

# SENSOR FUNCTIONALITY STATEMENT

**KIT DVS-PSS 2024**

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# 1. INTRODUCTION

Thank you for purchasing a Blind Spot Information and Moving Off Information System with integrated Camera Monitoring System. In order to ensure the correct installation and use of the device, please read the installation instructions and other important information.

## **Disclaimer**

The content of this manual will be updated from time to time without prior notice; updated content will be added to the new version of this manual. This manual is used as a guide. The photos, charts and illustrations provided in the manual are only for explanation and illustrative purposes. There may be differences with the actual situation, please refer to the actual situation.

## **Safety warning**

In order to ensure that the system passes DVS/PSS, the installation position of each component is critical. Please be sure to install according to the product assembly instructions;

Although this product has the blind spot information function, the driver should take full responsibility for driving, be sure to drive vehicle carefully and pay attention to the surrounding;

System detection and sensing components, if obscured will affect the function of the device. Please clean the cameras on the front and sides regularly to ensure normal operation; If the system detects anomalies, or other fault conditions. Please drive carefully to avoid the risk of accidents.

For more information, please refer to: <https://tfl.gov.uk/info-for/deliveries-in-london/delivering-safely/direct-vision-in-heavy-goods-vehicles>

# 2. PRODUCT INTRODUCTION

## 2.1.Product brief introduction

In October 2024, the Direct Vision Standard (DVS), the license to drive an HGV into Greater London, will change significantly. One of the key changes for vehicles weighing more than 12 tones, whether from the UK or entering London from overseas, is the minimum star requirement, which will be increased from one to three stars. This adjustment means a greater emphasis on safety, especially for vehicles that do not meet the star rating. In order to be licensed, these vehicles will now need to be equipped with additional safety equipment.

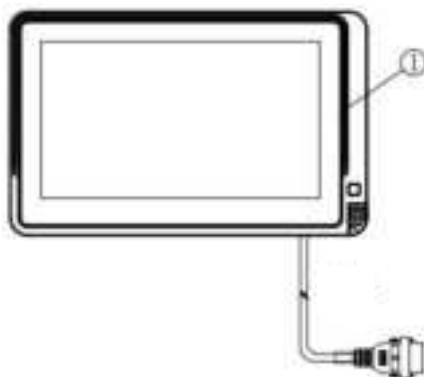
Previously, the permit for HGV’s additional safety equipment was called a "safety system." However, starting in October 2024, it will be called the Progressive Safe System (PSS).The shift is part of a broader effort to improve safety standards. PSS introduces the latest technological advancements, which means that some operators may need to replace existing equipment with new, more advanced technology.



Our DVSUK2 Kit is a perfect entry level solution for the operator who wishes to meet the standards of the Progressive Safe System.




## 2.2.Parts list

- A. DM70MR 3-  
channel display



- B. CS50RA-180 Front Camera



<p>C. CS50RA-180 Side Camera</p>	
<p>D. AP103A GPS receiver</p>	
<p>E. AP120 visual LED light</p>	

### 3. PRODUCT FUNCTION INTRODUCTION

#### 1. function introduction

The Blind Spot Information System (BSIS) provides blind spot information and active detection and identification around the vehicle (side). Traffic accidents due to vehicle size and dead line of sight. Blind Spot Information System (BSIS) is a set of camera AI algorithm to provide drivers with auxiliary information when driving

BSIS effectively eliminates vehicle blind spots and reduces accidents due to blind eye angles on the side of vehicles. When the vehicle is stationary or moving, once a risk object, or a vulnerable road users (VRU) enters the detection area, BSIS will provide the driver with an IS (Information Signal) information Signal, or WS (Warning Signal) warning signal to remind the driver to avoid accidents.

The Moving Off Information System (MOIS) is a set of AI technology that provides drivers with active detection and blind spot information ahead of the vehicle. When the vehicle is stationary or moving, once a vulnerable road user (VRU) enters the detection range, the system will provide the driver with an IS (Information Signal) information Signal or WS (Warning Signal) warning signal to remind the driver to avoid accidents.

