

You're safer with us

# Vehicle Safety Systems

English

**Edition 24** 



# "Zero lives lost in collisions with commercial vehicles and mobile machinery"

Brigade is at the pinnacle of commercial vehicle and mobile plant blind-spot safety. A founder and innovator of sensing and monitoring systems that have helped save lives for over forty years.

Whilst our portfolio may be emulated, our commitment to vehicle safety, our reliable, trusted products and our dedicated team of experts, cannot. We invest in people as well as technology. Everyone in the Brigade family understands the life-changing significance of the products and service we provide and the importance of outstanding systems that work in the most demanding of situations.

For the future: We will continue to inform and work with policy makers and industries to ensure blind-spot mitigation is effective. We will recruit the highest calibre people who are passionate about what we do. We will impart expert knowledge and advice to help customers with their challenges. We will always seek to innovate and bring new products to market that help prevent collisions and save lives. We will strive to achieve our vision of zero lives lost by constantly improving the safe operation of commercial vehicles and mobile plant around the world.

- Brigade Electronics Group Plc management systems are certified to ISO9001:2015
- Our principal manufacturing facilities are certified to IATS16949:2016
- All applicable products have CE-marking in Europe and FCC/IC approval in North America
- The majority of our products comply with UN ECE Regulation 10 (EMC)
- Combinations of our camera monitor systems are certified to Regulation 46
- Our products comply with REACH and RoHS



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# You're safer with us

# Camera Monitor Systems

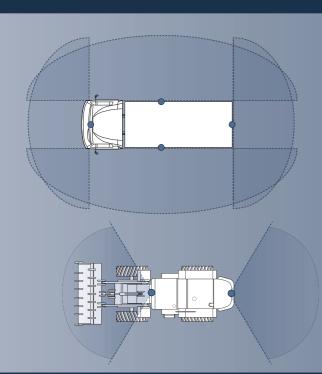
Brigade's camera monitor systems enable drivers and operators to manoeuvre and drive safely.

Vehicle-mounted cameras can help the driver to see blind spots by delivering a live feed on the monitor of everything in the camera view, including people or obstacles.

Camera monitor systems are used in a wide range of on and off-road applications to meet a host of health and safety and legislative requirements. The range includes entry-level reversing cameras to full-vehicle camera system with Al. With single-to-multiple camera inputs and auto-triggers, Brigade cameras and monitors will work on any application in any industry and are fully compatible with MDR recorders.

Internet Protocol (IP) Cameras are high-definition digital cameras with their own IP address. Directly connected to an MDR, the IP camera transmits digital video over a data connection (ethernet cable) where the images are saved to the onboard storage.

**Backeye®360** is an intelligent camera monitor system designed to assist low-speed manoeuvring by providing the driver with a complete 'birds-eye' surround view of the vehicle in real time.







# **360° Camera Monitor Systems**

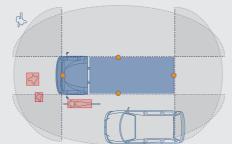
An intelligent camera monitor system designed to assist low-speed manoeuvring by providing the driver with a complete 'bird's-eye' surround view of the vehicle in real time.

360° technology works with four ultra wide-angle cameras, each covering one full side of the vehicle with a viewing angle of over 180°. High-mounted on the front, rear and sides, the calibrated cameras capture all of the surrounding area including the blind spots of the vehicle or machine.

The four live images are simultaneously sent to an electronic control unit (ECU) where they are instantly processed, combined, blended and stitched. A clear, real-time view is provided to the driver in a single image on the monitor.

# **360° with Artificial Intelligence**

- Recognises and alerts the driver to people around the vehicle
- Detected people are shown in a coloured box overlayed on the 360° image on the driver's monitor
- Compatible with all Brigade HD monitors and MDR recorders



Model Part No:

### AI AHD 360° CAMERA SYSTEM

VBV-360-1000 - High Definition Backeye®360 system with Artificial Intelligence 7524



### IP69K cameras

- 12-24Vdc
- Size (WxHxD) ECU 140 x 122 x 40mm
- Size (WxHxD) Camera 140 x 63 x 54mm
- · 3 year warranty

AHD

### Contents

• 1 x ECU

**Features** 

Al technology

- 4 x VBV-2230-C-Al cameras
- 1 x Interface Harness • 1 x Power harness
- 1 x Video input harness
- 1 x Video output harness
- 1 x Video output cable
- 1 x Remote control

- Ultra-wide viewing angle cameras (HxV) 190° x 130°
- 1/4" CMOS sensor Video output:
- AHD 1.0 and CVBS (PAL/NTSC) 360 view and individual channels
- recordable on Brigade MDR recorders

### Power

• Power consumption: 15 Watts

- Mechanical vibration: 2.8G
- Comprehensive view of surrounding area
- in a single image • 1080p HD 360° image
- 5 view modes:
- Choice of 2D or 3D
- Landscape & portrait configuations

· Audible and visual alerts when a

pedestrian or cyclist is detected

- Front & rear crossing-traffic • Customisable vehicle position
- Auto calibration via monitor
- Left, right, reverse & speed signal triggers
- Configurable on-screen parking markers
- · Customisable overlay guidelines per camera view
- 2 x video outputs

### • Current: 1.22 Amps

**Durability & Standards** 

- Operating temperature:
- -20 to +75°C
- IP30 FCU
- CE marked
- E-Marked: UNECE R10 compliant FCC Approved
- IC Approved

### NOTES:

- · Calibration mats are
- required for installation.
- Monitor and camera extension cables not included

### **AI CAMERA CABLES**

VBV-AI801	- 1 metre Al Camera Extension Cable	7489
VBV-AI805	- 5 metre Al Camera Extension Cable	7490
VBV-AI810	- 10 metre Al Camera Extension Cable	7508
VBV-AI815	- 15 metre Al Camera Extension Cable	7509
VBV-AI820	- 20 metre Al Camera Extension Cable	7491

### Model

### HD

Part No:

### **AHD 360° CAMERA SYSTEM**

# 5800

# BN360-300 - High Definition Backeye®360 system



12-24Vdc

IP69K cameras

- Size (WxHxD) ECU 179 x 113 x 26mm
- Size (WxHxD) Camera 55 x 45 x 41mm
- 5 year warranty

### AHD

### Contents

- 1 x ECU
- 4 x BN360-1000C cameras • 1 x Video output cable to connect to
- SELECT range monitor.
- 1 x set-up/view-select button
- 1 x ECU power harness
- 1 x ECU interface/video input harness
- **Features** • 720p HD 360° image
- 15 different view modes (10 x landscape
- & 5 x portrait configuations) - Front & rear crossing-traffic
- Customisable vehicle position • 2 pre-defined configuration groups
- Configure & customise set up via PC
- calibration software
- Left, right, reverse & speed signal triggers
- · Configurable on-screen parking markers • Customisable overlay guidelines per camera view
- 2 x video outputs
- · Ultra-wide viewing angle cameras (HxV) 182° x 118°
- 1/4" CMOS sensor • Video output: AHD 1.0 and NTSC

- 360 view and individual channels recordable on Brigade MDR recorders

### Power

• Power consumption: 15 Watts

- **Durability & Standards** • Mechanical vibration: 8.5G
- Mechanical shock: 51G

• Current: 1.22 Amps

- · Operating temperature:
- -30 to +75°C
- IP30 ECU
- CE marked • E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved
- ISO 20653:2006 • ISO 13766-1:2018

### NOTES:

· Calibration kit is

See individual products for detailed

required for installation. Monitor and camera extension cables not included

### BN360-300 360° CAMERA MONITOR SYSTEMS

Complete 360 AHD camera monitor system for large rigid vehicles

SE-770HR-300 - 360 AHD camera system with VBV-770HM - 7" AHD monitor SE-7014HRF-300 - 360 AHD camera system with VBV-7104HFM - 10.4" AHD monitor 7297







• 1 x Monitor

- · 1 x BN360-300 AHD 360 system
- · 1 x BN360-H310 10m camera cable
- 2 x BN360-H315 15m camera cables

specifications and warranties

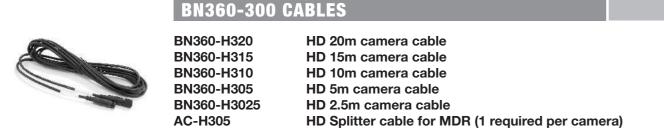
· 1 x BN360-H320 - 20m camera cable

Backeye®360

# Camera Monitor Systems



Model Part No:





BN360-300 MO	UNTING BRACKETS		
BN360-100C-BKT01	Adaptable mounting bracket Can be shaped to allow installation on non-vertical surfaces	46	649
BN360-100C-BKT02	Mounting bracket to adjust camera angle	47	714
BE360-CD	Deflector to shield camera from knocks (To be used with BN360-100C-BKT02 Mounting bracket)	47	701
BN360-100C-BKT03	Deflector to shield camera from knocks	47	743

Model Part No:

# **Camera Monitor System Ranges**

AI

HD

5809

5810

5811

5812

5813

6648

Al cameras are a new generation of active blind-spot detection. Using Artificial Intelligence, the cameras detect and recognise the human form within the predefined detection zone and reliably warn the driver visually and/ or audibly before a possible collision occurs.

ELITE

Top of the range systems that are the first choice for Original Equipment Manufacturers (OEMs) and Bodybuilders. Exceptional quality and consistent performance in the harshest conditions. Rigorously tested to higher standards, the superior components and build quality are reflected in the Elite series' 5 year warranty. Ideal for heavy duty applications including N2 and N3 Heavy Goods Vehicles (HGVs), on/off-highway vehicles, agricultural machinery and mobile plant used on Construction, Civil Engineering, Quarry and Mine sites.

SELECT

High quality, reliable, best-selling mid-range systems. First choice in the Aftermarket and popular also with OEMs and Bodybuilders. 3 year warranty. Ideal for medium to large on-highway vehicles and smaller off-highway mobile plant.

ESSENTIAL

Entry level reversing solution for cost-conscious Aftermarket customers. Ideally suited for on-highway applications.

# **Camera Monitor Icon Key**

### Camera icons

ooo LED Infrared LEDs for ultra-low-light performance

Day/night sensor

√
)
)
Audio

₩ Heater

Normal/mirror view

WDR Wide Dynamic Range

**DWDR** Digital Wide Dynamic Range

### **Monitor icons**

Number of camera inputs

Number of auto-triggers

√
)
)
Audio

'Button-lock' anti-tamper feature

On-screen distance and vertical line markers

Normal/mirror view - switching from menu

### Cable icons

(Black = solid/pins)

Male connector Select

Female connector Select

Male screw fit connector Elite

Female screw fit connector Elite

Male push fit connector Elite

Female push fit connector Elite

Male IP connector

Female IP connector

# Elite Range Cameras

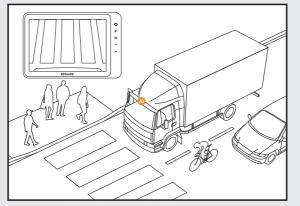


# **Cameras with Artificial** Intelligence

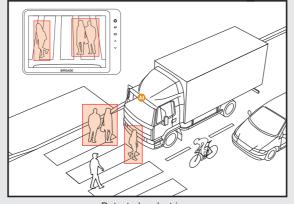
Al cameras are a new generation of active blind-spot detection.

Using Artificial Intelligence, the cameras detect and recognise the human form within the pre-defined detection zone and reliably warn the driver visually and/ or audibly before a possible collision occurs.

- Recognises and alerts the driver to people in the front and rear blind-spot
- Detected people are shown in a coloured box overlayed on the HD camera image on the driver's monitor
- Image processing and detected-person-overlay directly from the camera unit
- Plug and play: Al camera connects directly to the Brigade monitor and/or optional buzzer
- Compatible with all Brigade HD monitors and MDR recorders



No pedestrians in the detection zone



Detected pedestrians

Model Part No:

### CAMERA WITH ARTIFICIAL INTELLIGENCE

AI

VBV-2220C AI-D04 Front-facing AI camera - normal view VBV-2230C AI-D04 Rear Al camera - mirror view

7321 7396



Camera Viewing angles: Front: 52° Rear: 129°

Al Detection range: Front: Covers Class 6 area Rear: Up to 11m (dependent on camera mounting height)

· IP69K

- · Camera Size (WxHxD) 97.5×75.3×72
- · 2 years warranty

AHD

### **Features**

- High Definition AHD 1080P
- Recognises and alerts the driver to people in the front and rear blind-spot
- Detected people are shown in coloured box overlayed onto the camera image • Image processing and detected-person-
- overlay directly from the camera unit • Plug and play:
- Al camera connects directly to the Brigade monitor and/or optional internal buzzer or external alarm
- Brigade Select range connectors • Compatible with all Brigade HD monitors
- and MDR recorders Alarm trigger output: 12V

### **Specifications**

• 260mA @12V, 140mA @24V Imaging

### • Operating Voltage: 12-24V

- TV system: 25fps/30fps
- CMOS 1/2.9" 2M Pixel sensor

### **Durability & Standards**

### • Mechanical vibration: 5.9G

- Operating temperature:
- -20 to +70°C • E-marked: UNECE R10 compliant
- CE marked
- FCC Approved • UKCA Approved
- IC Approved

· VBV AI Camera extension cables only to be used



### AI CAMERA CABLES

VBV-AI801	- 1 metre Al Camera Extension Cable	7489
VBV-AI805	- 5 metre Al Camera Extension Cable	7490
VBV-AI810	- 10 metre Al Camera Extension Cable	7508
VBV-AI815	- 15 metre Al Camera Extension Cable	7509
VBV-AI820	- 20 metre Al Camera Extension Cable	7491
AC-24-12(011)	- Power adapter for Al camera	5760

### Elite Range Camera/monitor compatibility

KEY	ELITE MONITORS	SELECT MONITORS	
<ul><li>✓ = Compatible</li><li>✓ AC-007 = Compatible with adapter(s) shown</li></ul>	BE-970WFM BE-970WM BE-870LM BE-870FM	VBV-770HFM VBV-770HM VBV-7104HFM VBV-7104HM	
ELITE BE-810C Shutter camera	✓	✓ AC-007 & SC-1000-ECU	
All other ELITE cameras	✓	✓ AC-007	

Part No: Model

### AHD CAMERA 1080p

BE-8100C - PAL **BE-8101C - NTSC** 

126 x 69 x 144° · IP69K / IP68

Size (WxHxD) 86 x 72 x 78mm

· Viewing angle (HxVxD)

5 year warranty

**R46** 



### **Features** • High definition picture quality with 1080p

- AHD 2.0 video signal output
- 4 Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Microphone Mirror / Normal view
- Back Light Compensation
- Automatic white balance
- CMOS sensor • TV lines: 800

### Power

 Power consumption: 4.2 Watts • Current: 0.35 Amps

**Durability & Standards** 

- Mechanical vibration: 8.5G
- Mechanical shock: 51G
- Operating temperature: -40 to +85°C

**ELITE** 

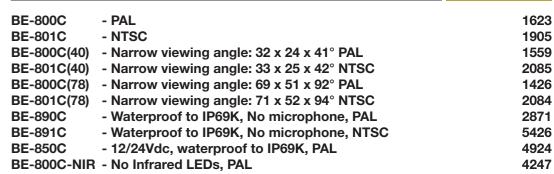
6408

6410

- CE marked
- E-Marked: UNECE R10 compliant • FCC Approved
- IC Approved
- ISO 13766:2018
- ISO 20653:2013 • EN61000-6-3:2021
- Camera monitor system R46 approved

ELITE

### **CAMERA WITH WDR**





• Wide Dynamic Range for improved detail in shadows and highlights

- 5 Infrared LEDs for ultra-low light performance (except BE-800C-NIR)
- · Day / Night sensor
- Microphone
- · Automatic white balance
- Sony CMOS sensor

### R46 WDR

Viewing angle (HxVxD)

108 x 80 x 136° NTSC

102 x 76 x 132° PAL

IP68

· Size (WxHxD)

86 x 72 x 80mm

5 year warranty

- Mirror / Normal view

### Power

• Power consumption: 4.5 Watts • Current: 0.33 Amps

(0.37 - 2.63 Amps BE-850C)

### • E-Marked: UNECE R10 compliant

**Durability & Standards** 

• Mechanical vibration: 8.5G

• Mechanical shock: 51G

• FCC Approved

• CE marked

IC Approved

• ISO 13766:2006

• ISO 20653:2006 • EN13309:2010

• Camera monitor system R46 approved

• Operating temperature: -40 to +85°C

BE-800C, BE-890C & BE-850C only

www.brigade-electronics.com Tel +44(0) 1322 420300 sales@brigade-electronics.com

VBV AI connector

10

# Select Range Cameras



SELECT HD

5467 5470

5471

2808

13

Model Part No:

### **SHUTTER CAMERA WITH WDR**

**ELITE** 

1242



12



BE-810C - Shutter camera

- · IP68 / IP69K
- Size (WxHxD) 123 x 86 x 80mm
- 5 year warranty



**WDR** 

- Wide Dynamic Range for improved detail in shadows and highlights
- 5 Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Automatic shutter
- Heater

**Features** 

- Microphone
- Mirror / Normal view Backlight compensation
- · Automatic white balance
- Sony CMOS sensor • TV System: PAL
- TV Lines: 450

### Power

• Power consumption: 5.4 Watts

• Current: 0.45 Amps

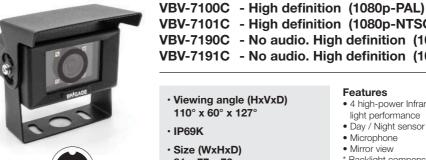
### **Durability & Standards**

- Mechanical vibration: 8.5G • Mechanical shock: 51G
- Operating temperature: -40 to +70°C
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved
- ISO 13766-1:2018

### Select Range Camera/monitor compatibility

KEY	ELITE MONITORS	SELECT MONITORS	
<ul><li>✓ = Compatible</li><li>✓ AC-006 = Compatible with adapter(s) shown</li></ul>	BE-970WFM BE-970WM BE-870LM BE-870FM	VBV-770HFM VBV-770HM VBV-7104HFM VBV-7104HM	
SELECT VBV-710C Shutter	<b>√</b> AC-006	✓	
All other SELECT cameras	<b>√</b> AC-006	✓	

Model **Part No:** 



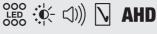
### VBV-7101C - High definition (1080p-NTSC) VBV-7190C - No audio. High definition (1080p-PAL)

AHD CAMERA 1080p

VBV-7191C - No audio. High definition (1080p-NTSC)

