



PowerView[®]

Model 01DISP0007

Product: PV1200 TCS

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. Search enovationcontrols.com for the latest version of this manual.

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



BEFORE INSTALLING THIS ENOVATION CONTROLS PRODUCT:

Read and follow all installation instructions.

Please contact Enovation Controls immediately if you have any questions.

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Hardware Installation

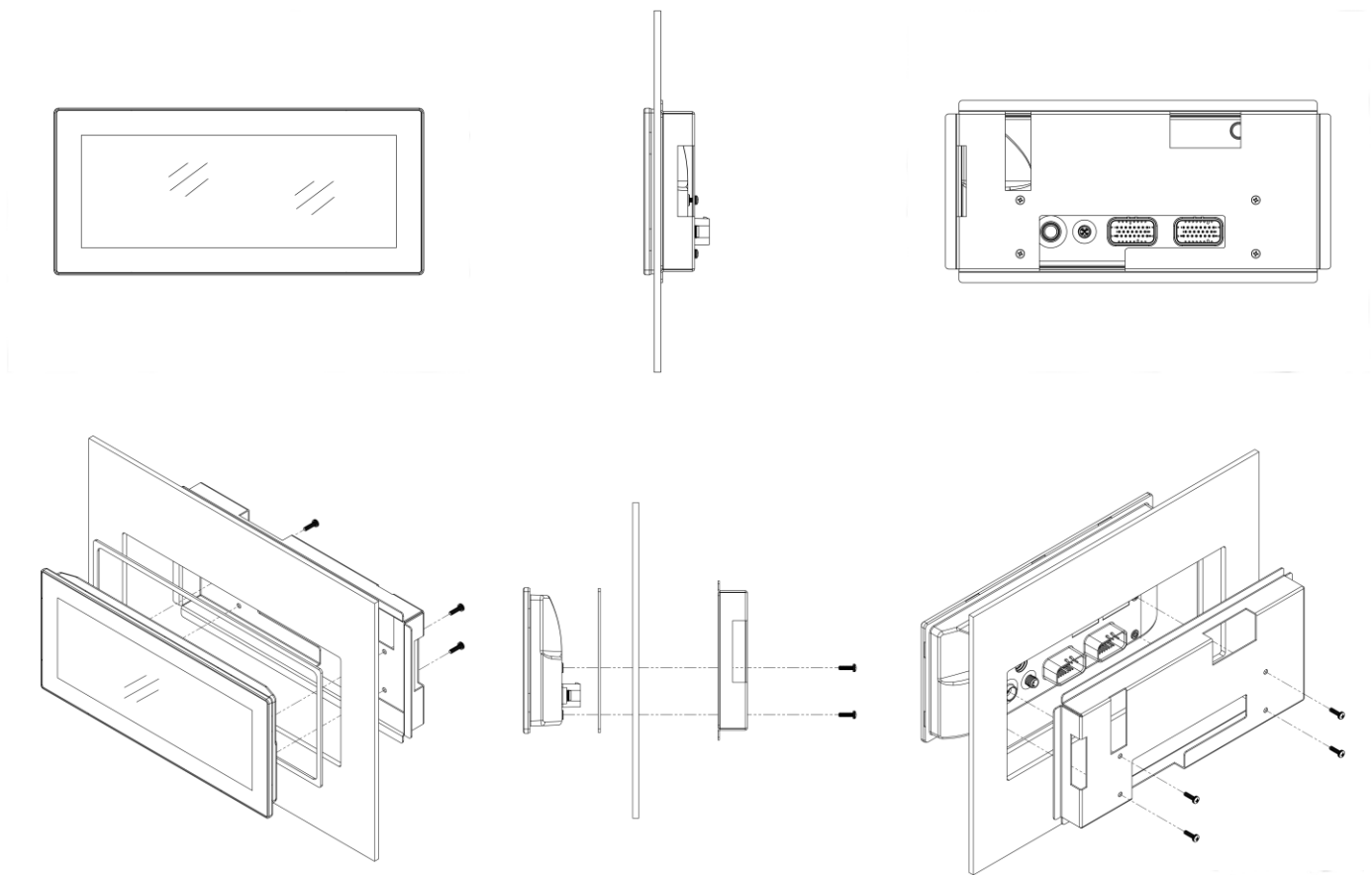
The following instructions will guide you through installing the PowerView display. Plan to install the display into a dash to protect the back side of the display from sun exposure.

