



180905_Rev. 1.06

KIGIS IPAS User Manual

Wired Type [Standard]

Vehicle Tag(VT) · Pedestrian Tag(PT)

Intelligent Proximity Alert System



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Thank you for purchasing KIGIS IPAS product from KYUNGWOO SYSTECH, Inc.
This product is a safety-assisting device to give warning signals by detecting the proximity of vehicles and pedestrians at industrial working site. Any property or life damage caused by the breach of safety regulation and users' carelessness will not be held responsibility. Before using this product, please read this manual carefully.

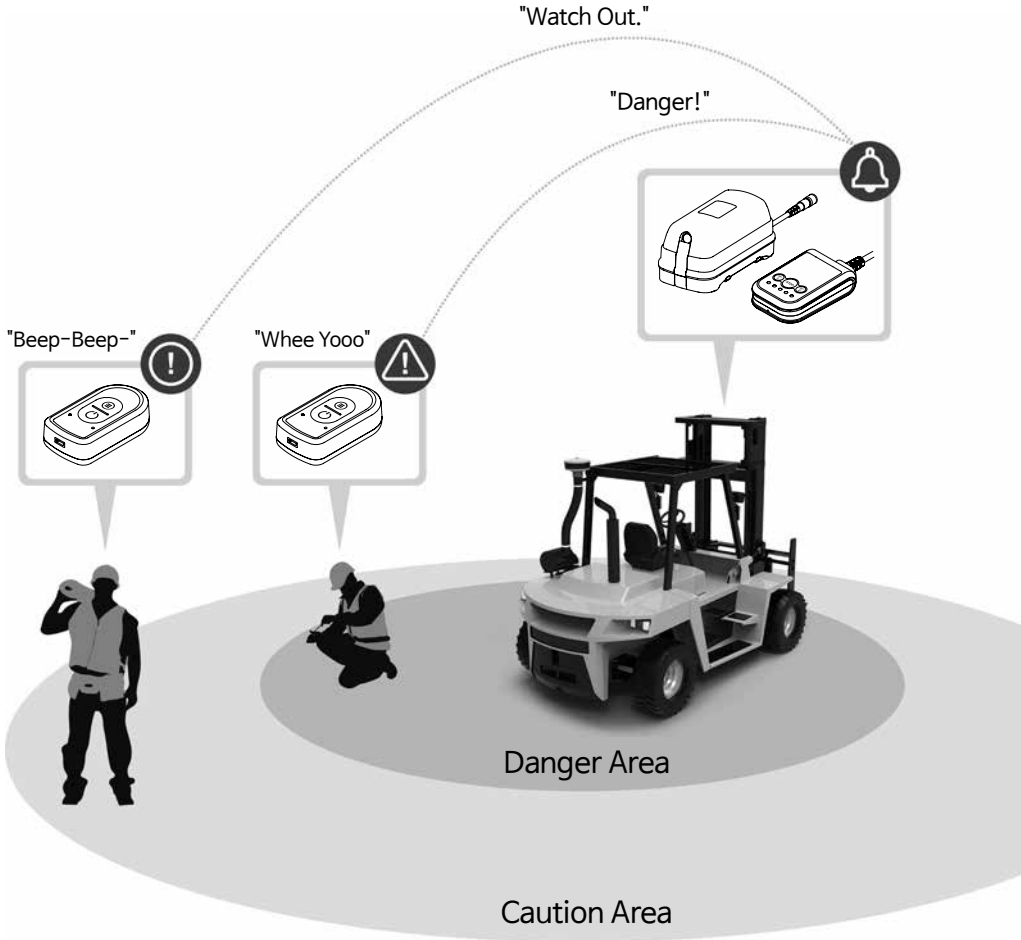


· Model No : PAS-K01-10
· FCC ID : [VT]ZE8-PAS-K01-10 / [PT]ZE8- PAS-K01-00
· Manufacturer : KYUNGWOO SYSTECH, Inc. / KOREA

- * This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- * CAUTION : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- * NOTE : This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1. What is IPAS?

