MURPHY®
by ENOVATION CONTROLS

PowerView™ Model PV780

Installation Manual

00-02-0860
2013-02-21
Section 78

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.

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 MURPHY immediately if you have any questions.

Table of Contents

Hardware Installation **1**

Inspecting Package Contents 1

Dash-Mounted Installation 1

Wiring Information **3**

Pin Out Specifications 3

Wiring Schematics 4

Specifications **6**

(THIS PAGE INTENTIONALLY LEFT BLANK)

Hardware Installation

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

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:

PV780 unit

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

- 4 ea. machine screws and flat washers
- 4 Nylock nuts
- Installation & Operations manual – P/N 00-02-0686

Dash-Mounted Installation

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 PowerView 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 FW Murphy 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.
>
> If this manual was supplied with your product, the template will be correct.

Mounting the Unit

1. Place the back side 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. Ensure x amount of materials is available to ensure the display is properly secured within the dash. Torque the 6-32 Nylock nuts to 5 inch pounds.

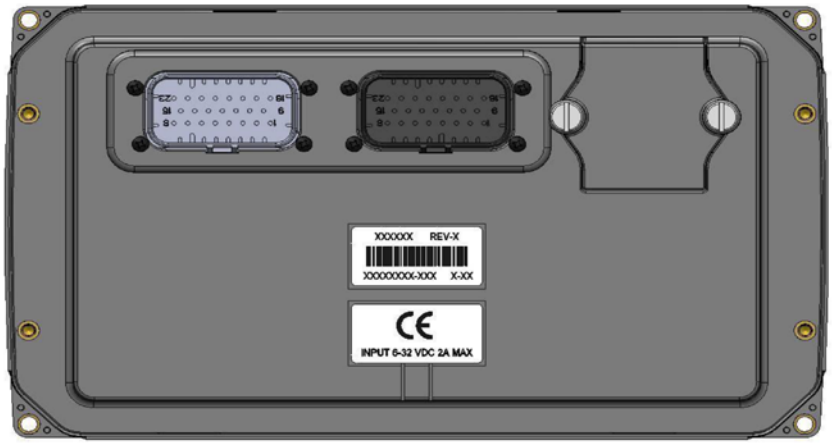
2. Place the display behind dash and line up the four mounting holes on the display with the holes in dash.

3. Install four bolts and tighten nuts.

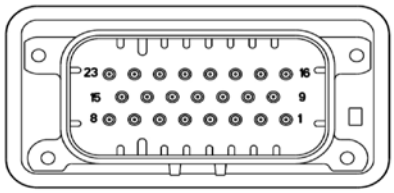
Wiring Information

Pin Out Specifications

PV780

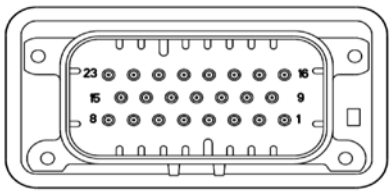


Connector 2 (Gray)		
1	Video Input 1	NTSC/PAL Signal 1
2	Video Input 2	NTSC/PAL Signal 2
3	Video Input 3	NTSC/PAL Signal 3
4	RS-485 High	Data + (B)
5	RS-485 Low	Data - (A)
6	-	No Connect
7	-	No Connect
8	-	No Connect
9	Video Input 1 Ground	
10	Video Input 2 Ground	
11	Video Input 3 Ground	
12	USB ID	Host (grounded); Slave (not connect)
13	Frequency Input	
14	Frequency Return	
15	-	No Connect
16	USB D-	White (Data -)
17	USB D+	Green (Data +)
18	USB 5V	Red (+5V)
19	USB Ground	Black
20	USB Shield	
21	-	No Connect
22	-	No Connect
23	-	No Connect



View looking at back of the display
Mating connector P/N: **AMP 770680-4**

Connector 1 (Black)		
1	Digital Input 1	Discrete digital; active high
2	Analog Input 3	0-5V; 4-20mA; resistive analog
3	Analog Input 2	0-5V; 4-20mA; resistive analog
4	Analog Input 1	0-5V; 4-20mA; resistive analog
5	CAN1 L	Green
6	CAN1 H	Yellow
7	Battery	Red (Unswitched 12/24V)
8	Ground	Black (Common)
9	Analog Input 3 Ground	Black (Common with Ground)
10	Analog Input 2 Ground	Black (Common with Ground)
11	Analog Input 1 Ground	Black (Common with Ground)
12	Digital Input 3	Discrete digital; active high
13	Digital Input 2	Discrete digital; active high
14	Frequency Output 1	0-10kHz
15	Ignition In	Ignition (Switched 12/24V)
16	-	No Connect
17	-	No Connect
18	CAN2 L	Green
19	CAN2 H	Yellow
20	Digital Input 4	Discrete digital; active high
21	Digital Input 5	Discrete digital; active high
22	Digital Output	Switched low-side, 500mA
23	-	No Connect

