

AWM

ALL-WEATHER MONITOR SERIES II: L, R, V AND VR



AWM SERIES II: R, V, VR



AWM SERIES II: L

USER MANUAL

8.4" - 10.4" - 12.1" - 15.0" TFT RUGGED LCD DISPLAYS

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Owner Record

We recommend an easy-to-locate place to record the Display’s serial number and warranty period. The serial number label is on the back of the enclosure. That label’s date code starts the Display’s warranty period.

If the Display ever requires service, please refer to this information when contacting the **DSE Service Center at 480.515.1110.**

PRODUCT	SERIAL NUMBER					MANUFACTURE DATE
AWM	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

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Welcome.

With this purchase of this All-Weather Monitor (AWM) Series II, we welcome you to Digital System Engineering's family of harsh-duty mobile products.

You will soon become familiar with the quality difference in this bright sunlight-readable Display (5 to 800 nits), specifically designed for mobile computing. DSE has incorporated the latest optical engineering to achieve optimal viewability in all lighting conditions. Designed to be rugged, this 800 x 600 SVGA (or optional 1028 x 768 XGA) Display is engineered to thrive in any environment. (The AWM15 is XGA standard.)



AWM SERIES II: L

The AWM handles a wide-range of severe environments, making it the first selection of many industries for their mobile applications. Designed to be rugged, this Flat Panel LED LCD Display is engineered to thrive in adverse environments.

Housed in a milled billet aluminum case, the slim-profile AWM is light weight and watertight, and the Display enclosure meets IP67.



AWM SERIES II: R, V, VR

Engineered to operate on low power consumption, the AWML manages Low Voltage Differential Signaling (LVDS) digital input. The AWMR (RGB) manages a VGA video input. AWMV (Video) offers three (3) BNC Video IN connectors (RS170, NTSC/PAL) and a Video OUT connector. The AWMVR offers both RGB and Video connectors.

You may have purchased the AWM with the optional Analog Resistive Touch Screen (available with R and VR). Other options include Night Vision (NVIS) compatibility, a pass-through USB port and an internal heater, necessary when working in critically low temperatures, down to -40°C (-40°F).

We are Digital Systems Engineering, keeping rugged **Technology in Motion**. Our Digital Technology Team is at the ready to support your system projects. We also value your satisfaction and encourage your feedback. Please visit our Customer Feedback page at www.digitalsys.com, under Support.

GENERAL SAFETY

SAFETY ICONS

Safety icons are inserted throughout the AWM Series II User Manual to draw attention to specific User Caution and Warning instructions.



WARNING! SHOCK HAZARDS

This icon warns user of a potential risk of electrical shock.



CAUTION! INSTRUCTIONAL

This icon is intended to tell the user of important operating and/or maintenance instructions.

GENERAL SAFETY INSTRUCTIONS

- Before operating the AWM Display, read this User Manual thoroughly
- Keep this User Manual for future use
- Verify the system capability (see System Set-up) to ensure operation of the Display
- For expeditious installation, follow these User Manual instructions in sequence
- Adhere to all Caution and Warnings on system and as stated in this User Manual
- User Manual instructions for installation and operation should be followed precisely
- Adjust only those controls covered by the User Manual's operating instructions; improper adjustment of other controls voids the Display's warranty and may result in Display damage, and
- Adhere to local installation codes.



GENERAL SAFETY PRECAUTIONS

- Power cable must be connected to a properly wired and grounded power source
- Any equipment to which the Display is attached must also be connected to properly wired and grounded power sources
- To avoid possibility of electrical shock, damage to electrical components or scratching the Display surface, do not open (no serviceable parts), disassemble or modify, and
- Disassembly of Display voids warranty.

GENERAL DISPLAY SAFETY

- Always disconnect Display from power source before cleaning
- Do not operate Display with a damaged cable, and
- Do not operate if Display has been dropped or damaged. Unit should be inspected by qualified DSE Service Personnel.



FLUIDS FROM LCD DISPLAY

- If Display is shattered, do not touch fluids from the LCD Screen
- If fluid should get on hands or clothing, immediately wipe off with liquid soap or rubbing alcohol with a clean towel; wash with water; immediately consult with a doctor, and
- If fluid gets in eyes, flush immediately with water for a minimum of 15 minutes; then immediately consult with a doctor.

ELECTRICAL SAFETY

ELECTRICAL

INSTALLING CABLES

- Pre and post installation, verify Display's power input connector is securely seated
- Install power cable so as not to come in contact with hot surfaces
- Do not allow anything to rest on power cable, and
- Protect power cable from extreme heat sources.

POWER SOURCE

- Always connect to a properly grounded DC (standard) power source
- Any equipment to which Display is attached must also be connected to properly wired and grounded power sources
- Operational voltage is 10 - 36 VDC (Input is 12, 24, 28 VDC nominal), and
- Power Consumption is: 6 - 20 Watts maximum for AWM08, 210 and 12 and 6 - 40 Watts for AWM15.



WARNING! POWER CONSUMPTION

WARNING!

*AWM08, 10, 12 are listed at 6 - 20 Watts maximum.
AWM15 is listed at 5 - 40 Watts maximum.*

SERVICING

USER

- User Servicing is limited to cleaning the Display and screen
- Do not disassemble or modify the Display to avoid the possibility of electrical shock, damage to its electrical components or scratching the Display surface, and
- Disassembly voids the warranty.

Should a product be retired, dispose responsibly through a technology electronic (E-waste) recycler.

DSE

DSE Qualified Service Personnel may be required to service the Display if:

- Does not operate normally when installation instructions are followed
- Does not operate normally when operating instructions are followed
- Has been dropped or damaged, or
- Exhibits a distinct change in performance, indicating a need for service.

SHIPPING TO A DSE SERVICE CENTER

If Display should need to be shipped to the DSE Service Center, the original packing material or similar should be used to ensure safety of Display in shipping. Repack Display as it was originally received. Protect the Display screen.

