



*QES1500 Progressive & Interlace Units*  
*Industrial LCD Monitors User's Manual*  
**Glee 17C2 Series**

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Please read this manual to learn about the safety precautions and get the most out of the design features of your new monitor.

## **INTRODUCTION**

Thank you for purchasing the QES1500 Progressive & Interlace Series Color Monitor. We are confident that you will be pleased with the performance and reliability of your new monitor. The QES1500 Progressive & Interlace Series Color Monitor was designed to meet the screen performance requirements of today's demanding industrial and military applications. While complying with a wide variety of industrial video formats, it delivers a larger screen area, higher resolutions, and greater color accuracy than many monitors in its price range.

### **Product Description**

The QES1500 Progressive & Interlace Series Industrial LCD Displays are high performance, Active Matrix color/monochrome TFT LCD monitors designed for those demanding applications that require a rugged, high quality computer display capable of sub-VGA through 1920x1200 resolutions. These premium displays accept a broad range of standard signal formats, enabling them to function in most modern industrial environments. For legacy or replacement applications, we can configure this LCD display to accept a wide variety of sub-VGA formats and video signal inputs. Options available are; Touch Screen, Vandal Protection Shield, Enhanced Sunlight Readability, Open Frame Configurations, Rack mount Configurations, Wall/Arm Mount Configurations, NEMA 4X stainless steel panel mount bezel and LED Backlight. These computer display panels have all the features necessary for use in those industrial, manufacturing, financial, transportation and other severe environments that require bright, crisp computer imaging.

Note: For a more detail specification, see specific model number spec sheet.

### **Product Safety Precautions**

**Read all of these instructions and save this manual for later use. Follow all warnings and instructions on the product. These safety instructions must be followed to ensure your safety and prevent property damage.**

1. Do not cover or block the ventilation holes in the enclosure.
2. Do not insert sharp objects or spill liquid into the monitor through the cabinet slots. This may cause accidental fire, electric shock or failure.
3. Unplug the unit when not in use for an extended period of time.
4. Do not attempt to service this product yourself, since opening or removing the cover may expose you to potential electric shock. Only a qualified technician should service this product.

# MONITOR SETUP

Unlike CRT displays, the LCD panel has a fixed pixel format over a set area. So for best performance, the “native resolution” setting is always recommended. Use the following notes as a reference to setup your display.

- **8.4”, 10.4” and 12.1” monitors:** The native resolution of the LCD panel is 800 X 600; Recommended resolution is 800 X 600 @ 60 KHZ
- **14.1” and 15” monitors:** The native resolution of the LCD panel is 1024 X 768; Recommended resolution is 1024 X 768. @ 60 KHZ
- **17”, 18.1” and 19” monitors:** The native resolution of the LCD panel is 1280 X 1024; Recommended resolution is 1280 X 1024 @ 60 KHZ or 1024 X 768 @ 60 Hz.
- **24” Monitors:** The native resolution of the LCD panel is 1920 x 1200; Recommended resolution is 1920 x 1200 @ 60 or 75 Hz.

## Display Features

- Analog RGB Sync On Green (SOG) Capable
- DVI-D Digital Input Signal Capable
- RS-170A and RS-343 Video Signal Capable (Interlace Formats)
- VESA 75/100 Standard Mounting – Specific Models.
- DDC2B Plug & Play
- Universal Power Supply with VESA Power Management
- User Friendly OSD interface
- High Brightness and Contrast
- Wide Viewing Angle
- Front Remote Controls on Specific Models
- Tilt and Swivel Base on Specific Models
- Heavy Duty Cold Roll Steel Chassis on Specific Models

## Display Options

- TTL Input for EGA, CGA and MDA Timings Option
- RCA (NTSC/PAL) and 4 Pin Mini Din (S-video) Optional
- 3/4/5 Wire BNC Inputs Option
- Universal Video Input Box Option
- Wireless Remote Control Option
- Anti-Reflective Protective Faceplate Option
- Strengthen Anti-Reflective Protective Faceplate Optional
- Sunlight Readable Option
- Touch Screen Option: Resistive, Capacitive and SAW (Surface Acoustic Wave)
- Differential Video Input Options for long cable lengths and/or high-noise factory environments

## **Unpacking The Monitor**

Your LCD monitor package will consist of the following components listed on the section below. Open shipping container and lay all the components on a flat clean surface. If any component is missing, please contact Dynamic Displays as soon as possible.

### **NOTES:**

- We recommend you to keep the packing box for transportation.
- In case of transporting and packing the unit in the packing box, carefully place it, in the packing box keeping its panel from touching any objects

## **Package Contents**

Before operating this monitor, please make sure that all items listed are present in your package:

- LCD Monitor
- AC/DC Adapter
- AC Power Cord
- VGA Cable
- Users Manual

### **Optional Items:**

These are optional items and can be ordered by contacting Dynamic Displays, Inc.

- Composite Video Cable
- 5 BNC to HD15 adaptor cable
- Audio Cable
- Wireless Remote Control
- Mounting Hardware
- CD with Touch Screen Drives (Optional with Touch Screen)
- Universal Video Input Box (Optional)

## **Connecting The Monitor**

No tools are required to install the LCD monitor. Simply follow the instructions outlined in the next few steps. Connectors for the signal and power are located on the back panel.

- **Connect Signal Cable (VGA):** Attached the VGA cable connector with the ferrite bead closest to it to the graphics card adaptor on your computer system and attached the other end to the monitor. Be cautious in inserting the cable properly into both connectors. If the cable does not fit it may be facing the wrong direction. Turn the cable over and try to match the shape of the connector with that of the graphics adapter.
- **Connect Power Adapter and Cable:** Connect the round shape plug end of the AC/DC adapter to the DC Power input connector of the LCD monitor. Connect the female end of the power cable to the AC power input receptacle on the AC/DC adapter. Then plug the male end of the power cable into an AC outlet.
- **Connect DVI (Digital Video Interface) Cable (Optional):** If you have a DVI digital graphics card adapter and a DVI cable, connect it to the DVI (IN) connector of the monitor. The optional DVI graphics adapter and the DVI cable can be ordered by contacting Dynamic Displays.
- **Connect Audio signal Cable (Optional):** Connect Audio In connector of the LCD monitor and an Audio Out device (PC, DVD, CD) with the attached stereo mini cable.
- **Connect Touch Screen Cable (Optional):** Connect the optional USB or RS 232 serial touch screen connection to the driver card or system driving the touch screen controller.

If your computer was off, turn on your computer/system. Your display should now operate as a normal computer display showing your windows or whatever video is being sent to the flat panel.

**Note:** If for any reason the display goes blank and gives an “out of Range” or “No Input Signal”, your system source is putting out a signal that is out of range or non compatible with the LCD’s video A/D board. If this happens, make sure you are inputting the correct signal. If the display doesn’t work properly, it may be because:

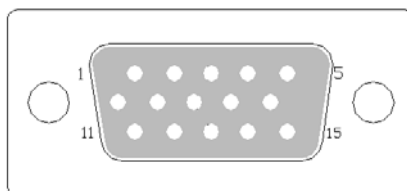
- The resolution is too high or low for the LCD.
- The power source is incorrect.

