



# *User Manual*

## 12" Industrial LCD Monitor

Model No. HIS-ML12-SXA



## ***TABLE OF CONTENTS***

Safety and Regulation Information .....	3
Factory Preset Timing.....	4
Panel Controls and OSD Functions.....	5
OSD Function Descriptions .....	6
Installation Instructions .....	7
Cleaning .....	9
Troubleshooting.....	10
Drawings .....	11
Specifications .....	13
Warranty Statement.....	16

## **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

If the selected timing is NOT included in the table below, the monitor will use the most suitable available timing.

Resolution	Horizontal Freq. (KHz)	Vertical Freq. (Hz)	Pixel Frequency (MHz)	Mode
640 x 350	31.469	70.087	25.175	VGA-350
640 x 400	31.469	70.087	25.175	VGA-400-GRAPH
640 x 480	31.469	59.940	25.175	VGA-480
640 x 480	37.861	72.809	31.500	VESA-480-72Hz
640 x 480	37.500	75.000	31.500	VESA-480-75Hz
720 x 400	31.469	70.087	28.322	VESA-400-TEXT
800 x 600	35.156	56.250	36.000	SVGA
<b>* 800 x 600</b>	<b>37.879</b>	<b>60.317</b>	<b>40.000</b>	<b>VESA-600-60Hz</b>
<b>* 800 x 600</b>	<b>48.077</b>	<b>72.188</b>	<b>50.000</b>	<b>VESA-600-72Hz</b>
<b>* 800 x 600</b>	<b>46.875</b>	<b>75.000</b>	<b>49.500</b>	<b>VESA-600-75Hz</b>

\* Factory recommended timing for best picture quality

## Panel Controls and OSD Functions

Controls	Description
DC On/Off switch*	Press the power switch to turn the monitor ON/OFF
Menu Button	Pressing the menu button the first time brings up the OSD (On Screen Display) menu.
Plus (+) and Minus (-) Buttons	The + and – buttons select the function. Press the menu button again to enter the function item to be adjusted. Then the + and – buttons increase and decrease the function setting.

### Power Indicator

- GREEN ..... ON
- YELLOW ..... SUSPEND
- OFF ..... OFF

\* **Note:** This unit has “Energy Star” capability – you can leave device power in the on state when the computer is powered off.

## OSD Function Descriptions

FUNCTION	DESCRIPTION
Brightness	101 scales of brightness are available to choose from (0 to 100)
Contrast	256 scales of contrast are available (0 to 255)
H. Position	For adjustment of the display's horizontal position.
V. Position	For adjustment of the display's vertical position.
Phase	32 scales are available to adjust the focus and clarity of the display (0 to 31).
Clock	This function provides a frequency-tracking feature that allows the user to have better stability and clarity. Increasing the Clock value can be up to 64 settings. The number of decreasing Clock (minus) is dependent on the video signal timing.
Auto Adjustment	This function will adjust the display size automatically to fit the full screen.
OSD H. Position	For moving the OSD menu window horizontally.
OSD V. Position	For moving the OSD menu window vertically.
Graphics Text	Provides ability for the operator to choose a display that allows maximum graphics text quality. The resolution selection can either be 640x400 or 720x400. Please refer to Standard Timing Table for different timing modes.
Recall	Will force all adjusted parameters to factory-preset values.
Language	Five OSD language options are available: English, German, French, Spanish and Italian.
Color Temp.	Push the (+ -) buttons to select different color temperatures. 9300 – CIE coordinated Color Temperature of 9300°K 6300 – CIE coordinated Color Temperature of 6500°K USER – Three colors (Red, Green, Blue) can be adjusted from the OSD menu.
Save + Exit	Saves the values of this setting and exits the OSD menu function.