### Viewing angle (HxVxD) 110° x 60° x 127°

- · Size (WxHxD) 81 x 77 x 70mm
- · 3 year warranty



### **Features**

- 4 high-power Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Microphone
- Mirror view
- \* Backlight compensation • Automatic white balance
- Sony CMOS 1/3"& Nextchip ISP
- TV System: AHD 1.0 (1080p)
- TV Lines: 800

### Power

- Power consumption: 3 Watts
  - Current: 0.2 Amps

### **Durability & Standards**

- Mechanical vibration: 8.5G • Mechanical shock: 51G
- Operating temperature: -30 to +80°C
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

### SHUTTER CAMERA

VBV-710C - Shutter camera

SELECT



### · Viewing angle (HxVxD)

- 98 x 73 x 108°
- · IP68 / IP69K
- · Size (WxHxD) 122 x 85 x 82mm











**Features** 

- 4 high power infrared LEDs for ultra-low light performance
- Day / Night sensor
- Automatic Shutter
- Heater
- Microphone
- Mirror / Normal view · Backlight compensation
- Automatic white balance
- 1/3" Sharp CCD • TV System: PAL
- TV Lines: 580

### • Max Current: 0.5 Amps

Power

Max Power consumption: 6 Watts

### **Durability & Standards** • Mechanical vibration: 10G

• Mechanical shock: 50G

• Operating temperature: -30 to +70°C CE Marked

• E-Marked: UNECE R10 compliant

# Select Range Cameras



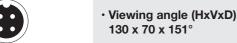
**SELECT HD** 

Model Part No:

### AHD EYEBALL CAMERA **SELECT HD**



VBV-3100C - High Definition flush-mount eyeball camera Mirror view - (1080p-PAL) 7143 VBV-3101C - High Definition Flush-mount eyeball camera Mirror view - (1080p-NTSC) 7144 VBV-3120C - High Definition Flush-mount eyeball camera Normal view - (1080p-PAL) 7145 VBV-3121C - High Definition Flush-mount eyeball camera Normal view - (1080p-NTSC) 7146



- · IP69K
- · Size (WxHxD) 57 x 42 x 70mm
- 3 year warranty



• 5 high power infrared LEDs for ultra-low light performance

- Day / Night sensor
- Lens swivel adjustment: 26° (Top) x 4° (Bottom) x 4° (Left) x 4° (Right)
- Lens rotation adjustment: ±180° • Microphone
- Backlight compensation · Automatic white balance
- 1/3" CMOS
- TV System: AHD 2.0 (1080p)

range in all directions

· Automatic white balance

• TV System: AHD 1.0 (720p)

· Power consumption: 1 Watt • Current: 0.57 Amps

 Mirror / Normal view Backlight compensation

• TV Lines: 900 • TV Lines: 600 (SW & W)

Power

Can be used internally or externally

• CMOS - 1/3" ON-Semi ISP - Nextchip

• TV lines: 900

### Power

- Power consumption: 1.6 Watts
- Current consumption: 0.112 Amps

### **Durability & Standards**

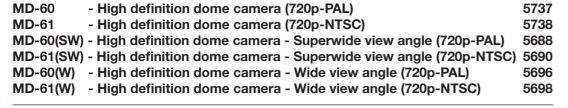
- Mechanical vibration: 8.5G
- Mechanical shock: 51G • Operating temperature: -30 to +70°C
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

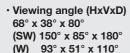


AHD DOME CAMERA









- IP68
- Size (Diameter x H) 76 x 59.5 mm
- · 3 year warranty



### **Durability & Standards** • Dome camera with 150° movement

- Mechanical vibration: 10G Mechanical shock 51G
- Operating temperature: -30 to +85°C
- CE marked • E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved



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### **OPTIONAL EXTRAS**

MD-50SM-30 - Surface mounting adapter (30mm deep) 5003

MD-50AM-15 - Angled surface mounting adapter (adds 15°)

MD-50AM-25 - Angled surface mounting adapter (adds 25°)

5005

5004

### Model Part No:

### **AHD MINI CAMERA**

DMC-1035 - High definition mini camera (internal use) (720p-PAL) 5721 DMC-1031 - High definition mini camera (internal use) (720p-NTSC) 5719



- · IP30
- · Size (WxHxD) 43 x 45 x 37.5mm
- · 3 year warranty



✓ N AHD

Viewing angle (HxVxD)

Size (Diameter x Length)

91 x 77 x 123° PAL

IP69K/IP68

35 x 50mm

COO LED

3 year warranty

96 x 71 x 126° NTSC

### **Features**

- Mirror / Normal view Backlight compensation
- · Automatic white balance • CMOS - 1/3" ON-Semi ISP - Nextchip
- TV System: AHD 1.0 (720p)

• TV Lines: 900

- Power consumption: 1.0 Watt
- Current: 0.55 Amps

### Mechanical vibration: 10G

### **Durability & Standards**

- Mechanical shock: 51G
- Operating temperature: -30 to +85°C
- CF marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

### **CYLINDER CAMERA**

VBV-485C - Cylinder camera PAL

SELECT

2199

2843

15

VBV-481C - Cylinder camera NTSC

### • Power consumption: 1.9 Watts

• Current: 0.2 Amps

**Durability & Standards** 

• Mechanical vibration: 10G

Mechanical shock: 50G

- 9 LEDs for ultra-low light performance • Day/night sensor
- Mirror view Backlight compensation
- · Auto white balance

**Features** 

- 1/3" Sharp CCD
- TV Lines: 680 PAL 800 NTSC

# • E-Marked: UNECE R10 compliant

• FCC approved VBV-481C only

• Operating Temperature: -30 to +70°C

IC approved VBV-481C only

# IP Cameras



# **What are IP cameras & Expansion Modules?**

An Internet Protocol (IP) camera is a high-definition digital camera with its own IP address. Instead of transmitting video over a video cable to a monitor or Mobile Digital Recorder (MDR), the IP camera transmits digital video to an MDR over a data connection (ethernet cable) where the images are saved to the onboard storage.

Brigade Expansion Modules use Power Over Network (PON) Switch technology to expand the channel capability of the MDR by transmitting digital video images from up to 8 IP cameras over a single ethernet connection to the MDR. The MDR on-screen display allows easy camera set up without need for specific IP camera knowledge

Benefit: Connecting IP cameras increases the number of channels available on the MDR:

MDR-641 MDR-508

- 8 x Analogue channels plus 1 x IP channel MDR-644 - 4 x Analogue channels plus 4 x IP channels

MDR-644 and 4 x PON switch - 4 x Analogue channels plus 8 x IP channels MDR-508 and 4 x PON switch - 8 x Analogue channels plus 4 x IP channels

MDR-508 and 8 x PON switch - 8 x Analogue channels plus 8 x IP channels

- 4 x Analogue channels plus 1 x IP channel

= 5 channels = 9 channels

= 8 channels

= 12 channels = 12 channels

= 16 channels

Model Part No:

### IP CAMERA

### IP-1000C - Internal forward-facing camera

5935



### Viewing angle (HxVxD) 87 x 51 x 98°

- · Size (WxHxD) 75 x 122 x 42mm
- · 3 year warranty





### **Features**

- High-definition picture quality Windscreen flush-mounted to avoid reflections
- Microphone
- Normal view mirror view via OSD settings or IP web interface
- Backlight compensation
- · Automatic white balance
- Supports web browser access • Fast setup feature in MDR 500 series to
- auto-assign camera IP address • Picture Elements: 1920(H) x 1080(V)
- Imaging device: CMOS
- TV Lines: 1050
- Latency: 250ms

- Power consumption: 2.7 Watts Current: 0.23 Amps @ 12V
- **Durability & Standards**

### • Mechanical vibration: 6G

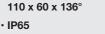
- Mechanical shock: 51G
- Operating temperature: -40 to +70°C
- Video output signal: H264 or H.265
- Network protocol: MDR5, ONVIF, TCP/IP. HTTP. DHCP. NTP. FTP
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

### **IP CAMERA**

### IP-1200C - Surface-mount dome camera

5937





Viewing angle (HxVxD)

- Size (WxHxD) 101.5 x 57.4 x 96 mm
- 3 vear warranty





### **Features**

- High-definition picture quality
- Surface mount
- Heater Microphone
- Normal view
- Backlight compensation · Automatic white balance
- Supports web browser access
- Fast setup feature in MDR 500 series to
- auto-assign camera IP address • Picture Elements: 1920(H) x 1080(V)
- Imaging device: CMOS
- TV Lines: 900
- · Latency: 250ms

- Power consumption: 3.5 Watts
- 0.26 A @ 12V (IR off) 0.31 A @ 12V (IR on)

### **Durability & Standards**

- Mechanical vibration: 6G • Mechanical shock: 51G
- Operating temperature: -40 to +70°C
- Video output signal: H264 or H.265
- Network protocol: MDR5, ONVIF, TCP/IP, HTTP, DHCP, NTP, FTP
- CE marked
- E-Marked: UNECE R10 compliant • FCC approved
- IC approved

Part No: Model

### **IP CAMERA**

### IP-1100C - Surface-mount camera

5936



 Viewing angle (HxVxD) 84 x 46 x 103°

- Size (WxHxD) 96 x 52 x 58mm



- orientation
- performance
- Dav/night sensor Normal view
- Backlight compensation
- Automatic white balance
- Supports web browser access
- Fast setup feature in MDR 500 series to auto-assign camera IP address
- Imaging device: CMOS

• Latency: 800ms

- Picture elements: 1920 x 1080
- TV Lines: 800

### Power

• Power consumption: 5 Watts

• Current: 0.2 Amps

### **Durability & Standards**

- Mechanical vibration: 8.5G
- Mechanical shock: 51G
- Operating temperature: -40 to +70°C • Video output signal: H264 or H.265
- Network protocol: MDR5, ONVIF,

- IC approved

# **IP EXPANSION MODULES**

IP-EM4 - PON 4-channel switch IP-EM8 - PON 8-channel switch



### · 4 or 8 IP camera inputs

Size (WxHxD) IP-EM4: 149 x 44 x 127mm

### **Features**

- IP-EM8: 174 x 54 x 129.5mm
- 3 year warranty

· 12-24Vdc

- Expands the channel capability of the MDR by enabling the addition of IP
- IP-EM4 adds 4 channels to MDR-508 IP-EM8 - adds 8 channels to MDR-508 IP-EM4 - adds 4 channels to MDR-644

### Power

• Power consumption: 3 Watts

### **Durability & Standards** • Mechanical vibration: 2.3G

- Mechanical shock: 150G
- Operating temperature: -40 to +70°C CE marked
- E-Marked: UNECE R10 compliant FCC approved
- IC approved

### **IP CAMERA ACCESSORIES**



IP-EC-1 - CAT5E Ethernet cable 1 metre IP-EC-5 - CAT5E Ethernet cable 5 metre



IP-EM-PC - MDR-PON Power cable Included with IP-FM4 and IP-FM8

IP-L601 - IP Camera extension cable 1 metre IP-L603 - IP Camera extension cable 3 metre IP-L605 - IP Camera extension cable 5 metre IP-L610 - IP Camera extension cable 10 metre

IP-L615 - IP Camera extension cable 15 metre IP-L620 - IP Camera extension cable 20 metre IP-L630 - IP Camera extension cable 30 metre

IP-1XXX-PC - IP Power and Ethernet cable

To connect a single camera to MDR 500 without a PON switch. Not required for 644 and 641 series MDR.

WARNING: There is a latency (time lag) in all digital video transmission, including IP Cameras. Although this time lag is small (~800ms IP1100C ~250ms IP1000C & IP1200C), it is unacceptable for a camera that a driver is using as a safety and manoeuvring aid. Brigade IP cameras are an excellent choice for general monitoring (eg bus interior, doors, luggage compartment) and recording purposes, but should not be used as a driver aid for manoeuvring or blind-spot monitoring. Analogue cameras are still the best choice for safety critical manoeuvring and blind spot monitoring applications.

16

www.brigade-electronics.com Tel +44(0) 1322 420300 sales@brigade-electronics.com

17







**Features** 

High-definition picture quality

 Surface mount Built-in G-sensor for automatic image

• High power infrared LED for low-light

- - TCP/IP, HTTP, DHCP, NTP, FTP CE marked
  - E-Marked: UNECE R10 compliant
  - FCC approved

5861

5860

5865

5866

5864

5867

5902

5903

5982

5904

5983

5984



### Elite Range Camera/monitor compatibility

KEY	ELITE MONITORS	SELECT MONITORS	
<ul><li>✓ = Compatible</li><li>✓ AC-007 = Compatible with adapter(s) shown</li></ul>	BE-970WFM BE-970WM BE-870LM BE-870FM	VBV-770HFM VBV-770HM VBV-7104HFM VBV-7104HM	
ELITE BE-810C Shutter camera	✓	✓ AC-007 & SC-1000-ECU	
All other ELITE cameras	✓	✓AC-007	

Part No: Model

### 7" IP69K QUAD MONITOR

**ELITE** 



### BE-970WFM - Waterproof 7" Quad digital LCD monitor

3560



- Size (WxHxD) 194 x 124 x 48mm
- · 5 year warranty









### **Features**

- 4 camera inputs
- Shutter camera compatible (inputs 1&2).
- · Backlit touch screen button panel • 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- Mirror / Normal switching from menu.
- On screen distance and vertical
- line markers
- Audio
- · Speed switch trigger to turn monitor on/off or trigger a split screen
- Sun shield • Multi-lingual menus
- Auto-switching PAL / NTSC

### **Picture Quality**

- LED backlighting
- (gives 20,000 hours life)
- Anti-glare screen • Resolution: 800 x 480
- Contrast ratio: 500:1 Brightness: 500cd/m²
- Viewing angles:
- Side 65° x Top 50° x Bottom 60°

### Power

- Power consumption: min 28 Watts • Current: max 2.15 Amps

### **Durability & Standards**

- Aluminium die-cast casing
- Mechanical vibration: 10G
- Mechanical shock: 100G
- Operating temperature: -40 to +75°C CE marked
- E-Marked: UNECE R10 compliant
- ISO 16750
- ISO 20653: 2006
- HALT tested

### 7" IP69K MONITOR

**ELITE** 

3351



# · 12-24Vdc

- · IP69K
- Size (WxHxD) 194 x 124 x 48mm
- 5 year warranty





7.0







### **Features**

BE-970WM - Waterproof 7" Digital LCD monitor

- 2 Camera inputs
- Shutter camera compatible both inputs
- Backlit touch screen button panel
- 'Button-lock' anti-tamper feature
- 2 Auto-triggers
- Mirror / Normal switching from menu
- On screen distance and vertical line markers
- Audio
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

### **Picture Quality**

- LED backlighting
- (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 500cd/m<sup>2</sup>
- Viewing angles: Side 65° x Top 50° x Bottom 60°

### Power

- Power consumption: 11 Watts
- Current: 0.9 Amps

### **Durability & Standards** Aluminium die-cast casing

- Mechanical vibration: 20G
- Mechanical shock: 100G
- Operating temperature: -40 to +70°C
- CE marked • E-Marked: UNECE R10 compliant
- ISO 16750
- ISO 13766: 2006
- HALT tested

# Model

### 7" MONITOR

### ELITE

### BE-870HM - 7" High Definition LCD monitor



- 2 Camera inputs
- Size (WxHxD) 194 x 124 x 33mm
- · 5 year warranty

· 12-24Vdc







- - - Auto-switching PAL / NTSC

• 2 Auto-triggers with configurable

Mirror / Normal switching from menu

Auto-dimmer and keypad illumination

• On-screen distance and vertical line markers

### **Picture Quality**

 Audio • Sun shield

- LED backlighting (gives 20,000 hours life) Anti-glare screen
- Multi-lingual menus
  - CE marked

  - E-Marked: UNECE R10 compliant
  - IC approved

### 7" QUAD MONITOR

### BE-870FM - 7" Digital LCD monitor

- · 12-24Vdc
- Size (WxHxD)
- 197 x 135 x 30mm
- 5 year warranty















Plus additional in-built image options

### • 5 Auto-triggers • Shutter camera compatible

• 4 camera inputs

**Features** 

- 'Button-lock' anti-tamper feature Mirror / Normal switching from menu
- On-screen distance & vertical line markers Audio
- Sun shield • Auto-dimmer
- Multi-lingual menus • Auto-switching PAL / NTSC

- **Picture Quality**  LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 4000cd/m<sup>2</sup> · Viewing angles

Side 70° x Top 50° x Bottom 70°

### • Power consumption: 21 Watts

- **Durability & Standards**
- Operating temperature: -40 to +70°C
- CF marked
- HALT tested

### 7" MONITOR

# ELITE

2705

### BE-870LM - 7" Digital LCD monitor

### **Features**

- Shutter camera compatible both inputs
- 197 x 128 x 34mm off delays
- 5 year warranty



· 12-24Vdc

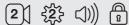
· Size (WxHxD)

















- 2 Camera inputs
- · 'Button-lock' anti tamper feature • 2 Auto-triggers with configurable trigger-
- Mirror / Normal switching from menu
- On-screen distance and vertical line markers Audio
- Sun shield
- Auto-dimmer and keypad illumination
- Multi-lingual menus Auto-switching PAL / NTSC

**Picture Quality** 

- LED backlighting
- (gives 20,000 hours life)

• Contrast ratio: 500:1 • Brightness: 400cd/m<sup>2</sup> · Viewing angles:

• Current: 1 Amp

Anti-glare screen

• Resolution: 800 x 480

Power • Power consumption: 12 Watts

Side 70° x Top 50° x Bottom 70°

### **Durability & Standards**

- Mechanical vibration: 2.5G
- Mechanical shock: 51G • Operating temperature: -30 to +70°C
- CE marked • E-Marked: UNECE R10 compliant
- Camera monitor system R46 approved



000000



2146

Part No:

trigger-off delays

• Contrast ratio: 800:1 • Brightness: 500cd/m<sup>2</sup> • Shutter camera compatible • 'Button-lock' anti tamper feature

- Viewing angles: Side 80° x Top 60° x Bottom 70°
- Power • Power consumption: 11.7 Watts

• Resolution: 1024 x 600

- Current: 0.975 Amp
- **Durability & Standards** • Mechanical vibration: 3G
- Mechanical shock: 51G • Operating temperature: -40 to +70°C
- FCC approved
  - ELITE



- Current: 1.9 Amps
- · Mechanical vibration: 6G Mechanical shock: 100G
- E-Marked: UNECE R10 compliant

# Monitors



### Select Range Camera/monitor compatibility

KEY	ELITE MONITORS	SELECT MONITORS	
<ul><li>✓ = Compatible</li><li>✓ AC-006 = Compatible with adapter(s) shown</li></ul>	BE-970WFM BE-970WM BE-870LM BE-870FM	VBV-770HFM VBV-770HM VBV-7104HFM VBV-7104HM	
SELECT VBV-710C Shutter	✓ AC-006	✓	
All other SELECT cameras	✓ AC-006	✓	