## Signal Input Connections

Following are the pin out descriptions for the standard and optional connectors provided on the monitor:

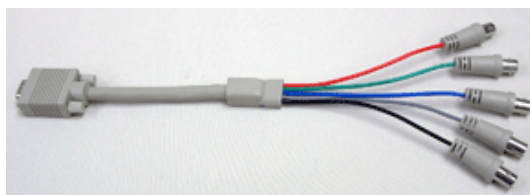
### VGA High Density HD15 Connector Pin Out

Pin Assignments for VGA Video HD15 Input Connector			
PIN	CONNECTION	PIN	CONNECTION
1	Red Video (75 Ohm, 0.7 Vpp)	9	Key (No pin)
2	Green Video (75 Ohm, 0.7 Vpp)	10	Sync Ground
3	Blue Video (75 Ohm, 0.7 Vpp)	11	Monitor ID Bit 0
4	Monitor ID Bit 2	12	Monitor ID Bit 1 – Bidirectional Data
5	Ground	13	Horizontal Sync (or Composite Sync)
6	Red Video Ground	14	Vertical Sync
7	Green Video Ground	15	Monitor ID Bit 3 - DDC Clock
8	Blue Video Ground		



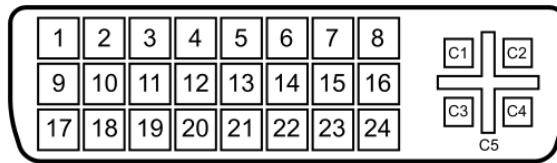
### Female BNC's to HD15 Adaptor Cable (Optional)

BNC to HD15 Adaptor Connections						
Video Signal Input Available	Signal Description	Red	Green	Blue	Horz. Sync or C-Sync (Gray Cable)	Vertical Sync (Black Wire)
<b>Sync on Green (SOG)</b>	Composite Sync: Horizontal and Vertical Sync signals are on the Green Video Signal.	Connect	Connect	Connect		
<b>Composite Sync (C-Sync).</b>	Separate Composite Sync: Horizontal and Vertical Sync signals are on the Horizontal Sync Cable only.	Connect	Connect	Connect	Connect	
<b>Separate Horizontal and Vertical Sync</b>	Separate Sync: Both signals (Horizontal & Vertical) are on individual cables as identified on the chart.	Connect	Connect	Connect	Connect	Connect



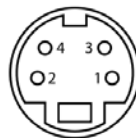
DVI (Digital Visual Interface) Connector Pin Out

Pin Assignments for DVI Input Connector			
PIN	CONNECTION	PIN	CONNECTION
1	TMDS Data 2-	16	Hot Plug detect
2	TMDS Data 2+	17	TMDS Data 0-
3	TMDS Data 2/4 Shield	18	TMDS Data 0+
4	NC	19	TMDS Data 0/5 shield
5	NC	20	NC
6	DVI DDC SCL	21	NC
7	DVI DDC SDA	22	TMDS Clock Shield
8	Analog Vertical Sync	23	TMDS Clock+
9	TMDS Data 1-	24	TMDS Clock-
10	TMDS Data 1+	C1	Analog Red
11	TMDS Data 1/3 Shield	C2	Analog Green
12	NC	C3	Analog Blue
13	NC	C4	Analog Horizontal Sync
14	DDC +5 V	C5	Analog Return Gnd
15	Gnd		



S- Video 4 Pin connector (Optional).

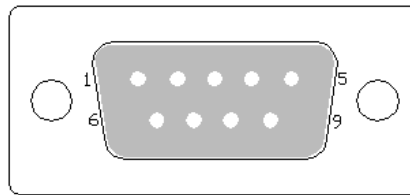
Pin Assignments for S-Video Input Connector	
PIN	CONNECTION
1	Ground (Y)
2	Ground (C)
3	Y Intensity (Luminance)
4	C Color (Chrominance)





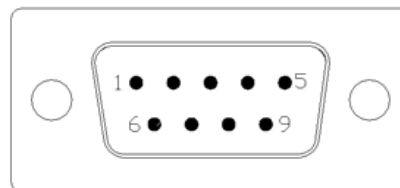
CGA 9 Pin D-Sub Connector (Optional)

Pin Assignments for 9 Pin Optional CGA Color Graphics Adapter. Video Type: TTL		
PIN	CONNECTION	DESCRIPTION
1	GND	Ground
2	GND	Ground
3	R	Red Video
4	G	Green Video
5	B	Blue Video
6	I	Intensity
7	RES	Reserved
8	HSYNC	Horizontal Sync
9	VSYNC	Vertical Sync



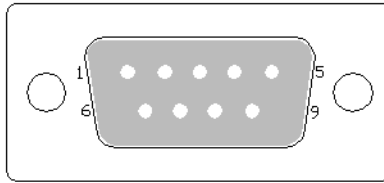
EGA 9 Pin D-Sub Connector (Optional)

Pin Assignments for 9 Pin Optional EGA=Enhanced Graphics Adapter. Video Type: TTL		
PIN	CONNECTION	DESCRIPTION
1	GND	Ground
2	SR	Secondary Red
3	PR	Primary Red
4	PG	Primary Green
5	PB	Primary Blue
6	SG/I	Secondary Green / Intensity
7	SB	Secondary Blue
8	HSYNC	Horizontal Sync
9	VSYNC	Vertical Sync



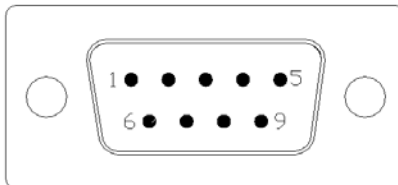
MDA 9 Pin D-Sub Connector (Optional)

Pin Assignments for 9 Pin Optional MGA – Hercules Mono Graphics Adapter. Video Type: TTL		
PIN	CONNECTION	DESCRIPTION
1	GND	Ground
2	GND	Ground
3	N/C	No Connection
4	N/C	No Connection
5	N/C	No Connection
6	I	Intensity
7	M	Monochrome Video
8	HSYNC	Horizontal Sync
9	VSYNC	Vertical Sync



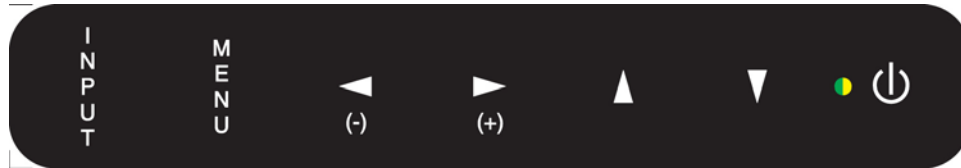
Touch Screen 9 Pin D-Sub connector, Serial Port (Optional).

Pin Assignments for 9 Pin Optional Touch Screen		
PIN	CONNECTION	DESCRIPTION
1	CD	Carrier Detect
2	RDX	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	System Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	Ring Indicator



# OSD CONTROLS & FUNCTIONS

The OSD interface is composed of 7 membrane switches (as shown below) and a Bi-color LED. All the adjustments required for the monitor are done through these buttons which interface with the Menu selections on the OSD.



## Menu Operating Instructions:

Your LCD monitor allows you to easily adjust the characteristics of the image being displayed. All of these adjustments are made using the OSD control buttons on the front or rear of the monitor. While you use these buttons to adjust the controls, the OSD shows you their numeric values as they change.

## Menu OSD Control Buttons:

- **INPUT:** Selects Input Video Source.
- **MENU:** Selects command function.
- **Left (-) / ◀:** Moves selection to left or decreases function value.
- **Right (+) / ▶:** Move selection to right or increase function value
- **UP / ▲:** Increase value.
- **DOWN / ▼ :** Decreases value.
- **LED:** Green Light: Power ON  
Orange Light: Power Saving or No Input Signal

**POWER:** Power on/off control. The monitor will enter into Auto Setup automatically the first time the unit is first turned on.

