Note: It will display "-" when the SIM card is not inserted or not recognized.	
	Network Type	Show the connected network type, such as LTE and 3G. Note: It will display "-" when the device is not connected to network.	
	PLMN ID	Show the current PLMNID, including MCC, MNC, LAC, and Cell ID.	
		Show the location code of the SIM card.	
	LAC	Note: It will display "-" when the SIM card is not inserted or not recognized.	
		Show the Cell ID of the SIM card location.	
	Cell ID	Note: It will display "-" when the SIM card is not inserted or not recognized.	
	Network Status		
	IP Address	Show the Network Status ID Address Network Catework and	
	Netmask	DNS Address of the current network. If the SIM card is not	
	Gatewav	inserted or not recognized, it will display 0.0.0.0.	
	DNS		
	Connection	Show the cellular dial-up connection duration.	
	Duration		

TCP/IP

VS125 use Ethernet for data transmission and multi-device stitching.

For cellular version, data reporting is depended on the current network. When cellular network and Ethernet are all available, data reporting prioritizes the cellular network.

M ilesight	TCP/IP		I WI AN		
ai Dashboard	IP Assignment	Manual Automatic (DHCP)	Enable WLAN		
E Communication	IP Address	192.168.44.103 Test	- I WLAN Settings		
Report	Subnet Mask	255.255.255.0	WI-FI SSID	People Counter_FA7984	
🖪 Image	Default Gateway	192.168.44.1	WLAN IP Address	192.168.1.1	
System	Primary DNS Server	8.8.8.8	Protocol	802.11n (2.4G)	\$
	Secondary DNS Server	114.114.114.114	Bandwidth	20MHZ	\$
		x	Channel	Auto	0
	HTTP/HTTPs		Security Mode	No Encryption	\$
	НТТР				×
	HTTP Port (1-65535)	80			~
	HTTPS				
	HTTPS Port	443			
	Certificate Installation Method	Create Self-Signed Certificate			
📾 English >	Certificate	Update Show Properties			
🛓 admin 🔹		×			0

Parameters	Description
IP Assignment	Manual or Automatic (DHCP) is optional.
IP Address	Set the IPv4 address of the Ethernet port, the default IP is 192.168.5.220 .
Test	Click to test if the IP is conflicting.
Subnet Mask	Set the Netmask for the Ethernet port.
Default Gateway	Set the gateway for the Ethernet port's IPv4 address.
Primary DNS Server	Set the primary IPv4 DNS server.
Secondary DNS Server	Set the secondary IPv4 DNS server.

HTTP/HTTPs (PoE Version Only)

Milesight	Default Gateway	192.168.44.1	IWLAN		
Dashboard	Primary DNS Server	8.8.8.8	Enable WLAN		
📰 Rule	Secondary DNS Server	114.114.114.114			
Communication			X WLAN Settings		
😋 Report			Wi-Fi SSID	People Counter_FA7984	
🖬 Image	нттр		WLAN IP Address	192.168.1.1	
System	HTTP Port (1-65535)	80	Protocol	802.11n (2.4G)	\$
	нттря		Bandwidth	20MHZ	٥
	HTTPS Port	443	Channel	Auto	٢
	Certificate Installation Method	Create Self-Signed Certificate	Security Mode	No Encryption	\$
	Certificate	Update	/ Properties		×
	199332		×		_
	1802.1x				
	Authentication Type	MD5-Challenge			
	Enable				
🛤 English >			×		
🛓 admin 🔹 🔉					$\mathbf{>}$
Parar	neters		Descriptio	on	

HTTP	Start or stop using HTTP.
HTTP Port	Web GUI login port, the default is 80.
HTTPS	Start or stop using HTTPS.
HTTPS Port	Web GUI login port via HTTPS, the default is 443.
Certificate Installation	Create Self-signed Certificate: upload the custom CA certificate,
Method	client certificate and secret key for verification.
Certificate	Create the SSL certificate.

802.1x Protocol (PoE Version Only)

The IEEE 802.1x is an authentication protocol to allow access to networks with the use of RADIUS server.

