

# Magelis iDisplay 19"

## User Manual

09/2008







---

# Table of Contents



---

	<b>Safety Information</b> .....	<b>5</b>
	<b>About the Book</b> .....	<b>7</b>
<b>Part I</b>	<b>General Overview</b> .....	<b>9</b>
<b>Chapter 1</b>	<b>Important Information</b> .....	<b>11</b>
	Additional Safety Information .....	11
	Federal Communications Commission Radio Frequency Interference Statement - For U.S.A. ....	12
	Qualified Personnel .....	13
	Safety Information for the UK .....	14
	Certifications and Standards .....	16
	European (CE) Compliance .....	16
<b>Chapter 2</b>	<b>Physical Overview</b> .....	<b>17</b>
	Main Features .....	18
	Package Contents .....	19
	iDisplay Unit Description .....	21
	Analog RGB and DVI-D Interface Specifications .....	23
	RS-232C and USB Interface Specifications .....	26
	Accessories .....	28
<b>Chapter 3</b>	<b>Characteristics</b> .....	<b>29</b>
	Structural and Electrical Characteristics .....	30
	Environmental Characteristics .....	32
	Functional Characteristics .....	33
<b>Chapter 4</b>	<b>Dimensions/Installation</b> .....	<b>35</b>
	Dimensions .....	36
	Creating a Panel Cut for Cabinet Installation .....	39
	Panel Mounting .....	40
	Installing the iDisplay .....	41



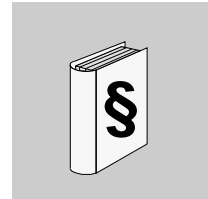
---

<b>Part II</b>	<b>Implementation</b>	<b>47</b>
<b>Chapter 5</b>	<b>Main Power Connection</b>	<b>49</b>
	Connecting the AC Power Cord	50
	Connecting the Power Supply	52
	Connecting the USB Cable	54
	Connecting the RGB, DVI-D, and 232C Cable	55
	Grounding	56
	Connecting I/O Signal Lines	58
<b>Part III</b>	<b>Installation</b>	<b>59</b>
<b>Chapter 6</b>	<b>Operation Mode Setup and Display Positioning</b>	<b>61</b>
	Dip Switches and Slide Switch Operation	62
	Status of Front LED	64
	Running the OSD	65
<b>Chapter 7</b>	<b>Connections</b>	<b>73</b>
	Connecting the iDisplay to a PC	74
	Touch Panel Data	76
<b>Chapter 8</b>	<b>Touch Panel Communication Program</b>	<b>79</b>
	iDisplay Software	79
<b>Chapter 9</b>	<b>Maintenance</b>	<b>81</b>
	Regular Cleaning	82
	Replacing the Gasket	85
	Maintenance Checks	87
<b>Chapter 10</b>	<b>Troubleshooting</b>	<b>89</b>
	Troubleshooting Checklists	90
	Error Message	92
<b>Index</b>		<b>93</b>



---

## Safety Information



---

### Important Information

#### NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a Danger or Warning safety label indicates that an electrical hazard exists, which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

#### **DANGER**

DANGER indicates an imminently hazardous situation, which, if not avoided, **will result** in death or serious injury.

#### **WARNING**

WARNING indicates a potentially hazardous situation, which, if not avoided, **can result** in death, serious injury, or equipment damage.

#### **CAUTION**

CAUTION indicates a potentially hazardous situation, which, if not avoided, **can result** in injury or equipment damage.



**PLEASE NOTE**

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

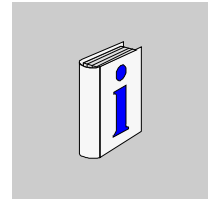
© 2008 Schneider Electric. All Rights Reserved.

---



---

## About the Book



---

### At a Glance

- Document Scope** This manual describes the configuration and usage of the Magelis iDisplay 19". This External Display is designed to operate in an industrial environment and features the very latest technologies.
- The Magelis iDisplay 19" is an External LCD Display Monitor.
- The reference number of the product is:
- MPCYT90NAN00N
    - 100...240 Vac
    - 19" SXGA Touch screen
    - 1280 x 1024 pixels

---

### Validity Note

#### General

The present documentation is intended for qualified technical personnel responsible for the implementation, operation and maintenance of the products described. It contains the information necessary for the proper use of the products. However, those who wish to make more "advanced" use of our products may find it necessary to consult our nearest distributor in order to obtain additional information.

**The contents of this documentation are not contractual and in no way constitute an extension to, or restriction of, the contractual warranty clauses.**

#### Registered Trademarks

PL7 and Vijeo Look are registered trademarks of Schneider Electric.

Microsoft® and Windows® are registered trademarks of Microsoft Corporation.

Intel®, Celeron and Pentium® are registered trademarks of Intel Corporation.

IBM® is a registered trademark of International Business Machines Corporation.

---



## Product Related Warnings

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH**

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Always use a properly rated voltage sensing device to confirm power is off.
- Unplug the power cable from both the iDisplay and the power supply.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the iDisplay 19". This device is designed to use 100...240 Vac input.

**Failure to follow these instructions will result in death or serious injury.**

### **WARNING**

#### **LOSS OF CONTROL**

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link. \*<sup>1</sup>
- Each implementation of a Magelis iDisplay must be individually and thoroughly tested for proper operation before being put into service.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

\*<sup>1</sup> For additional information, refer to *NEMA ICS 1.1* (latest edition), "*Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control*".

## User Comments

We welcome your comments about this document. You can reach us by e-mail at [techpub@schneider-electric.com](mailto:techpub@schneider-electric.com)

---



---

# General Overview



---

## At a Glance

**Overview** This part provides an overview of the Magelis iDisplay touch screen monitor.

**What's in this Part?** This part contains the following chapters:

Chapter	Chapter Name	Page
1	Important Information	11
2	Physical Overview	17
3	Characteristics	29
4	Dimensions/Installation	35

---







---

# Important Information

1

---

## Additional Safety Information

**General** This chapter describes safety aspects which are specific to the operation of the Magelis iDisplay.

**What's in this Chapter?** This chapter contains the following topics:

Topic	Page
Federal Communications Commission Radio Frequency Interference Statement - For U.S.A.	12
Qualified Personnel	13
Safety Information for the UK	14
Certifications and Standards	16
European (CE) Compliance	16

---



## Federal Communications Commission Radio Frequency Interference Statement - For U.S.A.

---

### FCC Radio Interference Information

This equipment has been tested and found to comply with the Federal Communications Commission (FCC) 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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause or be subject to interference with radio communications. To minimize the possibility of electromagnetic interference in your application, observe the following two rules:

- Install and operate the iDisplay in such a manner that it does not radiate sufficient electromagnetic energy to cause interference in nearby devices.
- Install and test the iDisplay to ensure that the electromagnetic energy generated by nearby devices does not interfere with the iDisplay's operation.

### **WARNING**

#### **ELECTROMAGNETIC / RADIO INTERFERENCE**

Electromagnetic radiation may disrupt the iDisplay's operations, leading to unintended equipment operation. If electromagnetic interference is detected:

- Increase the distance between the iDisplay and the interfering equipment.
- Reorient the iDisplay and the interfering equipment.
- Reroute power and communication lines to the iDisplay and the interfering equipment.
- Connect the iDisplay and the interfering equipment to different power supplies.
- Always use shielded cables when connecting the iDisplay to a peripheral device or another computer.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**



## Qualified Personnel

---

### General

Only qualified personnel are authorized to implement, operate or maintain the products. The interference of non-qualified persons or failure to observe the security instructions contained in this manual, or attached to the devices, can endanger the personnel and/or do irreparable damage to the equipment. The following personnel can be designated as "qualified personnel":

- at the application design level, engineering department personnel who are familiar with automation safety concepts (for example, a design engineer),
  - at the equipment implementation level, personnel who are familiar with the installation, connection and commissioning of automation equipment (for example, an installation assembly or cabling engineer, or a commissioning technician),
  - at the operation level, personnel who are experienced in the use and control of automation and computing equipment (for example, an operator),
  - as far as preventive or corrective maintenance is concerned, personnel trained and qualified in regulating or repairing automatic and computing devices (for example an operating technician, or an after-sales service technician, etc.).
-



## Safety Information for the UK

---

### Earthing and Wiring

#### **WARNING**

##### **UNGROUNDING EQUIPMENT**

- This apparatus must be earthed.
- Use a three-pin plug with a standard three-pin power point.
- Use only three-core extension cords.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

#### **WARNING**

##### **IMPROPER WIRING**

Wire the equipment as described below:

- Green and Yellow: Earth.
- Blue: Neutral.
- Brown: Live.
- The Green and Yellow wire must be connected to the terminal in the plug marked by the letter E or by the safety earth symbols colored Green, or Green and Yellow.
- The blue wire must be connected to the terminal which is marked by the letter N or colored Black.
- The brown wire must be connected to the terminal which is marked with the letter L or colored Red.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

**Note:** The fact that the equipment operates satisfactorily does not imply that the power point is earthed. If you have any doubt about the effective earthing or wiring the power point, consult a qualified electrician. Incorrectly wired power cords are a major cause of fatalities.



## **WARNING**

### **INCOMPATIBLE POWER SYSTEM**

Do not connect this equipment to an isolation transformer power system:

- An isolation transformer system is a system having no reference between live parts and Earth; the exposed conductive parts of the device frame and enclosure are earthed.
- An isolation transformer system is not permitted where the computer is directly connected to public supply systems in the UK.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

---



## Certifications and Standards

---

### Agency Certifications

Schneider Electric submitted this product for independent testing and qualification by third-party listing agencies. These agencies have certified this product as meeting the following standards.

North America:

- Underwriters Laboratories Inc., UL508, Industrial Control Equipment
  - Canadian Standards Association, Specification C22.2, No. 142, Process Control Equipment
- 

### Compliance Standards

Schneider Electric tested this product for compliance with the following compulsory standards.

North America: Federal Communications Commission, FCC Part 15

Europe: CE

- Programmable Controllers: IEC 61131-2
  - EMI: EN55011 (Group 1, Class A) / IEC 61000-3-2, IEC 61000-3-3
  - EMC: EN 61000-6-2
- 

### Qualification Standards

Schneider Electric voluntarily tested this product to additional standards. The additional tests performed, and the standards under which the tests were conducted, are specifically identified in *Environmental Characteristics*, p. 32.

---

## European (CE) Compliance

---

### CE Compliance Note

The products described in this manual comply with the European Directives concerning Electromagnetic Compatibility and Low Voltage (CE marking) when used as specified in the relevant documentation, in applications for which they are specifically intended, and in connection with approved third-party products.

---



---

# Physical Overview



---

## At a Glance

Overview	This chapter provides a physical overview of the product.														
What's in this Chapter?	This chapter contains the following topics:														
<table><tr><th>Topic</th><th>Page</th></tr><tr><td>Main Features</td><td>18</td></tr><tr><td>Package Contents</td><td>19</td></tr><tr><td>iDisplay Unit Description</td><td>21</td></tr><tr><td>Analog RGB and DVI-D Interface Specifications</td><td>23</td></tr><tr><td>RS-232C and USB Interface Specifications</td><td>26</td></tr><tr><td>Accessories</td><td>28</td></tr></table>		Topic	Page	Main Features	18	Package Contents	19	iDisplay Unit Description	21	Analog RGB and DVI-D Interface Specifications	23	RS-232C and USB Interface Specifications	26	Accessories	28
Topic	Page														
Main Features	18														
Package Contents	19														
iDisplay Unit Description	21														
Analog RGB and DVI-D Interface Specifications	23														
RS-232C and USB Interface Specifications	26														
Accessories	28														

---



## Main Features

---

### Introduction

The iDisplay is equipped with the following features:

- High Quality TFT Color LCD Display
  - Easy Installation In Users' Cabinets and Panels
  - Panel can be used as a VGA Display
  - Easy-to-use Built-In Touch Panel
  - USB-HUB Function
- 

### High Quality TFT Color LCD Display

This unit is equipped with a 19.0 inch TFT-type color LCD. Its superior brightness and wide viewing angle, not found in ordinary laptop-type TFT LCDs, widens your scope of applications.

The screen's maximum resolution is 1280 x 1024 pixels and can display 16,777,216 colors.

---

### Easy Installation In Users' Cabinets and Panels

The iDisplay's slim and compact design makes installation easy since it was designed specifically for use as an IA (Industrial Automation) or OA (Office Automation) system monitor.

The flat front panel provides protection equivalent to the rigorous IP65f standard. Even without its optional protective cover the front panel is highly resistant to both water and dust.

---

### Panel can be used as a VGA Display

Since the iDisplay is equipped with an analog RGB interface and a DVI-D Interface, it can be connected to a PC and other similar devices. (The PC's dot clock frequency, however, must be within the standard range.)

---

### Easy-to-use Built-In Touch Panel

iDisplay series built-in touch panel is standard equipment, allowing touch panel data to be output to a host PC via input/output commands and an RS-232C cable or USB cable.

