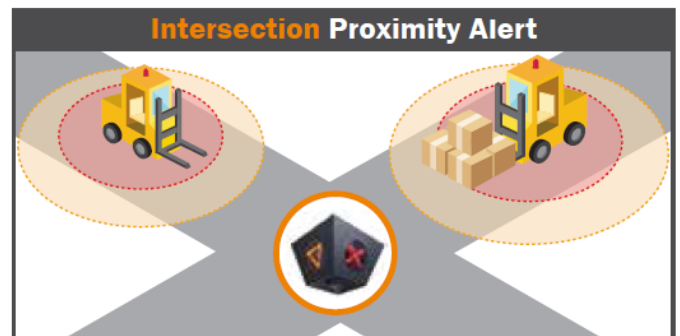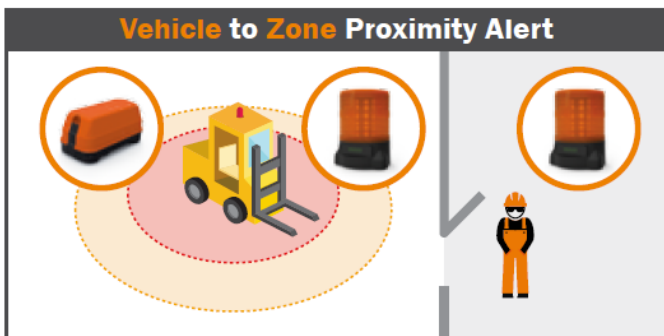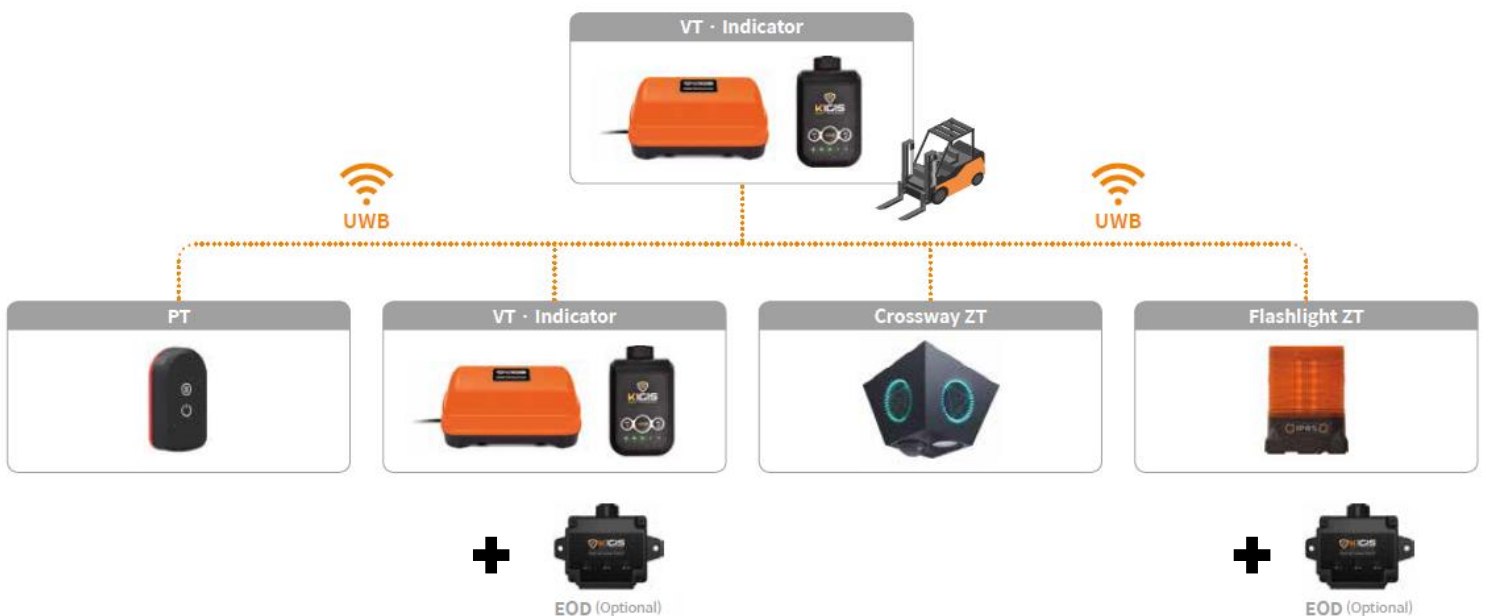## IPAS(Intelligent Proximity Alert System)

IPAS is designed to reduce the risk of collision between pedestrians and moving vehicles in your workplace. The system uses the cutting-edge RF technology to precisely measure the distance between the vehicles and pedestrians providing highly reliable collision warning.

