







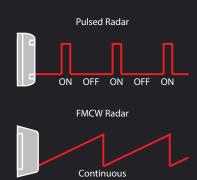
Backsense Radar

Backsense® radar systems use a patented Frequency Modulated Continuous Wave (FMCW) radar technology.

Backsense® radar transmits a continuously varying frequency signal which gives a unique time stamp to each instance of the wave. The returning wave is then referenced against this without having to stop transmitting unlike pulsed radar.

The advantages of FMCW over competitor pulsed radar are FMCW has better detection at long distance and greater resistance to electromagnetic noise.

Backsense® radar also controls the radar beam pattern, so the spread of the beam can be restricted to the width of the plant for the length of the detection area, to minimise false alerts on a busy site.







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.







Backsense Radar

38

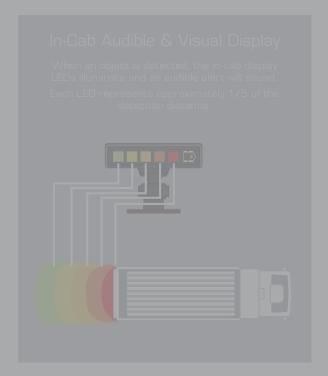
Backsense Network Radar

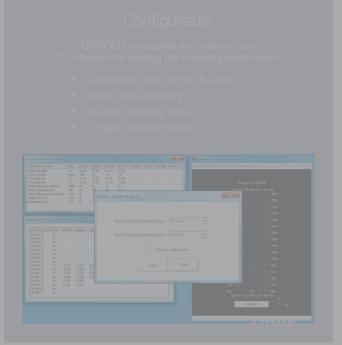
40

Ultrasonic

44









Backsense Radar – Accessories & Spare Parts

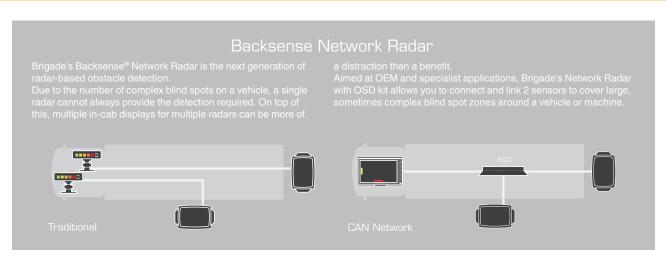
Packethe Hadai Accessories & Spare Faire	
BS-05B	Adjustable sensor bracket
BS-05DCX	Extension Cable – 5m
BS-09DCX	Extension Cable – 9m
BS-25DCSX	Extension Cable – 25m
BS -7030 D	Display – 3m range
BS -7045 D	Display – 4.5m range
BS -7060 D	Display – 6m range
BS-8000D	Display – Configurable range
BS-70XXS	Sensor – Fixed range. Replace 'XX' with 30, 45 or 60 corresponding to detection range of 3m, 4.5m and 6m
BS-8000S	





- Overlay detection data for up to 2 radar sensors on a single monitor.
- Compiles with CAN 2.0A Base Frame Format.
- Detects multiple moving and stationary objects.
- High frequency continuous wave provides increased reliability & low false alarm rates.
- Adjustable detection range up to 30m.
- 3 trigger inputs used for activating components such as alarms and beacons.
- Environmentally sealed sensor IP69K
- Sensor can be steam & pressure cleaned.
- Multi-voltage.
- 3 year warranty.

12-24V Voltage: Current Draw: 0.4A Radar Frequency: 24.05GHz to 24.25GHz Weight: Radar Sensor O.7kg Vibration: Shock: 100G EMC: CE & 'e' marked ISO 16750/13766, EN13309 & FCC Approvals: Operating Temperature : -40°C to 85°C Ingress Protection:



On-Screen Display

Multiple radars with individual in-cab displays can cause confusion and also be a challenge to install. Brigade's latest innovation, the Backsense® OSD (On-screen Display) ECU allows for the use of 2 Backsense® Network Radar units to be combined with any Brigade Backeye® camera system.

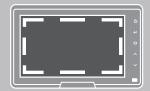
Radar detection data is overlaid transparently* along the edge of the monitor so as not to obscure the camera image with the audible warning via the monitor speakers.

*Transparency level can be adjusted via software

When an object is detected in the YELLOW zone, the associated on-screen indicator will turn yellow and a pulsed audible alert is played through the monitor's speaker.



When object is detected in RED zone, the associated on-screen indicator will turn red an a constant audible alert is played through the monitor's speaker.

