



Part # SM7FE

7-inch Hybrid Monitor
Auto Pairs NTSC/PAL CVBS &
1080 AHD Cameras



A division of
Component Solution Services, LLC.
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Mishawaka, IN 46545
www.veritysafe.com

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New 1080p AHD Technology!

What's New About It?

The **MK7FM** can be attached to any existing camera, CVBS, 720p, 960 and 1080p AHD. It is one monitor that replaces all older versions. It also auto-selects the camera input NTSC or Pal.

Although it works best with AHD cabling with 4-pin aviation style connectors (the industry standard connectors), the monitors work well with non-AHD 4-pin cables.

If you have a system already in your vehicle with 5-pin aviation-style connectors, our 4-pin to 5-pin conversion cables can swap out CBVS components with 1080 AHD components.

This monitor works with Verity and other shutter cameras without requiring a controller box.

Adjustable parking lines with the ability to change the distance of the marker line to match the true measurement.

4 mode settings to match the driver's preferred image view using the MODE button without entering the main menu.

Newly designed OSD – On Screen display menu.

3 camera inputs with audio on camera 1.

The MK7FM is 5 monitors in one. It separates itself from other systems by accomplishing all these different inputs as if they were designed for each.

Component Solution Services LLC. Engineers the **Verity®** products to meet any requirements and price point within the commercial and fire rescue industries. Designed for professional drivers, Verity develops and markets products and applications to transmit video, audio, and data. Verity® is also home to the Reveal® line of MDVRs.



The Verity Difference:

- We are an engineering firm
- Products designed and tested in the USA
- Field-tested, not just bench-tested
- Low issue rate of 0.022%
(That is one component out of 4,000+ systems)
- Not found in Big-Box or online mega-sites
- Easy to reach tech support from our R&D department

Verity integrates the needs of the fleets and end-users into what we engineer for our OEMs.

Replacement parts can be found at:

www.Librv.com

Your system likely came preinstalled, so the installation section will be for reference.

Thank you for purchasing our Verity system. When installed and used properly, your SM7FE is designed to deliver years of trouble-free operation. This manual contains important information required to properly install and operate the unit. Verity Systems are designed for quick installation by trained professionals in proper installation environments. Our designs are based on decades of working with vehicle manufacturers.

Verity's products are intended to be installed as a supplement and our observation systems and/or products are not intended for use as substitutes for rear-view mirror devices, or for any other standard motor vehicle equipment which may be required to be installed on vehicles by law. Verity products promote improving the vehicle operator's field of view. Our products are no substitute for proper defensive driving techniques, observance of traffic laws, and motor vehicle safety regulations.

Installation Location

It is unlawful in most locals for any person to drive a motor vehicle equipped with a television viewer/screen located at any point forward of the back of the driver's seat (or in any location that is visible, directly or indirectly), to the driver while operating the vehicle. Our systems are designed to be used primarily as a rear observation device.

DO NOT OPEN ANY COMPONENT. There are no serviceable parts inside any of the components of the Verity Rear Vision products. Opening the product will break the tamper indicators and void the warranty.

WARNING

- ◆ Do not place heavy objects on cables or cover them with carpet or mats.
- ◆ Do not place cables where they can be crushed in any manner.
- ◆ Our systems are designed as a driving aid. Watching videos, broadcasts, DVDs, and/or any images other than those intended for driving assistance cameras is prohibited.

CAUTION

- ◆ To avoid damage to the electronic circuit, stop using this product while doing welding work to the vehicle and/or trailers.
- ◆ Never immerse any component in water, and do not employ spray cleaners. When cleaning, use a damp, lint-free cloth only.
- ◆ Connect this unit only to other compatible devices.
- ◆ Although our products have built-in surge and cross-polarity protection, make sure all cables are connected properly; improper cable connections may damage the camera and the monitor.
- ◆ Cables should not be allowed to touch hot or rotating parts, such as the engine, ventilator, etc.
- ◆ Do not locate the monitor near heat-generating vents or devices.
- ◆ Turn off power to the monitor when connecting the camera.

Monitors are not designed to be waterproof. (Our SM07F waterproof monitor is the exception.) Exposure to water, such as rain, may damage the unit.

