Pulsed Radar

Pulsed Radar and Pulsed Radar Xtreme systems use a patented microwave radar technology. Microwaves are unaffected by inclement weather conditions, temperature extremes, dust, dirt, constant vibrations and are capable of detecting moving and stationary objects. Systems based upon ultrasonic technology typically used on passenger vehicles need ideal environmental conditions to function properly. Others, like Doppler radar, only detect moving objects, and video and infrared systems are often affected by extreme heat or sunlight.

Ultrasonic

Ultrasonic sensors generate pulsed high frequency sound waves. If there is an object in the path of these pulses, they will be reflected back to the sensor as an echo. By measuring the time difference between the pulse being transmitted and the echo being received, it is possible to determine how far away the object is from the sensor.
Obstacle Detection

- Pulsed Radar - Xtreme: 46
- Pulsed Radar: 48
- Ultrasonic: 50
Obstacle Detection

- Detects moving, stationary & multiple objects.
- Unaffected by temperature extremes, dirt, dust, rain, sleet, snow or fog.
- Effective through non-metalic surfaces e.g. plastic & fiberglass.
- Adjustable detection range - 10m to 3m.
- Can be programmed with optional service tool to ignore fixed objects, bodywork, attachments etc.
- Self diagnostic function.
- Rugged cable system withstands harsh environmental conditions.
- In-cab audible & visual alert.
- 2 auxiliary outputs to activate additional items, e.g. cameras or alarms.
- Multiple sensors can be networked.
- Sensor epoxy filled for maximum vibration resistance.
- Environmentally sealed sensor - IP67.
- Sensor can be steam & pressure cleaned.
- Multi-voltage.
- 2 year warranty.

**Voltage:** 12-24V  
**Current Draw:** 0.2A  
**Radar Frequency:** 5.8GHz  
**Relay Output:** Normally Open, 1A Max. Continuous  
**Body:** Sensor Polycarbonate, Display PC & ABS  
**Weight:** Sensor 0.95kg, Display 0.11kg  
**EMC:** CE & ‘e’ marked  
**Standards:** Conforms to SAE 1455 environmental  
**Operating Temperature:** -40°C to 85°C  
**Ingress Protection:** Sensor IP67

Pulsed Radar - Xtreme

The Pulsed Radar - Xtreme is ideal for large off-road mining equipment, vehicles that typically have large blind spots, such as Haul Trucks, Wheel Loaders, Dozers, Excavators and Shovels.

In-Cab Audible & Visual Display

When an object is detected, the in-cab display LEDs illuminate and an audible alert will sound. Each LED represents approximately 1/5 of the detection distance.

Network Sensors

Up to 24 sensors may be combined on the one network to provide object detection to several areas while requiring only 1 in-cab mounted display.
Pulsed Radar - Xtreme Kits

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Detection Range</th>
<th>Harness Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS4100</td>
<td>10m</td>
<td>10m</td>
</tr>
<tr>
<td>BS4200</td>
<td>10m</td>
<td>20m</td>
</tr>
</tbody>
</table>

Kits contain:
- Sensor unit - factory set at 10m detection range
- Audio/visual display
- 10m or 20m harness (sensor to display)
- Sensor & display mounting hardware
- Installation & operation manual

Programmable

The Pulsed Radar - Xtreme is fully configurable using the PVST4000 Service Tool.
- Detection zones can be adjusted from 10m to 3m.
- Detection type can be selected.
- Audible & visual warnings from the display can be configured or modified.
- ‘Fixed Object Calibration’, allows the sensor to ignore small, fixed objects in the radar path, e.g. ladders, booms, rippers & pulleys.
- Unit available for purchase or hire.

Pulsed Radar - Xtreme Components

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XPV4102</td>
<td>Display &amp; bracket</td>
</tr>
<tr>
<td>XPV4232A</td>
<td>Sensor - Factory set at 10m detection range</td>
</tr>
<tr>
<td>XPV4132</td>
<td>Harness - Sensor to Display 10m</td>
</tr>
<tr>
<td>XPV4165</td>
<td>Harness - Sensor to Display 20m</td>
</tr>
<tr>
<td>XPV41CA</td>
<td>Cab adaptor cable</td>
</tr>
<tr>
<td>XPV41PA</td>
<td>Power adaptor cable</td>
</tr>
<tr>
<td>PVST4000</td>
<td>Service Tool - Available for purchase or hire</td>
</tr>
</tbody>
</table>
### Pulsed Radar

- Voltage: 12-24V
- Current Draw: 0.2A
- Radar Frequency: 5.8GHz
- Relay Output: Normally Open, 1A Max. Continuous
- Body: Sensor Polycarbonate, Display PC & ABS
- Harness: 7.5m
- Weight: Sensor 0.8kg, Display 0.11kg
- EMC: CE & ‘e’ marked
- Standards: Conforms to SAE 1455 environmental
- Operating Temperature: -40°C to 85°C
- Ingress Protection: Sensor IP67

### Obstacle Detection

- Up to 6m detection zone.
- Dual sensor kit developed for waste management vehicles.
- Unaffected by temperature extremes, dirt, dust, rain, sleet, snow or fog.
- In-cab audible & visual alert.
- Auxiliary output to activate additional items, e.g. cameras or alarms.
- Sensor unit epoxy sealed for maximum vibration resistance.
- Environmentally sealed sensor - IP67.
- Sensor can be steam & pressure cleaned.
- Multi-voltage.