KIGIS IPAS is an intelligent proximity alert safety and assistant system that prevents collisions by signaling dangers in 2 way communication to both drivers and pedestrians when pedestrians approach to a vehicle or vehicles approach to other vehicles in industrial working site. It is easy to install without causing any damages to the vehicle, and compared to other products, the outstanding proximity detection is an advantage that KIGIS IPAS only offers.



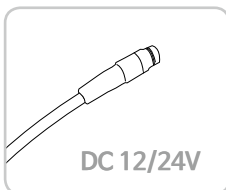
※ IPAS is applicable to all industrial vehicles. (excavators, forklifts, loaders, tractors, etc.)

2. Caution/Warning for Safety



! Caution!

※ Failure to observe the precautions in this manual may result in damage to the product or your property.



Use only DC 12/24V. For vehicles with DC 36/48V, be sure to connect SMPS module to use DC 12/24V. Otherwise, this may cause trouble.



Do not place the product near flammable materials, stoves, candles, or fire. This may cause fire and product deformation.



Do not intentionally immerse the product in water or wash it in running water. This may cause trouble.



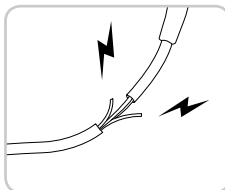
If the product smells, smokes, or makes abnormal noises, turn off the power and contact the customer service center immediately.

! Caution!

※ Failure to follow the warnings in this manual may result in damage to the product or serious injury.



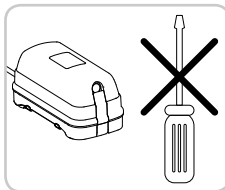
Do not touch the connector or wiring with wet hands. This may cause electric shock or fire.



Do not place heavy objects on the product or on wiring, or shock. It may cause electric shock or fire.



If a connector or a wiring gets wet, wipe it with a dry towel. Otherwise, it may cause electric shock or fire.

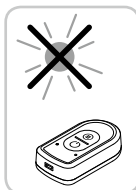


Do not disassemble or modify this product. This may cause trouble, and After-Sale Service will not be available.

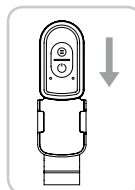
Usage Precautions



The pedestrian tag (PT) is a rechargeable product, so do not replace the battery. There is a risk of malfunction or explosion.



Since the pedestrian tag (PT) is a built-in battery product, please keep it in a cool place away from direct sunlight when not in use.



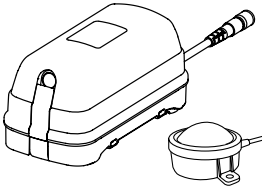
Combine PT and the holder in the proper way as shown in illustration. If not, a malfunction may be caused by an inflow of liquid matters.

* CAUTION Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

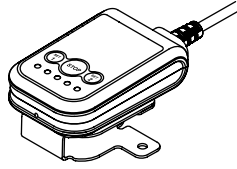
※ Any accidents that result from not following the instructions in this manual are the user's responsibility.

3. Components/Names of Parts

Components



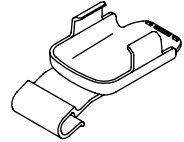
Vehicle Tag (VT)



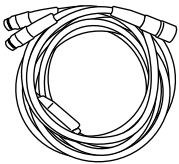
Indicator



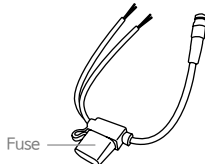
Pedestrian Tag (PT)



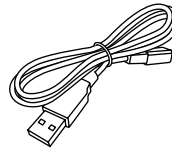
Helmet Holder



Cable Harness (6m)



Open Wire Adapter Cable

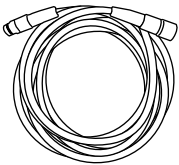


High Speed Charging Cable (PT)

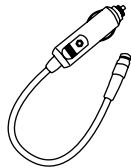
※ Tag may not be recharged with general charging cable.



