POWERVISIONS CONFIGURATION STUDIO

Murphy's PowerVision Configuration Studio® software allows you to customize multiple aspects of your PowerView/HelmView display from a personal computer.

Choose from our library of icons and backgrounds or upload your own images to design uniquely customized equipment screens. The configuration tool offers varying levels of control – from basic display options to in-depth custom programming through C-code syntax scripting capabilities.

The software tool comes pre-loaded with more than 100 commonly used J1939 and NMEA parameters. In addition, the tool supports several protocols for machine integration, including J1939, CANopen, NMEA and proprietary CAN protocols through FreeForm CAN protocol.

- Extensive library of CAN J1939 and NMEA messages and diagnostic functions
- Drag-and-drop interface for WYSIWYG programming
- Graphic toolsets for the design and scaling of text, gauge and bargraph data
- Multi-layered screens for customized backgrounds, instruments, graphics and surrounds; day/night modes; warning, diagnostic and button-push 'pop-ups'; video images
- State-machines with graphical building of state-machine models
- C/C++ syntax scripting capabilities for in-depth programming
- Data simulation for off-line viewing of configurations
- Easily adaptable configurations for multiple display sizes

POWERVIEW TACTILE BUTTON DISPLAYS - 101

PowerView 101 offers a simple connection to optional components and displays over 50 standard SAE J1939 parameters

The PowerView PV101 display is a multifunction tool that enables equipment operators to view standard engine and transmission parameters and active/stored trouble codes. The display can show a single or a four-parameter simultaneous display with text descriptions for most common fault conditions. The enhanced alarm indicators have ultra-bright alarm and shut-down LEDs

Operating Voltage: 8 - 32 VDC

Reversed Polarity:
Withstands reversed battery terminal polarity indefinitely within operating temperatures

Environmental
- **Operating Temperature:** -40° to +185° F (-40° to +85° C)
- **Display Viewing Temperature:** -20° to +185° F (-29° to +85° C)
- **Storage Temperature:** -40° to +185° F (-40° to +85° C)
- **Environmental Sealing:** IP68, ± 5 PSI (± 34kPa)

Power Supply Operating Current
(@ 14VDC) 52 mA min.: 300 mA max
(@ 32VDC) 1A max (with LCD heater)

CAN Bus: SAE J1939 compliant

Case: Polycarbonate/polyester

Maximum Panel Thickness: 3/8 inch (9.6 mm)

Auxiliary RS485 Communications Port
- User configurable as MODBUS MASTER or MODBUS RTU SLAVE
- MASTER ACTIVE (default) drives optional PVA or PVM gages
- SLAVE ACTIVE offers user adjustable communication parameters

Resistive Input: user selectable as one of the following

- Backlighting Potentiometer: 1 K Ohm, 1/4 W
- Murphy Fuel Sender: 33 Ohm full, 240 Ohm empty set standard from factory for use with Murphy fuel sender. Programmable for use with non-Murphy fuel senders. Shipping Weights (all models): 1 Lb. (450 g.)

Shipping Dimensions (all models): 5 x 6 x 6 in. (127 x 152 x 152 mm)

Clamp: PBT

Connectors: 6-pin Deutsch DT Series

POWERVIEW GLASS FRONT DISPLAYS - 1100

The Murphy PowerView® 1100 display streamlines size and speed in a single display.

The PowerView 1100 is a full-color configurable display that integrates vital engine, transmission and diagnostic information into an easy-to-read operator interface. This large 10.6-inch display features an expansive 8GB of storage and a high-speed processor to boot quickly as well as seamlessly showcase graphics, transitions and videos. The display's bonded LCD can easily be viewed, even in full sunlight, and its glove-friendly touchscreen and rugged design make it a perfect solution for all types of environments and applications. The PV1100 is available in portrait or landscape models and is programmable with PowerVision Configuration Studio®.

