



# HelmView™ Model HV750; HVS750

## *Installation Manual*

In order 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 [www.fwmurphy.com](http://www.fwmurphy.com).

**Warranty** - A limited warranty on materials and workmanship is given with this Murphy product. A copy of the warranty may be viewed or printed by going to <http://www.fwmurphy.com/warranty>.



Please read the following information before installing.

**BEFORE BEGINNING INSTALLATION OF THIS MURPHY 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 HelmView 750 display.

### Inspecting Package Contents

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Before attempting to install the product, we recommend you account for all parts and inspect each item for damage (which sometimes occurs during shipping). The items included in the box are:

HV750 or HVS750 unit

Installation kit – P/N 78-00-0638 includes:

- 4 ea. machine screws and flat washers
- 4 Nylock nuts
- Installation manual – P/N 00-02-0803
- Operations Manual – P/N 00-02-0805

### Dash-Mounted Installation

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#### Tools needed.

- Drill with 5/32" size bit
- Jig Saw
- Wrench or socket 6-32 Nylock nuts (provided) to studs

#### Preparing the Dash

Determine the location of the HelmView in the dash. Use the Installation Template (included at the end of the manual) as a guideline to cut a hole in the dash to the specified dimensions. Drill holes where indicated on the template for the mounting screws.

**NOTE:** When using the paper template from the manual, if you downloaded this document from the Enovation Controls website, be aware that the pdf file may not automatically print to scale. When submitting the file for print, you will need to select "None" for Page Scaling. Check the accuracy of the printed template by verifying the measurements labeled on the template are correct.

## Mounting the Unit

1. Place the backside of the display through the opening in the dash.
2. Use the four screws to line up the unit with the drilled holes.
3. Push the unit through the opening and screws through the drilled holes until the back of the case is flush.
4. Use the Nylock nuts provided to tighten unit to the dash. Use the appropriate wrench or socket to tighten. Torque lock nuts to 8-10 inch pounds.

## Flush Mounting the Dash

1. Cut the dash to allow for the display without bezel. Make sure enough material remains to properly secure the display within the dash. Torque the 6-32 Nylock nuts to 5-inch pounds.
2. Place the display behind dash and line up the four mounting holes on the display with the holes in dash.
3. Install four bolts and tighten nuts.