## Input Video Options Selection:

- **PC:** Select VGA input connector, HD15.
- **DVI:** Select Digital Input Connector, DVI.
- **AV:** Selects Composite Video Connector, RCA Jack.
- **SVIDEO:** Selects S-Video Input Connector – Din 4.

## OSD Interface buttons function:

- **Input Button:** Push this button, to select the video input signal (PC, DVI, AV or SVIDEO). With the adjust buttons ▲ or ▼, highlight the input required; then with the adjust buttons ◀(-) or ▶(+) confirm the selection.
- **Menu button:** Opens the OSD menu. Also used to exit the OSD menu or confirm adjustment settings and return to the previous menu.
- **Adjust Buttons:** ◀ (-), ▶ (+): These buttons have various functions.
  - They are used to navigate through the items on the OSD from left to right or right to left.
  - They are used to select menu item to be adjusted.
  - They are used to adjust the value of the menu item.
  - They are used to confirm the selection of the video input signal source.
  - They are used to increase or decrease the volume of the speakers.
- **Adjust Buttons:** ▲, ▼: These buttons used to navigate the OSD menu items from top to bottom or bottom to top.
- **Power Button:** Push this button to turn the unit on or off.

## OSD Interface Controls:

### 1. PC/Picture (AV Mode)



- 1.1. Contrast; Increases or decreases video gain of the image.
- 1.2. Brightness; Increases or decreases the brightness of the image.
- 1.3. HUE; *Only Available on S-Video or Composite Video.*
- 1.4. Saturation; *Only Available on S-Video or Composite Video.*
- 1.5. Sharpness; *Only Available on S-Video or Composite Video.*
- 1.6. Color Temp; allows the user to adjust for desire White Color Balance to a predetermined temperature colors or individual Red, Green and Blue Controls.
  - 1.6.1. Normal; Recalls the values for the color temperature of 7500K.
  - 1.6.2. Warm; Recalls the values for the color temperature of 6500K.
  - 1.6.3. Cool; Recalls the values for the color temperature of 9300K.
  - 1.6.4. S-RGB - *Only Available on PC Mode.*
  - 1.6.5. User - When selecting "USER" you may adjust each individual color one at a time - *Only Available on PC Mode.*
    - 1.6.5.1. User\_R; Allows the user to adjust the Red gain.
    - 1.6.5.2. User\_G; Allows the user to adjust the Green gain.
    - 1.6.5.3. User\_B; Allows the user to adjust the Blue gain.
- 1.7. Scale; With Scale selected, Use the "Left/ Right" buttons to choose from the following options:
  - 1.7.1. Normal - Fills the entire screen.
  - 1.7.2. Center - *Only Available on PC Mode.*
  - 1.7.3. Panorama – *Only Available on S-Video or Composite Video.*
  - 1.7.4. Full – *Only Available on S-Video or Composite Video.*
  - 1.7.5. Zoom – *Only Available on S-Video or Composite Video.*
  - 1.7.6. Zoom 2 – *Only Available on S-Video or Composite Video.*
- 1.8. Auto; Automatically adjusts for optimum image - *Only Available on PC Mode.*
- 1.9. Picture Mode
  - 1.9.1. Standard
  - 1.9.2. Dynamic
  - 1.9.3. Soft
  - 1.9.4. User
  - 1.9.5. 3D NR – *Only Available on S-Video or Composite Video.*
    - 1.9.5.1. Off
    - 1.9.5.2. Low
    - 1.9.5.3. Mid

- 1.9.5.4. High
- 1.9.6. MPEG NR - *Only Available on S-Video or Composite Video.*
- 1.9.6.1. Off
- 1.9.6.2. Low
- 1.9.6.3. High

2. SOUND



2.1. Equalizer

- 2.1.1. 120 Hz
- 2.1.2. 500 Hz
- 2.1.3. 1.5KHz
- 2.1.4. 5KHz
- 2.1.5. 10KHz

2.2. Balance; Sound balance Left and Right

2.3. Sound Mode

- 2.3.1. Standard
- 2.3.2. Movie
- 2.3.3. Music
- 2.3.4. User

2.4. AVC; Automatic Volume Control

- 2.4.1. Off
- 2.4.2. On

2.5. Surround

- 2.5.1. Off
- 2.5.2. On

3. SYSTEM

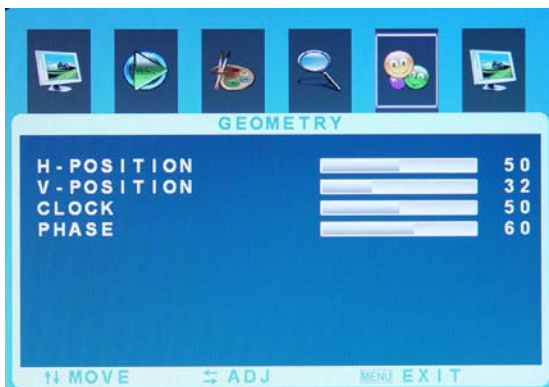


3.1. OSD – Language; Allows the user to select different OSD operating language.

- 3.1.1. English
- 3.1.2. Chinese
- 3.2. OSD H-Position; Adjust horizontal OSD positioning.
- 3.3. OSD V-Position; Adjust vertical OSD positioning.
- 3.4. OSD Duration; Adjust timer to display OSD.
- 3.5. OSD Halftone; In this function, user can adjust the transparency of OSD display.
  - 3.5.1. Sleep – Timer; Turns of display image after a set period of no screen activity.
  - 3.5.2. Off
  - 3.5.3. 15 Min
  - 3.5.4. 30 Min
  - 3.5.5. 45 Min
  - 3.5.6. 60 Min
- 3.6. Memory – Recall; Restore to factory settings.
- 3.7. OSD Time – Enables OSD timeout
  - 3.7.1.On – When set to “On”, OSD time-out is enabled.
  - 3.7.2.Off – When set to “Off”, OSD is always present.
- 4. ADVANCE - *Only Available on PC Mode.*



- 4.1. HSTART; Adjusts horizontal screen positioning.
- 4.2. HSIZE; Increases or decreases the Horizontal Size.
- 4.3. VSTART; Adjusts vertical screen positioning.
- 4.4. VSIZE; Increases or decreases the Vertical Size.
- 5. GEOMETRY - *Only Available on PC Mode.*



- 5.1. H-Position; Adjusts horizontal screen positioning.
- 5.2. V- Position; Adjusts vertical screen positioning.
- 5.3. Clock: Fine adjustment on horizontal position of video signals.

5.4. Phase; Phase adjustment; the phase should be adjusted until the screen image is sharp.

6. PIP – Picture in Picture



6.1. Multi Window

6.1.1. Off

6.1.2. PIP – Picture in Picture

6.1.3. POP – Picture Offset Picture

6.2. Sub Source

6.2.1. AV - *Only Available on PC Mode.*

6.2.2. S-Video - *Only Available on PC Mode.*

6.2.3. PC - *Only Available on S-Video or Composite Video*

6.2.4. DVI - *Only Available on S-Video or Composite Video*

6.3. Size – Only Available in PIP mode

6.3.1. Large

6.3.2. Small

6.3.3. Middle

6.4. PIP Position – Only Available in PIP mode

6.4.1. Top L

6.4.2. Bottom L

6.4.3. Bottom R

6.4.4. Top Right

6.5. Border Color

6.5.1. Black

6.5.2. Blue

6.6. Sound Source

6.6.1. Main

6.6.2. Sub

6.7. Swap

## **TROUBLESHOOTING**

**LCD Pixel Statement** - The LCD unit is produced with high-precision manufacturing techniques. Nevertheless, some pixels may occasionally misfire or appear as black or colored dots. This has no effect on the recorded image and does not constitute a malfunction.