PRODUCT CARE AND MAINTENANCE

PRODUCT CARE

This AWM Display is designed to provide optimum performance and service without any required scheduled maintenance other than occasional cleaning. Prior to use, remove the protective film from the Display screen.

DISPLAY SCREEN CLEANING

The Display Screen is a glass-based product. Power OFF the unit prior to cleaning.

- With a slightly damp cloth, lightly wipe down screen to remove dust and grit; always use a fresh side of cleaning cloth to avoid scratching
- Follow with a fresh cloth dampened slightly with cleaner
- A vinegar-based cleaner is recommended; this prevents streaking and degradation of coatings, or use a nonabrasive glass cleaner such as a professional foam glass cleaner
- Wipe left to right or right to left row patterns; swirling is not recommended
- To minimize risk of abrasion to Display screen, air drying is recommended.

TOUCH SCREEN CLEANING

- Touch Screen (optional): Use a special screen cleaning tissue or a solution specifically formulated for antistatic coatings. Follow the manufacturer's instructions, or
- Lightly dampen a soft clean cloth with water or a general purpose mild detergent solution
- On screen, always use a fresh side of cleaning cloth to avoid scratching, and
- To minimize risk of abrasion to Display screen, air drying is recommended.

DISPLAY ENCLOSURE

- Clean enclosure with a soft clean cloth lightly dampened with a general purpose mild detergent solution
- Wipe down with clean water, and
- Dry with a soft clean cloth.



WARNING!

WARNING! SHOCK HAZARDS

Disconnect from power source before cleaning screen or enclosure.



CAUTION!

CAUTION! INSTRUCTIONAL

- Do not use abrasive cleaners or solvent-based (flammable) cleaners on screen, its enclosure or any other electrical connection
- Do not use paper products; they may scratch the screen, and
- Do not directly apply cleaning solutions to screen.



USER TIP

USER TIP

In marine or similar environments, an added benefit of a vinegar-based cleaner is its effectiveness in dissolving mineral and salt deposits.

PRODUCT CARE AND MAINTENANCE (CONTINUED)

LONG-TERM STORAGE

- For long-term storage, Display should be stored in an ambient indoor environment
- Display screen be protected from accidental damage
- For Pedestal Mount, disconnect cable(s) and loosen arm adjustment to where ball can be removed from arm, or
- For Flush or Panel Mount, cover Display with a protective covering that will not scratch or transfer dyes to Display screen.

MAINTENANCE



WARNING!

WARNING! POWER CABLE

To avoid shock and fire hazards, replace the Display's power cable if:

- Insulation becomes damaged, or
- A loose connection is suspected.

OTHER MAINTENANCE

Only DSE Qualified Service Personnel should perform other maintenance aside from cleaning and Power Cable replacement described within.



WARNING!

WARNING! SHOCK HAZARD

To avoid risk of electrical shock, do not disassemble Display's enclosure. There are no user-serviceable parts in the Display. User maintenance is restricted to cleaning or power cable replacement as explained. Disassembling the Display voids the warranty.

SYSTEM SET-UP

SYSTEM REQUIREMENTS

The system the AMWR or VR is connected to must have the following capability:

- Computer setting with a minimum resolution of 640 x 480 pixels, and
- If optional Touch Screen Display is ordered, an available COM or USB port for connection is required, depending on the Display configuration ordered.

SHIPPING BOX and CONTENTS

The AWM is shipped in custom packaging. The installer should save the box and all packaging materials in event the Display should be returned to the DSE Service Center. Box contents are:

- AWM Display
- Power Cable
- R and VR: System Input Cable
- Mounting System and Hardware
- BNC Cables are provided by the end-user
- Touch Screen Cable if optional Touch Screen is ordered, and
- USB Cable if optional USB Pass-through is ordered.

INSTALLATION

The AWM may be mounted in three configurations, decided at time of order: with a universal ball-and-socket mounting kit, in a Flat Panel or optional Flush Mount configuration.

OPTIONAL PEDESTAL MOUNT

Optional is a RAM® universal ball-and-socket system mounting kit (Figure 1). By installing the Display with this kit, User can adjust the viewing angle to improve viewability in changing environments. This ball-and-socket system has proven to be successful in supporting an extreme amount of weight in high vibration and difficult-mount applications. Visit www.digitalsys.com for product mounting diagrams.

Locate the ball-and-socket system in shipping box. The kit consists of two RAM balls on mounting plates and a RAM arm with an adjustable T-knob with a packet of three (3) M4 x 10 counter-sunk stainless screws for mounting. (Figures 1 - 3)



Figure 1

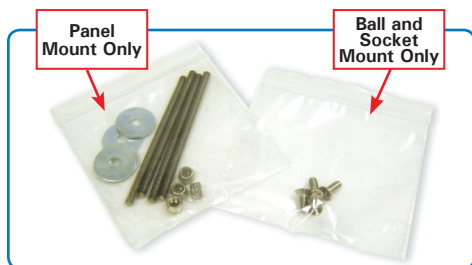


Figure 2

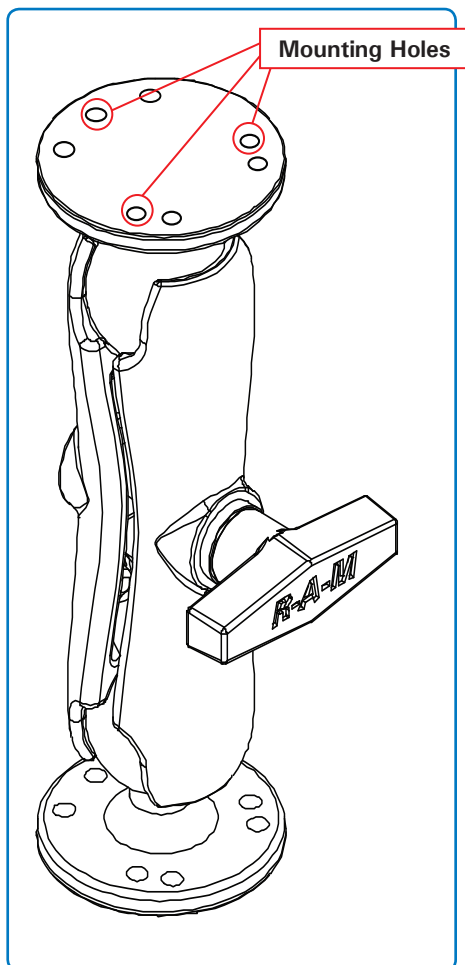


Figure 3

INSTALLATION (CONTINUED)

