




# PowerView<sup>®</sup>

## Model PV700

*Installation Manual*

To consistently bring you the highest quality, full-featured products, we reserve the right to change our specifications and designs at any time. The latest version of this manual can be found at [novationcontrols.com](http://novationcontrols.com).


**Warranty** - A limited warranty on materials and workmanship is given with this Enovation Controls product. A copy of the warranty may be viewed or printed by going to [www.enovationcontrols.com/warranty](http://www.enovationcontrols.com/warranty)



**BEFORE INSTALLING THIS ENOVATION CONTROLS PRODUCT:**

Read and follow all installation instructions.

Please contact Enovation Controls immediately if you have any questions.



This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Revision Table			
Date	Description	Date	Description
05/03/2019	Creation of New Document	05/04/2021	Corrected connector diagrams/info.
07/16/2019	Added dimension diagrams, kit numbers, etc.	5/20/2021	Corrected Inputs Specification
07/18/2019	Reformatting	10/27/2023	Updated logos, warranty, copyright
10/04/2019	Engineering review changes		
10/12/2019	Technical Services review changes		
10/23/2019	Additional Technical Services review changes		
03/22/2021	Additional Technical Services review changes		

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## Hardware Installation

The following instructions will guide you through installing the PowerView display.

**Notice:** This product must be mounted so the enclosure is protected from UV rays.

### Inspecting Package Contents

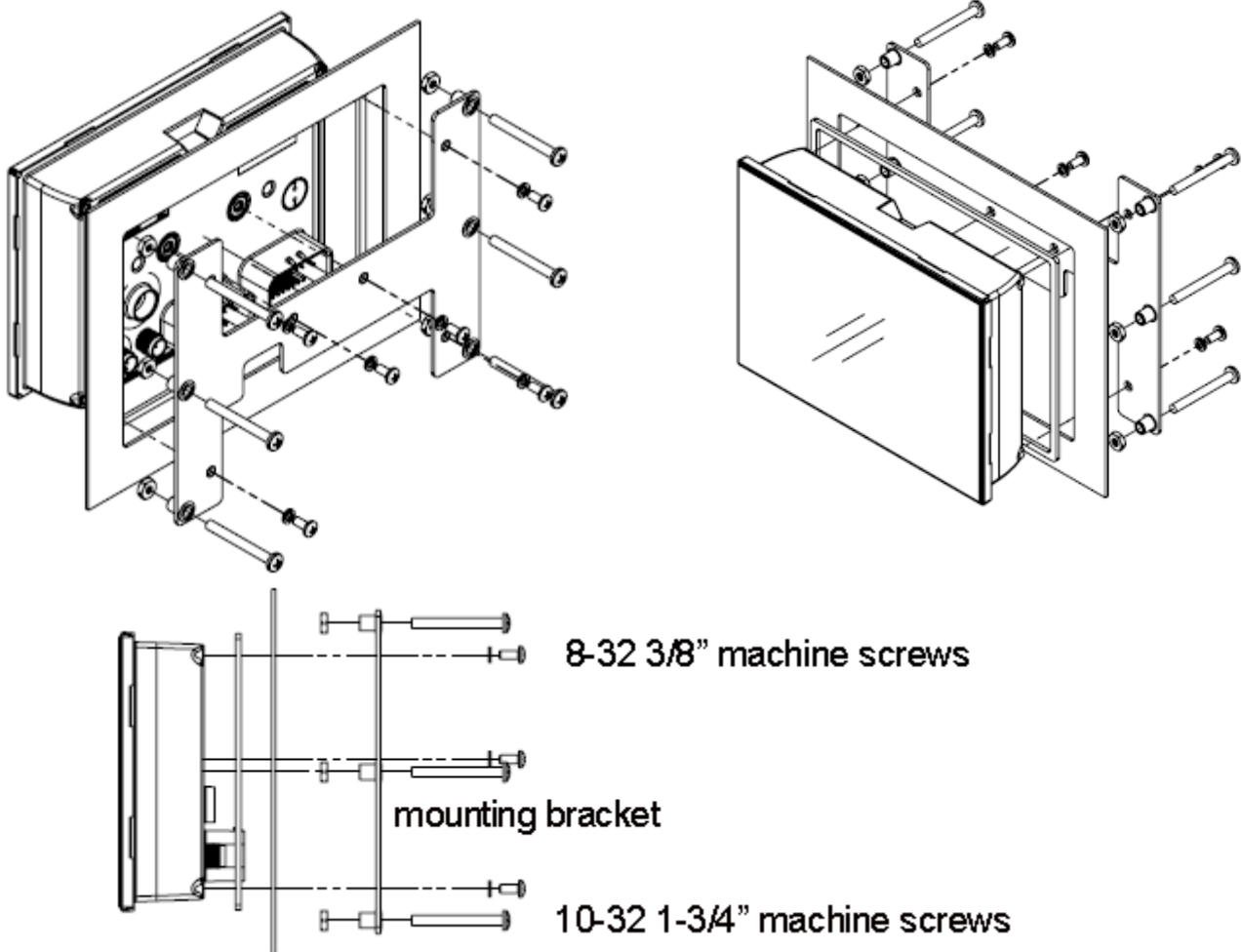
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Before installing the product, it is recommended that you ensure all parts are accounted for and inspect each item for damage (which sometimes occurs during shipping). The items included in the box are:

- PV700 unit
- Installation manual web reference insert

### Surface-Mounted Installation

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Installation Kit – P/N 78051451 includes

- Mounting Bracket
- Gasket/Panel Seal
- Seven #8 washers
- Seven 8-32 machine screws
- Seven 10-32 nuts 3/8"
- Six 10-32 1-3/4" machine screws

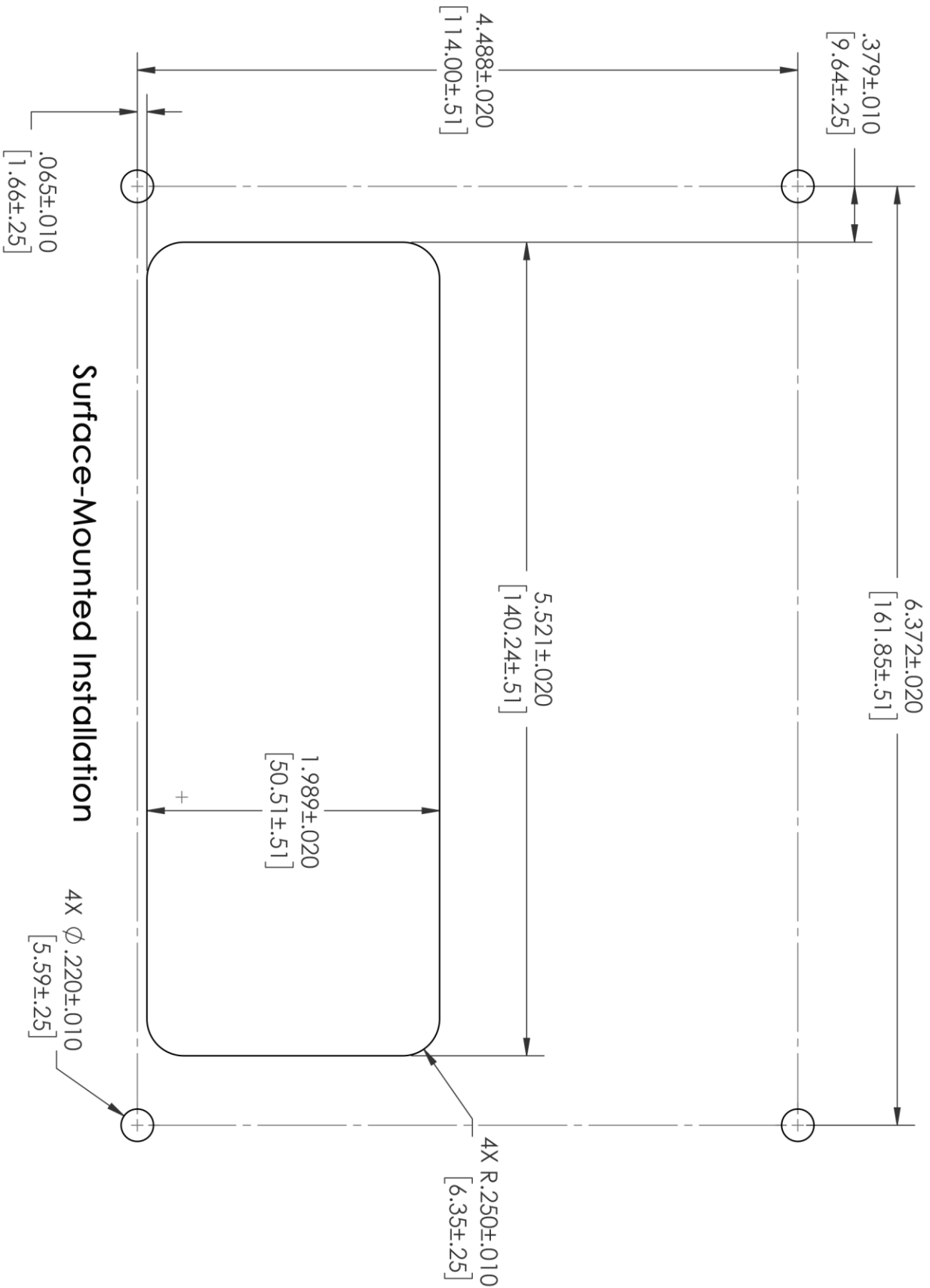
Tools needed.

