User Manual

17" Rack Mount Industrial Monitor
Revision D

Model No. HIS-RL17- _ _ _ 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 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.

Control Panel Buttons and Indicators

Control Panel Button	Mode	Description
OSD Menu	Always	Opens the On-Screen Display (OSD) menu. Also used to exit the OSD menu or to return to the previous menu.
Customized Key/ Down	When the OSD Menu is NOT Displayed	Performs a custom function selected by the user. To configure the customized function: OSD Menu > Setup > Customized Key Select from one of three custom functions: • MagicBright • MagicColor • Color Effect
	When the OSD Menu is Being Displayed	Scrolls down and adjusts items in the menu **DOWN.**
Up/Brightness Adjust	When the OSD Menu is NOT Displayed	Push to adjust brightness.
	When the OSD Menu is Being Displayed	Scrolls up and adjusts items in the menu **UP.**
Enter	When the OSD Menu is Being Displayed	Activates a highlighted menu item.

Control Panel Button	Mode	Description
Auto Adjust AUTO	Always	Use this button for auto adjustment of the display. Auto adjustment allows the monitor to self-adjust to the incoming video signal. The values of fine, coarse and position are adjusted automatically. Auto adjustment will also occur automatically each time the computer resolution is changed.
Power		Use this button to turn the monitor on and off.
Power Indicator		This light glows blue during normal operation, and blinks blue when the monitor is in Stand by.

On Screen Display Functions

Picture

Menu	Description
Brightness	Adjusts the brightness. **Direct Access Feature**: When OSD is not on the screen, push the ⊕ button to adjust the brightness.
Contrast	Adjusts the contrast.
MagicBright	Provides an optimum viewing environment depending on the contents of the image on screen. There are six modes available, each with its own pre-configured brightness value: 1) **Custom:** Allows manual configuration of brightness and contrast using the OSD menu 2) **Text:** For content involving heavy text 3) **Internet:** For working with a combination of text and graphics; this is generally the best setting for industrial HMI applications 4) **Game:** For watching motion pictures, such as a game 5) **Sport:** For watching motion pictures, such as a sport 6) **Movie:** For watching motion pictures, such as a DVD or Video CD

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Color

Menu	Description
MagicColor	Improves digital image and displays natural color more clearly without disturbing the image quality. There are four modes available: 1) **Off:** Disables the MagicColor feature 2) **Demo:** Displays a split screen—on the right is the screen *before* applying MagicColor and on the left is the screen *after* applying MagicColor 3) **Full:** Displays vivid natural color and more realistic natural skin color, with enhanced clarity 4) **Intelligent**: Displays vivid natural color with enhanced clarity
Color Tone	The color tone can be changed to one of four modes: 1) **Cool:** Makes whites bluish 2) **Normal:** Keeps whites white 3) **Warm:** Makes whites reddish 4) **Custom:** Manually adjust the image
Color Control	Adjusts individual Red, Green, and Blue color balance.
Color Effect	Applies a color filter to the screen image. Select one of five modes: 1) **Off:** Disables the Color Effect (default setting) 2) **Grayscale:** Applies a grayscale filter 3) **Green:** Applies a green color filter 4) **Aqua:** Applies an aqua color filter 5) **Sepia:** Applies a sepia color filter
Gamma	Gamma correction changes the luminance of the colors with intermediate luminance. Select one of three pre-defined gammas: • **Mode 1:** Shows normal gamma • **Mode 2:** Shows higher gamma (brighter) • **Mode 3:** Shows lower gamma (darker)

Image

Menu	Description
Coarse	Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it to the center using the Horizontal Control menu.
Fine	Removes noise such as horizontal stripes. If the noise persists after fine tuning, repeat it after adjusting the frequency (refresh rate) on your computer video adapter.
Sharpness	Adjusts the clarity 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 OSD menu.
H-Position	Changes the horizontal position of the OSD menu.
V-Position	Changes the vertical position of the OSD menu.
Transparency	Changes the translucency of the background of the OSD.
Display Time	The OSD menu will automatically turn off if no adjustments are made for a certain time period. You can set the amount of time that the menu will wait before it turns off. Select from one of four times: • **5 seconds** • **10 seconds** • **20 seconds (default)** • **200 seconds**

Setup

Menu	Description
Reset	Returns settings to factory defaults.
Customized Key	Allows you to specify a function to activate when the Customized Key 🔲▼ is pressed. Select from one of three function options: • **MagicBright** • **MagicColor** • **Color Effect**
Off Timer	Allows you to set a time for the monitor to turn off automatically. The default is set for ten hours.

Information

Menu	Description
Information	Shows the video source and display mode.

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 <u>sufficient space</u> is available to allow for <u>proper air flow</u> into and out of the unit.

3. Ensure that the air temperature around the unit (top and bottom) <u>will not exceed the rated specifications of the unit</u>.