Model Part No:

### AHD 10.4" QUAD MONITOR

SELECT HD

6057



# VBV-7104HFM - 10.4" High Definition LCD monitor

- **Features** • AHD and CVBS compatible
- 3 year warranty
- 10.4





· 12-24Vdc

7.0

· Size (WxHxD)

· 3 year warranty

196 x 118 x 28mm

4 (5) (1))

Plus additional in-built image options

· 12-24Vdc

· Size (WxHxD)

267 x 193 x 30mm



- High-definition, high contrast, wide view
- - Configurable trigger delay
  - · On-screen distance markers

  - Auto-switching AHD 1.0 / AHD 2.0 /

### **Picture Quality**

- (gives 30,000 hours life)
- Anti-glare screen

- Configurable view options 4 camera inputs
- · 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- . Mirror / Normal switching from menu
- Built-in speaker
- Sun shield
- Multi-lingual menus
- PAL / NTSCC
- LED backlighting

- Resolution: 1024 x 768
- Contrast ratio: 900:1
- Brightness: 500cd/m<sup>2</sup>
- Viewing angles Side 85° x Top 85° x Bottom 85°

- Power consumption: 31.2 Watts
- Current: 2.6 Amps

### **Durability & Standards**

- Mechanical vibration: 4G
- Mechanical shock: 51G
- Operating temperature: -20 to +70°C
- CE marked
- E-Marked: UNECE R10 compliant
- HALT tested
- FCC approved
- IC approved

### AHD 7" MONITOR

### SELECT HD

7204

### VBV-770HFM - 7" High Definition LCD monitor

- AHD and CVBS compatible • High-definition, high contrast, wide view angle
- Configurable views
- 4 camera inputs
- 5 Auto-triggers

**Features** 

- Mirror / Normal switching from menu
- 'Button lock' anti-tamper feature
- On-screen distance markers
- Audio
- Sun shield
- Auto-dimmer
- Multi-lingual menus
- Auto-switching AHD 1.0 / AHD 2.0 / PAL / NTSC

### **Picture Quality**

- LED backlighting
- (gives 20,000 hours life) Anti-glare screen

- Resolution: 1024 x 600
- Contrast ratio: 700:1
- Brightness: 650cd/m<sup>2</sup>
- Viewing angles: Side 85° x Top 85° x Bottom 85°

- Power consumption: 27.6 Watts
- Current: 2.3 Amps

### **Durability & Standards**

- Mechanical vibration: 3G
- Mechanical shock: 51G
- Operating temperature: -20 to +70°C CF marked
- E-Marked: UNECE R10 compliant
- UKCA marked HALT tested
- FCC approved IC approved

Model

### AHD 7" MONITOR

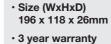
### **SELECT HD**

### VBV-770HM - 7" High Definition LCD monitor

5611

**Part No:** 

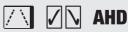






· 12-24Vdc









### **Features**

- AHD and CVBS compatible
- High-definition, high contrast, wide view angle
- 3 camera inputs
- 3 Auto-triggers Mirror / Normal switching from menu
- 'Button lock' anti-tamper feature
- On-screen distance markers
- Audio
- Sun shield Auto-dimmer
- Multi-lingual menus
- Auto-switching AHD 1.0 / AHD 2.0 / PAL / NTSC

### **Picture Quality**

 LED backlighting (gives 20,000 hours life)

- · Anti-glare screen
  - Resolution: 1024 x 600 • Contrast ratio: 700:1
  - Brightness: 500cd/m<sup>2</sup>
  - · Viewing angles:
  - Side 85° x Top 85° x Bottom 85°

### Power

• Power consumption: 10 Watts Current: 0.8 Amps

- **Durability & Standards**
- Mechanical vibration: 4G • Mechanical shock: 51G
- Operating temperature: -30 to +70°C
- CE marked
- E-Marked: UNECE R10 compliant • HALT tested
- FCC approved IC approved

### 4.3" MIRROR MONITOR

## **ESSENTIAL**





- Size (WxDxH)
- 280 x 92 x 30.5mm 1 year warranty





### **Features** • On screen milti-lingual display menu

- Digital LCD panel • 2 Auto-trigger
- Auto dimmer Illuminated keypad
- On-screen distance markers • TV system: PAL / NTSC

### **Picture Quality**

• Resolution: 480 x 272

• Contrast ratio: 600:1 • Brightness: 1000cd/m<sup>2</sup>

- Power consumption: 6.6 Watts • Current: 0.53 Amps

### **Durability & Standards**

- Vibration rating: 6G
- Operating temperature: -20 to +70°C • CE marked

Side 65° x Top 60° x Bottom 50°

FCC approved

· Viewing angles:

Power

### **CAMERA MONITOR SYSTEM ANCILLARIES**

### SELECT



BMM-019-ARM - 68mm replacement arm (Select range)

3348

21

- 68mm mounting bracket arm · Allows montor to be dash-mounted in portrait position



A further range of camera/monitor brackets and mounting adapters is available. Please contact us for details

# Camera Monitor Kits



Model Part No:

**CAMERA MONITOR SYSTEMS** 

ELITE

BE-870L-000 - Single camera monitor system for rigid vehicles

3231











See individual products for detailed specifications and

**R46** 

2705

1623

0801

2705

BE-870L-100 - Single shutter camera monitor system for rigid vehicles

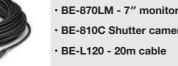
4032











**BE-810C Shutter camera** 1242 BE-L120 - 20m cable 0801 See individual products for detailed specifications and

### AHD CAMERA MONITOR SYSTEMS

**SELECT HD** 

VBV-770H-7000 - Single AHD camera monitor system for rigid vehicles

6111









· VBV-770HM - 7" AHD monitor 5611 VBV-7100C - Camera 5464 VBV-H420 - AHD 20m cable 5513 See individual products for detailed specifications and

See individual products for

detailed specifications and

warranties

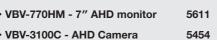
VBV-770H-3100 - Single AHD camera monitor system for small rigid vehicles 7680











5516

VBV-770H-3200 - Single AHD camera monitor system for rigid vehicles

VBV-H410 - AHD 10m cable

7681



22







· VBV-770HM - 7" AHD monitor 5611 VBV-3100C - AHD Camera 5454 VBV-H420 - AHD 20m cable 5513 See individual products for detailed specifications and warranties

Model

· Camera Viewing angle

# **CAMERA MONITOR SYSTEM**

**ESSENTIAL** 

VBV-670-000 - PAL Camera monitor system VBV-671-000 - NTSC Camera monitor system

5774 5816

Part No:















(HxVxD)



### Contents

• 1 x VBV-670M monitor

• 1 x monitor sunshield

• 1 x monitor bracket • 1 x VBV-63XC camera

• 1 x 20m VBV-L4020 extension cable

Fitting kit

### **Camera Features**

Normal view

• 1/3" PixelPlus CMOS • TV Lines: 425

### **Monitor Features**

2 camera inputs

• 1 auto trigger

 Sun shield Multi-lingual menus

Normal/Mirror via OSD menu

### **Picture Quality**

• Monitor resolution: 800x400

Contrast ratio: 500:1

• Brightness: 250 cd/m2

 Monitor viewing angles: Side 70° x Top 45° Bottom 65°

### Power

• Power consumption: 4.2 Watts

• Current: 0.4 Amps

### **Durability & Standards**

Mechanical vibration:

Camera: 8.5G Monitor: 4G • Operating temperature: -30 to +70°C

CE marked

FCC approved



### TO CONNECT AN ADDITIONAL CAMERA

VBV-630C - Essential Camera - PAL VBV-631C - Essential Camera - NTSC

VBV-L4020 - 20m Essential extension cable

5817

**ESSENTIAL** 

5772

5773

4765

4766

23

### **CAMERA MONITOR SYSTEM**

VBV-650-000 - PAL Camera monitor system VBV-650-000N - NTSC Camera monitor system



### Camera Viewing angle (HxVxD) 81 x 59 x 106° PAL 81 x 59 x 108° NTSC

Camera IP67 Camera Size (WxHxD) 65 x 59 x55mm

Monitor Size (WxHxD) 150 x 99 x 31mm

1 year warranty





### Contents

• 1 x VBV-650M monitor

• 1 x monitor bracket

• 1 x VBV-620C camera PAL or VBV-621C camera NTSC

• 1 x 20m VBV-L4020 extension cable

• Fitting kit

**Camera Features** 

 Mirror view • CMOS

• TV Lines: 420 **Monitor Features** 

### **Picture Quality**

• Monitor resolution: 640x480

• Monitor viewing angles: Side 70° x Top 50° Bottom 70°

• Power consumption: 2 Watts

### **Durability & Standards**

• Operating temperature: -10 to +70°C



# Adapter Cables



Part No: Model **BRIGADE CAMERA MONITOR ADAPTERS** AC-006 - Connects Select camera (not shutter) to Elite cable 1983 AC-007 - Connects Select monitor to Elite cable 1984 AC-014 - Connects Elite camera to Select cable 2094 AC-014(5M) - Connects Elite camera to Select cable, 5m long 5049 AC-020 - Connects Elite monitor to Select cable 2590 AC-055(5M) - 5-pin to 4-pin Select cable, 5m long 4267 AC-306 - Splitter cable connects 1 x (Non HD) Select camera to 4904 AC-307 - Splitter cable connects 1 x Elite camera to MDR & Monitor 4905 AC-H305 - Splitter cable connects 1 x BN360-300 camera to MDR & ECU 6648

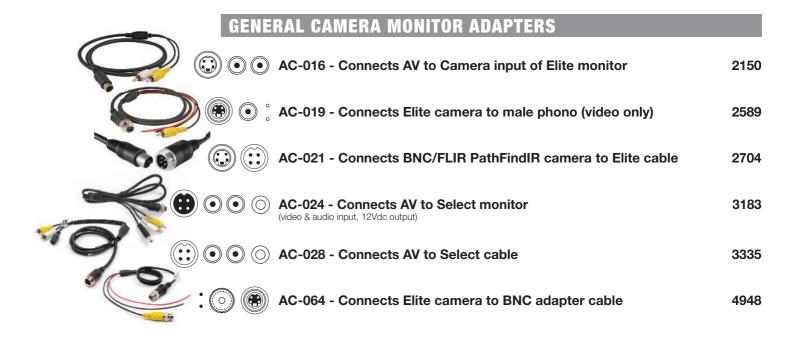
AC-056 - Connects Select camera to Orlaco monitor	4401
AC-062 - Connects Elite camera to Orlaco monitor	4691
AC-063 - Connects Elite camera to Orlaco monitor, screw fit	4925
AC-066 - Connects Orlaco camera to Elite monitor	5027
AC-067 - Connects Orlaco camera to Select monitor	5028
AC-24-12(009) - In-line 24/12Vdc converter - Select camera to Mekra 507405 monitor	4926
AC-308 - Splitter cable to connect MDR to Mekra 507405 CMS	4949

MISCELLANEOUS CAMERA MONITOR ADAPTERS

Part No: Model

OEM	CAMERA MONITOR ADAPTERS	
	AC-041 - Connects Elite camera to John Deere 7-pin amp output	4245
	AC-042 - Connects Select camera to John Deere 7-pin amp output	4246
	AC-044 - Connects Select camera to Molex M12 (Fendt)	4279
	AC-045 - Connects Elite camera to Molex M12 (Fendt)	4280
	AC-068 - Connects Select camera to MAN Harman unit with camera prep	5234
	AC-069 - Connects Select camera to MAN/Scania Harman unit without camera prep	5318
	AC-24-12(002) - In-line 24/12Vdc converter - Elite camera to Mercedes monitor	4266
	AC-24-12(006) - In-line 24/12Vdc converter - Select camera to Volvo FH(4) & FM(4)	4719
	AC-24-12(007) - In-line 24/12Vdc converter - Select camera to Iveco connect system	4762
	AC-24-12(008) - In-line 24/12Vdc converter - Select camera to Mercedes Sprinter	4763
	AC-24-12(010) - In-line 24/12Vdc converter - Select camera to Mercedes Actros/Arocs 2019> with J9P prep'	5907

A further range of OEM-specific adapters to connect Brigade cameras to factory-fit monitors is available



Cables

# Cables



Model	Model		Part No:
AI CAME	RA CABLES	Al	
VBV-AI801	- 1 metre Al Camera Extension Cable		7489
VRV-AI805	- 5 metre Al Camera Extension Cable		7490

7490 VBV-AI810 - 10 metre Al Camera Extension Cable 7508 VBV-AI815 - 15 metre Al Camera Extension Cable 7509 VBV-AI820 - 20 metre Al Camera Extension Cable 7491

AC-24-12(011) - Power adapter for AI camera 5760

ELITE HD CAMERA CABLES	ELITE HD



BE-H030	- 30 metre extension cable	7376
BE-H025	- 25 metre extension cable	7375
BE-H020	- 20 metre extension cable	7374
BE-H015	- 15 metre extension cable	7373
BE-H012	- 12 metre extension cable	7372
BE-H010	- 10 metre extension cable	7371
BE-H008	- 8 metre extension cable	7370
BE-H005	- 5 metre extension cable	7369
BE-H003	- 3 metre extension cable	7368
BE-H001	- 1 metre extension cable	7367
BE-H0003	- 0.5 metre extension cable	7366

CAMERA TO MONITOR CABLES	ELITE
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BE-L130	- 30 metre cable	0800
BE-L120	- 20 metre cable	0801
BE-L115	- 15 metre cable	0802
BE-L112	- 12 metre cable	3008
BE-L110	- 10 metre cable	0803
BE-L108	- 8 metre cable	3007
BE-L105	- 5 metre cable	0804
BE-L101	- 1 metre cable	5042
BE-L1003	- 0.3 metre cable	2797

ELITE CA	AMERA EXTENSION CABLES	ELITE
BE-X025 BE-X020	- 25 metre extension cable	1907





BE-X025	- 25 metre extension cable	1907
BE-X020	- 20 metre extension cable	1143
BE-X015	- 15 metre extension cable	2101
BE-X010	- 10 metre extension cable	2100
BE-X005	- 5 metre extension cable	2099
BE-X003	- 3 metre extension cable	0805

Model Part No:



SELECT AHD CAMERA CABLES	SELECT HD
VBV-H430 - 30 metre cable	5511
VBV-H425 - 25 metre cable	5512
VBV-H420 - 20 metre cable	5513
VBV-H415 - 15 metre cable	5514
VBV-H412 - 12 metre cable	5515
VBV-H410 - 10 metre cable	5516
VBV-H407 - 7 metre cable	5517
VBV-H406 - 6 metre cable	5518
VBV-H405 - 5 metre cable	5519
VBV-H404 - 4 metre cable	5520
VBV-H403 - 3 metre cable	5521
VBV-H4025 - 2.5 metre cable	5522
VBV-H4005 - 0.5 metre cable	5523

# Articulated Vehicle Connection



Model Part No:

1829

TRUCK/TRAILER CABLE KIT

ELITE

SK-31E - Truck and trailer cable kit - unique pin layout Inclusive of SK-31E-T - Trailer kit

1830

1886



BE-L110 - 10m cable for cab 0803 SP-7A - 7-pin bulkhead socket for cab & cab-end camera connector 1827 (unique pin lavout) SC-7 - Coiled cable with 7-pin plugs

SK-31E-T - Trailer only kit

BE-X020 - 20m extension cable for 1143

SP-7B - 7-pin bulkhead socket for trailer & trailer-end camera connector (unique pin layout)

Model

TRUCK/DRAWBAR TRAILER CABLE KIT

SK-50E - Truck and drawbar trailer cable kit for two cameras

- unique pin layout Inclusive of SK-50E-A Truck kit and SK-31E-T trailer kit 1570

1886

7567

Part No:









BE-L115 - 15m cable for truck	0802
BE-X005 - 5m extension cable for truck camera	2099
· CS-020 - Two way camera selector	1571
SP-7A - 7-pin bulkhead socket for trailer & trailer-end camera connecto (unique pin layout)	r 7566
(unique pin layout)	7500
· SC-7 - Coiled cable with 7-pin plugs (unique pin layout)	1829

· BE-X020 - 20m extension cable for 1143 trailer camera

 SP-7B - 7-pin bulkhead socket for cab & cab-end camera connector (unique pin layout)

SK-31E-T - Trailer only kit

TRUCK/TRAILER CABLE KIT

(unique pin layout)

1144

1885

1143



BE-L110 - 10m cable for cab 0803 SP-07C - 7-pin bulkhead socket for cab & cab-end camera connector SC-07 - Coiled cable with 7-pin plugs 1046 SK-30E-T - Trailer only kit

BE-X020 - 20m extension cable for

SP-07T - 7-pin bulkhead socket for trailer & trailer-end camera connector 7565

TRUCK/TRAILER CABLE KIT

SP-15A-01 - 15-pin bulkhead socket for cab & 3 cab-end

ELITE

ELITE



SP-07T

SK-15-01 - Truck and trailer cable kit for three cameras

3422

3427

socket for trailer & 3 trailer-end camera connectors

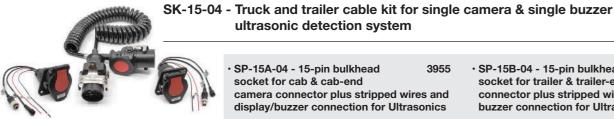
· SP-15B-01 - 15-pin bulkhead

3268 cable with 15-pin plugs

camera connectors · SC-15-01 - Coiled shielded

TRUCK/TRAILER CABLE KIT

ELITE

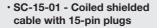


ultrasonic detection system



SP-15A-04 - 15-pin bulkhead socket for cab & cab-end camera connector plus stripped wires and display/buzzer connection for Ultrasonics

· SP-15B-04 - 15-pin bulkhead 3956 socket for trailer & trailer-end camera connector plus stripped wires and display/ buzzer connection for Ultrasonics



3268

3997

SC-15-01

28



SP-15B-04

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29

ELITE

SK-50E-A - Truck only kit

# Articulated Vehicle Connection



Model Part No:

### TRUCK/TRAILER CABLE KIT

SELECT

SK-15-05 - Truck and trailer cable kit for 3-camera Backeye®360

5066



· SP-15A-05 - 15-pin bulkhead socket for cab & cab-end connector plus 3x connections for Backeye®360 Select 5064

SP-15B-05 15-pin bulkhead socket for trailer & trailer-end connector plus 3x connections for Backeye®360 Select · SC-15-01 Coiled shielded cable with 15-pin plugs