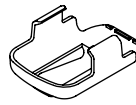
User Manual



Optional
Extension Cable



Optional
Cigar Jack Adapter

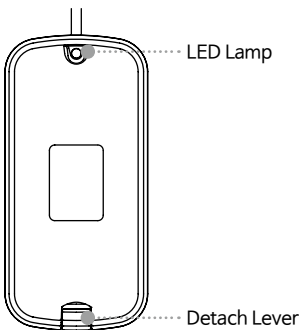


Optional
Clip Holder

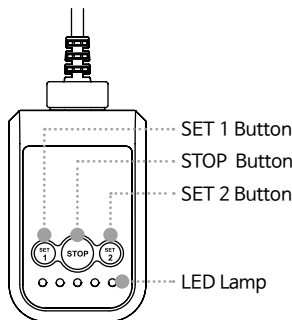
※ It is strongly recommended that the tag should be installed on epaulet or arm band due to communication problem in case of installation at waist or in pocket.

※ The appearance of the product may be slightly different from the actual product received.

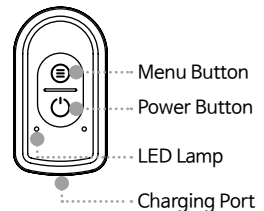
Names of Parts



Vehicle Tag (VT)


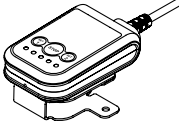



Indicator



Pedestrian Tag (PT)

4. Specifications

Specifications		Vehicle Tag (VT)	Indicator	Pedestrian Tag (PT)
Product Image				
Electrical Feature	Power	12/24V DC Input(9/32Vdc)	12/24V DC Input(9/32Vdc)	-
	Current	300mA	500mA	-
	Interface	CAN Bus 2.0	CAN Bus 2.0	-
	LED Status and Alarm method	<ul style="list-style-type: none"> · Normal operation · Green LED flashing · Approaching alarm · Green/Red LED flashing 	<ul style="list-style-type: none"> · Normal operation · Green LED flashing · Approaching alarm · Green/Red LED flashing + Warning voice 	<ul style="list-style-type: none"> · Normal operation · Green LED flashing · Approaching alarm · alarm + vibration(3 options)
	Sound Level / @Distance	-	92dB / 0.1m	87dB / 0.1m
	Battery	-	-	Lithium polymer 950mA
	Operating Voltage	-	-	3.7V
	Charge Interface	-	-	Micro USB Type-B(5V/1A)
	Charge Time	-	-	Approximately 1 hour 30 minutes
	Charge Current	-	-	0.85mA
	Operating Time	-	-	6 days(8 hours/day)
Mechanical Feature	Size	177.8 × 84.1 × 86mm	93 × 130.5 × 47.5mm	40 × 72 × 19.5mm
	Weight	444g	207g	58.5g
	Mounting Method	Magnet pad attachment method	Fixed with screw (or adhesive tape)	Clip, Necklace chain
UWB Feature	Frequency	3993.6MHz	-	3993.6MHz
	Bandwidth	499.2MHz	-	499.2MHz
	Detdction Cycle	0.5sec	-	0.5sec
Operation Specification	Operating Temperature	-30 ~ 85°C	-30 ~ 85°C	-20 ~ 55°C
	Storage Temperature	-40 ~ 85°C	-40 ~ 85°C	-20 ~ 55°C
	Waterproof	IP65	IP65	Basic waterproof

※ Some features may change without prior notice to improve the performance of the product.



5. Installation

! Caution! It is highly recommended to install IPAS with the power off. Turn on the power after connecting all products.

Vehicle Tag (VT) or Indicator

Cable Harness (6m)

Open Wire Adapter Cable or Cigar Jack Adapter

* Normal operation : Green Flash ON after turning on the power.

* **Caution!** Wind up cable terminals to properly connect them. Disregarding this caution, it may cause a malfunction caused by liquid matters.