#### 2. Product working logic diagram

##### 2.1. DVS/PSS BSIS Detect

2.1.1. Vehicle Static  $V=0\text{Km/h}$  & Brake Signal.





Regulation	Warning Type	DM70MR (Monitor)	AP120 (LED light)	Audio Warning (DM70MR Output)
BSIS	IS	Detection area yellow translucent base map	Steady on red below (SIDE)	N/A

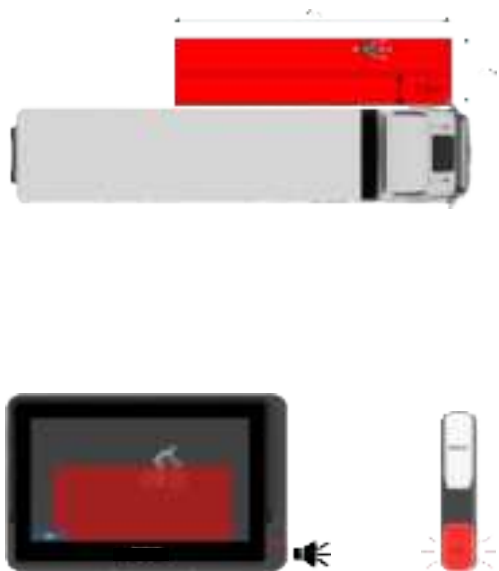
2.1.2. Vehicle Dynamic ( $V=0\text{Km/h}$  & No Brake Signal) or ( $1\text{Km/h} \leq V \leq 35\text{Km/h}$ ).







2.1.3. Vehicle Dynamic (0Km/h≤V≤35Km/h) & (No Brake Signal) & (Turning signal is on).

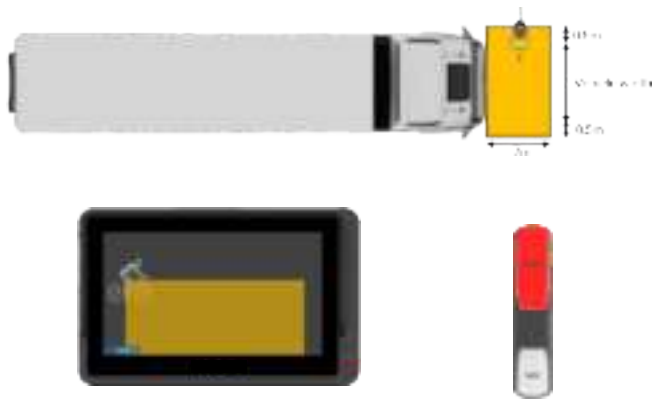


Regulation	Warning Type	DM70MR (Monitor)	AP120 (LED light)	Audio Warning (DM70MR Output)
BSIS	WS	Detection area red translucent base map	Flashing red below (SIDE)	Caution. Side Pedestrian.

2.1.4. Vehicle Dynamic V>35Km/h, Detection Off.

2.2. DVS/PSS MOIS Detect

2.2.1. Vehicle Static V=0Km/h & Brake Signal.



Regulation	Warning Type	DM70MR (Monitor)	AP120 (LED light)	Audio Warning (DM70MR Output)
MOIS	IS	Detection area yellow translucent base map	Steady on red above (FRONT)	N/A

2.2.2. Vehicle Dynamic (V=0Km/h & No Brake Signal) or (1Km/h≤V≤10Km/h).



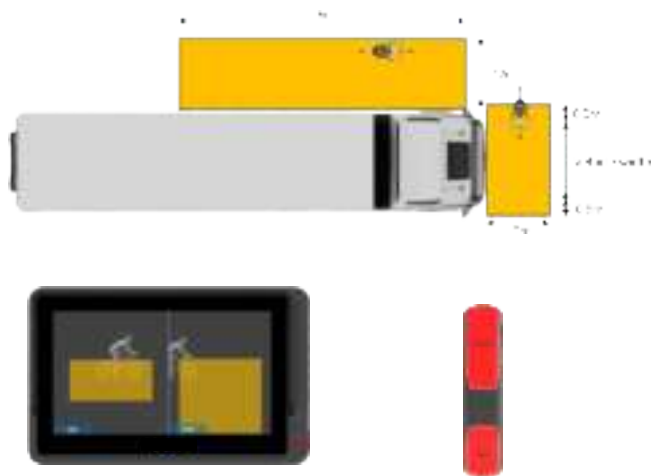


Regulation	Warning Type	DM70MR (Monitor)	AP120 (LED light)	Audio Warning (DM70MR Output)
MOIS	WS	Detection area red translucent base map	Flashing red above (FRONT)	Caution. Front Pedestrian.