Authentication Type	MD5-Challenge	Ŷ
Enable		
EAPOL Protocol Version	802.1x-2001	Ŷ
Username		
Password		
Confirm Password		

Parameters	Description
Authentication Type	It's fixed as MD5-Challenge.
Enable	Enable or disable 802.1x authentication.
EAPOL Protocol Version	802.1x-2001 or 802.1x-2004 is optional.
Username	Set the username for 802.1x authentication.
Password	Set the password for 802.1x authentication.
Confirm Password	Enter the password again.

WLAN

WLAN		
Enable WLAN		
WLAN Settings		
Wi-Fi SSID	People Counter_DC056F	
WLAN IP Address	192.168.1.1	
Protocol	802.11n (2.4G)	÷
Bandwidth	40MHZ	÷
Channel	Auto	÷
Security Mode	No Encryption	\$

Parameters	Description
Enable WLAN	Enable or disable Wi-Fi feature. If disabled, users can use button to enable it.
Wi-Fi SSID	The unique name for this device Wi-Fi access point, defined as People Counter_xxxxxx (can be found on the device label).
WLAN IP Address	Configure WLAN IP address for web access, the default IP address is 192.168.1.1.
Protocol	802.11g (2.4 GHz) and 802.11n (2.4 GHz) are optional.
Bandwidth	20 MHz or 40 MHz are optional.
Channel	Select the wireless channel. Auto, 1,11 are optional.
Security Mode	No Encryption, WPA-PSK, WPA2-PSK and WPA-PSK/WPA2-PSK are optional.
Cipher	AES, TKIP, AES/TKIP are optional.
Wi-Fi Password	Customize the password when security mode is not No Encryption.

5.3.2 Recipient & API

Recipient

Milesight

VS125 supports to add data receivers (supports HTTP(s)/MQTT(s)). The device will proactively push data to the receivers according to the configured reporting scheme. Besides, users can get the people counting data or configure the device via CGI. For CGI document, please contact Milesight IoT support: iot.support@milesight.com.

Recipient Name	URL/Host	Protocol	Status	Operation
Recipient	https://data	HTTP(S)	Connected	6 5

Parameters	Description
Recipient Name	Show the recipient name.
URL/Host	Show the URL/host of HTTP(s) server or MQTT broker.
Protocol	Show the report protocol.
Status	Show connection status from device to HTTP(s) server or MQTT broker.
Operation	Click to edit the information or delete the recipient.

Note: Up to 8 receivers can be added.

M ilesight	1 Recipient			_		
🔟 Dashboard	Recipient Name URL/Host	Recipient Settings				
📰 Rule	+	Recipient Name	Recipient			
Communication		Report Protocol	MQTT			
Report		Host				
🖪 Image						
System		Port (1-65535)				
		ClientID				
		Username				
		Password			QoS 0	
		Торіс				
		QoS	QoS 0 0			×
		TLS				_
🖽 English >			×			
🛓 admin >						•

Milesight □ Dashboard □ Rule □ Communication ○ Report □ image ○ System	Name URL/Hoar I Report Strategy Trigger Report ① Periodic Report Scheme Cuthe Doar Periodic Report Scheme Cuthe Doar Periodic Report Scheme Cuthe Doar Periodic Report Content Cutomize Report Content Cutomize Report Content Doarde Retroan Diare Trigger Data Diare Trigger Data
Parameters	Description
Recipient Name	Customize the recipient name.
Report Protocol	HTTP(s) or MQTT is optional.
HTTP(s)	
URL	The device will post the people counting data in json format to this URL.
Connection Test	Click Test to send test message to URL to check connectivity.
Username	The username used for authentication.
Password	The password used for authentication.
MQTT	
Host	MQTT broker address to receive data.
Port	MQTT broker port to receive data.
Client ID	Client ID is the unique identity of the client to the server. It must be unique when all clients are connected to the same server, and it is the key to handle messages at QoS 1 and 2.
Username	The username used for connecting to the MQTT broker.
Password	The password used for connecting to the MQTT broker.
Topic	Topic name used for publishing.
QoS	QoS0, QoS1, and QoS2 are optional.
TLS	Enable the TLS encryption in MQTT communication.
Certificate Type	CA Signed Server or Self Signed is optional. CA signed server certificate: verifying with the certificate issued by Certificate Authority (CA) that is pre-loaded on the device. Self signed certificates: upload the custom CA certificates, client certificates and secret key for verification.
Report Strategy	
Trigger Report	Report immediately when there is a change of the line crossing people counting number or region people counting number.
	Select the periodic report of Unitine DOT OF From Now Un.
Periodic Report	Un the vot: The device will report at the top of each hour. For example,