Normally a 17" SXGA (1280 X 1024) display has nearly 4 million sub-pixels. Industry standard specification allows 8 non-performing pixels on the LCD screen, which is only 0.0002% of the total sub-pixels.

Troubleshooting	
Symptom	Suggestion
<b>There Is No Picture On The Screen</b>	<ol style="list-style-type: none"> <li>1. Check the color of the LED indicator on the LCD monitor. <ul style="list-style-type: none"> <li>• <b>"GREEN"</b>: During normal operation the LED light will be green. If it is green and there is no picture, contact the customer service line.</li> <li>• <b>"ORANGE"</b>: Check the connection of the VGA cable to the monitor and the connection to the computer.</li> <li>• <b>"NO POWER"</b>: Make sure the power cord is securely connected to the adapter and the light on the adapter is green.</li> </ul> </li> <li>2. The signal cable should be properly connected to the display card and computer. Try disconnecting the video cable from the display and connecting to a known working display (if available) to confirm the presence of proper video.</li> <li>3. Check whether the LCD monitor and computer power cords are connected and whether there is a supply of power.</li> <li>4. Make sure the resolution mode is supported by the display and check settings of the display card.</li> <li>5. Confirm that the video cable is not defective.</li> </ol>
<b>No Signal Input with Blue Screen</b>	Check the signal connection between the computer and LCD monitor.
<b>Missing Colors</b>	If the red, green or blue colors are missing, check the signal cable to make sure it is plugged correctly. The pins in the cable could be loose and cause a bad connection.
<b>Image Too Bright/Image Too Dark</b>	Adjust brightness and contrast by OSD.
<b>Irregular Image</b>	Check the signal connection between the computer and LCD monitor. Select "Auto Adjust" button.
<b>Distorted Image</b>	Reset the LCD monitor. (Select "Recall" function by using OSD)
<b>Image Is Not Centered / Size Is Not Appropriate</b>	Use OSD Image Menu to adjust H. Position and V. Position. Check image size setting. Select Auto Adjust.



<b>Uneven Color / Color Too Dark / Dark Area Distorted / White Color Is Not White</b>	Use OSD Color Temperature Menu to adjust color setting.
<b>No Sound</b>	Check the audio signal cable connection between the computer and LCD monitor. Try pressing the "+MUTE" button to disable the volume Mute function. * Some models do not have speakers (sound)
<b>The Display Is Dark / Bright Or Saturated</b>	Verify video input levels are appropriate; 0.7V <sub>PP</sub> for Analog inputs or 5 V <sub>PP</sub> for TTL input video signal.
<b>The Display Blinks</b>	Check the signal connection between the computer and LCD monitor.
<b>Image Blinks On And Off</b>	The timing is special and not programmed in the MCU. Contact the Sales department at Dynamic Displays, Inc. 800-793-6862.
<b>Hook On Top Of The Image</b>	The LCD monitor needs the Universal Video Input Box. Contact the Sales Department at Dynamic Displays, Inc.
<b>Dim Image</b>	<ol style="list-style-type: none"> <li>1. Adjust the brightness and contrast <b>by with</b> OSD.</li> <li>2. The timing is special and not programmed in the MCU. Contact the Sales Department at Dynamic Displays.</li> <li>3. Flat Panel may have come unplugged from inverter.</li> <li>4. Lamp in Flat Panel may have failed.</li> </ol> <p>* Contact Dynamic Displays, Inc. and return unit for repair if suggestion 1 or 2 does <b>NOT</b> fix the Dim Image.</p>
<b>Lines Missing Or Not Displaying On Top Or Bottom Of The Image</b>	The timing is special and not programmed In the MCU. Contact the Sales department at Dynamic Displays, Inc. 800-793-6862.
<b>Characters Missing On Left Or Right Of Image</b>	The timing is special and not programmed In the MCU. Contact the Sales department at Dynamic Displays, Inc. 800-793-6862.

# **CLEANING INSTRUCTIONS**

- When cleaning, unplug the AC adapter from the LCD display and outlet for safety.
- Lightly wipe dirt from the cabinet and LCD panel surface with a clean lint-free cloth soaked in a neutral cleaning solution. This removes dust and other particles that can scratch the screen
- Treat the LCD panel with care. Do not rub the LCD panel surface with a rough item or hit it on the surface. Also, do not strongly press the LCD panel surface. This can lead to unevenness in the screen and also failure of the product.
- Cleaners recommended for the LCD panel are isopropyl alcohol (without abrasive), non-ammoniac glass cleaner, and watered-down neutral cleaning solution. Do not use organic solvent such as acetone and toluene.
- Do not use thinner, benzine, alcohol or such on the plastic cabinet. These can damage the cabinet, alter its quality and cause the paint to peel off.
- Do not apply insecticides and other volatile items to the cabinet. Also do not leave rubber and vinyl products or such in contact with it for long hours. This can cause the surface quality to alter and the paint to peel off.

## QES1508 Series 8.4-inch LCD Specification

<b>Size/Technology</b>	8.4 inch SVGA Color TFT LCD Module
<b>Viewing Area</b>	170.4 mm x 127.8 mm
<b>Pixel Pitch</b>	0.213 mm x 0.213 mm
<b>Native Resolution</b>	800 x 600 Pixels
<b>Back Light</b>	20,000 Hours
<b>Viewing Angle (H/V)</b>	65°(Up) - 45°(Down) / 65°(Right) - 65°(Left)
<b>Contrast Ratio</b>	500:1
<b>Brightness</b>	220 Cd/m <sup>2</sup>
<b>Response Time</b>	10 mSec Rising – 25 mSec Falling
<b>Colors</b>	262K Colors – 6 Bits
<b>Supported Video Formats - Standard</b>	640 x 400 @ 85Hz 640 x 480 @ 60/72/75/85Hz 720 x 400 @ 70/85Hz 800 x 600 @ 56/60/72/75/85Hz – Native Resolution Legacy Products Timings - Horizontal: 15 to 68KHz; Vertical 50 to 85Hz EGA; CGA; MDA; TTL Video Timings (*1)
<b>Video Input Signals</b>	Standard - Analog Video: 0.7Vpp @ 75 Ohms DVI-D Digital Video Input NTSC/PAL and S-video (*3) TTL Video Input for EGA, CGA and MDA (*1)
<b>Sync Input Signal Formats</b>	Separate Sync TTL Level Composite TTL Level Sync Sync on Green Video (Positive) 0.7Vpp-Sync (negative) 0.3Vpp
<b>Input Interface (Connectors)</b>	D-Sub HD15(VGA Analog) DVI-D NTSC Video; S-Video and RCA Jack (*3) DB-9 Input (*1) Honda 20 Pin Connector (Fanuc Models) Molex Part Number: 03-06-2151 (Mazak Models) Edge Card Connector – 10 Pin 3, 4, & 5-Wire BNC Inputs, HD15 and DB-9 (TTL) (*2) DC Input
<b>Power Requirements</b>	100-240VAC 50-60Hz or +12VDC @ 1 A
<b>Approvals</b>	Designed to Comply with: FCC, CE, UL
<b>Temperature: Operating</b>	0° to 50°C @ 10-90% R.H.
<b>Temperature: Storage</b>	-20° to 60°C @ 10-90% R.H.
<b>Altitude: Operating</b>	0 to 10,000 ft
<b>Altitude: Storage</b>	0 to 40,000 ft
<b>Mechanical Configurations</b>	Open Frame and Legacy Configurations
<b>Dimensions</b>	Open Frame: <a href="#">Contact DDI or Visit WEB for Mechanical Dimension</a> Legacy Replacement: <a href="#">Contact DDI or Visit WEB for Mechanical Dimensions</a>
<b>Warranty</b>	One Year Warranty (Parts and Labor)
<b>Options</b>	Touch Screen: Resistive, Capacitive or SAW (USB or Serial) Screen Protection from Impact - Strengthened Glass HD15 to 5 BNC Female Interface cable Sunlight Readable

Note (1) – With TTL Video Input Option.