2.2.3. Vehicle Dynamic V>10Km/h, Detection Off.

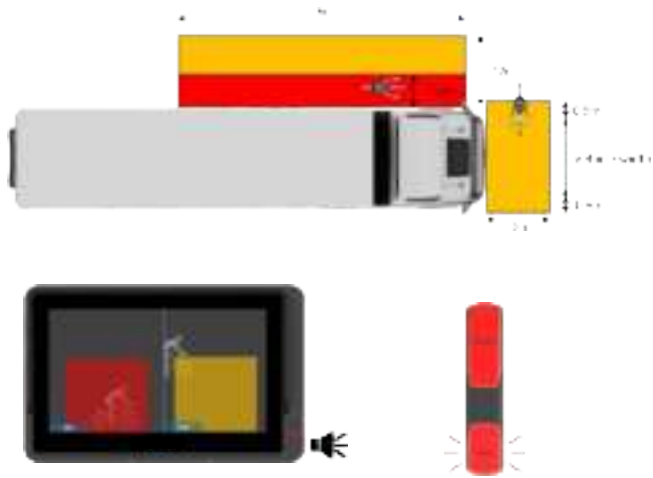
2.3. DVS/PSS BSIS & MOIS Detect

2.3.1. BSIS & MOIS IS



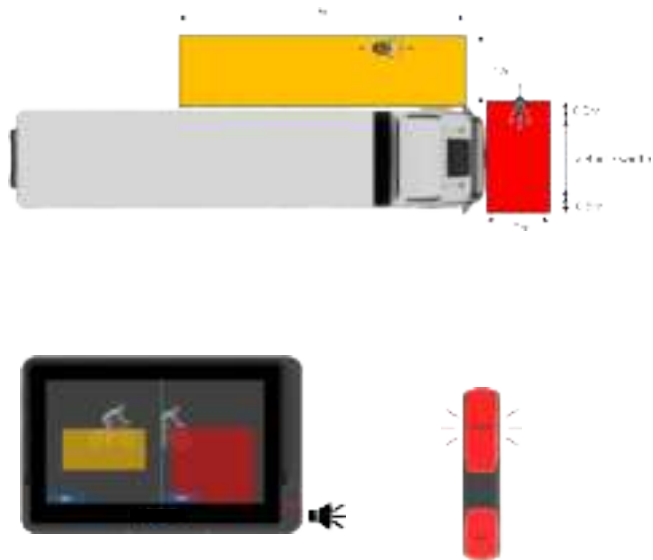
Regulation	Warning Type	DM70MR (Monitor)	AP120 (LED light)	Audio Warning (DM70MR Output)
BSIS + MOIS	IS	BSIS & MOIS Detection area yellow translucent base map	Steady on red (SIDE & FRONT)	N/A

2.3.2. BSIS WS & MOIS IS



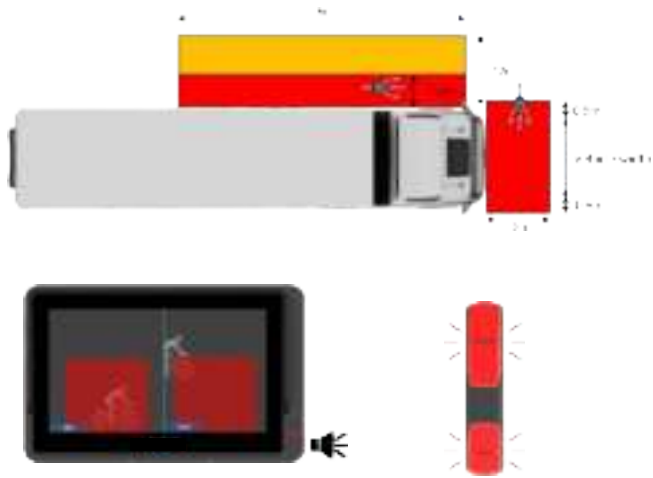
Regulation	Warning Type	DM70MR (Monitor)	AP120 (LED light)	Audio Warning (DM70MR Output)
MOIS	IS	Detection area yellow translucent base map	Steady on red above (FRONT)	N/A
BSIS	WS	Detection area red translucent base map	Flashing red below (SIDE)	Caution. Side Pedestrian.

