



**AbraxSys**  
RUGGED LCD SOLUTIONS

**USER GUIDE**

# LCD MONITOR



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# 1. Introduction

Your LCD monitor is a highly integrated TFT display panel, which allows an easy display of standard video input sources such as PC Analog RGB [aka VGA], DVI [Digital Video Interface], DisplayPort [DP], HDMI, S-video, and Composite video. This LCD monitor is a highly engineered display device and has been tested under a variety of conditions with various video producing devices to ensure a highly compatible and reliable display.

With this highly flexible architecture, if your application requires any modification to operate satisfactorily, please contact our factory for modification and engineering assistance.

## FEATURES:

- The monitor was Engineered, Designed, and Produced in the United States. Support is also done in the USA.
- 5 button user interface (OSD Keypad)
- On Screen Display (OSD) control for all features
- Up & Down Arrows are Brightness Controls unless entering the full OSD menu
- Full multi sync capable
- No software drivers needed!
- VESA DPMS and DDC2/B support
- Real Color Technology - Digital brightness and contrast controls
  - TV color controls including hue and saturation control
  - Flesh tone adjustment
  - Full color matrix allows end users to experience the same color as viewed on CRTs and other displays
- Low EMI and power saving features
- High-Quality Advanced Scaling
  - Fully programmable zoom ratios
  - High quality shrink capability from WUXGA resolution
  - Real Recovery function provides full color recovery image for higher refresh rates
  - Moiré cancellation
- Analog RGB Input Port
  - Supports up to 1920x1200(WUXGA)@60Hz
- Auto-Configuration / Auto-Detection
  - Phase and image positioning
  - Input format detection
  - Compatibility with all graphic cards and standard VESA modes
- If configured at time of order, NTSC, PAL or SECAM input
  - Video decoder with S-Video and Composite video inputs

## 2. Product Safety Precautions

- Ensure that sufficient space is available around the display to provide the circulation necessary for cooling.
- Ensure that the ambient air temperature will not exceed the specified maximum temperature.
- Do not attempt to service this display yourself. The rear chassis has a seal so that non-qualified personnel will not expose themselves to dangerous voltages or other risks.
- To protect from electrical shock, unplug the display power supply from the wall before moving.
- Do not expose the display to direct sunlight or heat.
- Do not use this display near water.
- Do not place any heavy objects on the power cords. Damage may cause electrical shock.
- Unplug the power supply from the wall or unit if one of the following conditions exists:
  - Power cord or plug is damaged or frayed.
  - Liquid is spilled onto the display or the display is exposed to rain or water.
  - The display does not operate normally when the operating instructions are followed.
  - The display has been dropped or the enclosure has been damaged.
  - The display exhibits a distinct change in performance, indicating a need for service.

## 3. Inspection of your AbraxSys Monitor

The LCD monitor is supplied with different accessories depending on the model configuration purchased. Verify the model and accessories that were ordered. Contact your AbraxSys salesperson should there be any discrepancies.

## 4. Unpacking your AbraxSys Monitor

Your new rugged LCD monitor package will consist of a variation of the components listed below (section 5), depending on model, configuration, and options ordered. Open shipping container and place all the components on a flat clean surface. Contact your AbraxSys salesperson should there be any discrepancies and/or packaging damage. Packaging type will depend on model size. 'Cable Kits' are clearly labeled on a box inside the shipping container which will include not only all associated cables, but also necessary mounting hardware, a user manual (USB flash drive), and a touch screen driver (USB flash drive). If the kit box is missing, please contact AbraxSys immediately. Additionally, on the outside of each packaging container you will notice a white AbraxSys product label. Printed information on this label will be Model, Model Configuration, Date Code, Serial Number, Invoice number, customer PO number, customer requested reference information, and the AbraxSys Production work-order number.



# 5. What is included with your AbraxSys Monitor

Model, configuration, and options ordered will dictate what has been supplied.

In general, the below cables will be ~6ft (~1.82m) and supplied based on inputs present.

- If VGA (HD15) input is present, then a VGA Video Cable is supplied.
- If DVI input is present, then a DVI Video Cable is supplied.
- If DisplayPort (DP) input is present, then a DP Video Cable is supplied.
- If HDMI input is present, then an HDMI Video Cable is supplied.
- If Touch Screen is present, then a Serial (RS232) and/or USB cable is/are supplied depending on touch type.
- Typically, SDI, S-video, BNC, or Composite cables are not supplied.
- Power Cable for AC input, or a Locking Connector Cable for DC, or a Barrel Connector Cable for DC.
- If Remote Dimming input is present, then a special Dimming Cable is supplied.
- If On-Demand Serial Controls input is present, then a special RS232 Cable is supplied.
- User's Manual on Small USB Stick, noted with the AbraxSys logo on the device.
- Mounting Hardware; 4 Bolts/Washers for VESA Configuration or Various quantities and sized Bolts/Washers for Panel Mount configuration. There will typically be one more washer and one more bolt than is needed.
- Another small USB thumb-drive with Touch Screen Drivers (Optional when touch is installed).

