



SonaSafe

TECHNICAL DATA SHEET

Proximity Awareness.

Sonar and ultra-wideband proximity awareness for mobile plant - dynamic exclusion zones, real-time driver and pedestrian alerts, and every breach recorded to the cloud dashboard.

5

Detection Technologies

0-23 m

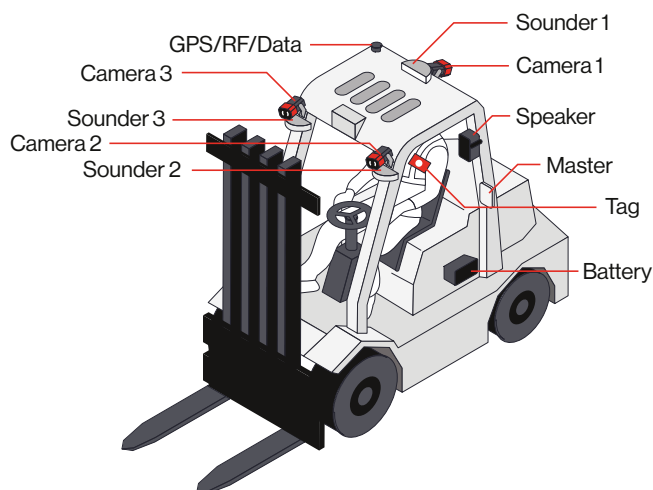
Configurable Zones

45 m

Presence Detection

SYSTEM COMPONENTS

Typical Installation



On The Vehicle

Sounder 1	Front Left
Sounder 2	Front Right
Sounder 3	Rear
Camera	170° wide angle
Horn Speaker	In-cab, 15 W
Master	Controller
GPS/RF/Data	4G-LTE uplink
Tag	Personal Detection Unit
Battery	Vehicle supply

Component Detail



Sounder

SonaSafe's proximity detection sensors, called Sounders, combine ultrasonic sound and ultra-wideband RF to provide an accurate and responsive detection solution that reduces alert fatigue through various configuration options. Forklifts carry two Sounders on the front and one on the rear. Larger CHE vehicles 6-8 Sounders.



Master

The Master controls all SonaSafe components interfacing with machine inputs speed, handbrake, safe to approach, fork height, driver presence and direction of travel - to dynamically create exclusion zones that reflect the vehicle and driver's operation. It features an in-cab 15 W Controller, 4G-LTE uplink, and runs on vehicle supply.



Horn Speaker

An interactive Horn Speaker informs the driver of system status and, through both an audible alarm and human voice, of breaches of the vehicle's exclusion zones. LEDs also highlight status.



AI Camera

Proxicam AI camera is fully integrated via SonaSafe modbus, with the same alert functionality and uptime monitoring as the Sounders. Typical fitout is one camera on the rear, or up to three cameras on forklifts and up to four cameras on larger machines as required. Features a 170° wide angle.

MAIN OPERATING CHARACTERISTICS

Built for the moment people and plant meet.

Specifically designed for when people interact with materials handling equipment, and for vehicle-versus-vehicle detection, the system uses five distinct technologies - ultra-wideband, narrowband, ultrasonic sonar pinging, GPS and vision - in various or all combinations.

This provides a high-speed, low-latency, simultaneous networked solution that works across multiple vehicles and people.

An in-cab rugged Horn provides audio tones and messages signalling alerts, faults and specific operational conditions.

Multiple zones - Stop, Warning, Visitor and Vehicle are available from 0 m to 23 m with high accuracy, and presence detection up to 45 m.

All systems are mobile data enabled and upload alert, status and maintenance data to a cloud-based Device Management and Analytics platform.

Alert Type

Visitor Rules

Access Control

Speed Control

Stop

Geofencing

Person in Area

Safe Approach

Vehicle Warning

Door Alert

Driver Zones

Camera Links

Sonasaft can be configured for a range of equipment and applications. Zone sets and alert rules are agreed at discovery and set at installation.

Configuration Options

Input & Output Interfacing

Speed control

Bubble morphing

Movement detection (acceleration / deceleration)

Impact detection

Driver detection

Safe to approach

Crane line length bubble morphing (X up / Y out)

Horn Speaker

Alerts

Speech

Tones

● Operational - green

● Handbrake on- blue

● Fault detected - red

Fixed volume: defined by the customer and set at installation, so crew cannot lower it.

