



# *User Manual*

## 15" Panel Mount Industrial Monitor Revision D

Model Numbers: HIS-ML15- \_\_\_ \_ D



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## **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 no limited to nuclear reactor control, aerospace navigation systems and life support systems are not appropriate for this product.**

**This product is intended to be mounted in a suitable cabinet or other enclosure. The NEMA 4, 4x or 12 ratings are applicable only when properly installed in a like rated enclosure.**

**This product is a UL Recognized Component 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.

## 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	-/+
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	+/+
<b>*VESA, 1024 x 768</b>	<b>48.363</b>	<b>60.004</b>	<b>65.000</b>	<b>-/-</b>
<b>*VESA, 1024 x 768</b>	<b>56.476</b>	<b>70.069</b>	<b>75.000</b>	<b>-/-</b>
<b>*VESA, 1024 x 768</b>	<b>60.023</b>	<b>75.029</b>	<b>78.750</b>	<b>+/+</b>

\* Factory recommended timings for best picture quality

## Control Panel Buttons and Indicators

Control Panel Button	Mode	Description
<b>MENU</b>	Always	Opens the OSD menu. Also used to exit the OSD menu or return to the previous menu.
	When the OSD Menu is NOT Displayed	<p><b>MagicBright</b></p> <p>Provides an optimum viewing environment depending on the contents of the image you are watching. Currently four different modes are available. Each mode has its own pre-configured brightness value. You can easily select one of four settings by simply pressing MagicBright control buttons.</p> <ol style="list-style-type: none"> <li>1) <b>Text:</b> Normal Brightness For documentation or work involving heavy text.</li> <li>2) <b>Internet:</b> Medium Brightness For working with a mixture of images such as text and graphics.</li> <li>3) <b>Entertain:</b> High Brightness For watching motion pictures such as a DVD or VCD.</li> <li>4) <b>Custom</b> Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the Brightness and Contrast using the OSD menu.</li> </ol>
	When the OSD Menu is Being Displayed	Adjusts items in the menu <b>DOWN</b> .

<b>Control Panel Button</b>	<b>Mode</b>	<b>Description</b>
	When the OSD Menu is NOT Displayed	Push to adjust brightness.
	When the OSD Menu is Being Displayed	Adjusts items in the menu <b>UP</b> .
<b>ENTER</b>	When the OSD Menu is Being Displayed	Activate a highlighted menu item.
<b>AUTO</b>	Always	Use this button for auto adjustment of the display.
<b>POWER</b>		Use this button to turn the monitor on and off.
<b>POWER INDICATOR</b>		This light glows green during normal operation, and blinks green once as the monitor saves your adjustments.

## Direct Functions

Menu	Description
<b>AUTO</b>	<p>When the 'AUTO' button is pressed, the Auto Adjustment screen appears as shown in the animated screen on the center. Auto adjustment allows the monitor to self-adjust to the incoming video signal. The values of fine, coarse and position are adjusted automatically.</p> <p>To make the automatic adjustment function sharper, execute the 'AUTO' function while the AUTO PATTERN is on.</p> <p><b>IMPORTANT NOTE: LOCKING CONTROL PANEL BUTTONS</b></p> <p>The control panel buttons can be <u>locked</u> by simultaneously pressing the AUTO and MENU buttons for 5 seconds. Repeating this operation will <u>unlock</u> the buttons.</p>

Menu	Description
<b>MagicBright</b>	Push the MagicBright repeatedly to circle through four available pre-configured modes.
<b>Brightness</b>	Adjust brightness.

# OSD Functions

**Important Note: Except for Brightness and Contrast, all of these functions are automatically set by using the AUTO Button.**

## Picture

Menu	Description
Brightness	<b>Direct Access Feature:</b> When OSD is not on the screen, push the button to adjust brightness.
Contrast	Adjust the contrast.

## Color

Menu	Description
Color Tone	The tone of the color can be changed and one of four modes can be selected – Cool, Normal, Warm and Custom.
Color Control	Follow these steps to adjust individual R,G,B color balance.
Gamma	Select one of three pre-defined gammas.

## Image

Menu	Description
Coarse	Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it the center using the Horizontal Control menu.
Fine	Removes noise such as horizontal stripes. If the noise persists even after fine tuning, repeat it after adjusting the frequency (clock speed).
Sharpness	Sets the clearness of the image.
H-Position	Changes the horizontal position of the display.
V-Position	Changes the vertical position of the display.