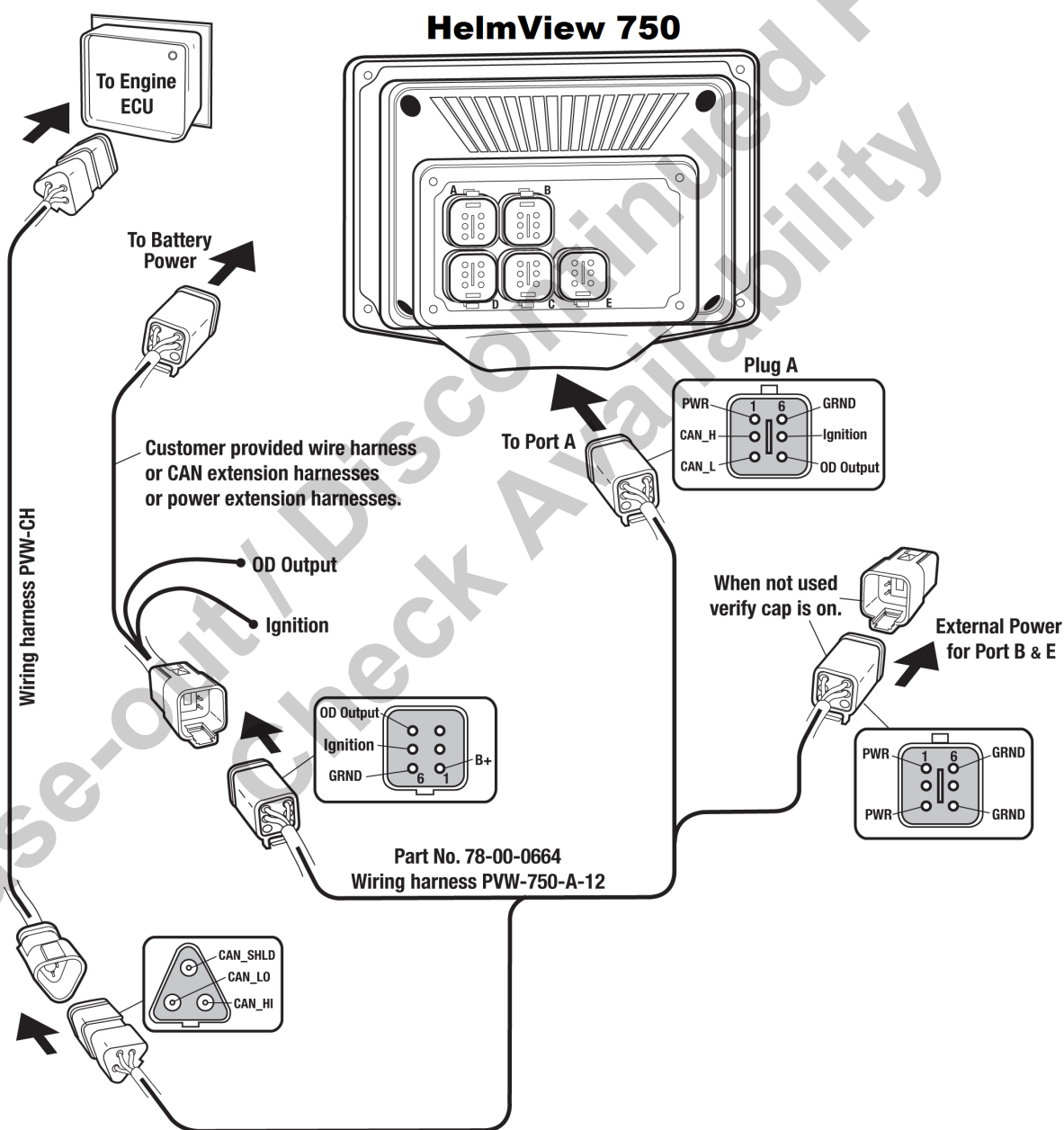
# Wiring Instructions

The following illustrations are examples of typical quick-connect options for setup. Wiring harnesses are sold separately.

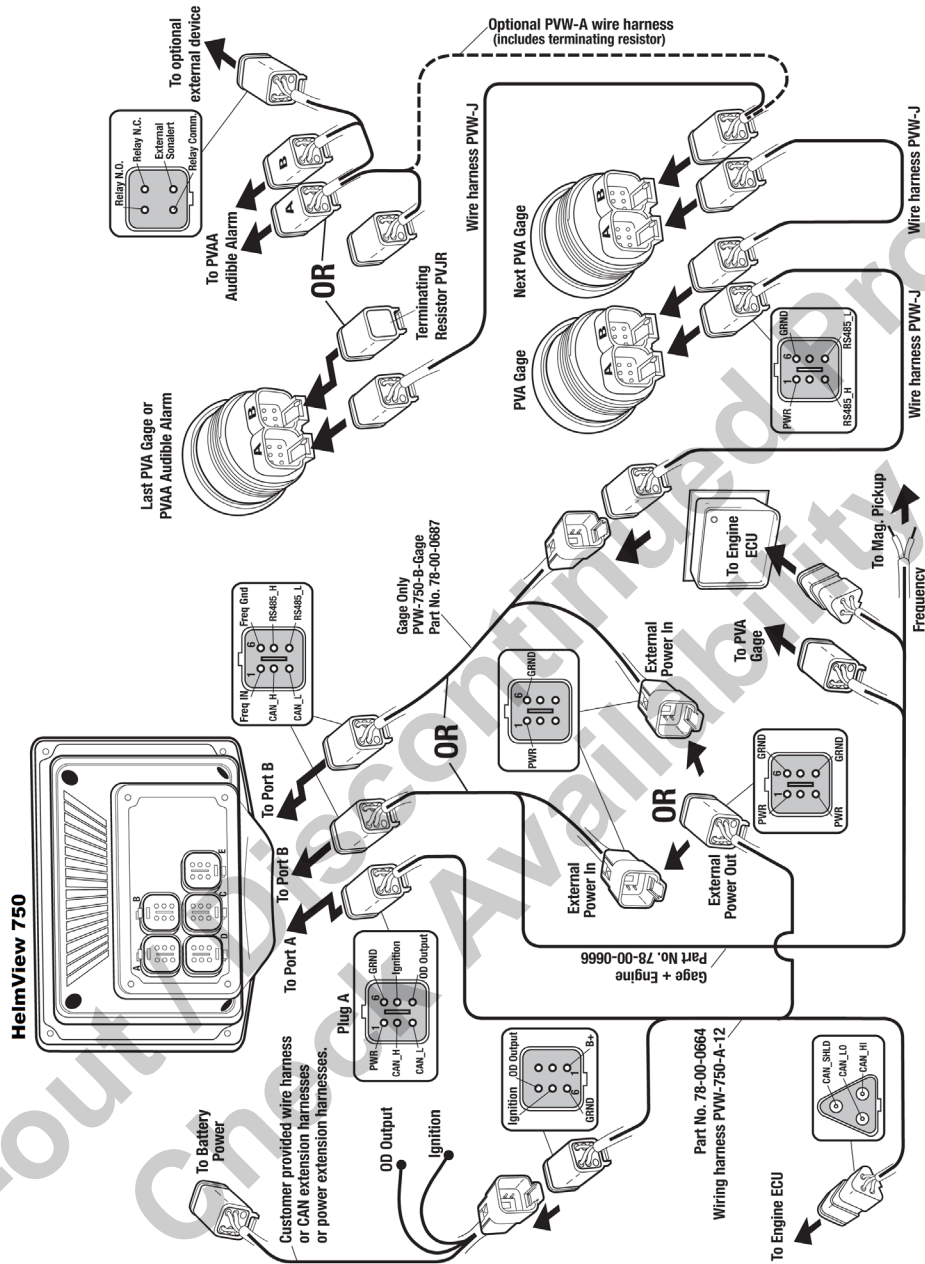


**WARNING:** Failure to install the unit per the specified wiring diagrams may cause damage to the unit. **DO NOT** connect power to the video ground. Warranty is void for damage caused by incorrect wiring.