Inspecting Package Contents

Before attempting to install 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:

- Model 01DSIP0007 / PV1200 TCS unit
- Installation manual web reference insert

Dash-Mounted Installation



Installation Kit – P/N 78-00-1294 includes

- Bracket
- Panel Seal
- Four 8-32 machine screws

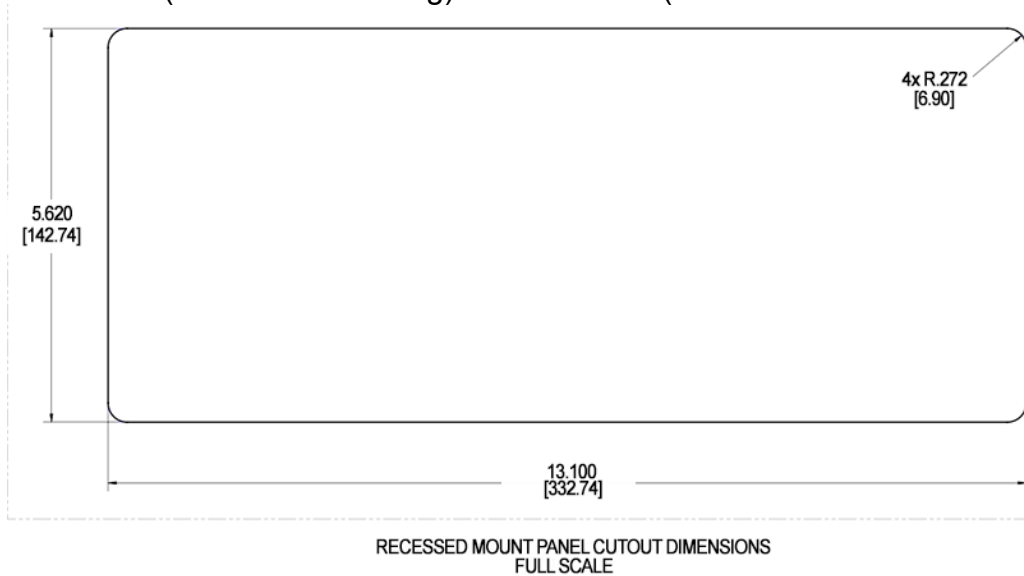
Tools needed.

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

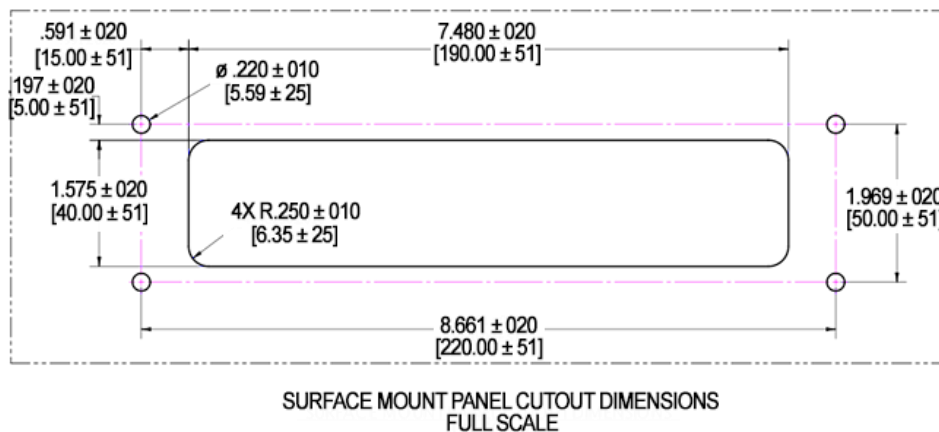
Preparing the Dash

Determine the location of the PV1200 in the dash. Cut a hole in the dash to these dimensions:

- (recessed mounting): 13.1" x 5.62" (332.74 mm x 142.74 mm)



- (surface mounting): 7.480 x 1.575 (190.00 mm x 40.00 mm)



Mounting the Unit

1. Place the back side of the display through the opening in the dash.
2. Use the four included screws from the mounting kit (78-00-1294) to attach the unit to the bracket and torque to 10 inch-pounds.

Available Accessories for the PV1200 TCS

The following PV1200 TCS accessories are available through Enovation Controls:

Part Number	Description	Order Details
78700671	PV1200 including BT Extender, Touch, Connected, Stereo	Display
78001294	Kit, Mounting Bracket, PV1200	Accessories
78001057	Harness, Black Connector, Flying Leads	
78001017	Harness, Black Connector, Development	

Optional Equipment for Certain PV1200 Models

There are two PV1200 model numbers that will have a Bluetooth Range Extender module (03ACCY0002 / 78700656) attached to the display at our factory.

These model numbers are as follows:

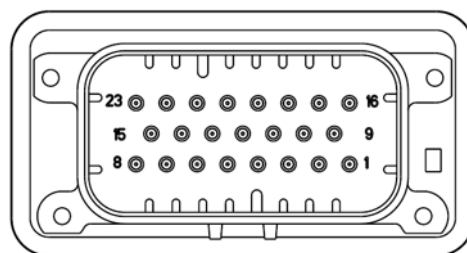
- 78700671 PV1200-TCS with ICE-15
- 78700706 PV1200-TCS with ICE-15

NOTE: When a Bluetooth Range Extender is installed, ensure the Settings menu controlling Bluetooth connectivity is turned on to look for an external Bluetooth signal. Contact Enovation Controls for assistance if needed.

Wiring Information

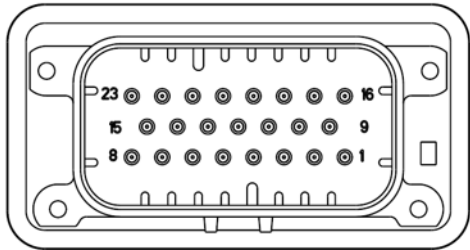
Pinout Specifications

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 Ground
10	Analog Input 2 Ground
11	Analog Input 1 Ground
12	Digital Input 3
13	Digital Input 2
14	Frequency Input
15	Ignition Input
16	Video In 2 (Negative)
17	Video In 2 (Positive)
18	CAN2 Low
19	CAN2 High
20	Digital Input 4
21	Digital Input 5
22	Digital Output
23	Frequency Input Ground



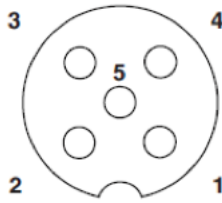
AMP 770680-1

Blue Connector	
1	AMP Turn ON
2	Video Input 1 (Positive)
3	Video Input 3 (Positive)
4	Video Input 4 (Positive)
5	Line Out 5 Right (Negative)
6	Line Out 5 Left (Negative)
7	Line Out 4 Right (Negative)
8	Line Out 4 Left (Negative)
9	Video Input 1 (Negative)
10	Video Input 3 (Negative)
11	Video Input 4 (Negative)
12	Line Out 5 Right (Positive)
13	Line Out 5 Left (Positive)
14	Line Out 4 Right (Positive)
15	Line Out 4 Left (Positive)
16	Line Out 1 Left (Positive)
17	Line Out 1 Left (Negative)
18	Line Out 1 Right (Positive)
19	Line Out 1 Right (Negative)
20	Line Out 2 Left (Positive)
21	Line Out 2 Left (Negative)
22	Line Out 2 Right (Positive)
23	Line Out 2 Right (Negative)