## On-Screen Display (OSD)

Menu	Description
Language	Changes the language used in the Menu.
H-Position	Changes the horizontal position of the OSD.
V-Position	Changes the vertical position of the OSD.
Transparency	Changes the translucency of the background of the OSD.
Display Time	The menu will automatically turn off if no adjustments are made for a certain time period. You can set the amount of time the menu will wait before it turns off.

## Setup

Menu	Description
Image Reset	Image parameters are replaced with the factory default values.
Color Reset	Color parameters are replaced with the factory default values.

## Information

Menu	Description
Information	Shows the video source and display mode.
Color Reset	Color parameters are replaced with the factory default values.

# 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-ML15 is 50°C (132°F)***

→ ***Remember that heat rises – the temperature at the top of the cabinet will be much hotter than at the bottom when the air is not circulating.***

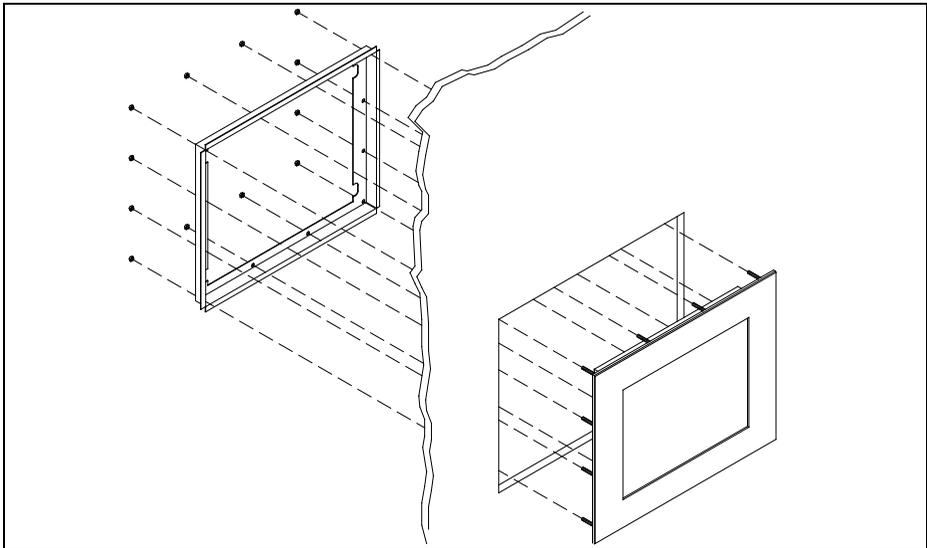
→ ***Also, remember that even though this product is designed to operate at 50°C, the life span of any electronic device is shortened when it is consistently operated at high temperatures. Therefore it is wise to take steps to keep the temperature of the ambient air around the unit as low as possible.***

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-ML15 is 90% non-condensing***

## Installation into Panel

1. Refer to the drawing below.
2. Locate position in panel for mounting of the monitor. Assure that there is adequate space begin the panel. Allow extra space (0.5 in. behind and on each side) for air ventilation.
3. Cut a rectangular hole in the panel. Clean and deburr.  
Dimensions: 16.02" (406mm) W x 12.72" (323mm) H ; +/- .020"
4. Separate the rear collar from the unit by removing the 12 nuts.
5. Insert the unit into the front of the panel and re-attach the collar.
6. Tighten all 12 nuts to a torque of 24 inch-pounds to assure a water-tight seal between the poron bezel gasket on the monitor and equipment panel. *HIS will not assume liability for damage to internal electronics due to improper installation.*



## **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 Bezel**

The acrylic front bezel can be cleaned in the same manner as the touchscreen or glass window.

# Troubleshooting

## Blank Screen

After installing the power adapter and connecting I/O cable to a PC, the monitor displays a blank screen.

- Press the power button and check to see if the power LED is lit.
- If the LED turns green, make sure the PC is powered on. Make sure all cables are connected.
- If the LED turns orange, check to see if the PC is in the power saving mode by pressing any keys on the keyboard.

## Rolling Screen

- Change PC display resolution to 1280x1024 at 60 Hz refresh.
- Unplug the power adapter to monitor and then plug it in again.
- Press monitor power button again.
- Reset the monitor to the original factory setting.
- Press “Auto” button.

## Unstable Screen

- Press the “Auto” button.
- Make sure the PC display resolution is not set greater than 1280x1024 at 75hz.
- Make sure the PC display resolution matches one of the factory preset timings in this manual.
- Change the PC display resolution to 1024x768 at 60hz.
- Reset the monitor to the factory setting.
- Press the “Auto” button.