## Single Engine



# PVA and Dual Engine Gages



**NOTE:** Port B and C connectors are keyed differently than Port A and D connectors to ensure proper connection.

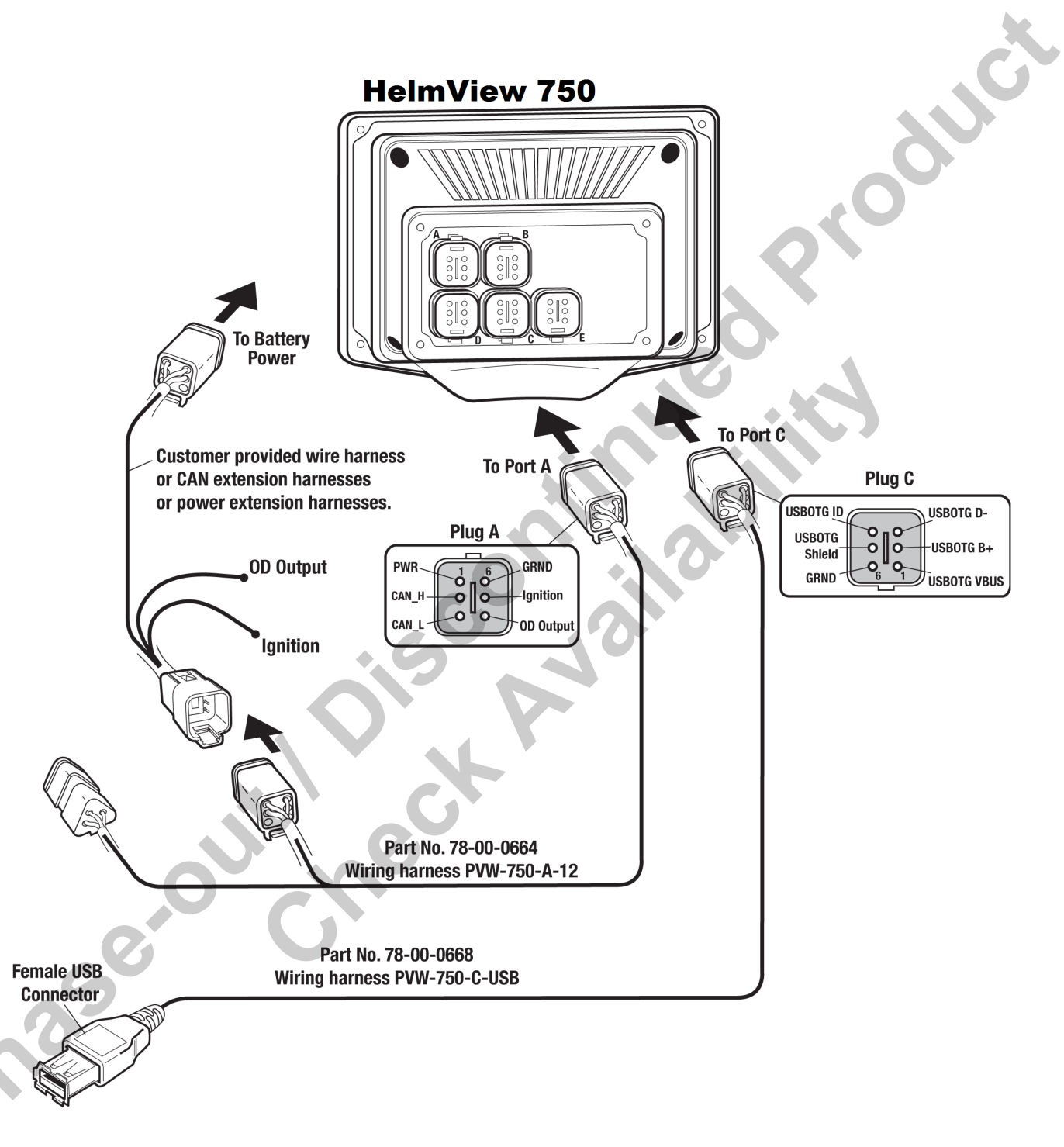
If both PVA gages\* and Video camera are going to be used, an extra harness is needed (P/N 78000688 PVW-750-MINI).

\*Please note, PVA Gages are not certified.