● **Functionality**

Vehicle to Pedestrian Proximity Alert

Vehicle to Vehicle Proximity Alert

Vehicle to Zone Proximity Alert

Intersection Proximity Alert

● **Key Map for Operating and Sensing**

| VT · Indicator | | | |
| PT | VT · Indicator | Crossway ZT | Flashlight ZT |

UWB · UWB

EOD (Optional) · EOD (Optional)

Datasheet

Ultra wideband technology based tag detecting approaching pedestrians or vehicles.

- Ultra Wideband based intelligent proximity alert system
- Standard deviation of distance measurement 10cm
- CAN bus interface with 12/24V external power
- Easy use without a setup
- Simple installation and detachment using magnetic pad or bracket.
- Detecting functions are unaffected by wind, falling rain or snow, fog, humidity, air temperature, or light
- Tag operates in warehouse, factory, port and construction/mining site as a safety device
- IP65 enclosure withstands harsh environments

● **Technical Data**

General Specifications

Communication Method	Interface	Max. Detectable Distance	Standard Deviation of Detecting Distance	Weight
UWB	CAN Bus 2.0	30m	2.9cm (400ms, 30m)	483.5g

Ultra Wideband RF Parameter

Method	Conducted Rx Sensitivity	Conducted Tx Power Density	Data Rate
UWB compliant IEEE802.15.4-2011 STD	-93dBm /500MHz (6.8Mbps, PER 1%)	Max -41.3dBm/MHz	6.8Mbps

Electrical Characteristic

Power	Operating Voltage	Power Consumption
110/220VAC (90 – 264VAC)	DC 9~32V	Below 4W

Operating Specifications

Operating Temperature	Storage Temperature	Ingress Protection Rating	Connector
-30~85℃	-40~85℃	IP65	I.P Connector PLUG 6P (M10xP0.5)

IPAS Flash Light Zone Tag

● Overview

IPAS Flashlight Tag is a safety-assisting device which prevents collisions between vehicles by signaling dangers in 2 way communication to people in industrial working site.

Signal processing tag determines the distance from Zone tag to Vehicle Tag based on the time delay of the return signal. The tag are configured to a caution and a danger areas.

When a vehicle enters into the caution and danger area of the zone tag, the light flashes from the tag. The two areas are factory pre-set to default distances; they can be reconfigured for different distances using setting buttons. The sensitivity was pre-calibrated at the factory, assuming that the detecting field will be clear of obstacles. The sensitivity cannot be adjusted by user's handling.
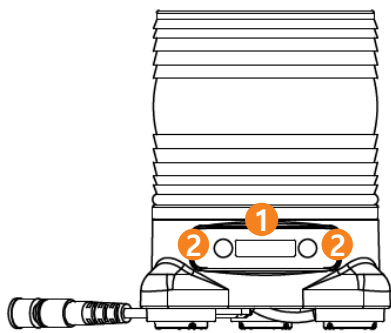
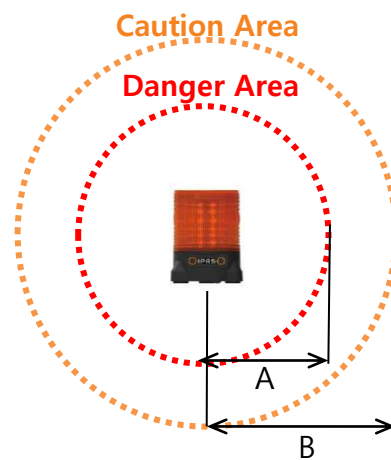*Figure 1. IPAS Flash Light Tag Features*