3268

### TRUCK/ DRAWBAR TRAILER CABLE KIT

SELECT

VSK-50E - Truck and drawbar trailer cable kit for two cameras Inclusive of VSK-50E-A Truck kit and VSK-30E-T Trailer kit

2540

1227



SC-07-24S

VSP-47B

VSK-50E-A - Truck only kit

VBV-L420 - 20m cable for truck 1380 VBV-L405 - 5m camera cable for

1499 truck camera · VCS-020 - Two-way camera selector 1844

• 1 x VSP-47A - 7-pin camera bulkhead socket for truck rear

SC-07-24S - Coiled cable with 7-pin 1227 sockets

2542 VSK-30E-T - Trailer only kit

1380 VBV-L420 - 20m cable for trailer

· VSP-47B - 7-pin camera bulkhead socket for trailer 1846

### **SELECT**

### TRUCK/DRAWBAR TRAILER CABLE KIT

VSK-505E - Truck and drawbar trailer cable kit for two Select shutter cameras

1380

2541





- VBV-L420 20m cable for truck VBV-L520 - 20m camera cable for
- VBV-L505 5m camera cable for cab 4001
- VCS-020 Two-way camera selector 1844 2 x AC-035 - 5-pin to 4-pin shutter

camera adapter

- VSP-57A 7-Pin bulkead socket for cab & cab-end camera connector
- VSP-57B 7-pin bulkhead socket for trailer & trailer-end camera connector 3870
- · SC-07-24S Coiled cable with 7-pin

Model

Part No:

2539

### TRUCK/TRAILER CABLE KIT

SELECT

VSK-31E - Truck and trailer cable kit - unique pin layout

Inclusive of VSK-31E-T - Trailer kit



SP-7B

(Select connecton via supplied adapter cables)

VBV-L410 - 10m cable for cab 1386 SP-7A - 7-pin bulkhead socket for

cab & cab-end camera connector 1827 (unique pin layout) AC-014 - Adapter cable 2094

SC-7 - Coiled cable with 7-pin plugs 1829 (unique pin layout)

2543 VSK-31E-T - Trailer only kit

· VBV-L420 - 20m cable for trailer 1380

· AC-006 - Adapter cable 1983 SP-7B - 7-pin bulkhead socket for

trailer & trailer-end camera connector 1828 (unique pin layout)

### TRUCK/TRAILER CABLE KIT

SELECT



VBV-L410 - 10m cable for cab

Inclusive of SK-30E-T - Trailer only kit

VSP-47A - 7-pin bulkhead socket for cab & cab-end camera connector 1847

SC-07-24S - Coiled cable with

1386

1227

VSK-30E-T - Trailer only kit 2542

· VBV-L420 - 20m extension cable for

· VSP-47B - 7-pin bulkhead socket for trailer & trailer-end camera connector

3871

3870

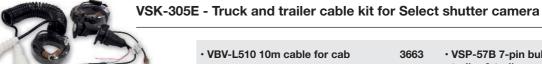
1380

2538

### TRUCK/TRAILER CABLE KIT

type 24S 7-pin plugs

SELECT









VSP-47B

VBV-L510 10m cable for cab

VBV-L520 20m cable for trailer VSP-57A 7-pin bulkhead socket for

cab & cab-end camera connector

3663 · VSP-57B 7-pin bulkhead socket for trailer & trailer-end camera connector

> · SC-07-24S - Coiled cable with type 24S 7-pin plugs

1227

30

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Model Part No:

### DIGITAL WIRELESS CONNECTION SYSTEM

**DW-2000-TX - Digital Wireless Transmitter** DW-2000-RX - Digital Wireless Receiver

7088 7089



- 1 camera input
- IP69K
- Size (WxHxD) 105 x 106 x 25.2mm
- · 3 year warranty

### Features

- CVBS, AHD 720P and 1080P
- compatible • Image Latency: 200 milliseconds
- No need for retractable coiled cables
- Reduces installation time · Re-pair facility allows for interchangeable
- trailers
- Triggered by reverse gear
- Up to two transmitters can be paired to one receiver
- TV System AUTO
- · Secure connection
- Easy 1-button pairing
- VBV Select range connectors

### Power

• Power consumption: TX: 1.04 Watts RX: 0.12 Watts

### **Durability & Standards**

- Operating temperature: -20 to +70°C
- CE marked
- FCC approved

Adapter required to connnect Elite range

SELECT HD

Part No:

SS-H002 -High Definition Twin camera screen splitter (Select range connectors) 7178







- · 2 camera inputs

• 12-24Vdc

- Size (WxHxD) 147 x 37 x 78mm
- · 2 year warranty

		In-built imag
Sinale	Split	

- **Features**
- AHD and CVBS compatible • Offers split-screen option for monitors
- without in-built functionality • 3 trigger inputs per camera
- Shutter camera compatible with
- adapters (Elite TS-1000-ECU)
- (Select AC-035) • TV System: PAL / NTSC/AHD1/AHD2
- Manual Mirror/Normal switching choose from horizontal normal/mirror or vertical normal/flip
- Short circuit protection on camera inputs
- Reverse polarity protected

Adapter required for Elite range monitors

### Power

• Current: 0.8 Amps

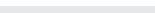
### **Durability & Standards**

- Mechanical vibration: 3G
- Mechanical shock: 51G
- Operating temperature: -30 to +80°C
- CE marked
- E-Marked: UNECE R10 compliant
- UKCA marked
- FCC approved
- IC approved

### **CAMERA MONITOR SYSTEM ANCILLARIES**

ELITE

EDM-50 - Multi-camera module and screen splitter (Elite range connectors)



Plus additional in-built

- Shutter camera compatible (inputs 1,2&3)
- add-ons
- camera
- On screen distance markers • Mirror / Normal image switch for each
- Selectable camera audio

- Current: 2A
- **Durability & Standards**
- Mechanical vibration: 5G
- Operating temperature: -25 to +70°C CE marked
- E-Marked: UNECE R10 compliant

### 2152 **Features** Power • Power consumption: 20 Watts

- 12-24Vdc
- · 4 camera inputs
- · Size (WxHxD) 154 x 28 x 105mm
- · 2 year warranty

Single Split Triple Quad Picture image options

- AV input to accept DVD, sat nav or other
- 5 manual or auto-triggers for each
- camera
- Auto-scanning function
- · Adapter required for Select range monitors

Not AHD compatible

### **CAMERA MONITOR SYSTEM ANCILLARIES**

ELITE

3666





· Adapter required for Select range monitors

SC-1000-ECU - Shutter camera module

- · Current: 2A
- · CE marked

· 2 year warranty

· E-Marked: UNECE R10 compliant

# · 12-24Vdc

· Auto-triggers safety equipment at the designated speed

LS-60-A - Speed switch

- Size (WxHxD) 44 x 16 x 64mm
- 2 year warranty

### **Features**

**CAMERA MONITOR SYSTEM ANCILLARIES** 

- Normally closed safety device on by
- default, turning off at designated speed • 10 speed threshold settings
- Compact size • Easy to install and set up
- · Short circuit protection on camera inputs
- Reverse polarity protected

### Power

- Power consumption: 21.6 Watts
- Max current: 1.8 Amps • Switch Output max. current: 1.2 Amps

### • Mechanical shock: 50G • Operating temperature: -40 to +85°C

### • E-Marked: UNECE R10 compliant

**Durability & Standards** 

• Mechanical vibration: 10G

### Notes:

A relay is required if connected to a device that is higher than 1.2 Amps

## **CAMERA MONITOR SYSTEM ANCILLARIES**



CS-020 - Two-way camera selector (Elite range connectors) VCS-020 - Two-way camera selector (Select range connectors)

1571 1844

4851

- · Allows a 2nd camera to be connected to a monitor
- · 2nd camera view selected by trigger wire
- · Full screen view only
- · 2 year warranty













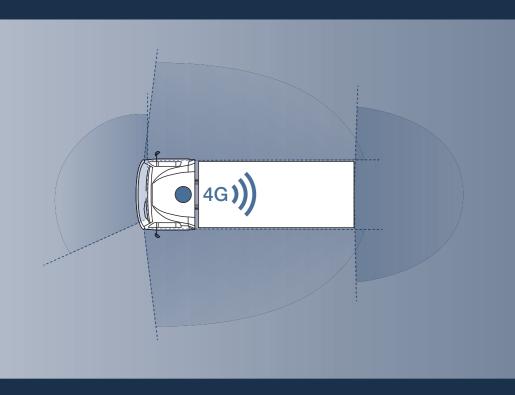
# Mobile Digital Recording

Brigade's Mobile Digital Recording (MDR) systems are capable of capturing vehicle data and footage from up to 16 vehicle-mounted cameras.

The MDR range includes models with 4G connectivity capabilities, allowing data to be accessed from the recorder without having to physically go to the vehicle.

MDRs are compatible with all Brigade's Backeye® camera monitor systems, IP cameras and Backeye®360.

Dash Cams - compact, combined camera and recording systems that provide evidence in the case of vehicle incidents. The palm-sized devices are easily attached to the windscreen, enabling recording of the road ahead and in cab.





# Mobile Digital Recorders



Part No:

7068

7079

Part No: Model

### **MOBILE DIGITAL RECORDER 600 SERIES**

MDR-644-1-CMR - 8 channel 1TB hard drive recorder 6570 MDR-644-2-SSD - 8 channel 2TB solid-state drive recorder 6585



MDR-644G-1-CMR MDR-644G-2-SSD

- 8 channel 1TB hard drive recorder with 4G 6571 - 8 channel 2TB solid-state drive recorder with 4G 6586





MDR-644GW-1-CMR - 8 channel 1TB hard drive recorder with WiFi & 4G 6572 MDR-644GW-2-SSD - 8 channel 2TB solid-state drive recorder with WiFi & 4G 6587



- 9-32Vdc
- · 4 x Analogue &
- 4 x IP camera inputs
- Supports up to 12 cameras using external PON Switch
- Size 190 x 82 x 222mm (WxHxD)
- · 8 trigger/alarm inputs
- · Lockable and interchangeable storage unit
- · Fast, easily downloadable recordings and data
- · 3 year warranty

- 1 x MDR-644 Mobile Digital Recorder
- · Wired Mouse · Input / Output Cable
- Power Cable
- GPS Antenna
- 4G Network Antenna (G & GW models) Wi-Fi Antenna (GW models)
  - USB A to B Cable
  - Security Key
  - Bracket & Fixings

### **Features**

- Remotely access MDR units using wireless (WiFi models only) and/or Mobile network (4G models only)
- Mobile apps for remote view (WiFi/4G models only)
- · Geo-fencing (4G models only)
- recordina
- Built-in GPS
- Internal G-sensor and built-in buzzer · Recordings saved to hard disk (protected by non-visible digital watermark) and in-built Mirror recording onto 64Gb SD card
- · Recording modes: normal, alarm and timer (all watermarked)
- Configurable alarm trigger settings (speed, G-force, motion detection, video loss voltage)
- Record images prior to alarm activation and after vehicle switched off
- MDR-Dashboard (full player) and MDR-Player (portable) with Google (English only)

- Search by date, time or triggered events
- Multi-level password protected access • Hard drive unit directly pluggable to PC via USB port
- 8 x trigger Inputs, 2x trigger outputs and
- 1x12V power output Built-in HDD heater MDR Control using USB Mouse or.
- optional IR remote control USB 3.0 connection
- TV System: PAL/NTSC/AHD
- Compatible with Brigade's vehicle CCTV camera monitor systems, IP cameras and Backeye®360 systems

### **Image and Audio Quality**

- High quality H.265 image compression
- ADPCM audio compression
- Choice of 8 low to high resolution

- Max power consumption: 80 Watts

### **Durability & Standards**

- Mechanical vibration: SSD 3.1G
- Operating temperature: CMR -40 to +50°C
- CF marked
- E Mark
- IC approved

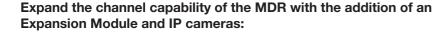
### • Mobile Standards: 3G/4G Audio (cameras must have microphones) Record at between 1 and 25 frames per Robust aluminum housing second, per channel Anti-vibration mounting for reliable

### Power

- Current: 6.6 Amps

- Mechanical shock: 51G
- SSD -40 to +70°C
- FCC approved

### **OPTIONAL EXTRA**



IP-EM4 - PON Expansion Module adds 4 channels to MDR-644 = 12 channels

### Model

### **MOBILE DIGITAL RECORDER 600 SERIES**

MDR-641-1-CMR MDR-641-2-SSD

- 5 channel 1TB hard drive recorder

- 5 channel 2TB solid-state drive recorder

7078 7069



**MDR-641G-1-CMR** MDR-641G-2-SSD

• 9-32Vdc

4 x Analogue &

Lockable and

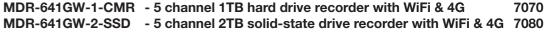
1 x IP camera inputs

8 trigger/alarm inputs

interchangeable storage unit

Fast, easily downloadable

- 5 channel 1TB hard drive recorder with 4G - 5 channel 2TB solid-state drive recorder with 4G



- Input / Output Cable
- Power Cable
- GPS Antenna

- · Security Key **Features**
- Size (WxHxD) 190 x 70 x 206mm
- 3 year warranty

recordings and data

### **Main Contents** • 1 x MDR-641 Mobile Digital Recorder

- Wi-Fi Antenna (GW models)
- · CMS adapter cable
- Bracket and Fixings
- · Remotely access MDR units using wireless (WiFi models only) and/or Mobile network (4G models only)
- Mobile apps for remote view (WiFi/4G models only)
- Geo-fencing (WiFi/4G models only)
- Mobile Standards: 3G/4G
- GPS
- Internal G-sensor
- · Recordings saved to hard disk or SSD (watermark protected)
- Becording modes: normal\_alarm and timer (all watermarked)
- loss, voltage) • Record images prior to alarm activation
- and after vehicle switched off • MDR-Dashboard (full player) and MDR-Player (portable) with Google
- (English only) · Search by date, time or triggered events

- Wired Mouse

- 4G Antenna (G and GW models)

- · Audio (cameras must have microphones)
- Robust housing

- Configurable alarm trigger settings (speed, G-force, motion detection, video

 USB 3.0 connection • TV System: PAL/NTSC/AHD Compatible with Brigade's vehicle CCTV

Built-in HDD heater

**Image and Audio Quality** 

camera monitor systems. IP cameras

Multi-level password protected access

• 8 x trigger Inputs, 2x trigger outputs and

• High quality H.265 image compression • ADPCM - audio compression

and Backeye®360 systems

• MDR Control using USB Mouse

- Choice of 8 low to high resolution
- Record at between 1 and 25 frames per second, per channel

• Max power consumption: 22 Watts Current: 3.9 Amps

• Mechanical vibration: SSD 3.1G CMR 1.5G

• Mechanical shock: 51G

**Durability & Standards** 

- Operating temperature: CMR -40 to +50°C
- SSD -40 to +70°C • CE marked
- FCC approved
- E Mark IC approved

MDR-MCU-R-01

MDR Reader and cable for PC Required to download data from storage

7053



36



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# IP Expansion Modules

Model



Part No:

Part No: Model

### **MOBILE DIGITAL RECORDER 500 SERIES**

- 8 channel 1TB hard drive recorder MDR-508-1-G2-CMR 6244 MDR-508-2-G2-SSD - 8 channel 2TB solid-state drive recorder 6437



MDR-508GW-1-G2-CMR - 8 channel 1TB hard drive recordeR with 4G 6246 MDR-508GW-2-G2-SSD - 8 channel 2TB solid-state drive recorder with 4G 6439



6245 MDR-508G-1-G2-CMR - 8 channel 1TB hard drive recorder with WiFi & 4G MDR-508G-2-G2-SSD - 8 channel 2TB solid-state drive recorder with WiFi & 4G 6438



### • 9-32Vdc

- · 8 camera inputs -Supports AHD High definition cameras
- 8 trigger/alarm inputs
- interchangeable storage unit
- · Fast, easily downloadable recordings and data
- · Size (WxHxD) 224 x 85 x 221mm
- 3 year warranty

### Note:

G2 MDR-500 Series hard drives SSD and SD cards are NOT interchangeable with previous MDR-500 Series models unless a firmware and software update has been carried out, HDD SSD & SD cards also need formatting. See website for further details

### Main Contents

- caddy unit
- Wired Mouse
- 64Gb industrial grade Class 10 SD card
- Input / Output Cable
- Power Cable
- 4G Antenna (G and GW models)
- Wi-Fi Antenna (W and GW models)
- Security Key

### Features

- · Remotely access MDR units using
- Mobile apps for remote view
- Mobile Standards: 2G/3G/4G
- Robust aluminum housing
- · Anti-vibration mounting for reliable
- Built-in GPS
- Internal G-sensor and built-in buzzer
- SSD (protected by non-visible digital watermark) and in-built Mirror recording onto 64Gb SD card
- timer (all watermarked) Configurable alarm trigger settings
- (speed, G-force, motion detection, video loss, voltage)
- · Record images prior to alarm activation
- MDR-Dashboard (full player) and

- Mobile Digital Recorder with storage
- GPS Antenna
- USB A to B Cable (3.0)
- Bracket and Fixings

- wireless (WiFi models only) and/or Mobile network (4G models only)
- (WiFi/4G models only)
- Geo-fencing (WiFi/4G models only)
- Audio (cameras must have microphones)

- Recordings saved to hard disk or
- · Recording modes: normal, alarm and
- and after vehicle switched off

### MDR-Player (portable) with Google and MS Bing maps (English only)

- Search by date, time or triggered events
- Multi-level GDPR compliant password protected access
- Storage unit directly pluggable to PC via USB port
- 8 x trigger Inputs, 2x trigger outputs and 1x12V power output
- Built-in HDD heater
- MDR Control using USB Mouse
- USB 3.0 connection
- TV System: PAL/NTSC/AHD
- Compatible with Brigade's vehicle CCTV camera monitor systems. IP cameras and Backeye®360 systems

### Image and Audio Quality

- High quality H.264 image compression
- ADPCM audio compression
- Choice of 8 low to high resolution settings Record at between 1 and 25 frames per
- second, per channel

### Power

 Max power consumption: 80 Watts • Current: 6.6 Amps

### **Durability & Standards**

- Mechanical vibration: 1G
- Mechanical shock: 51G
- · SSD vibration: 2.2G Operating temperature
- CMR -40 to +50°C SSD -40 to +70°C
- E-Marked: UNECE R10 compliant
- CE marked
- FCC approved IC approved
- RoHS2 Compliant

# **What are IP cameras & Expansion Modules?**

An Internet Protocol (IP) camera is a high-definition digital camera with its own IP address. Instead of transmitting video over a video cable to a monitor or MDR, the IP camera transmits digital video to the MDR over a data connection (ethernet cable) where the images are saved to the onboard storage.

