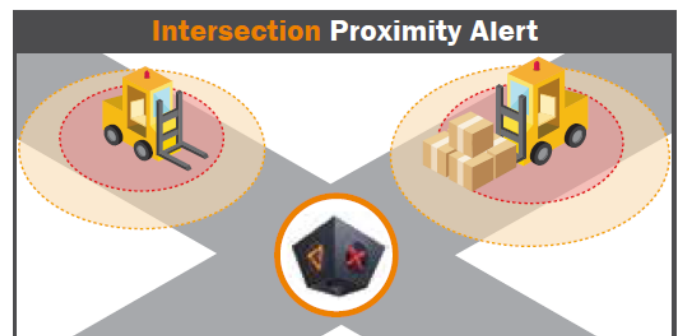
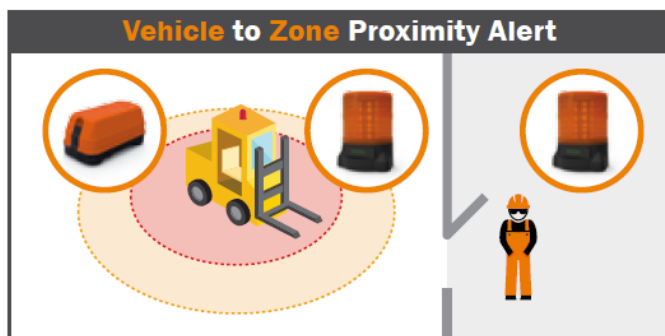


IPAS(Intelligent Proximity Alert System)

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



● Key Map for Operating and Sensing



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°C	-40~85°C	IP65	I.P Connector PLUG 6P (M10xP0.5)

● 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.

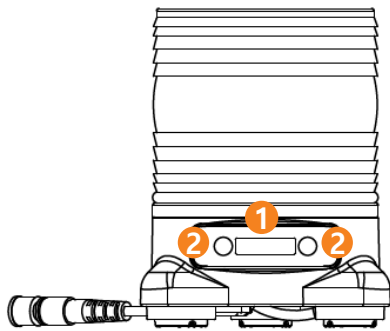


Figure 1. IPAS Flash Light Tag Features

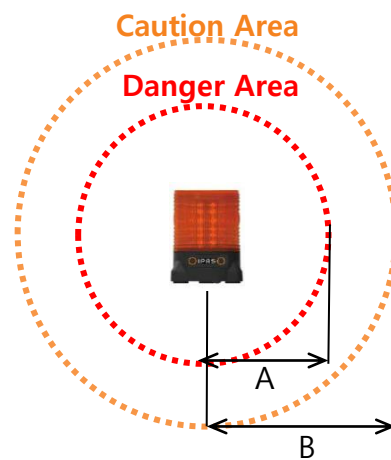


Figure 2. IPAS Flash Light Tag Detecting Distances

- 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 ($A < B$)

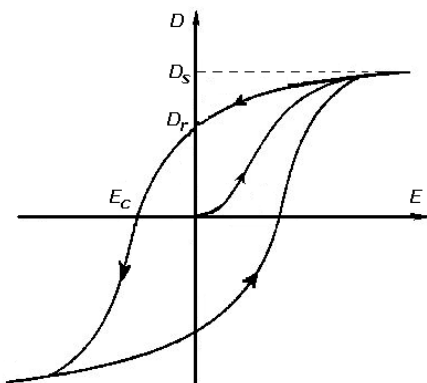


Figure 3. Hysteresis

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.