Scheme	When the interval i	s set to 1 ho	ur, it will report at	: 0:00, 1:00, 2:00 and so on;
Period	 when the interval is set to 10 minutes, it will report at 0:10, 0:20, 0:30, so on. From Now On: Begin reporting from this moment onwards and regul 			
	report based on th	e interval cvo	; cle.	
Data Retransmission	Enable to resend stored data packets from the disconnected period when the device's network connection is restored. Every recipient supports to receive 50,000 pieces of data at most.			
Customize Report Content	Customizable sele redundancy. Customize Report Conten © Device Info © Device Name © IP Address © Running Time © Tinger Time © Tinger Time © Time Zone © Network © Network Status © Cell ID © Line Trigger Data © Cell ID © Line Trigger Data © Cell ID © Line Priodic Data © Line Count Data © Line Count Data © Line/Region VUID	t Device SN Custom Device ID Custom Device ID Firmware Version Start Time DST Enable CICID LAC Dwell Time Data Capacity Counted	ent to be reported	d, avoiding data

MQTT API (Cellular Version Only)

VS125 provides MQTT API to support to receive downlink commands from MQTT broker to get people counting data and achieve the configuration. For API document, please contact Milesight IoT support: iot.support@milesight.com.

Status	Disconnecte
Host	112.48.19.183
Port (1~65535)	10566
Торіс	12345
Client ID	
Username	admin
Password	•••••
QoS	QoS 1 \$
TLS	

Parameters	Description
Status	Show connection status between device and MQTT broker.
Host	MQTT address to receive data.
Port	MQTT port to receive data.
Topic	Topic name used for publishing.
	Client ID is the unique identity of the client to the server.
Client ID	It must be unique when all clients are connected to the same server, and it
	is the key to handle messages at QoS 1 and 2.
Username	The username used for connecting to the MQTT.
Password	The password used for connecting to the MQTT.
QoS	QoS0, QoS1, QoS2 are optional.
TLS	Enable the TLS encryption in MQTT communication.
	CA Signed Server or Self Signed is optional.
	CA signed server certificate: verifying with the certificate issued by
Certificate Type	Certificate Authority (CA) that is pre-loaded on the device.
	Self signed certificates: upload the custom CA certificates, client
	certificates and secret key for verification.

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5.4 Report

Milesight

VS125 supports visual line chart or bar chart generation to display people traffic and supports report exporting. Before using this feature, do ensure that the device time is correct on **System** page.



Staff Included Staff Excluded	Select whether to include staff counting values on the graph.
🔺 💼	Select the display type as line or bar.
١	Click to download the chart screenshot.
下	Export the historical traffic data as CSV file according to the selected time unit. The device can store up to one million data records to CSV file.

5.5 Image

Milesight

VS125 has great lighting adaptability that allows it to work well in low light or even complete dark environments. It supports day and night mode switching based on the no-photosensitive scheme.



Parameters	Description
	Set image mode. Auto, Day, Night and Schedule are optional.
Day/Night Mode	Night: infrared based black and white mode:
Switch	Auto: automatic switch day and night according to image brightness;
	Schedule: switch day and night according to the configured schedule.
Sensitivity	Set the sensitivity of the automatic day and night switching. The higher
Genotivity	sensitivity, the easier to switch day and night.
Night Mode	Set the schedule of the night mode.
Duration	
Target	Set the brightness of the target to make image clearer. The higher
Brightness	brightness is, the brighter the target brightness is.
Power Line	Choose the frequency to avoid the image flashing
Frequency	choose the nequency to avoid the intege flashing.
Wide Dynamic	Enable or disable WDR. Enabling WDR can capture more detail in scenes

Range where light conditions vary greatly.

5.6 System

Milesight

5.6.1 Device Info

All information about the hardware and software can be checked on this page. Besides, users can modify the device name, customize device ID and site ID for large amounts of devices management.