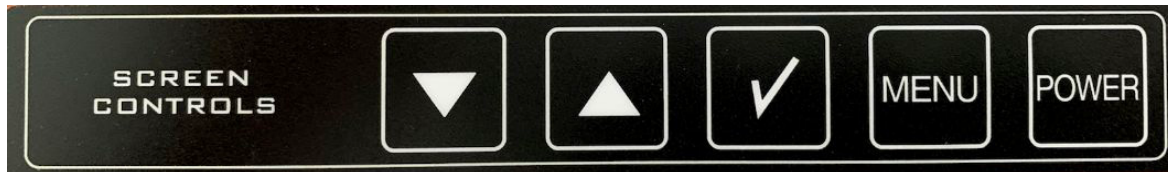
## 6. Connecting the AbraxSys Monitor

1. Connect all cables to the computer first. This would include the VGA Video cable and any optional touch interface cable, serial or USB.
2. After connecting the cables between the LCD monitor and the computer, connect the Power Cable to the display and the customer supplied DC voltage source. Check the display unit label to determine the correct DC voltage.
3. Turn the DC voltage source on. The display will be active.
4. Turn on your computer. The display should now operate showing your OS or the video that is being supplied to the flat panel.

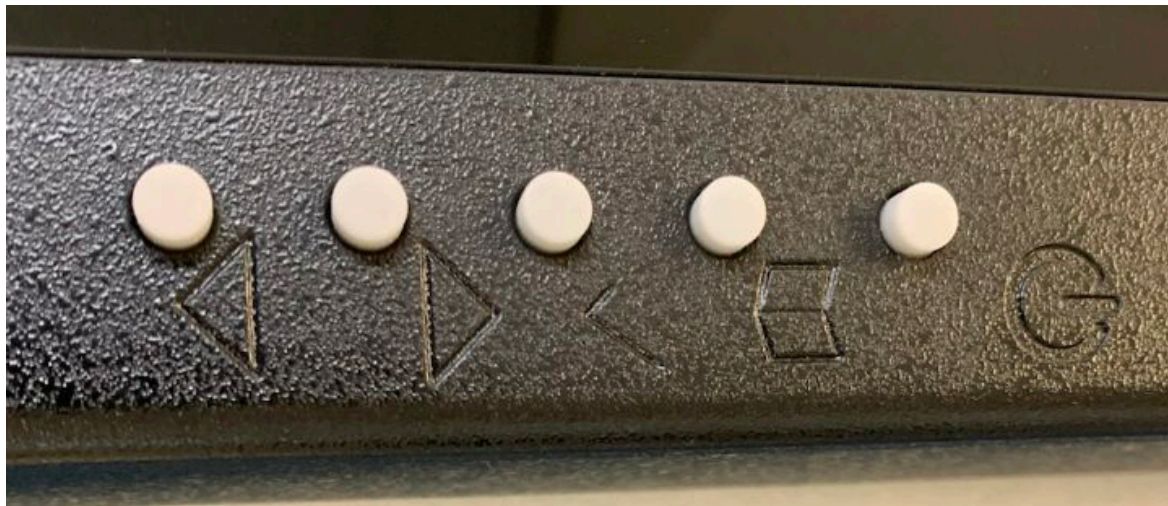
Note: If for any reason the display goes blank and gives an "Out of Range" or "No Input Signal", your computer or video source is supplying a signal that is "out of range" of the LCD's video board. If this happens, reboot the computer or video source and make sure you are supplying the correct video resolution and refresh signal. If the display doesn't work properly, it may be because:

- The resolution is too high or low for the LCD.
- The refresh rate is set too high. Set the refresh rate to 60Hz.
- The power source is incorrect.
- The unit is malfunctioning. If you believe this to be true, disconnect the video cable from the LCD display and connect to a known working display. If the display is working satisfactory and the video is within the appropriate range, then contact AbraxSys Customer service for an RMA number at 800-883-9050.

## 7. On Screen Display [OSD]



(Flat Ribbon Keypad Controls)



(Mechanical Keypad Controls)

With the OSD (On Screen Display) you can modify the settings and control the special features of the monitor. The OSD uses a number of menus for making changes and turning the special features on or off. The configuration can be done via the OSD-keypad located either on the front or back of your LCD monitor.

With the monitor operation, to start the OSD press the "MENU" button on the keypad. The OSD Main Menu will be displayed.

To select a Menu item, press the Menu button again.

You can use the Up or Down keys to move the Highlight to the item you wish to adjust. Once selected you use the Up or Down buttons to increase or decrease the selected value.

To get back to the previous menu point press the "Check" button.

To exit completely you can either wait for the OSD menu to time out or press the "Check" Button several times to back out.

Note: All changed values will only be saved by selecting "Exit" from the OSD. If not, the adjusted values will be lost after loss of power.



## 8. Full I/O Configured Unit

Only DVI, DisplayPort, Composite, and S-video (and VGA, if ordered that way). Other I/O Configurations begin at Section 9 below.

Image Adjustments	Sharpness	0-24	12 = Disabled 11-0 = smoothing filter 13-24 = sharpness filter (only working on analogue inputs)
		Gamma	Off
	1.8		Modify output Gamma by selected correction table
	2.0		
	2.2		
	2.4		
2.6			
Image Adjustments <i>Advanced</i>	Dynamic NR Mode	Off	Disable dynamic noise reduction
		Adaptive	Set noise filter strength dynamically depending on measured noise data
		Low	Set static noise reduction filter
		Medium	
		High	
		Max	
	MPEG NR Mode	On	Enable/Disable MPEG noise reduction to compensate MPEG/JPEG artifacts
		Off	
	DCDi	On	Enable/Disable "Directional Correlation Deinterlacing" that eliminates jagged edges doing low-angle diagonal interpolation
		Off	
Motion Processing	Off	Disable motion processing for interlaced inputs	
	Adaptive	Combine normal de-interlacing with motion detection	
	Normal	Odd and even filed will be outputted together	
Image Adjustments	Film Mode	Off	Disable film mode detection
		Video 2:2	Enable film mode detection using selected method
		Video 3:2	
		Video 3:2+2:2	
	Decoder Settings	Y-Bias	Luminance bias for video decoder
		Y-Gain	Luminance gain of video decoder
		C-Gain	Color gain of video decoder