There are three mounting holes in the back of the Display for attachment of a ball mounting plate. Take care not to strip the screw holes or over tighten. (Figure 4) It is recommended the remaining ball be mounted on a flat surface. Because of various surface substrates where the Display is mounted, the installer provides the screws to mount the other ball.

- Note the location of the three mounting holes on a ball mounting plate (Figure 3)
- With three (3) M4 x 10 counter-sunk stainless screws (Figure 2) attach mounting plate to the back of the AWM (Figure 1)
- Mount second ball mounting plate on surface where the Display is to be installed
- Insert each ball into the RAM arm
- Lightly tighten the arm around the balls using the T-knob on the arm (Figure 1, 3)
- Adjust the Display to the viewing preference, and
- Tighten the T-knob to hold the Display in position.

PANEL MOUNT

Panel Mount installation should be specified at time of order; the ball-and-socket mount system will not be included in shipping box. (Figure 4) There are four tapped mounting holes on four corners of the Display's rear panel. A mounting hardware packet is included with product accessories in the shipping box. This packet includes four (4) M4 stainless steel threaded studs, 7.6cm (3" long), four (4) Nylock self-locking nuts and four (4) flat washers.

Installer should refer to product drawings on DSE's web site, <http://www.digitalsys.com/Ruggedized-Display-Products/Rugged-LCD-Monitors.html> for exact measurements of Display's rear panel. These should be helpful when installer cuts the required installation opening.

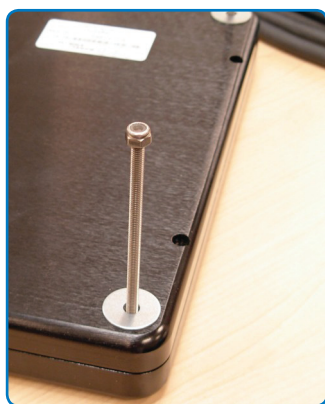


Figure 4

FLUSH MOUNT with OPTIONAL BEZEL

With Flush Mount Bezel, Display may be mounted flush with mounting surface; this should be specified at time of order as ball-and-socket mount system or any mounting hardware will not be included in the shipping box. Installer needs to supply screws for this installation.

Installer should refer to product drawings on DSE's web site, <http://www.digitalsys.com/Ruggedized-Display-Products/Rugged-LCD-Monitors.html> for exact measurements of Display. Note: Locations of milled holes in Flush Mount Bezel. Drill corresponding holes into the substrate where Display is to be mounted.

PRESSURE EQUALIZER VALVE

There is a Pressure Equalizer Valve on the chassis. (Figure 5) In the final installation, do not block or constrain this valve.

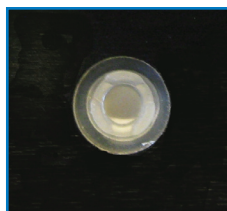


Figure 5



CAUTION!

CAUTION!

Enclosure is aluminum; do not over tighten screws or strip screw holes.
Do not block or constrain the Pressure Equalizer Valve.

DISPLAY CONNECTORS - SERIES L (LVDS)

CABLES

The AWML (LVDS, Low Voltage Differential Signaling for digital input) has one cable, supplied by the customer. See Table 1 for Connector Pinouts.

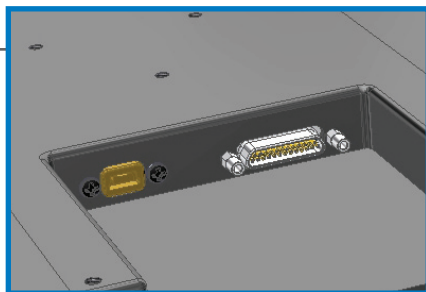


Figure 6

LVDS

MICRO D 25-PIN CONNECTOR

PIN	SIGNAL
1	RX0+ IN
2	RX0- IN
3	RX1+ IN
4	RX1- IN
5	RX2+ IN
6	RX2- IN
7	RXCK+ IN
8	RXCK- IN
9	GROUND
10	PWR VIN GND
11	PWR VIN GND
12	PWR +VIN
13	PWR +VIN
14	GROUND
15	USBD0-RS232XD (TOUCH)
16	USBD0+RS232XD (TOUCH)
17	GROUND
18	USBD1- (PASS-THROUGH)
19	USBD1+ (PASS-THROUGH)
20	GROUND
21	PRE HEAT LED BEEPER CPU-HTR
22	PWR VIN GND
23	PWR VIN GND
24	PWR +VIN
25	PWR +VIN
MOLEX #	836149012
MATE #	834219014 (MOLEX)

Table 1

CONNECTORS

Display Connectors are located on bottom of chassis enclosure; from left to right: Mini-B USB Pass-Through and LVDS Cable. (Figure 6)

Connectors are physically unique to insure installer makes correct connections. If optional Touch Screen is installed, Touch signals run through the LVDS Connector.

LVDS Connector Pinout is in Table 1.

See Table 2 for USB Pass-Through Connector Pinout.