Milesight	Device Info			L Coursest Courses Times		
Dashboard	i bence mo.			Current System Time		
E Pulo	Device Name	People Counter		Date 03/07/2024		
	Product Model	V5125-LOBEU		Time 09:48:20		
	SN	6834E27852640016				
e keport	Hardware Version	110		Set the System Time		
	Haldware version	410		Time Zone UTC-0):00 Western European Time (WET), Gro	eenwich Mean 🗘
System	Software Version	V_125.1.0.1-hard-test5		Daylight Saving Time		
	MAC Address	1C:C3:16:34:35:36				
	WLAN MAC Address	1C:C3:16:34:35:37				
	Customized Device ID			Synchronize Time		_
	Customized Device iD			Synchronize Mode	NTP Timin	g Manual Timing
	Customized Site ID			Server Address	pool.ntp.org	×
	Running Time	14 minutes 31 seconds		Time Interval	(and a set	
			×	min(1-10080)	1440	×
	Users		× .			
📾 English 🔉						
	Username	User Level	Operation			
🛓 admin 🔹 🔸	admin	Administrator	6 0			• • • • • • • • • • • • • • • • • • •

5.6.2 User

Milesight	Device Name	People Counter		I Guarant Cartana Tana		
d) Dashboard	Product Model	VS125-LOBEU		Current System Time		
🚦 Rule	SN	6834E27852640016		Date 03/07/20	224	
Communication	Hardware Version	V1.0		Time 09:52:00		
🔮 Report	Software Version	V_125.1.0.1-hard-test5		Set the System Time		
🖻 Image	MAC Address	1C:C3:16:34:35:36		Time Zone	UTC-0:00 Western European Time (WET), Greenwich Mean 🗘	
System	WLAN MAC Address	1C:C3:16:34:35:37		Daylight Saving Time		
	Customized Device ID				×	
	Customized Site ID			Synchronize Time	×	
	Running Time	18 minutes 14 seconds		Synchronize Mode	NTP Timing Manual Timing	
			×	Server Address	pool.ntp.org ×	
	Users		~	Time Interval min(1-10080)	1440 ×	
	Username	User Level	Operation			
Englich	admin	Administrator	6 0			
		+ Add User				
🛓 admin >						2
Parameters	;		De	escription		
G	You can o	change the log	in password	d of this devic	e.	

0

Username	admin	
User Level	Administrator	¢
Administrator Password		
New Password		
Confirm		
At least: • 8 characters • 2 types of characters: N	umber, letter and symbol	

Click to set three security questions for your device. In case that you forget the password, you can click **Forget Password** button on login page to reset the password by answering three security questions correctly.

Password	
Security Question1	What is your lucky number?
Answer1	
Security Question2	What is your favorite sport?
Answer2	
Security Question3	What is your favorite game?
Answer3	

Click to add a viewer, who will only have access to the "Dashboard" and "Report" interfaces.

	Add User			
	Username	viewer		
11 (2020)	User Level	Viewer	\$	
+ Add User	Password			
	Confirm			
	At least: • 8 characters • 2 types of character	s: Number, letter and symb	ol	
			×	

5.6.3 Time Configuration

Milesight

Milesight Dashboard Rule Communication Report Image System	I Device Info. Device Name Product Model SN Hardware Version Software Version MAC Address WLAN MAC Address Customized Device Customized Site ID	People Counter V\$125-L08EU 6834E27852640016 V1.0 V.125.1.0.1-hard-test5 10:C3:16:34:35:37	I Current System Time Date 03/07/2024 Time 10:02:43 I Set the System Time Time Zone UTC-0:00 Western European Time (WET), Greenwich Mean Daylight Saving Time I Synchronize Time Synchronize Time Synchronize Time Server Address pool.ntp.org	
∎ English > ≛ admin >	Running Time Users Username admin	18 minutes 14 seconds	Time Interval ma(1-1000)	
Paramet	ters		Description	
Time Zo	one	Choose the time zone for your location.		
		Enable or disable Daylight	Saving Time (DST).	
Davlight Savi	na Time	Start Time: the start time of DST time range.		
Daylight Saving Time		End Time: the end time of DST time range.		
		DST Bias: the DST time will be faster according to this bias setting.		
Synchronize	e Mode	NTP Timing or Manual Timing is optional.		
Server Add	dress	NTP server address to sync the time.		
Time Inte	erval	Set the interval to sync time with NTP server.		
Setting T	ïme	Set the device time manually.		
Synchroniz	Synchronize with Synchronize the time with your computer.		your computer.	