- Drill with 7/32 in. size bit
- Jigsaw
- Screw Driver

## **Preparing the Dash**

Determine the location of the PV700 in the dash. Cut a hole in the dash to these dimensions:

Surface Mount (Actual Size): (next page)



## **Surface-Mounting the Unit**

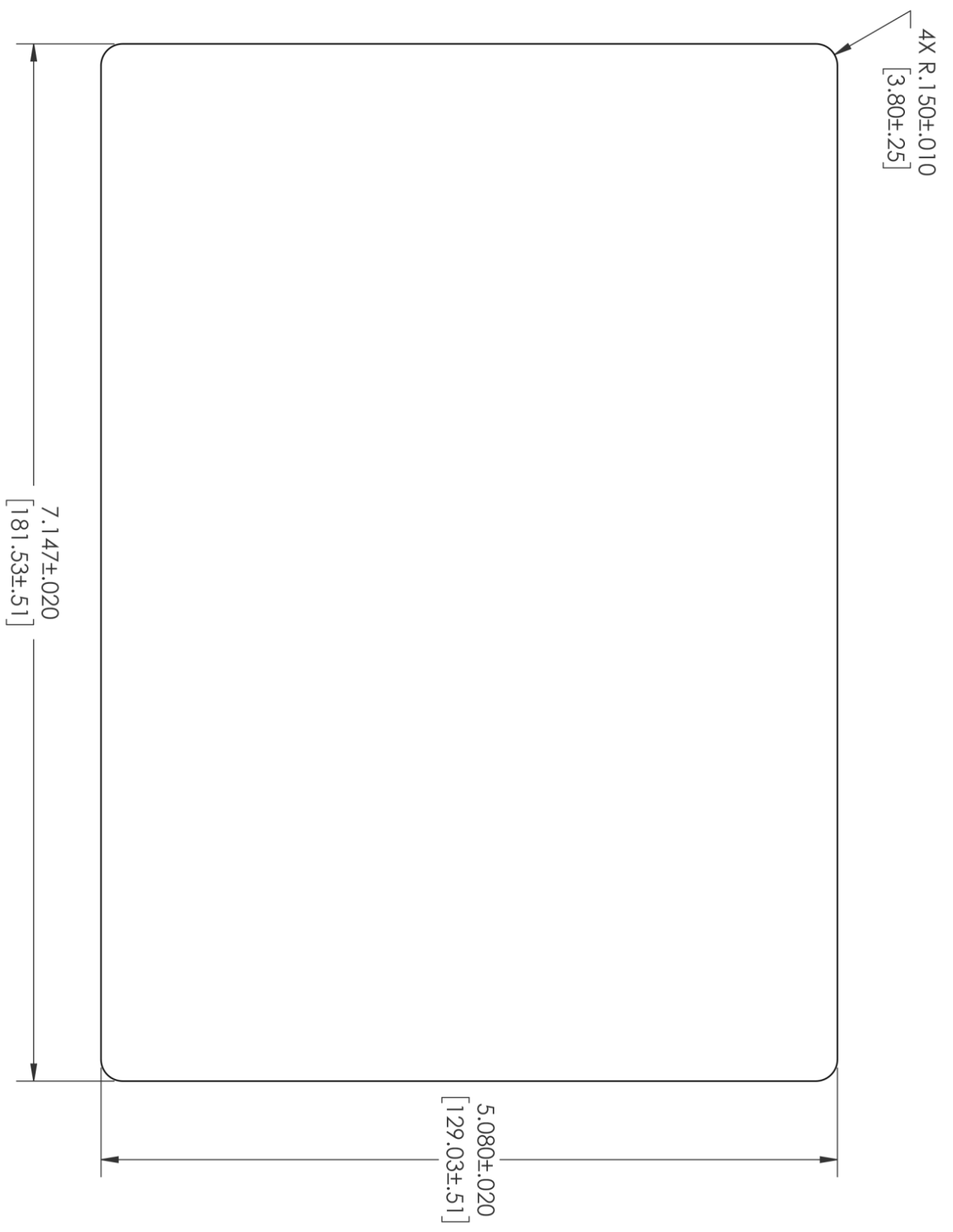
1. Place the back side of the display through the opening so the display will sit on the face of the dash.
2. Use the included four long screws and locking nuts from the mounting kit (78051451) to attach the unit to the bracket.
3. Torque to 10 inch-pounds.