### See pages 16-17 for the range of IP cameras

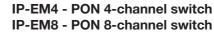
Brigade Expansion Modules use Power Over Network (PON) Switch technology to expand the channel capability of the MDR by transmitting digital video images from up to 8 IP cameras over a single ethernet cable to the MDR. The MDR on-screen display allows easy camera set up without need for specific IP camera knowledge

Benefit: Connecting IP cameras increases the number of channels available on the MDR:

MDR-641	- 4 x Analogue channels plus 1 x IP channel	= 5 channels
MDR-508	- 8 x Analogue channels plus 1 x IP channel	= 9 channels
MDR-644	- 4 x Analogue channels plus 4 x IP channels	= 8 channels
MDR-644 and 4 x PON switch	- 4 x Analogue channels plus 8 x IP channels	= 12 channels
MDR-508 and 4 x PON switch	- 8 x Analogue channels plus 4 x IP channels	= 12 channels
MDR-508 and 8 x PON switch	- 8 x Analogue channels plus 8 x IP channels	= 16 channels

**Part No:** Model

### IP EXPANSION MODULES



### · 12-24Vdc

- · 4 or 8 IP camera inputs
- · Size (WxHxD) IP-EM4: 149 x 44 x 127mm

IP-EM8: 174 x 54 x 129.5mm

3 vear warranty

### **Features** Expands the channel capability of the

MDR by enabling the addition of IP

IP-EM4 - adds 4 channels to MDR-508 IP-EM8 - adds 8 channels to MDR-508 IP-EM4 - adds 4 channels to MDR-644

### Power

· Power consumption: 3 Watts

### **Durability & Standards**

- Mechanical vibration: 2.3G Mechanical shock: 150G
- Operating temperature: -40 to +70°C
- E-Marked: UNECE R10 compliant
- FCC approved

### **OPTIONAL EXTRA**



38

Expand the channel capability of the MDR with the addition of an **Expansion Module and IP cameras:** 

IP-1XXX-PC - IP Camera - Power & Ethernet Cable

IP-EM4 - Expansion Module adds 4 channels to MDR-508 = 12 channels 5860 IP-EM8 - Expansion Module adds 8 channels to MDR-508 = 16 channels 5861

### IP EXPANSION MODULE ACCESSORIES



IP-EC-1 - CAT5E Ethernet cable 1 metre IP-EC-5 - CAT5E Ethernet cable 5 metre

IP-EM-PC - MDR-PON Power cable

5864

5865

5866

39

5860

5861

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Part No: Model

MOBILE DIGITAL RECORDER ACCESSORIES

MDR-508GW-EXP-0 - Wi-Fi & 4G upgrade Expansion Module

For MDR-508 models only. SD card not included

MODILE DIG	THE HEUUNDEN AUULSSUNIES	
AC-305	- Splitter cable connects 1 x Backeye®360 BN360-200 camera to MDR & ECU	4903
AC-H305	- AHD splitter cable connects 1 x Backeye®360 BN360-1000C camera to MDR & ECU	6648
AC-306	- Connects 1 x Select camera to MDR and monitor	4904
AC-307	- Connects 1 x Elite camera to MDR and monitor	4905
AC-075	- Select Range Adapter cable female to female	7020
MDR-USB-A-01	<ul> <li>USB 3.0 cable Type A to Type A connectors         For MDR-641 models only     </li> </ul>	7056
MDR-RP02	- Remote status & interface panel with panic button	6016
MDR-04RPC	- 6m cable for Remote status & interface panel	6018
MDR-AC-ACC-01	- Adapter cable for remote panel For MDR-641 models only	7051
MDR-MCU-R-01	- MCU reader for PC For MDR-641 models only	7053





40

Ipgrade Expansion Module DR-508 models only. SD card not included	5310
Fi upgrade Expansion Module DR-508 models only. SD card not included	5311
- Caddy unit with 1TB CMR For MDR-504 & MDR-508 models only	6243
- Caddy unit with 500GB SSD	6201
For MDR-504 & MDR-508 models only	
- Caddy unit with 1TB SSD For MDR-504 & MDR-508 models only	6202
- Caddy unit with 2TG SSD For MDR-504 & MDR-508 models only	6203
- Caddy unit with 1TB CMR For MDR-644 models only	6615
- Caddy unit with 1TB SSD For MDR-644 models only	6617
- Caddy unit with 2TB SSD For MDR-644 models only	6618
- Caddy unit with 1TB CMR For MDR-641 models only	7060
- Caddy unit with 1TB SSD For MDR-641 models only	7061
- Caddy unit with 2TB SSD For MDR-641 models only	7062
strial grade Class 10 SD card	4875
strial grade Class 10 SD card	4876
	- Caddy unit with 1TB CMR For MDR-504 & MDR-508 models only  - Caddy unit with 500GB SSD For MDR-504 & MDR-508 models only  - Caddy unit with 1TB SSD For MDR-504 & MDR-508 models only  - Caddy unit with 1TB SSD For MDR-504 & MDR-508 models only  - Caddy unit with 2TG SSD For MDR-504 & MDR-508 models only  - Caddy unit with 1TB CMR For MDR-644 models only  - Caddy unit with 1TB SSD For MDR-644 models only  - Caddy unit with 2TB SSD For MDR-644 models only  - Caddy unit with 1TB CMR For MDR-641 models only  - Caddy unit with 1TB CMR For MDR-641 models only  - Caddy unit with 1TB SSD For MDR-641 models only  - Caddy unit with 1TB SSD For MDR-641 models only  - Caddy unit with 2TB SSD For MDR-641 models only  - Caddy unit with 2TB SSD For MDR-641 models only  - Caddy unit with 2TB SSD For MDR-641 models only

Part No: Model

### DASH CAM RECORDER

DC-102-RVC -Dash Cam and rear-view camera - UK DC-102-RVC-002 - Dash Cam and rear-view camera - EU

6395 7025



- · 12-24Vdc
- In-built camera
- 1 external camera input
- Fast, easily downloadable recordings and data
- Dash Cam Size (WxHxD) 78 x 34.6 x 31.5mm
- Rear-view Camera size (WxHxD) 61 x 30.5 x 25mm
- · 1 year warranty

### Contents:

- 1x GPS Antenna
- 1x 3m Hardwire cable
- 1x Mounting Bracket, adhesive pads
- 1 x 32Gb Micro SD card

- SD card (supports up to 64Gb)
- Audio
- External GPS receiver

- 1x Micro SD to SD adapter

### Features

- 1080p High definition video capture
- Wide-angle camera lens 140°

- 1x Rear-view camera & 6m camera cable

- 1x Quick start guide

- in shadow and highlights

- eliminates the need for manual formatting of video files

- 1x Dash Cam Recorder

- and clips

- Wide dynamic range for improved detail
- Up to 4 hours recording on supplied micro
- · Continuous recording with automatic
- overwriting of oldest data
- FAT (File Allocation Table) system

- 4 recording modes:
- Continuous Records in 1min segments
- Incident Records 10 seconds before and after an incident
- Manual Records 10 seconds before and 50 seconds after manually starting
- recording
- Parking mode Requires hard wiring • Infrared LEDs for ultra-low light
- performance (Infrared camera only)
- Adjustable camera angle (rear-view camera only)

### **Picture Quality**

- Sensor: 2.1 M Pixel 1/2.7" CMOS
- Dash Cam video resolution: FHD 1920 x 1080
- Rear-view camera video resolution: HD 1280x720
- MP4 image compression
- Fast frame rate, 30 frames per second
- **Durability & Standards** • Operating temperature: -10 to +60°C
- CE marked

### DASH CAM RECORDER

Dash Cam and internal Infrared LED camera - UK DC-102-IRC -DC-102-IRC-002 - Dash Cam and internal Infrared LED camera - EU

6396 7028



- · 12-24Vdc
- In-built camera
- 1 external camera input
- Fast, easily downloadable
- recordings and data Dash Cam Size (WxHxD) 78 x 34.6 x 31.5mm
- · Infrared Camera size (WxHxD) 61 x 30.5 x 25mm
- · 1 year warranty

### Contents:

- cable
- 1x GPS Antenna • 1x 3m Hardwire cable
- and clins
- 1x Micro SD to SD adapter

### • 1x Quick start guide

- **Features**
- 1080p High definition video capture
- Wide dynamic range for improved detail
- Up to 4 hours recording on supplied micro SD card (supports up to 64Gb) • Continuous recording with automatic
- Audio
- formatting of video files

- 1x Dash Cam Recorder
- 1x Infrared LED Camera & 0.6m camera
- 1x Mounting Bracket, adhesive pads
- 1 x 32Gb Micro SD card

- Wide-angle camera lens 140°
- in shadow and highlights
- overwriting of oldest data
- External GPS receiver • FAT (File Allocation Table) system eliminates the need for manual

- 4 recording modes:
- Continuous Records in 1min segments
- Incident Records 10 seconds before and after an incident
- Manual Records 10 seconds before and 50 seconds after manually starting
- recording Parking mode - Requires hard wiring
- Infrared LEDs for ultra-low light performance (Infrared camera only) Adjustable camera angle (Infrared

### camera only)

- **Picture Quality** • Sensor: 2.1 M Pixel 1/2.7" CMOS
- Dash Cam video resolution: FHD 1920 x 1080
- Infrared camera video resolution: HD 1280x720

### MP4 image compression • Fast frame rate, 30 frames per second

**Durability & Standards** • Operating temperature: -10 to +60°C

CE marked

www.brigade-electronics.com Tel +44(0) 1322 420300 sales@brigade-electronics.com 41

Dash Cams

# Dash Cams



Part No: Model

### DASH CAM RECORDER

DC-101 -Dash Cam - UK DC-101-001 - Dash Cam - EU

6290 6558



- · In-built camera
- 1 video output
- · Fast, easily downloadable recordings and data
- Size (WxHxD) 78 x 34.6 x 31.5mm
- 1 vear warrantv

### Contents:

- 1x Dash Cam Recorder
- 1x GPS Antenna
- 1x 3m Hardwire cable • 1x Mounting Bracket, adhesive pads
- and clips • 1x 16Gb Micro SD card
- 1x Micro SD to SD adapter
- 1x Quick start quide

- **Features**
- 1080p High definition video capture Wide-angle camera lens 140°
- Wide dynamic range for improved detail in shadow and highlights
- Up to 4 hours recording on supplied micro
- SD card (supports up to 64Gb) • Continuous recording with automatic
- overwriting of oldest data Audio
- External GPS receiver
- FAT (File Allocation Table) system eliminates the need for manual formatting of video files
- · Front Vehicle departure warning

### 4 recording modes:

- Continuous Records in 1min segments
- Incident Records 10 seconds before and after an incident
- Manual Records 10 seconds before and 50 seconds after manually starting recording
- Parking mode Requires hard wiring

### **Picture Quality**

- Sensor: 2.1 M Pixel 1/2.7" CMOS
- Video resolution:
- FHD 1920 x 1080
- MP4 image compression
- Fast frame rate, 30 frames per second

### **Durability & Standards**

- Operating temperature: -10 to +60°C CE marked





# **Al Connected dashcam**

The AI Connected Dashcam is a compact, windscreen-mounted dual camera system that uses AI technology to provide event warnings, high-definition incident recording and monitor driver behaviour.

The forward-facing camera will identify and audibly alert a driver to a hazardous situation, such as a risk of colliding with the vehicle ahead or an unsignalled lane departure.

The driver-facing camera will identify issues such as mobile use, smoking and inattention.

- 1920P forward facing and 1080P driver facing cameras for clearer identification of registrations, faces and incident detail
- Supports up to 1TB storage capacity (256GB supplied)
- Built-in 4G allows operators to monitor fleets on the move (Subscription required) via a Dashboard or mobile app, and to remotely live stream or download recorded footage
- Simple installation and calibration
- Enhanced G sensor detects harsh braking, cornering and acceleration events
- Event notifications sent to the dashboard or app to alert fleet managers to high risk incidents

Model Part No:

### AI CONNECTED DASHCAM

### DC-204-AI - Connected Dashcam with AI



- In-built dual cameras: front and driver facing
- **Built-in ADAS and driver** safety alerts
- 4G Connection via Brigade's **Telematics services**
- Fast. easily downloadable recordings and data

12-24Vdc

- Supports 2 additional cameras - additional cable required
- Size (WxHxD) 113 x 88 x 68mm
- 1 year warranty



### Contents: • 1x Dash Cam Recorder

- 2x 128Gb Micro SD card • 1x Power lead
  - 1x Mounting Bracket • 1x Power box with cable
  - 1 x Torx driver

### **Features**

- 170° driver facing camera lens
- · 140° forward facing camera lens
- · Wide dynamic range for improved detail in shadow and highlights
- · Built-in WiFi and 4G communication module
- Built in ADAS function:
- Lane Departure Warning (LDW)
- Forward Collision Warning (FCW)
- Headway Monitoring Warning (HMW) - Digital Cockpit Safety (DCS) to detect
- unsafe driving behaviour Built in 6-axis G-Sensor for harsh acceleration, deceleration, cornering and incident detection
- Built-in GPS receiver
- 3 recording modes:
- Continuous: Records in 1min seaments
- Timer: Records to schedule accurate to the second
- Alarm:
- Pre-alarm from 1-to 60 minutes - Post-alarm from 1-30 minutes
- · Individual channel configurations for recording resolution, frame rate and
- Supports up to 1TB storage capacity

- Audio
- Continuous recording with automatic overwriting of oldest data

7477

- Supports CBVS monitors (additional
- cable required)

### **Picture Quality** • 5 M Pixel 1/2.7" CMOS sensor forward

- facing camera
- 2 M pixel 12.9 CMOS sensor Driver facing camera
- 1080p driver facing HD video capture
- 1920p forward facing HD video capture
- Fast frame rate, 30 frames per second

### Power • Power consumption: 12.66 Watts

**Durability & Standards** 

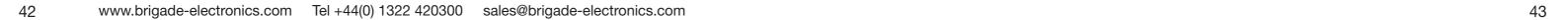
### Operating temperature: -40 to +70°C • CE marked

- FCC approved
- IC approved
- E-marked: UNECE R10 compliant

### **NOTES:**

Available in the UK only.

In order to provide full functionality and maximum fleet manager benefit, the Al connected dashcam is only sold with a monthly subscription. Contact us for further details.



# **Object Detection Systems**

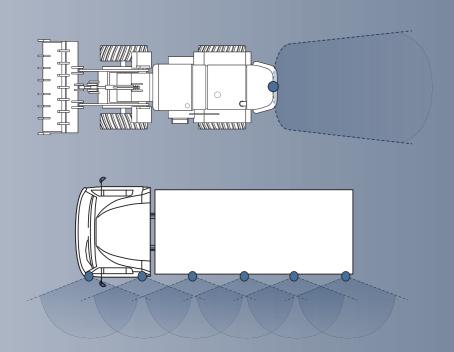
Object detection systems detect stationary and moving objects, providing in-cab visual and audible warnings, alerting the operator or driver whose attention cannot be focused on all danger areas.

**Backsense® heavy-duty radar sensor systems** designed for heavy-duty machines to detect people and objects in blind spots. Available with fixed and programmable detection ranges.

**Ultrasonic detection sensors** To minimise both vehicle damage and collisions with pedestrians, cyclists or objects. Perfect for road-going commercial vehicles operating in confined spaces or manoeuvring at low speed. An optional external speaking alarm can be added to alert cyclists and pedestrians that the vehicle is turning.

**Detection systems with AI** are algorithm-based systems that predict if a collision is likely to occur and alert the driver depending on the severity of the calculation.

**ZoneSafe®** uses Radio Frequency Identification (RFID) technology to create detection zones around vehicles and mobile plant. Vehicle-mounted antennas detect RFID tags which can be worn by workers, placed on objects or property, or set up around restricted areas.





# Al Detection Systems



### **CAREYE® Turn Assist** Developed by Eyyes **Artificial Intelligence blind spot detection**

EYYES

CAREYE® is a new Artificial Intelligence (AI) blind-spot turn assistant for large commercial vehicles, comprising of a camera-based sensor mounted high on the side of the cab, an ECU and a driver display in the cab.

Vulnerable road users are detected and

classified, and their future course of movement is calculated using artificial intelligence. Depending on the risk of collision, the driver will receive a visual and/or audible warning in real time. Only if a collision is predicted will an audible warning be given, thus minimising false warnings and the likelihood of the driver becoming habituated by the alarm.

- Alerts the driver using Artificial Intelligence
- · Differentiates between vehicles and vulnerable road users (VRU)
- Calculates the direction of VRUs
- · The driver receives a progressive alert according to the predicted risk of collision
- · The system is active up to 30km/h with or without indicators being activated
- Effective in low light and poor weather conditions
- · Detection area: 10m length and 4m width from side of vehicle
- · Information signal according to UNECE R151 (Blind spot monitoring system)
- Developed and produced in the European Union



1. An approaching

object has been

detected





2. A moving object

has been detected

beside the vehicle





3. A moving object has been detected in the danger zone but not on course for a collision

predicted

Model Part No:

### CAREYE® AI BLIND SPOT DETECTION SYSTEM

CAREYE® Turn assist with AI - Left side (for right-hand drive vehicles)

**CAREYE® Turn assist with AI - Right side** (for left hand-drive vehicles)

CS-SET-00400

CS-SET-00610







46

### · Side camera sensor system

- · 12-24Vdc
- Detection zone -10m length and 4m width
- Dimensions: W x D x H Camera: 111 x 80 x 140mm ECU: 140 x 115 x 40mm
- · IP66/67 Camera
- · 2 year warranty

Must be fitted by a Brigade-trained

### Contents 1 x HD camera sensor

- · in-cab audio/visual display
- FCU
- CAN inductive cable connector

### **Features**

- · Side camera system with Artificial Intelligence • Differentiates between
- vehicles and vulnerable road users (VRU)
- · Calculates the direction of VRU's
- The driver receives a progressive alert according to the predicted risk of collision
- The system is active up to 30km/h with or without indicators being activated

### • Effective in low light and poor

- weather conditions · Information signal according
- to UNECE R151 (Blind spot monitoring system)
- Heated camera
- Speed signal from CAN connection
- Developed and produced in the European Union

### **Durability & Standards**

- Operating temperature: -40° to +70°C
- CE marked
- F-Marked: UNFCF R10 compliant

- Power consumption: Max 100 Watts
- Current: 25mA in idle mode

### OPTIONAL EXTRAS

CarEYE Digital 7" 16:9 monitor CarEYE Turning Angle Sensor **CarEYE Wing extension** 

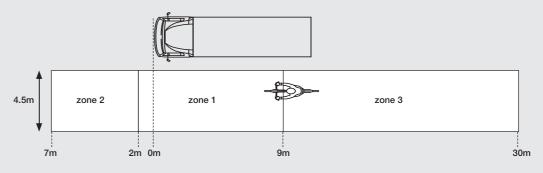
CS-SET-00380 CS-SET-00091 CS-SET-00530

# **Radar Predict Artificial Intelligence blind spot detection**

Brigade's Radar Predict is the latest innovation in side-detection safety, specifically designed to protect cyclists from collisions with HGVs. The advanced radar system uses AI technology to detect a potential collision by analysing data such as speed and direction of both the vehicle and cyclist. By differentiating between static and moving objects, the Radar Predict algorithm alerts the driver only when an impact with a cyclist is likely.