5.6.4 Remote Management

computer time

Milesight provides remote management service for this device via Milesight DeviceHub platform or Milesight Development Platform. Before connecting, do ensure the device is connected to the network and Internet connection is stable.

Milesight □ bashboard □ communication □ communication □ validation □ validation □ validation □ system	I Remote Mana Remote Mana Platform Status I Platform Setti Remote Mana Auto Provisio Data Transfer Periodic Repo Periodi Repo Periodi Repo Periodi Repo I Security Servic	agement agement I Time of Flight Advanced Settings Frequency Adjustment② Modulation Mode A ○ Frequency Adjustment③ Mode A ○ Frequency Adjustment③ Modulation Mode A ○ Frequency Adjustment③ Modulation Mode A ○ Frequency Adjustment③ Modulation Mode A ○ Frequency Adjustment③ Frequency Adjustment③ Mode A ○ Frequency Adjustment④ Frequency Adjustment④ A F	
Paramete	rs	Description	
Remote Management			
Remot Managen	Remote Management Enable or disable to manage the device through Milesight platforms.		
Platfor	rm DeviceHub or IoT Development Platform is optional.		
Status	S	Show the connection status between the device and the DeviceHub.	
IoT Develop	ment Pla	atform	
Remot Managen Servic	e nent e	Enable to change the device settings via Milesight Development platform.	
Auto Provis	ioning	Enable to receive and deploy the configurations from Milesight Development Platform after the device is connected to Internet	
Data Trar Servic	nsfer e	Report people counting data to Milesight Development platform.	
DeviceHub 2	2.0 (PoE	Version Only)	
Server Add	Server Address IP address or domain of the DeviceHub 2.0 management server.		
Synchror Device Na	nize ame	Enable or disable to synchronize device name on devicehub 2.0.	
Synchror Customize	nize ed ID	Customize the device ID and site ID.	
Security Ser	vice		
SSH	SSH Enable or disable SSH access. The SSH port is fixed as 22.		

5.6.5 System Maintenance

M ilesight	Remote Management	I Reset
ii) Dashboard	Remote Management	Recovery device basic configuration Basic Recovery
	Platform 0	Recovery device to factory settings All Recovery
Report	Status Disconnected	I Reboot
Image	Platform Settings	Report the Davice
System	Remote Management Service	
	Auto Provisioning (1)	I Upgrade
	Data Transfer Service	Software Version V_125.1.0.1-hard-test5
	I Security Service	Upgrade Image Dupgrade
	SSH	Explanation: The upgrade process takes 1-10 minutes, do not turn off the power. The automatic reboot will happen once the upgrade complete.
		Backup and Restore
		Export Config File Export
English >		Import Config File
🛓 admin >		
Parameters	Description	
	Recovery device basic configuration	i: keep the IP settings and user information

Reset	Recovery device to factory settings: reset device to factory default, which needs to verify admin password.
Reboot	Restart the device immediately.
Upgrade	Click the folder icon and select the upgrading file, then click the Upgrade button to upgrade. The update will be done when the system reboots successfully. Note: The upgrade process takes about 1-10 minutes. Do not turn off the power and complete automatic restart after the upgrade.
Backup and	Export Config File: Export configuration file.
Restore	Import Config File: Click the file icon and select the configuration file, click
Rectore	Import button to import configuration file.

6. Installation Instruction

Parameter definition:

Parameters	Explanation	Value
Н	Installation height	2.2 ~ 6 m
h	Target height	Example 1.7 m
α	Horizontal field of view angle	
β	Vertical field of view angle	
х	Length of detection range	
У	Width of detection range	

α and β are related to installation height:

Installation Height / m	α	β
0~3	106°	69°
3.001 ~ 4	97°	62°
4.001 ~ 5	94°	60°

5.001 ~ 6	73°	45°

6.1 Covered Detection Area

The detection area covered by the device is related to the field of view angle of the device, the installation height and the target height.