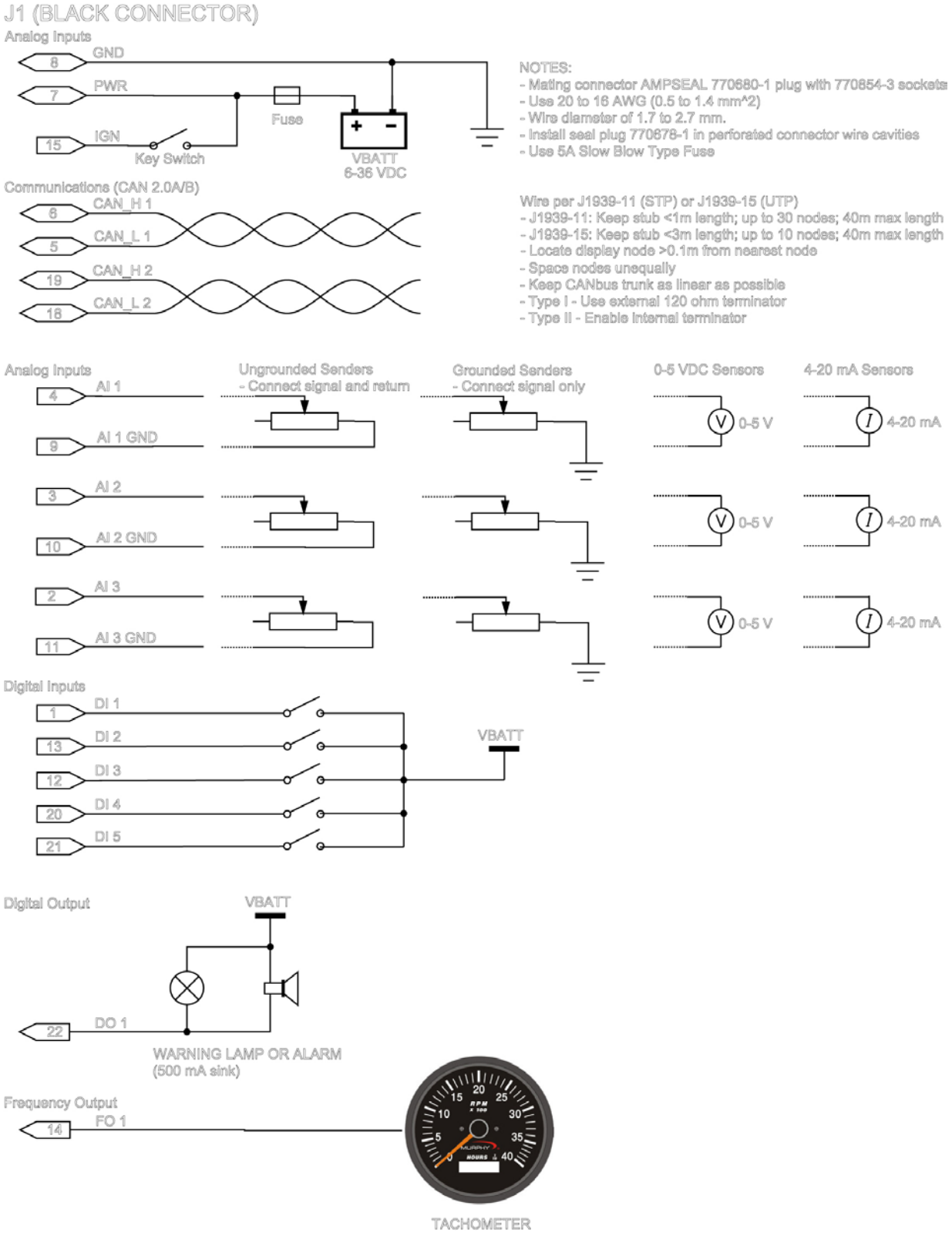


View looking at back of the display
Mating connector P/N: **AMP 770680-1**

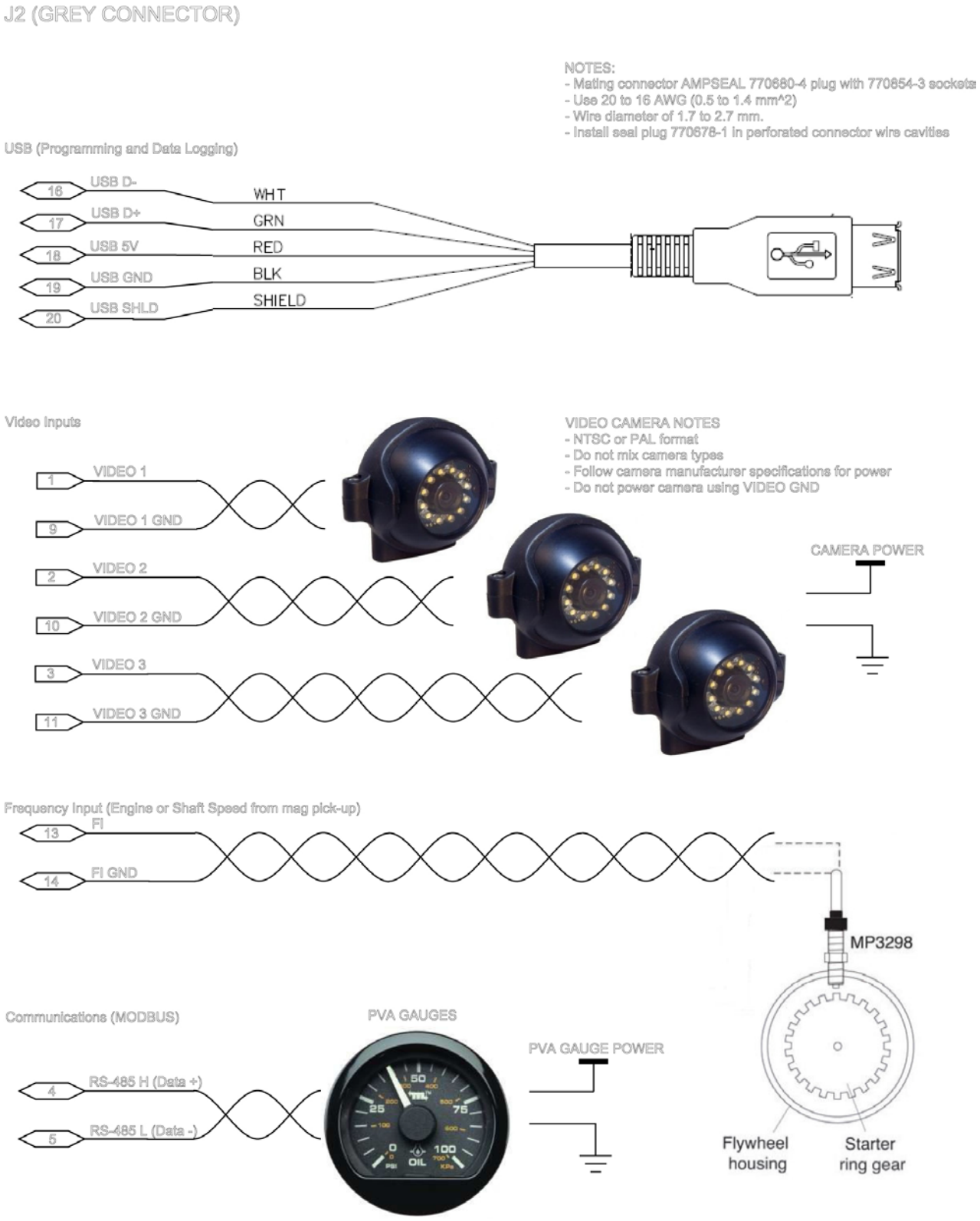
Signal Definitions

CAN: 3 ports according to CAN specification 2.; 1 port isolated according to NMEA 2000 USB 2.0 host Video input (optional): 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 Schematics – Black Connector



