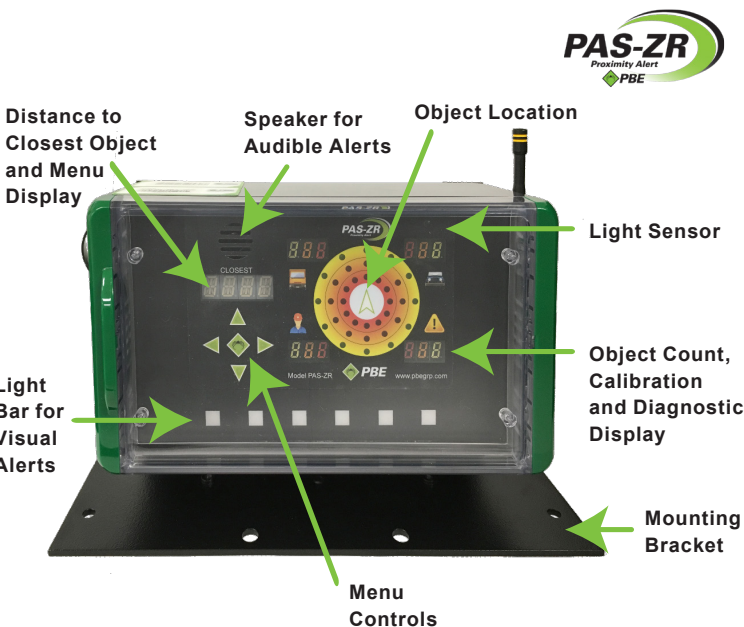
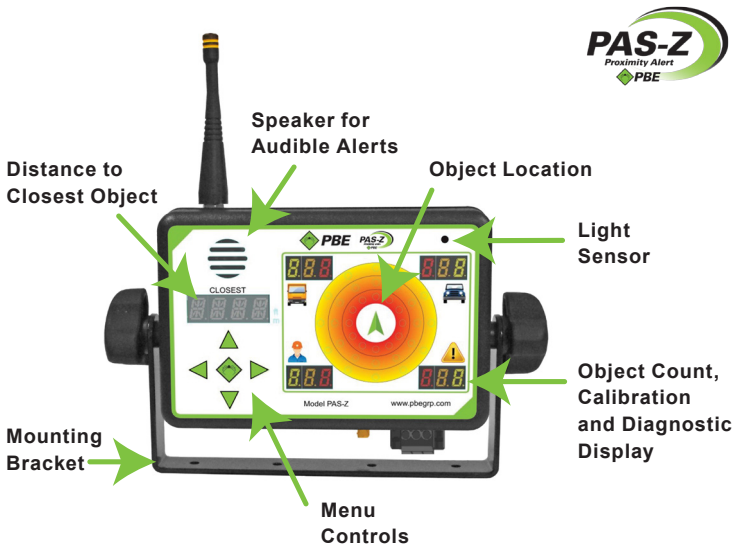


INNOVATING SAFETY. POWERING PRODUCTIVITY.

PAS-Z and PAS-ZR are a compact, portable, multiple technologies Proximity Detection & Collision Avoidance solution for all market sectors

PBE's tag based Proximity Alert Systems (PAS) are designed to enhance workplace safety by reducing risk of collision through asset and personnel detection and warning. The device alerts drivers of the presence of personnel, vehicles, obstacles and user defined geofences. The configurable PAS-Z helps manage vehicle interactions by providing reliable information on direction and distance by utilizing multiple technologies including RFID, GPS, Electromagnetics and Bi-directional Radar. A ruggedized version, the PAS-ZR is also available with the same functionality.

All PAS-Z solutions have extensive reporting capabilities to allow identification of safety issues and processes in addition to replaying of events. The same tags are used for PBE's tracking solution and can be combined into entry/exit systems for a single integrated solution.

