



防夾視覺 AI 感測系統 – SafeZone

SafeZone - Vision-AI Sensing System for Bus Doors



產品描述 Product Description

SafeZone 防夾視覺 AI 感測系統首創將 AI 影像辨識應用於公車門安全，突破傳統氣壓式防夾的盲區。系統能辨識人撐傘、人帶背包、僅露出手腳等多種人形特徵，即使在擁擠與低光環境仍保持高準確度，並可主動預警、停止關門與重新開啟，目前已成功部署於台灣數百台公車。

SafeZone is the first AI vision-based anti-pinch sensing system designed for bus door safety, overcoming the blind spots of traditional pneumatic mechanisms. It identifies people in various scenarios—such as holding an umbrella, carrying a backpack, or when only part of a limb is visible—with high accuracy even in crowded or low-light environments. The system provides proactive alerts, door-stop control, and automatic reopening, and has already been deployed on hundreds of buses across Taiwan.

應用 – 公車車門防夾系統 Applications – Anti-Pinch System for Bus Doors

此安全系統包含歐特明提供感知控制器及視覺感知模組，另外搭配車門控制器，此系統可以主動偵測車門範圍附近是否有人員，避免人員被車門關閉所夾傷或發生其他受傷事件。

This safety system includes oToBrite's sensing controller and visual perception module, paired with a door controller. The system proactively detects the presence of individuals near the bus door area to prevent injuries caused by the doors closing.

產品特點 Product Features

- 車門開啟時，系統主動偵測車門外30公分
Detects a 30 cm area outside the bus door when it opens.
- 當系統偵測到有乘客時，車門便無法關閉
Prevents the door from closing if a passenger is detected.
- 車門關閉後，系統即停止偵測
Stops detection once the door is fully closed.



● 大量人潮
Large crowds



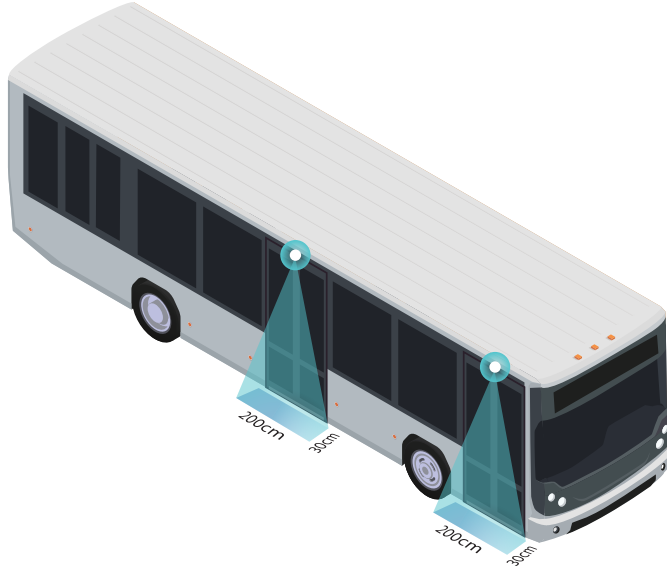
● 撐傘的人
People carrying umbrellas



● 部分身體被遮蔽的人
Partially obscured person

System Sensing and Detection Trigger Conditions

- 目標物：乘客
Target Object: Passengers
- 必要偵測觸發範圍：車門外 200 cm x 30 cm
Required Detection Trigger Area: 200 cm x 30 cm outside the bus door.
- 描述：車門外30公分內偵測到乘客就不關門
Description: The system detects passengers within 30 cm outside the bus door and prevents the door from closing.