PASS-THROUGH CONNECTOR	
MINI-B USB	
PIN	SIGNAL
1	USB +5V
2	USBD1-
3	USBD+
4	NO CONNECT
5	GROUND
AMPHENOL #	P-MUSB-B151-05

Table 2

DISPLAY CONNECTORS - SERIES R (RGB)

CABLES

The AWMR is packaged with two cables:

- RGB (System) Input, #1 in Figure 7
- DC Power, #2 in Figure 7

-
1 RGB (System) Input
2 DC Power Input
.....



Figure 7

CONNECTORS

Connectors are located on the bottom of the Display housing, from left to right: Optional USB Pass-through, Optional Touch (Screen) and Power and RGB Input, (Figure 8). Connectors are physically unique to insure the installer makes the proper connections.

-
1 Optional USB Input
2 Optional Touch Input
3 Power Input
4 RGB Input
.....



Figure 8

SYSTEM INPUT CONNECTOR

- The IP68 sealed RGB Input Cable, 3 m (10 ft), is in the shipping box
- Line up the red dots on the connectors
- Push the cable connector into Display's System connector, #4 in Figure 8, and
- Plug the standard DB-15 (video) female connector to the system's video source; secure.

DC POWER CONNECTOR

- IP68 sealed DC Power Cable, 3 m (10 ft), is in shipping box
- Line up red dots to Power Input connector, #1 in Figure 8
- Plug in quick-connect 3-pin connector
- To disconnect, pull outside ring on connector away from Display until cable is free
- Positive flying lead marked with "+" label
- Negative lead is not marked (Figure 9)
- Connect flying leads to corresponding polarity on DC voltage source, primary terminal.

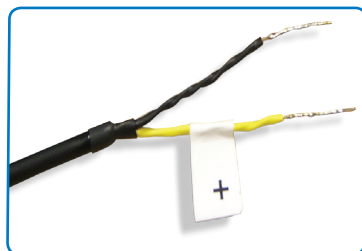


Figure 9



WARNING! POWER SOURCE POLARITY

Verify polarity of power source posts prior to connecting cable's flying leads.

DISPLAY CONNECTORS - SERIES V (VIDEO)

CABLES

- AWMV is packaged with one cable: DC Power, #1 in Figure 10, and
- BNC cable #2 Figure 10, is provided by end-user.

-
- 1** DC Power Input
 - 2** BNC Input
-

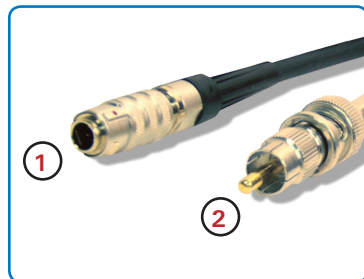


Figure 10

CONNECTORS

Connectors are located on bottom of chassis; from left to right: Power and three BNC Inputs. (Figure 11). Connectors are physically unique to insure installer makes correct connections.



Figure 11

-
- 1** Power Input
 - 2** BNC Inputs
-

COMPOSITE BNC CONNECTOR

AWMV accepts a standard NTSC/PAL composite video signal from any device: a camera, VCR or DVD. This signal is carried to Display via a coaxial video terminated with a BNC connector.

- End-user supplies BNC coaxial video cable
- BNC receptacle on Display is IP67 sealed
- Line up with BNC connector, #2 in Figure 11, and
- Plug together, adding a 1/4 turn to connect.

DISPLAY CONNECTORS - SERIES V (VIDEO)



WARNING! POWER SOURCE POLARITY

Verify polarity of power source posts prior to connecting cable's flying leads.

DC POWER CONNECTOR

- IP68 sealed DC Power Cable, 3 m (10 ft), is in shipping box
- Line up red dots to Power Input connector, #1 in Figure 11
- Plug in quick-connect 3-pin connector
- To disconnect, pull outside ring on connector away from Display until cable is free
- Positive flying lead marked with "+" label
- Negative lead is not marked (Figure 12)
- Connect flying leads to corresponding polarity on DC voltage source, primary terminal.

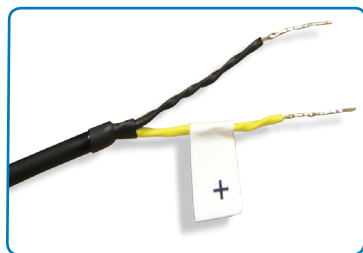


Figure 12



CAUTION!

Use care when inserting or removing connector.
Do not force mating.

This section is intentionally left blank.

DISPLAY CONNECTORS - SERIES VR (VIDEO/RGB)

CABLES

- AWMVR comes with two cables: RGB (System) Input and DC Power, #1 and 2 in Figure 13
- BNC cable is provided by end-user

-
- 1** RGB (System) Input
- 2** DC Power Input
-



Figure 13

CONNECTORS

Connectors are located on bottom of unit housing, from left to right: Optional USB Pass-through, Optional Touch (Screen), Power, RGB (System), and BNC inputs. (Figure 14)

Connectors are physically unique to insure installer makes correct connections.



Figure 14

-
- 1** Optional USB Input
- 3** Optional Touch Input
- 3** Power Input
- 4** RGB (System) Input
- 5** BNC Input
- 6** BNC Input
- 7** BNC Input
-

SYSTEM INPUT CONNECTOR

- IP68 sealed RGB (System) Input Cable, 3 m (10 ft), is in shipping box
- Line up red dots on connectors
- Push cable connector into unit's RGB (System) connector (#4, Figure 14), and
- Plug standard DB-15 (video) female connector to system's video source; secure.

DC POWER CONNECTOR

- IP68 sealed DC Power Cable, 3 m (10 ft), is in shipping box
- Line up red dots to Power Input connector, #1 in Figure 14
- Plug in quick-connect 3-pin connector
- To disconnect, pull outside ring on connector away from Display until cable is free
- Positive flying lead marked with "+" label
- Negative lead is not marked (Figure 15)
- Connect flying leads to corresponding polarity on DC voltage source, primary terminal.