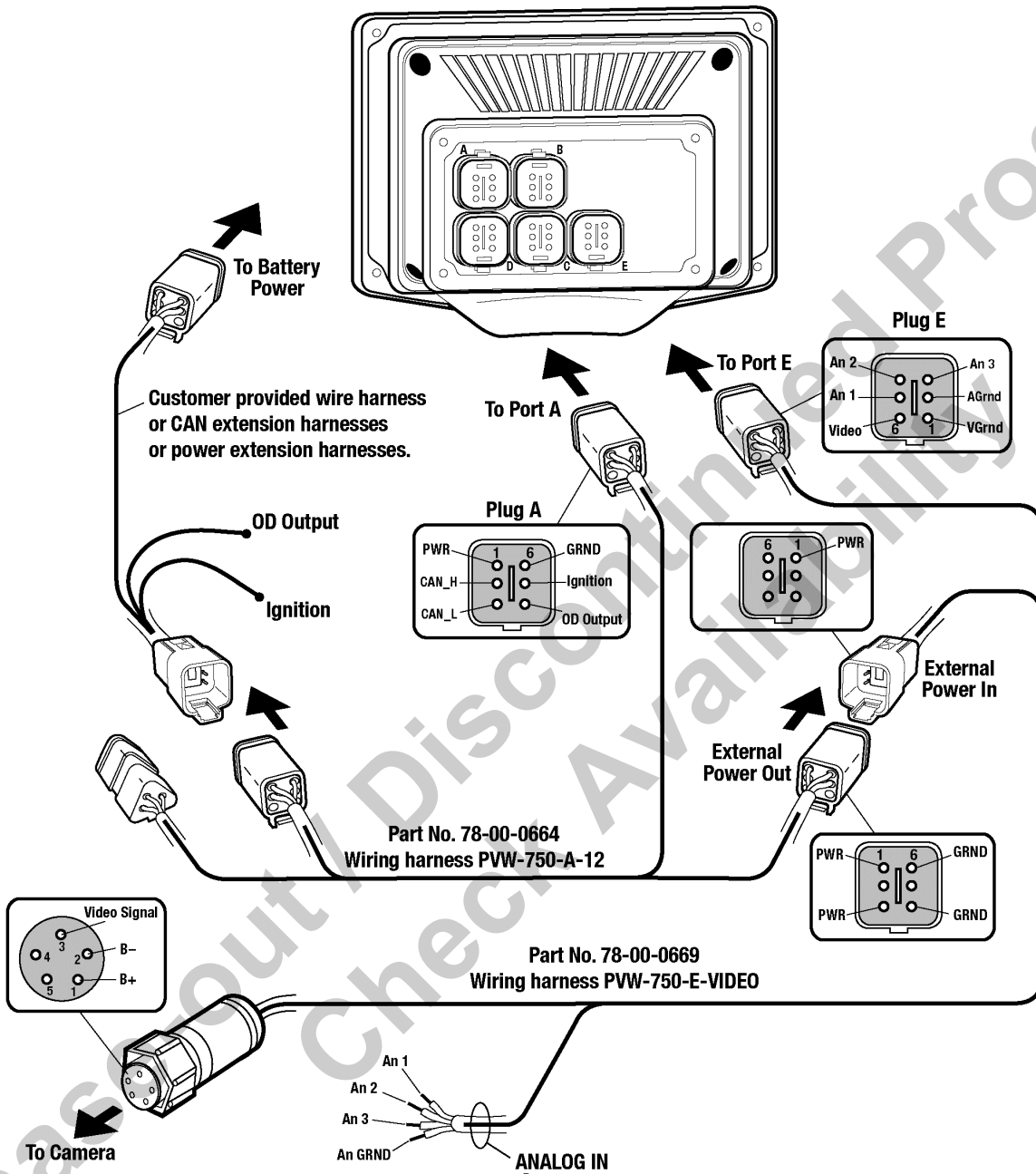
**WARNING:** Failure to install the unit per the specified wiring diagrams may cause damage to the unit. **DO NOT** connect power to the video ground. Warranty is void for damage caused by incorrect wiring.

