

# Vision™ PLC+HMI

# Installation Guide

V530-53-xxxx  
 V560-xxxx  
 V570-57-xxxx /V570-57-xxxx-J  
 V700-xxxxJ  
 V1040-xxxx  
 V1210-xxxxJ



SCAN  
to download

## General Description



The products listed above are micro-PLC+HMIs, rugged programmable logic controllers that comprise built-in operating panels.

Detailed Installation Guides containing the I/O wiring diagrams for these models, technical specifications, and additional documentation are located in the Technical Library in the Unitronics website:



<https://unitronicsplc.com/support-technical-library/>

## Alert Symbols and General Restrictions



When any of the following symbols appear, read the associated information carefully.

Symbol	Meaning	Description
	Danger	The identified danger causes physical and property damage.
	Warning	The identified danger could cause physical and property damage.
<i>Caution</i>	Caution	Use caution.

- Before using this product, the user must read and understand this document.
- All examples and diagrams are intended to aid understanding, and do not guarantee operation. Unitronics accepts no responsibility for actual use of this product based on these examples.
- Please dispose of this product according to local and national standards and regulations.
- Only qualified service personnel should open this device or carry out repairs.

	▪ Failure to comply with appropriate safety guidelines can cause severe injury or property damage.
	▪ Do not attempt to use this device with parameters that exceed permissible levels. ▪ To avoid damaging the system, do not connect/disconnect the device when power is on.

## Environmental Considerations

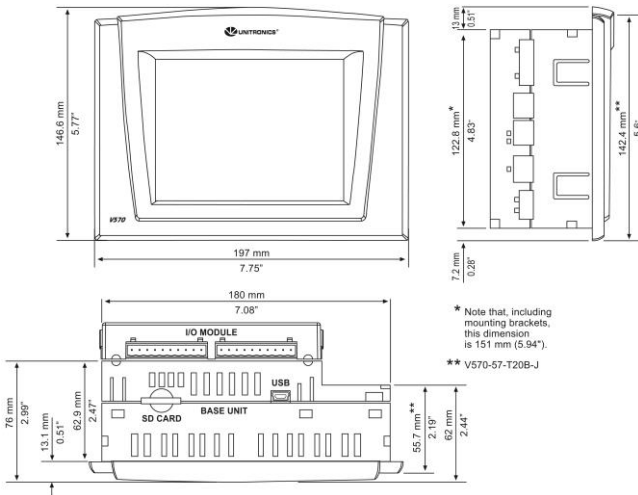
	▪ Do not install in areas with: excessive or conductive dust, corrosive or flammable gas, moisture or rain, excessive heat, regular impact shocks or excessive vibration, in accordance with the standards given in the product's technical specification sheet.
	▪ Do not place in water or let water leak onto the unit.
	▪ Do not allow debris to fall inside the unit during installation.
	▪ Ventilation: 10mm space required between controller's top/bottom edges & enclosure walls. ▪ Install at maximum distance from high-voltage cables and power equipment.

## Mounting

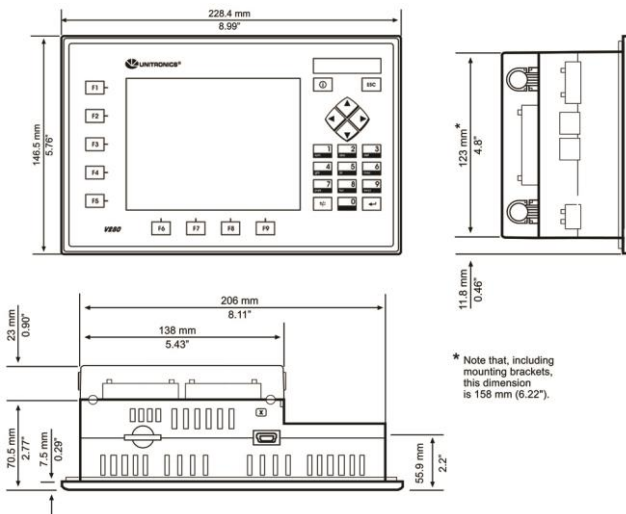
Note that figures are for illustrative purposes only.

