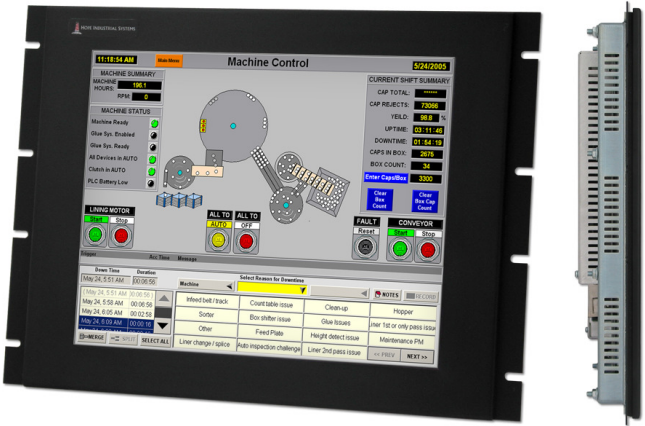




# User Manual

## 17" Rack Mount Industrial Monitor Revision E

Model No. HIS-RL17- \_\_\_ \_ E



# Table of Contents

<b>SAFETY AND REGULATORY INFORMATION.....</b>	<b>3</b>
Warning .....	3
FCC Notice .....	3
<b>USING THE LCD DISPLAY.....</b>	<b>4</b>
Setting the Timing Mode.....	4
OSD and Power Lock Settings .....	4
<b>ADJUSTING THE SCREEN IMAGE .....</b>	<b>5</b>
<b>OSD MENU.....</b>	<b>7</b>
<b>INSTALLATION INSTRUCTIONS.....</b>	<b>10</b>
Preparing for Installation.....	10
Installation into Rack .....	11
<b>TOUCHSCREEN DRIVER INSTALLATION .....</b>	<b>12</b>
<b>CLEANING.....</b>	<b>13</b>
<b>TROUBLESHOOTING .....</b>	<b>14</b>
<b>DRAWINGS .....</b>	<b>16</b>
<b>SPECIFICATIONS .....</b>	<b>18</b>
Display .....	18
Environmental.....	18
Video .....	19
Electrical .....	19
Compliances and Certifications .....	19
Functional .....	19
Rack Compatibility .....	20
Physical .....	20
VGA Pin Assignment .....	20
<b>FACTORY PRESET TIMING.....</b>	<b>21</b>
<b>WARRANTY STATEMENT .....</b>	<b>22</b>

# Safety and Regulatory Information

## Warning

To prevent fire or shock hazard, do not expose the unit to rain or moisture. Dangerously high voltages are present inside the unit. Do not disassemble the unit. Refer servicing to qualified personnel only.

This equipment is not intended for use in critical applications where its failure to operate would create immediate life threatening circumstances. Applications including, but not limited to, nuclear reactor control, aerospace navigation systems and life support systems are not appropriate for this product.

This product is a UL Listed Product and must be used with a listed computer.

## FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the device.

# Using the LCD Display

## Setting the Timing Mode

Setting the timing mode of your computer graphics adapter (or other video source) is important for maximizing the quality of the screen image and for minimizing eye strain. The timing mode consists of the resolution (example 1280 x 1024) and refresh rate (or vertical frequency; example 60 Hz). After setting the timing mode, use the OSD (On-screen Display) controls to adjust the screen image.

For the best picture quality set your LCD display timing mode to:

**VESA 1280 x 1024 @ 60 Hz**

Please refer to the computer graphics adapter manufacturer's manual for instructions on setting the resolution and timing mode. In Microsoft Windows, these settings may be found at this location:

**ME, 2000, XP:** Control Panel > Display > Settings

**Vista:** Control Panel > Personalization > Display Settings

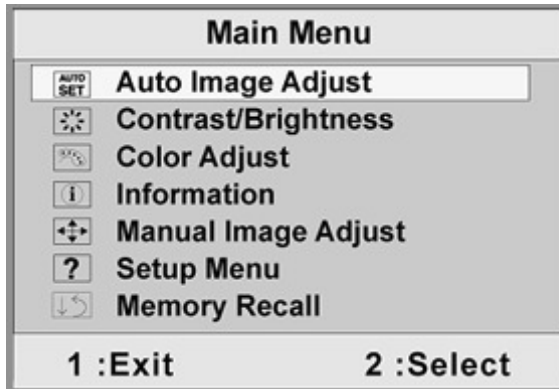
**WARNING:** Do not set the graphics card in your computer to exceed the maximum refresh rate of 75 Hz; doing so may result in permanent damage to your LCD display.