<b>Image Adjustments</b>	<b>Auto Adjust</b>	Setup and settle input image automatically On success, mode data will be save for this mode		
	<b>Clock</b>	Range dep. on input	Adjust horizontal total	
	<b>Phase</b>	0-63	Adjust horizontal total	
	<b>Hor. Position</b>	Range dep. on input	Shift image depending on H-Porches	
	<b>Ver. Position</b>	Range dep. on input	Shift image depending on V-Porches	
	<b>Gamma</b>	Off	Disable Gamma correction	
	<b>Scheme</b>	Off	Scheme is disabled	
		Vivid	Vivid color scheme	
		Cinema	Cinema color scheme	
		Gaming	Gaming color scheme	
<b>Backlight</b>	0-100	Adjust intensity of backlight		
<b>Brightness</b>	0-100	Adjust digital brightness		
<b>Contrast</b>	0-100	Adjust digital contrast		

<b>Color Adjustment</b>	<b>Color Temp.</b>	User	Disable color temp. and activate user RGB adjustments
		4200K	Set color temperature to desired value in Kelvin
		5000K	
		6500K	
		7200K	
		9300K	
	<b>RGB</b>	Red	Adjust user color Range 0-100
		Green	
		Blue	
<b>Saturation</b>	0-100	Adjust Saturation <i>(only possible on Video/SVideo)</i>	
<b>Hue</b>	0-100	Adjust Hue <i>(only possible on Video/SVideo)</i>	
<b>Auto Color Adjust</b>	Calibrate internal ADC's		

<b>Scaling Adjustments</b>	<b>Main Scaling Mode</b>	Full Screen	Zoom/shrink input to fully fit into display	
		Letter Box	Select different Letter Box and Pillar Box scaling modes	
		Pillar Box		
		Letter Box Expand		
		Pillar Box Expand		
	<b>Zoom</b>	Native	1:1 scaling	
		Hor.	Horizontal zoom in %	
	<b>Zoom Pos.</b>	Ver.	Vertical zoom in %	
		Hor.	Select horizontal and vertical position of zoom window in %	
Ver.				

<b>Audio Settings</b>	<b>Volume</b>	0-100	Master volume
	<b>Balance</b>	-10 to $\pm 10$	Balance between left and right audio channel
	<b>Bass</b>	-10 to $\pm 10$	Increase/decrease bass
	<b>Treble</b>	-10 to $\pm 10$	Increase/decrease treble
	<b>Auto Volume</b>	On	Enable/Disable auto volume
Off		This keeps volume on master volume level	

<b>OSD Settings</b>	<b>OSD Timeout</b>	0-60	OSD Timeout in seconds; 0=Disable timeout
	<b>OSD Hor. Pos.</b>	0-100	Horizontal OSD position in %
	<b>OSD Ver. Pos</b>	0-100	Vertical OSD position in %
	<b>OSD Blend</b>	0-10	OSD transparency 0=No transparency 10=Maximum level of transparency
	<b>OSD Orientation</b>	0°	Rotation of OSD
90°			
180°			
270°			

<b>System Settings</b>	<b>Info</b>	Main: DisplayPort 1920x1200@60Hz Firmware Version: V1.18 Jul 16 2015 Panel type: LM240WU9
	<b>Mode Info</b>	Main: DisplayPort 1920x1200@60Hz Mode Nr5 STD H/V Total 2080-1234 H/V Start 112-32 Hor freq 74 Hz Sync Pol H+ V-
	<b>Restore user defaults</b>	Restore further saved user defaults
	<b>Save user defaults</b>	Save user defaults
	<b>Rest factory default</b>	Reset factory defaults This will load firmware defaults but not erase the previous saved user defaults

## 9. AbraxSys Monitors configured for DVI and DisplayPort (DP) only or for DVI and VGA (HD15) only.

<b>Input Select</b>	<b>Main Picture Channel</b>	DisplayPort	Set main input to selected input
		DVI	
		VGA	
	<b>Scan Input</b>	On	Enable scanning of inputs
Off		Disable scanning of inputs	
<b>Image Adjustments</b>	<b>Sharpness</b>	0-8	8=sharp, smoothing disabled 0=maximum of smoothing
	<b>Auto Adjust</b>	Setup and settle input image automatically On success, mode data will be save for this mode	
	<b>Auto Color Adjust</b>	Calibrate internal ADC's	
	<b>Clock</b>	Range dep. on input	Adjust horizontal total
	<b>Phase</b>	Range dep. on input	Adjust H-Phase
	<b>Hor. Position</b>	Range dep. on input	Shift image depending on H-Porches
	<b>Ver. Position</b>	Range dep. on input	Shift image depending on V-Porches
<b>Color Adjustment</b>	<b>Backlight</b>	0-100	Adjust intensity of backlight
	<b>Color Controls</b>	On	Off will bypass complete color processing and digital filters
		Off	
	<b>Brightness</b>	0-100	Adjust digital brightness 0-49 decrease brightness 51-100 increase brightness
	<b>Contrast</b>	0-100	Adjust digital contrast 0-49 decrease contrast 51-100 increase contrast
	<b>Color Temp.</b>	User	Disable color temp. and activate user RGB adjustments
		4200K	Set color temperature to desired value in Kelvin
		5000K	
		6500K	
		7500K	
9300K			
<b>RGB</b>	Red	Adjust user color Range 0-100	
	Green		
	Blue		