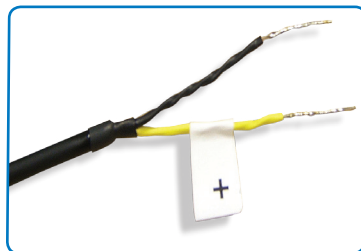


Figure 15

DISPLAY CONNECTORS - SERIES VR (CONTINUED)

COMPOSITE BNC CONNECTOR

The AWMVR accepts a standard NTSC/PAL composite video signal from any device such as a camera, VCR or DVD. This signal is carried to the Display via a coaxial video terminated with a BNC connector.

- End-user supplies BNC coaxial video cable
- BNC connector on Display is sealed
- Line up with BNC connector, #6 in Figure 14, and
- Plug together, adding a ¼ turn to lock.

OPTIONAL CONNECTORS

OPTIONAL USB PASS-THROUGH CONNECTOR

- Optional USB Pass-through Connector is an IP68 sealed 4-pin connector
- Custom USB Cable is in shipping box; it is .6 m (2 ft)
- Line up red dots to USB connector, #3 in Figure 14
- Plug in quick-connect 4-pin connector, and
- To disconnect, pull outside ring on connector away from unit until free.

OPTIONAL TOUCH SCREEN CONNECTOR

- Optional Touch Screen Connector is an IP68 sealed 5-pin connector
- Touch Screen Cable is in shipping box; it is 3 m (10 ft)
- Line up red dots to Touch connector, #4 in Figure 14, and
- Plug together.

OPTIONAL AC POWER ADAPTER

OPTIONAL AC POWER ADAPTER

- Supports R, V and VR Displays
- Optional AC Power Adapter Cable set: 3 m (10 ft) cable with an IP68 sealed connector, power adapter and 1.8 m (6 ft) common AC power cord (Figure 16)
- Adapter accepts voltage from 110 to 250 VAC and frequency from 47 to 63Hz
- AC power cord plug is a North American standard for 120 VAC/60Hz, and
- Line up red dots to Power Input connector, #1 in Figure 14
- Plug in quick-connect 3-pin connector, and
- To disconnect, pull outside ring on connector away from Display until free.

Note: Optional AC Power Adapter is not an off-the-shelf item. It is equipped with a specific connector for integration with the AWM Displays.



Figure 16

OPERATOR CONTROLS - SERIES L (LVDS)

On right hand of the AWM Series L Display bezel are two (2) Operator Control buttons. (Figure 17)

POWER ON/OFF

Note: Display defaults to an **AUTO-ON** state when power is applied.

- POWER ON/OFF button is marked with I/O (Input/Output) symbol
- Momentarily pressing this button turns ON or OFF the unit
- Blue LEDs glow behind buttons when unit is powered on, and
- Rapid power cycling (ON/OFF/ON) is not supported.

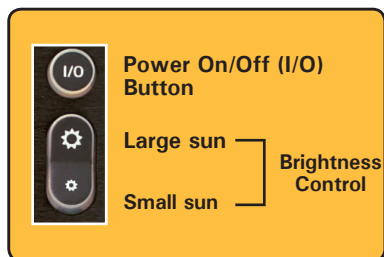


Figure 17



CAUTION!

CAUTION!

Monitor defaults to AUTO-ON when connected to a computer and power is applied.

BRIGHTNESS

The Brightness Button toggles the control of Display's brightness.

- **LARGE SUN** button: when repeatedly pressed or held down, will cause Display's back-light brightness to step up in increments to its brightest setting
- **SMALL SUN** button: when repeatedly pressed or held down will cause Display's back-light brightness to step down in increments to its lowest setting,
- Lowest Setting is almost total black, suitable in very subdued light, as in night time operations, and
- Adjusted settings are maintained during power cycles.

This section is intentionally left blank.

OPERATOR CONTROLS - SERIES R, V, VR

On right hand of the AWM Series R, V and VR Display bezel are seven (7) Operator Control buttons. (Figure 18)

POWER ON/OFF

Note: Display defaults to an AUTO-OFF state when power is applied.

- POWER ON/OFF button is marked with I/O (Input/Output) symbol
- Momentarily pressing this button turns ON or OFF the unit
- Blue LEDs glow behind buttons when unit is powered on, and
- Rapid power cycling (ON/OFF/ON) is not supported.

BRIGHTNESS

The Brightness Button toggles control of Display's brightness.

- LARGE SUN button: when repeatedly pressed or held down will cause Display's backlight brightness to step up in increments to its brightest setting
- SMALL SUN button: when repeatedly pressed or held down will cause Display's backlight brightness to step down in increments to its lowest setting,
- Lowest Setting is almost total black, suitable in very subdued light, as in night time operations, and
- Adjusted settings are maintained during power cycles.

SELECT

The SELECT Button is used to start the OSD Menu. This button is also used to select a function within the Menu. (See On-Screen Display.)

UP ARROW

The UP Arrow Button is an adjustment tool in the OSD Menu. (See OSD Menu Categories.)

DOWN ARROW

The DOWN Arrow Button is an adjustment tool in the OSD Menu. (See OSD Menu Categories.)

SOURCE

The SOURCE Button is used to move between video inputs, without opening the OSD Menu. (See On-Screen Display.) **Note: Source Button is inactive in Series R.**



Figure 18



CAUTION!

Monitor defaults to AUTO-OFF when connected to a computer and power is applied.

ON-SCREEN DISPLAY MENU

For the AWM Series R, V and VR, the On-Screen Display (OSD) User Interface is where Display adjustments are made. With its user-friendly graphical interface, the OSD Menu provides access to fine-tuning the Display according to the user's preferences. **Note:** *There is no OSD menu in AWM Series L.*

OSD MENU ACTIVATION

To activate the OSD menu, press and release SELECT Button.