SYSTEM FEATURES

Part# MK7FM 7" - Auto Pairs to CVBS &1080P AHD Cameras

- Screen size: 7-inch digital screen (7" 16:9)
- High Resolution: 1024 × 600 Pixel (RGB)
- Video Format: CVBS / AHD (1080P)
- System: PAL/NTSC Auto Select
- Contrast: 500:1
- Brightness: 400 cd/m²
- Power supply: DC 12-24 V
- Operation temperature: -20C° ~ +65C°
- Monitor view angle: Horz. L (85) R (85) Vert. UP (85) DOWN (85)
- Adjustable backup lines
- 3 camera inputs with shrink tube labeled trigger wires
- Speaker built into the monitor
- Auto blue screen if there is no signal on the activated channel.
- Features: 1080P AHD camera, Removable HD sunshade, LCD screen, high-quality processor, in-line waterproof fuse, new easy-to-use OSD menu function via buttons: reversing image delay time 0~10s, Mirror/Normal image, plus horizontal flip, multi-language.

Part # C001F AHD CAMERA SPECIFICATIONS

- Image Sensor: 1 / 2.9 Sony
- TV System: NTSC
- Video Format: AHD/1080P
- Effective Pixels: 1,300,000
- Sensing Area: 4.8mm (H) X 3.67mm (V)
- Resolution: 1280*960 (1.2M Pixels)
- Night Vision: 18 IR LED
- Minimum Illumination: 0.1 Lux (day), 0 Lux (with IR)
- Microphone: Yes
- Power Supply: DC 12V
- Camera Angle: 120°
- Waterproof rating: IP69

SYSTEM COMPONENTS



7-Inch AHD Monitor



Mount



C001F
1080P AHD Camera



65 ft FM / FM 4-pin
Aviation connector



Manual



Monitor Harness,
3- camera with
trigger wires

Default- 65' fm/fm camera cable – **Optional** 49' fm/fm camera cable

SYSTEM COMPONENTS

This monitor can be mounted on the dash and on both horizontal and vertical surfaces. Make sure the view is suitable for the driver to observe the images. Take care not to block any necessary viewing area when mounting. Before mounting the system, permanently hook up all connections to ensure proper operation.

Mounting Monitor

1. After determining the monitor location, position the monitor support bracket, mark the bolt-hole location, and drill the holes. Be careful not to drill into any other components that may be hidden.
2. Attach monitor bracket. Mount the monitor to the support bracket with the supplied hardware.
3. Connect the wires on the monitor cable to the proper connections using the Verity Wire Connection Key (Fig. 1) and wiring diagram (Fig. 2)

Figure 1.

Verity Wire Connection Key

RED wire to ignition hot (+) 10-24 volts DC

BLACK wire to ground (-) (please use a proper chassis ground post)

GREEN trigger wire is for camera 1. Connects Green trigger wire to backup light wire or backup beeper wire. This connection is needed to activate the monitor when putting the vehicle into reverse.

WHITE (CAM 2) trigger wire for accessory cameras (right side cameras

etc.) DO NOT power this wire unless you intend to trigger a second camera. It will be connected to your trigger power source, such as a turn signal light wire.

YELLOW (CAM3) trigger wire for accessory cameras (side cameras etc.) DO NOT power this wire unless you intend to trigger a third camera

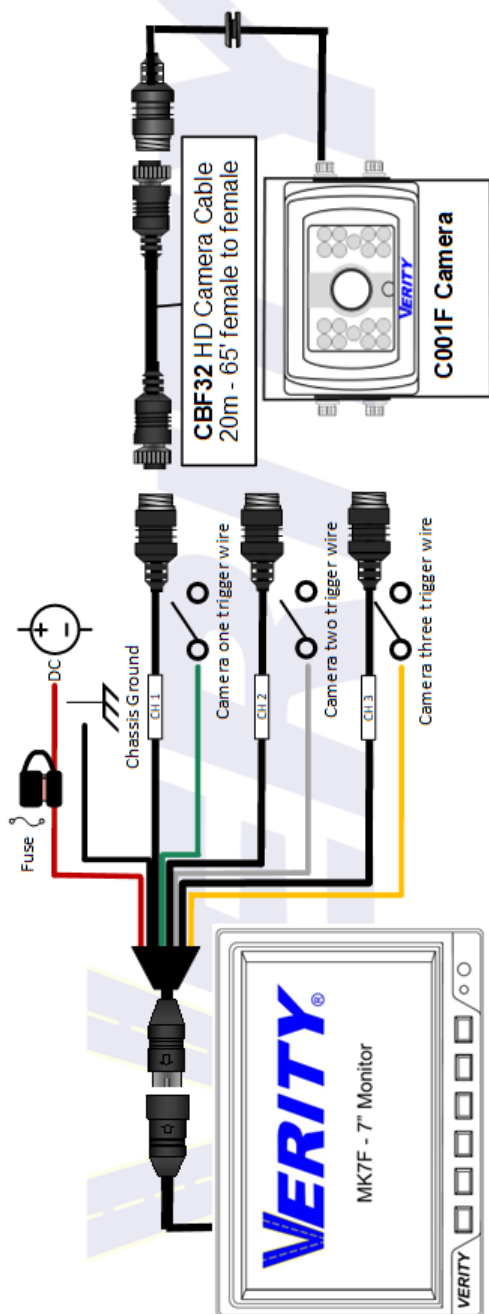
USE ARROWS TO ALIGN 18 PIN CONNECTION!