## OSD and Power Lock Settings

- **OSD Lock:** Press and hold [1] and the up arrow ▲ for 10 seconds. If any buttons are pressed the message *OSD Locked* will display for 5 seconds.
- **OSD Unlock:** Press and hold [1] and the up arrow ▲ again for 10 seconds.
- **Power Button Lock:** Press and hold [1] and the down arrow ▼ for 10 seconds. If the power button is pressed, the message *Power Button Locked* will display for 5 seconds. With or without this setting, after a power failure, your LCD display's power will automatically turn ON when power is restored.
- **Power Button Unlock:** Press and hold [1] and the down arrow ▼ again for 10 seconds.

## Adjusting the Screen Image

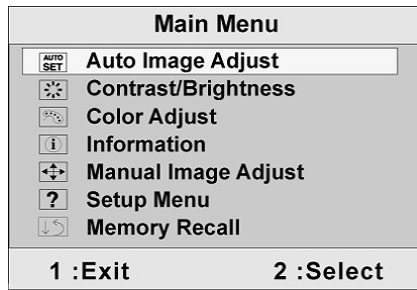
Use the buttons on the rear control panel to display and adjust the On-Screen Display (OSD) menu. To adjust the screen image, follow the instructions below:



Control Panel Button	Description
[1]	Displays the Main Menu or exits the control screen and saves adjustments.
[2]	<ul style="list-style-type: none"> <li>• Displays the control screen for the highlighted control.</li> <li>• Toggles between two controls on some screens.</li> <li>• Shortcut to Auto Image Adjust</li> </ul>
Power	Use this button to turn the monitor on and off. The Power Indicator light glows green during normal operation and orange when the monitor is in Power Saving mode.
▼	<ul style="list-style-type: none"> <li>• Scrolls down and adjusts items in the menu down.</li> <li>• Shortcut to the Contrast adjustment control screen.</li> </ul>
▲	<ul style="list-style-type: none"> <li>• Scrolls up and adjusts items in the menu up.</li> <li>• Shortcut to the Contrast adjustment control screen.</li> </ul>

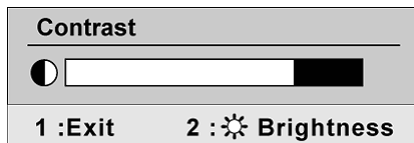
## Adjusting the Screen Image (continued)

1. To display the Main Menu, press button [1].



**NOTE:** All OSD menus and adjustment screens disappear automatically after 15 seconds. This is adjustable through the OSD timeout setting in the Setup menu.

2. To select a control to adjust, press the up ▼ or down ▲ button to scroll through the menu.
3. After the control is selected, press button [2]. A control screen like the one shown below appears.



*The line at the bottom of the screen shows the current functions of buttons [1] and [2]: Exit or select the Brightness control.*




4. To adjust the control, press the up ▼ or down ▲ buttons.
5. To save the adjustments and exit the menu, press button [1] twice.


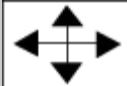





### The following tips may help you optimize your display:







- a. Adjust the computer's graphics card so that it outputs a 1280 x 1024 @ 60 Hz video signal to the LCD display. Look for instructions on "changing the refresh rate" in the graphics card's user guide.
- b. If necessary, make small adjustments using H POSITION and V POSITION until the screen image is completely visible. The black border around the edge of the screen should barely touch the illuminated "active area" of the display.