<b>OSD Settings</b>	<b>OSD Timeout</b>	2-16	OSD Timeout in seconds
	<b>OSD Hor. Pos.</b>	0-1000	Horizontal OSD position. 0=Left, 1000=Right
	<b>OSD Ver. Pos</b>	0-1000	Vertical OSD position. 0=Top, 1000=Bottom
	<b>OSD Blend</b>	0-12	OSD transparency 0=No transparency 12=Maximum level of transparency
	<b>OSD Orientation</b>	0°	Rotation of OSD
		90°	
		180°	
270°			
<b>OSD Language</b>	English	OSD Language	
	German		
	French		
	Italian		
	Spanish		

<b>System Settings</b>	<b>Info</b>	DVI 1600x1200@59.8Hz Firmware Version: V1.17 Mar 9 2016 Panel type: NL160120AC27-37
	<b>Mode Info</b>	DVI 1600x1200@59.8Hz Mode Nr 0 Mode Type STD Ver total 1235 Hor Freq 73kHz Sync H+ V+
	<b>Restore user defaults</b>	Restore further saved user defaults
	<b>Save user defaults</b>	Save use defaults
	<b>Rest factory default</b>	Reset factory defaults This will load firmware defaults but not erase the previous saved user defaults

# 10. Supported Video Modes

Generally all VESA compatible video modes are supported.

Video Mode Input	Vertical Refresh Rate	Mode
720 x 400	70 Hz	DOS
640 x 350	70 Hz	DOS
640 x 400	70 Hz	DOS
640 x 480	59,9 Hz	VGA
640 x 480	60 Hz	VGA
640 x 480	72 Hz	VGA
640 x 480	72,8 Hz	VGA
640 x 480	75 Hz	VGA
640 x 480	85 Hz	VGA
800 x 600	56,25 Hz	SVGA
800 x 600	60 Hz	SVGA
800 x 600	70 Hz	SVGA
800 x 600	72 Hz	SVGA
800 x 600	75 Hz	SVGA
800 x 600	85 Hz	SVGA
1024 x 768	60 Hz	XGA
1024 x 768	70 Hz	XGA
1024 x 768	72 Hz	XGA
1024 x 768	75 Hz	XGA
1024 x 768	85 Hz	XGA
1152 x 864	75 Hz	XGA+
1280 x 1024	60 Hz	SXGA
1280 x 1024	70 Hz	SXGA
1280 x 1024	75 Hz	SXGA
1280 x 1024	85 Hz	SXGA
1600 x 1200	60 Hz	UXGA
1920 x 1200	60 Hz	WUXGA

# 11. HD-SDI inputs

The HD-SDI ports allow connection of 3G-SDI sources. It supports video resolutions from 480i@60Hz up to 1080p@60Hz. An active loop-through output is provided to pass-thru the input signal without any signal quality loss.

- DVI 1.0 / HDMI 1.4 compliant digital video output
- 8 channel digital sound (I<sup>2</sup>S) via DVI/HDMI up to 192 KHz



SDI-IN SDI signal IN (input 75 Ohms)

SDI-OUT SDI signal OUT (active loop-thru output / 75 Ohms)

# 12. Power

## General

AbraxSys typically offers the following power options:

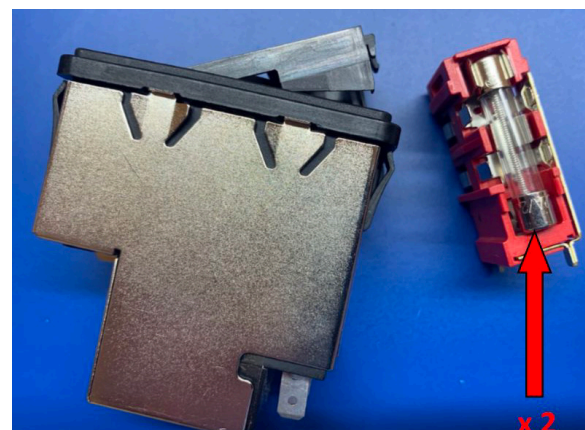
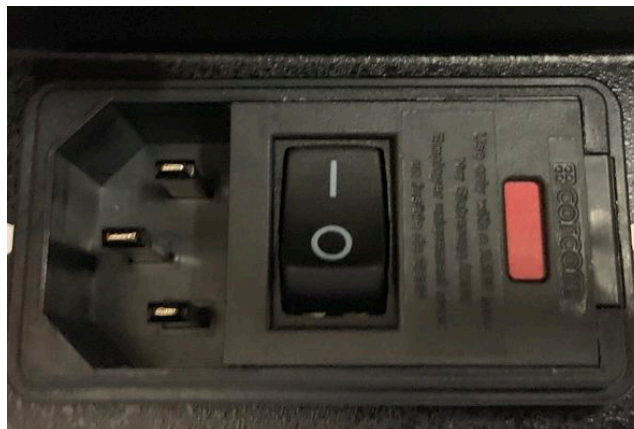
- 90-264V AC 110/220
- 12V DC FIXED
- 24V DC Variable
- 9 to 36V DC Variable
- 20 to 53V DC Variable

## Alternating Current [AC] Power

AC Power with an In-Line Corcom Transient Noise and EMI / RFI Filter  
Auto Switching @ 50/60 Hz (Internal)

- Current - IEC 6A
- Voltage - IEC 120VAC
- Current - UL 6A
- Voltage - UL 250VAC

This power module has a field replaceable fuse port. Below is shown how to change the fuses (x2). Use two Glass 2A 250VAC 3AB 3AG Fuses. AbraxSys suggests Littlefuse p/n 0313002.HXP.