## **Flush-Mounted Installation (Actual Size)**

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Please see the next page:





## Flush-Mounting the Unit

1. Slide seal over display.
2. Slide the display through the cutout.
3. Fasten backing plate to the display using the 6 short 8-32 screws. Torque to 10 inch-pounds.
4. Install the long 10-32 screws into the backing plate with locking nuts between the display and the plate.
5. Hand-tighten the screws to draw the display tight against the panel.
6. Torque to 3 inch-pounds then tighten locking nuts.

If using a compatible mounting kit, follow the manufacturer's installation instructions included with the kit.

## Available Accessories for the PV700

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The following PV700 accessories are available through Enovation Controls:

Part Number	Description	Order Details
<b>78700667</b>	PV700, Standard	<b>Display</b>
<b>78090098</b>	Programming Kit, PV780/PV1200	<b>Accessories</b>
<b>78051451</b>	Kit, Mounting Bracket, PV700	
<b>78090069</b>	Harness, PV750/PV700 Conversion, Power/CAN	<b>Service</b>

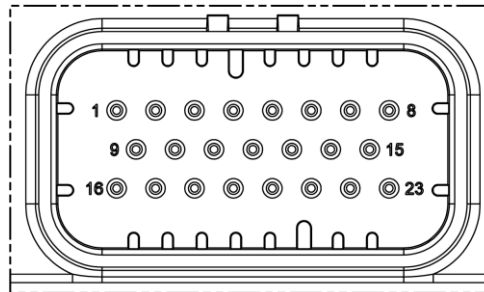
# Pinout Specifications

## Standard Version

Black Connector	
1	Digital Input 1
2	Analog Input 3 +
3	Analog Input 2 +
4	Analog Input 1 +
5	CAN1 Low
6	CAN1 High
7	Battery
8	Ground
9	Analog Input 3 -
10	Analog Input 2 -
11	Analog Input 1 -
12	Digital Input 3
13	Digital Input 2
14	Frequency Output 1
15	Ignition On
16	N/A
17	N/A
18	CAN2 Low
19	CAN2 High
20	Digital Input 4
21	Digital Input 5
22	Digital Output
23	Frequency Output 2