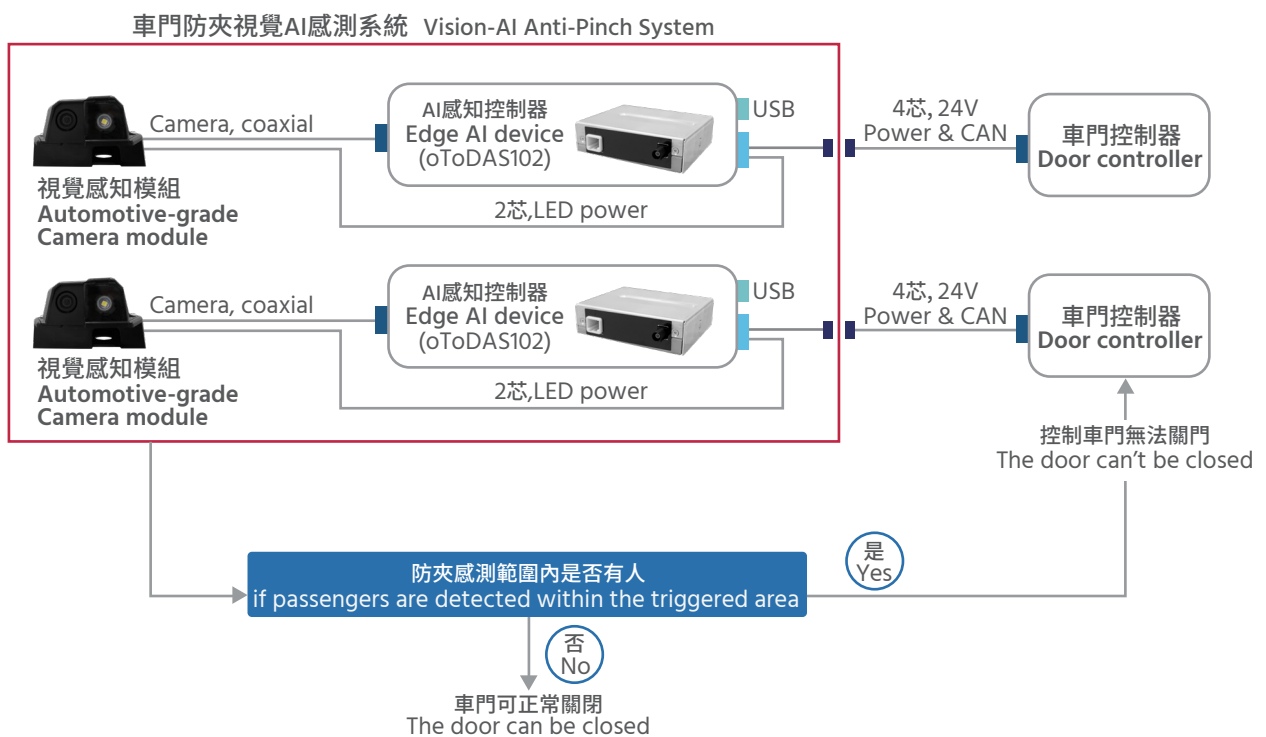


產品組成 Product Content

歐特明提供以下列紅框內的產品，包括感知控制器，視覺感知模組，和紅框內線束，以下配置為前門/中門各一套

Provides the Following Products:

Including sensing controllers, visual perception modules, and wiring harnesses within the red box. The configuration includes one set for the front door and one set for the middle door.



產品規格 (視不同應用而定)

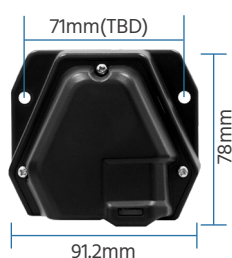
Product Spec. (Customized for different applications)

感知控制器 (oToDAS102) Sensing Controller (oToDAS102)	規格 Specification
電壓範圍 Voltage Range	16V~32V
作動溫度 Operation Temperature	-20°C ~ +70°C
儲存溫度 Storage Temperature	-20°C ~ +75°C
防塵防水等級 Ingress Protection Rating	IP51

視覺感知模組 (oToCAM206-L137T+LED Lamp) Visual perception modules	規格 Specification
操作溫度 Operating Temperature	-20°C ~ +70°C
儲存溫度 Storage Temperature	-20°C ~ +75°C
防塵防水等級 Ingress Protection Rating	IP69K (鏡頭本體 Camera)
燈組 LED Lamp	因應夜間感知功能視情況加裝LED燈 In response to the night sensing function, LED lights can be installed depending on the situation

輪廓圖

Outline Drawing



driving easier and safer



9F-2, No. 8, Keyan Rd., East Dist., Science-Based Industrial Park,
Hsinchu, Taiwan (R.O.C.)



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