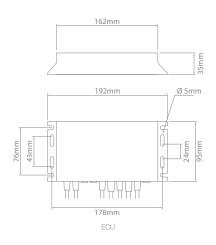


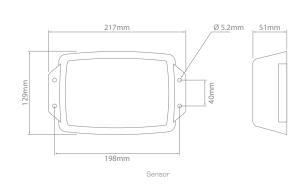
Each radar sensors detection notification can be assigned to one of eight predefined positions overlaid around the edge of a monitor.

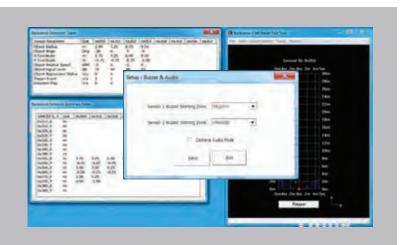












Backsense Network Radar - OSD Kit

Detection Distance (m) Detection Width (m) Camera Inputs

Trigger Inputs Outputs*

BS-9001-**0SD**

Part No.

2 – 10

2

3

3 x 0.5A

Supports up to 2 Backsense® Network Radars.

Compatible with Brigade Backeye systems, including Backeye 360 and Brigade Digital Mobile Recorders.

*1 x output for alarm use only.

Kit contents:

Kit contents:

1 x BS-9000 Sensor Unit

1 x OSD ECU

3 x Network Y Cable

2 x CAN Bus Terminator

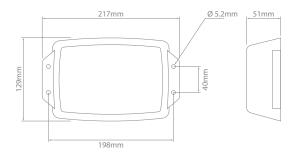
1 x 9m Extension Cable

1 x Network Power Input Cable
Sensor Mounting Hardware

Manual & software available on IONNIC website







BS-9000 CAN Integration

Backsense Network Radar - Sensor



Part No.

Description

BS-9000 Single network radar sensor unit CAN

SAE J1939

Baud Rate 500K

Detection Distance (m) Detection Width (m)

2 - 10









Backsense Network Radar - Accessories



Part No. Description

BS-05B Adjustable sensor bracket

Supplied with bolts, washers and nylock nuts.

BS-05**DCX** Extension cable - 5m **BS**-09**DCX** Extension cable - 9m BS-25DCSX Extension cable - 25m

BS-OONYC Network 'Y' cable

BS-OONT 120 Ohm CAN bus terminator BS-02PIC Network power input cable - 2m

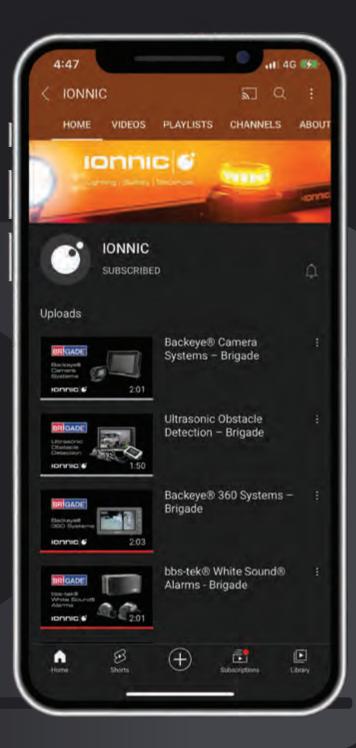


IONNIC YouTube Channel

Product videos, configuration tutorials and more





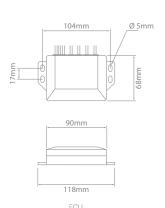


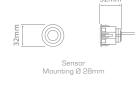


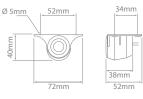
- Obstacle detection rate under 200 milliseconds.
- Adjustable max. detection distance via dip switch.
- Backscan includes in-cab visual display.
- OSD module overlays detection data for up to 2 Ultrasonic sensors on a single monitor.
- 3 stage warning zones.
- Environment Learning Mode prevents false 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.
- Multi-voltage.
- 3 year warranty.