Setting Tips It is more desirable to install VT in a 360 ° open space for example on top of cabin, rather than a space inside cabin. This product, as a wireless frequency (RF) device, is better communicative in operation in an open space.

KIGIS IPAS is designed with the customer in mind for easy installation without the help of an installer. The powerful magnet can be attached easily on VT floor without damaging the vehicle and it is also convenient to detach with detach lever. It can be easily installed by using cable ties in case of no magnet on vehicle.

Magnetic Pad : Easy to install

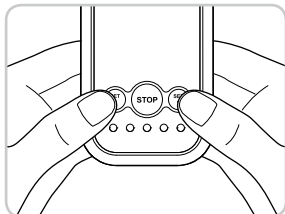
Detach lever : Easy to detach from vehicle by pulling the lever as shown

Pedestrian Tag Helmet Clip

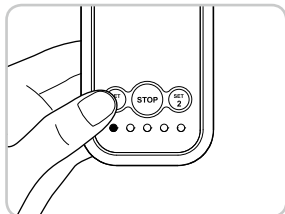
Fastening Tie Hole

Danger / Caution Area Distance Setting

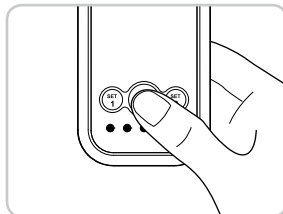
※ In a condition of normal operation



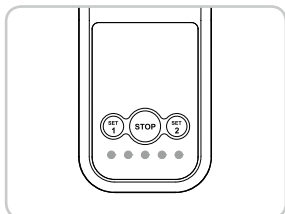
① Press and hold SET 1 and SET 2 buttons simultaneously for 2 seconds or more.



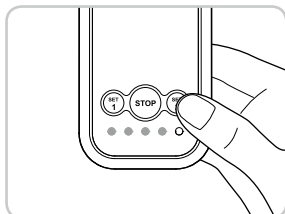
② Set the desired **Danger Area** distance by operating the SET 1 and SET 2 buttons. (Refer to "How to set the distance" on the following page)



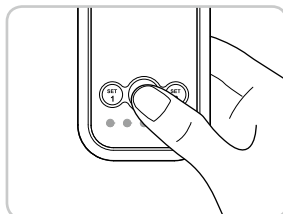
③ Press STOP to complete the **Danger Area** setting.



④ When the green LED is on, set the distance to the **Caution Area**.



⑤ Set the desired **Caution Area** distance by operating the SET 1 and SET 2 buttons. (Refer to "How to set the distance" on the following page)



⑥ Press STOP to complete the **Caution Area** setting.