Note (2) – With Universal Video Input Option.

Note (3) – With Video Connector Adaptor Option.

# QES1510 Series 12.1 inch LCD Specification

## *10.4" LCD Replacement for 12" CRT Monitor*

<b>Size/Technology</b>	10.4 inch SVGA Color TFT LCD Module
<b>Image Size</b>	211.2 mm x 158.4 mm
<b>Pixel Pitch</b>	0.264 mm x 0.264 mm
<b>Native Resolution</b>	800 x 600 Pixels
<b>Back Light</b>	20,000 Hours
<b>Viewing Angle (H/V)</b>	35°(Up) - 65°(Down) / 60°(Right) - 60°(Left)
<b>Contrast Ratio</b>	500:1 Typical
<b>Brightness</b>	230 Cd/m <sup>2</sup>
<b>Response Time</b>	10 mSec Rising – 25 mSec Falling
<b>Colors</b>	Native 262K colors (RGB 6-bit driver)
<b>Supported Video Formats – Standard</b>	640 x 400 @ 85Hz 640 x 480 @ 60/72/75/85Hz 720 x 400 @ 70/85Hz 800 x 600 @ 56/60/72/75/85Hz – Native Resolution Legacy Products Timings - Horizontal: 15 to 68KHz; Vertical 50 to 85Hz EGA; CGA; MDA; TTL Video Timings (*1)
<b>Video Input Signals</b>	Standard - Analog Video: 0.7Vpp @ 75 Ohms DVI-D Digital Video Input NTSC/PAL and S-video (*3) TTL Video Input for EGA, CGA and MDA (*1)
<b>Sync Input Signal Formats</b>	Separate Sync TTL Level Composite TTL Level Sync Sync on Green Video (Positive) 0.7Vpp-Sync (negative) 0.3Vpp Differential TTL Video Input (Differential Digital RGB, H&V Sync) Serial Differential Communications RS-422
<b>Input Interface (Connectors)</b>	Honda 20 Pin Connector (Fanuc Models) Molex Part Number: 03-06-2151 (Mazak Models) D-Sub HD15(VGA Analog) DVI-D NTSC Video; S-Video and RCA Jack (*3) DB-9 Input (*1) Edge Card Connector – 10 Pin. 3, 4, & 5-Wire BNC Inputs, HD15 and DB-9 (TTL) (*2) DC Input
<b>Power Requirements</b>	100-240VAC 50-60Hz @ 1 Amp
<b>Approvals</b>	FCC, CE, UL
<b>Temperature: Operating</b>	0° to +50°C @ 10-90% R.H.
<b>Temperature: Storage</b>	-20° to +60°C @ 10-90% R.H.
<b>Altitude: Operating</b>	0 to 10,000 ft
<b>Altitude: Storage</b>	0-40,000 ft
<b>Dimensions</b>	Open Frame: <a href="#">Contact DDI or Visit WEB for Mechanical Dimension</a> Legacy Replacement: <a href="#">Contact DDI or Visit WEB for Mechanical Dimensions</a>
<b>Warranty</b>	One Year Warranty (Parts and Labor)
<b>Options</b>	Touch Screen: Resistive, Capacitive or SAW (USB or Serial) Screen Protection from Impact - Strengthened Glass HD15 to 5 BNC Female Interface cable Sunlight Readable

Note (1) – With TTL Video Input Option.

Note (2) – With Universal Video Input Option.

Note (3) – With Video Connector Adaptor Option.

## QES1512 Series 12.1-inch LCD Specification

<b>Size/Technology</b>	12.1 inch SVGA Color TFT LCD Module with LED Backlight
<b>Viewing Area</b>	246.0 mm x 184.5 mm
<b>Pixel Pitch</b>	0.3075 mm x 0.3075 mm
<b>Native Resolution</b>	800 x 600 Pixels
<b>LED Back Light</b>	50,000 Hours
<b>Viewing Angle (H/V)</b>	65°(Up) - 75°(Down) / 80°(Right) - 80°(Left)
<b>Contrast Ratio</b>	700:1
<b>Brightness</b>	450 Cd/m2
<b>Response Time</b>	10 mSec Rising – 25 mSec Falling
<b>Colors</b>	16.2M Colors – 8 Bits
<b>Supported Video Formats Standard</b>	640 x 400 @ 85Hz 640 x 480 @ 60/72/75/85Hz 720 x 400 @ 70/85Hz 800 x 600 @ 56/60/72/75/85Hz – Native Resolution Legacy Products Timings - Horizontal: 15 to 68KHz; Vertical 50 to 85Hz EGA; CGA; MDA; TTL Video Timings (*1)
<b>Video Input Signals</b>	Standard - Analog Video: 0.7Vpp @ 75 Ohms DVI-I Digital Video Input NTSC/PAL and S-video (*3) TTL Video Input for EGA, CGA and MDA (*1)
<b>Sync Input Signal Formats</b>	Separate Sync TTL Level Composite TTL Level Sync Sync on Green Video (Positive) 0.7Vpp-Sync (negative) 0.3Vpp Differential TTL Video Input (Differential Digital RGB, H&V Sync) Serial Differential Communications RS-422
<b>Input Interface (Connectors)</b>	D-Sub HD15(VGA Analog) DVI-D NTSC Video; S-Video and RCA Jack (*3) DB-9 Input (*1) Honda 20 Pin Connector (Fanuc Models) Molex Part Number: 03-06-2151 (Mazak Models) Edge Card Connector – 10 Pin. 3, 4, & 5-Wire BNC Inputs, HD15 and DB-9 (TTL) (*2) DC Input
<b>Power Requirements</b>	100-240VAC 50-60Hz @ 1 Amp
<b>Approvals</b>	Designed to Comply with: FCC, CE, UL
<b>Temperature: Operating</b>	-30° to +85°C @ 10-90% R.H.
<b>Temperature: Storage</b>	-30° to +85°C @ 10-90% R.H.
<b>Altitude: Operating</b>	0 to 10,000 ft
<b>Altitude: Storage</b>	0 to 40,000 ft
<b>Mechanical Configurations</b>	Open Frame and Legacy Configurations
<b>Dimensions</b>	Open Frame: <a href="#">Contact DDI or Visit WEB for Mechanical Dimension</a> Legacy Replacement: <a href="#">Contact DDI or Visit WEB for Mechanical Dimensions</a>
<b>Warranty</b>	One Year Warranty (Parts and Labor)
<b>Options</b>	Touch Screen: Resistive, Capacitive or SAW (USB or Serial) Screen Protection from Impact - Strengthened Glass HD15 to 5 BNC Female Interface cable Sunlight Readable

Note (1) – With TTL Video Input Option.

Note (2) – With Universal Video Input Option.

Note (3) – With Video Connector Adaptor Option.