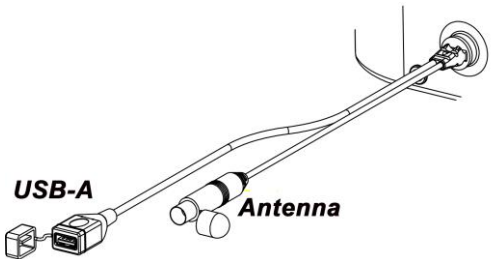


AMP 770680-5

Ethernet (M12) Connector	
1	Ethernet TX (Positive)
2	Ethernet RX (Positive)
3	Ethernet TX (Negative)
4	Ethernet RX (Negative)
5	Ethernet Ground

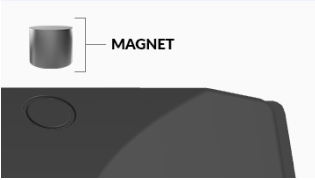


M-12, 5-pos, A-coded,
Plastic Knurl Connector Only



Configuration Information

Follow these steps to download a custom configuration to the PV1200 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 onto the spot shown here on the upper right 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 arrow keys on the screen to select the configuration file from the USB to be loaded into the display.
7	Start the configuration load by pressing the right arrow/green arrow key on the screen twice.
8	Once completed, the unit will reboot into the loaded application.

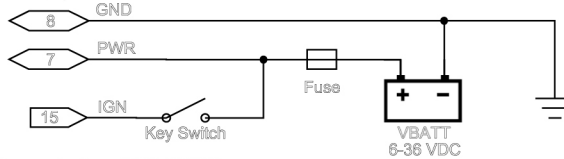
Wiring Schematics – Black Connector



WARNING: Failure to install the unit per the specified wiring diagrams may cause damage to the unit. **DO NOT** connect power to the video ground. Warranty is void for damage caused by incorrect wiring.

J1 (BLACK CONNECTOR)

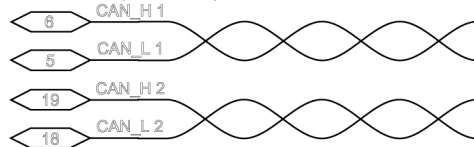
Power Inputs



NOTES:

- Mating connector AMPSEAL 770680-1 plug with 770654-3 sockets
- Use 20 to 16 AWG (0.5 to 1.4 mm²)
- Wire diameter of 1.7 to 2.7 mm.
- Install seal plug 770678-1 in perforated connector wire cavities
- An ISO8820 certified automotive fuse rated for no more than 5A shall be used to power the unit.

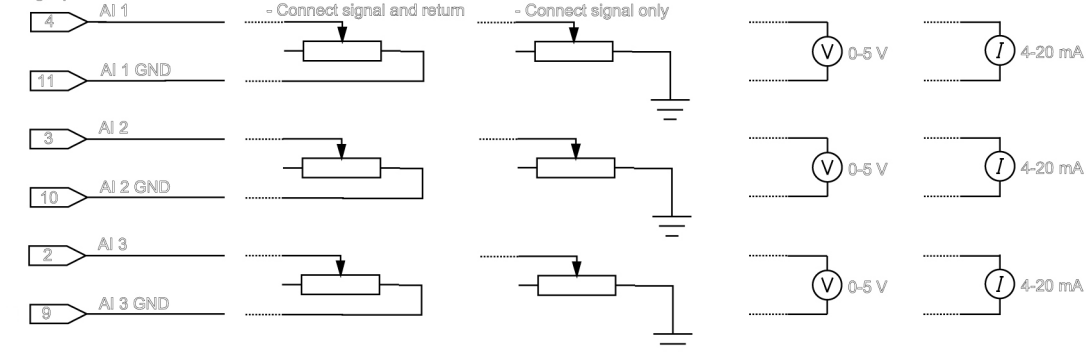
Communications (CAN 2.0A/B)