Figure 2. IPAS Flash Light Tag Detecting Distances

① LED Screen : Power ON → IPAS, Configuration
② Configuration Buttons (Down, Up)

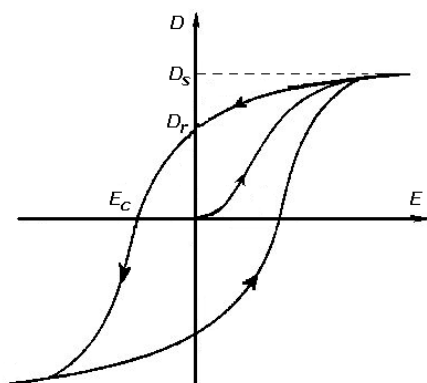| Tag	Area	Minimum Distance	Maximum Distance
Zone Tag	A	10m	30m
	B	10m	30m

※ A must be set-up lower than B (A < B)

Figure 3. Hysteresis

Hysteresis, applies to IPAS, is a dynamic lag between an input and an output that disappears if the input is varied more slowly; this is known as rate-dependent hysteresis. However, phenomena such as the magnetic hysteresis loops are mainly rate-independent, which makes a durable memory possible.

Systems with hysteresis are nonlinear, and can be mathematically challenging to model. Some models such as the Preisach model (originally applied to ferromagnetism) and the Bouc-Wen model attempt to capture general features of hysteresis; and there are also phenomenological models for particular phenomena such as the Jiles-Atherton model for ferromagnetism.

Configuration

The alarm type and volume level configuration can be selected via the menu button on the pedestrian tag.

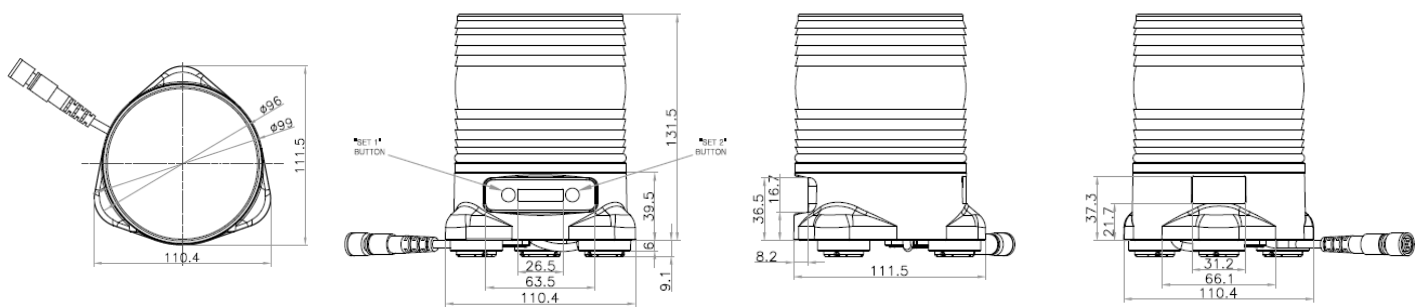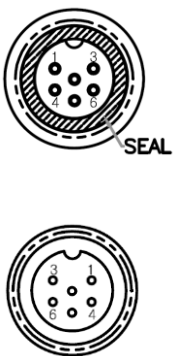| Button	Functions
Left	Change the menu, Change the setting values
Right	Enter the menu, Change the setting values