Wiring Schematics – Grey Connector



Specifications

Electrical

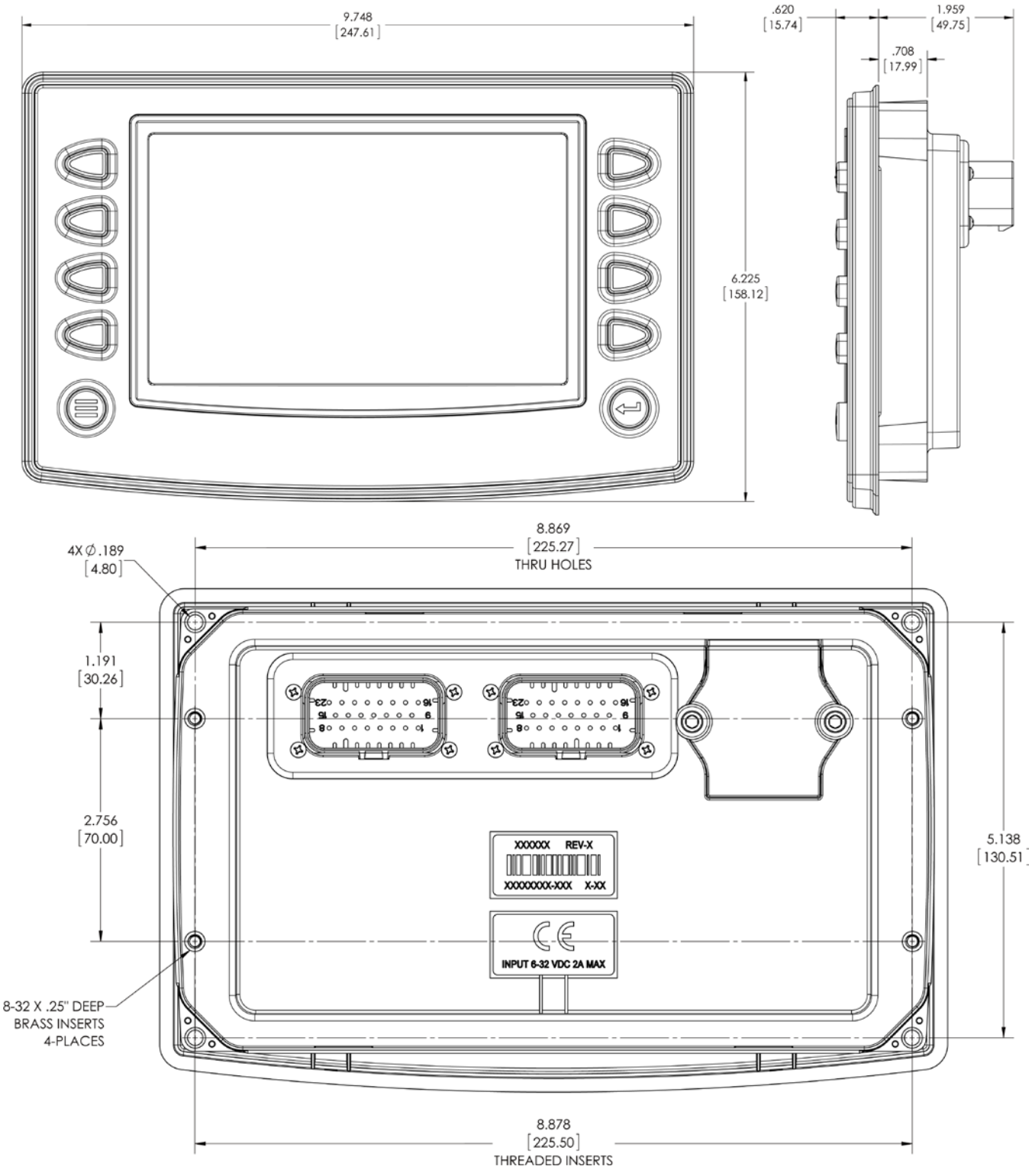
Display	7” / 178mm color transmissive TFT LCD
Resolution	WVGA, 800 x 480 pixels, 16-bit color
Aspect Ratio	16:9
Orientation	Landscape or portrait
Backlighting	LED, 400-500 cd/m2 (50,000 h lifetime)
Microprocessor	Freescale™ i.MX357, 32bit, 532 MHz
Operating System	QNX® Real-time Operating system
Flash Memory	2 GB
RAM	128 Mbytes SRAM
Clock	Real-time clock with rechargeable battery back-up
Operating Voltage	6 - 36 VDC, protected against reverse polarity and load-dump
Power Consumption	10 W full backlight 22 W full backlight with heater (< -10º C)
CAN	2 CAN ports according to CAN specification 2.0B. One port isolated according to NMEA 2000 (GPS)
RS-485	1 MODBUS Master / Slave port, PVA
Protocols	J1939, NMEA 2000 (GPS), CANopen, Free Form CAN
Connection	(2) AMPSEAL 23pin
Keyboard	10 tactile pushbuttons
USB	USB 2.0 host (full speed)
Inputs	(3) 0-5 VDC analog inputs or resistive, (1) input configurable to support measurement frequencies from 2 Hz-10 kHz, (5) discrete digital (active high)
Video Input (optional)	3 NTSC/PAL
Output	(1) 500mA; switched low-side, (2) frequency
SD Storage (optional)	For program updates, map data, diagnostic data storage
Landscape or Portrait Mounting Options	Front Mount, Back Mount