# 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-ML12 is 50 °C (122 °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.*

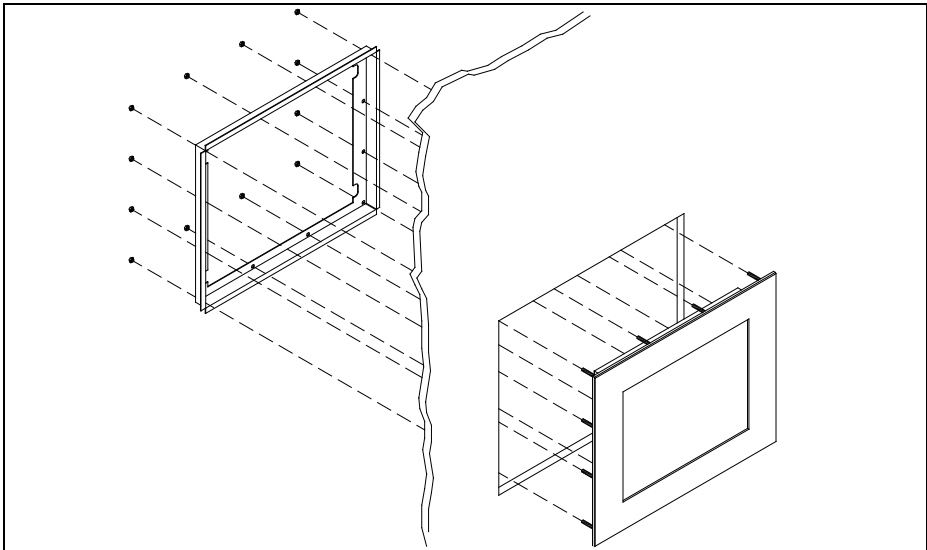
→ *Also, remember that even though this product is designed to operate at 50 °C, the life span of any electronic device is shortened when it is consistently operated at high temperatures. Therefore it is wise to take steps to keep the temperature of the ambient air around the unit as low as possible.*

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: 12.12" (308mm) W x 10.35" (263mm) H ; +/- .020"
4. Separate the rear collar from the unit by removing the 8 nuts.
5. Insert the unit into the front of the panel and re-attach the collar.
6. Tighten all 8 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

## **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 800x600 at 60hz.
- Unplug the power adapter to monitor, then plug it in again.
- Press monitor power button again.
- Reset the monitor to the original factory setting.
- Press “Auto” button.

## Unstable Screen

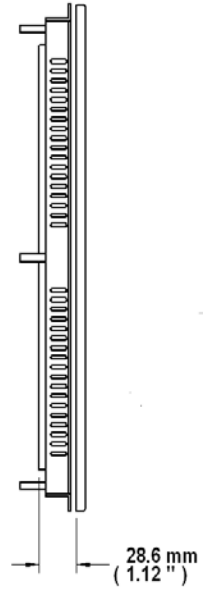
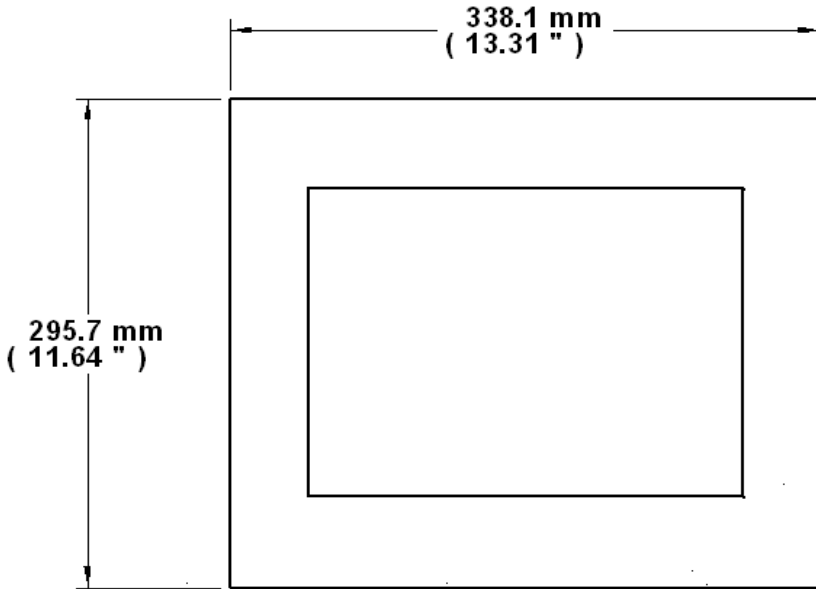
- Press the “Auto” button.
- Make sure the PC display resolution is not set greater than 800x600 at 75hz.
- Make sure the PC display resolution matches one of the factory pre-set timings in this manual.
- Change the PC display resolution to 800x600 at 60hz.
- Reset the monitor to the factory setting.
- Press the “Auto” button.