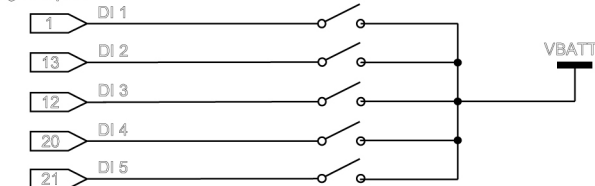
Wire per J1939-11 (STP) or J1939-15 (UTP)

- J1939-11: Keep stub <1m length; up to 30 nodes; 40m max length
- J1939-15: Keep stub <3m length; up to 10 nodes; 40m max length
- Locate display node >0.1m from nearest node
- Space nodes unequally
- Keep CANbus trunk as linear as possible
- Type I - Use external 120 ohm terminator
- Type II - Enable internal terminator

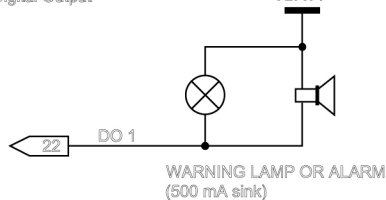
Analog Inputs



Digital Inputs



Digital Output



Wiring Schematics – USB and Blue Connector

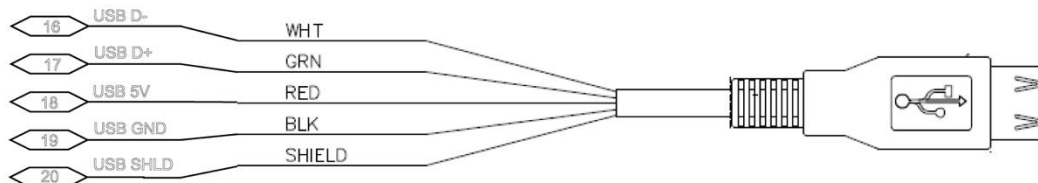


WARNING: Failure to install the unit per the specified wiring diagrams may cause damage to the unit. **DO NOT** connect power to the video ground. Warranty is void for damage caused by incorrect wiring.

NOTES:

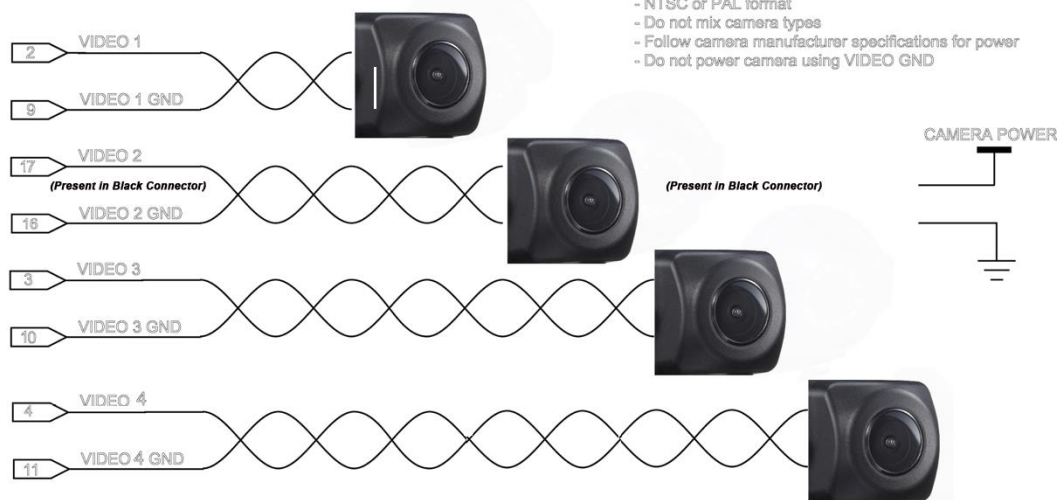
- Mating connector AMPSEAL 770680-5 plug with 770654-3 sockets
- Use 20 to 16 AWG (0.5 to 1.4 mm²)
- Wire diameter of 1.7 to 2.7 mm.
- Install seal plug 770678-1 in perforated connector wire cavities