If force is applied to this connection when it is not aligned, it may damage the plug pins and void the warranty.

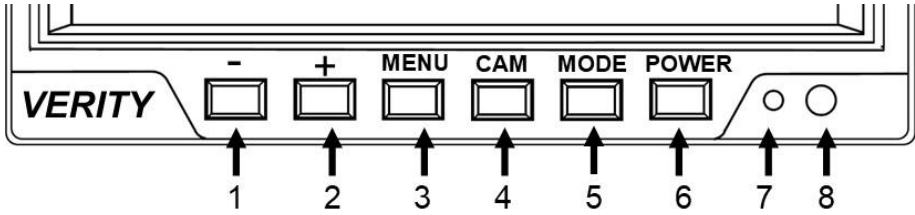
CONNECTIONS

Wire Connection Key:

- Red wire** to Ignition hot (+) 12-24v. DC
- Black wire** to proper grounding spot GND (-)
- Green trigger wire** for camera 1 to backup light
- White trigger wire** for camera 2 to right turn signal relay
- Yellow trigger wire** for camera 3 to other (turn) signal relay



MENU BUTTONS



1 (-) adjusts volume DOWN and in the menu, it moves the highlighted submenu selection UP.

2 (+) adjust volume UP and in the menu, it moves the highlighted submenu selection DOWN.

3 MENU opens the menu and confirms the submenu selection. Press to select/enter subpage.

4 CAM confirms the menu selection.

5 MODE – adjusts the picture color (standard, soft, highlight, vivid). In the menu, MODE exits/saves the current menu selection.

6 POWER – Turns monitor On and Off manually.

7 Power indicator Light.

8 IR/light sensor.

Press Menu to open the following menu options.

Use the + and – buttons to navigate the menu, and press "Menu" to enter that page's settings.

A subpage will exist for all except Backlight.



Camera – Press "Menu" again to enter the camera settings page.

Parking Line – Adjust the rear parking lines that display when in reverse.

Language – Choose your preferred language.

Backlight – No submenu, press "Menu" to change backlight brightness level or set to Auto.

System – Adjust trigger timer, auto scan, rotate image.

Camera Settings: Press Menu, then press Menu again to enter the camera settings subpage.

Here are the following options to adjust:



Camera – Choose which camera to set the monitor screen view.

Select Camera 1, 2, or 3.

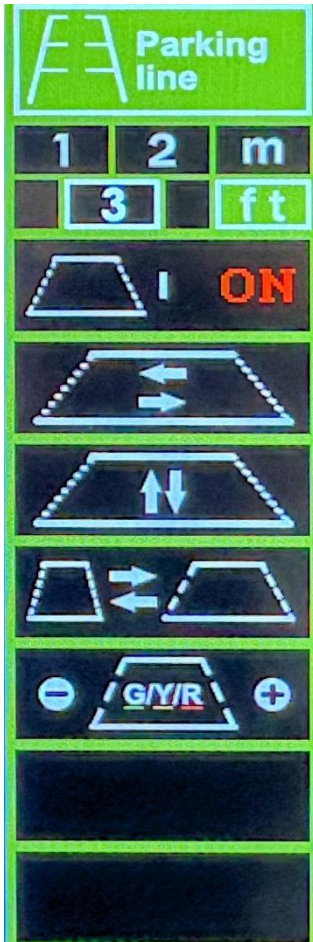
Set the brightness level of the selected camera.