Note: *OSD Menu closes after 30 seconds of inactivity. This setting may be adjusted in the OSD Menu: Tools: OSD Timeout.*

OSD MENU CATEGORIES

The OSD Menu is comprised of five icons and an Exit Button; each icon represents a distinct menu category with its corresponding functions. (Figure 19)

Note: *OSD Menu selections are indicated by icon only; there is no text.*

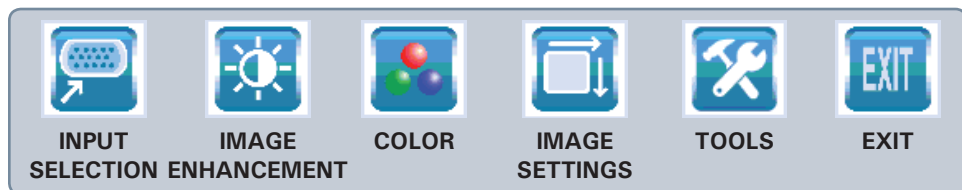


Figure 19

GENERAL OPERATING INSTRUCTIONS

- To open the OSD Menu, press (once) the SELECT Button
- Use the UP or DOWN Button to move across Menu; selected icon turns yellow (Figure 20)
- As Main Menu icon is highlighted, its Submenu appears in OSD dialogue box
- Press (once) SELECT Button to enter highlighted icon's Submenu
- A highlight bar is superimposed over the first menu item
- Press UP or DOWN Button to move the highlight bar through the Submenu
- Press (once) SELECT Button to activate the highlighted Submenu item
- To Change values: press UP or DOWN Buttons, which increases (UP) or decreases (DOWN) the value of parameter as indicated in dialogue box; hold down Button to fast forward



Figure 20

ON-SCREEN DISPLAY MENU (CONTINUED)

- Press (once) SELECT Button to go to a new menu item (Figure 21), or
- Press (once) SELECT Button to save new value or wait for OSD to timeout; it will auto-close, saving all changes
- To choose another menu item, use UP or DOWN Button to move across Main Menu; repeat instructions, and
- To Exit, use UP or DOWN Button to move across OSD Menu to highlight Exit Sign icon; press (once) SELECT Button to Exit; upon Exit, all changes are saved.

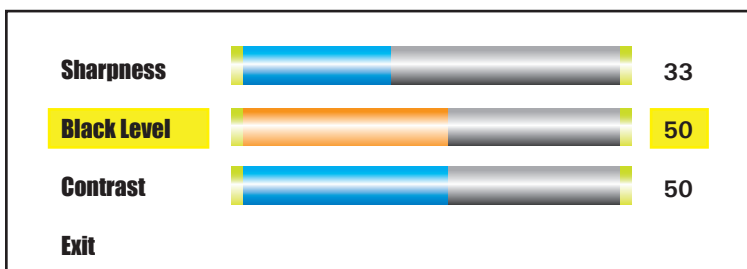




Figure 21



CAUTION! SAVING CHANGES

- Exit Button saves adjustments made to OSD then exits the Menu, or
- If OSD times out, any adjustments made are auto saved, then Menu closes.

OSD MENU CATEGORIES



INPUT SELECTION

The Input Selection Menu enables a selection of three Composite video input signals. Selection is based on Display configuration and its dependency upon a specific signal source. Main power recycle resets input source to default, C Video 1 (Composite).

Note: The SOURCE Button on the Display allows for moving through various video input signals without accessing the OSD Menu.

C VIDEO 1

Select for first Input Signal. Select Exit Button to save.

C VIDEO 2

Select for second Input Signal. Select Exit Button to save.

C VIDEO 3

Select for third Input Signal. Select Exit Button to save.

OSD MENU CATEGORIES (CONTINUED)



EXIT

Select Exit Button to save changes and exit from OSD Menu.



IMAGE ENHANCEMENT

The Image Enhancement Menu enables adjustments of Image Enhancement values.

SHARPNESS

Select Sharpness to adjust Sharpness of shown image. Use UP (right) or DOWN (left) Button to adjust in preset increments. Select Exit to save.

Composite input signal factory default is 33 within a range of 0 - 100.

BLACK LEVEL

Select Black Level to adjust Black Level of input Composite Signal. Factory default is 50 within a range of 0-100. Use UP (increase) or DOWN (decrease) Button to adjust in individual increments. Select Exit Button to save.

CONTRAST

Select Contrast to adjust difference in brightness between light and dark areas of Display pixels. Factory default is 50 within a range of 0 - 100. Use UP (increase) or DOWN (decrease) Button to adjust in individual increments. Select Exit Button to save.



EXIT

Select Exit Button to save changes and exit from OSD Menu.



COLOR

The Color Menu enables adjustments of Color Parameters of the Display image.

COMPOSITE INPUT SIGNAL

HUE

Select Hue to adjust shading (gradation) within colors. Factory default is 50 within range of 0 - 100. Use UP (increase) or DOWN (decrease) Button to adjust in individual increments. Select Exit Button to save.

SATURATION

Select Saturation to adjust intensity or vividness (saturation) of color. Factory default is 50 within range of 0 - 100. Use the UP (increase) or DOWN (decrease) Button to adjust in individual increments. Select Exit Button to save.

OSD MENU CATEGORIES (CONTINUED)

COLOR RESET

Select Color Reset to reset active Composite signal Color parameters Hue and Saturation to factory default values (50). Select Exit Button to save.

Note: Color parameters will reset active Composite Video Input Signal only.



EXIT

Select Exit Button to save changes and exit from OSD Menu.



IMAGE SETTINGS

The Image Setting Menu enables Display screen adjustments if Display is set-up for a VGA Input Signal.

Note: Composite: if unavailable, icon may be grayed.