## QES1514 Series 14.1-inch LCD Specification

<b>Size/Technology</b>	14.1 inch XGA Color TFT LCD Module
<b>Viewing Area</b>	285.7 mm x 214.3 mm
<b>Pixel Pitch</b>	0.279 mm x 0.279 mm
<b>Native Resolution</b>	1024 x 768 Pixels
<b>Back Light</b>	50,000 Hours
<b>Viewing Angle (H/V)</b>	10°(Up) - 30°(Down) / 40°(Right) - 40°(Left)
<b>Contrast Ratio</b>	300:1
<b>Brightness</b>	200 Cd/m <sup>2</sup>
<b>Response Time</b>	10 mSec Rising – 15 mSec Falling
<b>Colors</b>	262K Colors – 6 Bits
<b>Supported Video Formats Standard</b>	640 x 400 @ 85Hz 640 x 480 @ 60/72/75/85Hz 720 x 400 @ 70/85Hz 800 x 600 @ 56/60/72/75/85Hz – Native Resolution Legacy Products Timings - Horizontal: 15 to 68KHz; Vertical 50 to 85Hz EGA; CGA; MDA; TTL Video Timings (*1)
<b>Video Input Signals</b>	Standard - Analog Video: 0.7Vpp @ 75 Ohms DVI-I Digital Video Input NTSC/PAL and S-video (*3) TTL Video Input for EGA, CGA and MDA (*1)
<b>Sync Input Signal Formats</b>	Separate Sync TTL Level Composite TTL Level Sync Sync on Green Video (Positive) 0.7Vpp-Sync (negative) 0.3Vpp Differential TTL Video Input (Differential Digital RGB, H&V Sync) Serial Differential Communications RS-422
<b>Input Interface (Connectors)</b>	Honda 20 Pin Connector (Fanuc Models) Molex Part Number: 03-06-2151 (Mazak Models) Edge Card Connector – 10 Pin. D-Sub HD15(VGA Analog) DVI-D NTSC Video; S-Video and RCA Jack (*3) DB-9 Input (*1) 3, 4, & 5-Wire BNC Inputs, HD15 and DB-9 (TTL) (*2) DC Input
<b>Power Requirements</b>	100-240VAC 50-60Hz @ 1 Amp
<b>Approvals</b>	Designed to Comply with: FCC, CE, UL
<b>Temperature: Operating</b>	0° to 50°C @ 10-90% R.H.
<b>Temperature: Storage</b>	-20° to 60°C @ 10-90% R.H.
<b>Altitude: Operating</b>	0 to 10,000 ft
<b>Altitude: Storage</b>	0 to 40,000 ft
<b>Mechanical Configurations</b>	Open Frame and Legacy Configurations
<b>Dimensions</b>	Open Frame: <a href="#">Contact DDI or Visit WEB for Mechanical Dimension</a> Legacy Replacement: <a href="#">Contact DDI or Visit WEB for Mechanical Dimensions</a>
<b>Warranty</b>	One Year Warranty (Parts and Labor)
<b>Options</b>	Touch Screen: Resistive, Capacitive or SAW (USB or Serial) Screen Protection from Impact - Strengthened Glass HD15 to 5 BNC Female Interface cable Sunlight Readable

Note (1) – With TTL Video Input Option.

Note (2) – With Universal Video Input Option.

Note (3) – With Video Connector Adaptor Option.

# QES1515 Series 15-inch LCD Specification

	Tabletop Models	All Other Models
<b>Size/Technology</b>	15" TFT Active Matrix LCD	15" TFT Active Matrix LCD
<b>Viewing Area</b>	304.128 mm x 228.096 mm	308.8 mm x 231.9 mm
<b>Pixel Pitch</b>	0.297 mm x 0.297 mm	
<b>Native Resolution</b>	1024 x 768 Pixels	
<b>Back Light</b>	50,000 Hours	
<b>Viewing Angle (H/V)</b>	60° (Left), 60° (Right) / 40° (Up), 60° (Down)	
<b>Contrast Ratio</b>	400:1	350:1
<b>Brightness</b>	250 Cd/m2	450 Cd/m2
<b>Response Time</b>	16 mSec (Tr + Tf)	
<b>Colors</b>	262K – (6 Bits for R, G, B)	16.2 Million – (6 Bits + FRC for RGB)
<b>Supported Video Formats - Standard</b>	640 x 400 @ 85Hz 640 x 480 @ 60/72/75/85Hz 720 x 400 @ 70/85Hz 800 x 600 @ 56/60/72/75/85Hz 1024 x 768 @ 60, 70 and 75 Hz – Native Resolution Legacy Products Timings - Horizontal: 15 to 68KHz; Vertical 50 to 85Hz EGA; CGA; MDA; TTL Video Timings (*1)	
<b>Video Input Signals</b>	Standard - Analog Video: 0.7Vpp @ 75 Ohms DVI-I Digital Video Input NTSC/PAL and S-video TTL Video Input for EGA, CGA and MDA (*1)	
<b>Sync Input Signal Formats</b>	Separate Sync TTL Level Composite TTL Level Sync Sync on Green Video (Positive) 0.7Vpp-Sync (negative) 0.3Vpp Differential TTL Video Input (Differential Digital RGB, H&V Sync) Serial Differential Communications RS-422	
<b>Input Interface (Connectors)</b>	D-Sub HD15(VGA Analog) DVI-D NTSC Video; S-Video and RCA Jack (*3) DB-9 Input (*1) Honda 20 Pin Connector (Fanuc Models) Molex Part Number: 03-06-2151 (Mazak Models) Edge Card Connector – 10 Pin. 3, 4, & 5-Wire BNC Inputs, HD15 and DB-9 (TTL) (*2) TNC – Isolated BNC Connector (Military Application) DC Input	
<b>Power Requirements</b>	100-240VAC 50-60Hz or +12VDC @ 4A	
<b>Approvals</b>	Designed to Comply with: FCC, CE, UL	
<b>Temperature: Operating</b>	0° to 50°C @ 10-90% R.H.	
<b>Temperature: Storage</b>	-20° to 60°C @ 10-90% R.H.	
<b>Altitude: Operating</b>	0 to 10,000 ft	
<b>Altitude: Storage</b>	0 to 40,000 ft	
<b>Mechanical Configurations</b>	Table Top with Tilt & Swivel, Open Frame, NEMA Panel Mount, Rack Mount & Wall Mount	
<b>Dimensions</b>	<a href="#">Tabletop or Desktop enclosure with Tilt &amp; Swivel</a> <a href="#">Open Frame;</a> <a href="#">NEMA 4/12 Panel Mount</a> <a href="#">Rack mount: EIA RS310 D – 7 Unit</a>	
<b>Warranty</b>	One Year Warranty (Parts and Labor)	
<b>Options</b>	Touch Screen: Resistive, Capacitive or SAW (USB or Serial) Screen Protection from Impact - Strengthened Glass HD15 to 5 BNC Female Interface cable Sunlight Readable	

Note (1) – With TTL Video Input Option

Note (2) – With Universal Video Input Option.

Note (3) – With Video Connector Adaptor Option.