● Specifications
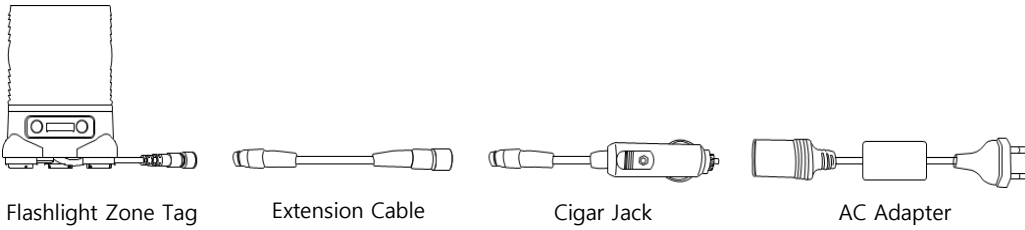
Dimension
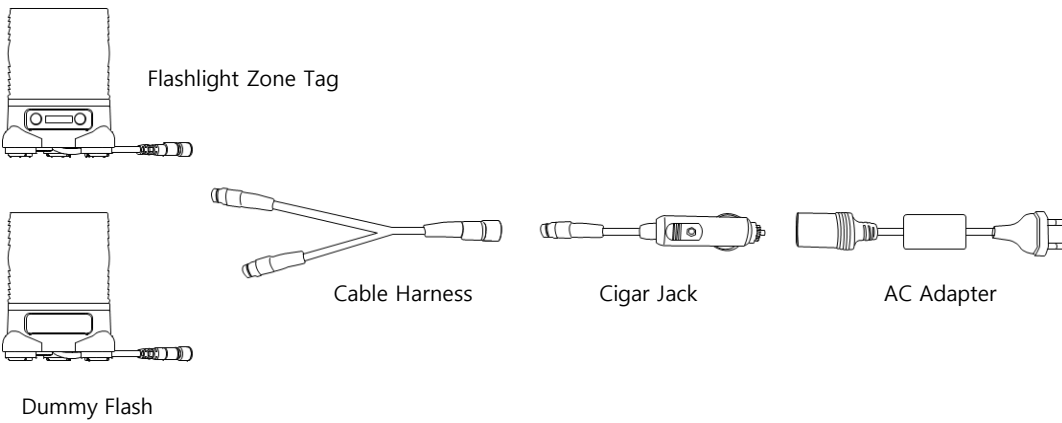

Figure 4. IPAS Flash Light Tag Dimension

Connector Specifications

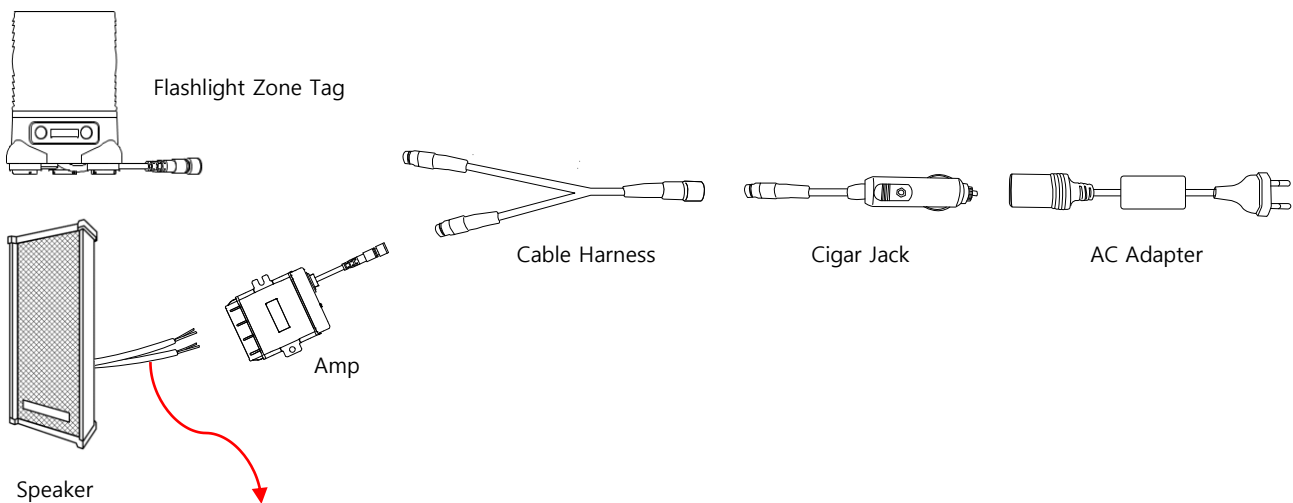| Pin No.	Function	Wire Description	
		Size	Color
P01	+12V		Red
P02	CAN_L		Yellow
P03	CAN_H	AWG #26	Blue
P04	RS232_TX		White
P05	RS232_RX		Green
P06	GND		Black