TOOLS

The Tool Menu enables adjustment of miscellaneous parameters.

OSD TIMEOUT

Factory default OSD Timeout setting is 30 seconds. Interval selections are Off, 5, 15, 30 and 60 seconds. Select to adjust time elapse between last Menu activity and when Menu exits. Use the UP (increase) or DOWN (decrease) Buttons to change the values. Select Exit Button to save. *Note: Any changes made in will be saved upon Timeout Exit.*

NVIS GREEN / NVIS RED (OPTIONAL)

If unit is equipped with NVIS Green / NVIS Red option, User has to set the NVIS mode to be active at power-on; Display will default to that NVIS color theme.

Use the UP ARROW Button to select NVIS Red.

Use the DOWN ARROW Button to select NVIS Green.

PICTURE-IN-PICTURE (PIP) MENU *(Not Available with "R" Series; No Video Feed)*

The User may view a second video source in addition to the default signal source by utilizing the Picture-in-Picture (PIP) feature.

The PIP Menu has two selections: PIP Source; PIP Mode.

PIP SOURCE

PIP Source allows User to select the Composite Video Source (C 1 - 3) for the PIP.

OSD MENU CATEGORIES (CONTINUED)

PIP MODE

PIP Mode allows User to select Display Video Source viewing modes of OFF or PIP.

- OFF: turns off the PIP setting
- PIP: turns on the PIP view
- Settings are maintained during power cycles (ON/OFF Button), and
- Settings return to factory default at main power recycle.

FACTORY RESET

Select Factory Reset to reset Display screen adjustments Color Settings (*Sharpness, Black Level, Contrast*) and Color (*Hue, Saturation*) to factory default values (50). Select Exit Button to save.



CAUTION!

FACTORY RESET

Factory Reset will reset all OSD changes made to Video set-ups with the exception of the PIP settings.



EXIT

Select Exit Button to save changes and exit from OSD Menu.

OPTIONAL NVIS

NVIS GREEN / RED OSD

NVIS Green / Red OSD option allows interfacing with Night Vision devices without adverse effects. The Display may be set to automatically power on in NVIS mode. Daylight mode can be brought up by pressing the UP ARROW Button. This button allows the User to toggle between Day Mode and NVIS Mode.

User selects either NVIS Green or NVIS Red in the OSD menu. Once saved in the OSD, the UP / DOWN ARROW Buttons will toggle between that selection (Green or Red) and Day Mode; both NVIS colors are not available at the same time.

OPTIONAL INTERNAL HEATER

OPTIONAL INTERNAL HEATER

The optional Internal Heater automatically brings Display up to standard operating temperature if unit is below that temperature when powered on.

OPERATIONS

- The flashing blue LED behind the Power Button indicates the Display is in heating mode, bringing the Display up to operational temperature
- Once the Display is up to operational temperature, the flashing LED becomes a constant blue illumination and the Display automatically powers on
- Maximum time for the Display to reach operational temperature is approximately 12 minutes (15 minutes for 15"), and
- There are no user adjustments for the Internal Heater function.

OPTIONAL USB PASS-THROUGH CONNECTOR

OPTIONAL USB PASS-THROUGH CONNECTOR - NO TOUCH SCREEN OPTION

Note: Do not install the RS232 (Serial) Connector. It is inactive.

The optional Connector signal is sent through the Touch Screen (T/S) cable.

- Install IP68 sealed T/S 4-pin connector to the Display's rear pod, #4, Figure 14
- Install T/S cable's USB connector to any system USB port
- Install IP68 sealed 4-pin, .6m (2 ft) USB Pass-through Cable to #3, Figure 14, and
- USB Pass-through Connector is standard A-type USB port socket; it is not sealed.

OPTIONAL USB PASS-THROUGH CONNECTOR - WITH TOUCH SCREEN OPTION

The optional USB Pass-through Connector signal is sent through the Touch Screen (T/S) cable connection to the system.

- Install IP68 sealed T/S 5-pin connector to Display's rear pod, #2, Figure 14
- With split end of T/S Cable, install USB connector to any system USB port
- Install Touch Screen Display RS232 Connector, to a system serial port, or
- Install Touch Screen Display USB Connector, to a system USB port
- Install IP68 sealed 4-pin, .6m (2 ft) DSE USB Pass-through Cable to Display's rear pod, #3, Figure 14, and
- USB Pass-through Connector on other end is a standard A-type USB port socket; it is not a sealed (watertight) connector.



CAUTION!

USB PORT

The USB port socket on the cable is not sealed.

OPTIONAL TOUCH SCREEN DISPLAY

TOUCH SCREEN INSTALLATION

Touch Screen Installation instructions are available from the Digital Systems Engineering web site, www.digitalsys.com.

If hurdles are encountered during an installation, contact DSE's Service Center at 480.515.1110 x111; e-mail Service@digitalsys.com; or visit www.digitalsys.com.

TSHARC Touch Controller Driver/Windows Operating Systems

The monitor's touch screen function requires the download of a TSHARC Touch Controller Driver application installed on the device where the monitor is connected. To download the latest compatible drivers, go to www.digitalsys.com.

Operating Systems compatible with TSHARC Touch Controller Driver are: Microsoft's® XP, 7, 8 and 10 (32 and 64-bit); with RS232 and USB options. If other MS O/S are installed, contact Service@digitalsys.com for assistance. **Note: TSHARC Touch Controller Driver is not compatible with Microsoft® Vistas.**



TSHARC Touch Screen Controller Driver is not compatible with Vistas.

PREVIOUS VERSIONS OF TOUCH SCREEN CONTROLLER DRIVERS

Previous versions of ANY Touch Screen Controller Driver must be removed before installing the latest version of the TSHARC™ Touch Screen Controller Driver.