Note that the LCD screen may have a single pixel that is permanently either black or white

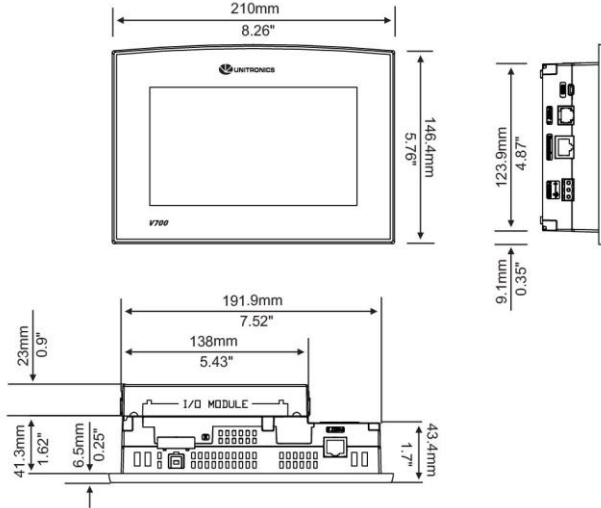
### Dimensions: V530/ V570



### Dimensions: V560

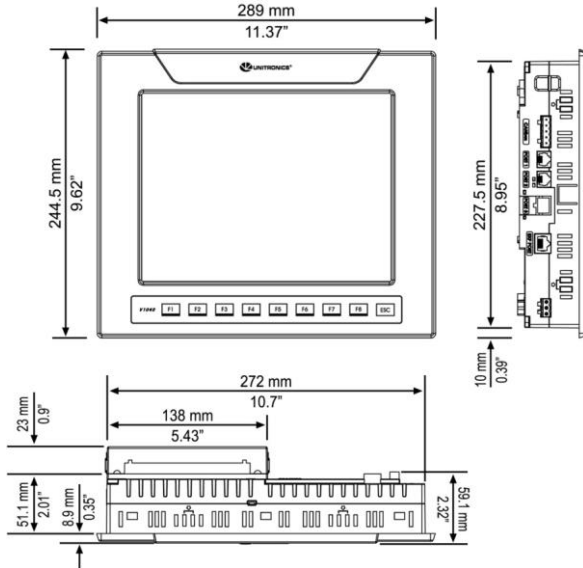


**Dimensions: V700**

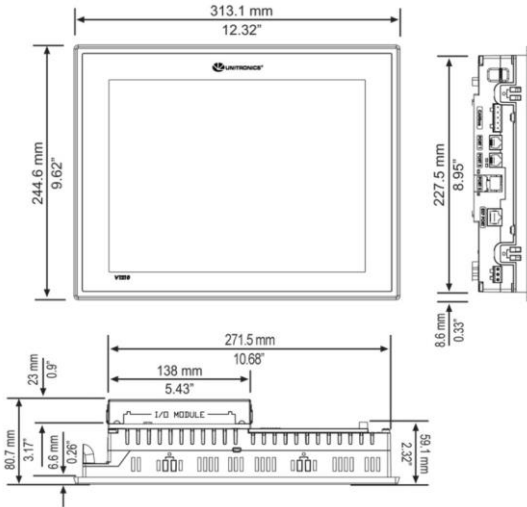


Note that the Snap-in I/O module thickness is 23 mm (0.9").

**Dimensions: V1040**



**Dimensions: V1210**

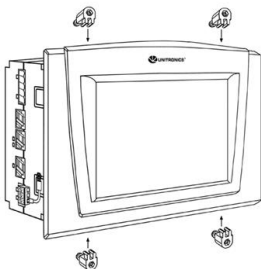


Model	Cut-out	View area
V530/V570	182x125mm (7.16"x4.92")	118.2x89.1mm (4.65"x4.95")
V560	206x124.5mm (8.13"x4.9")	117x88.4mm (4.6"x3.48")
V700	193x125mm (7.59"x4.92")	153.7x86.7mm (6.05"x3.41")
V1040	274x230mm (10.78"x9.05")	215x162.5mm (8.46"x6.39")
V1210	297x228.5mm (11.69"x8.9")	246.8x185.3mm (9.71"x7.29")

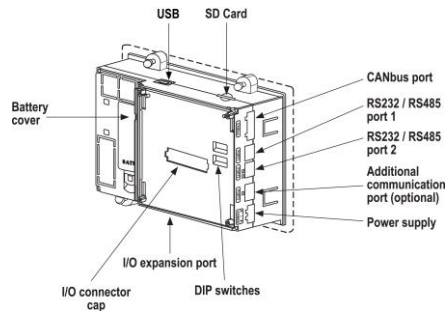
**Panel Mounting**

Before you begin, note that the mounting panel cannot be more than 5 mm thick.

1. Make a panel cut-out of the appropriate size.
2. Slide the controller into the cut-out, ensuring that the rubber seal is in place.
3. Push the mounting brackets into their slots on the sides of the panel as shown in the figure below.
4. Tighten the bracket's screws against the panel. Hold the bracket securely against the unit while tightening the screw.
5. When properly mounted, the controller is squarely situated in the panel cut-out as shown in the accompanying figures