Tag (PDU)

Internal buzzer

Button functions

LED indicator

● Operational - green

● Faulty - red

Camera

LED indicator

● Operational - blue

● Detectional - yellow

● Faulty - red

SPECIFICATIONS

Power, Interfacing and detection.

DESCRIPTION	SPECIFICATION
DC supply	12 to 24 volt nominal at less than 3 ampere
Extended DC supply	36 to 80 volt
Power consumption	< 20 watt
Ground	Negative supply and floating 36, 48 or 80 volt
Interface standard	RS485 to sensors, RS232 external
Detection distance	1 to 23 metres, less than 0.5 metre accuracy
Detection distance for presence	45 metres
Camera	Wide angle, 170° coverage
Horn output	15 watt
Narrowband sync frequency	ISM band, 920 MHz nominal
Spread spectrum standards	EN 301 489-33, EN 302 065-1, IEEE 802.15.4-2011
Spread spectrum frequency	6.24 to 6.7392 GHz
Sounder data bus	RS485 Modbus protocol
Loudspeaker data bus	RS232
Maximum voltage on Sounder data bus	48 volt DC limited to 1 ampere
Maximum voltage on loudspeaker data bus	Supply voltage
Fault indication	Visual and audible
GPS	Standard
Data connections	M12 and Deutsch
Accelerometer	Standard X, Y, Z
Temperature - operational, excluding the Horn	-20°C to +60°C
Temperature - storage	-40°C to +85°C

Alerting, ingress and the dashboard

DESCRIPTION	SPECIFICATION
Alert functions & control	Visual audible message open collector relay drive
PDU time to fully charge	6 hours nominal
Dashboard upload mobile data	4G-LTE
Dashboard monitoring	Customer centric, device health

INGRESS PROTECTION

IP61

ACCESS POINT

IP63

TAG

IP66

MASTER
CONTROLLER

IP66

HORN

IP66

INDICATOR UNIT

IP66

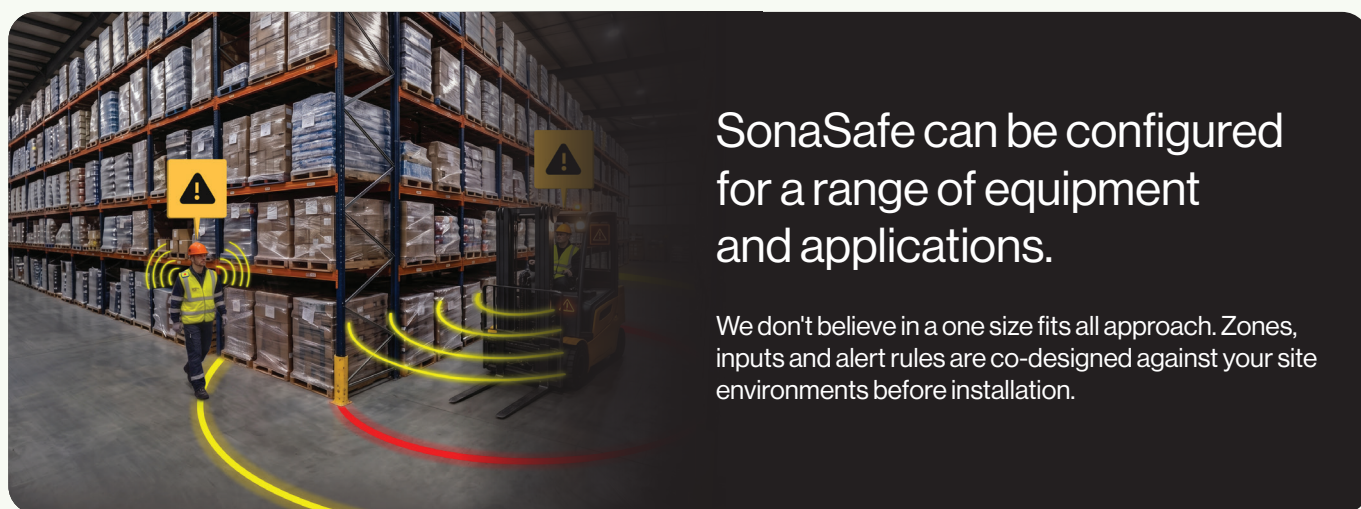
CAMERA

IP69K

SOUNDER

IP69K

UWB ANTENNA



SonaSafe can be configured for a range of equipment and applications.

We don't believe in a one size fits all approach. Zones, inputs and alert rules are co-designed against your site environments before installation.