# OSD Menu

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

Menu	Description
 <p><b>Auto Image Adjust</b></p>	<p>Automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion. Press the [2] button to obtain a sharper image.</p> <p><b>NOTE:</b> Auto image adjust works with most common video cards. If this function does not work on your LCD display, lower the video refresh rate to 60 Hz and set the resolution to its pre-set value.</p>
 <p><b>Contrast/Brightness</b></p>	<p><b>Contrast</b> adjusts the difference between the image background (black level) and the foreground (white level).</p> <p><b>Brightness</b> adjusts the background black level of the screen image.</p>
 <p><b>Color Adjust</b></p>	<p>Provides several color adjustment modes, including preset color temperatures and a User Color mode which allows independent adjustment of red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500 Kelvin).</p> <div data-bbox="646 884 1058 1131" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><b>Color Adjust</b></p> <p>sRGB</p> <p>9300K</p> <p>• 6500K</p> <p>5400K</p> <p>User Color</p> <hr/> <p>1 :Exit                      2 :Select</p> </div> <ul style="list-style-type: none"> <li>● <b>sRGB:</b> This is quickly becoming the industry standard for color management, with support being included in many of the latest applications. Enabling this setting allows the LCD display to more accurately display colors the way they were originally intended. Enabling the sRGB setting will cause the Contrast and Brightness adjustments to be disabled.</li> <li>● <b>9300K:</b> Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).</li> <li>● <b>6500K:</b> Adds red to the screen image for warmer white and richer red.</li> </ul>

Menu	Description
	<ul style="list-style-type: none"> <li>● <b>5400K:</b> Adds green to the screen image for a darker color.</li> <li>● <b>User Color:</b> Individual adjustments for red (R), green (G), and blue (B).               <ol style="list-style-type: none"> <li>1. To select color (R, G, or B) press button [2].</li> <li>2. To adjust selected color, press ▲ and ▼.</li> </ol> </li> </ul> <p><b>Important:</b> If you select RECALL from the OSD Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.</p>
 <p><b>Information</b></p>	<p>Displays the timing mode (video signal input) coming from the graphics card in the computer, the LCD model number, and the serial number.</p> <p><b>NOTE:</b> VESA 1280 x 1024 @ 60 Hz (recommended) means that the resolution is 1280 x 1024 and the refresh rate is 60 Hertz.</p>
 <p><b>Manual Image Adjust</b></p>	<p>Displays the Manual Image Adjust Menu.</p> <div style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><b>Manual Image Adjust</b></p> <ul style="list-style-type: none"> <li> H. / V. Position</li> <li> H. Size</li> <li> Fine Tune</li> <li> Sharpness</li> </ul> <p style="text-align: center;">1 :Exit                      2 :Select</p> </div> <ul style="list-style-type: none"> <li>● <b>H/V Position (Horizontal/Vertical Position)</b> moves the screen image left or right and up or down.</li> <li>● <b>H. Size (Horizontal Size)</b> adjusts the width of the screen image.</li> <li>● <b>Fine Tune</b> sharpens the focus by aligning text and/or graphics with pixel boundaries.           <p><b>NOTE:</b> Try the Auto Image Adjust function first.</p> </li> <li>● <b>Sharpness</b> adjusts the clarity and focus of the screen image.</li> </ul>
 <p><b>Setup Menu</b></p>	<p>Displays the menu show below:</p>

Menu	Description
	<div data-bbox="646 226 1057 472" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>Setup Menu</b></p> <ul style="list-style-type: none"> <li> Language Select</li> <li> Resolution Notice</li> <li> OSD Position</li> <li> OSD Timeout</li> <li> OSD Background</li> </ul> <p style="text-align: center;">1 :Exit                      2 :Select</p> </div> <ul style="list-style-type: none"> <li>● <b>Language Select</b> allows the user to choose the language used in the menus and control screens.</li> <li>● <b>Resolution Notice</b> advises the optimal resolution to use and displays the Resolution Notice menu shown below: <div data-bbox="646 657 1057 903" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><b>Resolution Notice</b></p> <p style="text-align: center;">For the best quality, change the resolution to 1280 x 1024</p> <p style="text-align: center;">Press "1" to clear message Press "2" to disable message</p> <p style="text-align: center;">1 :Exit                      2 :Select</p> </div> </li> <li>● <b>OSD Position</b> allows the user to move the OSD menus and control screens.</li> <li>● <b>OSD Timeout</b> sets the length of time the OSD screen is displayed. For example, with a "15 second" setting, if a control is not pushed within 15 seconds, the display screen disappears.</li> <li>● <b>OSD Background</b> allows the user to turn the OSD background On or Off.</li> </ul>
 <p><b>Memory Recall</b></p>	<p>Returns the adjustments back to factory settings if the display is operating in a factory Preset Timing Mode listed in this manual.</p> <p><b>NOTE:</b> This control does not affect changes made with the User Color control, Language Select, or Power Lock setting.</p>