# USB Wiring



# Analog Video

## HelmView 750



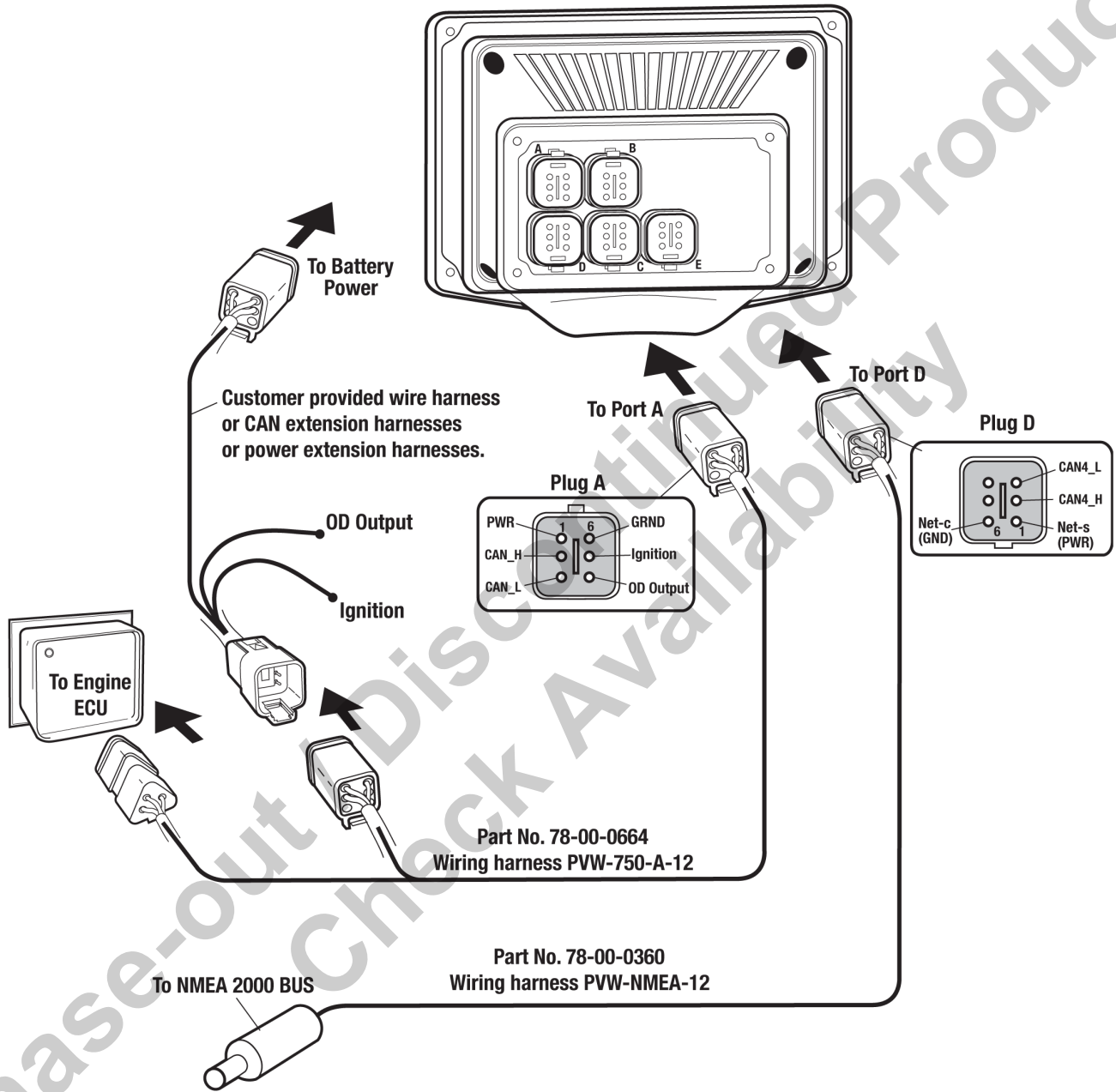
**NOTE:** If both PVA gages and video camera are going to be used, an extra harness is needed (P/N 78000688 PVW-750-MINI).



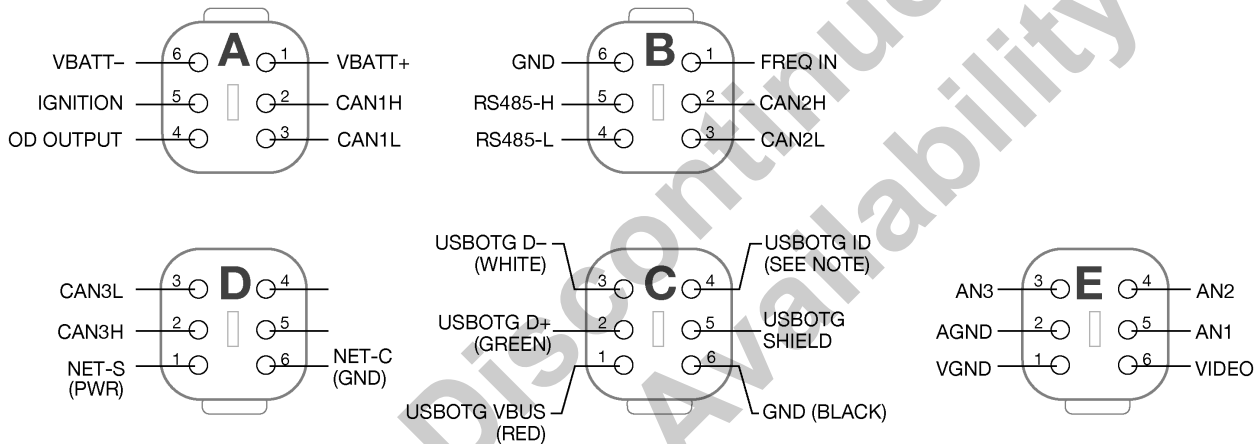
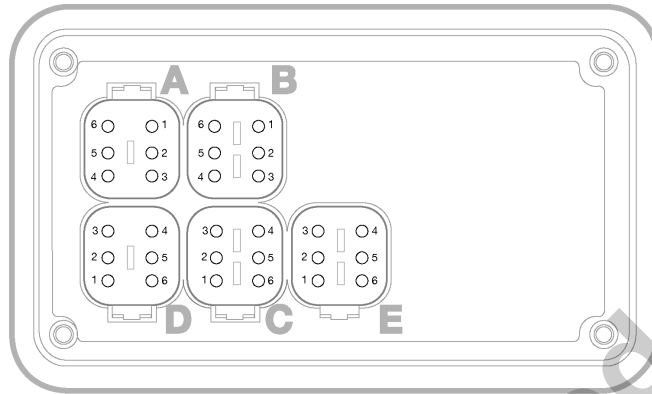
**WARNING:** Failure to install the unit per the specified wiring diagrams may cause damage to the unit. **DO NOT** connect power to the video ground. Warranty is void for damage caused by incorrect wiring.