This is beneficial for systems requiring both touch panel operation and data monitoring.

---

### USB-HUB Function

The iDisplay unit has USB-HUB function and can connect USB devices to the front USB connector.

---



## Package Contents

---

### Introduction

The following items are included in the iDisplay's package. Before using the iDisplay, please make sure that all items listed here are present:

- iDisplay Unit (1)
- Installation Gasket (1)
- Installation Fasteners (12: 4x3 set)
- AC Power Cord EU plug (1)
- AC Power Cord USA plug (1)
- CD ROM (User Manual, Touch Panel Communication Program) (1)
- Analog RGB. VGA Cable (1)
- Touchscreen Interface USB Cable (1)
- USB Cable Strap (1)
- Instruction sheet (1)

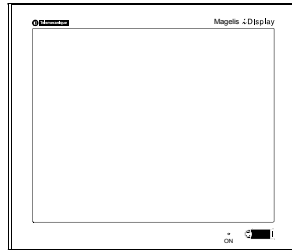
This unit has been carefully packed with special attention to quality. However, should you find anything damaged or missing, please contact your local iDisplay distributor immediately.

---



**iDisplay Package Contents**

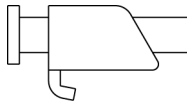
The following shows the iDisplay Package Contents:



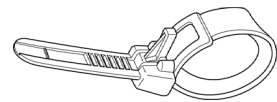
iDisplay Unit



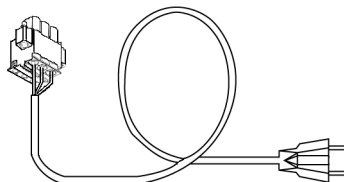
Installation Gasket



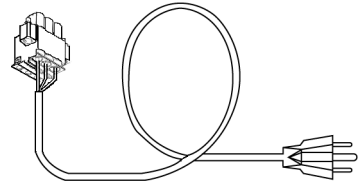
Installation Fasteners



USB Cable Strap



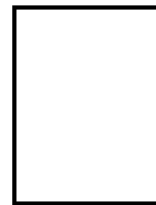
AC Power Cord EU plug



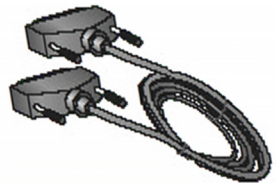
AC Power Cord USA plug



CD-ROM



Instruction Sheet



Analog RGB.VGA Cable



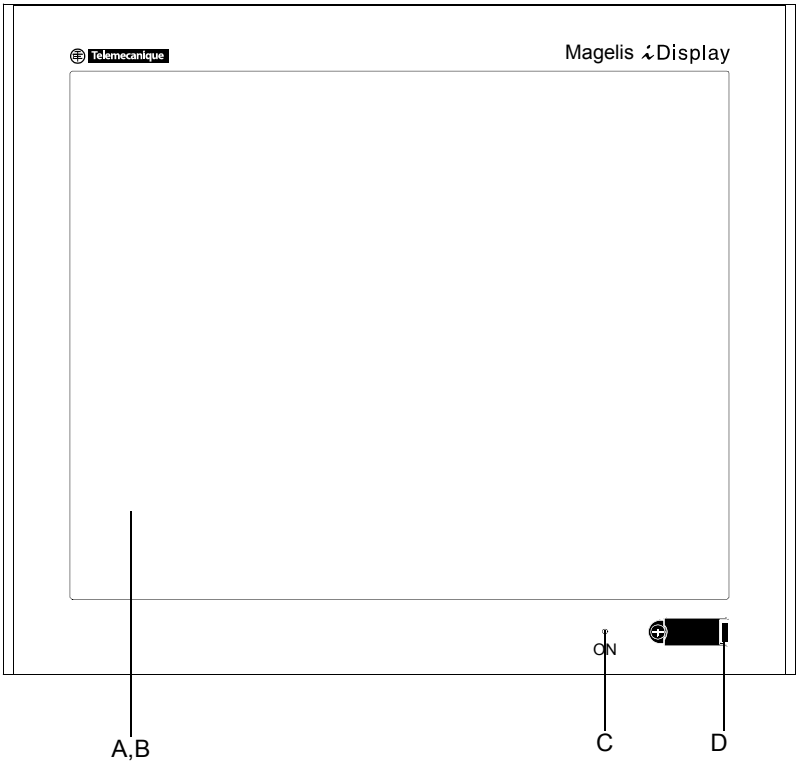
Touchscreen Interface  
USB Cable



# iDisplay Unit Description

**Introduction**      The following diagrams identify the different parts of the iDisplay unit and describe their functions.

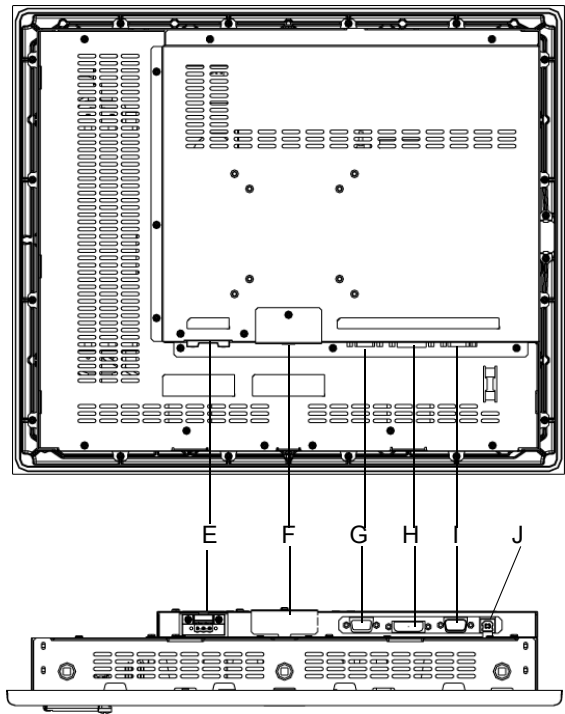
**Front View**      The following provides a front view of the iDisplay:



Part	Function
A	Display: displays User created screens
B	Touch Panel: performs screen change operations and sends data to the host (PC).
C	Front LED: indicates the condition of the power supply, a backlight burnout or image signal input.
D	Front USB Connector (Type A): connects USB devices.



**Rear and Bottom Views**      The following provides rear and bottom views of the iDisplay:



Part	Function
E	AC Power Connector: provides the input and ground terminals for a power cable.
F	Setting Switch (Dip switch): changes the settings of each operation mode.
G	VGA Interface (analog RGB) Connector: connects analog RGB interface.
H	DVI-D Interface Connector: connects DVI-D interface.
I	RS-232C Connector: connects RS-232C (serial) interface, sends touch panel data to the host (PC), and receives commands from the host (PC).
J	USB Connector (Type B): connects USB interface, sends touch panel data to the host (PC, and receives commands from the host (PC) or can be used as an upstream port for USB-HUB.



## Analog RGB and DVI-D Interface Specifications

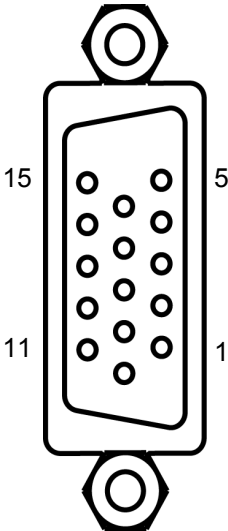
### Analog RGB Interface

The following table displays the Analog RGB signals:

Input signal type	Analog RGB
Input signal characteristics	Image signal: analog RGB Synchronous signal: TTL level, negative true or positive true Scanning type: non-interlaced
OSD (On Screen Display) Settings	<ul style="list-style-type: none"><li>● CONTRAST</li><li>● BRIGHTNESS</li><li>● H-POS</li><li>● V-POS</li><li>● H-SIZE</li><li>● PHASE</li><li>● BACKLIGHT</li><li>● SHARPNESS</li><li>● DEFAULT (RESET ALL)</li></ul>



The following table displays the Analog RGB Interface pin assignments and signal Names:

Pin Connection	Pin	Signal Name	Direction	Meaning
	1	R	Input	R Analog signal
	2	G	Input	G Analog signal
	3	B	Input	B analog signal
	4	Reserved	-	-
	5	Ground	-	Digital grounding
	6	Return R	-	R signal GND
	7	Return G	-	G signal GND
	8	Return B	-	B signal GND
	9	Reserved	-	-
	10	Ground	-	Digital grounding
	11	Reserved	-	-
	12	DDC DATA	-	DDC data
	13	H.SYNC	Input	Horizontal synchronous signal
	14	V.SYNC	Input	Vertical synchronous signal
	15	DDC CLOCK	-	DDC clock

Connector: mini D-sub 15pin male

Connector set screw: Inch type (4-40)

Cable: RGB cable included (VGA standard) less than 4.5m (177.2 in.)

## WARNING

### EQUIPMENT DISCONNECTION OR UNINTENDED EQUIPMENT OPERATION

- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only RGB cables specified in this document.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

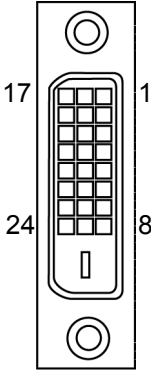


DVI-D Interface

The following table displays the DVI-D signals:

Input signal type	DVI-D
OSD (On Screen Display) Settings	<ul style="list-style-type: none"><li>● CONTRAST</li><li>● BRIGHTNESS</li><li>● BACKLIGHT</li><li>● SHARPNESS</li><li>● DEFAULT (RESET ALL)</li></ul>


The following table displays the DVI-D Interface pin assignments and signal names:

Pin Connection	Pin	Signal Name	Pin	Signal Name
	1	TMDS DATA2-	13	-
	2	TMDS DATA2+	14	-
	3	TMDS DATA2/4 SHIELD	15	GND
	4	-	16	Hot Plug Detect
	5	-	17	TMDS DATA0-
	6	DDC Clock	18	TMDS DATA0+
	7	DDC Data	19	TMDS DATA0/5 SHIELD
	8	-	20	-
	9	TMDS DATA1-	21	-
	10	TMDS DATA1+	22	TMDS CLOCK SHIELD
	11	TMDS DATA1/3 SHIELD	23	TMDS CLOCK+
	12	-	24	TMDS CLOCK-

Connector: DVI-D 24-pin male

Connector set screw: Inch type (4-40)

Cable: DVI-D not included

 **WARNING**

**EQUIPMENT DISCONNECTION OR UNINTENDED EQUIPMENT OPERATION**

- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only the DVI-D cables specified in this document.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**



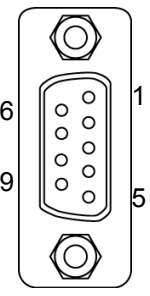
## RS-232C and USB Interface Specifications

### RS-232C Interface

The following table displays the RS-232C signals:

Input signal type	RS-232C
Serial Interface	<ul style="list-style-type: none"><li>• Baud rate: 9600 bps</li><li>• Data length: 8 bits</li><li>• Flow Control: none</li><li>• Parity: none</li><li>• Stop bit: 1</li></ul>

The following table displays the RS-232C Interface pin assignments and signal names:

Pin Connection	Pin	Signal Name	Meaning
	1	CD	Carrier Detect (1)
	2	RD	Receive Data (iDisplay->Host)
	3	SD	Send Data (iDisplay<-Host)
	4	DTR	Data Terminal Ready (1)1
	5	SG	Signal ground
	6	DSR	Data Set Ready (1)
	7	RS	Request to Send (iDisplay<-Host)
	8	CS	Clear to Send (iDisplay->Host)
	9	-	(Used internally)

(1): CD, DTR, and DSR are connected together inside of the iDisplay.

Connector: D-sub 9 pin male

Connector set screw: Inch type (4-40)

Cable: SIO straight cable not included

**Note:** The signal names used for the serial interface on iDisplay units are designed to match the pin order used on most PC serial interfaces, so that a straight cable can be used to connect the two.



## **⚠ WARNING**

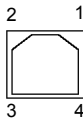
### **EQUIPMENT DISCONNECTION OR UNINTENDED EQUIPMENT OPERATION**

- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only the SIO cables specified in this document.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

### **USB Interface (Up-stream port)**

The following table displays the USB Interface (Up-stream port) pin assignments and signal names:

Pin Connection	Pin	Signal Name	Meaning
	1	USB1+5 Vdc	+5 Vdc
	2	USBD1(-)	USB data (-)
	3	USBD1(+)	USB data (+)
	4	GND	Ground

Connector: USB 2.0/USB 1.1 compliant

Connector set screw: Type B connector

Cable: USB Cable included

## **⚠ WARNING**

### **EQUIPMENT DISCONNECTION OR UNINTENDED EQUIPMENT OPERATION**

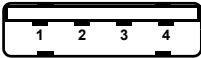
- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only the USB cables specified in this document.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**




Front USB  
Interface (Down-  
stream port)

The following table displays the Front USB Interface (Down-stream port) pin assignments and signal names:

Pin Connection	Pin	Signal Name	Meaning
	1	USB1+5 Vdc	+5 Vdc
	2	USBD1(-)	USB data (-)
	3	USBD1(+)	USB data (+)
	4	GND	Ground

Connector: USB 2.0/USB 1.1 compliant

Connector set screw: Type A connector



WARNING

EQUIPMENT DISCONNECTION OR UNINTENDED EQUIPMENT OPERATION

- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only the USB cables specified in this document.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Accessories

Accessories for  
iDisplay

The accessories available as option for the iDisplay is shown below:

Description	Reference
Maintenance kit	MPCYK90MNTKIT
Protective film	MPCYK90SPSKIT



---

# Characteristics



---

## At a Glance

Introduction

This chapter lists the iDisplay characteristics.