Environmental

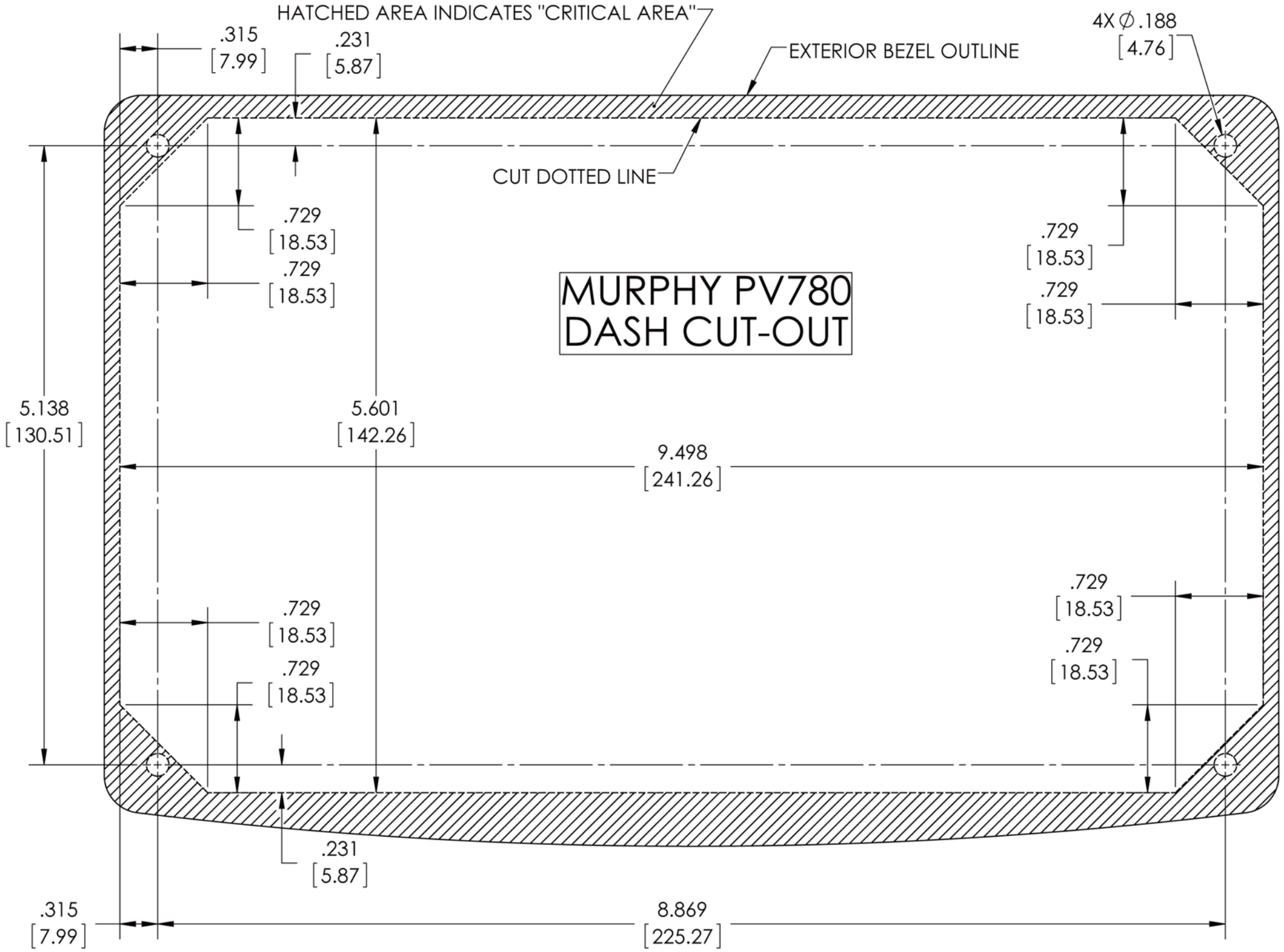
Operating Temperature	-40º C to +85º C
Storage Temperature	-40º C to +85º C
Protection	IP66 and 67, front and back
Emissions	SAE J1113 or customer specified
Immunity	SAE J1113 or customer specified
Vibration	Random vibration, 7.86 Grms (5-2000Hz), 3 axis
Shock	± 50G in 3 axis