# Installation Instructions

## Preparing for Installation

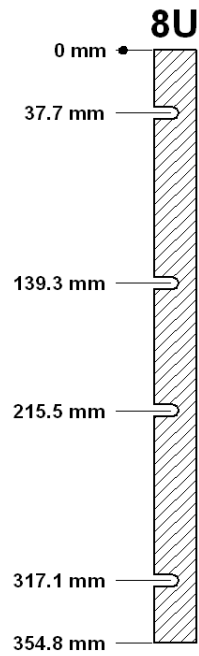
**Important! Perform the following steps BEFORE Installation of the monitor into the panel.**

1. Ensure that sufficient power is available.
2. Ensure that sufficient space is available to allow for proper air flow into and out of the unit.
3. Ensure that the air temperature around the unit (top and bottom) will not exceed the rated specifications of the unit.
  - **The maximum rated temperature of the HIS-RL17 is 50°C (122°F).**
  - ***Also, remember that even though this product is designed to operate at 50°C, the life span of any electronic device is shortened when it is consistently operated at high temperatures. Therefore it is wise to take steps to keep the temperature of the ambient air around the unit as low as possible.***
4. Ensure that the ambient humidity of the air around the unit does not exceed the rated specifications for the unit.
  - **The maximum rated humidity for the HIS-RL17 is 90% non-condensing.**
5. If the display will be mounted far from the computer using long cables or extender devices, the full configuration should be bench-tested prior to final installation for easy troubleshooting.

## Installation into Rack

Hope Industrial Systems' Rack Mount Monitors conform to Electronic Industries Association standard EIA-310-D. Our monitors will fit in type A, B, or C rack with a width of 19" (482.6 mm) (preferred EIA rack width).

The HIS-RL17 has a panel height of 8U.



# Touchscreen Driver Installation

The enclosed CD-ROM contains documentation and drivers for all major operating systems (touchscreen models only). To be sure you have the most current information, check the following Internet address:

[http://HopeIndustrial.com/Touchscreen\\_Drivers.htm](http://HopeIndustrial.com/Touchscreen_Drivers.htm)

# Cleaning

**CAUTION! DO NOT USE ABRASIVE MATERIALS SUCH AS PAPER TOWELS OR DIRTY SHOP RAGS ON THE DISPLAY AS IT WILL SCRATCH THE PROTECTIVE COATING. ALWAYS USE A SOFT CLOTH, PREFERABLY MADE OF COTTON.**

## **Resistive Touchscreen Model**

Any standard glass cleaner can be used to clean the touchscreen. Always spray the glass cleaner on the cloth or towel and then clean the touchscreen. Glass cleaner sprayed directly on the monitor could possibly leak inside a non-sealed unit and cause damage.

Vinegar or ammonia will not hurt the touchscreen. Again, spray the cloth and then clean the touchscreen.

## **Tempered Anti-Reflective Glass Window**

Use any standard glass cleaner as long as there is no abrasive or oily content. The anti-reflective coatings are physically part of the surface of the glass and resist degradation to the Military Specifications.

## **Acrylic Window**

Monitors with acrylic protective windows can be cleaned in the same manner as the touchscreen or glass window.