What's in this Chapter?

This chapter contains the following topics:

Topic	Page
Structural and Electrical Characteristics	30
Environmental Characteristics	32
Functional Characteristics	33



Structural and Electrical Characteristics

Structural  
Characteristics

The following table presents the iDisplay Structural characteristics:

Characteristics	Values
Grounding	≤ 100 Ω or your country's applicable standard
Structure	Rating: Equivalent to IP65f (JEM 1030) * <sup>1</sup>
External dimensions	W460 mm [18.1 in.] x H390 mm [15.4 in.] x D77.7 mm [3.1 in.]
Weight	Approx. 7 kg [15.4 lb]
Cooling Method	Natural air circulation

**Note:** \*<sup>1</sup> The front face of the iDisplay unit, installed in a solid panel, has been tested under conditions equivalent to those shown here. Even though the iDisplay unit's level of resistance is equivalent to these standards, oils that should have no effect on the iDisplay can possibly harm the unit. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oils are allowed to adhere to the unit for long periods of time. If the iDisplay's front face protection sheet peels off, these conditions can lead to oil entering the iDisplay and separate protection measures are suggested. Also, if non-approved oils are present, it may cause deformation or corrosion of the front panel's plastic cover. Therefore, prior to installing the iDisplay be sure to confirm the type of conditions that will be present in the iDisplay's operating environment. If the installation gasket is used for a long period of time, or if the unit and its gasket are removed from the panel, the original level of protection cannot be guaranteed. To maintain the original protection level, replace the installation gasket regularly.



## ⚠ CAUTION

### EQUIPMENT DAMAGE

- Prior to installing the iDisplay, determine the environmental conditions in which the iDisplay will be operated.
- Do not use non-approved oils.
- Ensure that the iDisplay's front face protection sheet has not peeled off, especially if the iDisplay is operated in conditions where there are vaporized oils or low viscosity cutting oils present.
- In the event that the iDisplay's front face protection sheet has become worn or has peeled off, separate protection measures must be used.
- Do not allow low viscosity cutting oils to adhere to the unit for long periods of time.
- Replace the installation gasket regularly, even if it has been removed from the panel.

**Failure to follow these instructions can result in injury or equipment damage.**

### Electrical Characteristics

The following table presents the iDisplay Electrical characteristics:

Characteristics	Values
Rated Voltage	100 Vac to 240 Vac
Allowable Voltage	85 Vac to 264 Vac
Rated Frequency	50 Hz/60 Hz
Rated Frequency Range	40 Hz to 72 Hz
Allowable Voltage Drop	1 Cycle (max.) (Voltage drop interval must be 1 s or more)
Current Consumption	<ul style="list-style-type: none"> <li>● <math>\leq 1.2</math> A for 100 Vac (Typ 1.0 A)</li> <li>● 0.7 A for 240 Vac (Typ 0.5 A)</li> </ul>
In-Rush Current	60 A (max.)
Voltage Endurance	1500 Vac 20 mA for 1 minute (between charging and FG terminals)
Insulation Resistance	500 Vdc 10M $\Omega$ (min.) (between charging and FG terminals)



## Environmental Characteristics

**Characteristics** The following table presents the iDisplay's environmental characteristics:

Characteristics	Values
Ambient operating temperature	0°C to +50°C (32°F to 122°F)
Storage temperature	-20°C to +60°C (-4°F to 140°F)
Operating and storage humidity	10%RH to 90%RH (relative humidity) (wet bulb temperature: ≤ 39°C (102.2°F) - no condensation
Air purity (Dust)	≤0.1 mg/m <sup>3</sup> (no electrically conductive dust permitted)
Pollution degree	Pollution degree 2
Corrosive gasses	Free of corrosive gasses
Atmospheric endurance	800hPa to 1,114hPa (≤2,000 meters (6561 feet) above sea level)
Vibration resistance	JIS B 3502, IEC61131-2 compliant <ul style="list-style-type: none"> <li>● 5Hz to 9Hz Half amplitude 3.5mm,</li> <li>● 9Hz to 150Hz Constant acceleration 9.8m/s</li> <li>● X, Y, Z each direction 10 times (100 minutes)</li> </ul>
Impact resistance	JIS B 3501, IEC61131-2 compliant <ul style="list-style-type: none"> <li>● 147 m/s X, Y, Z each direction 3 times )</li> </ul>
Noise immunity (via noise simulator)	<ul style="list-style-type: none"> <li>● Noise voltage: 1,500Vp-p</li> <li>● Pulse duration: 1μ sec, 500n sec, 50 n sec</li> <li>● Rise time: 1 n sec</li> </ul>
Electrostatic discharge immunity	6kV contact (complies with IEC 61000-4-2 level 3)
Surge resistance	Normal mode: 1 KV/Common Mode: 2kV (complies with IEC 61000-4-5 level 3)



## Functional Characteristics

### Introduction

The Functional characteristics include:

- Performance
- Display

### Performance

The following table presents the iDisplay performance:

Items		Characteristics
Graphics		SXGA (1280 x 1024)
Display Unit		19 inch TFT SXGA
Touch Panel I/F	Type	Resistive Film (Analog)
	Resolution	1024 x 1024
	Interface	<ul style="list-style-type: none"> <li>● Serial Interface (RS-232C)</li> <li>● USB Interface (Type B connector)</li> </ul>
Video I/F		<ul style="list-style-type: none"> <li>● Analog RGB Interface</li> <li>● DVI-D Interface</li> </ul>

### Display

The following table presents the display characteristics:

Characteristics	Values
Size	480 mm (19 in.) (Measured diagonally)
Type	TFT Active Matrix Color LCD
Resolution	1280(H) 1024(V) pixels (1pixel=R+G+B color bits)
Dot Pitch	0.294mm (0.01in.) 0.294mm (0.01in.)
Display Colors	16,777,216 colors (R+G+B color bits each)
Video I/F	<ul style="list-style-type: none"> <li>● Analog RGB Interface</li> <li>● DVI-D Interface</li> </ul>
Brightness Control	Available
Contrast Control	Available (Analog RGB only, when the analog RGB connection is used)
Display Area	H 376.32 mm (14.8 in.) V 301.056 mm (11.9 in.)
Display Modes	640 x 400, 640 x 480, 720 x 400, 800 x 600, 1024 x 768, 1280 x 1024
Backlight	CCFL
Backlight Lifetime	(1) 50,000 hours at an ambient temperature of 25°C (77°F). Backlights can be replaced by returning the unit to Schneider

**Note:** (1) 50% decreased brightness indicates the backlight needs to be replaced. This value is only for reference and not a guaranteed value.







---

# Dimensions/Installation



---

## At a Glance

**Introduction** This chapter presents the iDisplay dimensions and its installation in a panel mounting.

**What's in this Chapter?** This chapter contains the following topics:

Topic	Page
Dimensions	36
Creating a Panel Cut for Cabinet Installation	39
Panel Mounting	40
Installing the iDisplay	41



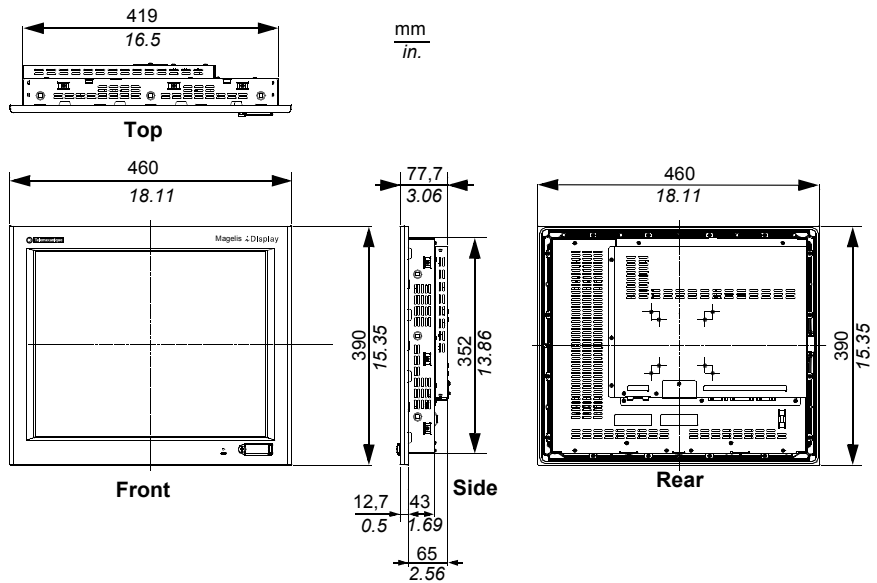
Dimensions

Introduction

The following dimensions are given in millimeters and in inches and apply to all iDisplay units.

External Dimensions

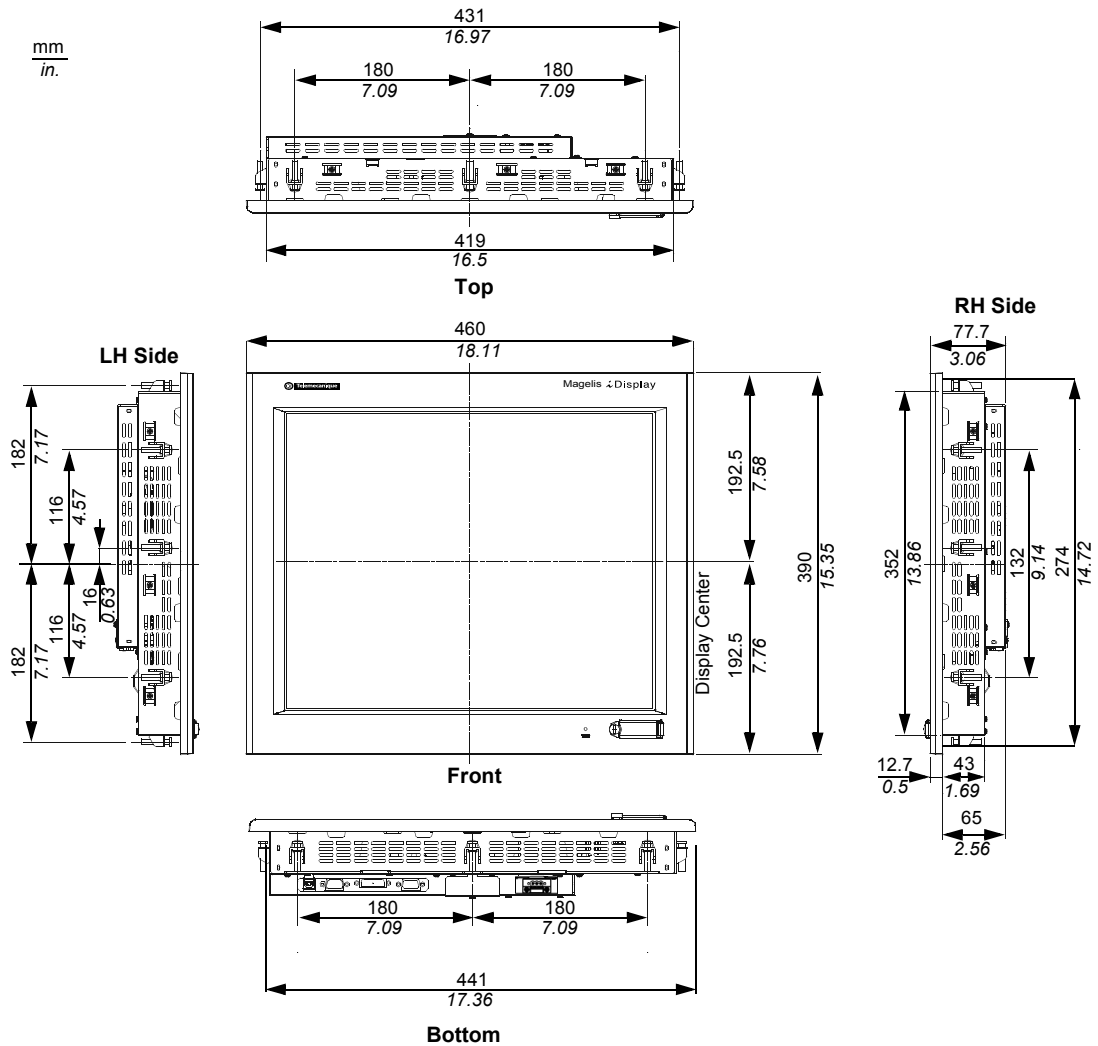
The following diagram shows iDisplay's dimensions:





**Dimensions with  
Installation  
Fasteners**

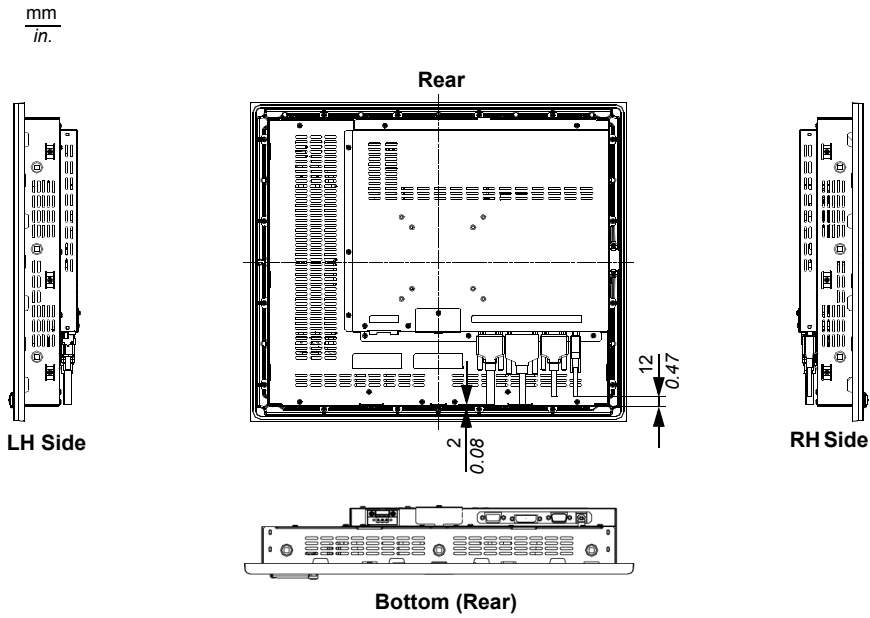
The following diagram shows the dimensions when fasteners are installed:





**Dimensions with Cables**

The following diagram shows the dimensions with cables (rear view):



**Note:** The above values take into account cable bending. The dimensions given here are representative values depending on the type of connection cable used and are therefore intended for reference only.



## Creating a Panel Cut for Cabinet Installation

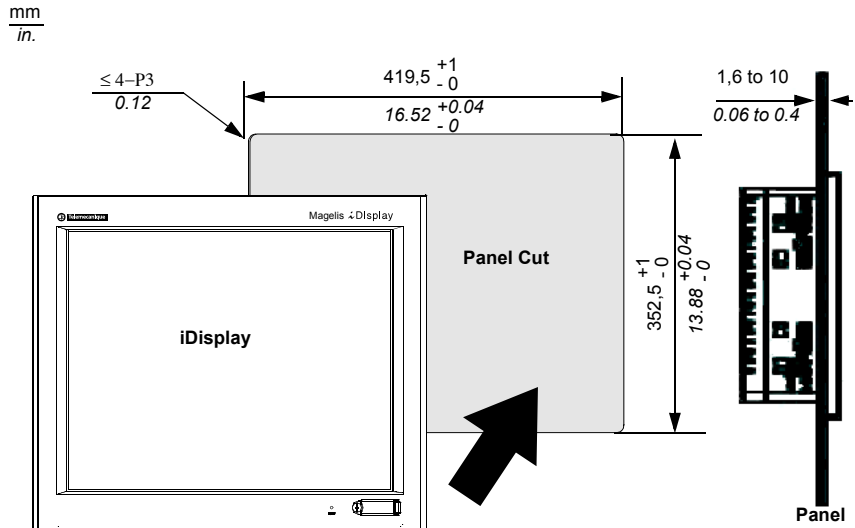
### Introduction

For a cabinet installation, the correct sized opening must be cut in the installation panel.

**Note:** The installation gasket and installation fasteners are needed to install the iDisplay.

### Inserting a iDisplay

The following diagram shows the panel cut. Dimensions are in millimeters and inches:



**Note:**

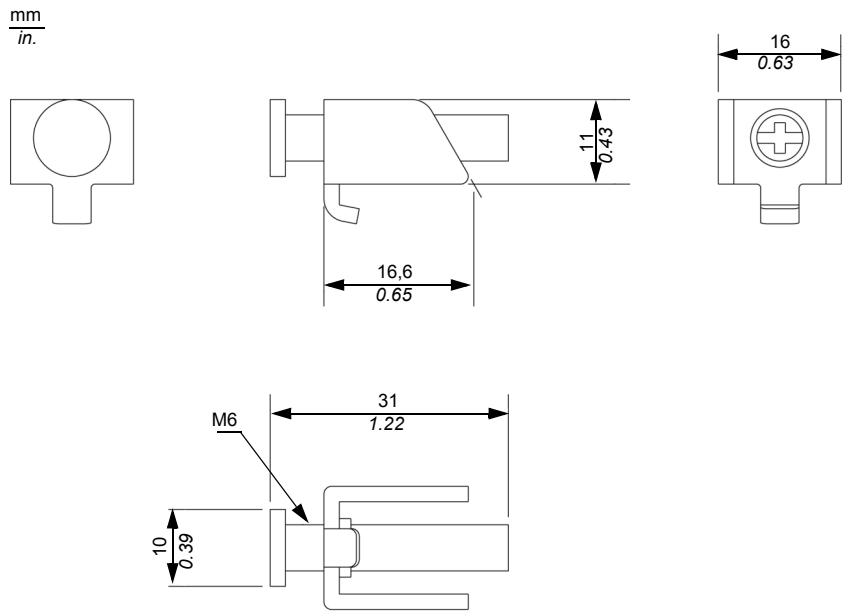
- Ensure the installation panel thickness is between 1.6 to 10 mm (0.06 to 0.4 in).
- To ensure that the product's water resistance is maintained, install it in a panel that is flat and free of scratches or dents.
- Keep careful hold of the unit to prevent it from falling out of its installation panel.
- Metal reinforcing strips can be attached to the inside of the panel, near the Panel Cut, to increase the panel's strength.



Panel Mounting

Panel Mounting Dimensions

The iDisplay units are designed to be mounted in a cabinet with the Installation Fasteners, as shown below:





## Installing the iDisplay

### Vibration and Shocks

Extra care should be taken with respect to the specification concerning vibration levels (see p. 32) when installing or moving the iDisplay unit. If the iDisplay unit is moved, for example, while it is installed in a rack equipped with caster wheels, the unit can receive excessive shock and vibration.

#### CAUTION

##### EXCESSIVE VIBRATION

- Plan your installation activities so that device shock and vibration tolerances are not exceeded.
- Ensure that the panel opening and thickness are within the specified tolerances.
- Before mounting the iDisplay unit into a cabinet or panel, ensure that the installation gasket is attached to the unit. The installation gasket provides additional protection from vibration.
- The recommended torque for mounting the iDisplay 19" device is 0.5 N•m (4.5 lb-in).

**Failure to follow these instructions can result in injury or equipment damage.**

### Installation Gasket

Use of the installation gasket may help extend the operating life of your iDisplay. The gasket is required to meet the protection ratings (IP65, IP20) of the unit and provides additional protection from vibration. Even if moisture protection is not required, install the gasket delivered with your Magelis product.

#### CAUTION


##### LOSS OF SEAL

- Inspect the installation gasket prior to installation or reinstallation, and periodically as required by your operating environment.
- Replace the gasket if visible scratches, tears, dirt, or excessive wear are noted during inspection.
- Do not stretch the gasket unnecessarily or allow the gasket to contact the corners or edges of the frame.
- Ensure that the gasket is fully seated in the installation groove.
- Install the iDisplay into a panel that is flat and free of scratches or dents.
- Tighten the installation fasteners using a torque of 0.5 N•m (4.5 lb-in).

**Failure to follow these instructions can result in injury or equipment damage.**



Installation  
Fasteners



CAUTION

**OVERTORQUE AND LOOSE HARDWARE**

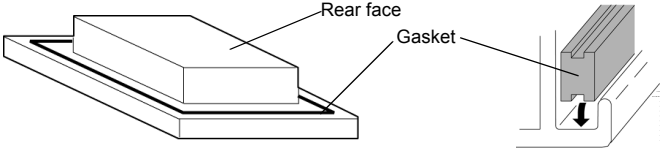
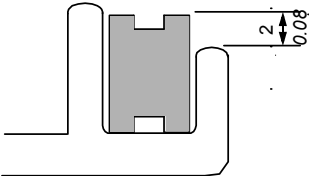
- Do not exert more than 0.6 N•m (5.3 lb-in) of torque when tightening the installation fastener, enclosure, accessory, or terminal block screws. Tightening the screws with excessive force can damage the plastic casing of the iDisplay 19".
- When installing or removing screws, be careful that they do not fall inside the iDisplay 19" unit's chassis.

**Failure to follow these instructions can result in injury or equipment damage.**

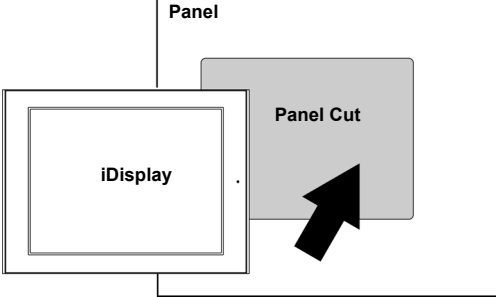
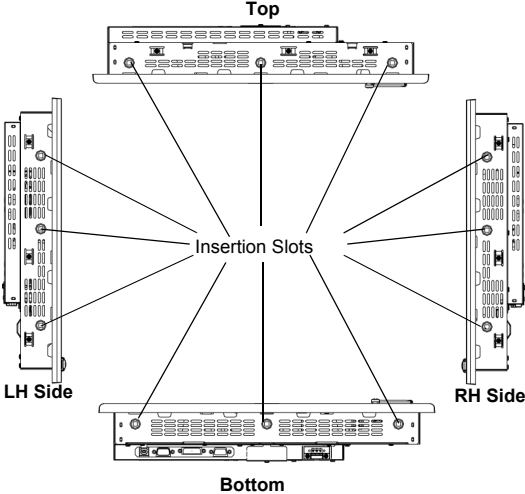
**Note:** The screw installation fasteners are required for NEMA4 protection.

Installing the  
iDisplay

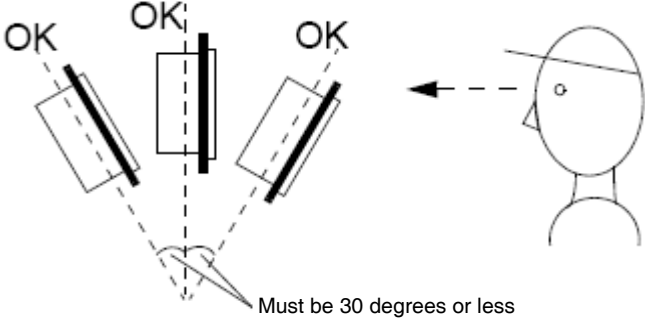
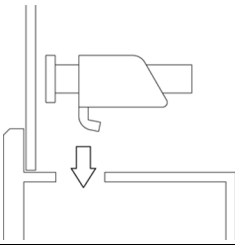
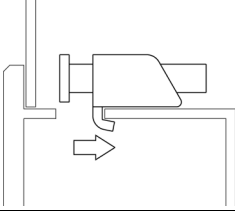
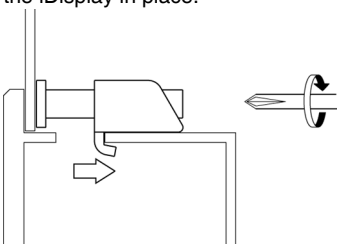
Follow the steps given below when installing the iDisplay:

Step	Action
1	<div>Attaching the Installation Gasket:</div>
2	<div><p>Attach the gasket ensuring that the gasket's grooved edge is on the top and press the gasket completely into the slot. Ensure that the gasket's seam is not inserted into any of the corners of the unit as this may cause the gasket to tear. Check that the gasket is correctly attached to the unit. The upper surface of the gasket should protrude evenly approximately 2 mm (0.08 in.) out of the groove:</p><div><div><div>mm</div><div>in.</div></div></div></div>



Step	Action
3	<p>Insert the iDisplay into the Panel Cut:</p> 
4	<p>Insert the installation fasteners securely into the 12 slot recesses of the unit:</p> 



Step	Action
5	<p>If you are installing the iDisplay in a slanted panel, make sure that the panel is not tilted more than 30 degrees:</p> 
6	<p>Insert each fastener:</p> 
7	<p>Pull each fastener back until it is flush with the rear of the attachment hole:</p> 
8	<p>Use a screw driver to tighten to 0.5 N•m (4.5 in-lb.) each fastener screw and secure the iDisplay in place:</p> 



**iDisplay Ambient Temperature and Humidity**

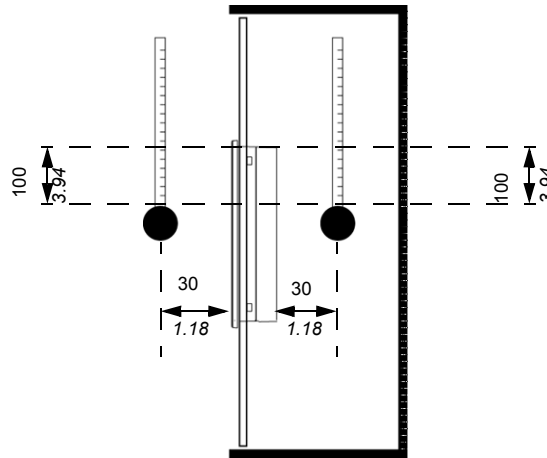
Take the following precautions:

- Ensure that heat from surrounding equipment does not cause the iDisplay to exceed its standard operating temperature.
- Ensure that the ambient temperature is 0°C (32°F) to 50°C (122°F)
- Ensure that the ambient humidity is 10% to 90%

When installing the iDisplay in a cabinet or an enclosure, "Ambient operation temperature" indicates both the panel face and cabinet or enclosure's internal temperature.

mm

in.