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


9.748
[247.61]
.620
[15.74]
1.959
[49.75]
.708
[17.99]
6.225
[158.12]
8.869
[225.27]
THRU HOLES
4X Ø.189
[4.80]
1.191
[30.26]
2.756
[70.00]
5.138
[130.51]
XXXXX REV-X
XXXXXXX-XXX X-XX
INPUT 6-32 VDC 2A MAX
8-32 X .25" DEEP
BRASS INSERTS
4-PLACES
8.878
[225.50]
THREADED INSERTS

(THIS PAGE INTENTIONALLY LEFT BLANK)


HATCHED AREA INDICATES "CRITICAL AREA"
EXTERIOR BEZEL OUTLINE
4X ∅ .188
[4.76]
.315
[7.99]
.231
[5.87]
CUT DOTTED LINE
.729
[18.53]
.729
[18.53]
.729
[18.53]
.729
[18.53]
MURPHY PV780
DASH CUT-OUT
5.138
[130.51]
5.601
[142.26]
9.498
[241.26]
.729
[18.53]
.729
[18.53]
.729
[18.53]
.729
[18.53]
.231
[5.87]
.315
[7.99]
8.869
[225.27]

(THIS PAGE INTENTIONALLY LEFT BLANK)

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. MURPHY products and the Murphy logo are registered and/or common law trademarks of Enovation Controls, LLC. This document, including textual matter and illustrations, is copyright protected by Enovation Controls, LLC, with all rights reserved. (c) 2013 Enovation Controls, LLC. A copy of the warranty may be viewed or printed by going to http://fwmurphy.com/warranty.

ENOVATION CONTROLS CORPORATE HEADQUARTERS
5311 S 122ND EAST AVENUE
TULSA, OK 74146

ENOVATION CONTROLS – SAN ANTONIO OFFICE
5757 FARINON DRIVE
SAN ANTONIO, TX 78249

ENOVATION CONTROLS – HOUSTON OFFICE
105 RANDON DYER RD
ROSENBERG, TX 77471

ENOVATION CONTROLS – UK OFFICE
CHURCH ROAD LAVERSTOCK
SALISBURY SP1 1QZ UK

MURPHY ECONTROLS TECHONOLOGIES (HANGZHOU) CO, LTD.
77 23RD STREET
HANGZHOU ECONOMIC & TECHOLOGICAL DEVELOPMENT AREA
HANGZHOU, ZHEJIANG 310018 CHINA

DOMESTIC SALES & SUPPORT

ECONTROLS PRODUCTS
PHONE: 210 495 9772
FAX: 210 495 9791
EMAIL: INFO@ECONTROLS.COM
WWW.ECONTROLS.COM

MURPHY PRODUCTS
PHONE: 918 317 4100
FAX: 918 317 4266
EMAIL: SALES@FWMURPHY.COM
WWW.FWMURPHY.COM

MURPHY CONTROL SYSTEMS & SERVICES
PHONE: 281 633 4500
FAX: 281 633 4588
EMAIL: CSS-SOLUTIONS@FWMURPHY.COM

MURPHY INDUSTRIAL PANEL DIVISION
PHONE: 918 317 4100
FAX: 918 317 4124
EMAIL: IPDSALES@FWMURPHY.COM

INTERNATIONAL SALES & SUPPORT

UNITED KINGDOM
PHONE: +44 1722 410055
FAX: +44 1722 410088
EMAIL: SALES@FWMURPHY.CO.UK
WWW.FWMURPHY.CO.UK

CHINA
PHONE: +86 571 8788 6060
FAX: +86 571 8684 8878
EMAIL: APSALES@FWMURPHY.COM

LATIN AMERICA & CARIBBEAN
PHONE: 918 317 2500
EMAIL: LASALES@FWMURPHY.COM

SOUTH KOREA
PHONE: +82 70 7951 4100
EMAIL: SKOREASALES@FWMURPHY.COM

INDIA
PHONE: +91 91581 37633
EMAIL: INDIASALES@FWMURPHY.COM

Printed in the USA