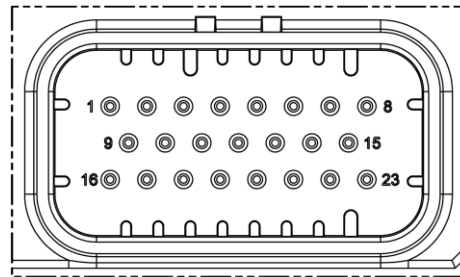
Mating Connector  
AMP 770680-1



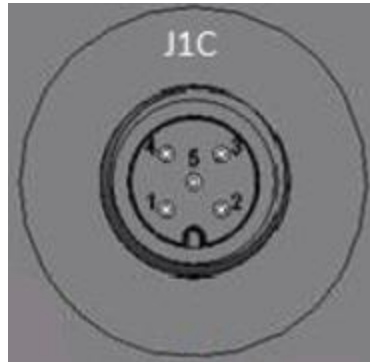
Blue Connector	
1	Frequency In
2	N/A
3	N/A
4	Video 4 In P
5	Video 3 In P
6	Video 2 in P
7	Video 1 in P
8	N/A
9	Frequency In Return
10	12V Output
11	Video 4 In N
12	Video 3 in N
13	Video 2 In N
14	Video 1 In N
15	N/A
16	N/A
17	N/A
18	N/A
19	N/A
20	N/A
21	N/A
22	N/A
23	N/A



Mating Connector  
AMP 770680-5



Ethernet (M12) Connector	
1	Ethernet TX+
2	Ethernet RX+
3	Ethernet TX-
4	Ethernet RX-
5	Ethernet Ground



M-12, 5-pos, A-coded, Plastic Knurl Connector

3Pin D code M12 Connector	
1	N/A
3	N/A
4	N/A



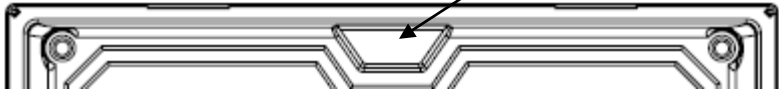
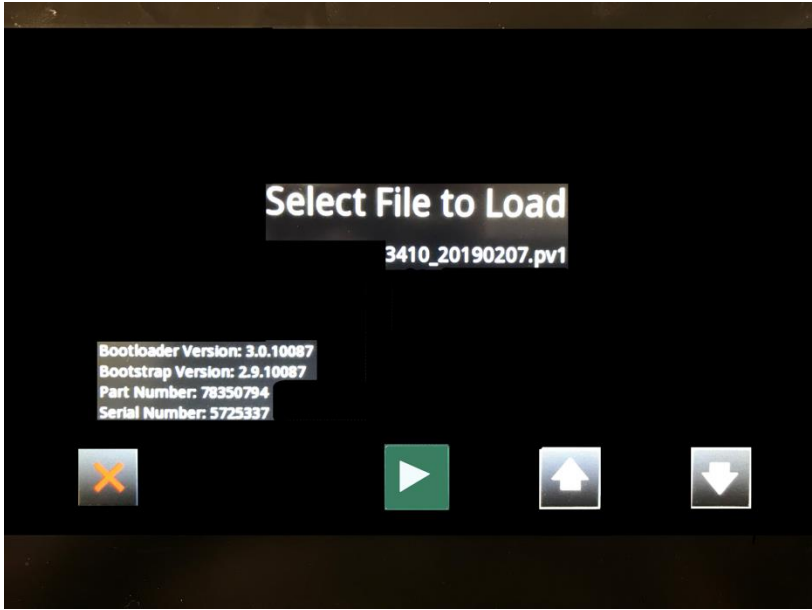
Pigtail Options
USB
Radio Antenna (Optional)
Aux Input (Optional)



This product is protected by a 2A fuse. Replace only with a similar style 2A fuse.

## Configuration Information

Follow these steps to download a custom configuration to the PV700 display:

Step	Action
1	Turn off the display.
2	Insert the USB drive that contains the new configuration file into the display's attached USB pigtail.
3	Place a magnet into the notch shown here on the upper middle side of the back of the display: 
4	Power the display back on, continually holding the magnet in place.
5	Remove the magnet when the display shows the utility for loading new software. 
6	Touch the up or down arrow keys on the screen until the appropriate configuration file from the USB to be loaded into the display is shown on the screen.
7	Press the right arrow/green arrow key on the screen twice to load the selected configuration.
8	Once completed, the unit will reboot into the loaded application.