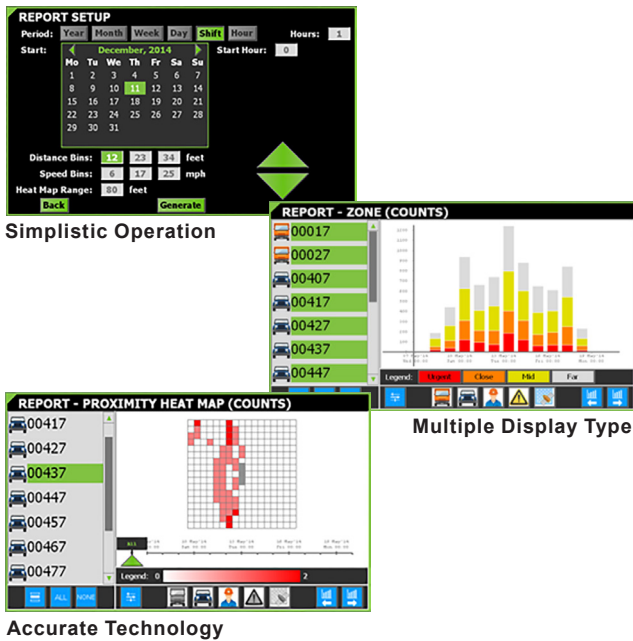


BENEFITS

- Suitable for worksites, depots, temporary possessions, mines and hazardous areas
- Accurate range and direction for all vehicles, personnel, obstacles and assets
- Seamless operation above and below ground
- Convenient local configuration or user friendly software for future download
- All events logged internally with an extensive reporting capability
- Audio and visual warnings with the option of an external strobe/siren
- Self-contained for simplistic and quick installation

TECHNOLOGIES

- Multiple detection technologies:
 - EM (Electromagnetics)
 - RFID
 - GPS
 - Bi-Directional Radar
- GPS receiver for surface tracking and defining site Geofencing
- Magnetic solid state compass
- Wi-Fi ready



FEATURES

- Multiple technologies for redundancy and accuracy
- Recognizes 4 user definable groups, such as personnel, assets, vehicle types, visitors, obstacles etc.
- Each vehicle has 4 configurable zones for each group type
- Critical reports for daily review and full data capture for offsite analysis
- 4 outputs and 4 inputs for alarms or allowing optional control and interaction with vehicle and machines
- Compatible with PBE's tracking system and entry/exit system functionality for an integrated solution
- Powered via the ignition circuit of the vehicle/machine or via an auxiliary power source
- USB port for configuration and data extraction without wireless connectivity

PAS-Z AND PAS-ZR PROXIMITY ALERT SPECIFICATIONS

General Specification			
PAS-Z Enclosure Dimensions	6.014(L) x 4.008(W) x 1.502(D) inches 152.8(L) x 101.8(W) x 38.2(D) millimeters		
PAS-ZR Enclosure Dimensions	9.094 (L) x 4.921 (W) x 3.543 (D) inches 231 (L) x 125 (W) x 90 (D) millimeters		
Input & Ignition Voltage	11-15 VDC (Optional 24-12VDC convertor available)		
Temperature	0° to 70°C 32°F to 158°F		
Outputs (4)	PAS-Z: SPST contacts (2 NC & 2 NO); apply up to 30 VDC / 1 A PAS-ZR: SPST contacts (2 NC, 1 NO, & 1 NO configured for sounder strobe); For outputs 1, 2, & 4, apply up to 30 VDC / 1 A; Output 3 supplies voltage (Vin) for sounder strobe activation		
Inputs (4)	Input 1 & 2; apply up to 30 VDC (<10V = 0, 10-30V = 1) Input 3 & 4; switch closure/dry contact monitoring (open = 0, closed = 1)		
Internal Storage Capacity	8GB		
Warranty	12 Month		
Frequencies			
	ITU Region 1 (Europe, Africa, the Middle East)	ITU Region 2 (Americas)	ITU Region 3 (Asia and most of Oceania)
RFID	868.3MHz	915MHz	920MHz
Radar	4.5GHz	4.5GHz	6.5GHz
Electromagnetic (EM)	122.1kHz	122.1kHz	122.1kHz
Range & Accuracy Estimations			
	Range		Accuracy
RFID	≈ 60m, 200ft		Zonal awareness
Radar	≈ 100m, 300ft		≈ 0.3m, 1ft
Electromagnetic (EM)	≈ 10m, 30ft		≈ 0.3m, 1ft
GPS	Autonomous 2.5 m (≈ 8.2 ft) CEP; SBAS = 2.0 m (≈ 6.56 ft) CEP		