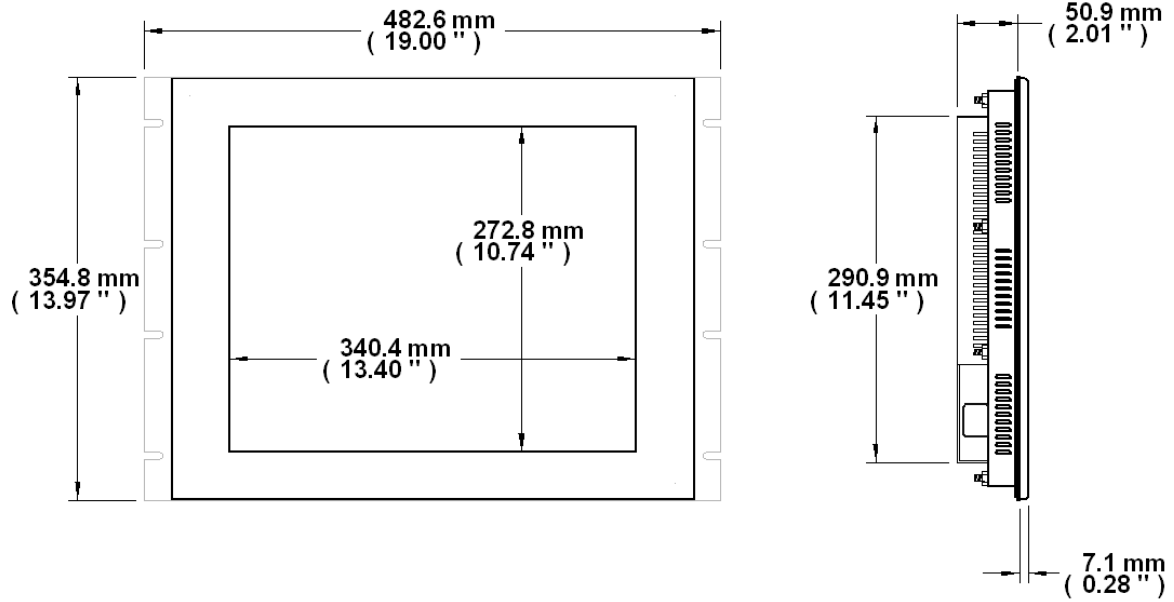
## Troubleshooting

Symptom	Check List	Solutions
<b>Blank Screen</b>	Is power on?	<p>Make sure the power button is ON.</p> <p>Make sure A/C power cord is securely connected to the monitor.</p> <p>Plug another electrical device into the power outlet to verify that the outlet is supplying proper voltage.</p>
<b>No image on the screen</b>	Do you see the "No Signal" message on screen?	Check the video connection from the monitor to the computer.
	If running Windows and the computer power is on, reboot the computer and watch for the initial boot and windows screen.	If you see the initial screens, then the image goes dark, the computer may be set to an incompatible resolution. Reboot the computer in safe mode and set the resolution and refresh rate of the graphics card to a compatible resolution
	Do you see the "Out of Range" message?	<p>This message displays when the signal from the computer exceeds the maximum resolution and frequency that the monitor can handle. (&gt; 1280 x 1024 resolution or &gt; 75 Hz refresh rate)</p> <p>Adjust the computer to a compatible resolution and refresh rate.</p>
	There is no image on the screen and the power LED is solid amber.	<p>The monitor is in Power Saver mode.</p> <p>Press a key on the keyboard to activate the monitor and restore the image on the screen.</p>
<b>Wrong or abnormal colors</b>	Are there missing colors or are colors incorrect?	<p>Check cable connection to make sure cables are securely connected. Make sure there are no loose or broken pins in the cable connector.</p> <p>Connect the monitor to another PC.</p>
<b>Image on screen is not perfect</b>	Many possible causes. Try the following solutions.	<ul style="list-style-type: none"> <li>• Make sure the PC display resolution matches one the factory preset timings shown in this manual.</li> </ul>