The length of the detection area is approximately $x=2 \times \tan(\alpha/2) \times (H-h-0.05)$ and the width of the detection area is approximately $y=2 \times \tan(\beta/2) \times (H-h-0.05)$.



For example, if the pedestrians' height is 1.75 m, the detection area corresponding to each installation height is as follows:

Installation Height (m)	Detection Area (m)
2.2	2.5 × 1.3
2.5	3.2 × 1.6
3.0	4.0 × 2.1
3.5	4.6 × 2.5
4.0	5.3 × 2.8
4.5	6.3 × 3.8
5.0	7.5 × 4.0
5.5	6.2 × 3.5
6.0	7.0 × 4.0

6.2 Installation

Ceiling Mount

Installation condition: ceiling thickness > 30mm.

Step 1: Remove the cover. (If the wires need to be protruded from the side of the device, remove the blocking rubber.)

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Step 2: Drill 4 holes with a diameter of 4mm according to the hole position of the device screw. (If you need to hide the power cord into the ceiling, drill another wire hole.) Attach the expansion bolts to the hole position in the ceiling.



Step 3: Connect all required wires, and pass them through the wire holes behind the device.(If the alarm I/O is going to be used, please connect the Multi-interface to the device.)



Step 4: Fix the device to the wall plugs via mounting screws.



Step 5: Fix the cover back to device.



Ceiling/Lintel Mount (with Optional VB01 Multifunctional Bracket)

Step 1: Fix the pole to the device with the hole on the device.

Step 2: Adjust the length of the pole, then adjust the direction of 3-axis ball and tighten it with the handle. **Step 3:** Determine the mounting location and drill 3 holes, fix the wall plugs into the mounting holes, then fix the bracket base to the wall plugs via mounting screws.

(Note: If the wire needs to be extended to the interior of the ceiling or wall, a wire hole with a suitable size is also required to be drilled.)



Step 4: Remove the cover on the device, and then connect all required wires and pass them through the inside of pole.

Step 5: Fix the pole to bracket base with screws and nuts.

Ceiling Mount



Lintel Mount



Installation Note:

Milesight

- It is recommended to inform people at the deployment site in advance that their images will be collected (through signage, user agreements, etc.) and obtain their consent before installation. Additionally, inform them that they have the option to opt out if they do not consent to the collection of their images.
- The device is sensitive to ambient light, so it's best to avoid placing it in areas where light conditions fluctuate significantly.
- Make sure there are no obstacles within the live view of device.
- When the device is installed on the door frame or door, it is recommended to use VB01 or other bracket to make the device is above 30cm from the door with enough time to capture the target.
- When the device is installed at the door of the fan switch, the device needs to be installed on the opposite side of the door.
- For more accurate target attribute detection, tilt the device slightly (within 10 degrees).



6.3 Factors Affecting Accuracy

- The device can not recognize well if the ground is smooth and lacks patterns.
- It is indistinguishable when the color of targets and the floor is similar.
- The device may not accurately recognize people walking at extremely fast speeds (more than 2.5 m/s).

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- If the Milesight specific lanyard worn by the staff is obstructed by collars, scarves, hair, or other objects, it may result in inaccurate counting.
- If the staff wear striped clothing or clothing with patterns similar to the Milesight specific staff lanyard, it may lead to false detections.

7. Communication Protocol

VS125 will post the people counting data in json format to HTTP URL or MQTT broker.