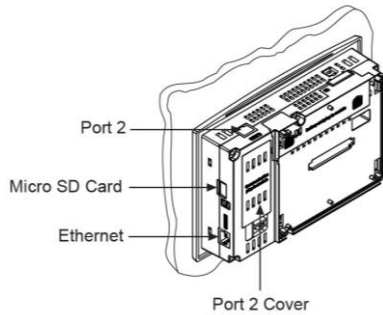
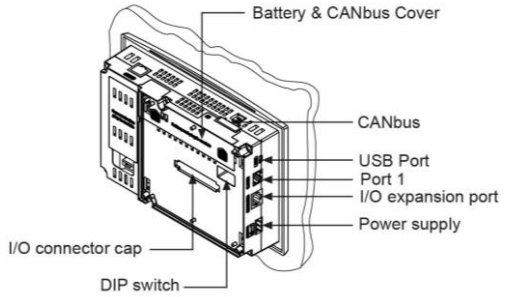
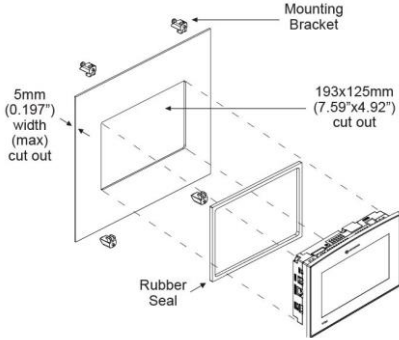


**V530/V560/V570**

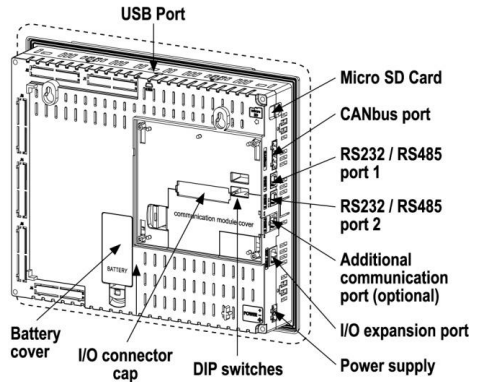
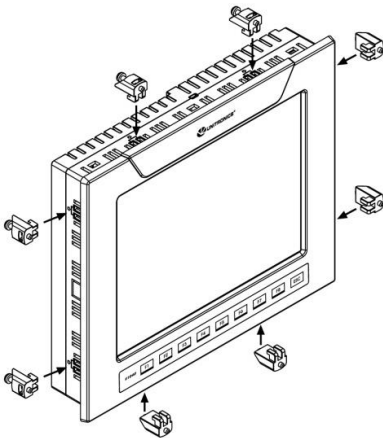


Note: USB and SD Card (V560 and V570 only)

**V700**



**V1040/V1210**



## Wiring



- Do not touch live wires.



- Install an external circuit breaker. Guard against short-circuiting in external wiring.
- Use appropriate circuit protection devices.
- Unused pins should not be connected. Ignoring this directive may damage the device.
- Double-check all wiring before turning on the power supply.

### Caution

- To avoid damaging the wire, do not exceed a maximum torque of 0.5 N·m (5 kgf·cm).
- Do not use tin, solder, or any substance on stripped wire that might cause the wire strand to break.
- Install at maximum distance from high-voltage cables and power equipment.

## Wiring Procedure

Use crimp terminals for wiring; use 26-12 AWG wire (0.13 mm<sup>2</sup>–3.31 mm<sup>2</sup>).

1. Strip the wire to a length of 7±0.5mm (0.270–0.300“).
  2. Unscrew the terminal to its widest position before inserting a wire.
  3. Insert the wire completely into the terminal to ensure a proper connection.
  4. Tighten enough to keep the wire from pulling free.
- Input or output cables should not be run through the same multi-core cable or share the same wire.
  - Allow for voltage drop and noise interference with I/O lines used over an extended distance. Use wire that is properly sized for the load.
  - The controller and I/O signals must be connected to the same 0V signal.

## Power Supply

The picture is for illustration only.

The controller requires either an external 12 or 24VDC power supply.

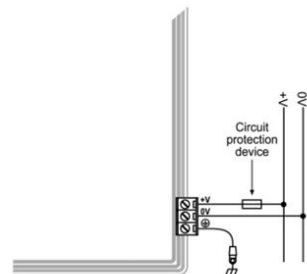
Permissible input voltage range: 10.2-28.8VDC, with less than 10% ripple.



- The power supply must include double insulation. Outputs must be rated as SELV/PELV/Class2/Limited Power.



- Use separate wires to connect the functional earth line (pin 3) and the 0V line (pin 2) to the system earth ground.
- Install an external circuit breaker. Guard against short-circuiting in external wiring.
- Double-check all wiring before turning on the power supply.
- Do not connect either the 'Neutral' or 'Line' signal of the 110/220VAC to device's 0V pin
- In the event of voltage fluctuations or non-conformity to voltage power supply specifications, connect the device to a regulated power supply.



## **Earthing the PLC+HMI**

To maximize system performance, avoid electromagnetic interference by:

- Mounting the controller on a metal panel.
- Connect each common and ground connection directly to the earth ground of your system.
- For ground wiring uses the shortest and thickest possible wire.