USB (Programming and Data Logging)



J2 (BLUE CONNECTOR)

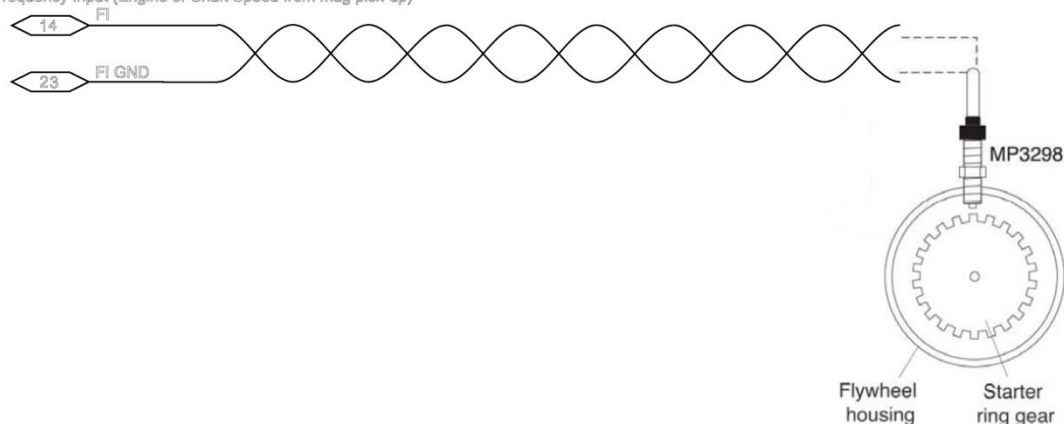
Video Inputs



VIDEO CAMERA NOTES

- NTSC or PAL format
- Do not mix camera types
- Follow camera manufacturer specifications for power
- Do not power camera using VIDEO GND

Frequency Input (Engine or Shaft Speed from mag pick-up)

