USER'S GUIDE

# BACKEYE
# REAR-VIEW CCTV OBSERVATION SYSTEM

## Model: BE-255

BRIGADE®
ELECTRONICS PLC

## FEATURES

Monitor

The black & white monitor is designed for automotive rear view system.

- You can use the monitor by a 12V or 24V car battery
- The monitor is automatically turned on when you set the change lever in the R(reverse) position
- Optionally two sources are available.(Camera, A/V Input)

Camera

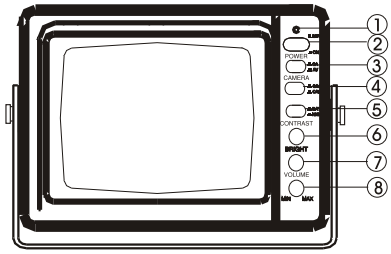
The black and white camera is designed for automotive rear view system to provide the driver with a view of the rear vehicle.

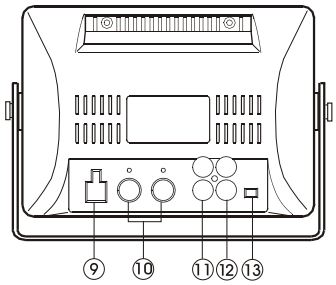
- You can use the camera by a DC 12V / 200mA
- The camera is automatically turned on when the monitor is turned on.
- The camera utilizes a CCD image sensor having a high quality picture.
- The camera automatically adjusts the picture quality with changing in light.
- Wide field of view: (option)

( 96 degree in the horizontal plane.
  120 degree in the diagonal plane.

- Water resistant housing.
- Operates over a wide temperature range.

## MONITOR CONTROLS




1) POWER LED

2) POWER SWITCH
   Press the power switch(▬ ON) to turn the monitor on.
   (The green LED indicator will illuminate.)
   Press the power switch again to turn the monitor off(▙ Stand By)
   (The Green LED indicator will not extinguish.)
   The Monitor is in the Stand By condition.

3) CAMERA / A.V SELECTOR
   Depress the selector(▙CA) to select the camera (CA1, CA2).
   Press the selector(▬ AV) to select the AV input signal.

4) CAMERA SELECTOR
   Depress the camera selector( ▙CA1) to select the camera connected to the camera 1.
   Press the camera selector(▬CA2) to select the camera connected to the camera 2.

5) DAY/NIGHT SWITCH
   Normally this switch should be in the out position. (▙ DAY)
   When you view the picture at night or in a tunnel etc., Depress the switch to reduce the picture brightness. (▬ NIGHT)

6) CONTRAST CONTROL
   Adjust the contrast control for the desired overall best picture.
   Turn clockwise to increase picture contrast and counterclockwise to decrease.

7) BRIGHT CONTROL

Adjust the bright control for the best overall picture or display brightness.
Turn clockwise to increase picture brightness and counterclockwise to decrease it.

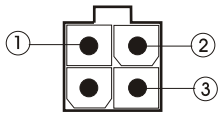
8) VOLUME CONTROL

Adjust the volume control for the desired sound level.
Turn clockwise to increase and counterclockwise to decrease.

9) POWER CONNECTOR

Insert the supplied power cable connector firmly until it is locked.
To remove the power connector, press in the clip and pull out the connector, while Holding the clip down.

- Power connector pin description

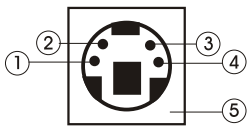



| Pin No. | Description |
|---|---|
| 3 | White : positive power (DC 10V to 32V) |
| 2 | Green : R(reverse) gear power (DC 12V or 24V) |
| 1 | Black : ground |

10) CAMERA INPUT CONNECTOR

There are two mini DIN type connectors for the video camera inputs.
Connect the black and white video cameras to the monitor with the supplied cable.
The monitor supplies power to the camera.

- Camera input connector pin description.




| Pin No. | Description |
|---|---|
| 1 | Power DC 12V |
| 2 | Audio Input |
| 3 | N/C |
| 4 | Video Input |
| 5 | Ground |

11) AUDIO/VIDEO INPUT JACK

For just monitoring on the screen, put the plug of A/V signal into this jack.

12) AUDIO/VIDEO OUTPUT JACK

Connects audio, video output connector to a second monitor or VCR input with a conventional RCA phone type connector cable.(option, not supply)

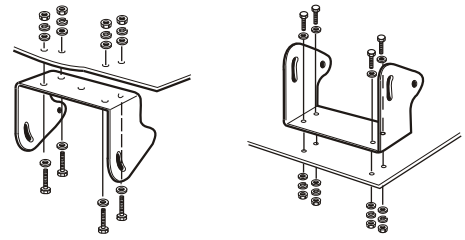
13) MIR/NOR OPTION

When the switch is in MIR ( )position, the picture will reversed.
When the switch is in NOR ( )position, the picture will be normally displayed.
Camera 1 & Camera 2 are operated individually.