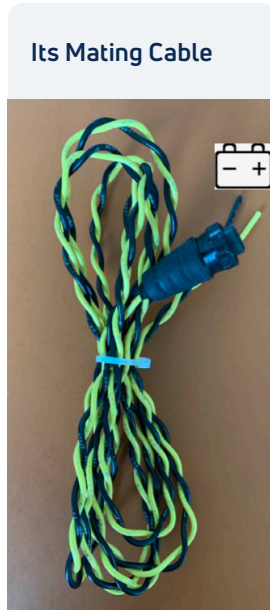




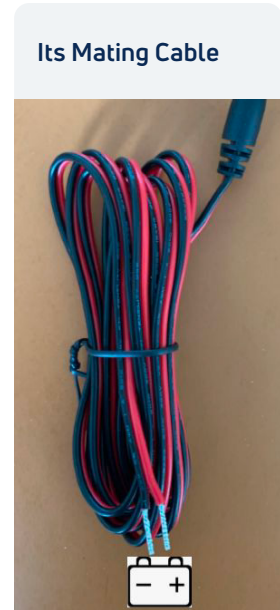
# Power (Continued)

## Direct Current [DC] Power

AbraxSys typically provides one of these two types of DC power connectors, although a Terminal Block is a possibility, too.



Yellow = Positive  
Black = Negative



Red = Positive  
Black = Negative

### 12V DC Fixed

12V is FIXED and cannot handle spikes and/or small deviations. Must be CONSTANT 12V.

### 24V DC Variable

This is a variable DC option and can handle a fairly wide deviation from 24V.

### 9 to 36V DC Variable

This variable configuration will take variations from 9V DC all the way through 36V DC.

### 20 to 53V DC Variable

This variable configuration will take variations from 20V DC all the way through 53V DC.

# 13. Troubleshooting

## General:

A general guide to troubleshooting a flat panel display system it is worth considering the system as separate elements, such as: Controller (jumpers, PC settings) Panel (controller, cabling, connection, panel, PC settings) Backlight (inverter, cabling, backlight LED rails) Cabling Computer system (display settings, operating system) Through step by step cross checking with instruction manuals and a process of elimination to isolate the problem it is usually possible to clearly identify the problem area.

## No image:

If the panel backlight is not working it may still be possible to just see some image on the display. A lack of image is most likely caused by incorrect connection, lack of power, failure to provide a signal, or incorrect graphic card settings.

## Image position:

If it is impossible to position the image correctly, i.e. the image adjustment controls will not move the image far enough, then test using another graphics card. This situation can occur with a custom graphics card that is not close to standard timings or if something is in the graphics line that may be affecting the signal such as a signal splitter (please note that normally a signal splitter will not have any adverse effect).

## Image appearance:

A faulty panel can have blank lines, failed sections, flickering or flashing display, incorrect graphics card refresh rate, resolution or interlaced mode will probably cause the image to be the wrong size, to scroll, flicker badly or possibly even display no content. Incorrect jumper settings on the controller may cause everything from total failure to incorrect image. CAUTION: Do not set the panel power input incorrectly. Sparkling on the display: faulty panel signal cable.

## Backlight:

Items to check include: Power input, Controls, Inverter and Tubes generally in this order. If half the screen is dimmer than the other half: Check cabling for the inverter. For a specific backlight tube check the AC pins orientation (CAUTION: Never reverse any DC power pins). Also: If adjusting brightness control has no effect the chances are that the VR rating or method of adjusting brightness is not compatible or correctly connected to the inverter. If system does not power down when there is a loss of signal.

## Continued failure:

If unit after unit keeps failing consider and investigate whether you are short circuiting the equipment or doing something else seriously wrong.

Generally, after common sense issues have been resolved we recommend step by step substitution of known working parts to isolate the problem.

# 14. Care & Cleaning

Occasionally clean the display panel and cabinet with a soft cloth dampened (not soaked) with a mild (non-abrasive) glass cleaner. Keep turning a fresh side of the cloth toward the screen surface to avoid scratching it with accumulated grit.

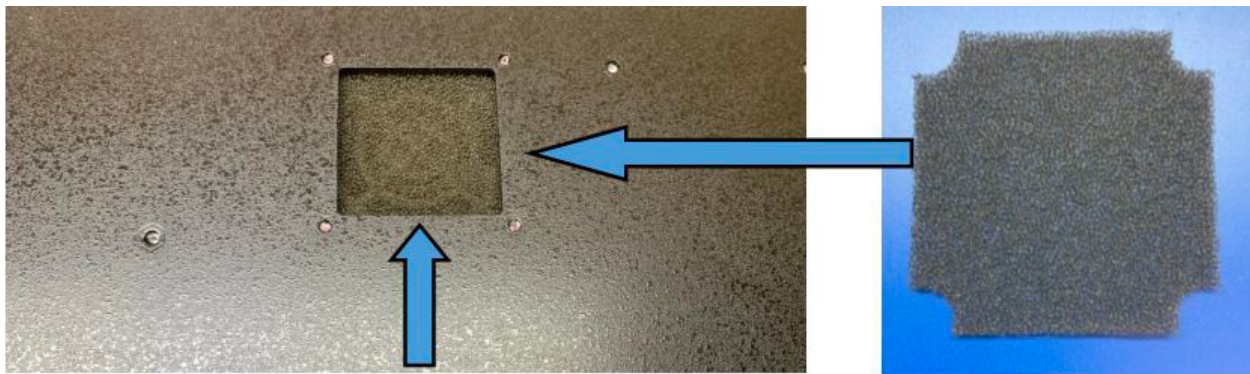
Note: The solvent should be applied only to the cloth, and not directly on the monitor screen.