The single dual-radar unit is fitted to the nearside of the truck and gives complete coverage to the side of the vehicle, including the trailer unit. The driver is alerted if a cyclist enters a detection zone and receives a second warning if a collision is predicted.

- 180° Cyclist side detection
- · Detection area of 4.5m x up to 37m
- · Calculates if a collision is likely in the nearside blind spot
- Suitable for Rigid AND articulated vehicles
- Quick and easy installation
- Available for left and right side applications
- Meets Reg151 requirements
- Complies with PSS DVS Independently



**Part No:** Model

### RADAR PREDICT AI SENSOR SYSTEM

RP-001 - 77GHz Radar Predict sensor system with AI - Left side (for right-hand drive vehicles)

RP-010 - 77GHz Radar Predict sensor system with AI - Right side 7625

• 9-32Vdc

Detection length: 46m

Detection width: 4.5m

Sensor size (WxHxD)

115 x 95 x 41mm

Sensor size with bracket (WxHxD) 200 x 110 x 43.5mm

Display size with bracket (WxHxD) 131 x 63 x 42mm

IP69K sensor

3 vear warranty

### Contents

- 1x dual radar sensor unit • 1 x Inertial measurement unit module
- 1 x display
- 1 x radar bracket
- Radar cable

### **Features**

- 180° cyclist side detection
- · Calculates if a collision is likely in the nearside blindspot
- · Covers nearside of a vehicle 3 stage Visual alert when a cyclist is
- detected Audible and visual alert when collision s
- predicted
- Differentiates between cyclists and vehicles/other road users · Designed for rigid and articulated
- vehicles • System active under 30Km/h

- · Quick and easy installation
- Compact and rugged design for harsh environments

7500

47

- Automatic trailer recognition
- Operating frequency: 76-77GHz
- Adjustable display volume

**Durability & Standards** 

• Power consumption: 6.5 Watts

### • Operating temperature: -40 to +85°C

- CE marked FCC approved
- IC approved
- E-Marked: UNECE R10 compliant • Complies with UNECE reg151
- requirements

• Meets 2024 Direct Vision Standard BSIS requirements

# Ultrasonic Detection Systems



# Sidescan®Predict **Artificial Intelligence blind spot detection**

Designed for rigid-bodied vehicles, the system comprises of six ultrasonic sensors fitted along the side of the vehicle to increase safety when turning or low speed manoeuvring. Each sensor has a maximum detection radius of 2.5 metres.

Sidescan®Predict constantly gathers object detection data such as the distance of an object, cyclist or other VRU from the vehicle, whether moving or stationary, plus additional information such as the speed, direction, acceleration, and turning rate. The data feeds an algorithm to calculate the risk of a collision, which is delivered to the driver as a visual warning, audible warning or both. depending on the severity of the calculation.

### Examples of scenarios (not limited to)



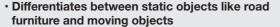
A static object has been detected



A moving object has been detected



A moving object has been detected close to the vehicle



- · Calculates the direction and speed of VRUs
- · The driver receives a progressive alert according to the predicted risk of collision
- The system is active up to 30km/h with or without indicators being activated
- · Effective in low light and poor weather conditions
- Detection area: Up to 2.5m from side of vehicle
- For rigid vehicles only
- · Independently tested 2024 DVS/BSIS compliant







Collision Predicted

Part No: Model

### SIDESCAN®PREDICT AI DETECTION SYSTEM

SSP-6000W - Sidescan®Predict sensor system with AI

6153





- · 6 sensor system
- · 12-24Vdc
- Detection zones 0 2.5m
- Underslung and flush-mount fixings included
- Display dimensions: 52 x 92 x 21mm (WxHxD)
- IP69K sensors
- · 3 year warranty

Must be fitted by a Brigade-trained Contact us for details

### Contents

- Display
- Algorithm FCU
- 6 x 4 types flush mount
- fixings
- 6 x underslung fixings Waterproof control box
- •10m buzzer cable
- 4 x 4.5m sensor cables 2 x 2.5m extension cables

### **Features**

- · Detects objects in the nearside blindspot
- Differentiates between static objects and moving objects
- Calculates the risk of collision by evaluating speed, position and direction of the vehicle and detected VRU
- Driver audio and visual alerts • Vehicle motion monitoring to
- remove unnecessary alarms • Extra-wide sensor detection pattern for full side blind-spot
- ECU configuration and diagnostics via USB
- · Indicator-activated external turn alarms can be connected without additional hardware
- · Built-in indicator and vehicle speed acquisition

sales@brigade-electronics.com

- off above 18.6 mph / 30 kph 6 x sensors
  - Auto brightness display. Manual alarm volume

System automatically shuts

- adjustment. Can be retrofitted by a trained installer.
- System can not be activated/ deactivated by the driver.
- Environment Learning mode to eliminate false alarms from bodywork that intrudes in the first 100cm of the detection zone.
- Speed signal from Tachograph

### **Durability & Standards**

- Mechanical vibration: 8.5G
- Mechanical shock: 51G Operating temperature:
- -30 to +70°C CE marked
- F-Marked: UNFCF R10
- compliant FCC approved
  - IC approved

- Power consumption 3 Watts
- Current: 230mA

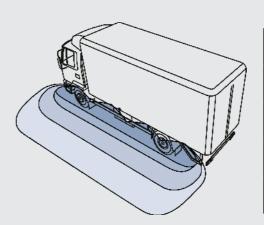
# **Sidescan®Flex**

### Flexible side detection

Sidescan®Flex is a four-sensor system fitted to the side of a vehicle to detect objects in the nearside blind spot, where cyclists or pedestrians can otherwise go undetected.

An advancement to the standard Sidescan® system, Sidescan®Flex allows the operator to choose from four detection configurations, each with different detection distances and audible and visual alerts (see table).

Sidescan® Flex has an increased maximum detection range of 2.5 metres.



Detection distance		Config 1	Config 2	Config 3	Config 4
0 - 0.6m	Beeps per second (*) Flashes per second (*)	Constant 8	Constant 8	Constant 8	Constant 8
0.6 - 0.9m	Beeps per second (1) Flashes per second (2)	Constant 8	4 8	4 8	4 8
0.9 - 1.5m	Beeps per second Flashes per second	4 4	- 4	- 4	1 4
1.5 - 2.5m	Beeps per second Flashes per second	1 1	- 1	-	-

Model **Part No:** 

### SIDESCAN®FLEX ULTRASONIC DETECTION SYSTEM

SS-4200W -Sidescan®Flex sensor system with mute function

SS-4200W-000 - Sidescan®Flex sensor system with mute function, low speed trigger module and turn indicator sensor kit

Includes LS-60-A low speed trigger module and TS-001ECU turn indicator sensor



### · 4 sensor system

- · 12-24Vdc
- Detection zones 0 2.5m (4 audible/visual configuarions, selectable via dip switches)
- Underslung and flush-mount fixings included
- 1 Output trigger
- · 3 year warranty

### Contents • 4 x sensors

- Buzzer
- 4 x 0° flush mount fixings • 4 x 11° flush mount fixings
- 4 x underslung fixings Waterproof control box
- •10m buzzer cable
- 4 x 4.5m sensor cables • 2 x 2.5m extension cables

### **Features** • Obstacles detected in under

- 200 milliseconds
- Buzzer with audible distance warning, LED & adjustable volume control
- Buzzer will silence after 4 seconds if there is no movement from detected object or vehicle
- Self-diagnostic function

- intrudes in the first 100cm of the detection zone
- **Durability & Standards** • Mechanical vibration: 5G

Environment Learning Mode

prevents false alarms from

ancillary equipment that

5916

6075

- Mechanical shock: 10G • Operating temperature: -30 to +80°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved

### Power

 Power consumption: 2.4 Watts

• Current: 200mA



UDS-RELAY-12

UDS-RELAY-24 Trigger-out diode protected relay 24Vdc

Trigger-out diode protected relay 12Vdc

4216

4215

To power a device switched by the output trigger

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# Ultrasonic Detection Systems



Model Part No:

### SIDESCAN® ULTRASONIC DETECTION SYSTEM

SS-4100W -Sidescan® Side sensor system with mute function 5257 5344 SS-4100W-000 - Sidescan® Side sensor system with mute function, low speed trigger module and turn indicator sensor kit

Includes LS-60-A low speed trigger module and TS-001ECU turn indicator sensor



SK-15-04

SK-UDS-05

UDS-10BC

SS-4100W

LS-60-A

TS-001ECU

SS-BC-08

50

### · 4 sensor system

- · 12-24Vdc
- · 1.0/1.5m detection range -(selectable via dip switch)
- Audible distance warning
- · Underslung and flush-mount fixings included

Truck/trailer sensor only cable kit (required)

SIDESCAN®/SIDESCAN®FLEX RECOMMENDED EXTRAS

Turn indicator trigger for system activation

Backchat speaking alarm with side turn

SIDESCAN®/SIDESCAN®FLEX OPTIONAL EXTRA

warning for cyclists/pedestrians Note: TS-001ECU Turn indicator trigger is required

Additional Sidescan sensor system for cab (optional)

Latched auto-reset Backalarm cut-out (dash mount)

10m display cable (required)

Low speed trigger module

- · 2 levels of sensitivity -(selectable via dip switch)
- 3 vear warrantv

### Contents

- 4 x sensors
- Buzzer
- 4 x 0° flush mount fixings • 4 x 11° flush mount fixings
- 4 x underslung fixings
- Waterproof control box
- •10m buzzer cable
- 4 x 4.5m sensor cables
- 2 x 2.5m extension cables

### **Features**

· Obstacles detected in under 200 milliseconds • Buzzer with audible distance

warning, LED & adjustable

volume control Buzzer will silence after 4 seconds if there is no movement from detected

### **Durability & Standards**

- · Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +80°C
- Waterproof sensors to IP68 Waterproof control box to
- IP69K CE marked
- E-Marked: UNECE R10
- compliant
- FCC approved

### Power

Power consumption:

4219

3716

5257

4851

1362

1334

4752

• Current: 200mA

## object or vehicle • Environment Learning Mode prevents false alarms from ancillary equipment that intrudes in the first 100cm of SIDESCAN®/SIDESCAN®FLEX ADDITIONS FOR ARTICULATED VEHICLES 3997 Truck/trailer camera/sensor cable kit



### BACKSCAN® ULTRASONIC DETECTION SYSTEM

BS-4000W - Backscan® Rear reversing sensor system



- · 4 sensor system
- · 12-24Vdc
- 2.5m detection range outer sensors 2.5m/0.6m (selectable via dip switch)
- Graduated visual and audible distance warning display
- Underslung and flush-mount fixings included
- 50cm compensation range for sensors fitted inboard of dip switch)
- · 3 year warranty

### Contents

- 4 x sensors
- Visual and audible display • 4 x 0° flush mount fixings
- 4 x 11° flush mount fixings
- 4 x underslung fixings
- Waterproof control box
- 15m display cable • 4 x 2.5m sensor cables

- Features · Obstacles detected in under
- 200 milliseconds Environment Learning Mode prevents false alarms from tow-hooks and other ancillary equipment that intrudes in the first 100cm of
- Self-diagnostic function • 1 x Trigger output
- the detection zone

### **Durability & Standards**

- · Mechanical vibration: 5G • Mechanical shock: 10G
- Operating temperature:
- -30 to +80°C Waterproof sensors to IP68
- Waterproof control box to
- IP69K
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved

### Power

• Power consumption: 2.4 Watts

3997

• Current: 200mA



# ADDITIONS FOR ARTICULATED VEHICLES

UDS-10BC	10m Buzzer/display cable	3710							
SK-UDS-05	Truck/trailer sensor only cable kit	4219							

Truck/trailer camera/sensor cable kit

To power a device switched by the output trigger

UDS-RELAY-24	Trigger-out diode protected relay 24Vdc	4215
UDS-RFI AY-12	Trigger-out diode protected relay 12Vdc	4216

# Ultrasonic Detection Systems



Model Part No:

### FRONTSCAN® ULTRASONIC DETECTION SYSTEM

FS-4000W - Frontscan® Front sensor system

3747



- · 4 sensor system
- 12-24Vdc
- 2.0m/1.0m detection range outer sensors can be reduced to 0.6m (selectable via dip switches)
- Audible distance warning
- · Flush-mount
- · 3 year warranty

### Contents

- 4 x sensors
- 4 x 11° flush mount fixings
- 4 x 18° flush mount fixings
- 4 x 26° flush mount fixings Waterproof control box
- 2.5m buzzer cable
- 4 x 2.5m sensor cables
- **Features** · Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from tow-hooks and other ancillary equipment that intrudes in the first 100cm of

- the detection zone
  - Self-diagnostic function • 1 x Trigger output
  - **Durability & Standards**
  - Operating temperature: -30 to +80°C
  - Waterproof sensors to IP68
  - Waterproof control box to
  - CE marked
  - E-Marked: UNECE R10 compliant

### Power

- Power consumption: 2.4 Watts
- Current: 200mA



### RECOMMENDED EXTRA

LS-60-A Low speed trigger module

Enables sensors below designated speed

4851

4215



### OPTIONAL EXTRA

Trigger-out diode protected relay 24Vdc

Trigger-out diode protected relay 12Vdc

UDS-RELAY-12 To power a device switched by the output trigger 4216

### CORNERSCAN® ULTRASONIC DETECTION SYSTEM

CS-3100 - Cornerscan® Corner sensor system with mute function

5261

from ancillary equipment

Self-diagnostic function

**Durability & Standards** 

• Waterproof sensors to IP68

Waterproof control box to

• E-Marked: UNECE R10

Mechanical vibration: 5G

• Mechanical shock: 10G

Operating temperature:

-30 to +80°C

detection zone

within the first 100cm of the



- · 3 sensor system
- · 12-24Vdc
- 0.6/1.0m detection range -(selectable via dip switch)
- Audible distance warning
- · Flush-mount
- · 2 levels of sensitivity -(selectable via dip switch)
- 3 year warranty

### Contents

- 3 x sensors
- Buzzer
- 3 x 11° flush mount fixings • 3 x 18° flush mount fixings
- 3 x 26° flush mount fixings
- Waterproof control box
- 2.5m buzzer cable
- 3 x 2.5m sensor cables

### **Features**

- Obstacles detected in under 200 milliseconds
- Buzzer with audible distance warning, LED & adjustable volume control Buzzer will silence after
- 4 seconds if there is no movement from detected object or vehicle Environment Learning

Mode prevents false alarms

IP69K

CE marked

compliant

FCC approved

- Power consumption: 2.4
- Current: 2 Amps

### **RECOMMENDED EXTRA**

LS-60-A

Low speed trigger module



### STEPSCAN™ ULTRASONIC DETECTION SYSTEM

ST-2100 -Stepscan<sup>™</sup> Step sensor system with mute function ST-2100-60-A - Stepscan™ Step sensor system with mute function and low speed trigger module

Includes UDS-4.5SC 4.5m extension cable



### · 2 sensor system

- · 12-24Vdc
- · 0.6/1.0m detection range -(selectable via dip switch)
- Audible distance warning
- Flush-mount
- · 2 levels of sensitivity -(selectable via dip switch)
- · 3 year warranty

### Contents

- 2 x sensors
- Buzzer
- 2 x 11° flush mount fixings • 2 x 18° flush mount fixings
- 2 x 26° flush mount fixings
- Waterproof control box
- 2.5m buzzer cable

### • 2 x 2.5m sensor cables

- **Features** • Obstacles detected in under
- 200 milliseconds • Buzzer with audible distance warning, LED & adjustable
- volume control • Buzzer will silence after 4 seconds if there is no
- movement from detected object or vehicle • Environment Learning Mode prevents false alarms from

ancillary equipment that intrudes in the first 100cm of

5262

5345

the detection zone · Self-diagnostic function

### **Durability & Standards**

- Mechanical vibration: 5G
- Mechanical shock: 10G • Operating temperature:
- -30 to +80°C
- Waterproof sensors to IP68
- Waterproof control box to
- IP69K CE marked
- E-Marked: UNECE R10
- compliant FCC approved

### Power

- Power consumption:
- 2.4 Watts • Current: 200mA



### **RECOMMENDED EXTRA**

LS-60-A Low speed trigger module Enables sensors below designated speed 4851



### **EXTENSION CABLES**

UDS-2.5BC - Buzzer/display extension cable 2.5m	3717
UDS-10BC - Buzzer/display extension cable 10m	3716
UDS-15BC - Buzzer/display extension cable 15m	3746
UDS-2.5SC - Sensor extension cable 2.5m	3719
UDS-4.5SC - Sensor extension cable 4.5m	3720
UDS-7.0SC - Sensor extension cable 7.0m	5623



52

4851

# Radar Detection Systems



# **Ultrasonic Detection On-Screen Display Module**

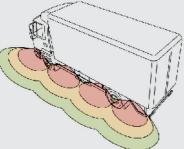


- Integration of Brigade's ultrasonic obstacle detection systems and Backeye® camera monitor systems
- Ultrasonic detection warnings overlaid onto camera image on in-cab monitor
- Reduced driver stress and distractions as all information is in one view

### Sensor data and camera image combined

Brigade's ultrasonic proximity sensors minimise both vehicle damage and collisions with pedestrians, cyclists or objects. Perfect for road-going commercial vehicles operating in confined spaces or manoeuvring at low speed.

Working in conjunction with a Backeye® camera monitor system and up to two ultrasonic detection systems, the on-screen display module warns the driver of obstacles close to the vehicle by overlaying 3-stage audible and visual ultrasonic data onto the camera image on the monitor.