Set the contrast level of the selected camera.

Set the saturation (color intensity) level of the selected camera.

Flip the image of the selected camera to mirror/unmirror.

Parking Line: Press Menu, press the "+" to navigate down to the Parking Line icon, press Menu to select. Upon entering the subpage, here are the following settings:



Choose between meters and feet as a measurement unit.

Adjust the distance increments between the lines (3ft, 6ft, 9ft).

Turn parking line ON/OFF.

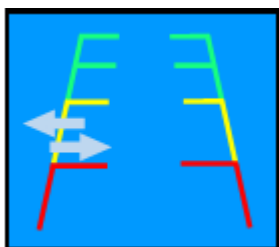
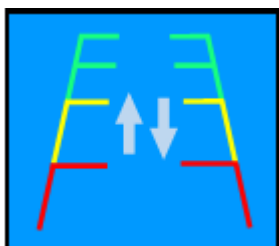
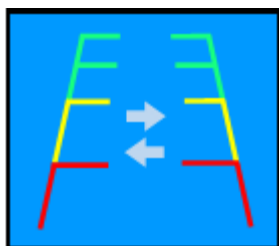
Make adjustments to move the parking line box left or right.

Make adjustments vertically to the length of the box.

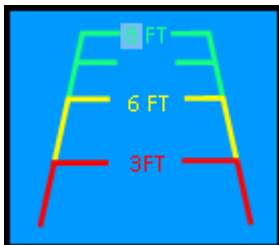
Make adjustments to the width.

Set the distances by feet for each color's warning zone (Green, Yellow, Red).

Adjustments can be made horizontally & vertically.



Change the distance between indicator lines.





Language Setting: Press Menu, press "+" to navigate down to the Language icon, press Menu to select. Upon entering the subpage, here are the following settings:

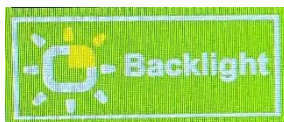
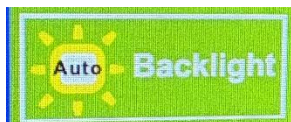
Choose which language to set by navigating the list with the + and – buttons.

Press Menu to select and set that language preference and then press Mode to save changes / exit the page.



Backlight Setting: Press Menu, press "+" to navigate down to the light bulb icon, press Menu to select and adjust the monitor brightness setting.

There is no subpage. You will see setting changes occur as you press the Menu button, switching from Auto, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, and Full.



System Settings: Press Menu, press "+" to navigate down to the System icon, press Menu to select. Upon entering the subpage, here are the following settings:



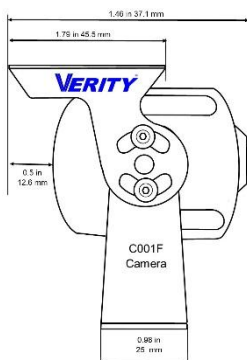
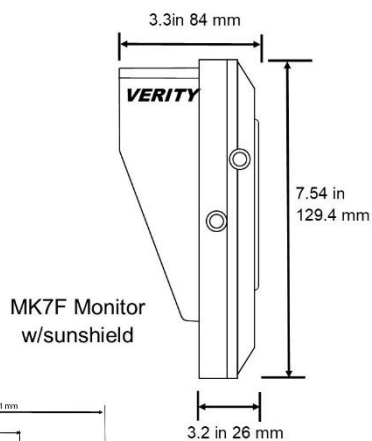
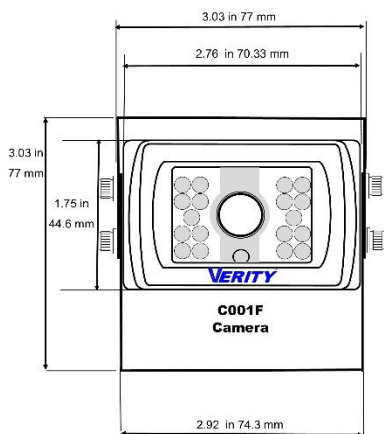
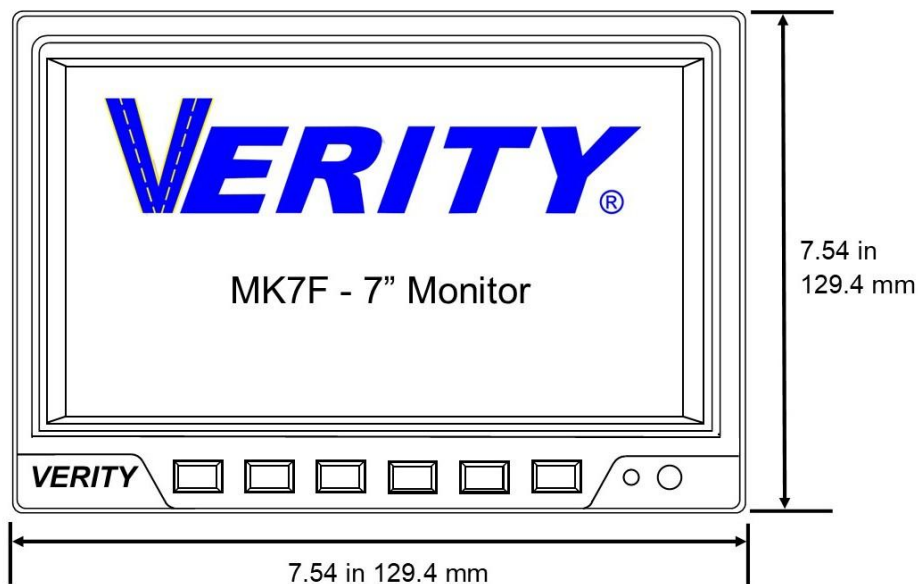
Trigger Delay – adjust between 1 and 3 seconds.