Computing
Processor: Renesas® R-Car M2 with Arm® Cortex®-A15 dual-core processor @ 1.5 GHz (32-bit)
Operating System: QNX® Realtime Operating System
Storage: 8 GB flash memory
RAM: 512 MB DDR3-SDRAM
Graphics: Renesas graphics processor

Display
Screen Size: 10.6 inches (231.36 mm × 138.82 mm)
Type: LVDS TFT LCD with LED backlight, 24-bit color
Resolution: 1280 × 768
Contrast Ratio: Typ. 1000:1
Brightness: 1000 cd/m2
Surface: Anti-glare
Touch Panel: Projected capacitive (PCAP) with glove touch

Hardware
Real Time Clock: Available with battery backup
Connectors:
(2) AMPSEAL 23 pin (main)
(1) AMPSEAL 35 pin (optional)
(1) M12 5 pin [Ethernet] (optional)
(1) USB pigtail
(1) Radio antenna jack (optional)

Video Input: (3) NTSC/PAL (single channel viewable)

Communication
CAN: (2) CAN 2.0B according to ISO 11898-2, J1939 and proprietary messaging
Serial: RS-485 serial (Modbus: master or slave)
USB: USB 2.0 full speed host
Ethernet: 1 X Ethernet 10/100 Base-T (optional)
Wi-Fi: 802.11 b/g radio (optional)
Bluetooth: Fully integrated Bluetooth 2.1, class 1 (optional)

Electrical
Operating Voltage: 6 – 36 VDC, reverse polarity protected
Outputs:
(1) 500 mA switched low-side
(1) Frequency output (2Hz – 3KHz)

Inputs:
(3) Analog 0 – 5 VDC, 4-20 mA, resistive, 10-bit resolution
(5) Discrete digital, active-high
(1) Frequency in (2Hz – 10kHz) 5V pk-pk min, 49V 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 (ISO 15003)
Shock: ±50G in 3 axes
EMC/EMI: SAE J1113, ISO 13766, CE per 2014/30/EU

POWERVIEW GLASS FRONT DISPLAYS- 1200

The Murphy PowerView® 1200 packs power and viewability in an ultra-wide display.

The PowerView 1200 is a full-color configurable display that integrates vital engine, transmission and diagnostic information into an easy-to-read operator interface. This large 12.3-inch display features an expansive 8GB of storage and a high-speed processor to boot quickly as well as seamlessly showcase graphics, transitions and videos. The display's bonded LCD can easily be viewed, even in full sunlight, and its available glove-friendly touchscreen and rugged design make it a perfect solution for all types of environments and applications. The PV1200 is available in touchscreen and non-touchscreen models and is programmable with PowerVision Configuration Studio®.

Computing
Processor: Renesas® R-Car M2 with Arm® Cortex®-A15 dual-core processor @ 1.5 GHz (32-bit)
Operating System: QNX® Realtime Operating System
Storage: 8 GB flash memory
RAM: 512 MB DDR3-SDRAM
Graphics: Renesas graphics processor

Display
Screen Size: 12.3 inches (320 mm × 130 mm)
Type: LVDS IPS LCD with LED backlight, 24-bit color
Resolution: 1280 × 480
Contrast Ratio: Typ. 800:1
Brightness: 1000 cd/m2
Surface: Anti-glare
Touch Panel: Projected capacitive (PCAP) with glove touch

Hardware
Real Time Clock: Available with battery backup
Connectors:
(2) AMPSEAL 23 pin (main)
(1) M12 5 pin [Ethernet] (optional)
(1) USB pigtail
Video Input: (3) NTSC/PAL (single channel viewable)

Communication
CAN: (2) CAN 2.0B according to ISO 11898-2, J1939 and proprietary messaging
Serial: RS-485 serial (Modbus: master or slave)
USB: USB 2.0 full speed host
Ethernet: 1 X Ethernet 10/100 Base-T (optional)
Wi-Fi: 802.11 b/g radio (optional)
Bluetooth: Fully integrated Bluetooth 2.1, class 1 (optional)

Electrical
Operating Voltage: 6 – 36 VDC, reverse polarity protected
Outputs:
(1) 500 mA switched low-side
(1) Frequency output (2Hz – 3KHz)

Inputs:
(3) Analog 0 – 5 VDC, 4-20 mA, resistive, 10-bit resolution
(5) Discrete digital, active-high
(1) Frequency in (2Hz – 10kHz) 5V pk-pk min, 49V 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 (ISO 15003)
Shock: ±50G in 3 axes
EMC/EMI: SAE J1113, ISO 13766, CE per 2014/30/EU

POWERVIEW TACTILE BUTTON DISPLAYS - 25

The PowerView 25 is an engine and diagnostic display in an economical, compact package.