## MONITOR INSTALLATION

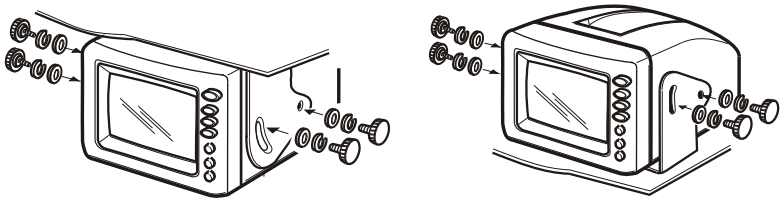
- Install the monitor on a surface which will support more than 4 kg(9Lbs) of weight.
- Install the monitor away from a speaker mounted in the vehicle so that the picture is not distorted by the speaker's magnetic field.
- Do not install the unit in an extremely hot or humid place(radiator, air duct , etc.) or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- The monitor is not designed for waterproof.

1) Attach the supplied mounting bracket to the ceiling or the floor, etc.

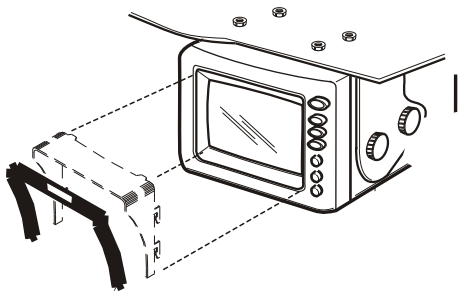


Tapping screw or
Machine screw with nut.

2) Adjust the angle of the monitor and fasten the screws firmly.

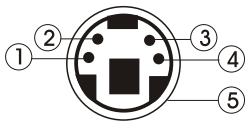


3) Install the sunshield (Optional)
4) Fix a sunshield into holes(6) and fitting it on the line of upper part, pull it down.



## CAMERA CONTROLS

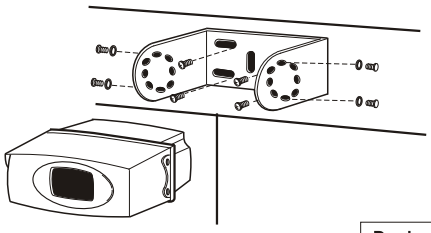
● CAMERA CONNECTOR



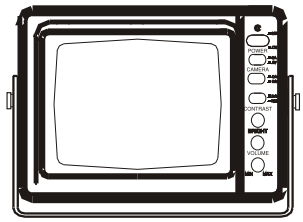

| Pin No. | Description |
|---|---|
| 1 | Video Output |
| 2 | N/C |
| 3 | Audio Output |
| 4 | Power DC 12V |
| 5 | Ground |

## CAMERA INSTALLATION

A. Attach the supplied mounting bracket to the vehicle. Adjust the angle of the camera and fasten the screws firmly.



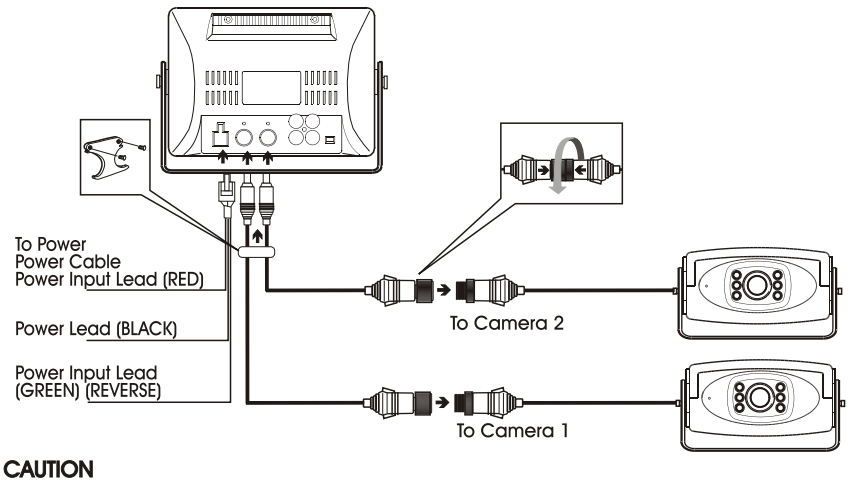
B. Run the cable from the monitor to the camera



Protect the cable by using conduit or running the cable inside the vehicle as much as possible.