## Screen is not perfect

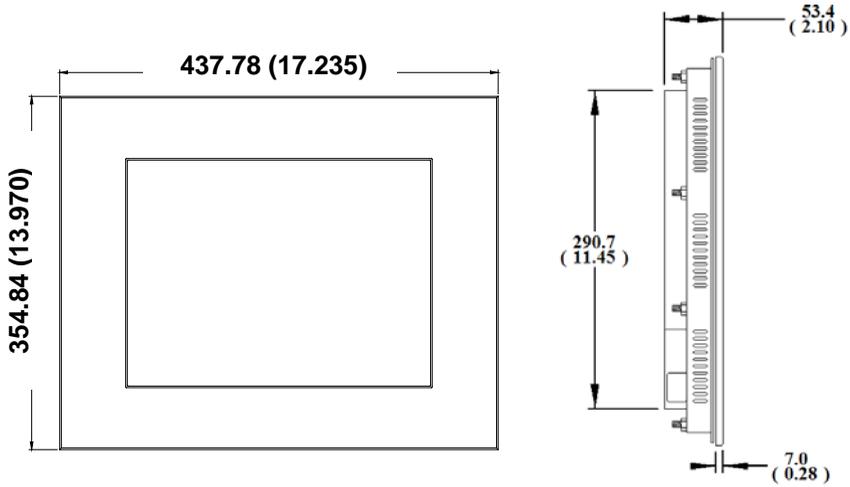
- Make sure the PC display resolution matches one the factory preset timings shown in this manual.
- Recall factory setting. Refer to panel controls and OSD functions in this manual.
- Fine tune the picture by performing the following adjustments in this order – pitch, phase, and position. Refer to OSD functions in this manual.

## Auto Adjustment Locked

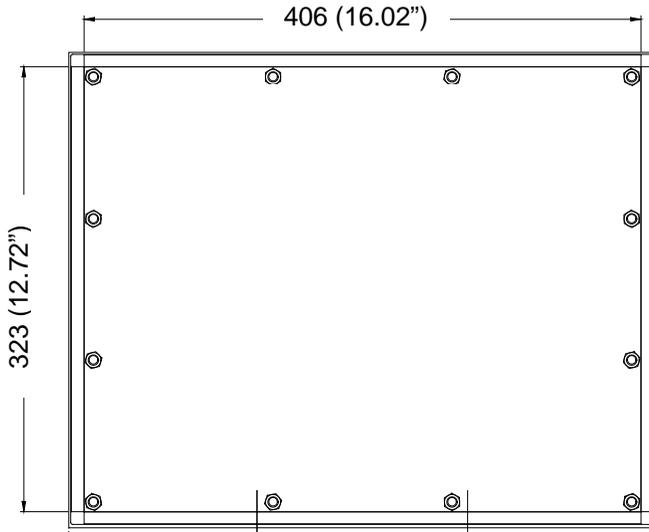
- To unlock press the MENU and AUTO buttons simultaneously for at least 5 seconds. (see page 7)