# NMEA Wiring

## HelmView 750



## Pin Specifications for Deutsch DT04-6P Style Connections

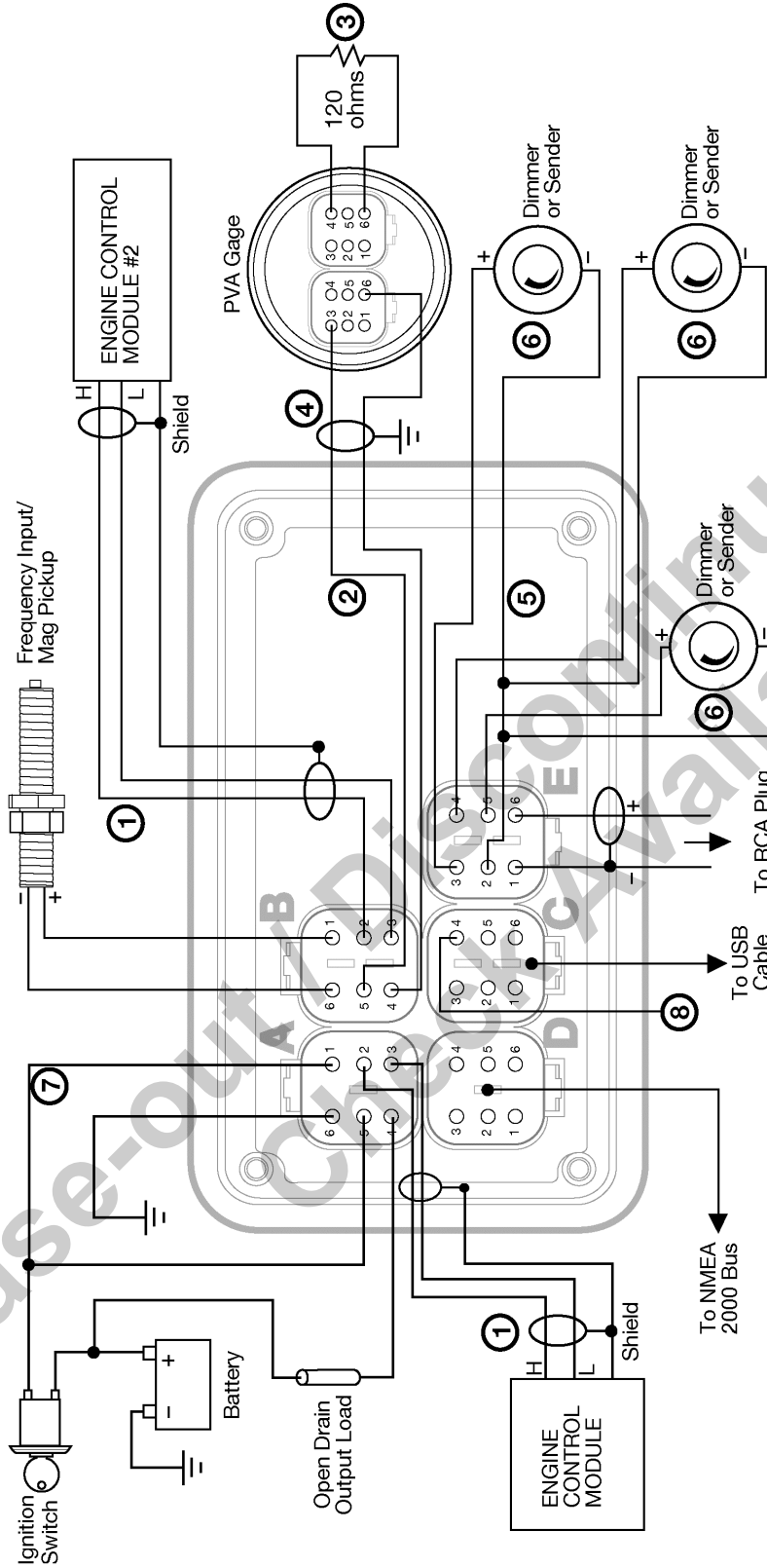


**NOTE:** GND to use as host, FLOAT to use as device (not currently supported).

### Signal Definitions

- CAN  
 3 ports according to CAN specification 2 (1 port isolated according to NMEA 2000)
- USB 2.0 host
- Video input: NTSC/PAL
- Inputs  
 (3) 0-5 VDC analog inputs (1 input configurable to support measurement frequencies from 2 Hz - 10kHz, values from 0-100% duty cycle)
- Output: Digital, capable of sinking 500mA.