7.1 Periodic Report

{

```
"device_info":
   {
       "cus_device_id": "123456",
       "cus_site_id": "789123",
       "device_mac": "24:E1:24:FA:0C:6C",
       "device_name": "People Counter",
       "device_sn": "6384E16179950009",
       "firmware_version": "V_125.1.0.1,
       "hardware_version": "V1.0",
       "ip_address": "192.168.60.183",
       "running_time": 141
   },
   "network_info": //Cellular version only
   {
       "network_status": "true", //True is connected, False is disconnected
       "iccid": "89860117838009934120",
       "imei": "860425047368939",
       "cell_id": "340db80",
       "lac": "5299"
   },
"line_periodic_data": [{
           "line": 1,
           "line_uuid": "9a0440de-3188-4f6d-b886-bb20c97bd26b",
           "total": {
               "female_in": 0,
               "female_out": 0,
```

```
"in": 0,
        "male_in": 0,
        "male_out": 0,
        "out": 0
    },
    "children": {
        "female_in": 0,
        "female_out": 0,
        "in": 0,
        "male_in": 0,
        "male_out": 0,
        "out": 0
    },
    "staff": {
        "female_in": 0,
        "female_out": 0,
        "in": 0,
        "male_in": 0,
        "male_out": 0,
        "out": 0
    },
    "group": {
        "in": 0,
        "out": 0
    }
},
{
    "line": 2,
    "line_uuid": "b138b9a1-ce58-40bd-98f4-c401dfc118c8",
    "total": {
        "female_in": 0,
        "female_out": 0,
        "in": 0,
        "male_in": 0,
        "male_out": 0,
        "out": 0
    },
```

```
"children": {
                "female_in": 0,
                "female_out": 0,
                "in": 0,
                "male_in": 0,
                "male_out": 0,
                "out": 0
           },
           "staff": {
                "female_in": 0,
                "female_out": 0,
                "in": 0,
                "male_in": 0,
                "male_out": 0,
                "out": 0
           },
           "group": {
                "in": 0,
                "out": 0
           }
       }
   ],
"line_total_data": [{
           "line": 1,
           "line_uuid": "9a0440de-3188-4f6d-b886-bb20c97bd26b",
           "children": {
                "female_in_counted": 0,
                "female_out_counted": 0,
                "in_counted": 0,
                "male_in_counted": 0,
                "male_out_counted": 0,
                "out_counted": 0
           },
           "total": {
                "female_in_counted": 0,
                "female_out_counted": 0,
                "in_counted": 0,
```

```
"male_in_counted": 0,
             "male_out_counted": 0,
             "out_counted": 0,
             "capacity_counted": 0
        },
         "staff": {
             "female_in_counted": 0,
             "female_out_counted": 0,
             "in_counted": 0,
             "male_in_counted": 0,
             "male_out_counted": 0,
             "out_counted": 0
        },
         "group" {
             "in_counted": 0,
             "out_counted": 0
         }
    },
"region_data":
{
    "dwell_time_data":
         {
             "avg_dwell_time": 308367,
             "children_avg_dwell_time": 0,
             "children_max_dwell_time": 0,
             "female_avg_dwell_time": 0,
             "female_max_dwell_time": 519934,
             "male_avg_dwell_time": 0,
             "male_max_dwell_time": 96799,
             "max_dwell_time": 519934,
             "staff_max_dwell_time": 1522,
             "staff_avg_dwell_time": 1522,
             "region": 1,
             "region_name": "Region1",
             "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac"
        }
```

```
],
         "region_count_data":
              {
                  "total": {
                  "current_female": 0,
                  "current_male": 1,
                  "current_total": 2
              },
              "children": {
                  "current_female": 0,
                  "current_male": 1,
                  "current_total": 2
              },
              "staff": {
                  "current_female": 0,
                  "current_male": 1,
                  "current_total": 2
              },
              "region": 1,
              "region_name": "Region1",
              "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac"
         }]
    },
    "time_info":
     {
         "dst_status": false,
         "enable_dst": true,
         "end_time": "2024-05-30T20:21:49+08:00",
         "start_time": "2024-05-30T20:20:49+08:00",
         "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
    }
}
```