---

# Implementation



---

## At a Glance

Introduction	This part describes the implementation of the product.		
What's in this Part?	This part contains the following chapters:		
	Chapter	Chapter Name	Page
	5	Main Power Connection	49

---







---

# Main Power Connection



---

## At a Glance

**Introduction** This chapter describes the connection of the iDisplay to the mains power supply.

**What's in this Chapter?** This chapter contains the following topics:

Topic	Page
Connecting the AC Power Cord	50
Connecting the Power Supply	52
Connecting the USB Cable	54
Connecting the RGB, DVI-D, and 232C Cable	55
Grounding	56
Connecting I/O Signal Lines	58



## Connecting the AC Power Cord

---

### Connecting the Terminal Block

Connect the power cord to the terminal block attached to the Magelis iDisplay unit. The terminal block is removable from the Magelis iDisplay iPC unit.

---

### Overview

## DANGER

### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Always use a properly rated voltage sensing device to confirm power is off.
- Unplug the power cable from both the iDisplay and the power supply.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the iDisplay 19". This device is designed to use 100...240 Vac input.

**Failure to follow these instructions will result in death or serious injury.**

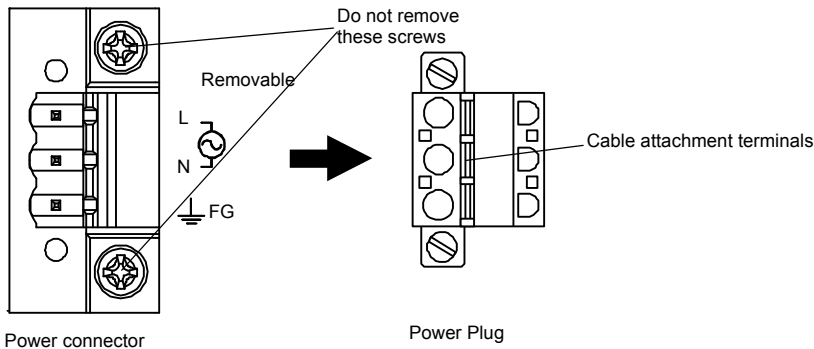
**Note:** When the FG terminal is connected, be sure the wire is grounded. Not grounding the Magelis iDisplay unit will result in excess noise and vibration. When using the strand wire, if the conductor's end is not twisted correctly, the end wires may either short against each other or against an electrode. The grounding wire should have a cross sectional area of 2 mm (12 AWG) or greater. Create the connection point as close to the iDisplay as possible and keep the wire as short as possible. To reduce noise be sure to twist the wire ends. Use copper conductors only. The temperature rating of field installed conductors is 75 °C (167 °F) maximum.

---



Terminal Block  
Description

The figure below shows how to wire the Terminal Block:



**Note:** The torque required to tighten these screws is 0.5 to 0.6 N.m (4.5 to 5.3 lb-in). Do not solder the wire itself. If the central wire's end strands are not twisted correctly, the end strands may either short against each other, or against an electrode.

Wiring the  
Terminal Block

When connecting the wires, ensure to follow the procedures given below:

Step	Action
1	Confirm that the power cable is disconnected from the power supply.
2	Check the color of each cable core before connecting it to the attachment hole.
3	Open the cable attachment holes of the terminal plug by pressing the corresponding button on the plastic terminal.
4	Remove the wire's external covering and insert the crimp-type pin terminal of the cable core completely into the opening.
5	Release the pressure on the plastic terminal and the hole is closed and the cable is fixed:

Black

White

Green/Yellow

Open Button

L

N

FG



## Connecting the Power Supply

---

### Introduction

Take the following precautions when supplying power to the iDisplay unit.

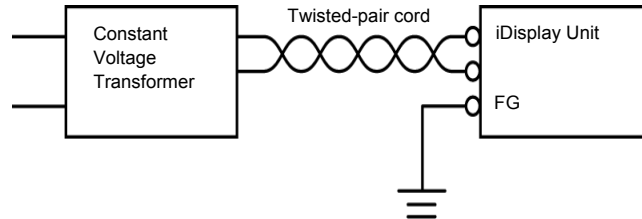
---

### Precautions

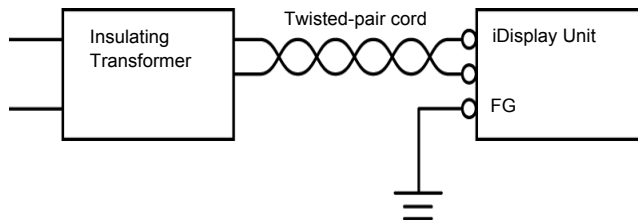
- Connect the AC power cord to the connector at the rear of the iDisplay unit.
  - Between the line and the ground, be sure to use a low noise power supply.
  - The iDisplay unit's power supply cord should not be bundled or kept close to main circuit lines (high voltage, high current), or input/output signal lines.
  - Connect a lightning surge absorber to handle power surges.
  - To reduce noise, make the power cord as short as possible.
- 

### Power Supply Connections

If the power supply voltage exceeds the iDisplay unit's specified range (AC 85 ~ 264 V), connect a constant voltage transformer as illustrated below:



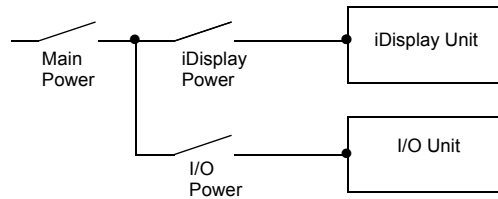
For between the line and ground or between the lines select a power supply that is low in noise. If there is an excess amount of noise, connect an insulating transformer as illustrated below:



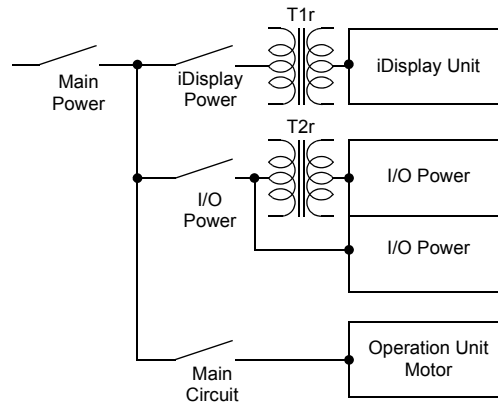
**Note:** Use constant voltage and insulating transformers with capacities of the rated value or more.



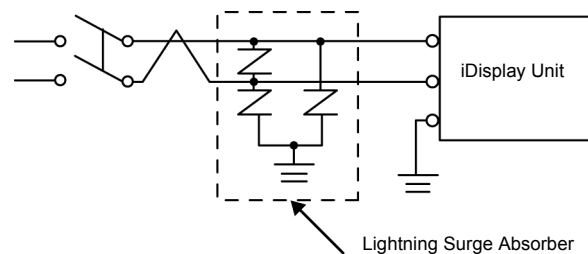
When supplying power to the iDisplay unit, separate the input/output and operation lines as shown below:



The power supply cable must not be bundled or positioned close to main circuit lines (high voltage, high current), or input/output signal lines. It should be separated as illustrated in the diagram below.



To deal with power surges, connect a lightning surge absorber as shown in the diagram below:

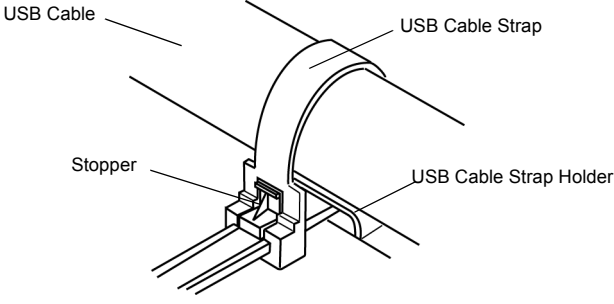




## Connecting the USB Cable

### USB Cable Strap Attachment

When attaching the USB Cable Strap, be sure to follow the procedures given below:

Step	Action
1	Connect the USB Cable to the connector.
2	Insert the cable strap into the cable strap holder, and tighten the strap until the cable is secured in place. <div></div>

### USB Cable Strap Removal Feature

When removing the USB Cable Strap, be sure to follow the procedures given below:

Step	Action
1	Push in the cable strap's stopper until the cable strap band is unlocked, then remove the band.
2	Disconnect the USB cable.



## Connecting the RGB, DVI-D, and 232C Cable

---

### **Attaching the RGB, DVI-D, and 232C Cable**

After connecting the RGB, DVI-D, and 232C Cables, the plug can be safely attached by tightening the connection screws.

---



# Grounding


## Overview

The grounding resistance between the iDisplay’s Frame Ground (FG) and Ground must be 100 Ω or less. When using a long grounding wire, check the resistance and if required replace a thin wire with a thicker wire and place it in a duct. In addition, please refer to the table below for maximum line lengths for the thickness of wire.

## Ground Wire Dimensions

Wire Thickness	Maximum Line Length
2 mm <sup>2</sup> (14 AWG)	30 m (98 ft.)
	60 m (196 ft.) round trip.
1.5 mm <sup>2</sup> (16 AWG)	20 m (65 ft.)
	40 m (131 ft.) round trip.

## Precaution



**WARNING**

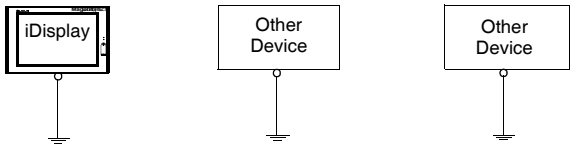
**UNINTENDED EQUIPMENT OPERATION**

- Use only the authorized grounding configurations shown below.
- Confirm that the grounding resistance is 100 Ω or less.
- Test the quality of your ground connection before applying power to the device.  
Excess noise on the ground line can disrupt the iDisplay's operations.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

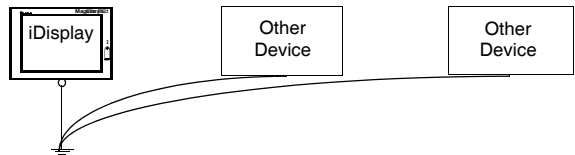
## Dedicated Ground

Connect the Frame Ground (FG) to a dedicated ground.



## Shared Ground Allowed

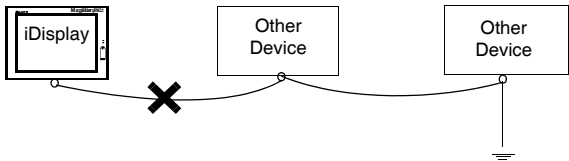
If a dedicated ground is not possible, use a shared ground, as shown below.





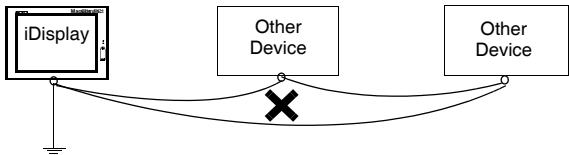
Shared Ground  
not Allowed

Do not connect the iDisplay 19" unit to ground through other devices using the SG terminal.



Shared Ground -  
Avoid Ground  
Loop

When connecting an external device to a iDisplay with the Shield Ground (SG), ensure that no ground loop is created. The iDisplay's FG and SG are connected internally.