## CONNECTION

- Connect the RED wire to the positive (12 or 24V DC) power terminal which is energized with the ignition key in the accessory position.
- Connect the BLACK wire to a metal point of the car or the negative battery post.
- Connect the GREEN wire to the switched power output terminal of the "R"(reverse) gear.




**CAUTION**

BEFORE MAKING THE CONNECTION , DISCONNECT
THE GROUND TERMINAL OF THE CAR BATTERY FOR AVOIDING SHORT CIRCUITS.

THE PLUGS SHOULD BE FULLY INSERTED INTO THE CONNECTORS OR JACKS.
A LOOSE CONNECTION MAY CAUSE MALFUNCTIONING OF THE UNIT.

## OPERATING INSTRUCTIONS

- When you turn the ignition key to the accessory or on position, the power is supplied to the monitor and monitor is in stand -by (S/B).

**Note the power of the monitor:**
When you push the power switch on the S/B position, the monitor is placed in a S/B mode. the monitor is not turned off until the ignition key on the off position.

**When you set the change lever to the reverse position,** the monitor is turned on and the picture from the camera 1 appears.

## CLEANING AND GENERAL MAINTENANCE.

- If your vehicle has been parked in direct sun light resulting in a considerable rise in temperature inside the vehicle, allow the unit to cool off before operating.
- Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the unit.

**CLEANING** Unplug or power off mode before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

**VENTILATION** Holes in the cabinet and of the back or bottom are provided for ventilation, and to ensure reliable operation of the monitor equipment by protecting from overheating. These holes must not be blocked or covered.

**OBJECT AND LIQUID ENTRY** Never push objects of any kind into this monitor equipment through holes as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

**SERVICING** Do not attempt to service this system by yourself as opening of removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

## FCC COMPLIANCE STATEMENT

**NOTE** This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**CAUTION** changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## SPECIFICATIONS

MONITOR(BE-255M)

| | |
|---|---|
| TV system | CCIR |
| Picture tube | Black and White |
| | 5.5 inch picture measured diagonally |
| | 90 degree deflection angle |
| Picture image | Factory preset to reverse image |
| Picture resolution | 700 TV lines |
| Power connector | Red : Positive 10V to 26V input |
| | Green : Reverse gear 10V to 16V input |
| | Black : Ground |
| Inputs | 4-pin mini DIN jack |
| | 1) 12V, 0.2A DC(output) |
| | 2) Audio input |
| | 4) Video input :1.0V p-p sync. negative |
| | 5) Ground |
| Power requirements | 10V to 26V DC |
| Power consumption | 20W Maximum |

| | |
|---|---|
| Operating Temperature Range | |
| -15 C to + 50 C (+5 F to +122 F) | |
| Storage Temperature Range | |
| -25 C to + 85 C (-13 F to +185 F) | |
| Dimensions | |
| 176(W) X 127(H) X 196(D) mm | |
| 7.0(W) X 5.0(H) X 7.8(D) Inch | |
| Including projecting parts and controls | |
| : 2Kg (4.4 lbs) | Weight Approx. |
| Including mounting bracket | |
| Accessories Supplied: | |
| Mounting bracket | 1EA |
| M ounting bolts | 4EA |
| Machine screws | 4EA |
| Spring washers | 4EA |
| Flat washers | 4EA |
| Power cable | 16.5 ft(5m) |

CAMERA(BE-255C)

PICK-UP DEVICE:

| | |
|---|---|
| Imager | Interline transfer type CCD |
| Picture elements | EIA : 290,000 pixels |
| Image size | 1/3 Inch |
| Optical & Other characteristics: | |
| Lens | Focal length 2.9mm |
| | Maximum aperture F=2.0 |
| Synchronization | Internal |
| Horizontal resolution | 380TV lines |
| Required illumination | 0.1 Lux Minimum |
| Signal to noise ratio | Minimum 44dB (at AGC off) |
| Power supply | 12V DC |
| Power consumption | 2.5W |
| Operating temp. | -30 C to +50 C |
| | (-22 F to +122 F) |
| Weight | 0.65Kg (1.5lbs) |

Dimensions:
94(W) X 48(H) X 38(D) mm

Accessories Supplied
Camera bracket : 1 EA
Adhesive vinyl tape : 1 EA
Angle adjusting screws : 4 EA
(with spring. flat washer)
4mm bolts : 4 EA
(with spring. flat washer)
Camera cable 66ft(20m)

* Design And Specifications Are Subject To Change Without Notice.

Brigade Electronics plc
London, England
Tel: +44 (0)20 8852 3261
www.brigade-electronics.co.uk

Printed in Korea