This J1939-compliant device provides electronic engine parameter data, is simple to install, matches the PowerView line of rugged displays and can be powered by 12-volt or 24-volt systems. The PV25 is equipped with two push buttons to quickly access a convenient menu. In addition, a back-lit graphic display and two LEDs indicate Active-fault Alarm or Shutdown status. Active and Stored Fault messages display the SPN (Suspect Parameter Number), FMI (Failure Mode Indicator) and the OC (Occurrence Count) using the SAE J1939 protocol. The PV25 displays up to 20 standard J1939 parameters in standard or metric units.

Engine Parameters:
Engine RPM
Engine Oil Pressure
Engine Hours
Coolant Temperature
ITA/Stage IIIB Parameters
Active Service Codes
System Voltage
Stored Service Codes

Tier 4 / Stage IIIB/IV Compliant Ready
Operating Voltage: 6 VDC minimum to 36 VDC maximum
Power Supply Operating Current:
460mA max @ 12 VDC
810mA max @ 24 VDC
Reversed Polarity: Withstands reversed battery terminal polarity

Environmental
Operating Temperature: -40° to 158°F (-40 to 70°C)
Storage Temperature: -67° to 185°F (-55 to 85°C)
Sealing: IP68
CAN Bus: SAE J1939 compliant

Connectors
4-pin AMP Mini-universal Mate-N-Lok Connector
AMP Plug: P/N 172338-1
AMP Socket: P/N 171639-1 (4 each, assumes 18 gage wire. See AMP Plug specification to match socket and wire size.)
Maximum Panel Thickness: 3/8 inch (9.6 mm)
Shipping Weight: (all models) 0.2 lb. (0.1 kg)
Shipping Dimensions: (all models)
3-7/8 x 2-3/4 x 2-3/4 in.
(98.4 x 69.85 x 69.85 mm)

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POWERVIEW TACTILE BUTTON DISPLAYS - 350

The PowerView 350 display series monitors multiple engine and machine parameters on an easy-to-read 3.8-inch (97 mm) QVGA monochrome LCD.

The display is capable of handling sophisticated engine diagnostics as well as basic engine alarm/shutdown. The PV350 display is customizable using the PowerVision Configuration Studio® software, an intuitive tool designed to make customization simple. Utilizing the software tool, users can tailor basic graphics, designate screen layout and define custom parameters. The PV350 is equipped with five tactile push buttons to quickly access a convenient menu. In addition, a backlit, heated graphic display and two LEDs indicate active-fault alarm or shut-down status.

Operating voltage: 6-36 VDC
Vibration and shock: 7.86 random vibe (5-2000Hz) and ±50g shock in three axes
Reversed polarity: Withstand reversed battery terminal polarity
Operating temperature: -40 to 185°F (-40 to 85°C)
Storage temperature: -40 to 185°F (-40 to 85°C)
Communications: (2) CAN 2.0B; second CAN port is NMEA 2000 isolated; J1939 and NMEA 2000 protocol; proprietary messaging
EMC/EMI:
2004/108/EC and 2006/95/EC directives
EN61000-6-4:2001 (emission)
EN61000-6-2:2001 (immunity)
EN-50121-3-2 and EN 12895

Connectors: Deutsch DT series 6 pin; M12 for NMEA 2000 (micro-C)
Inputs: (1) resistive analog
Outputs: (1) 500 mA; switched low-side
SAE J1113/2, 4, 11, 12, 21, 24, 26 and 41 display
Display: 3.8" (97 mm) QVGA (320x240 pixels); monochrome transflective LCD with white LED backlight and heater
Viewing angle: ±50° horizontally; +45°/-60° vertically
Keys: 5 tactile push buttons
Alarms: Red and amber warning LEDs; capable of set points-triggered output for external piezo buzzer or shutdown relay
Real-time clock: With Li-ion rechargeable battery backup

POWERVIEW TACTILE BUTTON DISPLAYS - 380

The Murphy PowerView 380 features robust, multifunction displays for advanced monitoring of multiple electronic engines.

It's capable of monitoring multiple engines and machine parameters on an easy-to-read 3.8-inch (97mm) QVGA monochrome LCD. The display is capable of handling sophisticated engine diagnostics as well as basic engine alarm/shutdown. Customize the PV380 display using the PowerVision Configuration Studio®, an intuitive tool designed to make customization simple. Using the software tool, users can tailor basic graphics, designate screen layout and define custom parameters. The PV380 is equipped with five tactile push buttons to quickly access a convenient menu. In addition, a backlit and heated graphic display with LEDs indicate alarm or shutdown status.