Grounding  
Procedure

When grounding, follow the procedures given below:

Step	Action
1	Check that the grounding resistance is 100 $\Omega$ or less.
2	When connecting the SG line to another device, ensure that the design of the system/ connection does not produce a ground loop. <b>Note: The SG and FG terminals are connected internally in the unit.</b>
3	Wherever possible, use 2 mm <sup>2</sup> (14 AWG) wire to make the ground connection. If this isn't possible, ensure that the grounding wire gauge and length conform to the table in <i>Ground Wire Dimensions</i> , p. 56. Create the connection point as close to the unit as possible and make the wire as short as possible.

Grounding I/O  
Signal Lines

**⚠ WARNING**

**UNINTENDED EQUIPMENT OPERATION**

- Do not wire I/O lines in proximity to power cables, radio devices, or other equipment that may cause electromagnetic interference.
- If wiring of I/O lines near power lines or radio equipment is unavoidable, use shielded cables and ground one end of the shield to the iDisplay's Frame Ground (FG).

Electromagnetic radiation may interfere with the iDisplay's control communications.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**



## Connecting I/O Signal Lines

---

### Precautions

I/O signal lines must be wired separately from the power circuit cable. If the power circuit cable needs to be wired with the input/output (I/O) signal lines for any reason, use shielded cables and ground one end of the shield to the iDisplay's Frame Ground terminal.

---



---

# Installation



---

## At a Glance

**Introduction** This part describes the product installation.

**What's in this Part?** This part contains the following chapters:

Chapter	Chapter Name	Page
6	Operation Mode Setup and Display Positioning	61
7	Connections	73
8	Touch Panel Communication Program	79
9	Maintenance	81
10	Troubleshooting	89







---

# Operation Mode Setup and Display Positioning



---

## At a Glance

**Introduction** This chapter describes the Operation Mode Setup and Display Positioning.

**What's in this Chapter?** This chapter contains the following topics:

Topic	Page
Dip Switches and Slide Switch Operation	62
Status of Front LED	64
Running the OSD	65



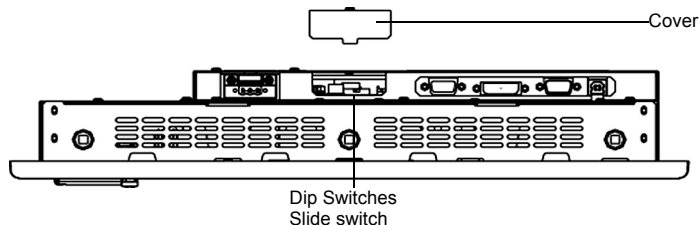
## Dip Switches and Slide Switch Operation

### Introduction

The Dip Switches and the Slide switch are located at the bottom of the iDisplay unit. They can only be used when the power supply is ON.

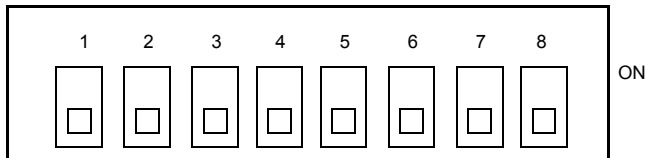
**Note:** After changing the settings of the Dip Switches and the Slide Switch, make sure you restart the iDisplay.

The following figure shows the location of the Dip and Slide Switches:



### Dip Switches Operation

The following figure shows the factory default position for the Dip and Slide Switches:



The following table describes each Dip Switch:

Item	Dip Switch	Description
1	SW1-1	Reserved (Always ON)
2	SW1-2	Display/Hide the OSD (On Screen Display)
3	SW1-3	Reserved (Always OFF)
4	SW1-4	Reserved (Always OFF)
5	SW1-5	Reserved (Always OFF)
6	SW1-6	Reserved (Always OFF)
7	SW1-7	Reserved (Always OFF)
8	SW1-8	Reserved (Always OFF)

SW1-2:

- Switch ON: to hide the OSD (On Screen Display)
- Switch OFF: to display the OSD

The default setting is OFF.

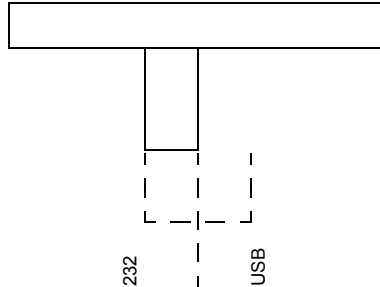


**Slide Switch  
Operation**

The slide switch is used to the switch data input (command control) method on the touch panel between USB and RS-232C.

The default setting is RS-232C.

The following figure illustrates the Slide Switch:





# Status of Front LED

---

**Status of Front LED in Operation Modes**

The following table describes the status of Front LED:

LED	OFF	Green	Orange	Green/Red Flash	Orange Flash <sup>1</sup>
Panel	Power OFF	Power ON	Power ON	Power ON	Power ON
Backlight	-	Normal	Normal	Burned-out	Burned-out
Input of Image	-	Yes	No	Yes	No

<sup>1</sup> When "no signal" is displayed.

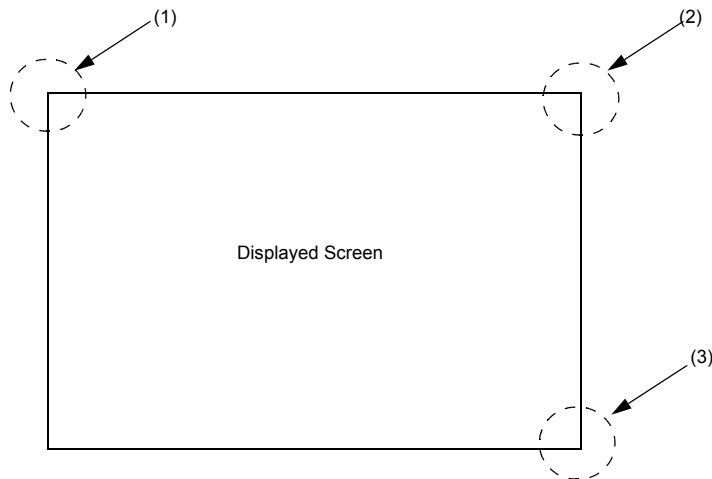
---



## Running the OSD

**Title of Overview Block** You can operate the iDisplay screen menus via the touch panel and adjust the screen image display to a minute level. This feature is called OSD (On Screen Display).

**Starting the OSD** The following figure shows how to start the OSD:



To start the OSD and enter OSD mode:

Press the three corners of the touch panel in the following order within 5 seconds:

- (1) upper left
- (2) upper right
- (3) lower right

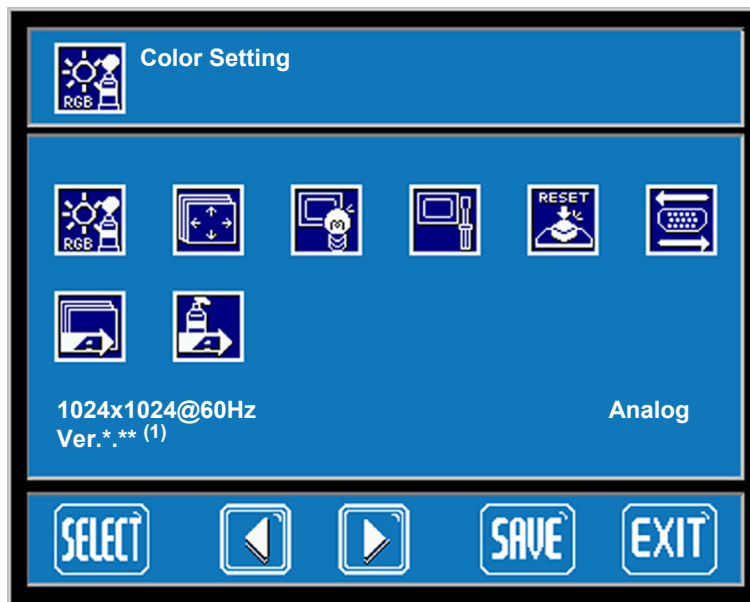
In OSD mode, the setting screen is displayed in the center of the screen. In this mode, the touch panel cannot be used to export data to external devices unless the settings for the OSD are completed.

**Note:** The OSD is not displayed when a switch SW1-2 is ON.



## Main Menu




The following figure shows the Main Menu:



(1) Ver. \*.\*: indicates the version of the OSD

## Using the OSD

When the OSD is started, the Main Menu appears. Touch the icon of an item to display its submenu or settings change screen:

- Use the  icon to change the setting.
- Press the  button to apply the setting.
- Press the  button to save the defined settings.

**Note:** If the power is turned OFF without saving the set values, this setting will be lost and the last saved setting will be read into the system when the iDisplay starts. To avoid this always save your settings.



## Exiting the OSD









To exit the OSD, press the  or  button or leave the OSD as it is at least 30 seconds.

If the OSD is automatically closed after 30 seconds of inactivity, the values set before the OSD was closed will be retained until the power is turned off or reset command. To ensure that your values are retained after the power is turned off, use







the  button.

## The Tools used

The following table describes Tool functions:

Icon	Tool	Function
	Color setting	Adjusts the contrast and the brightness
	Screen setting	Adjusts the display position of the screen (Analog RGB only).
	Custom display	Adjusts sharpness and the backlight brightness.
	System settings	Changes settings, such as activating the click sound.
	All reset	Resets the current OSD value to the default value.
	Input source	Switches Analog RGB and DV1-D.
	Auto adjust	Automatically adjusts the display position of the screen (Analog RGB only).
	Auto gain	Automatically adjusts the contrast and the brightness (Analog RGB only).



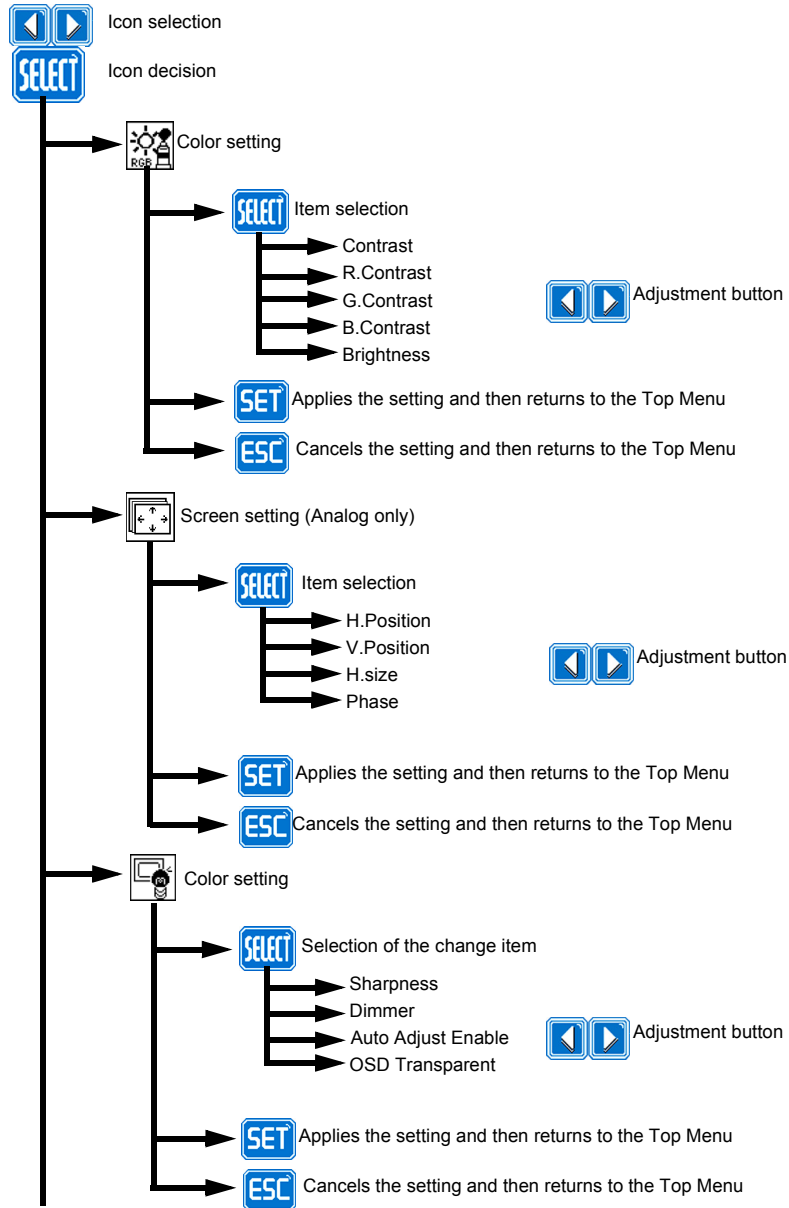
Icon	Tool	Function
	ESC	Cancels the setting and returns to the upper level.
	SET	Applies the setting and returns to the upper level.
	Arrow KEY	Changes the selection.
	SELECT	Selects.
	SAVE	Saves the current value and exits the OSD.
	EXIT	Cancels the current value and exits the OSD.