## Specifications

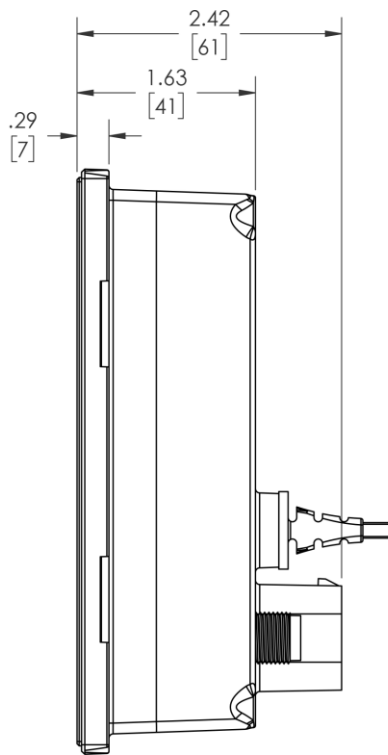
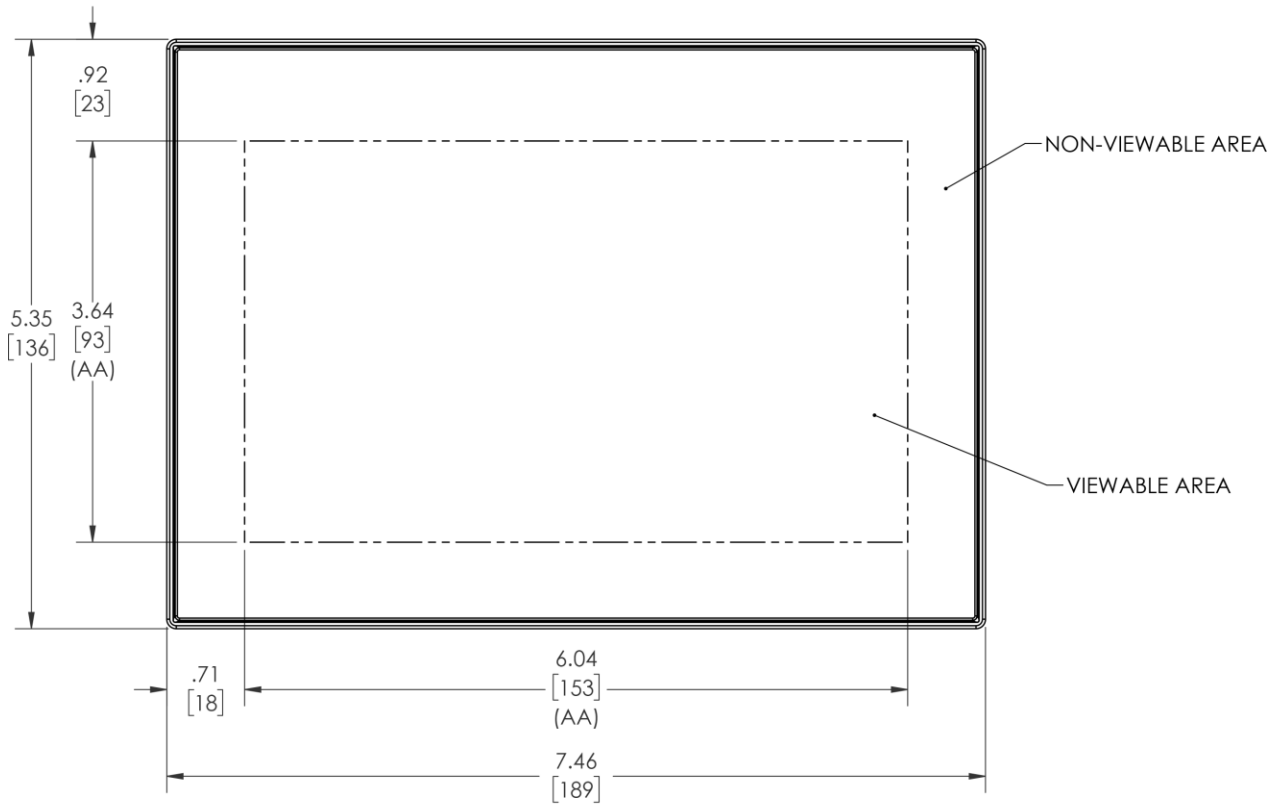
Computing	
<b>Main Processor:</b>	Renesas® R-Car M2 with Arm® Cortex-A15 dual core processor @ 1.5 GHz (32-bit)
<b>Operating System:</b>	QNX® Real-time Operating System
<b>Storage:</b>	8 GB flash memory
<b>Ram:</b>	512 MB DDR3-SDRAM
Display	
<b>Type:</b>	7" (178mm) LED backlight LVDS TFT LCD 16-bit color
<b>Resolution:</b>	WVGA, 800 x 480 pixels
<b>Contrast Ratio:</b>	600:1 (typical)
<b>Brightness:</b>	1000 cd/m <sup>2</sup>
<b>Surface:</b>	Anti-glare and hard coating
<b>Touch Panel:</b>	Projected capacitive (PCAP) with glove touch
Hardware	
<b>Real-time Clock:</b>	Li-Ion battery backup (Typ. Lifespan minimum 10 years), non-rechargeable, non-replaceable
<b>Connectors:</b>	(2) Ampseal 23 pin (1) M12, 5-pin (1) M12, 3-pin (1) USB pigtail (1) Antenna Connector pigtail
<b>Video Inputs:</b>	(4) NTSC/PAL (Single channel viewable)
<b>Audio Outputs</b> (Optional)	(1) Sub (2) Line-Out
Communication	
<b>CAN:</b>	(2) CAN 2.0B according to ISO 11898-2, J1939 and CANopen, proprietary messaging
<b>USB:</b>	(1) USB 2.0 Full Speed Host
<b>Ethernet:</b>	(1) X Ethernet 10/100 Base-T
<b>Wi-Fi (Optional):</b>	802.11 b/g radio