Operating Voltage: 6-36 VDC
Vibration and Shock: 7.86 random vibe (5-2000HZ) and ±50g shock in 3 axes
Reversed Polarity: withstands reversed battery terminal polarity
Operating Temperature: -40° to 185° F (-40° to 85° C)
Storage Temperature: -40° to 185° F (-40° to 85° C)
Communications: (1) CAN 2.0B; J1939 Protocol; Proprietary Messaging; (1) RS-485 serial
EMC/EMI:
2004/108/EC and 2006/95/EC directives
EN61000-6-4:2001 (emission)
EN61000-6-2:2001 (immunity)
EN-50121-3-2 and EN 12895

Connectors: Deutsch DT Series 6 and 12 pin
Inputs: (4) resistive analog; (3) analog; 0-5V/4-20mA analog or digital; (1) frequency 2-10000Hz, 3.6-120VAC
Outputs:
(2) 500 mA; switched low-side

SAE J1113/2, 4, 11, 12, 21, 24, 26 and 41
Display: 3.8" (97mm) QVGA (320x240 pixels); monochrome transflective LCD with white LED backlight and heater
Viewing Angle: ±50 horizontally; +45°/-60° vertically
Keys: 5 tactile push buttons
Alarms: Red and amber warning LEDs; capable of set point-triggered output for external piezo buzzer or shutdown relay
Real-time clock: With Li-ion rechargeable battery backup

POWERVIEW TACTILE BUTTON DISPLAYS - 450

The PowerView 450 features a rich features set and full customization in a compact size.

The PV450 features a 4.3-inch screen perfect for applications with tighter spaces, and it delivers the same powerful performance as Murphy's larger configurable displays. It integrates electronic engine, transmission and equipment information into an easy-to-read, full-color interface with eight tactile push buttons. The PV450's sunlight viewable, full-color screen makes seeing life-like gauges, alarm warnings, service codes, and video easy to view in virtually any condition. The HelmView 450 (see "How to Order" below) is also available to meet the engine monitoring needs of the Commercial Marine industry. The PV450 and HV450 are programmable with PowerVision Configuration Studio®.

Technical

Display: Bonded 4.3" color transmissive TFT LCD
Resolution: WQVGA, 480 x 272 pixels, 16-bit color
Aspect Ratio: 16:9
Orientation: Landscape or portrait
Backlighting: LED, 500-650 cd/m2 (30,000 hr lifetime)
Microprocessor: Freescale i.MX357 32bit, 532Mhz
QNX Realtime Operating System
Flash Memory: 256 MB
RAM: 128 Mbytes DDR2 SDRAM
Operating Voltage: 6-32 VDC, protected against reverse polarity and load dump (CSA, 6-30 VDC)
Power Consumption: 10W max. (CSA, 163 mA max @ 30VDC)
CAN: (2) CAN 2.0B; optional NMEA 2000 isolation, isolation with HV450
Protocols: J1939, NMEA 2000, CAN open
RS-485: (1) MODBUS Master/Slave
Video input (Optional): (2) NTSC/PAL input channels with one displayed at a time
Connection: (4) Deutsch DT 6-pin connectors
Keyboard: (8) tactile buttons with white LED backlight
USB: 2.0 host, full speed
Output: (1) Open-drain, capable of sinking 500 mA
Input: (1) Resistive, 0-5 V or 4-20 mA (software configurable) (10-bit resolution)
Clock: Real time clock with built-in rechargeable Li-ion battery backup (0.033 mWh)

Environmental

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: IP 66 and 67, front and back
Electromagnetic Compatibility:
2004/108/EC EN 60945:2002
EN 61000-6-4 EN 50121-3-2
EN 61000-6-2 (immunity) EN 12895
J1113/2, 4, 11, 12, 21, 24, 26 and 41
Vibration: Random vibration, 7.86 Grms (5-2000 Hz), 3 axes
Shock: ± 50G in 3 axes

Specifications applicable to CSA-certified PV450 only

CSA Certification: Class I Div 2 Groups B, C & D; T4; IP66
CAN: (2) CAN 2.0B (transmission rates up to 1Mbps)
Protocols: J1939 and CAN open
Environmental Protection: IP 66 and 67

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POWERVIEW TACTILE BUTTON DISPLAYS - 485

The PV485 is a customizable, all-in-one color display and controller designed to meet the needs of modern electronic engines and equipment applications.