## **UL Compliance**

The following section is relevant to Unitronics' products that are listed with the UL.

The following models: V570-57-T20B, V570-57-T20B-J, V700-T20BJ, V1040-T20B, V1210-T20BJ are UL listed for Hazardous Locations.

The following models: V530-53-B20B, V700-T4-T20BJ-N are UL listed for Ordinary Location.

For models from series V700, that include "T4" in the Model name, Suitable for mounting on the flat surface of Type 4X enclosure.

For examples: V700-T20BJ will be modified V700-T4-T20BJ



### **UL Ordinary Location**

In order to meet the UL ordinary location standard, panel-mount this device on the flat surface of Type 1 or 4 X enclosures

## **UL Ratings, Programmable Controllers for Use in Hazardous Locations,**

### **Class I, Division 2, Groups A, B, C and D**

These Release Notes relate to all Unitronics products that bear the UL symbols used to mark products that have been approved for use in hazardous locations, Class I, Division 2, Groups A, B, C and D.

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- Caution*
- This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D, or Non-hazardous locations only.
-  
- Input and output wiring must be in accordance with Class I, Division 2 wiring methods and in accordance with the authority having jurisdiction.
  - WARNING—Explosion Hazard—substitution of components may impair suitability for Class I, Division 2.
  - WARNING – EXPLOSION HAZARD – Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
  - WARNING – Exposure to some chemicals may degrade the sealing properties of material used in Relays.
  - This equipment must be installed using wiring methods as required for Class I, Division 2 as per the NEC and/or CEC.
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### **Panel-Mounting**

For programmable controllers that can be mounted also on panel, in order to meet the UL Haz Loc standard, panel-mount this device on the flat surface of Type 1 or Type 4X enclosures.

### **Communication and Removable Memory Storage**

When products comprise either USB communication port, SD card slot, or both, neither the SD card slot nor the USB port are intended to be permanently connected, while the USB port is intended for programming only.

### **Removing / Replacing the battery**

When a product has been installed with a battery, do not remove or replace the battery unless the power has been switched off, or the area is known to be non-hazardous.



Please note that it is recommended to back up all data retained in RAM, in order to avoid losing data when changing the battery while the power is switched off. Date and time information will also need to be reset after the procedure.

### **UL des zones ordinaires:**

Pour respecter la norme UL des zones ordinaires, monter l'appareil sur une surface plane de type de protection 1 ou 4X

### **Certification UL des automates programmables, pour une utilisation en environnement à risques, Class I, Division 2, Groupes A, B, C et D.**

Cette note fait référence à tous les produits Unitronics portant le symbole UL - produits qui ont été certifiés pour une utilisation dans des endroits dangereux, Classe I, Division 2, Groupes A, B, C et D.

- Attention**
- Cet équipement est adapté pour une utilisation en Classe I, Division 2, Groupes A, B, C et D, ou dans Non-dangereux endroits seulement.
- 
- Le câblage des entrées/sorties doit être en accord avec les méthodes de câblage selon la Classe I, Division 2 et en accord avec l'autorité compétente.
- 
- **AVERTISSEMENT: Risque d'Explosion** – Le remplacement de certains composants rend caduque la certification du produit selon la Classe I, Division 2.
  - **AVERTISSEMENT - DANGER D'EXPLOSION** - Ne connecter pas ou ne débranche pas l'équipement sans avoir préalablement coupé l'alimentation électrique ou la zone est reconnue pour être non dangereuse.
  - **AVERTISSEMENT - L'exposition à certains produits chimiques peut dégrader les propriétés des matériaux utilisés pour l'étanchéité dans les relais.**
  - Cet équipement doit être installé utilisant des méthodes de câblage suivant la norme Class I, Division 2 NEC et /ou CEC.

### **Montage de l'écran:**

Pour les automates programmables qui peuvent aussi être monté sur l'écran, pour pouvoir être au standard UL, l'écran doit être monté dans un coffret avec une surface plane de type 1 ou de type 4X.

### **Communication et de stockage amovible de mémoire (carte mémoire)**

Produits comprend un port USB de communication, soit un port carte SD ou les deux, ni le port SD, ni le port USB ne sont censés être utilisés en permanence, tandis que l'USB est destiné à la programmation uniquement.

### **Retrait / Remplacement de la batterie**

Lorsqu'un produit a été installé avec une batterie, retirez et remplacez la batterie seulement si l'alimentation est éteinte ou si l'environnement n'est pas dangereux.

Veillez noter qu'il est recommandé de sauvegarder toutes les données conservées dans la RAM, afin d'éviter de perdre des données lors du changement de la batterie lorsque l'alimentation est coupée. Les informations sur la date et l'heure devront également être réinitialisées après la procédure

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