# Wiring Schematic



**NOTE 1:** Use SAE J1939 compliant wiring/equipment.

**NOTE 2:** Only use 120 ohm characteristic impedance cable, example, Belden 9841.

**NOTE 3:** Last gage should be terminated with 120 ohm terminating resistor.

**NOTE 4:** RS485 cable shield should be grounded at a point only near the HeimView 750.

**NOTE 5:** Analog input ground should split off to separate wires near the HeimView 750.

**NOTE 6:** If any analog input is not used, connect the blue signal wire to ground pin 2.

**NOTE 7:** UBATT may optionally be connected directly to the positive battery terminal if the ignition line is switched through the ignition.

**NOTE 8:** GND to use as host, FLOAT to use as device (not currently supported).

**NOTE:** CAN buses on plug A and B have internal selectable terminating resistors configured by software.

## Specifications

### Electrical

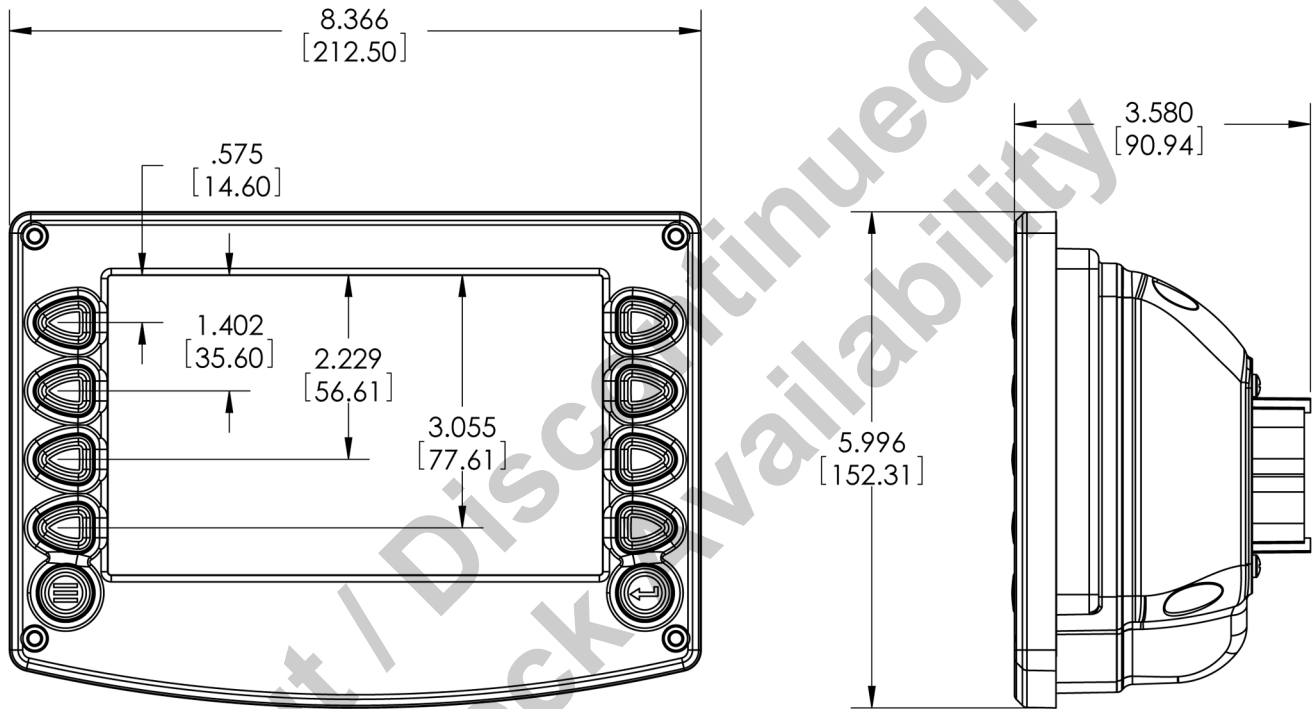
Display	7" (178mm) color transmissive TFT LCD
Resolution	WVGA, 800 x 480 pixels, 16-bit color
Aspect Ratio	16:9
Orientation	Landscape
Backlighting	LED, 400-500 cd/mC (50,000 h lifetime)
Microprocessor	Freescale IMX.31 32bit, 400 MHz
Operating System	QNX operating system
Flash Memory	2 GB
RAM	128 Mbytes SDRAM
Operating Voltage	8 - 35 VDC, protected against reverse polarity and load-dump
Power Consumption	10 W full backlight 22 W full backlight with heater (< -10° C)
CAN	3 CAN ports according to CAN specification 2.0B. One port isolated according to NMEA 2000 (GPS)
RS-485	1 MODBUS Master port at 38.4 Kbaud
Protocols	J1939, NMEA 2000
Connection	5 Deutsch DT04-6P 6-pin connectors
Keyboard	10 tactile buttons
USB	USB 2.0 host (full speed)
Inputs	(3) 0-4 VDC Analog inputs (1) input configurable to support measurement frequencies from 2 Hz-10 kHz
Video Input	NTSC/PAL
Output	Digital, capable of sinking 500mA