7.2 Trigger Report-Line Crossing People Counting

```
{

"device_info":

{
```

```
Milesight
```

```
"cus_device_id": "123456",
    "cus_site_id": "789123",
    "device_mac": "24:E1:24:FA:0C:6C",
    "device_name": "People Counter",
    "device_sn": "6384E16179950009",
    "firmware_version": "V_125.1.0.1",
    "hardware_version": "V1.0",
    "ip_address": "192.168.60.183",
    "running_time": 58
},
"network_info": //Cellular version only
{
    "network_status": "true", //True is connected, False is disconnected
    "iccid": "89860117838009934120",
    "imei": "860425047368939",
    "cell_id": "340db80",
    "lac": "5299"
},
"line_trigger_data":
[
    {
         "children": {
         "female_in": 8,
         "female_out": 2,
         "in": 14,
         "male_in": 8,
         "male_out": 2,
         "out": 6
    },
    "group": {
         "in": 0,
         "out": 0
    },
    "staff": {
         "female_in": 0,
         "female_out": 0,
         "in": 0,
         "male_in": 0,
```

```
"male_out": 0,
           "out": 0
       },
       "total": {
           "female_in": 20,
           "female_out": 22,
           "in": 27,
           "male_in": 20,
           "male_out": 22,
           "out": 27
       },
       "line": 1,
       "line_uuid": "9a0440de-3188-4f6d-b886-bb20c97bd26b"
},
       {
       "children": {
```

```
"female_in": 8,
     "female_out": 2,
     "in": 14,
     "male_in": 8,
     "male_out": 2,
     "out": 6
},
"group": {
     "in": 0,
     "out": 0
},
"staff": {
     "female_in": 0,
     "female_out": 0,
     "in": 0,
     "male_in": 0,
     "male_out": 0,
     "out": 0
},
"total": {
     "female_in": 20,
```

```
"female_out": 22,
           "in": 27,
           "male_in": 20,
           "male_out": 22,
           "out": 27
       },
        "line": 3,
        "line_uuid": "82ffe54d-0191-484b-a2fc-495628a8f2a1"
       }
    ],
    "time_info":
    {
       "dst_status": false,
       "enable_dst": true,
        "time": "2024-05-30T20:11:32+08:00",
        "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
    }
}
```

7.3 Trigger Report-Region People Counting

```
{
    "device_info":
    {
         "cus_device_id": "123456",
         "cus_site_id": "789123",
         "device_mac": "24:E1:24:FA:0C:6C",
         "device_name": "People Counter",
         "device_sn": "6384E16179950009",
         "firmware_version": "V_125.1.0.1",
         "hardware_version": "V1.0",
         "ip_address": "192.168.60.183",
         "running_time": 105
    },
    "network_info": //Cellular version only
    {
         "network_status": "true", ////True is connected, False is disconnected
         "iccid": "89860117838009934120",
         "imei": "860425047368939",
```

```
"cell_id": "340db80",
         "lac": "5299"
    },
    "region_trigger_data":
     {
         "region_count_data":
         [
              {
              "total": {
                   "current_female": 0,
                   "current_male": 1,
                   "current_total": 2
              },
              "children": {
                   "current_female": 0,
                   "current_male": 1,
                   "current_total": 2
              },
              "staff": {
                   "current_female": 0,
                   "current_male": 1,
                   "current_total": 2
              },
              "region": 1,
              "region_name": "Region1",
              "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac"
              }
         1
    },
    "time_info":
    {
         "dst_status": false,
         "enable_dst": true,
         "time": "2024-05-30T20:12:20+08:00",
         "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
    }
}
```

{

7.4 Trigger Report-Dwell Time Detection

```
"device_info":
{
    "cus_device_id": "123456",
    "cus_site_id": "789123",
    "device_mac": "24:E1:24:FA:0C:6C",
    "device_name": "People Counter",
    "device_sn": "6384E16179950009",
    "firmware_version": "V_125.1.0.1",
    "hardware_version": "V1.0",
    "ip_address": "192.168.60.183",
    "running_time": 106
},
"network_info": //Cellular version only
{
    "network_status": "true", ////True is connected, False is disconnected
    "iccid": "89860117838009934120",
    "imei": "860425047368939",
    "cell_id": "340db80",
    "lac": "5299"
},
"region_trigger_data":
{
    "dwell_time_data":
    ſ
         {
         "children": false,
         "duration": 96799,
         "dwell_end_time": "2024-05-30T20:12:20+08:00",
         "dwell_start_time": "2024-05-30T20:10:43+08:00",
         "people_id": 5,
         "region": 1,
         "region_name": "Region1",
         "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac",
         "sex": "male",
         "staff": true
```

```
}
]
},
"time_info":
{
    "dst_status": false,
    "enable_dst": true,
    "time": "2024-05-30T20:12:20+08:00",
    "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
}
```

-END-