Volume Control

※ In a condition of normal operation

SET 1 Button : - Volume



SET 2 Button : + Volume

Setting Initialization

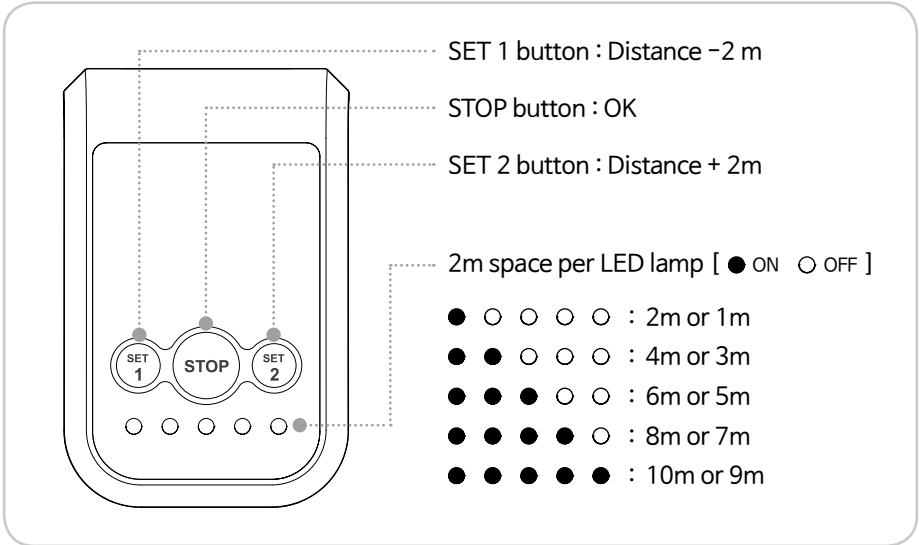
※ In case of malfunction

- ① Press and hold the STOP button for more than 2 seconds.
- ② When the red LED is flashing sequentially, press and hold the STOP button again for more than 2 seconds. The LED will turn off and the setting will be initialized. Reboot will take about 5 seconds. (Do not turn off the vehicle until the green LED flashes.)

※ **Default values after initialization : 4m for Danger Area / 8m for Caution Area**

How to Set the Distance

Distance setting can be set to even distance [2 / 4 / 6 / 8 / 10m] or odd distance [1 / 3 / 5 / 7 / 9m]. The default setting is even distance.



* Odd distance [1 / 3 / 5 / 7 / 9m] change : Press and hold SET 1 button + STOP button at the same time.

〈 Example 〉 Setting Danger Area 3m / Caution Area 9m

① Set an even distance 1m longer than the desired Danger /Caution Area as shown below.
(Set 3m ⇒ 4m / 9m ⇒ 10m)

Danger Area (Red LED) ● ● ○ ○ ○ : 4m

Caution Area (Green LED) ● ● ● ● ● : 10m

② Press & hold SET 1 button + STOP button at the same time, It is set to be 1m Shorter and it changes into 3m distance for Danger Area / 9m distance for Caution Area.

※ If you want to change from odd distance to even distance again, press and hold Set 2 & STOP.

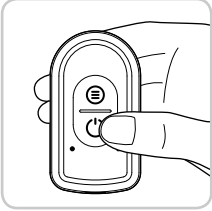
Setting Tips

As IPAS releases warning signals by detecting the proximity on 0.5 second cycles, proximity distance must be set considering vehicle speed.

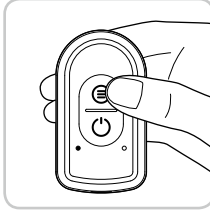
6. Setting - Pedestrian Tags



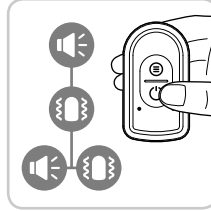
Alarm type Setting



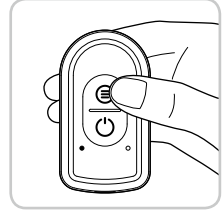
① Press and hold the power button to turn on the power. (Charging is required if the red LED is on.)



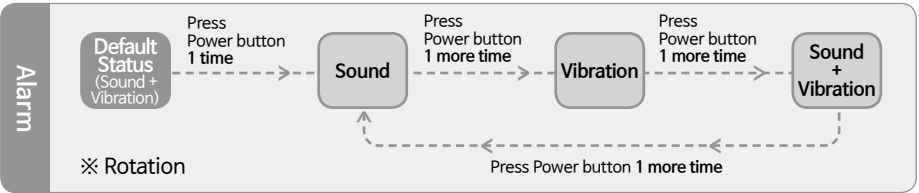
② Press and hold the menu button. (A short vibration will occur.)



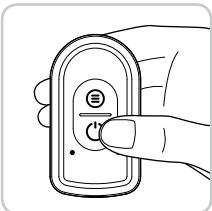
③ Press the power button to set the desired alarm type. (Please refer to the alarm system below.)



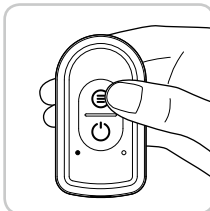
④ Press and hold the menu button to complete the setup.



Volume Control



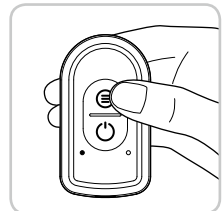
① Press and hold the power button to turn on the power. (Charging is required if the red LED is on.)