   → **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 <u>does not exceed the rated specifications for the unit.</u>

   → **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.

8U

0 mm
37.7 mm
139.3 mm
215.5 mm
317.1 mm
354.8 mm
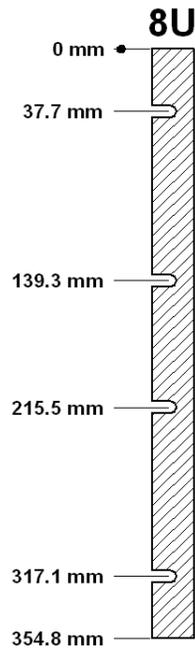
Touchscreen Driver Installation

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://HISmonitors.com/Touchscreen_Drivers.htm

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

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

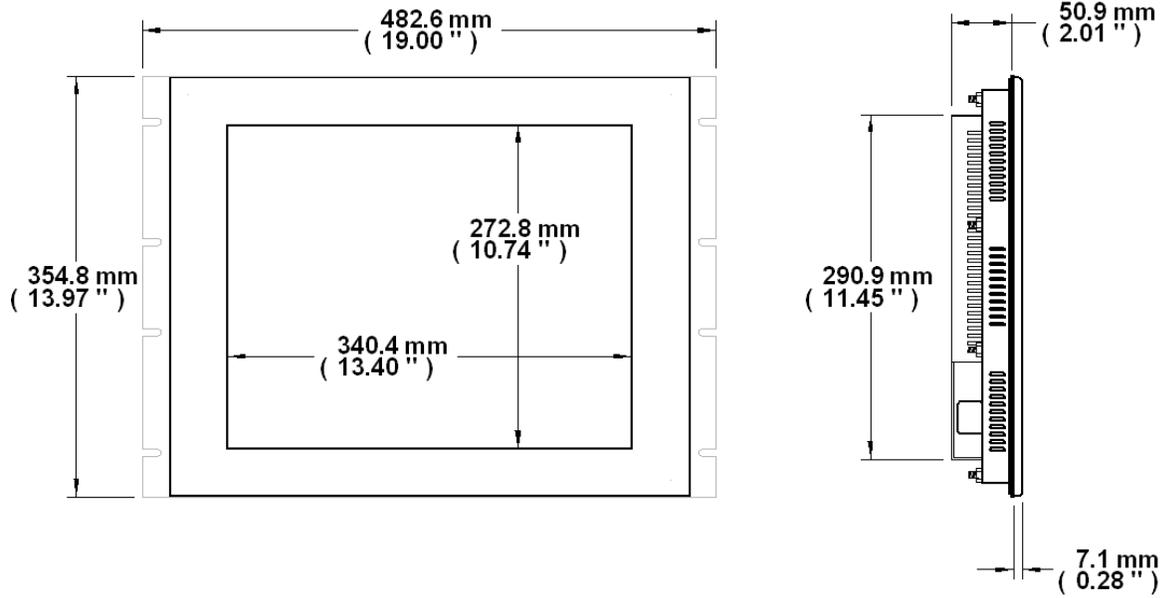Monitors with acrylic protective windows can be cleaned in the same manner as the touchscreen or glass window.

Troubleshooting

Symptom	Check List	Solutions
No image on the screen	Do you see the "Check Signal Cable" 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 "Not Optimum Mode, Recommended Mode 1280 x 1024 60 Hz" message?	This message displays when the signal from the computer exceeds the maximum resolution and frequency that the monitor can handle. (> 1280 x 1024 resolution or > 75 Hz refresh rate) Adjust the computer to a compatible resolution and refresh rate.
	There is no image on the screen and the power LED is blinking at 1 second intervals.	The monitor is in Power Saver mode. Press a key on the keyboard to activate the monitor and restore the image on the screen.
The screen shows strange colors or displays in black and white	Is the screen tinted to one color as if looking at the screen through cellophane paper?	This occurs if not all signal cable connectors are making contact. Check the signal cable connection.

Symptom	Check List	Solutions
Image on screen is not perfect	Many possible causes. Try the following solutions.	• Make sure the PC display resolution matches one the factory preset timings shown in this manual. • Recall factory setting. Refer to OSD functions in this manual. • Fine tune the picture by performing the following adjustments in this order – coarse, fine, and position. Refer to OSD functions in this manual.
Rolling or unstable image on screen	Many possible causes. Try the following solutions.	• Press "Auto Adjust" button. • Change PC display resolution to 1280x1024 at 60 Hz refresh. • Make sure the PC display resolution matches one of the factory preset timings in this manual. • 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 using the OSD.