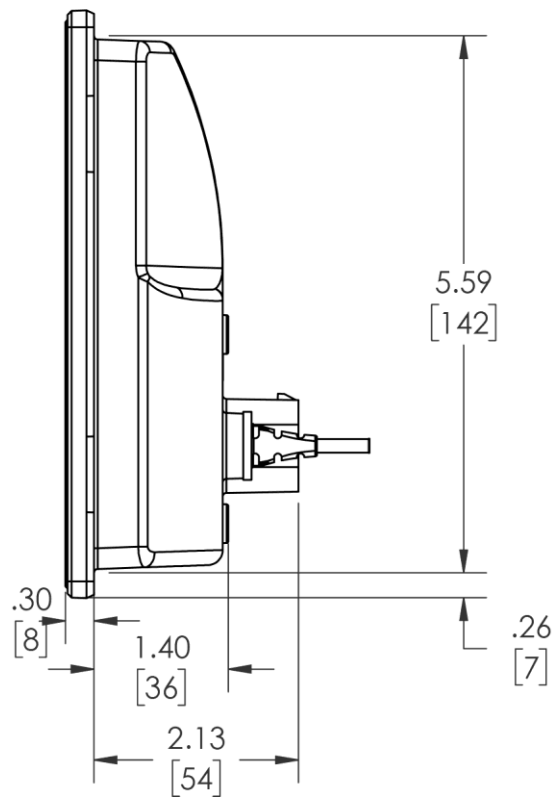
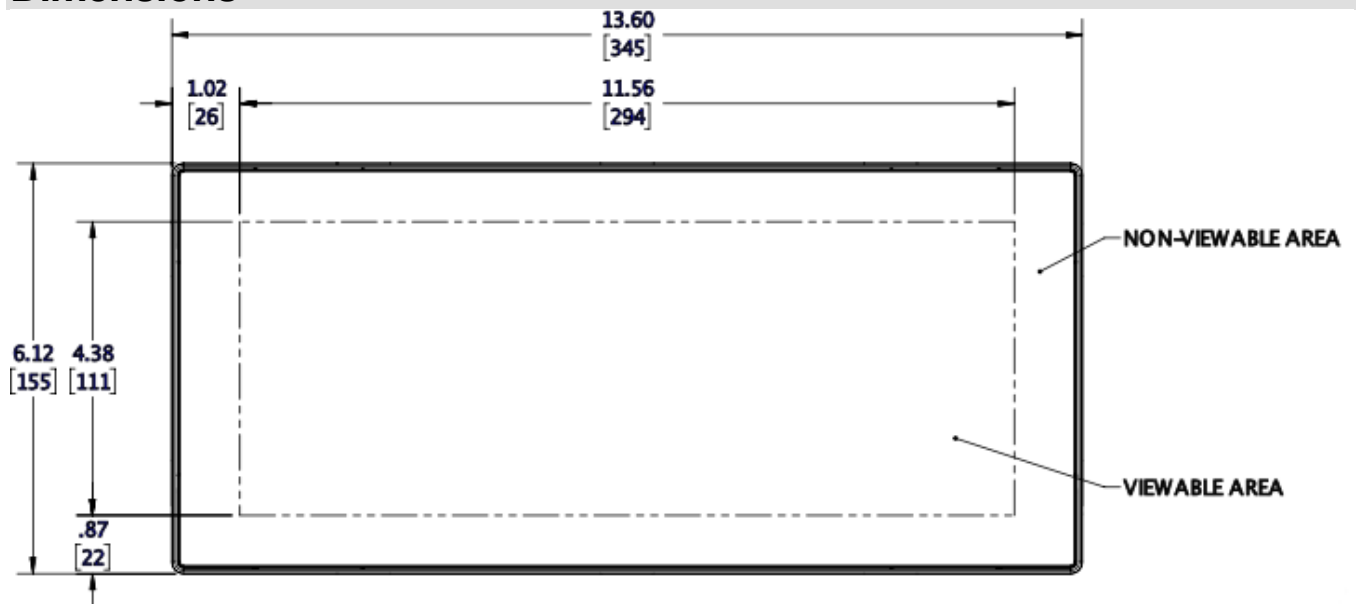