Its rugged design offers a wide array of configurable I/O and supports both mechanical and J1939 electronic engines. the PV485 also supports Tier 4 and stage IV engines, helping to make your transition to Tier 4 easier. The PV485 controller is compatible with the PowerVision Configuration Studio® software, so custom configurations can be quickly developed. With the PowerVision Configuration Studio software, it's easy to define the user interface screens, as well as the functionality and sequence of events controlled by the PV485. You can configure equipment control such as: autostart, pressure control, data logging and alarms. You can even add custom graphics and company branding to the user interface.

TECHNICAL SPECS

Part No. 78700639
Display: Bonded 4.3"/109mm color transmissive TFT LCD
Resolution: WQVGA, 480 x 272 pixels, 16-bit color.
Aspect Ratio: 16:9.
Orientation: Landscape.
Backlighting: LED, 900-1000 cd/m2 (30,000 hr lifetime).
Microprocessor: Freescale iMX35 32bit, 532MHz.
Operating System: QNX Real-Time Operating System.
Flash Memory: 256 MB.
Operating Voltage: 6 to 32 VDC protected against reversed polarity and load-dump.
Power Consumption: 10W max.
CAN: 1 CAN 2.0B.
Protocols: J1939; FreeForm CAN support.
Connection: (1) 35-pin AMP seal connector (AMP 776231-1).
Keyboard: 5 tactile buttons.
USB: (1) USB 2.0 host (full speed).
Digital Inputs: (3) digital inputs.
Digital Outputs: (4) low side open-drain, capable of sinking 500mA.
Analog Inputs: (6) total, (4) software configurable (0-5V, 4-20mA, Resistive) +Battery Voltage + 2nd Battery Voltage.
Analog Outputs: (1) 0-5V.
Frequency Inputs: (1) Alternator and Magnetic Pickup.
Real-Time Clock: with battery backup.
RS-485

ENVIRONMENTAL SPECS

Operating Temperature: -40 to +85°C (-40 to 185°F).
Storage Temperature: -40 to +85°C (-40 to 185°F).
Protection: IP 67, front and back.
Emissions / Immunity: SAE J1113 or customer-specified; (CE) - EN61000-6-2, EN12895, ISO 13766
Vibration: Random vibration, 7.86 Grms (5-2000 hz), 3 axis.
Shock: ± 50G in 3 axis.
Case: Polycarbonate / ABS.

POWERVIEW TACTILE BUTTON DISPLAYS - 780

Murphy's PowerView® 780 display offers customization and all-weather durability.

The PowerView 780 display is a full-featured, configurable display that shows integrated engine, transmission and diagnostic information in an easy-to-read operator interface. Equipment functionality can be further integrated through the available I/O and controlled via the CAN bus. The PV780 features a full-color, 7-inch bonded LCD for brighter, smoother graphics and best-in-class sunlight readability. The rugged design makes this display a great solution for extreme environments. The PV780 display is compatible with PowerVision Configuration Studio® which allows users to edit CAN parameters, add OEM branding and create custom equipment screens for a unique and sophisticated user interface.

Computing
Processor: Freescale™ i.MX357, 32 bit, 532 MHz, ARM11 core
Operating System: QNX® Realtime Operating System
Storage: 2 GB flash memory
RAM: 128 Mbytes SRAM

Display
Screen Size: 7 inches (178 mm)
Type: Bonded color transmissive TFT LCD, 16-bit color
Resolution: 800 x 480 pixels @ 60 Hz (WVGA)
Contrast Ratio: 400:1
Brightness: 1000 cd/m2 (LED, 40,000 hr. minimum)
Surface: print/glare-free glass
Viewing Angle: ±65° horizontal, +55°/-65° vertical
Orientation: Landscape or portrait
Touch Panel (optional): Projected capacitive (PCAP)

Hardware
Keypad: 10 tactile configurable soft keys with white LED backlight
Real time clock: with Li-ion rechargeable battery backup
Connectors: 2 AMPSEAL 23 Pin (AMP 770680-1 and AMP 770680-4)
Video Inputs: 3 NTSC/PAL (single channel viewable)
Dimensions: 8.37 x 6.0 in. (212.5 x 152.3 mm) landscape
Unit Depth: 3.57 in. (90.8 mm)
Case Material: PC/ABS, ISO 3795 (SAE J369, FMVSS 302) rated
Mounting Options: Front mount, back mount or RAM mount