Do not use paper products as they may scratch the surface. To minimize the risk of abrasion, allow the screen to stand dry. Special care should be taken when cleaning a touch screen or polycarbonate shield that is installed over the screen. Abrasive and certain chemical cleaners can easily damage the surface. Never use alcoholic or ammoniac cleaners to clean the polycarbonate shield or a touch screen.

Note: For best results cleaning a monitor with the optional antireflective tempered glass display shield, a solution of denatured alcohol is recommended to thoroughly clean the display.

**Replacing a Line Cord:** To avoid shock and fire hazards, the monitor's power cord should be replaced if the insulation becomes broken or if it develops a loose internal connection.

**Fan Filter:** A fan is not integrated into all AbraxSys models, but those that have a fan at the backside of the monitor the fan filter should be changed regularly, especially in very dirty environments. Replacement filters can be obtained by calling AbraxSys, (800) 883-9050.



Qualified service personnel should perform all maintenance, except for the power cord replacement described above.

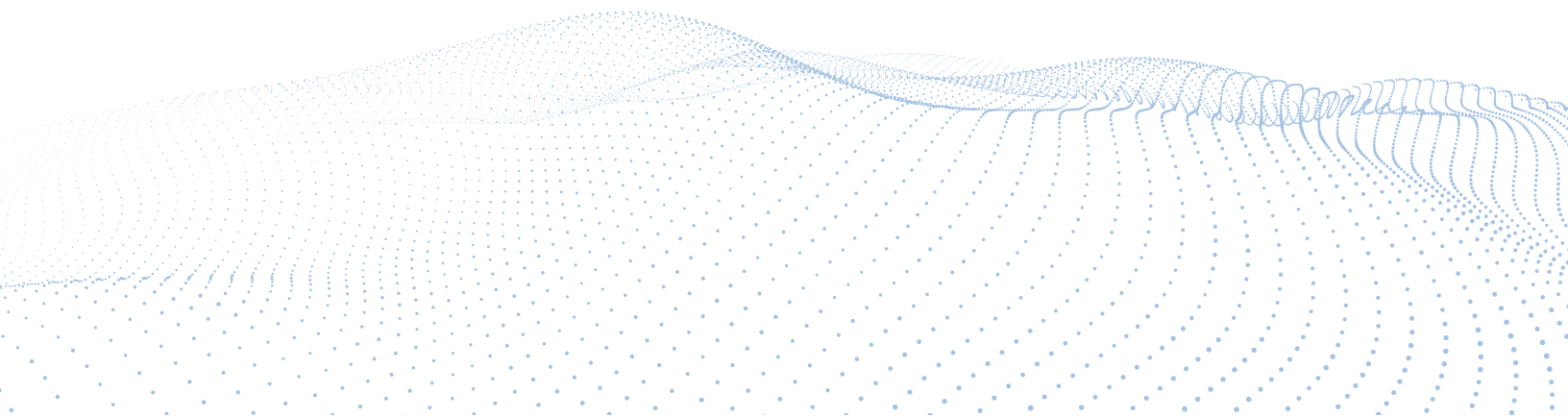
# 15. Mounting

## VESA Mount

There are four mounting holes at the backside of the monitor; they are spaced out by 100mm. There are four 'silver' colored screws and washers already loosely screwed into each hole. Remove them and mount according to the specifications of your mounting arm, bracket, etc.

## Panel Mount

1. Cut and drill the panel (refer to panel mount drawing). Measurements are in inches and millimeters.
2. If access to the side of the monitor is not available following installation, attach the power and video cables to the side of the monitor at this time.
3. Install the monitor in the prepared cutout.
4. Install the lock nuts and washers, supplied with the monitor, behind the holes running along the sides and top/bottom of the cutout in the panel. Extra lock nuts and washers are provided.
5. Tighten mounting nuts evenly to provide adequate seal and avoid potential damage to the unit. AbraxSys assumes no responsibility for water or chemical damage due to improper installation.
6. Attach the power, video cables, and touch cables (if applicable) if you have not already done so.



# Mounting (Continued)

## Rack Mounting

### SAFETY NOTICES:

To reduce the risk of personal injury and property damage, follow all safety notices.

- The 19-inch rack cabinet requires a minimal operational clearance on each side for proper airflow and easier access when installing and servicing devices. Make sure that the installation site provides enough space behind and in front of the enclosure for door opening.
- To guarantee the stability of the rack cabinet, the front stabilizer and the four leveling feet must be installed. Failure to do so can cause the rack cabinet to tip over, possibly resulting in personal injury.
- The weight of devices must not exceed 10kg per rack U level.
- The weight of devices mounted on universal rails must not exceed 80Kg.
- To improve rack stability, mount heavier items towards the bottom of the rack cabinet. Always load the rack from the bottom to the top.
- Never extend more than one component on slide assemblies. Pulling more than one device out of the rack at a time could cause the rack cabinet to fall over, possibly resulting in personal injury.
- Locate the rack cabinet near grounded, three-pronged power outlets so as to limit cable length.
- When installing optional devices into the rack cabinet, make sure to separate high current devices (like power units) from low current devices.
- You are responsible for installing an AC power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to one of the monitors.
- To avoid the potential for an electrical shock hazard, you must include an additional safety grounding conductor with the rack installation. If server power cords are plugged into AC outlets that are part of the rack, then you must provide proper grounding for the rack itself. If server power cords are plugged into wall AC outlets, the safety grounding conductor in each power cord provides proper grounding only for the servers. You must provide additional, proper grounding for the rack and other devices installed in it.