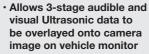


Model Part No:

### **ULTRASONIC ON-SCREEN DISPLAY MODULE**

UDS-OSD20-ECU - On-screen display module PAL UDS-OSD21-ECU - On-screen display module NTSC 5099 5347





- 12-24Vdc
- · 2 camera inputs
- · 2 trigger inputs
- · 2 UDS inputs
- · 2 UDS outputs
- · 2 year warranty
- · Compatible with 1x Sidescan® Frontscan®

Contents

• OSD ECU

Power cable

Splitter cable

Trigger cable

**Features** 

• UDS overlay will appear on a black background if no cameras installed

and Backscan®

• Overlay on monitor of vehicle

icon and detection data from

up to 2 x ultrasonic detection

- left or right on the monitor Audible warning via monitor
- Ultrasonic system fault displayed on monitor
- Compatible with MDR

• Graphics can be overlayed

### **Durability & Standards**

- Mechanical vibration: 5G • Mechanical shock: 10G
- Operating temperature: -30 to +70°C
- +22 to +158°F IP30
- Dimensions 74 x 118 x 28 mm (WxDxH) 29x46x11
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved IC Approved

### Power

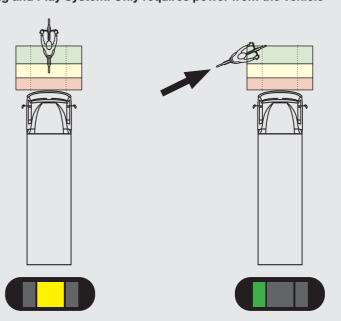
- Power consumption: 1.7 Watts
- Current: 140mA

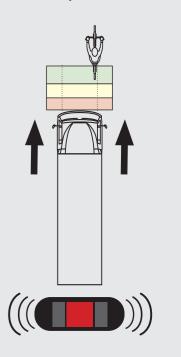
Note: Not compatible with HD camera monitor

# **DVS Front Radar**

Specifically designed to meet the 2024 DVS requirements, Brigade's DVS Front Radar is an advanced dual-radar collision prediction system with a 180° detection angle to the front of the vehicle. The driver is alerted through visual and audible signals if a vulnerable road user is detected in close proximity.

- Meets 2024 PSS Direct Vision Standard MOIS requirements
- Enhanced dual radar technology to detect pedestrians and cyclists in the front blind spot
- 3-stage system to alert drivers through visual and audible signals if a vulnerable road user is detected in close proximity to the front of the vehicle when stationary as well as moving off
- Real-time Feedback: Providing real-time warnings to the drivers for immediate reaction to prevent collisions
- Plug and Play System: Only requires power from the vehicle





Model Part No:

## FRONT RADAR SENSOR SYSTEM

FR-001DVS - DVS Front Radar sensor system

FR-30LDVS - DVS Offset Front Radar sensor system

8000

7673



- · Detection length: 2.5m
- · Detection width: 3.6m
- Sensor size (WxHxD)
- 115 x 95 x 41mm Sensor size with bracket
- 200 x 110 x 43.5mm
- Display size (WxHxD) 80 x 40 x 20mm
- IP69K sensor
- 3 year warranty

- 1x dual radar sensor unit
- 1 x display & bracket • 1 x radar bracket
- 1 x radar cable 5m
- 1 x IMU module & bracket

### **Features**

- 180° detection angle • Detects VRUs in the front blind spot
- when vehicle is stationary or moving off
- · Detects static and moving objects
- · 3-stage visual driver alert dependent on detection distance from vehicle
- · Audible and visual driver alert when object is detected and vehicle is moving forward
- Designed for rigid and articulated

- System active under 5Km/h
- Quick and easy installation
- · Compact and rugged design for harsh environments
- Operating frequency: 76-77GHz
- · Adjustable display volume
- Self-adjusting brightness display

### Power Power consumption: 6.5 Watts

### **Durability & Standards**

- Operating temperature: -40 to +85°C
- E-Marked: UNECE R10 compliant
- Meets 2024 PSS Direct Vision Standard MOIS requirements



# Radar Detection Systems



Part No: Model

### PROGRAMMABLE BACKSENSE® OBJECT DETECTION SYSTEM

### BS-8100 - 77GHz Programmable detection range

7135

7248



- 9-32Vdc
- Detection length: up to 60m (minimum programmable distance 0-3m)
- Detection width: 2 to 16m
- Rugged design for harsh environmental conditions
- Sensor size (WxHxD) 160 x 100 x 40mm
- Display size with bracket 101 x 71 x 70mm (WxHxD)
- 3 year warranty

- 1 x Configurable radar sensor • 1 x Audible and visual display with USB
- socket and mounting bracket 1 x 9m extension cable
- 1 x Mini USB cable

### **Features**

- Frequency modulated continuous wave (FMCW) radar technology
- · Quick reaction time
- · Effectively detects stationary, moving and multiple objects
- 1 activation input
- 1 trigger output Programmable:
- Detection area Blind zones - system ignores fixed objects Buzzer (70 to 90 dB(A) at 1m)
- Horizontal detection angle: 140°

- 5 stage adjustable audible and visual
- distance warning display
- · Sensor resistant to water, moisture, dust, vibration, heat, cold, mud and glare

- Current: 0.8 Amps
- Power consumption: 8 Watts

### **Durability & Standards**

- Operating temperature: -40 to +85°C
- CE marked UKCA marked
- FCC approved
- E-Marked: UNECE R10 compliant

Note: Configuration software available at

brigade-electronics.com

### SELECTABLE BACKSENSE® OBJECT DETECTION SYSTEMS

### • 9-32Vdc

- · 3 x selectable preset detection ranges: (LxW) 3m x 2.5m 4.5m x 3.5m 6m x 4.5m
- Rugged design for harsh environmental conditions
- Sensor size (WxHxD) 160 x 100 x 40mm
- Display size with bracket 101 x 71 x 70mm (WxHxD)
- · 3 year warranty

### Contents

BS-7100 - 77GHz Selectable detection range

- 1 x Non-configurable radar sensor
- 1 x Audible and visual display with mounting bracket
- 1 x 9m extension cable

### **Features**

- Frequency modulated continuous wave (FMCW) radar technology
- · Quick reaction time
- · Effectively detects stationary, moving and multiple objects
- 1 activation input
- 1 trigger output
- 5 stage adjustable audible and visual distance warning display
- Adjustable buzzer volume: (70-90dBA) Sensor resistant to water, moisture, dust.
- vibration, heat, cold, mud and glare

### Power

- Current: 0.8 Amps
  - · Power consumption: 8 Watts

### **Durability & Standards**

- Mechanical shock: 100G
- Mechanical vibration: 8.3G
- Operating temperature: -40 to +85°C CE marked
- UKCA marked
- FCC approved
- IC approved
- E-Marked: UNECE R10 compliant

# **Backsense® CAN Radar**

For OEM and specialist application markets, Brigade's Network Radar allows you to connect and link up to 8 sensors to cover large, sometimes complex blind spot zones around a vehicle or machine.

The system provides object detection in CAN (Controller Area Network) message format which may be processed to display data on control panels/displays on the vehicle or used to interact with aspects of the

Each connected radar sensor is allocated a unique ID and will transmit data for up to 8 closest objects. With a detection range of up to 60m length and 16m width, it provides a flexible system to meet customer specific requirements.

- Provides object detection in CAN message format
- Independent CAN Bus may communicate with existing CAN network via CAN Gateway
- · Separate CAN message & ID for each object detected (up to 8 per sensor)

Model **Part No:** 

### NETWORK BACKSENSE® OBJECT DETECTION

BS-9100 - Backsense® 77GHz CAN object detection radar

6351



- 12-24 Vdc
- · Detection length: up to 60m
- Detection width: 2m to 16m
- Sensor size (WxHxD)

BS-02DCX - 2m extension cable

BS-05DCX - 5m extension cable

160 x 100 x 40mm

· 3 year warranty

· IP69K sensor

### **Features**

Contents

• Frequency modulated continuous wave (FMCW) radar technology

• 1 x BS-9100 Radar sensor

- · Quick reaction time
- Network up to 8 sensors
- Extremely rugged design for severe weather conditions and all terrains
- Communication via CAN Gateway
- Configurable CAN ID
- Complies with CAN2.0A Base Frame
- Separate CAN message & ID for each object detected (up to 8 closest objects per sensor

### Power

- Current: 0.8 Amps • Power consumption; 8 Watts
- **Durability & Standards** • Mechanical shock: 100G
- Operating temperature: -40 to +85°C
- CE marked UKCA marked
- E-Marked: UNECE R10 compliant

Note: For CAN message format, refer to user manual at brigade-electronics.com

5272

4550

5637

57



### BACKSENSE® RADAR OBJECT DETECTION ACCESSORIES

BS-09DCX	- 9m extension cable	4551
BS-25DCSX	- 25m extension cable (Female end connector supplied loose)	4975
BS-00NYC	- Network Y Cable for 9000 series radar	5270
BS-02PIC	- Network power input cable for 9000 series radar	5271
BS-00NT	- 120 Ohms Network Terminator for 9000 series radar	5291
CT-470	- Constant tone external alarm - 102dB	1346

BS-WD-USB - USB -programming software, port driver and operating guide

**BKT-023** - Adjustable Bracket for BS-9100, BS-8100 & BS-7100 7190

# Zonesafe® RFID Detection

• 12-24Vdc

**IP67** 

Size (WxHxD)

122 x 250 x 90mm

· 2 Year Warranty



5882

### **ZoneSafe Control Unit**

The ZoneSafe Control Unit is installed in the cab so it is clearly visible to the driver. ZoneSafe is activated when a VibraTag Driver Tag is inserted into the Control Unit prior to operating the vehicle. Audible and visual alerts indicate various alarm states including a two-stage alert for the detection of one or more tags, system errors and the non-insertion of a driver tag. A mute button can override a detection alert once a tag has been acknowledged.

### **ZoneSafe Antenna**

A ZoneSafe Antenna creates a detection zone around a vehicle. Up to six antennas can be installed and linked in sequence to a control unit. The detection zone for each antenna can be programmed from smallest 3m up to largest 10m.

### **Zonesafe® RFID Tags**

ZoneSafe RFID tags can be used to detect people, protect assets and to create exclusion zones. Each tag can be uniquely identified and linked to individual people. Driver tags have the same functionality as pedestrian tags and are also compatible with the control unit.

> Model Part No:



# ZONESAFE® RFID TAG DETECTION SYSTEM

ZS-1000-ECU - ZoneSafe® Control Unit

5881



58

- · 12-24Vdc · Size (WxHxD)
- 102 x 180 x 58mm
- WIFI configuration interface for remote monitoring and downloads
- · 2 Year Warranty

### **Features**

- Installed in the cab of vehicle
- Two stage audible and visual warnings to the machine operator when a tag or tags are detected by connected antennas (available separately)
- Connect up to 6 antennas • Internal memory to store up to 4,000
- System activation by inserting driver tag
- Alarm if driver tag is left in vehicle
- · Central mute button to acknowledge the detection of one or more tags (configurable)

- Multi-colour status panel
- 3 selectable detection levels.
- AMPS hole pattern mounting
- 1 x Trigger input
- 1 x Trigger output
- TX Frequency: 125kHz • RX Frequency: 868.3MHz

• Current: 0.5 Amps

### **Durability & Standards**

• Operating temperature: -40 to +85C

### CE marked

### **OPTIONAL EXTRA**

ZS-ECU-MP **Mounting Plate for Control Unit**  5900

### Model Part No:

### ZONESAFE® RFID TAG DETECTION SYSTEM

ZS-1000-AP - ZoneSafe Vehicle-to-Pedestrian Antenna

Power

**Features** • Creates a detection zone around a

vehicle · Detects tags through walls and

obstructions and around blind corners

 Detection zone radius programmable manually or via WIFI

- · Connects to Control Unit on vehicle (antenna cable available separately)
- · Daisy-chain wiring to connect multiple antennas to the same vehicle
- TX Frequency: 125kHz • RX Frequency: 868.3MHz

• Current: 1 Amp

**Durability & Standards** • Operating temperature: -40 to +85C

Note: Antenna cable required for installation



20neSi

### OPTIONAL EXTRA

Detection radius range: 0 - 10m

(Configurable between 3 & 10m)

ZS-C130 Antenna Cable, 30m 5899

**ZS-AP-MP Mounting Plate for Pedestrian Antenna** 5898

**ZS-1000-BKT** 6079 **Adjustable-Angle Mounting Bracket** 

### ZONESAFE® RFID TAG DETECTION SYSTEM

ZS-1000-DVT - ZoneSafe® Driver VibraTag, rechargeable

ZS-1000-PVT - ZoneSafe® Pedestrian VibraTag, rechargeable











· Size (WxHxD) 84 x 53 x12mm

· IP67

1 Year Warranty

### **Features** • Carried by workers and machine

ZS-1000-TC - ZoneSafe® Pedestrian VibraTag, rechargeable, with clip

operators Each tag can be uniquely identified and

linked to individual people Driver tags have the same detection functionality as pedestrian tags and are

- also compatible with the control unit • Driver tag is masked from detection when inserted into the control unit
- Tag Immediately vibrates upon entering a vehicle detection perimeter
- · High-capacity rechargeable battery

### • 2 hour inductive charging time using

- wireless charger (available separately) • Hermetically sealed to provide best long term protection
- Can be worn on a lanyard, into pockets or armbands
- RX Frequency: 125kHz
- TX Frequency: 868.3MHz

### **Durability & Standards**

• Operating temperature: -10 to +55C

• CE marked

### **OPTIONAL EXTRA**

ZS-1000-TWC ZoneSafe® Wireless VibraTag charger 5893

59

5889

5888

5892

# Zonesafe® RFID Detection



Part No: Model

### **ZONESAFE® RFID TAG DETECTION SYSTEM**

### ZS-1000-AT - ZoneSafe® AssetTag

5894



· Size (HxDia) 63 x 48mm

- · IP67
- 1 Year Warranty
- **Features**  High-capacity (non-rechargeable) replaceable power cell providing long operational life (included)
- Protects vehicle from collisions with property or hazards
- Immediately warns the driver when tag is detetected within the vehicle's detection zone
- Robust and waterproof enclosure
- · Can be attached onto assets or mounted on top of a safety cone with neck opening diameter of 39-44mm
- RX Frequency: 125kHz
- TX Frequency: 868.3MHz

### **Durability & Standards**

- Operating temperature: -10 to +55C

### ZONESAFE® RFID TAG DETECTION SYSTEM

### ZS-1000-TT - ZoneSafe® Tag Tester

5883



- · Size (WxHxD) 110 x 90 x 55mm
- 1 Year Warranty

### Features

- · Checks pedestrian and driver tag battery status (green for good and red for low)
- Includes 2 relays which can be used to trigger alarms, locks or shutters
- Adjustable Tag detection range from 0.1 to 4m
- TX Frequency: 125kHz
- RX Frequency: 868.3MHz

### Power

• Current: 0.5 Amp

### **Durability & Standards**

- Operating temperature: -10 to +55C
- CE marked

### **ZONESAFE® RFID TAG DETECTION SYSTEM**

### ZS-1000-MZ - ZoneSafe® Masking Zone Antenna

5885



## (external 24V DC supplied)

- · Size (WxHxD) 250 x 122 x 90mm
- · IP67
- 1 Year Warranty

**ZS-1000-BKT** 

### **Features**

- Fitted to walls or other permanent structures
- Makes all tags within the masked area undetectable
- Adjustable masking zone from 3 to 10m
- Tags will be detected as normal once
- outside the masked area
- TX Frequency: 125kHz

### Power

### **Durability & Standards**

- Operating temperature: -40 to +85C



60

### **OPTIONAL EXTRA**

**ZS-AP-MP** Mounting Plate for Pedestrian Antenna

**Adjustable-Angle Mounting Bracket** 

5898 6079

### Part No: Model

### ZONESAFE® RFID TAG DETECTION SYSTEM

### ZS-1000-SG - ZoneSafe® Smart Gateway

5886



- Size (WxHxD) 110 x 90x 55mm
- · IP67
- · 1 Year Warranty

### **Features**

- Fitted to walls or other permanent structures
- 2 x relays which can be used to trigger alarms or open shutters, barriers etc
- Detects approaching vehicles equipped with ZoneSafe systems
- Adjustable detection range from 3 to 9m
- RX Frequency: 125kHz
- TX Frequency: 868.3MHz

### Power

• Current: 0.5 Amp

### **Durability & Standards**

• Operating temperature: -10 to +55C

### ZONESAFE® RFID TAG DETECTION SYSTEM

### ZS-1000-DR - ZoneSafe® Desktop Reader

5887

61



- · Size (HxDia) 160 x80 x 45mm
- 5V USB connection 1 Year Warranty
- (green for good and red for low) Can be powered from any computer

**Features** 

via USB

• Checks VibraTag battery status

- TX Frequency: 125kHz • RX Frequency: 868.3MHz
- **Durability & Standards**

• Operating temperature: -10 to +55C

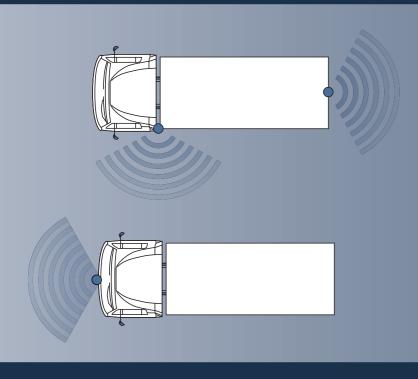
# **Warning Alarms**

Vital safety devices needed to warn workers and pedestrians that a vehicle is manoeuvring.

bbs-tek® white sound® are the safest alarms in the world due to their instant locatability and directional sound. The multi-frequency alarms are only heard in the danger zone, thus eliminating noise nuisance for local residents. bbs-tek® white sound® Smart alarms auto-adjust to 5dB above ambient.

**Quiet Vehicle Sounder** Designed for electric and hybrid-electric vehicles of all types, the Front speaker QVS Electric Vehicle Sounder warns pedestrians and other vulnerable road users that a quiet vehicle is approaching.

**Single Tone Alarms** meet the basic needs of reversing safety by warning pedestrians and workers that a vehicle is reversing.