### In-Cab Audible & Visual Display

When an object is detected, LEDs will illuminate to indicate the relative distance to the closest object and the buzzer tone rate will increase as the vehicle gets closer to the object.

### Dual Sensor for Waste Management Vehicles

Waste management vehicles work in both residential and commercial locations every day. It is not unusual for there to be pedestrians and workers moving into the path of a reversing truck.

The dual sensor BS2060 is designed specifically for these applications and provides enhanced coverage by working in tandem to detect objects that may sneak in behind the vehicle.
Pulsed Radar Kits

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<tr>
<th>Part No.</th>
<th>Detection Range</th>
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</tr>
</thead>
<tbody>
<tr>
<td>BS1030</td>
<td>3.0m</td>
<td>Single Sensor System</td>
</tr>
<tr>
<td>BS1060</td>
<td>6.0m</td>
<td>Single Sensor System</td>
</tr>
<tr>
<td>BS2060</td>
<td>6.1m</td>
<td>Dual Sensor System</td>
</tr>
</tbody>
</table>

Kits contain:
- Sensor unit/s
- Harness(es)
- Audio/visual display
- 7.5m Harness (sensor to display)
- Sensor & display mounting hardware
- Installation & operation manual
- BS2060 kit contains 2 sensor housings

Pulsed Radar Extension Cables

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPV2125</td>
<td>7.5m</td>
</tr>
<tr>
<td>SPV2150</td>
<td>15m</td>
</tr>
</tbody>
</table>
Obstacle Detection

- Obstacle detection rate under 200 milliseconds.
- Adjustable distance for outer sensors.
- Backscan includes in-cab visual display.
- 3 stage warning zones.
- Environmental Learning Mode prevents false alarms.
- Multiple sensor mount types included.
- Backscan incorporates 50cm compensation range for inboard mounted sensors (selectable via dip switch).
- One trigger output.
- Self diagnostic function.
- Sensors & ECU environmentally sealed - IP68.
- Multi-voltage.
- 2 year warranty.

- **Voltage:** 12-24V
- **Current Draw:** 0.2A
- **Detection Range:**
  - Backscan: up to 2.5m
  - Frontscan: up to 2.1m
- **Harness:**
  - ECU to Display: 15m
  - ECU to Sensors & Buzzer: 2.5m
- **EMC:** CE & 'e' marked
- **Standards:** RoHS compliant
- **Operating Temp:** -40°C to 80°C
- **Ingress Protection:**
  - Display & Buzzer: IP54
  - ECU & Sensors: IP68

**Environment Learning**

Environment Learning Mode prevents false alarms from tow-hooks and other ancillary fixed equipment that intrudes into the first 100cm of the detection zone.

**50cm Compensation**

50 centimetre compensation for installation to vehicles with in-board bumpers / tray over hang.

**Warning Zone**

The frequency of the signal changes according to the distance from sensors to the object.
Ultrasonic - Backscan

Kit contains:
- 1 x Backscan ECU
- 1 x Backscan display
- 4 x Sensor
- 4 x Sensor bracket - 0° flush mount
- 4 x Sensor bracket - 11° flush mount
- 4 x Pendant mount housing
- 4 x ECU to sensor harness
- 1 x ECU to display harness

**Part No.** BS-4000W

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Max. Detection Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS-4000W</td>
<td>2.5m or 0.6m*</td>
</tr>
</tbody>
</table>

*Outer sensors max. detection distance 2.5m or 0.6m (selectable via dip switch).
Sensor flush mounting: Ø 28mm

Ultrasonic - Frontscan

Kit contains:
- 1 x Frontscan ECU
- 1 x Buzzer
- 4 x Sensor
- 4 x Sensor bracket - 11° flush mount
- 4 x Sensor bracket - 18° flush mount
- 4 x Sensor bracket - 26° flush mount
- 4 x ECU to sensor harness
- 1 x ECU to buzzer harness

**Part No.** FS-4000W

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Max. Detection Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS-4000W</td>
<td>2.1m or 0.6m*</td>
</tr>
</tbody>
</table>

*Outer sensors max. detection distance 2.1m or 0.6m (selectable via dip switch).
Sensor flush mounting: Ø 28mm