Drawings

Front and Side Views

482.6 mm
(19.00 ")

272.8 mm
(10.74 ")

354.8 mm
(13.97 ")

340.4 mm
(13.40 ")

50.9 mm
(2.01 ")

290.9 mm
(11.45 ")

7.1 mm
(0.28 ")

Rear and Bottom Views

354.8 mm
(13.97 ")   317.1 mm
(12.48 ")

215.5 mm
(8.48 ")

139.3 mm
(5.48 ")

37.7 mm
(1.48 ")

6.4 mm
(0.25 ")

REAR CONTROLS

POWER IN

TOUCHSCREEN
(RS232 and USB)

458.8 mm
(18.06 ")

VIDEO

348.0 mm
(13.7 ")

437.8 mm
(17.24 ")

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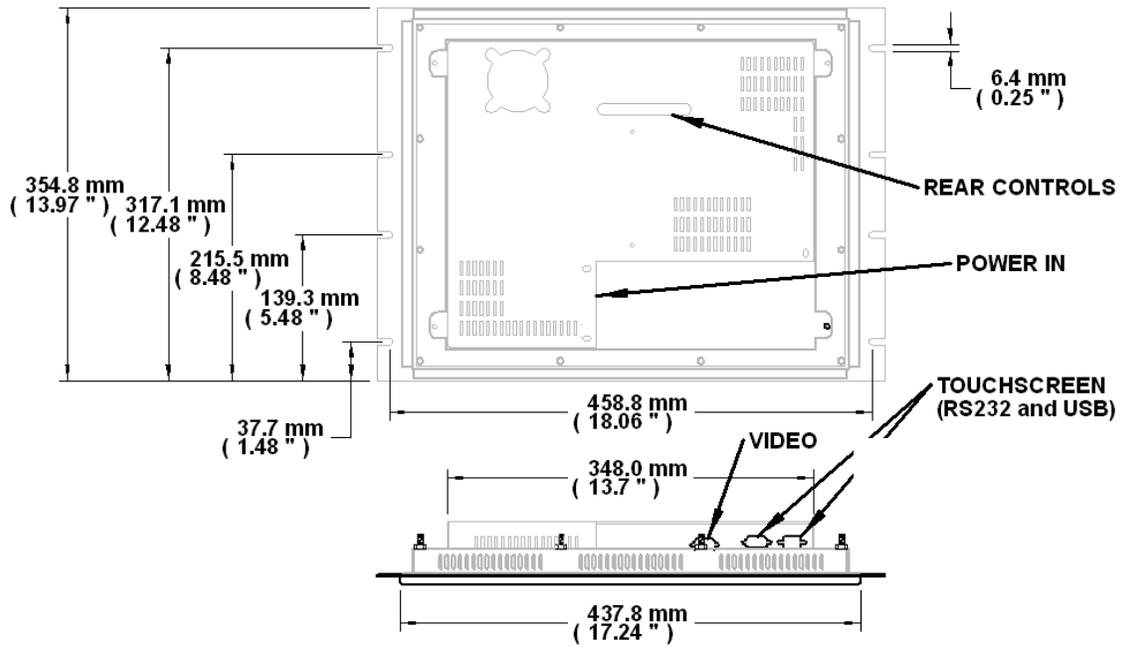
Specifications

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° / 160° (typical)
Brightness (white)	300 nits (cd/m^2) max
Contrast Ratio	1000:1 (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) (consult factory for installation instructions when continuous 24/7 operation exceeds 40°C / 104°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^2 / Hz, 10-200 Hz 0.03g^2 / 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 ≥ 2.0 V, V low ≤ 0.8 V) Compatible sync modes: Separate H/V sync, Combined sync, Sync on Green **Note:** NTSC/PAL composite input available (call for details)
Horizontal Scan	30 – 81 kHz
Vertical Scan	56 – 75 Hz
Optimum Resolution	1280 x 1024 @ 60 Hz
Maximum Resolution	1280 x 1024 @ 75 Hz
Response Rate	5 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	OSD Menu, Customized Key / Down, Up / Brightness Adjust, Enter, Auto Adjust, Power, Power Indicator
OSD (On Screen Display) Controls	Picture, Color, Image, OSD, Setup, Information
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	2.01" (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	+/+
VESA, 1280 x 1024*	63.981	60.020	108.00	+/+
VESA, 1280 x 1024*	79.976	75.025	135.00	+/+

* Factory recommended timings for best picture quality

Warranty Statement

<u>Who is Covered?</u>
This warranty covers the purchaser of this product only and is not transferable without our written consent.

<u>What Does This Warranty Cover and What is the Period of Coverage?</u>
The warranty remains in force for a three year period beginning on the date we invoice you for the product unless it is a keyboard, for which the warranty period is one year. If HIS repairs or replaces a product under warranty, its warranty term is not extended.

<u>What Will We Do to Correct Problems and How Do You Get Service?</u>
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 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.

<u>What Does This Warranty Not Cover?</u>
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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