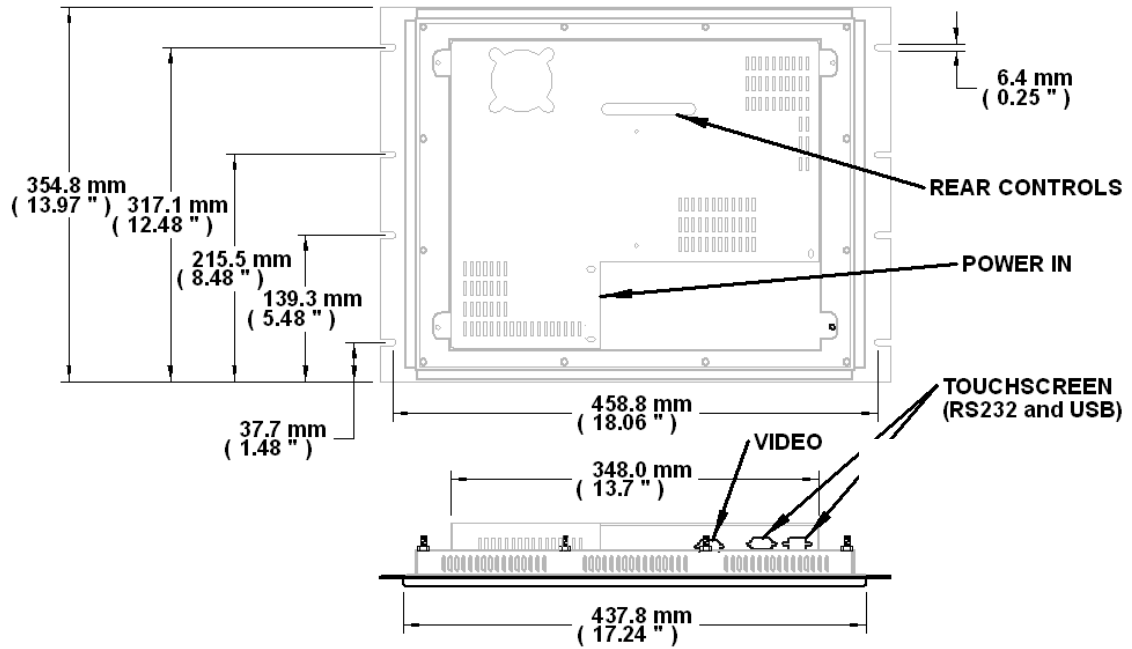
Symptom	Check List	Solutions
		<ul style="list-style-type: none"> <li>• Recall factory setting. Refer to OSD functions in this manual.</li> <li>• Fine tune the picture by manually adjusting image. Refer to OSD functions in this manual.</li> </ul>
<b>Rolling or unstable image on screen</b>	Many possible causes. Try the following solutions.	<ul style="list-style-type: none"> <li>• Press “Auto Adjust” button.</li> <li>• Change PC display resolution to 1280x1024 at 60 Hz refresh.</li> <li>• Make sure the PC display resolution matches one of the factory preset timings in this manual.</li> <li>• Unplug the power adapter to monitor and then plug it in again.</li> <li>• Press monitor power button again.</li> <li>• Reset the monitor to the original factory setting using the OSD.</li> </ul>

# Drawings

## Front and Side Views



## Rear and Bottom Views



# Specifications

## Display

Type	Thin-film transistor (TFT) Active Matrix Liquid Crystal
Size	17" (43 cm) diagonal
Image Size	13.3" (338 mm) x 10.6" (270 mm)
Native Resolution	SXGA (1280 x 1024, 5:4 aspect ratio)
Plug and Play	VESA DDC 2B
Minimum Resolution	640 x 350
Pixel Pitch	0.264 mm x 0.264 mm
Number of Colors	16.8 million
Viewing Angle (Hori/Vert)	170° / 155° (typical)
Brightness (white)	280 nits (cd/m <sup>2</sup> ) max
Contrast Ratio	600:1 (typical)
Backlight	Four CCFTs (Cold Cathode Fluorescent Tube); 50,000 hours brightness half-life; replaceable
Screen Protector (when not shipped with touchscreen)	Tempered glass to ANSI-Z97.1 SPEC; AR coated on both sides; 98% Transmission of light; 99% Reduction of glare; 53% UV blocking; 30% NIR Blocking

## Environmental

Temperature	0° to 50°C (32° to 122°F)
Humidity	20% to 90% non-condensing
Operating Shock	15 g, 6 msec, half-sine
Operating Vibration (sine)	1.0g, swept sine 9-200 Hz
Transport Vibration (random)	0.1g <sup>2</sup> / Hz, 10-200 Hz 0.03g <sup>2</sup> / Hz, 200-2000 Hz
Altitude	Operating: up to 10,000 feet; Non-operating: up to 40,000 feet

## Video

Input Connectors	HD-15 (optional BNC input; see "Input Signal Formats" for a list of compatible video signals)
Input Signal Formats	RGB Analog video, 0.7Vp-p Positive at 75 Ohms (+/- 5%), TTL Level (V high $\geq$ 2.0 V, V low $\leq$ 0.8 V) Compatible sync modes: Separate H/V sync, Combined sync, Sync on Green <b>Note:</b> NTSC/PAL composite input available (call for details)
Horizontal Scan	30 – 82 kHz
Vertical Scan	50 – 85 Hz
Optimum Resolution	1280 x 1024 @ 60 Hz
Maximum Resolution	1280 x 1024 @ 75 Hz
Response Rate	8 ms (typical)

## Electrical

Monitor Input	100/240 VAC, 0.6/0.3 A, 60/50 Hz
Power Consumption	36 W (typical)
Power Management	DPMS/energy star, < 1 W