Part No:

0935

0934

0897

0896

6317

5385

Part No: Model

### WHITE SOUND® SMART REVERSING ALARM

SA-BBS-107 - Self-adjusting heavy-duty - 87-107 Decibels

Features

1400

1399

1398





· Size (WxHxD) 172 x 79 x 95mm

Lifetime warranty

• Alarm continually adjusts to 5-10dB above ambient

· Multi-frequency broadband sound

• Instantly locatable

· Sound confined to danger area Eliminates noise nuisance

• Sounder unit: Driver

. Hole centres (mm): 153

Power

• Current: Max 1 Amp

**Durability & standards** • Mechanical vibration: 10G

• Operating temperature: -40 to +85°C

CE marked

• E-Marked: UNECE R10 compliant

 UKCA marked • SAE J994



noise abatement society



### WHITE SOUND® SMART REVERSING ALARM

SA-BBS-97 - Self adjusting - medium duty - 77-97 Decibels SA-BBS-97HV - Self adjusting - electric forklift - 77-97 Decibels

· 12-24Vdc

Size (WxHxD) 127 x 76 x 65mm

Lifetime warranty

above ambient

• Multi-frequency white sound alarm

• Sound confined to danger area

• Eliminates noise nuisance

• Sounder unit: Driver

• Hole centres (mm): 98-108

Current: Max 1 Amp

### **Durability & standards**

• Mechanical vibration: 10G

• Operating temperature: -40 to +85°C

CE marked

• E-Marked: UNECE R10 compliant

UKCA marked

SAE J994

• NAS/PIEK approved for night-time



BBS-107 - Heavy duty - 107 Decibels BBS-102 - Heavy duty - 102 Decibels

0899 0898



Size (WxHxD) 172 x 79 x 95mm

Lifetime warranty

• Multi-frequency broadband sound

· Sound confined to danger area

• Sounder unit: Driver

• Hole centres (mm): 153

### Power

• Current: Max 1 Amps

### **Durability & standards**

• Mechanical vibration: 10G

• Operating temperature: -40 to +85°C CE marked

• E-Marked: UNECE R10 compliant

UKCA marked

• SAE J994



### WHITE SOUND® REVERSING ALARM

BBS-82HV - Electric forklift - 82 Decibels BBS-92ADR - Petrol tanker - 92 Decibels

· 12-24Vdc

· 36-80Vdc (HV)

Size (WxHxD)

127 x 76 x 65mm Lifetime warranty

### Features

· Multi-frequency broadband sound

• Instantly locatable

· Sound confined to danger area

 Eliminates noise nuisance · Sounder unit: Speaker

Hole centres (mm): 98-108

Power

• Current: Max 0.3 Amps

### **Durability & standards**

• Mechanical vibration: 10G • Operating temperature: -40 to +85°C

CE marked

• E-Marked: UNECE R10 compliant

UKCA marked

• SAE J994

### Model

## WHITE SOUND® REVERSING ALARM

BBS-97 - Medium duty - 97 Decibels

- Medium duty - 92 Decibels **BBS-92** 

BBS-87 - Medium duty - 87 Decibels

BBS-82 - Medium duty - 82 Decibels



**bbs** 

 $MW^{\sim}$ Size (WxHxD) noise abatement society 105x65x37mm (BBS-97/92) 105x65x32mm

> (BBS-87/82/77) Lifetime warranty

### **Features**

Power

• Current: Max 0.5 Amps

Multi-frequency broadband sound

• Operating temperature: -40 to +85°C Instantly locatable

 Sound confined to danger area CF marked • E-Marked: UNECE R10 compliant Eliminates noise nuisance

 UKCA marked Sounder unit: Speaker Hole centres (mm): 76

delivery (BBS-82 only)

**Durability & standards** 

Mechanical vibration: 10G

### **SIDE TURN WARNING ALARM**

### BBS-TI - Turn Indicator Warning Alarm - 90 Decibels

**Features** 

2 vear warrantv

· Activates on side turn indication

 Sound synchronises with vehicle indicator flash

functions

• CE marked

• E-Marked: UNECE R10 compliant

### Sounder unit: Speaker • Hole centres (mm): 102

### QVS QUIET VEHICLE SOUNDER (AVAS)

### QVS-001-75 - Quiet Vehicle Sounder

· 12-24Vdc

IP68 Speaker

IP30 ECU

Size Speaker (WxHxD) 120 x 135 x 120mm

Size ECU (WxHxD) 93 x 26 x 185mm

· 2 year warranty

### Contents

• 1 x ECU

a quiet vehicle is approaching • Combined multi-frequency bbs-tek®

- Directional and locatable - The sound is

 Front speaker system Pitch and volume increase with vehicle speed to mimic an

• Operational below speeds of 20MPH

 Front sounder operational when ignition activated (silenced when parking brake

· Uses Tachograph speed signal'

### Power

• Current: Max 0.1 Amps

### • Mechanical vibration: 10G

Operating temperature:

• E-Marked: UNECE R10 compliant

FCC approved

IC Marked

• 49 CFR Part 571 and 585 Federal Motor Vehicle Safety Standards compliant

\* QVS helps achieve compliance for the

alternative installation methods



### • Alarm continually adjusts to 5-10dB 36-80Vdc (HV)

- Instantly locatable

### Power

### WHITE SOUND® REVERSING ALARM

### **Features**

- · Instantly locatable
- Eliminates noise nuisance

# 1322 2165





1 x Speake

### Features

· Warns pedestrians and other VRU's that

technology and tonal sounds - Multi-frequency sound

only heard in the hazard zone.

internal combustion engine

applied)

• Sounder unit: Speaker





· 12-24Vdc IP68

Size (WxHxD) 122 x 84 x 50mm

### • Multi-frequency broadband sound

· Built-in turn indicator trigger Built-in timed and latched alarm cut out

### Power Current: 0.5 Amps

**Durability & standards** 

UKCA marked

### **Durability & standards**

-30 to +70°C

CE marked

UKCA marked

UNFCE R138 compliant\*

\*\* If your vehicle is not equipped with a Tachograph, please contact us for

# Single Tone Alarms



Model Part No:

### **NIGHTSHIFT® SPEAKING ALARM**

BC-01(NS) - Single reversing message - Nightshift - 90 or 0 Decibels BC-01(NS-B) - Bespoke single message - Nightshift - 90 or 0 Decibels 0378 1198

· 12-24Vdc

Size (WxHxD) 122 x 84 x 50mm

· 2 year warranty

**Features** 

· Real speech alarm \* BC-01(NS) message "Ssh! Stand well

clear, vehicle reversing...

• Bespoke message up to 8 seconds under 4 seconds for best speech quality

• Double engage reverse to cut-out or reduce sound

Sounder unit: Speaker

• Hole centres (mm): 102

Current: 0.5 Amps

**Durability & standards** 

• E-Marked: UNECE R10 compliant

UKCA marked

### **SPEAKING ALARM**

0077 BC-01 - Single reversing message - 90 Decibels 0079 BC-01(B) - Bespoke single message - 90 Decibels BC-02(B) - Bespoke dual message - 90 Decibels 0083

· 12-24Vdc

· IP68

Size (WxHxD) 122 x 84 x 50mm

2 year warranty

**Features** 

 Real speech alarm \* BC-01 message "Ssh! Stand well clear, vehicle reversing...

• Bespoke message up to 8 seconds. under 4 seconds for best speech quality

· Sounder unit: Speaker

• Hole centres (mm): 102

Power

• Current: 0.5 Amps

**Durability & standards** 

• E-Marked: UNECE R10 compliant

UKCA marked



### SPEAKING HANDBRAKE WARNING ALARM

BC-01(H/Brake) - Single message - 2 wire - 90 Decibels BC-01(4W)(H/Brake) - Single message 4 wire - 90 Decibels

0849 1715

· 12-24Vdc

Size (WxHxD) 122 x 84 x 50mm

· 2 year warranty

**Features** 

Real speech alarm

\* Message "Bleep! Handbrake not applied...

Sounder unit: Speaker

• Hole centres (mm): 102

Power

• Current: 0.5 Amps

**Durability & standards** 

• E-Marked: UNECE R10 compliant



66

### **SPEAKING SIDE TURN WARNING ALARM**

SS-BC-08 - Single side-turn message - 90 Decibels

1334

· 12-24Vdc

Size (WxHxD) 122 x 84 x 50mm

2 vear warrantv

**Features** 

• Real speech alarm

\* Message "Ssh! Caution. Truck turning

Sounder unit: Speaker

• Hole centres (mm): 102

Power

Current: 0.5 Amps

**Durability & standards** 

CE marked

• E-Marked: UNECE R10 compliant • UKCA marked

Note: TS-001ECU Turn indicator triager is required

12-24 Volts

Size (WxHxD)

156 x 85 x 108mm

· 2 year warranty

IP68

Model

## SMART TONAL REVERSING ALARM

### SA-800 - Self adjusting heavy duty - 87-112 Decibels

Part No:

1315

**Durability & standards** • Mechanical vibration: 10G

• Operating temperature: -40 to +85°C

CE marked

• EMC approved: e

• SAE J994

### SMART TONAL REVERSING ALARM

### SA-400 - Self adjusting medium duty - 82-102 Decibels

1310

12-24 Volts

IP68

Size (WxHxD) 100 x 72 x 32mm

· 2 year warranty

**Features** 

Power

above ambient

• Frequency (KHz): 1.9

• Current: Max 0.3 Amps

• Sounder unit: Dome speaker

• Hole centres (mm): 111-114

• Alarm continually adjusts to 5-10dB

 Alarm continually adjusts to 5-10dB above ambient

• Frequency (KHz): 1.4 · Sounder unit: Speaker

• Hole centres (mm): 76-82

Power • Current: Max 0.2 Amps • Operating temperature: -40 to +85°C • EMC approved: e

**Durability & standards** 

• Mechanical vibration: 10G

SAE J994

### TONAL REVERSING ALARM

### BA-890 - Heavy duty - 112 Decibels

**Durability & standards** 



12-24 Volts

IP68

Size (WxHxD) 156 x 85 x 108mm

2 vear warranty

• Frequency (KHz): 1.9 • Sounder unit: Dome speaker

• Hole centres (mm): 111-114

Power • Current: Max 0.5 Amps

### • Mechanical vibration: 10G

• Operating temperature: -40 to +85°C

CE marked

• EMC approved: e

• SAE J994

Single Tone Alarms

# Ancillaries



Model Part No:



BA-570 - Medium duty - 102 Decibels BA-560 - Medium duty - 97 Decibels

2885 2742



· Size (WxHxD) 105 x 62 x 32mm

· 2 year warranty

• 2 metre cable (BA-530TCA-2)

• Frequency (KHz): 1.6

• Sounder unit: Speaker • Hole centres (mm): 75-85

### Power

• Current: Max 0.3 Amps

### **Durability & standards**

• Mechanical vibration: 10G

• Operating temperature: -40 to +85°C

CE marked

• EMC approved: e

SAE J994

# NIGHT SILENT TONAL REVERSING ALARM



0027



· Size (WxHxD)

48 x 60 x 48mm 2 year warranty

### **Features**

· Blue wire connection mutes alarm when

vehicle lights are on

• Frequency (KHz): 2.4 • Sounder unit: Piezo

Single bolt fitting

Power • Current: Max 0.03 Amps

### **Durability & standards**

Mechanical vibration: 10G

• Operating temperature: -20 to +60°C

CE marked

### TONAL REVERSING ALARM

### BA-13 - Medium duty - 90 Decibels

0015



### · 12-24Vdc

IP68

Size (WxHxD) 66 x 74 x 96mm

· 2 year warranty

### **Features**

• Frequency (KHz): 1.3

Sounder unit: Speaker

Single bolt fitting

### Power

• Current: Max 0.3 Amps

### **Durability & standards**

Mechanical vibration: 10G

• Operating temperature: -40 to +85°C CE marked

### Model

· 12-24Vdc

· Size (WxHxD)

122 x 84 x 50mm

· 2 year warranty

· IP68

**VEHICLE INTERCOM** 

BC-VI - Normally open channel rear to cab; button press cab to rear BC-VI-2 - Normally closed channel; button press communication

0815 0875

0663

4752

0334

0974

Part No:

• Two-way communication system Master unit volume control: 80-95dB

• Includes master unit, slave unit and 25m

• Sounder unit: Speaker

### **Features**

• Hole centres (mm): 102

### Power

• Current: 0.5 Amps

### **Durability & standards** • CE marked

• E-Marked: UNECE R10 compliant

**Durability and Standards** 

 UKCA marked • FCC Approved

IC Approved



### **ALARM ANCILLARIES**

### TCO-47 - Timed auto-reset reversing alarm cut-out (dash mount)

### **Features**

Single touch timed relay

Allows driver to cut-out alarm if reversing

between the hours of 11 30pm-7 00am Auto-resets after 3-4 mins delay

 CE marked EMC approved

# **ALARM ANCILLARIES**

### TCO-47-01 - Latched side-turn alarm cut-out (dash mount)

· 12-24Vdc

· 12-24Vdc

· 2 year warranty

2 vear warrantv

• Single touch timed relay

• Allows driver to cut-out alarm between the hours of 11.30pm-7.00am

• Resets by switch or ignition

### **Durability and Standards**

• CE marked

• EMC approved

### **ALARM ANCILLARIES**



NS-2 - Nightshift reversing alarm cut-out switch

NS-3 - Nightshift reversing alarm cut-out switch (auto gearbox)

**Durability and Standards** 

• CE marked

Resets when reverse gear disengaged



### · 12-24Vdc

· IP68

· 2 year warranty

• Double engage reverse to cut-out alarm

. No wiring necessary to cab

EMC approved

www.brigade-electronics.com Tel +44(0) 1322 420300 sales@brigade-electronics.com

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AC-24-12(000) (783 S. 25) E8-H015 7373 26 FM-600W 3747 52 MDR-644-2-SBD 618 40 VSW-2230CA-DDA 7361 10 ZS-1000-PVT 5889 51 AC-24-12(010) 5907 25 BE-H026 7375 26 FM-600W 3747 52 MDR-644-2-SBD 5126 36 VSW-2230CA-DDA 7362 10 ZS-1000-PVT 5889 51 AC-24-12(010) 5907 25 BE-H026 7375 26 FM-600W 3747 52 MDR-644-2-SBD 5126 36 VSW-2230CA-DDA 7362 10 ZS-1000-PVT 5889 61 AC-24-12(010) 5907 26 BE-H0360 7375 26 FM-600W 3747 52 MDR-644-2-SBD 5128 30 VSW-2240M 5333 21 ZS-1000-PVT 5889 61 AC-24-12(010) 5907 26 BE-H0360 7375 26 FM-600W 3747 52 MDR-644-2-SBD 5128 30 VSW-2240M 5333 21 ZS-1000-PVT 5889 61 AC-24-12(010) 5908 4908 40 BE-H0360 7376 26 FM-600W 3747 52 MDR-644-2-SBD 5128 30 VSW-2240M 5333 21 ZS-1000-PVT 5889 61 AC-24-12(010) 5908 4909 40 BE-H0360 7376 26 FM-1000 5938 17 MDR-644(W-1-CMR 568) 5127 36 VSW-31010C 7144 14 ZS-1000-PVC 5989 51 AC-3006 4904 40 BE-H036 5007 26 FM-1000 5938 17 MDR-644(W-1-CMR 568) 5127 36 VSW-31210C 7146 14 ZS-1000-PVC 5989 51 AC-3007 4905 24 BE-H038 30 SSW-24-1000 5938 17 MDR-644(W-1-CMR 10 TSW-3100-PVC 5989 51 AC-3007 4905 24 BE-H038 30 SSW-24-1000 5938 51 AC-3008 4949 24 BE-H132 3008 26 FM-1000 6003 2	. ,						DW-2000-TX	7088	32							49			
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A-C-241-20010) 930° 49 BE-HUS0 7375 28 FR-001DVS 7673 55 MDR-844G-1-CMR 5858 38 WBW-3100C 7143 14 ZS-1000-TC 5892 53 AC-241-20011) 930° 40 BE-L1030 7376 28 FR-001DVS 7673 55 MDR-844G-1-CMR 5858 38 WBW-3100C 7143 14 ZS-1000-TC 5892 53 AC-241-20011) 930° 40 BE-L1030 7376 28 FR-001DVS 7673 55 MDR-844G-1-CMR 5858 36 WBW-3100C 7143 14 ZS-1000-TC 5893 51 AC-240-240 74 MDR-846-AC-241 7651 74 MDR-846-AC-241 74	, ,																		
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BA-560   2742   68   BE-X003   0805   26   IP-L601   5867   17   OVS-001-75   5385   65   VEV-650-000N   4766   23   CAREYE® Turn assist with AI - BA-890   1246   67   BE-X010   2100   28   IP-L603   5902   17   RP-010   7625   47   VEV-670-000   5774   23   CAREYE® Turn assist with AI - BB-890   1246   67   BE-X010   2101   28   IP-L603   5902   17   RP-010   7625   47   VEV-670-000   5740   23   CAREYE® Turn assist with AI - BB-892   0896   65   BE-X015   2101   28   IP-L603   5902   17   SA-400   1310   67   VEV-7100C   5466   13   CS-SET-00400   46   CAREYE® Turn assist with AI - BB-892   0897   65   BE-X020   1143   26   IP-L610   5904   17   SA-800   1315   67   VEV-7101C   5467   13   CS-SET-00530   46   CAREYE® Turn assist with AI - BB-892   0894   65   BKT-023   7190   56   BKT-023   7190   5	BA-57	0027	68	BE-L130	0800	26				NS	5-3						CS-SET-00380		46
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# Warranties



### Lifetime New-For-Old Warranty (covers product for the life of vehicle)

bbs-tek® White sound® reversing alarms Self-adjusting backalarms



### **5 Year New-For-Old Warranty**

Backeye®360 camera system ELITE range camera monitor systems



### 3 Year New-For-Old Warranty

SELECT range camera monitor systems

MDR 644 & 508 series mobile digital recorders, IP cameras and accessories

Ultrasonic object detection systems

Backsense® radar object detection systems & on-screen display

### 2 Year New-For-Old Warranty

2 YEARS Al Cameras

Careye® Turn Assist

Camera monitor system ancillaries MDR 641 series mobile digital recorders

INDITION 041 Series mobile digital recorders

Ultrasonic object detection on-screen display

Ultrasonic object detection ancillaries and extras

Alarm ancillaries

Backchat® Speaking alarms

Vehicle intercom

QVS Quiet vehicle sounder

Zonesafe® Antenna & Control unit



### 1 Year New-For-Old Warranty\*

ESSENTIAL camera monitor systems ZoneSafe® RFID Tags and ancillaries Dashcams

All products aside those specifically listed

### **Warranty Terms and Conditions**

Brigade warrants all goods to be free from defect in material and workmanship in normal use provided that they have been installed and operated in accordance with the instructions supplied. Normal wear-and-tear excluded. The commencement date of all warranties is the date of delivery to the purchaser unless otherwise agreed in writing by Brigade. The period during which the warranty applies is stated above. Brigade make no other warranty, express or implied, with respect to the goods, their marketability, quality or fitness for any particular use or purpose. In particular, but without prejudice to the general provisions of the conditions of sale, no responsibility is assumed for incidental or consequential loss by reason of any warranty express or implied. Full details of Brigade's Terms and Conditions can be found at brigade-electronics.com.

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