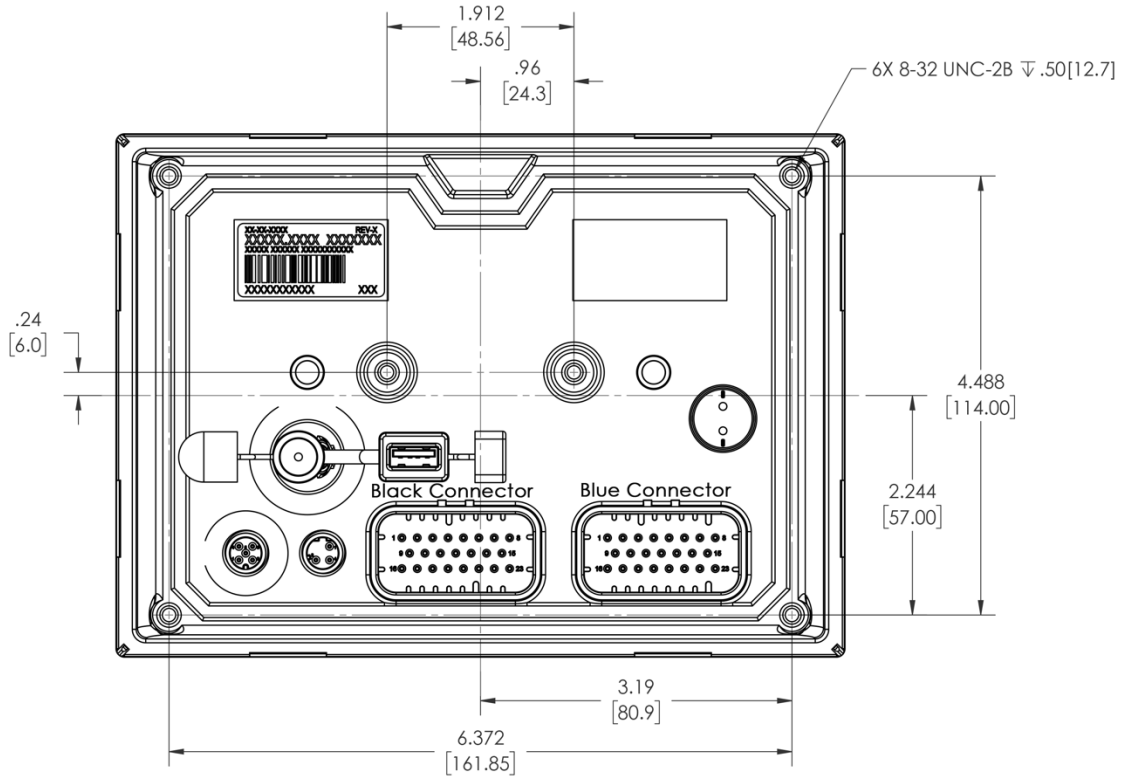
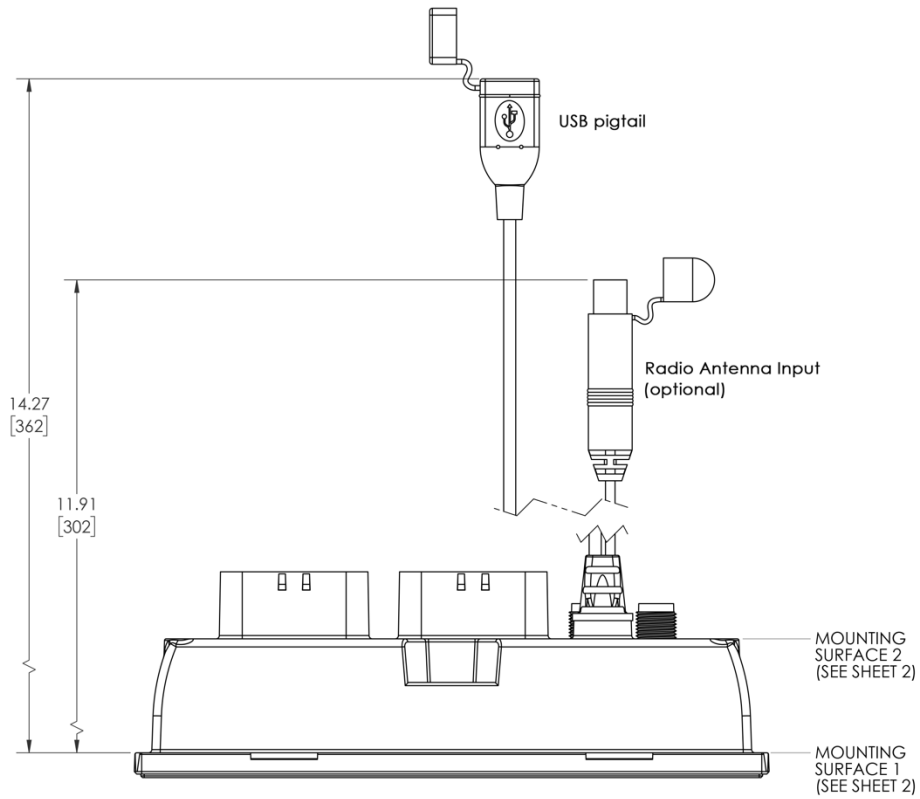
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<b>Bluetooth (Optional):</b>	Fully integrated Bluetooth 2.1, Class 1
<b>Electrical</b>	
<b>Operating Voltage:</b>	6 – 30 VDC, reverse polarity protected 1.1A Max at 12V, Standby 0.03mA
<b>Outputs:</b>	(1) 500 mA Switched Low-side (2) Frequency Out (2Hz – 3kHz)
<b>Inputs:</b>	(3) Analog 0-5 VDC, 4-20 mA, or resistive, 10-bit resolution (5) Discrete digital, active-high, switch to Battery Positive (1) Frequency In (0.5Hz – 20kHz) 5V offset, 2VAC to 120VAC
<b>Environmental</b>	
<b>Operating and Storage Temps:</b>	-40°C to +85°C (-40°F to +185°F)
<b>Protection:</b>	IP66 and IP67, front and back, for outdoor use
<b>Vibration:</b>	Panel Mount: 7.86 Grms (5 – 2000Hz), 3 axes Ram Mount: TBD
<b>Shock:</b>	Panel Mount: ± 50G in 3 axes Ram Mount: TBD
<b>EMC/EMI:</b>	SAE J1113 ISO 7637-2 ISO 11452 ISO 13766 ISO 16750-2 CISPR 25 EN 13309 CE Mark per 2014/30/EU (EN 61326-1 & EN 60945)



# Dimensions





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