## Compliances and Certifications

Electrical	UL 60950-1 / cUL Recognized Component (File No. E212889); FCC Class A; CE; UL 508A Listed (File No. E318630)
Environmental	RoHS
Enclosure	UL 50E (File No. E318630)

## Functional

Panel Controls	1, 2, Power, Down, Up
OSD (On Screen Display) Controls	Auto Image Adjust, Contrast/Brightness, Color Adjust, Information, Manual Image Adjust, Setup, Memory Recall
Touchscreen Option	5-wire resistive system; emulates a mouse; Serial RS-232 and USB interface to host computer

## Rack Compatibility

EIA Standard	EIA-310-D
Rack Width	482.6 mm (19.00") (preferred EIA width)
EIA Type Rack	A, B, or C
Mounting	8 Slots, 6.4 mm wide
Panel Height	8U, 13.97" (354.8 mm)
Enclosure Rating	NEMA 1

## Physical

Depth	2.0" (50.9 mm) behind bezel
Bezel	Black Powder-Coated Carbon Steel
Front Bezel outside dimensions	19.00" (482.6 mm) W x 13.97" (354.8 mm) H
Net Weight	16 lbs.
Shipping Weight	20 lbs.

## VGA Pin Assignment

Pin No.	Signal	Pin No.	Signal
1	Red	9	No pin
2	Green	10	Ground
3	Blue	11	Ground
4	Ground	12	SDA
5	Ground	13	H. sync
6	Ground	14	V. sync
7	Ground	15	SCL
8	Ground		

## Factory Preset Timing

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.00	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.00	+/+
VESA, 1280 x 960	60.000	60.000	108.00	+/+
<b>VESA, 1280 x 1024*</b>	63.981	60.020	108.00	+/+
<b>VESA, 1280 x 1024*</b>	79.976	75.025	135.00	+/+

\* Factory recommended timings for best picture quality

# Warranty Statement

## **Who is Covered?**

This warranty covers the purchaser of this product only and is not transferable without our written consent.

## **What Does This Warranty Cover and What is the Period of Coverage?**

We warrant this product to be free from defects in material and workmanship, subject to the conditions set forth below. The warranty on all industrial display products and KB-R2-EXT series keyboards remains in force for a three year period beginning on the date we invoice you. The warranty period on KB-PL1 keyboards is two years, and all other keyboards carry a one year warranty. If HIS repairs or replaces a product under warranty, its warranty term is not extended.

## **What Will We Do to Correct Problems and How Do You Get Service?**

We will repair or replace (at our sole option) any part of the unit which proves to be defective. Replacement parts may be new or refurbished and will meet the same specifications of the original parts or unit. We will return the product to you by the shipping method we choose in the U.S.A. at our expense. You must pay for shipments to locations outside of the U.S.A. In order to receive warranty service you must get prior approval from HIS. To request warranty service you can telephone us at 678-762-9790 or send an email to support@HopeIndustrial.com. If we determine that warranty service is needed we will give you a Return Material Authorization (RMA) number. This RMA number must be conspicuously marked on the outside of the shipping box. HIS will not accept shipments not accompanied by the RMA number. You must ship or deliver the product to HIS Freight prepaid.

## **What Does This Warranty Not Cover?**

This warranty does not cover equipment which has been damaged due to misuse, abuse or accident such as: operating the equipment outside of published specifications; exposure to chemicals or gases not covered by specified NEMA standards; displaying fixed images for long periods of time resulting in afterimage effects; improper or unauthorized repair by anyone other than HIS or a service agency authorized by HIS to perform such repairs; fire, flood, "acts of God", or other contingencies beyond the control of HIS.

HIS' responsibility for malfunctions and defects in hardware is limited to repair and replacement as set forth in this warranty statement. HIS shall not be liable for direct, indirect, incidental, consequential, or other types of damages resulting from the use of any HIS product other than the liability stated above. These warranties are in lieu of all other warranties express or implied, including, but not limited to, the implied warranties of merchantability or fitness for a particular purpose. Some states do not allow the exclusion of implied warranties or the limitation or exclusion of liability for incidental or consequential damages so the above exclusions or limitations may not apply to you. You are cautioned that the performance of this product can be affected by many factors, such as system configuration, software, application, and operator control of the system. It is your responsibility to determine suitability of this product for your purpose and application.

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**Hope Industrial Systems, Inc.**

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