---

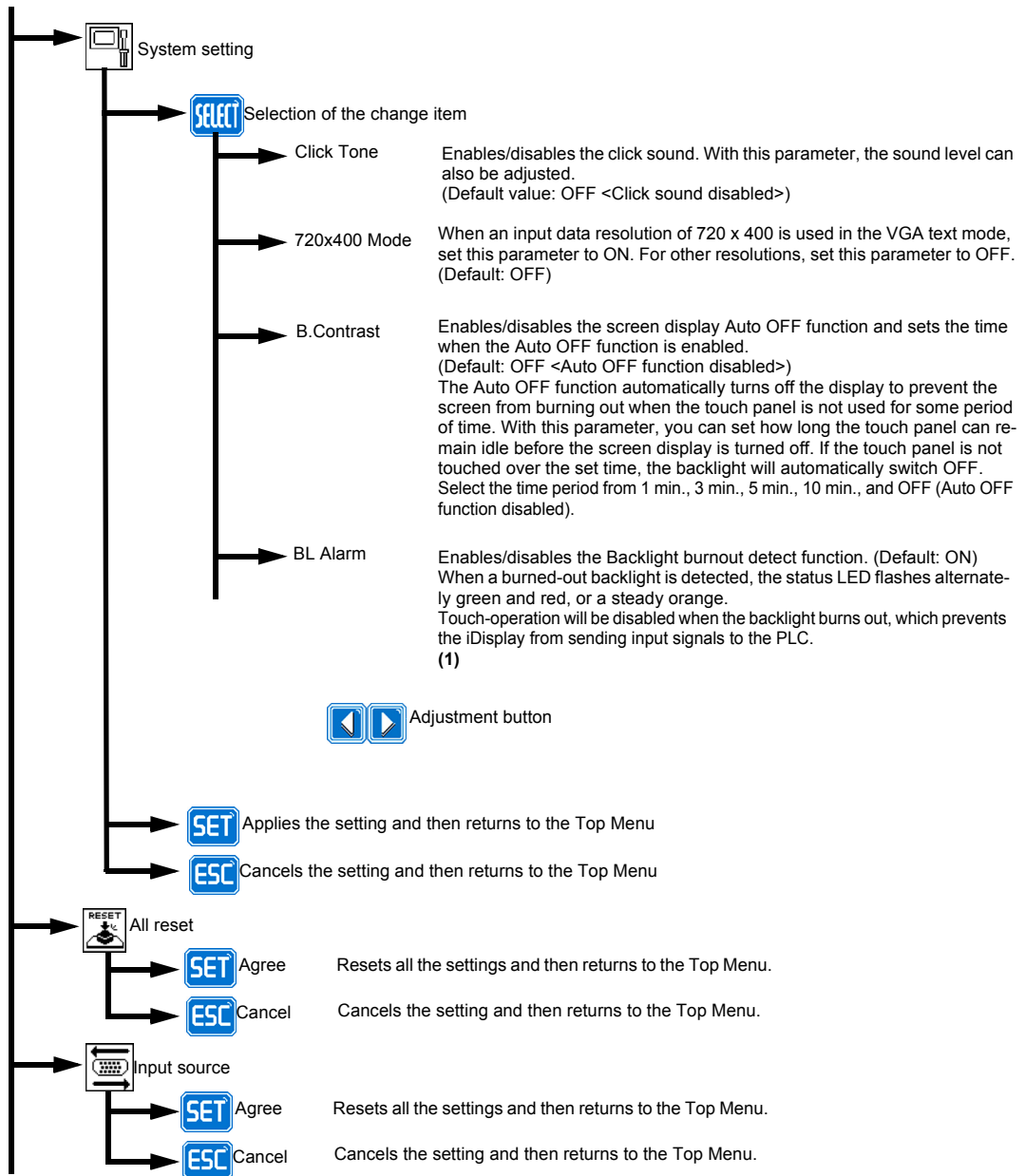


**IDisplay Menu**

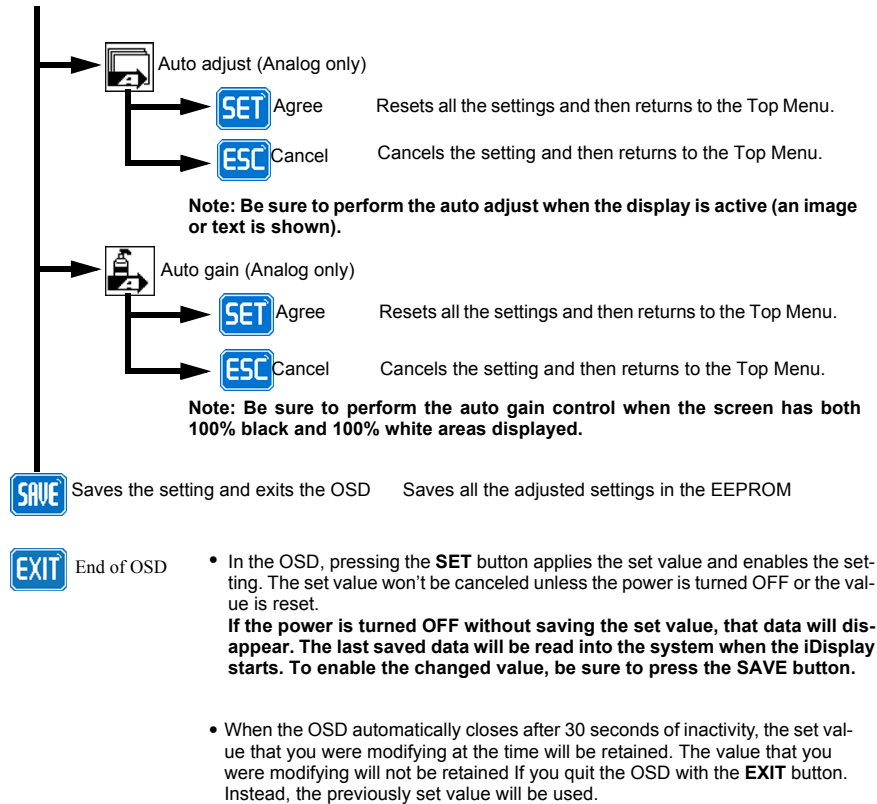
The following figure illustrates the iDisplay menu structure:

**Top Menu**









**Note:** (1) The iDisplay unit detects a backlight burnout by monitoring the backlight's current flow. However, the iDisplay may not detect this condition, depending on the type of backlight problem.







---

# Connections



---

## At a Glance

**Introduction** This chapter presents the iDisplay Connections to a PC and the Touch Panel Data.

**What's in this Chapter?** This chapter contains the following topics:

Topic	Page
Connecting the iDisplay to a PC	74
Touch Panel Data	76



## Connecting the iDisplay to a PC

### Connecting

The iDisplay unit is designed for standard SXGA mode.

The following table presents the number of pixels displayed:

Size	H.Sync. (kHz)	V.Sync. (Hz)	Dot Clock (MHz)	Screen Resolution Expansion (H: Horizontal) (V: Vertical)	Display Resolution
640 x 400	31.469	70.000	25.175	H: x 2 V: x 2.56	1280 x 1024
640 x 480	31.469	59.992	25.175	H: x 2 V: x 2.13	
640 x 480	35.000	66.667	30.240		
640 x 480	37.500	75.000	31.500		
640 x 480	37.861	72.810	31.500		
720 x 400 * <sup>1</sup>	31.469	70.000	28.320	H: x 1.77 V: x 2.56	
800 x 600	35.156	56.250	36.000	H: x 1.6 V: x 1.7	
800 x 600	37.879	60.317	40.000		
800 x 600	46.875	75.000	49.500		
1024 x 768	48.363	60.004	65.000	H: x 1.25	
1024 x 768	56.476	70.069	75.000	V: x 1.33	
1024 x 768	60.023	75.029	78.750		
1280 x 1024	63.981	60.000	108.000	H:V: x 1.0	
1280 x 1024	79.976	75.000	134.999		

**Note:** \*<sup>1</sup> When you use the 720 x 400 size, select "720 x 400 Display Resolution 720 x 420 DSP" in the OSD (On screen display) system setting.

**Note:**

- If you enter a signal timing value not compatible with this device, or if the timing value is larger than can be displayed by the dot clock, an "OUT OF RANGE" message is displayed. If this occurs, be sure to read your computer manual and enter a value that is compatible with this device.
- If you do not enter a signal (synchronized signal), a "NO SIGNAL" message is displayed.



**Magelis iDisplay and PC's VGA board:**

- Some types of VGA boards may not be within the ranges specified above, and, therefore, cannot be connected to the iDisplay.
- Also, if you change your PC's VGA board, it is possible that the new board cannot be connected to the iDisplay.

**Magelis iDisplay and Modular IPC:**

When targeting dual display configurations (Magelis iPC Front Panel + Magelis iDisplay), some particular configurations are not supported.

Configurations:

Modular iPC	connected to its	iPC Front Panel 19"
<ul style="list-style-type: none"><li>● MPCA... iPC Control Box Small or</li><li>● MPCB... iPC Control Box Medium or</li><li>● MPCC... iPC Control Box Large</li></ul>	connected to	<ul style="list-style-type: none"><li>● MPCNA20... iPC Front Panel 19" KBD or</li><li>● MPCNB20... iPC Front Panel 19" KBDTS or</li><li>● MPCNT20... iPC Front Panel 19" TS</li></ul>

For these configurations, the connection of an additional Magelis iDisplay on the VGA port of the Modular iPC Control Box is not supported.



# Touch Panel Data

## Introduction

The iDisplay uses an analog type touch panel, and can therefore detect all 1280 x 1024 coordinates.

A calibration program can be used to adjust the touch position.

## OS and touch Panel Driver Combinations

The following table lists the OS and Touch Panel Combinations:

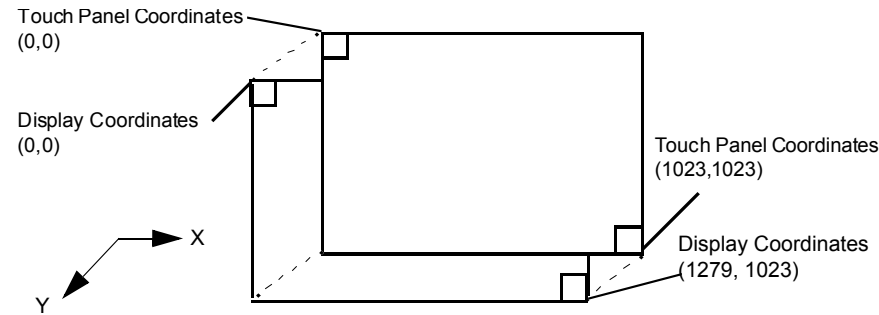
OS	Touch I/F Program	Calibration
For Windows®NT4.0, "SP6A" or newer version is supported.	PL-TD000	Feature included in the touch I/F program.
Windows®2000		
Windows®XP		

## Touch Panel Coordinate Data Resolution

Both the X and Y coordinates have a resolution of 1024.

The origin point (0,0) is located in the upper left corner of the screen.

Screen display origin, with resolution of 1280 x 1024, is normally located at the upper left hand corner of the screen. Therefore, a program to convert the touch coordinates to display coordinates is required.

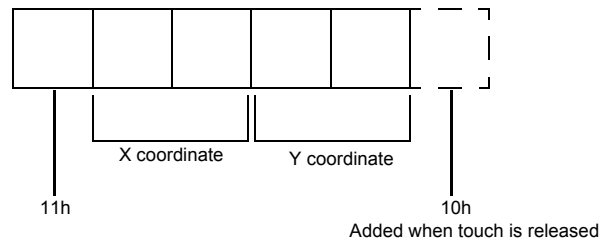




**Touch Panel  
Coordinate Data  
Format**

All data is in binary format:

- Header: 1 byte (11h=touched; 10h=released)
- X coordinate: 2 bytes (0 to 3FFh)
- Y coordinate: 2 bytes (0 to 3FFh)



**Example:**

If the coordinate [(X=23 (11h), Y=500 (1F4h))] is touched and moved to the coordinate (X=63(3Fh),Y=250(FAh)):

Coordinate Data	Action
11h 0h 17h 1h F4h	Touched
11h 0h 17h 1h F4h	Continuous output with the same location
11h 0h 18h 1h F5h	Moving the location without releasing touch
•	
•	
•	
11h 0h 3h 1h FAh	Continuous data output unless finger is released
11h 0h 3h 1h FAh 10h	When released, only 1 unit of data is sent







---

## Touch Panel Communication Program



8

---

### iDisplay Software

---

#### **Touch Screen Drivers**

To install and use the software, refer to the Touch Screen Drivers section of the CD-ROM (User Manual Touch Panel Communication Program).