If a different T/S Controller Driver (not TSHARC) is on the device it must be removed before installing the TSHARC drivers. Note: A typical driver uninstall program utility of Microsoft's® does not remove all traces of a T/S Driver installation. *Contact manufacturer of previously installed driver program to learn how to uninstall their product. These instructions may be available from the manufacturer's web site.*

NEW MONITOR INSTALLATION WITH EXISTING DEVICE

Whenever a new monitor is installed to an existing device (equipped with TSHARC driver), *Touch Screen calibration is always required.* The Touch Screen driver resides on the system device, not the monitor.



CALIBRATE!

ALWAYS CALIBRATE! *When adding a monitor to a new or different device, always calibrate to that device; Calibration settings reside on the device, NOT the monitor.*

NEW OPERATING SYSTEM INSTALLATION

If installing a new operating system (O/S), do not install Touch Screen Controller Driver until O/S is installed and system's video display settings have been verified. Touch Screen Controller Driver uses system's O/S display driver settings to accurately configure T/S Controller Driver files.

APPENDIX A

MECHANICAL DRAWINGS

Mount diagrams and dimensions may be of assistance in installation. Overview drawings may be found on the corresponding product page on the DSE website (www.digitalsys.com). When on the product page, scroll down and select the Download tab and follow instructions.

APPENDIX B

TROUBLESHOOTING

SYMPTOM: NO LIGHT BEHIND BUTTONS

Possible Problem	Solution
No power, loose power connection	Confirm the Display is properly connected to a DC or AC power source. Verify the power source is live or try another battery or AC power outlet. Verify the Display is powered on.
Reverse polarity	Check polarity of the power connection.

SYMPTOM: LIGHT BEHIND BUTTONS, NO IMAGE OR “NO SIGNAL” ERROR MESSAGE AND/OR NO IMAGE DISPLAYED

Possible Problem	Solution
Power on, no video signal	Verify the video cable is plugged into the System Input video connector. Verify a video signal is coming out of the system (i.e., Plug into a known good image source). Verify the incoming signal source selected matches the System Monitor signal source. Check the Brightness front panel (LCD) adjustment on the Display. This may be set too low. Check the Brightness and Contrast controls in the OSD. These may be set too low. System may have gone into power management stand-by. Press any key on the keyboard, move the mouse or cursor, or if there is a Touch Screen, touch to wake the system.

APPENDIX B (CONTINUED)

SYMPTOM: DISPLAY HAS 'ROLLING BARS' ACROSS SCREEN OR 'VERTICAL SHADED BARS' ON THE IMAGE

Possible Problem	Solution
System video display is not set to view at 800 x 600 pixels or 1024 x 768 pixels	Verify system video display is set at 800 x 600 pixels (1024 x 768 pixels).
Defective video cable	On a known good display source, confirm the video cable is not defective.
Interference from adjacent equipment	For proper grounding and shielding verify installation is with a proper video cable. Keep the cable away from sources of EMI such as electric motors, or unshielded RFI sources such as radar and microwaves.
Horizontal size is not adjusted	In the OSD, adjust the horizontal size control.

SYMPTOM: PICTURE QUALITY, IMAGE STABILITY IS DISTORTED

Possible Problem	Solution
Not working in 800 x 600 pixel resolution or 1024 x 768 pixel resolution	Verify system video display is set at 800 x 600 pixels (1024 x 768 pixels).
Proper cable grounding and shielding	Verify the use of a proper video cable with suitable grounding and shielding. Keep the video cable away from sources of EMI and RFI.
Improper video display settings	Check signal source for a proper signal. Verify system video display is set at 800 x 600 pixels (1024 x 768 pixels). Verify the computer refresh rate of 60 – 75Hz.
Display unit is farther than 3 m (10 ft) from signal source	Single cable lengths in excess of the standard 3 m (10 ft) cable should be of high quality shielded System Input cable. Contact DSE for information on custom cables.
Multiple Monitors are driven from the same signal source.	Splitting the video signal divides the strength of the signal. A video signal booster (line driver) is recommended if installation requires more than one Display driven from a single video source.
Display has incorrect or bad sync signals.	Check for proper video cable installation, or replace suspected faulty cable. Verify system video display is set at 800 x 600 pixels (1024 x 768 pixels) and at a 60 - 75Hz refresh rate.

APPENDIX B (CONTINUED)

SYMPTOM: DISPLAY IMAGE IS NOT PROPERLY SIZED

Possible Problem	Solution
OSD adjustments need to be made	Adjust the vertical and horizontal size controls through the OSD.
Improper video display settings	Verify system video display is set at 800 x 600 pixels (1024 x 768 pixels) and at a 60 - 75Hz refresh rate.

SYMPTOM: TOUCH SCREEN DOES NOT RESPOND

Possible Problem	Solution
T/S cable is not plugged in	Verify the connections between the T/S and the system.
T/S cable is installed in a different COM port than installed by the software	Install the T/S into another COM port. If using a laptop, verify the COM port(s) is enabled.
T/S Controller driver has not been installed	Install the TSHARC Controller driver.
Hardware failure	Contact a DSE Technical Support Technician (480.515.1110).

SYMPTOM: TOUCH SCREEN RESPONSE DOES NOT FOLLOW FINGER/STYLUS

Possible Problem	Solution
Controller is not calibrated	Run the calibration in the TSHARC Control Panel software.
T/S Controller Driver is not installed	Install the TSHARC Controller Driver.
T/S cable is not installed correctly	Verify the T/S cable is installed correctly.

SYMPTOM: "ERROR IN CALIBRATION" MESSAGE

Possible Problem	Solution
The T/S Controller Driver is not installed correctly	Uninstall the driver using "TSUN10.exe". If a previous T/S Controller Driver was installed, all footprints must be removed. Go to the T/S manufacturer's or contact the manufacturer for instructions to uninstall driver. Reinstall the TSHARC Driver software.

NOTES

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