Auto Scan.

Rotate – adjust screen view.

System Number/Setting Reset.

SYSTEM DIMENSIONS



Notes

(Use this page to write any notes)



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COMPONENT SOLUTION SERVICES, LLC (CSS)
LIMITED One (1) YEAR WARRANTY

1. CSS products' warranties are not transferable. They apply to the consumer for one (1) year and cover defects in material and workmanship. We do not warranty our cables, which are QC tested at three different stations before shipping. All components must be installed in compliance with all Federal, State, and Local government requirements. The warranty is limited to the United States of America and Canada.
2. Defective components will be replaced or repaired based on a CSS evaluation of the component. Inbound shipping charges, based on the CSS rate allocated in the RMA (returned merchandise agreement), will be covered once the component has been deemed defective. The pre-assigned inbound freight will be supplied upon the return of the product. All repaired/replaced warranty parts shall be for the remaining duration of the original warranty period.
3. CSS takes pride in our products and will aid in the processing of your components:
 - a) All warranty claimants must have consulted our technical support department for troubleshooting and acquiring an RMA. Contact can be made via email at tech@veritysafe.com or call 574-807-6002.
 - b) When the warranty claim is made, the consumer must establish the warranty start dates by presenting documentation regarding the date of retail purchase (e.g., bill of sale).
 - c) Service performed by non-authorized service personnel may void all warranty claims.
 - d) CSS will make no payments for system removal/system re-installing, mileage allowance, or transportation expenses. Verity does not pay for labor. The limited warranty does not cover damage resulting from misuse, accident, modification, or alteration to hardware or software, tampering, unsuitable physical or operating environment beyond product specifications, improper maintenance, or failure caused by a product for which CSS is not responsible. There is no warranty for any product with removed or altered identification labels. CSS DOES NOT PROVIDE ANY OTHER WARRANTIES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME JURISDICTIONS DO NOT ALLOW THE LIMITATION OF IMPLIED WARRANTIES, SO THIS LIMITATION MAY NOT APPLY TO YOU.
4. This warranty gives you specific legal rights; you may also have other rights that vary from state to state.

Technical Support

A service ticket can be filled out online to supply the quickest service. The service ticket can be easily found on our website, www.VeritySafe.com or use the code below/right. Please have the system's serial number, which is found on the back of the monitor, when contacting the service department. We take great pride in delivering the most dependable product in the industry. Each item was 100% QC tested, and then we randomly recheck another up to 10% before it leaves our hands to you. We have a 0.022% factory issue rate with our products.



Email Tech Support: Tech@VeritySafe.com

Phone Tech Support: 574-807-6002

Note: if you are a fire/rescue customer needing tech support after hours or on weekends, leave a message, and a technician will return your call as soon as one becomes available.

VERITY®

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We at Verity would like to personally thank you for purchasing our product. Our company strives to supply the best products at a fair price. We care that you enjoy a safe driving experience.

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