● Products Assembly

Standard

Flashlight Zone Tag   Extension Cable   Cigar Jack   AC Adapter

Multiple

Flashlight Zone Tag

Cable Harness   Cigar Jack   AC Adapter

Dummy Flash

Speaker + Amp

Flashlight Zone Tag
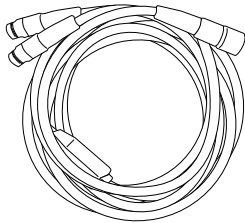
Cable Harness   Cigar Jack   AC Adapter
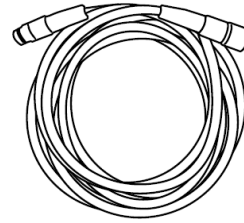
Amp

Speaker

※ Purchase 'Speaker Wire' if needed to extend the cable.
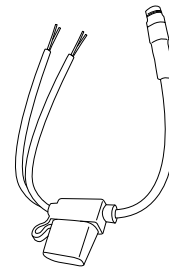
● Accessory

Products

IPAS Cable Harness(6M)
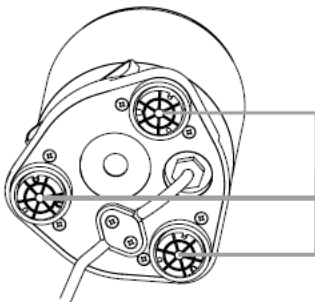
IPAS Extension Cable(6M)

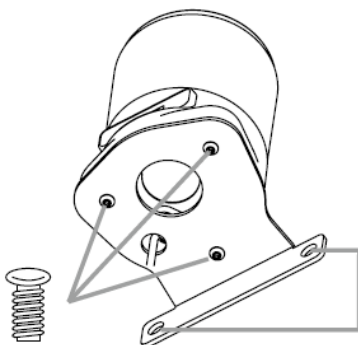IPAS Cable / Cigar Jack Adapter
(250V 5A Fuse Included)

IPAS Cable / Open Wire Adapter
(250V 5A Fuse Included)

Mounting Tools

Magnet Pads

The powerful magnet can be attached easily on VT floor, doors or corners

Bracket

It can be also easily installed by using cable ties in case of no magnet in vehicles, doors or corners.
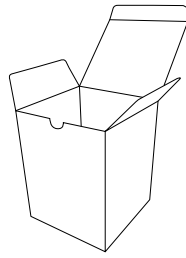
Packing

Figure 5. Inner Box

● **Certifications**

CE   ETSI EN 302 065-1 V2.1.1 (2016-11)
FCC: ZE8-PAS-K01-40
KC : MSIP-CRM-KWO-PAS-K01-40

● **Order Number (Product Code)**

Product Name	Function	Color	Product Code
IPAS Vehicle Tag: A1 Flash Light Type / Red Color	Vehicle – Zone	Red	PAS-K01-1400
IPAS Vehicle Tag: A1 Flash Light Type / Amber Color		Amber	PAS-K01-1500
IPAS Vehicle Tag: A1 Flash Light Type / Red Color / Magnet Pad		Red	PAS-K01-1401
IPAS Vehicle Tag: A1 Flash Light / Amber Color / Magnet Pad		Amber	PAS-K01-1501
IPAS Cable Harness (6.0M)			1-7020-30001
IPAS Cable Harness (3.0M)			1-7020-30009
IPAS Cable Harness (0.5M)			1-7020-30010
IPAS Extension Cable (6M)			1-7020-30002
IPAS Cable / Universal AC Adapter			1-7020-30005
IPAS Dummy Light			PAS-K02-7100
IPAS Audio AMP (20W) / English			PAS-K01-7201
IPAS Speaker (20W)			1-7020-50001

Manufacturer:

KYUNGWOO SYSTECH, INC.

4F, Daeryung Post Tower 5, 68, Digital-ro 9-gil, Geumcheon-gu, Seoul, 08512, Republic of Korea www.kyungwoo.com / www.kigistec.com

Distributor:

Motor Guardian Cam Inc.

2200 Estes Ave. 2F
Elk Grove Village IL 60007
sales@motorgc.com / (847) 296-4279