## Screen is not perfect

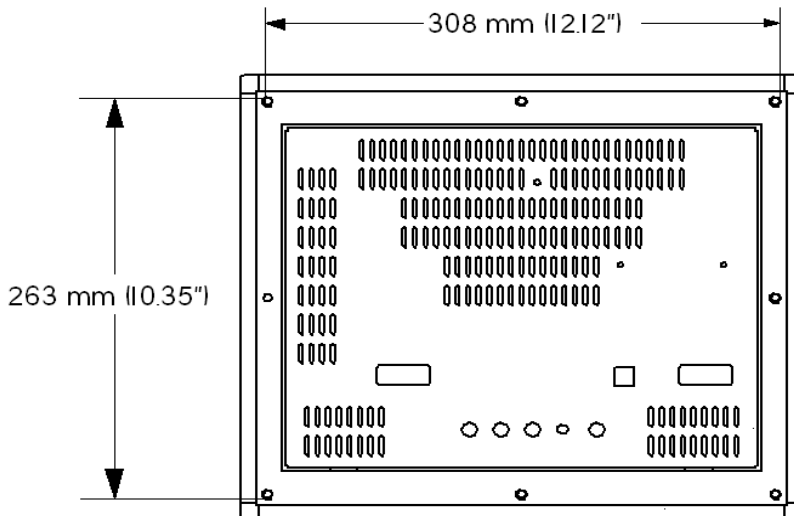
- Make sure the PC display resolution matches one the factory preset timings shown in this manual.
- Recall factory setting. Refer to panel controls and OSD functions in this manual.
- Fine tune the picture by performing the following adjustments in this order – pitch, phase, and position. Refer to OSD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

# Drawings

## Front and Side Views



## Rear View (showing Cutout Dimensions)



# Specifications

## Display

Type	Thin-film transistor (TFT) Active Matrix Liquid Crystal
Size	12.1" diagonal
Image size	9.7" (246mm) W x 7.3" (184.5mm) H
Native resolution	SVGA (800 x 600)
Plug and Play	DDC1/2B compatible`
Minimum resolution	VGA (640 x 480)
Pixel pitch	0.3075mm x 0.3075mm
Number of colors	16 million
Viewing Angle (Hori/Vert)	100° / 60°, typical
Brightness (white)	340 nits (cd/m <sup>2</sup> ) max
Contrast ratio	300:1 (typical)
Back light	Two CCFTs (Cold Cathode Fluorescent Tube); 50,000 hours, 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	31kHz – 38kHz
Supported Video Standards	Std VGA – 640x480 @ 60Hz SVGA – 800x600 @ 60Hz
Vertical scan	60Hz – 75 Hz
Response rate (typical)	30ms rising, 20ms falling

## Electrical

Power Adapter Input	100VAC – 240VAC, 50-60 Hz
Power adapter output	12VDC @ 2.5 amps
Monitor input	12VDC
Power consumption	Approximately 30 watts
Power management	DPMS/energy star, < 3W
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)	DC Power Switch, DC Power-On Indicator, Menu Button, Plus (+) and Minus (-) Buttons
OSD (On Screen Display) controls	Brightness, Contrast, H. Position, V. Position, Phase, Clock, Auto Adjustment, OSD H/V Position, Graphics Text, Recall, Language, Color Temperature, Save+Exit
Touch screen option	Elo Touch systems AccuTouch 5-wire resistive system; emulates a mouse; RS-232 interface to host computer

## Enclosure

Type	Panel mount; rear collar compresses gasket against panel, held by 8 10-32 studs
Panel rating	NEMA 12/4/4X (with proper installation) – built to IP65 standards

## Physical

Depth	1.6" (2.5" at connectors) behind panel maximum
Bezel	Stainless Steel
Front bezel outside dimensions	13.3" W x 11.6" H x 0.236" thick (not including gasket)
Cutout dimensions	12.12" (308mm) W x 10.35" (263mm) H ; +/- .020"
Net weight	12 lbs.
Shipping weight	13 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.

**Hope Industrial Systems, Inc.**

1325 Northmeadow Parkway  
Suite 100  
Roswell, GA 30076

[www.HISmonitors.com](http://www.HISmonitors.com)