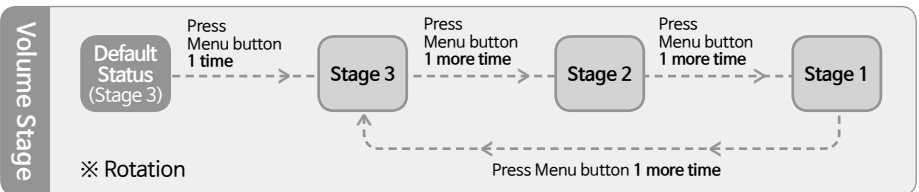
② Press and hold the menu button. (A short vibration will occur.)



③ Press the menu button to set the desired volume level. (See volume steps below.)



④ Press and hold the menu button to complete the setup.



7. How to use

Indicator Instruction that a driver must know

Situation	LED Lamp Status	Alarm	Mute Alarm
When a pedestrian (PT) trespass on the Caution Area	Red / Green Light flashes gradually	Repeating "Watch Out"	Press STOP Button 1 Time Even though alarm is muted (double click), in case that pedestrian escapes the set Danger / Caution Area and re-enters them, the alarm will go off again.
When a pedestrian (PT) trespass on the Danger Area		Repeating "Danger"	

* When pedestrian enters and escapes out of Danger/Caution Area, for the safety of pedestrians, the alarm will go off from the point 1m further away that was set originally.
(Example : If the Danger Area / Caution Area is set at 2m / 4m, the warning sound of PT will go off until it escapes 3m of Danger Area and 5m of Caution Area from VT)

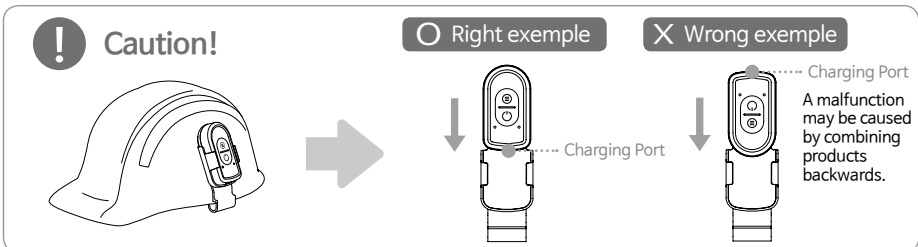
※ Volume Control : Refer to 8P

How to use "PT" that pedestrians must know

Situation	LED Lamp Status	Alarm	Alarm Pause	Mute Alarm
When a pedestrian (PT) trespass on the Caution Area	Green Flash	① "Beep-Beep-" sound ② Vibration (short interval) ③ Both ※ Depends on menu setting	Press menu or power button one time. Alarm will occur in 10 seconds automatically after pause.	Press menu or power button twice quickly. ("Beep" alarm will occur.) Even though alarm is muted (double click), in case that pedestrian escapes the set Danger / Caution Area and re-enters them, the alarm will go off again.
When a pedestrian (PT) trespass on the Danger Area		① "Whee yooo whee yooo"(siren) ② Vibration (long interval) ③ Both ※ Depends on menu setting		
When the battery is low (Less than about 4 hours of use)	Red Flash	"Beebeep Beebeep" 5 times every 10 minutes.	-	-

* When pedestrian enters and escapes out of Danger/Caution Area, for the safety of pedestrians, the alarm will go off from the point 1m further away that was set originally.
(Example : If the Danger Area / Caution Area is set at 2m / 4m, the warning sound of PT will go off until it escapes 3m of Danger Area and 5m of Caution Area from VT)