## QES1517 Series - 17" Rugged Modular Flat Panel Display

<b>Size/Technology</b>	17.0" SXGA Color TFT-LCD
<b>Viewing Area</b>	337.92(H) mm x 270.336(V) mm
<b>Pixel Pitch</b>	0.264 mm x 0.264 mm
<b>Native Resolution</b>	1280 x 1024 Pixels
<b>LED Life</b>	10, 000 Hours minimum
<b>Viewing Angle (H/V)</b>	70°(Up) - 60°(Down) / 75°(Right) - 75°(Left) @ CR = 10
<b>Contrast Ratio</b>	1000:1
<b>Brightness</b>	800 cd/m <sup>2</sup>
<b>Response Time</b>	Tr = 2 ms, Tf = 6ms Typical
<b>Colors</b>	16.2M Colors
<b>Supported Video Formats Standard</b>	640 x 400 @ 85Hz 640 x 480 @ 60/72/75/85Hz 720 x 400 @ 70/85Hz 800 x 600 @ 56/60/72/75/85Hz 1024 x 768 @ 60, 70 and 75 Hz 1152 x 864 @ 75 Hz 1280 x 960 @ 60 Hz 1280 x 1024 @ 60 and 75 Hz – Native Resolution Legacy Products Timings - Horizontal: 15 to 100KHz; Vertical 50 to 85Hz EGA; CGA; MDA; TTL Video Timings (*1)
<b>Video Input Signals</b>	Standard - Analog Video: 0.7Vpp @ 75 Ohms DVI-I Digital Video Input NTSC/PAL and S-video
<b>Sync Input Signal</b>	Separate Sync TTL Level Composite TTL Level Sync Sync on Green Video (Positive) 0.7Vpp-Sync (negative) 0.3Vpp Differential TTL Video Input (Differential Digital RGB, H&V Sync) Serial Differential Communications RS-422
<b>Input Interface (Connectors)</b>	D-Sub HD15(VGA Analog) DVI-D NTSC Video; S-Video and RCA Jack (*3) 3, 4, & 5-Wire BNC Inputs, HD15 and DB-9 (TTL) (*2) TNC – Isolated BNC Connector (Military Applications) DC Input
<b>Power Requirements</b>	100-240 VAC 50-60 Hz or +12 VDC @ 3A
<b>Temperature</b>	Operating: 0° to 50°C @ 5-90% R.H. Storage: -20° to 60°C @ 5-90% R.H
<b>Humidity</b>	Operating: Max. 95% @ 40°C non-condensing
<b>Altitude - Operating</b>	Operating: Up to 10,000 ft Storage: Up to 30,000 ft
<b>Shock</b>	Operating: Call Sales for more information
<b>Cold Start-Up</b>	Start-up @ -25°C 3min. usable picture, 20 min. full spec
<b>Vibration</b>	Operating: Call Sales for more information
<b>Drip Proof - Operating</b>	Call Sales for more information
<b>Fungus</b>	Call Sales for more information
<b>Salt Fog</b>	Call Sales for more information
<b>Sand Dust</b>	Call Sales for more information
<b>Crash Proof – Non Operating</b>	Call Sales for more information
<b>Rapid Decompression</b>	Call Sales for more information
<b>Safety</b>	IEC 60950
<b>Dimensions</b>	Panel Mount: <a href="#">17" Rugged Modular LCD</a>
<b>Warranty</b>	One Year Warranty (Parts and Labor)
<b>Options</b>	Touch Screen: Surface Accoustic Wave (SAW) and Resistive NVIS Class A & B Touch Screen: Resistive, Capacitive or SAW (USB or Serial) Screen Protection from Impact - Strengthened Glass Sunlight Readable

Note (1) – With TTL Video Input Option

Note (2) – With Universal Video Input Option.

Note (3) – With Video Connector Adaptor Option.



## QES1519 Series 19-inch LCD Specification

<b>Size/Technology</b>	19" TFT Active Matrix LCD
<b>Viewing Area</b>	376.3 mm x 301.1 mm
<b>Pixel Pitch</b>	0.294 mm x 0.294 mm
<b>Native Resolution</b>	1280 x 1024 Pixels
<b>Back Light</b>	50,000 Hours
<b>Viewing Angle (H/V)</b>	140°/130°
<b>Contrast Ratio</b>	600:1
<b>Brightness</b>	250 Cd/m <sup>2</sup>
<b>Response Time</b>	12 mSec
<b>Colors</b>	16.2 Million – (6 Bits + FRC)
<b>Supported Video Formats Standard</b>	640 x 400 @ 85Hz 640 x 480 @ 60/72/75/85Hz 720 x 400 @ 70/85Hz 800 x 600 @ 56/60/72/75/85Hz 1024 x 768 @ 60, 70 and 75 Hz – Native Resolution 1152 x 864 @ 75 Hz 1280 x 960 @ 60 Hz 1280 x 1024 @ 60 and 75 Hz – Native Resolution Legacy Products Timings - Horizontal: 15 to 68KHz; Vertical 50 to 85Hz EGA; CGA; MDA; TTL Video Timings (*1)
<b>Video Input Signals</b>	Standard - Analog Video: 0.7Vpp @ 75 Ohms DVI-I Digital Video Input NTSC/PAL and S-video (*3) TTL Video Input for EGA, CGA and MDA (*1)
<b>Sync Input Signal Formats</b>	Separate Sync TTL Level Composite TTL Level Sync Sync on Green Video (Positive) 0.7Vpp-Sync (negative) 0.3Vpp Differential TTL Video Input (Differential Digital RGB, H&V Sync) Serial Differential Communications RS-422
<b>Input Interface (Connectors)</b>	D-Sub HD15(VGA Analog) DVI-D NTSC Video; S-Video and RCA Jack (*3) TNC – Isolated BNC Connector (Military Applications) DB-9 Input (*1) 3, 4, & 5-Wire BNC Inputs, HD15 and DB-9 (TTL) (*2) DC Input
<b>Power Requirements</b>	100-240VAC 50-60Hz or +12VDC @ 4A
<b>Approvals</b>	Designed to Comply with: FCC, CE, UL
<b>Temperature: Operating</b>	0° to 50°C @ 10-90% R.H.
<b>Temperature: Storage</b>	-20° to 60°C @ 10-90% R.H.
<b>Altitude: Operating</b>	0 to 10,000 ft
<b>Altitude: Storage</b>	0 to 40,000 ft
<b>Mechanical Configurations</b>	Tabletop or Desktop enclosure with Tilt & Swivel, Open Frame, NEMA 4/12 Panel Mount: Rack mount; EIA RS310 D – 7 Unit or Wall/Arm Mount
<b>Dimensions</b>	Tabletop: <a href="http://www.industrial-panels.com/19_in_desktop_lcd.htm">http://www.industrial-panels.com/19_in_desktop_lcd.htm</a> Panel mount: <a href="http://www.industrial-panels.com/panel_mount_lcd_monitors.htm">http://www.industrial-panels.com/panel_mount_lcd_monitors.htm</a> Rack mount: <a href="http://www.industrial-panels.com/rack_mount_rugged_industrial_monitor.htm">http://www.industrial-panels.com/rack_mount_rugged_industrial_monitor.htm</a> Wall/Arm Mount: <a href="http://www.industrial-panels.com/19_in_lcd_wall_mount.htm">http://www.industrial-panels.com/19_in_lcd_wall_mount.htm</a>
<b>Warranty</b>	One Year Warranty (Parts and Labor)
<b>Options</b>	Touch Screen: Surface Accoustic Wave (SAW) and Resistive NVIS Class A & B Touch Screen: Resistive, Capacitive or SAW (USB or Serial) Screen Protection from Impact - Strengthened Glass Sunlight Readable

Note (1) – With TTL Video Input Option

Note (2) – With Universal Video Input Option.

Note (3) – With Video Connector Adaptor Option.