2.3.3. BSIS IS & MOIS WS



Regulation	Warning Type	DM70MR (Monitor)	AP120 (LED light)	Audio Warning (DM70MR Output)
MOIS	WS	Detection area red translucent base map	Flashing red above (FRONT)	Caution. Front Pedestrian.
BSIS	IS	Detection area yellow translucent base map	Steady on red below (SIDE)	N/A

2.3.4. BSIS & MOIS WS



Regulation	Warning Type	DM70MR (Monitor)	AP120 (LED light)	Audio Warning (DM70MR Output)
BSIS	WS	BSIS & MOIS Detection area red translucent base map	Flashing red (SIDE & FRONT)	Caution. Front and Side Pedestrian.



## 3. DM70MR DISPLAY FUNCTION DESCRIPTION

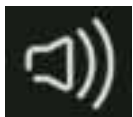
### 3.1. Basic function :

- Support 3-channel camera input, CH1 as the PSS side camera, CH2 as the PSS front camera, CH3 as the rear camera, they all support pedestrian detection and alarm functions.
- 3-channel video recording function is supported, after inserting an empty TF card and formatting it using the display, the video recording function can be performed, the maximum capacity supported is 512G. However, the matching front and side PSS cameras are soundless cameras, so the sound recording function is not supported.
- The display supports touch function, user can use the touch function to perform function setting, such as: menu operation, PSS detection zone setting, etc.
- PSS detection alarm function, please see the 4.3. Product working logic diagram

### 3.2. Menu function : Home screen menu



**BRIGHTNESS:**After entering, the screen brightness can be set, there are high, medium, low options.



**VOLUME:** After entering, the system alarm volume can be set, there are high, medium and low options to choose. The default value is Medium.



**LANGUAGE:**After entering, the screen language can be set, there are traditional Chinese, simplified Chinese, English, Spanish optional, the default is English.



**SYSTEM SETTING:**After clicking, the password input screen will appear, and you need to enter a four-digit password. For more information, contact your installer.

#### **4. Failure mode list and Troubleshooting method**

- No camera signal - Front/Rear

Troubleshooting method: Check the camera connection.

- Insufficient illumination, detection OFF - Front/Rear

Troubleshooting mode: None: This alarm is triggered when the scene brightness is too low.

- Low image quality, detection OFF - Front/Rear

Troubleshooting method: Check whether the camera lens is dirty and clean the lens.

- System error, the system will automatically restart in 5 seconds

Troubleshooting method: Feedback to original factory, provide version number information.

#### **5. Others**

There is no automatic heating function for the camera, so the lens must be cleaned in rainy and foggy weather, otherwise the camera detection will be affected.

## **4. COMMON PROBLEMS AND TEST MAINTENANCE GUIDE**

**4.1. After startup, the system automatically checks. The display send failure message when the system fails.**

- Check all parts of the system, whether the connection is normal or dirty

### **4.2. Power failure**

- Check the power supply voltage. The standard operating voltage is 24V
- Check whether the power cables and GND are connected correctly.

### **4.3. Detect range and range anomalies**

- The system meets DVS/PSS test specifications, and the system will take relative speed and vehicle status as reference. Provide IS (Information Signal), or WS (Warning Signal) to alert the driver.

### **4.4. The system still works after ACC OFF**

- Check whether the power cable is connected to the ACC switch

## 5. PRODUCT CLEANING AND MAINTENANCE

Regular cleaning can ensure that the camera lens maintain the best performance, the use of high-quality and safe cleaning agents and soft cloth, can effectively remove stains and debris on the lens. When the camera is automatically heated, it can effectively vaporize the surface of fog and frost and snow.

### 5.1.Camera cleaning time

- Inspect the vehicle with the naked eye before using it daily. Clean immediately when accumulating dust or dirt.
- Regular weekly inspection, visual observation. Clean immediately when accumulating dust or dirt
- Rainy day, frost day, snow day, etc.
- A failure message is displayed. (Dirty, shielding)
- Do not use aggressive chemicals or abrasive cleaning products to clean the lens