Communication
CAN: (2) CAN 2.0B according to ISO 11898-2, J1939 and proprietary messaging
Serial: RS-485 serial (Modbus: master/slave or PVA gauge)
USB: (1) USB 2.0 host (full speed)

Electrical
Operating Voltage: 6-36 VDC, reverse polarity protected
Outputs:
(1) 500mA switched low-side
(1) Frequency Out (2Hz - 3 kHz, Vbat rms square wave) for tach

Inputs:
(3) Analog 0-5VDC, 4-20 mA, or resistive, 10-bit resolution
(5) Discrete Digital, Active High
(1) Frequency In (2Hz - 10 kHz), 5Vpk-pk min, 120Vpk-pk max

Environment
Operating Temperature: -40°F to +185°F (-40°C to +85°C)
Storage Temperature: -40°F to +185°F (-40°C to +85°C)
Protection: IP66 and 67, front and back.
Vibration: Random vibration, 7.86 Grms (5-2000 Hz), 3 axes
Shock: ±50G in 3 axes
Electrical: J1113-2, -4, -11, -13, -21, -26 and -41
MC/EMI:
2004/108/EC and 2006/95/EC directives
EN 61000-4-3 (radiated EMF immunity radiated)
EN 61000-4-4 (EFT immunity power and I/O lines)
EN 61000-4-5 (surges power lines)
EN 61000-4-6 (RF immunity)
EN 61000-4-8 (magnetic field immunity)
EN 60945 (ESD)
EN 60945 (conducted emissions)
HYBRID EN 60945 CISPR 11 CLASS B (radiated emissions)

Certifications:
CE
E-mark capable

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POWERVIEW TACTILE BUTTON DISPLAYS - 780B

Murphy's PowerView® 780B display provides power and reliability with an easy-to-read interface.

The PowerView 780B is a full-color configurable display that integrates vital engine, transmission and diagnostic information into an easy-to-read operator interface. The PV780B also offers all the features of Murphy's popular PV780 with more power and memory. This sleek 7-inch display features an expansive 8 GB of storage and a high-speed processor to boot quickly as well as seamlessly showcase graphics, transitions and videos. The display's bonded LCD can easily be viewed, even in full sunlight, and its available glove-friendly touchscreen and rugged design make it a perfect solution for all types of environments and applications. The PV780B is available in touchscreen and non-touchscreen models and is programmable with PowerVision Configuration Studio®.

Computing
Processor: Renesas® R-Car M2 with Arm® Cortex®-A15 dual-core processor @ 1.5 GHz (32-bit)
Operating System: QNX® Realtime Operating System
Storage: 8 GB flash memory
RAM: 512 MB DDR3-SDRAM
Graphics: Renesas graphics processor

Display
Screen Size: 7 inches (178 mm)
Type: LVDS TFT LCD with LED backlight, 24-bit color
Resolution: 800 × 480 (WVGA)
Contrast Ratio: Typ. 600:1
Brightness: 1000 cd/m2
Surface: Anti-glare
Touch Panel: Projected capacitive (PCAP) with glove touch

Hardware
Keypad: 10 tactile configurable soft keys with white LED backlight
Real Time Clock: Available with battery backup

Connectors:
(2) AMPSEAL 23 pin (main)
(1) M12 5 pin [Ethernet] (optional)
(1) USB pigtail
Video Input: (3) NTSC/PAL (single channel viewable)

Communication
CAN: (2) CAN 2.0B according to ISO 11898-2, J1939 and proprietary messaging
Serial: RS-485 serial (Modbus: master or slave)
USB: USB 2.0 full speed host
Ethernet: 1 X Ethernet 10/100 Base-T (optional)
Wi-Fi: 802.11 b/g radio (optional)
Bluetooth: Fully integrated Bluetooth 2.1, class 1 (optional)

Electrical
Operating Voltage: 6 – 36 VDC, reverse polarity protected
Outputs:
(1) 500 mA switched low-side
(1) Frequency output (2Hz – 3KHz)

Inputs:
(3) Analog 0 – 5 VDC, 4-20 mA, resistive, 10-bit resolution
(5) Discrete digital, active-high
(1) Frequency in (2Hz – 10kHz) 5V pk-pk min, 49V pk-pk max

Environment
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: IP66 and IP67, front and back, for outdoor use
Vibration: 7.86 Grms (5 – 2000Hz), 3 axes
Shock: ±50G in 3 axes
EMC/EMI: SAE J1113, ISO 13766, CE per 2014/30/EU