## QES1524 Series 24-In LCD Specifications

<b>Size/Technology</b>	24.0" WUXGA Color TFT-LCD
<b>Viewing Area</b>	518.4 (H) mm x 324 (V) mm
<b>Pixel Pitch</b>	0.270 mm x 0.270 mm
<b>Native Resolution</b>	1920 x 1200 Pixels
<b>Back Light</b>	50,000 Hours
<b>Viewing Angle (H/V)</b>	89° (Left), 89° (Right) / 89° (Up), 89° (Down) @ CR = 10
<b>Contrast Ratio</b>	800:1
<b>Brightness</b>	300 cd/m <sup>2</sup> @ I <sub>L</sub> = 6 mA
<b>Response Time</b>	16 mSec Typical, on/off; 6 mSec Average
<b>Colors</b>	16.7M Colors (R G B Bit Data)
<b>Supported Video Formats</b>	640 x 480 @ 60, 72 and 75 Hz 720 x 400 @ 70 Hz 800 x 600 @ 56, 60, 72 and 75 Hz 1024 x 768 @ 60, 70 and 75 Hz 1152 x 864 @ 75 Hz 1280 x 960 @ 60 Hz 1280 x 1024 @ 60 and 75 Hz 1600 x 1200 @ 60, 65, 70 and 75Hz 1920 x 1200 @ 60 and 75Hz Hz– Optimal Native Resolution Legacy Products Timings - Horizontal: 15 to 68KHz; Vertical 50 to 85Hz EGA; CGA; MDA; TTL Video Timings (*1)
<b>Video Input Signals</b>	Standard - Analog Video: 0.7Vpp @ 75 Ohms DVI-I Digital Video Input NTSC/PAL and S-video (*3) TTL Video Input for EGA, CGA and MDA (*1)
<b>Sync Input Signal</b>	Separate Sync TTL Level Composite TTL Level Sync Sync on Green Video (Positive) 0.7Vpp-Sync (negative) 0.3Vpp Differential TTL Video Input (Differential Digital RGB, H&V Sync) Serial Differential Communications RS-422
<b>Input Interface (Connectors)</b>	D-Sub HD15(VGA Analog) DVI-D NTSC Video; S-Video and RCA Jack (*3) DB-9 Input (*1) TNC - Isolated BNC Connector (Military Applications) 3, 4, & 5-Wire BNC Inputs, HD15 and DB-9 (TTL) (*2) DC Input
<b>Power Requirements</b>	100-240 VAC 50-60 Hz or +24 VDC @ 5A
<b>Agency Approvals</b>	Designed to Comply with FCC, CE, UL
<b>Temperature: Operating</b>	0° to 50°C @ 5-90% R.H.
<b>Temperature: Storage</b>	-20° to 60°C @ 5-90% R.H.
<b>Altitude: Operating</b>	0 to 10,000 ft
<b>Altitude: Storage</b>	0 to 40,000 ft
<b>Mechanical Configuration</b>	Table Top or Wall Mount (VESA 100mm)
<b>Dimensions</b>	
<b>Warranty</b>	Year Warranty (Parts and Labor)
<b>Options</b>	Touch Screen: Surface Acoustic Wave (SAW) and Resistive NVIS Class A & B Touch Screen: Resistive, Capacitive or SAW (USB or Serial) Screen Protection from Impact - Strengthened Glass Sunlight Readable

Note (1) – With TTL Video Input Option

Note (2) – With Universal Video Input Option.

Note (3) – With Video Connector Adaptor Option.

# Universal Video Input Unit Option

Dynamic Display's unique Universal Video Input Option was designed to accept a wide variety of non-standard legacy video timing formats. It converts the video input signal to a VGA-style video format that is acceptable to most modern LCD displays. The Universal Video unit has a unique sync discriminator circuit that filters out extraneous sync pulses found in some legacy video signals. A phase lock loop design supplies sync pulses that are missing in other legacy video formats.

With the Universal Video Input Option, the user has the choice of switching between two separate video input ports. The first video input port is a standard HD-15 D-sub connection with fixed 75 ohm termination. The second video port has five BNC connections; Red, Green, Blue Video, Vertical Sync, and Horizontal/Composite Sync. The input impedance of each BNC input may be switched between 75 Ohms and Hi impedance for video loop-through applications.

Either of these two video ports can accept the following video signal format types:

- Three-wire RS170 and RS343-style analog composite sync-on-green video formats - with and without serrations and equalizing pulses.
- Four-wire analog video formats with separate composite sync.
- Five-wire Red, Green, Blue Video, with separate horizontal and vertical syncs.

In addition to these analog video timings, the Universal Video Input Option also accepts TTL video signals on Port One via a 9-pin D-sub connector for CGA and EGA monitors.

## Connecting The Universal Video (UVI) Box

Follow the instructions below to install the Universal Video Box to your Flat/Panel monitor.

Required tools: #2 Phillips Screw Driver

### 1. Mounting The UVI Box:

- Power down the Flat Panel Monitor and unplug the Power Adapter Cable (A/C - D/C Power Supply) going to the Flat Panel monitor unit.
- Unplug the Video Input Cable (SUB-D, 15HD) from your system going to the Flat Panel monitor unit.
- Mounting the (UVI) Box hardware is determined by which Flat/ Panel monitor you have. The following list is for Dynamic Displays Flat Panel systems:
  - a. 15" Flat Panel Plastic Enclosure  
8115061: Screw, Metric, Pan Head, Philips Head, Size M 4X8, Quantity of 4  
8120030: Washer ,Locking, Number 8, Quantity of 4
  - b. 19" Flat Panel Plastic Enclosure  
8115032: Screw ,Metric, Pan Head, Philips Head, Size M 3X8, Quantity of 4  
8120027: Washer, Locking External, Size 4, Quantity of 4
  - c. Rack Mount and Panel Mount  
8114455: Screw SEM, Pan Head, Philips Head ,Size 8-32 by 0.375, Quantity of 4
- Mount the (UVI) box to the VESA 100 mounting holes located on the rear of the Flat / Panel monitor.

### 2. Connect Video and Power to UVI and Flat Panel Monitor

- Plug the (VGA, SUB-D, 15HD) cable from the (UVI) box to the Flat / Panel monitor.
- Plug the Power Adapter / Cable (A/C - D/C Power Supply) into the input connector (12 VDC) on the (UVI) box.
- Plug one end of the DC Jumper Power Cable into the output connector (12 VDC) on the (UVI) box.
- Plug the other end of the DC Jumper Power Cable into the Flat/Panel (12VDC) input - located on the rear of Flat / Panel monitor.

- Determine Video Plug input from your System:  
The (UVI) box supports D-SUB or BNC:
  - D-SUB, 15HD (VGA)
  - D-SUB, 9HD (CGA / EGA) TTL
  - BNC (COMPOSITE / SYNC ON GREEN / SEPARATE SYNC / SEPARATE COMP. SYNC)
- After the correct input is determined set switch on (UVI) box for the correct input (D-SUB) or (BNC.)  
Switch located next to the last BNC on the right.

**Universal Video Input Box Specification:**

<b>Supported Video Input</b>	BNC Connector; 3/4/5 Wire RGB with Separate Sync, Composite Sync or Sync on Green. HD15 VGA Standard Connector: Five Wire RGB with Separate Sync, Composite Sync or Sync on Green. D-sub 9 Pin: TTL input for EGA & CGA.
<b>Frequency Range</b>	15 to 68 KHz
<b>Input Interface</b>	5 BNC's - HD15 (VGA Analog) - 9-pin D-Sub
<b>Power Connectors</b>	+12VDC Input and Loop through Voltage
<b>Power Requirements</b>	12VDC @ .025A
<b>Dimensions</b>	8" (L) x 4.3" (W) x 2" (H)
<b>Mounting</b>	VESA 75/100
<b>Construction</b>	Rugged for Industrial Applications
<b>Weight</b>	1 Lb.
<b>Warranty</b>	One Year Limited Warranty



## **Contact Information:**

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