---







---

## At a Glance

Overview	This chapter explains how to maintain the iDisplay.								
What's in this Chapter?	This chapter contains the following topics: <table><tr><th>Topic</th><th>Page</th></tr><tr><td>Regular Cleaning</td><td>82</td></tr><tr><td>Replacing the Gasket</td><td>85</td></tr><tr><td>Maintenance Checks</td><td>87</td></tr></table>	Topic	Page	Regular Cleaning	82	Replacing the Gasket	85	Maintenance Checks	87
Topic	Page								
Regular Cleaning	82								
Replacing the Gasket	85								
Maintenance Checks	87								

---



## Regular Cleaning

---

### Precautions

#### **DANGER**

##### **CHEMICAL BURNS TO EYES OR SKIN**

- Do not use tools to operate the touch panel or in the vicinity of the display.
- When placing the display face-down, select a clean, level, non-abrasive surface. If necessary, place a soft, non-abrasive pad on the surface before lowering the unit.
- If a leak in the LCD panel is discovered and you come in contact with the liquid crystal material, follow these procedures:
  - In the case of contact with eyes or mouth, flush with running water for 15 minutes minimum.
  - In the case of contact with skin or clothing, wipe off the liquid crystal material and wash with soap and running water for 15 minutes minimum.
  - If liquid crystal is ingested, induce vomiting, rinse mouth, and then drink a large quantity of water.
  - Follow any other hazardous substances safety procedures required by your facility.

**Failure to follow these instructions will result in death or serious injury.**

#### **CAUTION**

##### **HARMFUL CLEANING SOLUTIONS**

- Do not clean the unit or any component of the unit with paint thinner, organic solvents, or strong acids.
- Use only a mild soap or detergent that will not harm the polycarbonate material of the screen.

**Failure to follow these instructions can result in injury or equipment damage.**



Ensure that the gasket is in good working order and free from cracks, scratches, and dirt. A gasket that has been used for a long period of time may be scratched or dirty, and may have lost much of its water resistance. Change the gasket at least once a year, or when scratches or dirt become visible.

## CAUTION

### LOSS OF SEAL

- Inspect the installation gasket prior to installation or reinstallation, and periodically as required by your operating environment.
- Replace the gasket if visible scratches, tears, dirt, or excessive wear are noted during inspection.
- Do not stretch the gasket unnecessarily or allow the gasket to contact the corners or edges of the frame.
- Ensure that the gasket is fully seated in the installation groove.
- Install the iDisplay into a panel that is flat and free of scratches or dents.
- Tighten the installation fasteners using a torque of 0.5 N•m (4.5 lb-in).

**Failure to follow these instructions can result in injury or equipment damage.**

## DANGER

### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

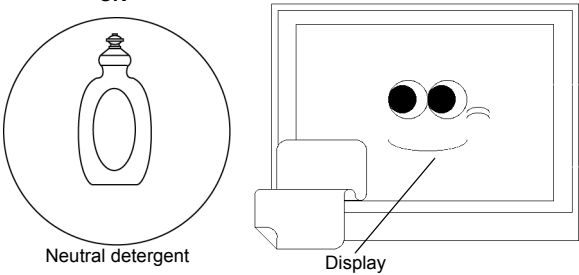
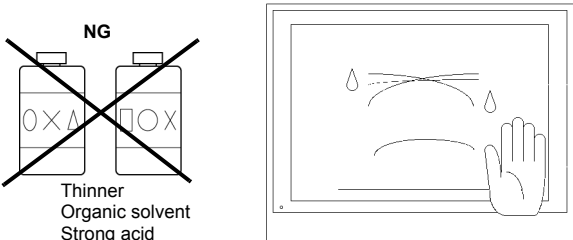
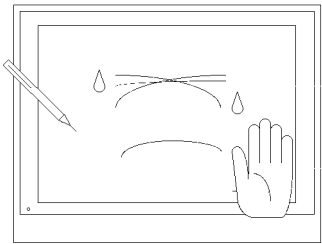
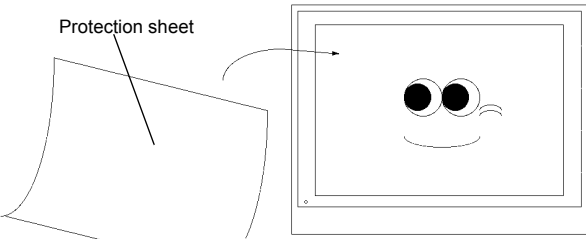
- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Always use a properly rated voltage sensing device to confirm power is off.
- Unplug the power cable from both the iDisplay and the power supply.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the iDisplay 19". This device is designed to use 100...240 Vac input.

**Failure to follow these instructions will result in death or serious injury.**



**Cleaning the iDisplay**

The following table explains how to clean the iDisplay:

Display	How to clean
<p><b>OK</b></p>  <p>Neutral detergent</p> <p>Display</p>	<p>When the display surface or frame becomes dirty, use a soft cloth moistened with neutral detergent to wipe away any dust or stains.</p>
<p><b>NG</b></p>  <p>Thinner Organic solvent Strong acid</p>	<p>Do not clean the unit with thinner, organic solvents, or strong acids.</p>
	<p>Do not use sharp or hard objects, such as a mechanical pencil or screwdriver, to push on the display. This could damage the unit.</p>
<p>Protection sheet</p> 	<p>Attach the screen protection sheet when using the iDisplay in extremely dirty or dusty areas.</p>



---

## Replacing the Gasket

---

### Introduction

The installation gasket protects the iDisplay and improves its water resistance. The gasket must be inserted correctly into the groove for the iDisplay unit's moisture resistance to be equivalent to IP65.

### CAUTION

#### LOSS OF SEAL

- Inspect the installation gasket prior to installation or reinstallation, and periodically as required by your operating environment.
- Replace the gasket if visible scratches, tears, dirt, or excessive wear are noted during inspection.
- Do not stretch the gasket unnecessarily or allow the gasket to contact the corners or edges of the frame.
- Ensure that the gasket is fully seated in the installation groove.
- Install the iDisplay into a panel that is flat and free of scratches or dents.
- Tighten the installation fasteners using a torque of 0.5 N•m (4.5 lb-in).

**Failure to follow these instructions can result in injury or equipment damage.**

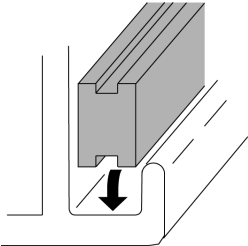
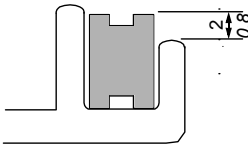
**Note:** The Gasket is included with the Maintenance Kit.

---



**Installing a Replacement Gasket**

The following table describes how to replace the installation gasket:

Step	Action
1	Place the unit on a flat level surface with the display facing downwards.
2	Remove the old gasket from the unit.
3	Attach the new gasket ensuring that the gasket's grooved edge is on the top. Ensure that the gasket's seam is not inserted into any of the corners of the unit as this may cause the gasket to tear. 
4	Check that the gasket is correctly attached to the unit. The upper surface of the gasket should evenly protrude approximately 2 mm (0.08 in) out of the groove. 



## Maintenance Checks

---

### Introduction

To keep your iDisplay unit in best condition, check the following points regularly:

- iDisplay Operation Environment
  - Electrical Specifications
  - Related Items
- 

### iDisplay Operating Environment

- Is the operating temperature within the allowable range (0°C to 50°C) (32°F to 122°F)?
  - Is the operating humidity within the specified range (30%RH to 90%RH), dry bulb temperature of 39°C (102°F) or less?
  - Is the operating atmosphere free of corrosive gases?
- 

### Electrical Specifications

Is the input voltage appropriate (85 Vac to 264 Vac)?

---

### Related Items

- Are all power cords and cables connected properly? Have any become loose?
  - Are all mounting brackets holding the unit securely?
  - Are there any scratches or traces of dirt on the installation gasket?
-







---

## At a Glance

**Overview**

This chapter describes how to locate and resolve problems with the iDisplay unit.

**What's in this Chapter?**

This chapter contains the following topics:

Topic	Page
Troubleshooting Checklists	90
Error Message	92

---



## Troubleshooting Checklists

---

### Introduction

**Note:** This section assumes that the iDisplay is the cause of a problem, not the host. When the host is the problem, please refer to its corresponding manual.

When a problem occurs, make sure to go through the checklist and follow the instructions given.

Here are the main issues that may occur when using the iDisplay unit:

- The display is blank:
  - No display appears after the unit is switched ON
  - The screen disappears during standard operation
  - The screen does not display normally
- The Touch Panel does not respond

**Note:** If the following checklists do not solve your problem, please contact your local Schneider Electric vendor or the vendor who sold you the iDisplay unit.

## DANGER

### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Always use a properly rated voltage sensing device to confirm power is off.
- Unplug the power cable from both the iDisplay and the power supply.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the iDisplay 19". This device is designed to use 100...240 Vac input.

**Failure to follow these instructions will result in death or serious injury.**



## No Display

The table below suggests actions to take if the iDisplay unit display is blank or if the screen turns itself off:

Step	Check/Operation	Solution
1	Does the backlight light up?	<ul style="list-style-type: none"> <li>• If No, follow steps 2 to 5</li> <li>• If Yes, follow steps 6 to 10</li> </ul> If none, contact your local distributor.
2	Is the unit using the correct power voltage?	If not, connect the appropriate voltage. see <i>p. 31</i>
3	Turn OFF the power switch	
4	Is the power supply cable correctly connected to the unit?	If not, connect the power cable correctly. see <i>p. 52</i>
5	Is the problem resolved?	If none of the previous steps fixed the blank panel display problem, then there is a problem with the iDisplay. Contact your local Schneider distributor.
6	Is the PC operating?	If not, start the PC.
7	Are the iDisplay output settings the same as the PC's frequency and resolution?	If not, set the iDisplay output settings to match the PC's frequency and resolution.
8	Is the RGB cable/DVI-D cable connected correctly?	If not, connect the RGB cable/DVI-D cable correctly. see <i>p. 55</i>
9	Does the screen display correctly?	If not, adjust the screen display parameters. see <i>p. 65</i>
10	Is the problem resolved?	If none of the previous steps fixed the blank panel display problem, then there is a problem with the iDisplay. Contact your local Schneider distributor.

## Touch Panel Does Not Respond

If the touch panel does not react, or its reaction is very slow after it is pressed, the table below proposes some solutions:

Step	Check/Operation	Solution
1	Is the Touch Panel Driver installed in the PC (host)?	If not, install the Touch Panel Driver. See the Touch Screen drivers CD.
2	Is the Touch Panel Driver set correctly?	If not, set the Touch Panel Driver correctly. See the Touch Screen drivers CD.
3	Is the Slide Switch correctly set for the input interface?	If not, set the Slide Switch correctly. see <i>p. 63</i>
4	Is the USB cable connected correctly?	If not, connect the USB cable correctly. see <i>p. 54</i>
5	Is the problem resolved?	If none of the previous steps fixed the touch panel problem, then there is a problem with the iDisplay. Contact your local Schneider distributor.



## Error Message

---

**Introduction**                    An error message appears if an error occurs in the iDisplay unit during RUN mode.

---

**Error Message List**            The following table lists possible error messages:

Error Message	Problem	Solution
Out of range 1 to 4	A signal timing value that is not compatible with the iDisplay unit has been entered.	Set the iDisplay Output settings to match the PC's frequency and resolution. see <i>p. 26</i>
	A value for the dot clock which exceeds the iDisplay unit's usable timing range has been entered.	
	A resolution that is not compatible with the iDisplay unit has been set.	
No Signal	The Windows-compatible PC's power has not been turned ON.	Turn on the Windows-compatible PC's power.
	The Windows-compatible PC has not been correctly connected to the iDisplay unit.	Connect the RGB cable/DVI-D cable correctly.
	The input I/F and the image input signal type are not the same.	Adjust the screen display parameters. see <i>p. 65</i>

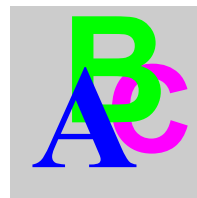
---



---

# Index

---



## A

AC Power Connector, 22

## C

Characteristic

- Electrical, 31
- Environmental, 32
- Functional, 33
- Structural, 30

Connecting

- AC Power Cord, 50
- Power Supply, 52

## D

Dedicated Ground, 56

Dimensions, 36

- External, 36
- With Cables, 38
- With Fasteners, 37

Display, 21

DVI-D, 22

## E

Error Message, 92

## G

Grounding, 56

## L

LED, 21

## O

OSD

- Display Menu, 69
- Exiting, 67
- Main Menu, 66
- Starting, 65
- Tool, 67
- Using, 66

## R

RS-232C, 22

## S

- Setting Switch, 22
- Shared Ground - Avoid Ground Loop, 57
- Shared Ground Allowed, 56
- Shared Ground not Allowed, 57

## T

Terminal Block

- Description, 51

Touch Panel, 21

Touch Panel Data, 76

Troubleshooting, 90



## **U**

### **USB**

Front, 21

Type B, 22

## **V**

VGA, 22







You can download this technical publication and other technical information from our website at <http://www.schneider-electric.com>.

Visit <http://www.schneider-electric.com> for your nearest Schneider Electric affiliate.