Position the monitor's rear chassis where it moves freely back into the rack cabinet and then use adequate mounting hardware to attach to the left and right 19" wide rack risers. Thread the monitor cables through an adequate cable management system already installed within the rack cabinet.

# 16. Optical Grade Protective Impact Window

When touch screen is not ordered, AbraxSys Premium Anti-Reflective Optical Grade Windows offers exceptional protection and glare reduction for all indoor and outdoor display applications that require the best material available.

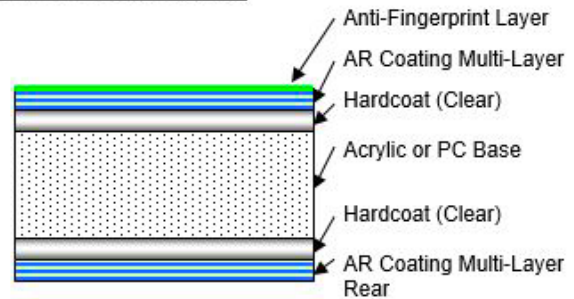
- Double-sided, Multi-layer Anti-reflective Coating
- Double-sided hard coat
- Front surface AFP (Anti-fingerprint) Coating
- 98% Transmission average in visible range
- < 0.5% Average reflectance per surface

## Environmental/Durability

- Abrasion Resistance: 600 rub Cheesecloth per Mil-M-13508C
- Adhesion: # 610 Snap Tape per MIL-C-48497A
- Humidity Resistance: 48hr. (50C, 95% R. H.)
- Solubility: 24 hr. immersion per MIL-C-48497A
- Approximate pencil hardness: > 5H
- AFP approximate contact angle: ~ 90°

Additionally, AbraxSys rugged Protective Impact Windows are state-of-the-art and boasts a virtually invisible anti-reflective coating allowing viewers to see the finest details in crystal clear color neutrality (even museum quality), while its UV-filtering, abrasion resistant acrylic, and anti-static coating offer uncompromising protection of the LCD face.

## AR Acrylic Structure



## **Features of the Protective Window:**

- Virtually eliminates reflections
- Blocks up to 99% of UV rays
- Optimal light transmission protects and brightens colors
- Anti-static protection that immediately dissipates static
- Durable hard coat protects against scratches
- Shatter resistance safeguards against injury and damage to the LCD
- Cleans like glass – no special cleaners needed
- Proprietary coating is engineered for permanence
- Anti-fingerprint technology (model sizes 8.4" thru 15")

# 17. Touchscreen (optional feature)

## Introduction

Touch screens are a common means to interface operator inputs to a system. The universal standard of Windows GUI (Graphical User Interface) has significantly increased the use of touch screens. There are several main touch technologies. The technologies are resistive, surface acoustic wave (SAW), surface capacitive, infra-red (IR), Optical, projective capacitive, and AbraxSys' Hardened Armored Resistive Touch. Each touch technology has advantages and disadvantages based on different user applications. Currently, AbraxSys only supports: Projected Capacitive, 5-wire Resistive, or Hardened Armored Resistive. These three are deemed the best for harsh-duty environments.

Typically, for 5-wire Resistive or Hardened Armored Resistive configurations, AbraxSys provides both Serial (RS232) and USB ports on its monitors. In some instances, only one will be present if the mechanical rear chassis is too small to accommodate both, at which point only one or the other will be resident. This will have been discussed and selected at the time of order. Projected Capacitive Touch configurations will have only USB. RS232 is not offered or available.

## Installation

All AbraxSys displays configured with a touch screen ("Resistive" and/or "Hardened Armored Resistive" only) are supplied with a USB thumb-drive which includes the drivers for various operating systems. Insert the supplied USB removable drive into the computer's applicable USB port and follow the installation instructions that will appear on the screen.

Drivers can also be downloaded from here:



[https://www.eeti.com/drivers\\_Win.html](https://www.eeti.com/drivers_Win.html)

Windows 10 Windows 8.1 Windows 8 Windows Embedded 8 Embedded 8.1 Industry Embedded 8.1 Pro Embedded 8 Standard Windows 7 Windows Embedded 7 Embedded Enterprise 7 Embedded Standard 7 Embedded POSReady 7 Windows XP Windows Embedded POSReady 2009 Windows 2000	<p>5.14.0.18411 USB / RS-232 For Surface Capacitive / Resistive / Surface Acoustic Wave / Infrared.</p> <p>2019/02/11</p>
	<p>For Projected Capacitive. The driver is a mouse emulation driver. If your USB interface touch device is projected capacitive type and Windows version is Windows 7 or later, we suggest you do not install this driver. There is a HID touch digitizer build-in driver in Windows 7 or later. If you need RS-232 interface driver for projected capacitive type touch device, please contact us.</p> <p>2018/06/19</p>



[https://www.eeti.com/drivers\\_Linux.html](https://www.eeti.com/drivers_Linux.html)

Kernel 2.6.24 Upward and 3.x.x / 4.x.x	USB / UART / PS2	
X86 (32/64bits)	eGTouch_v2.5.7413.L-x	2019/03/13
ARM / MIPS	eGTouch_v2.5.7413.L-ma	2019/03/13
<p>1. Available for multi-touch as kernel version is 2.6.36 above. If kernel version below 2.6.35, it could only support single point.</p> <p>2. Available for non-Xwindow system.</p> <p>3. Support Multi-controller &amp; Multi-monitor.</p> <p>4. Support Right-Click</p>		

# Touchscreen (continued)

For those systems specifically configured with an ELO Resistive Touch (only) controller, drivers can be downloaded from here:



<https://www.elotouch.com/support/downloads#/category/346LYmeuAUEI4Qa0sSjiSa>

**NOTE:** Projected Capacitive touch screens (PCAP for short) are USB only devices and do NOT need drivers or calibration. They are HID devices (Human Interface Device) and all Windows and Linux based operating systems, Win7 and above, are all HID-enabled.