### Environmental

Certifications (Model HV750 only)	ABS Type Approved display for Marine and Offshore Applications on ACC, ACCU, and ABCU Classed vessels
Operating Temperature	-40°C to +85°C (-40°F to 185°F)
Storage Temperature	-40°C to +85°C (-40°F to 185°F)
Protection	IP67, front and back
Emissions	IEC 60945, 95/54/EC
Immunity	SAE J1113, ISO 11452
Vibration	Random vibration, 7.86 G <sub>rms</sub> (5.2000 Hz), 3 axis
Shock	+/- 50G in 3 axis

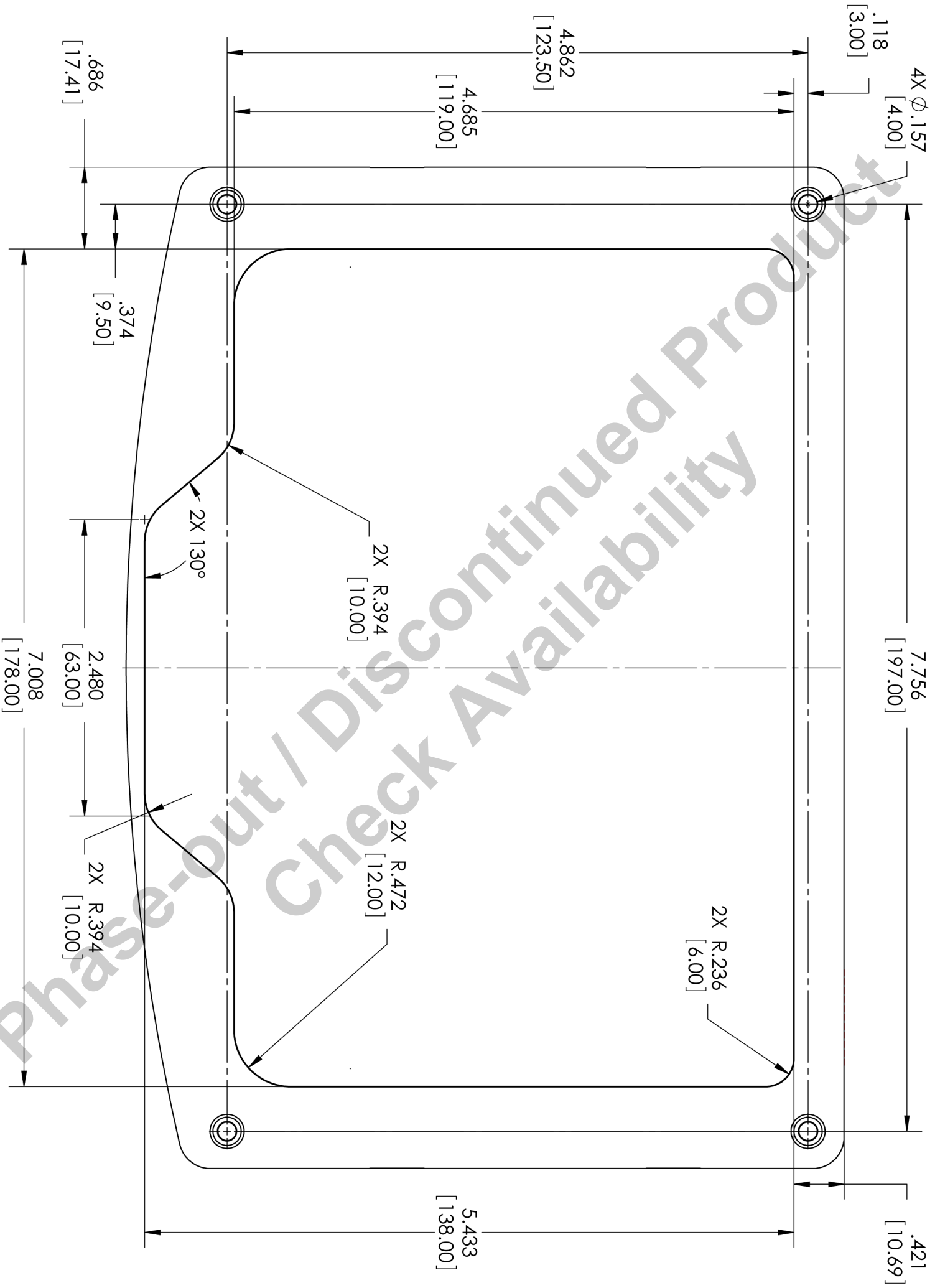
## Mechanical

Dimensions	(W x H) 8.37 x 6.0 in (212.5 x 152.3mm) landscape Unit Depth – 3.57 in (90.8mm)
Shipping Weight	Approximately 2.5 lbs. (1.13 kg)
Case Material	Polycarbonate back case



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