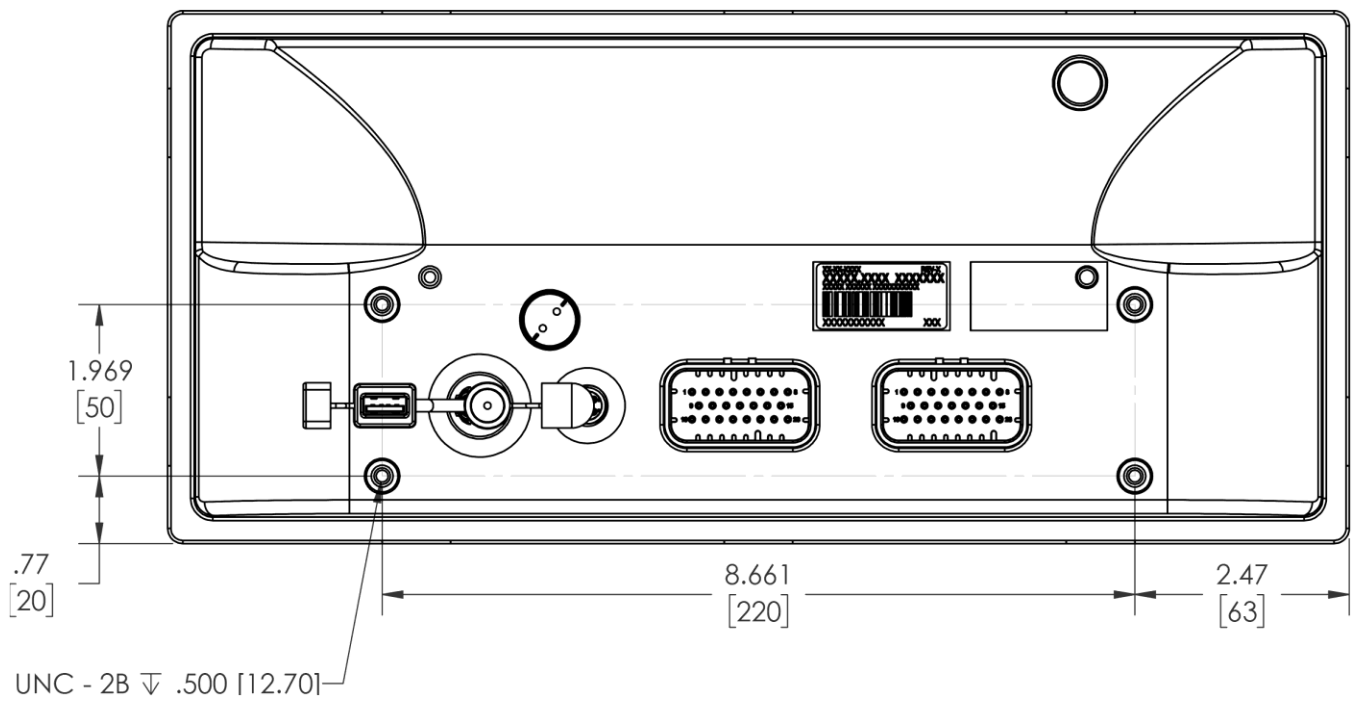
Specifications

Computing	
Main Processor:	Renesas® R-Car M2 with Arm® Cortex-A15 dual core processor @ 1.5 GHz (32-bit)
Operating System:	QNX® Real-time Operating System
Storage:	8 GB Flash memory
Ram:	512 MB DDR3-SDRAM
Graphics:	Renesas graphics processor
Display	
Type:	12.3" [320 mm (H) X 130 mm (W)] viewable area, LVDS IPS LCD with LED backlight, 8-bit color
Resolution:	1280 x 480 pixels
Contrast Ratio:	1000:1 (Typical)
Brightness:	1000 cd/m ²
Surface:	Anti-glare
Touch Panel:	Projected capacitive (PCAP) with glove touch
Hardware	
Real-time Clock:	Lithium battery backup (typ. lifespan 10 years), rechargeable
Connectors:	(2) Ampseal 23 pin (Main) (1) M12, 5-pin (Ethernet) (1) USB pigtail
Video Inputs:	(3) NTSC/PAL
Communication	
CAN:	(2) CAN 2.0B according to ISO 11898-2, J1939 and proprietary messaging
USB:	(2) USB 2.0 full speed host
Ethernet:	(1) Ethernet 10/100 Base-T
Wi-Fi:	802.11 b/g radio
Bluetooth:	Fully integrated Bluetooth 2.1, Class 1

Electrical	
Operating Volts:	6-36 VDC, reverse polarity protected
Outputs:	(1) 500 mA switched low-side
Inputs:	(3) Analog 0-5 VDC, 4-20mA, resistive, 10-bit resolution (5) Discrete digital, active high (1) Frequency in (0.5Hz – 20KHz) 5V pk-pk min, 120V pk-pk max
Environmental	
Operating Temperature:	-40°C to +70°C (-40°F to +158°F)
Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
Protection:	IP66 and IP67, front and back, for outdoor use
Vibration:	3.9 Grms (10 – 350Hz), 3 axes (ISO15003)
Shock:	±50G in 3 axes
EMC/EMI:	SAE J1113, ISO 13766, CE per 2014/30/EU

Dimensions





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