The HID standard was adopted primarily to enable innovation in PC input devices and to simplify the process of installing such devices. Prior to the introduction of the HID concept, devices usually conformed to strictly defined protocols for mouse, keyboards, touch screens, and joysticks. The HID protocol enables all modern mainstream operating systems to recognize standard USB HID devices, again, such as touch screens, keyboards, and mice, without needing a specialized driver. When installed, a message saying “An HID-compliant device has been recognized” generally appears on screen.

Technical support is available by contacting AbraxSys’ customer support at 800-883-9050.

## 18. Dimming (optional)

AbraxSys offers several types of dimming controls:

- Rear Mounted User Keypad with Up/Down arrows to control dimming
- Front Mounted User Keypad with Up/Down arrows to control dimming
- Manual Full-Range Dimming Turn-Pot from 0 to 100% brightness
- Automatic Ambient Light Sensor
- Remote Dimming by Turn-Pot
- Command Dimming by Serial (RS232) Port (not available on all models)



# Dimming (Continued)

## Rear or Front Mounted Keypad

While the Up/Down arrows also control menu movement within the OSD, the keypad has been pre-programmed to also do quick brightness adjustments by simply pressing the Up or Down arrows to control dimming levels.

## Manual Full-Range Dimming Turn-Pot

With this option, if ordered, a sealed potentiometer 'knob' has been integrated into a lower corner of the front bezel. Turn left to reduce the monitor's brightness, turn the knob right to increase luminance. All the way 'right' will be at full brightness and all the way left will produce a black screen....even though the monitor is still 'on'.

## Automatic Ambient Light Sensor

With this option, if ordered, a small sealed light sensor has been integrated into the front bezel. It automatically senses ambient light levels and provides continuous self-regulating control of the LCD's LED backlights for daylight and nighttime operation. Ideal for unsupervised Kiosks, outdoor control panels, vehicle operation, etc. and works by monitoring daylight conditions, then controlling the monitor's luminance so as to ensure that adequate lighting levels are maintained. The sensor will not reduce brightness down to a black screen, or zero 'nits'. Typically, about 20% of maximum brightness is as low as it will go. Please note as well, that when operating the monitor inside the brightness will appear about as bright as a standard office LCD, so do not be alarmed if the brightness is not super bright. You can take a flashlight and direct it closely over the light sensor and see the luminance increase. The sensor is meant only for very bright environments.

## Remote Dimming

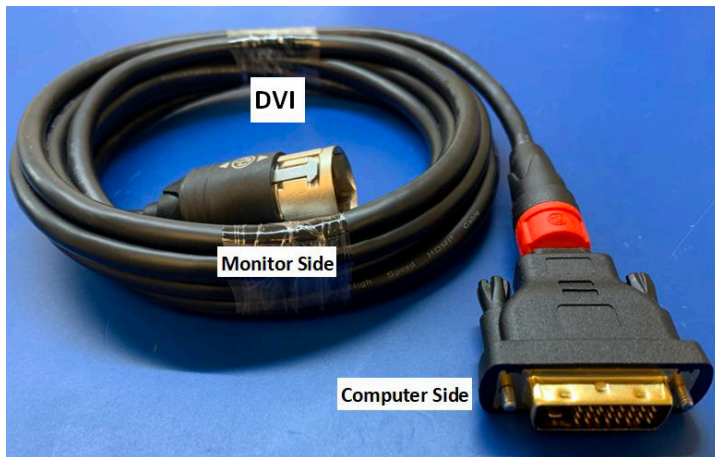
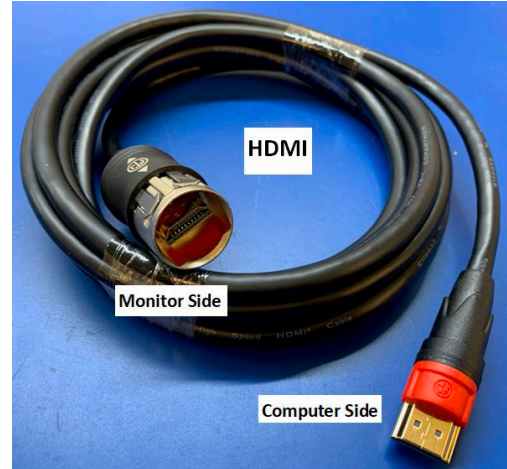
Same as " Manual Full-Range Dimming Turn-Pot " but the potentiometer is provided with wire leads so you can mount remotely, like on a ship's console or within a Pelican case.

## Command Dimming

Please contact AbraxSys for support if this was ordered.

# 19. IP67 Sealed Locking Cables for Enclosed Models

For AbraxSys fully-enclosed watertight / dust-tight model configurations, various cables with mating connectors will be supplied. These cables will be locking and watertight to IP67 standards.



## Other sealed input cables available:

- Sealed VGA (HD-15)
- BNC Composite
- DisplayPort
- Dual SDI (in/out)
- Serial RS/232
- Various cable lengths also available

For all other support questions or product issues,  
please contact AbraxSys at (800) 883-9050 or by email  
[customerservice@abraxsyscorp.com](mailto:customerservice@abraxsyscorp.com)



**AbraxSys**  
RUGGED LCD SOLUTIONS

(800) 883-9050

[contact@abraxsyscorp.com](mailto:contact@abraxsyscorp.com)

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