# Drawings

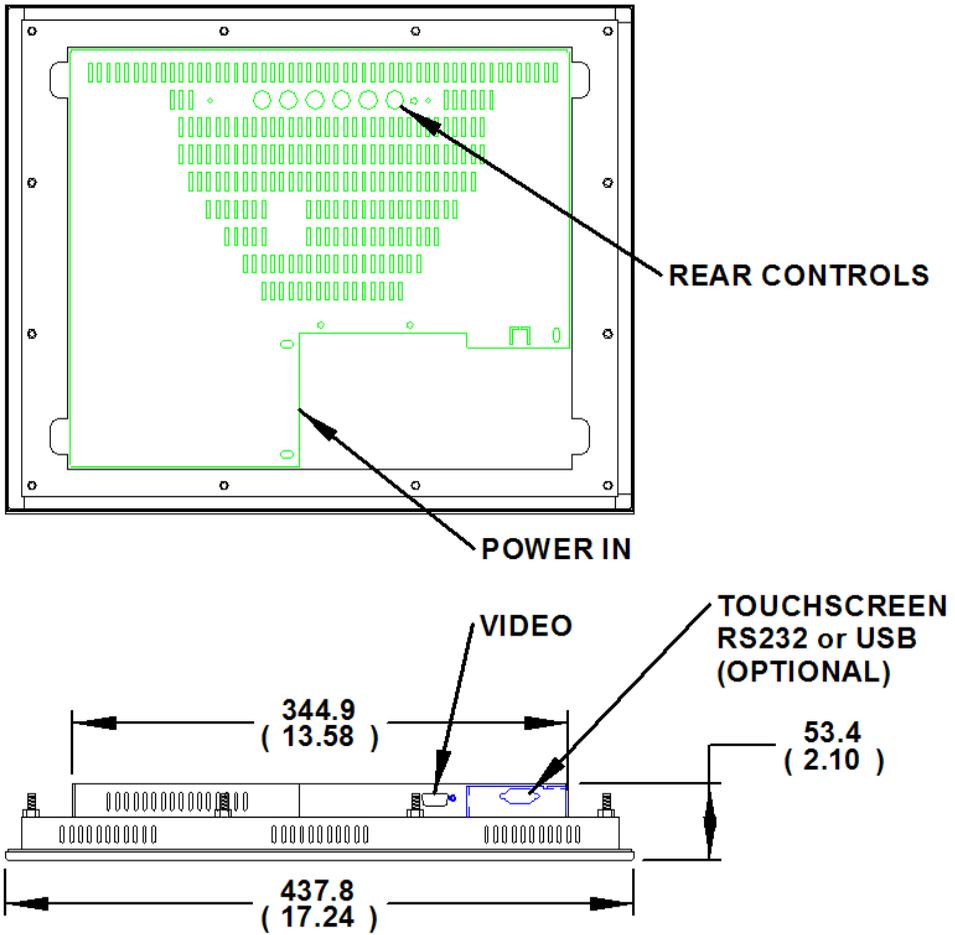
## Front and Side Views



## Rear View (Showing Cutout Dimensions)



## Rear and Bottom Views



## Specifications

### Display

Type	Thin-film transistor (TFT) Active Matrix Liquid Crystal
Size	15" diagonal
Image size	12.0" (304mm) x 9.0" (228mm)
Native resolution	XGA (1024 x 768)
Plug and Play	DDC1/2B compatible
Minimum resolution	VGA (640 x 480)
Pixel pitch	0.297mm x 0.297mm
Number of colors	16 million
Viewing Angle (Hori/Vert)	140° / 110°, typical
Brightness (white)	250 nits (cd/m <sup>2</sup> ) max
Contrast ratio	450:1 (typical)
Back light	Two CCFTs (Cold Cathode Fluorescent Tube); 35,000 hours brightness half-life; replaceable
Screen protector (when not shipped with touch-screen)	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; proprietary hydrophobic coating on outside reduces fingerprint smears, repels liquid spills and makes glass easy to clean.

### Video

Input connector	HD-15 (optional BNC input)
Input signal format	RGB Analog video 0 – 0.7V p-p – sep V and H, combined sync, sync on green
Horizontal scan	30kHz – 61kHz
Supported Video Standards	Std VGA – 640x480 @ 60Hz SVGA – 800x600 @ 60Hz XGA – 1024x768 @ 60Hz (Native)
Vertical scan	56Hz – 75Hz
Response rate (typical)	16ms

## Electrical

Monitor input	90VAC – 264VAC, 50/60Hz (+/- 3Hz)
Power consumption	Less than 25W
Power management	DPMS/energy star, < 1W
Compliance	UL 1950, cUL 959; FCC Class A

## Environmental

Temperature	0-50°C (consult factory for installation instructions when continuous 24/7 operation exceeds 40°C)
Humidity	20% to 90% non-condensing
Shock	30g (1/2 sine, 11 msec.)
Vibration	0.006 inch p-p 15-57Hz, 1.0g 57-640Hz sine
Altitude	Operating: up to 10,000 feet; Non-operating: up to 40,000 feet

## Functional

Panel controls (rear access)	Menu, MagicBright, Brightness, Adjust, Enter, Auto, Power, Power Indicator
OSD (On Screen Display) controls	Brightness, contrast, color tone, color control, gamma, coarse, fine, sharpness, H-position, V-position, OSD language, OSD H-position, OSD V-position, OSD transparency, OSD display time, image reset, color reset, information
Touch screen option	5-wire resistive system; emulates a mouse; Serial RS-232 or USB interface to host computer

## Enclosure

Type	Panel mount; rear collar compresses gasket against panel, held by 12 M5 studs
Panel rating	NEMA 12/4/4X (with proper installation) – built to IP65 standards

## Physical

Depth	1.8" behind panel maximum
Bezel	Powder coated carbon steel – matte finish, black; or Stainless Steel
Front bezel outside dimensions	17.2" (437mm) W x 13.97" (355mm) H x 0.28" thick (not including gasket)
Cutout dimensions	16.02" (406mm) W x 12.72" (323mm) H ; +/- .020"
Net weight	15 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		

## 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. This warranty remains in force for a three-year period beginning on the date we invoice you for the product. 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 770-992-0297 or send an email to [service@HISmonitors.com](mailto:service@HISmonitors.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; 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.