※ Alarm type setting / Volume Control : Refer to 10P



7. How to use – LED status display

LED Status	Vehicle Tag (VT)	Indicator	Pedestrian Tag (PT)
Power ON	●	● ○ ○ ○ ○	●
	Green Flash	Green Flash	Green Flash
Power OFF	○	○ ○ ○ ○ ○	●
	LED Off	LED Off	After Red light blinks once, it turns off
Normal	●	●	●
	Green Flash	Green Flash	Green Flash
Low Voltage Battery	-	-	●
	-	-	Red Flash
Battery Charging	-	-	●
	-	-	Red On
Fully Charged	-	-	●
	-	-	Green On
Entering Caution Area	● + ●	● + ●	●
	Green + Red flashing	Green + Red flashing	Green Flash
Entering Danger Area	● + ●	● + ●	●
	Green + Red flashing	Green + Red flashing	Green Flash

8. Check list before reporting failure

Question	Reason	Solution
Access to PT MENU is unavailable.	You can access the menu after turning on the power.	If you press and hold the power button for 2 seconds, the green LED will blink. Press and hold the menu button for 2 seconds afterward.
There is a red LED on the PT.	It is a signal indicating low voltage when the remaining battery power is less than 4 hours.	Please charge it. When it is 100% charged, the green LED will turn on.
The volume of VT sound is too low.	Indicator's volume setting is low.	The indicator can be adjusted up to 5 levels. (How to adjust the indicator volume : see 8P)
Can I mute the alarm when I drive a vehicle with a PT?	Mute of alarm sound is possible.	<p><How to mute alarm></p> <ul style="list-style-type: none"> * PT : Press twice quickly Menu or Power button with short intervals. * Indicator : Press STOP button once (When PT owner deviates and reenters the Danger / Caution area, the alarm will go off again)
Can I pause an alarm to talk to a VT car driver for a moment?	It is possible to pause for 10 seconds. After 10 seconds, the alarm will occur again.	<p><Alarm pause tip></p> <ul style="list-style-type: none"> * PT : 1 time quick press on Menu or Power button. (PT alarm will go off after 10 seconds automatically)
Previously set distance of Danger/ Caution area is not precise.	<p>A. The alert sounds in shorter horizontal distance depending on the installation height of VT.</p> <p>B. When getting inside and getting out of the Danger / Caution Area, alarm will go off 1m further from the set distance for the safety reason. (Example) In case of setting 2m for Danger Area and 4m for Caution Area, alarm will keep going off until getting out of 3m (Danger Area) and 5m (Caution Area).</p>	In case of A and B, it is normal function but when they are thought to be an issue, it is recommended to initialize the indicator to reset the distance for use from a scratch. (See Indicator initialization and distance setting 8P)

If you have any questions, please feel free to contact us at www.kyungwoo.com.

M E M O



WARRANTY



Warranty Term 1 year from the purchase date

Product Name	
Model Name	
Place of Purchase	
Date of Purchase	
Name of Customer	
Phone Number	

* Service information

1. If a performance or functional failure occurs while proper using during the warranty period, the repair service is free of charge.
2. When the repair service is required, please present the warranty card with all information filled in.
3. The following cases will be charged for the repair regardless of warranty period.
 - Failure due to careless use or improper repair or modification
 - Failure due to non-compliance to the specifications stated in this manual
4. After the expiration of warranty period, a certain fee will be charged for the repair service.
5. The warranty card cannot be reissued.

- ※ If failures occur when a person who is not in our service team tries to repair the product and breaks down, or uses components from other companies, we will not hold the responsibility for those failures.
- ※ Please contact the store where you purchased the product for the refund or exchange of the product.



4F, Daeryung Post Tower 5, 68, Digital-ro 9-gil, Geumcheon-gu,
Seoul, 08512, Republic of Korea



Think Smart,
Work Safe

Distributor (or purchasing store)

* Any inquiry about the purchased product is contactable to distributor (or purchasing store) at below line.



Manufacturer



KYUNGWOO SYSTECH, INC.
4F, Daeryung Post Tower 5, 68, Digital-ro 9-gil, Geumcheon-gu,
Seoul, 08512, Republic of Korea
Tel. +82-2-985-8085 Fax. +82-2-985-8087 E mail. info@kigistec.com
www.kyungwoo.com / www.kigistec.com