Voltage : Current Draw : Approvals : Operating Temp : Ingress Protection :

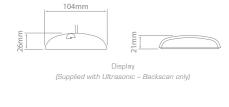
12-24V 0.2A RoHS, CE & 'e' marked -30°C to 80°C Sensors IP68 ECU IP69K

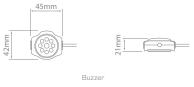


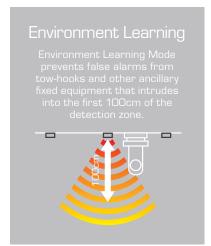


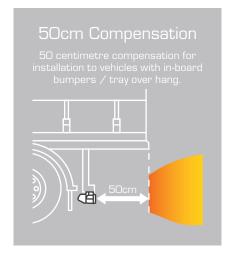


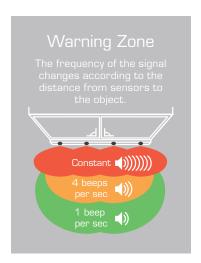






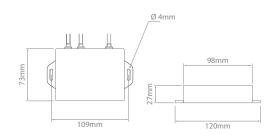












Ultrasonic – On-Screen Display Module 🐷



Camera Input 2

Trigger Input

Ultrasonic Detection System Input

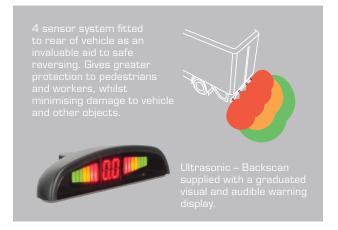
UDS-OSD20-ECU

2

2

Output 2

2 year warranty.





Ultrasonic - Backscan

Max. Detection Distance (m) Part No. Outer Inner

BS-4000W 2.5/0.6* 2.5

*Outer sensors only, detection range adjustable via dip switch.

Kit contents:

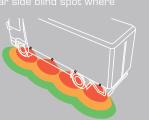
4 x Sensor 1 x Display

4 x O° Sensor Bracket

4 x 11° Sensor Bracket 4 x Pendant Mount Housing 4 x Sensor Harness – 2.5m 1 x Display Harness – 15m







Ultrasonic - Sidescan

Part No.

Max. Detection Distance (m)

SS-4100W

1.0/1.5

Kit contents:

- 4 x Sensor

- 1 x ECU 4 x 0° Sensor Bracket 4 x 11° Sensor Bracket
- 4 x Pendant Mount Housing 4 x Sensor Harness 4.5m 1 x Buzzer Harness 10m
- 2 x Extension Cable 2.5m





Ultrasonic - Cornerscan

Part No.

Max. Detection Distance (m)

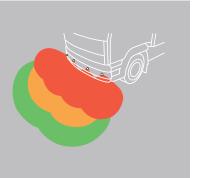
CS-3100

0.6/1.0

Kit contents:

- 3 x Sensor
- 1 x Buzzer 1 x ECU
- 3 x 11° Sensor Bracket
- 3 x 18° Sensor Bracket
- 3 x 26° Sensor Bracket 3 x Sensor Harness 2.5m 1 x Buzzer Harness 2.5m





Ultrasonic - Frontscan

Part No.

Max. Detection Distance (m) Outer Inner

FS-4000W

2.5/0.6

2.1/1.0

Kit contents:

- 4 x Sensor 1 x Buzzer
- 4 x 11° Sensor Bracket
- 4 x 18° Sensor Bracket 4 x 26° Sensor Bracket 4 x Sensor Harness 2.5m 1 x Buzzer Harness 2.5m



2 sensor system fitted to near side cab step giving awareness to the driver of objects to the side when turning and reversing.

Minimises the risk of damage to the vehicle cab from otherwise unseen objects.





Ultrasonic - Stepscan

Part No.

Max. Detection Distance (m)

ST-2100

0.6/1.0

Kit contents:

2 x Sensor 1 x Buzzer

1 x ECU

2 x 11° Sensor Bracket

2 x 18° Sensor Bracket 2 x 26° Sensor Bracket 2 x Sensor Harness – 2.5m 1 x Buzzer Harness – 2.5m

















UDS-4.5SC



Buzzer Extension Cable

Ultrasonic - Spare Parts 🔤



Part No.

UDS-000**HSS** Sensor – suits Backscan & Frontscan

UDS-00SM Pendant Mount Housing, use in conjunction with Sensor Bracket

UDS-00SSK Sensor Bracket Kit Kit contents: 4 x 0° & 4 x 11° bracket **UDS-**05**SS** Sensor Bracket Kit Kit contents: 2 x 5° bracket **UDS**-11**SS** Sensor Bracket Kit Kit contents: 2 x 11° bracket **UDS-18SS** Sensor Bracket Kit Kit contents: 2 x 18° bracket **UDS**-26**SS** Sensor Bracket Kit Kit contents: 2 x 26° bracket

UDS-4.5SC Sensor Extension Cable - 4.5m **UDS-2.5BC** Buzzer Extension Cable - 2.5m UDS-10BC Buzzer Extension Cable - 10m **UDS-15BC** Buzzer Extension Cable - 15m

