ENGINE VIEW 35

3.5-inch CAN Bus Display with Ready-to-Use Engine Monitor

- Functions as a J1939 engine monitor
- Powerful processor with sub-second boot time
- Scratch-resistant/anti-glare cover glass is optically bonded to LCD for superior mechanical and visual performance
- Bright, 1000-nit display is backlit and provides high-contrast text and full-color graphics for excellent sunlight readability
- Convenient flush mounting provides a modern look and feel to seamlessly blend with vehicle cab design
- Armrest, A-post, and dashboard mounting
- Rugged design for extreme environments
- Easy to configure J1939 monitoring

YOUR EXPERTS IN CAB CONTROLS

Grayhill specializes in the design, development, and production of human interface controls, including:

– Cab user interface design – Customized control panels – CAN bus interface devices

VERSATILE DISPLAY. MANY FEATURES.

Bright.
This 3.5-inch backlit LCD (480×320) is very bright (1000 nits) providing good daylight readability.
It has software controlled LED backlighting and 18-bit color.

Adaptable.
Designed for integration into off-highway vehicles. It functions in 12 V/24 V operation and is sealed against the ingress of liquids and dust.

Rugged.
The protective cover lens is scratch resistant glass, not plastic. Optical bonding of the cover glass improves impact resistance.

Powerful.
The powerful embedded computer can monitor and display many events simultaneously:
- 550 MHz
- 16 MB RAM
- 32 MB Flash

Adjustable.
- Select from 65 J1939 parameters
- Display parameters in a 4-up or 6-up screen
- Rapidly switch between 2 screens of parameters with the push of a button
- Select ECUID, Select CAN bit rate

Readable.
Optically bonding the display and cover glass reduces reflections. An anti-glare etching further improves readability in bright sunlight.

Useful.
Ideal for off-road vehicle applications, portable power applications, portable lighting applications, or anywhere it is necessary to monitor J1939 engine parameters.

Easy to Configure.
Select what to monitor in the Settings Menu.

Specifications are subject to change.

VERSATILE DISPLAY. ALL THE SPECIFICATIONS.

General Information

Display	3.5" color transmissive TFT LCD, IPS wide viewing angle
Resolution	480×320 pixels, 18 bit color
Aspect Ratio	3:2
Backlighting	LED, 1000 cd/m² or nits
Microprocessor	CORTEX M7, 550 MHZ
Flash Memory	32 MB
RAM	16 MB
Real Time Clock	Internal non-rechargeable battery backup
CAN	(2) CAN 2.0 B CAN FD Capable
Inputs	(3) 0-32 VDC discrete digital or 0-10 V Analog
Outputs	(2) digital 200 mA switched high side
Approximate Unit Weight	250 g

Power Specifications

Operating Voltage	8 VDC to 32 VDC
Power Consumption	3 Watts (typical)

Electrical Performance Specifications

Maximum Load	ISO 16750-4 5.1.2.2	T(max) = +75 °C
Jump Start Voltage	ISO 16750-2 4.3.2	36 V for 60 min
Short Circuit Protection	ISO 16750-2 4.10	36 V
Reverse Polarity Protection	ISO 16750-2 4.7	-36 V
Starting Profile	ISO 16750-2 4.6.3	12 V, Level II Class B and Level IV Class A 24 V, Level II Class A and Level III Class A
Superimposed Alternating Voltage	ISO 16750-2 4.4	Severity 2 and 3
Load Dump (Unclamped)	ISO16750-2 4.6.4.2.2	12 V: Us = 101 V, Ri = 0.5 Ω, td = 400ms 24 V: Us = 202 V, Ri = 1.0 Ω, td = 350ms
Parallel Inductive Load	ISO7637-2 Pulse 1	-600 V
Wire Harness Inductance Switching	ISO 7637-3 Pulse A & B	CCC Fast a/b: Level 4 -80 V/+80 V ICC Slow a/b: Level 4 -10 V/+10 V

CE Compliance

EMC	ISO 13766-1:2018	ESA

Mechanical Performance

Vibration, Random	ANSI/ASAE EP455 5.15.1	2 hrs each axis 50 Hz to 2000 Hz
Vibration, Sinusoidal	ANSI/ASAE EP455 5.15.2	A logarithmic sweep from 10 Hz to 2000 Hz to 10 Hz over a period of 20 min for 4 hrs in each axis
Shock	ANSI/ASAE EP455 5.14	11 ms half sine pulse of 490 m/s2 in 3 axis
Drop	ANSI/ASAE EP455 5.14.2 Level 1	400 mm onto a hardwood bench top on all practical edges

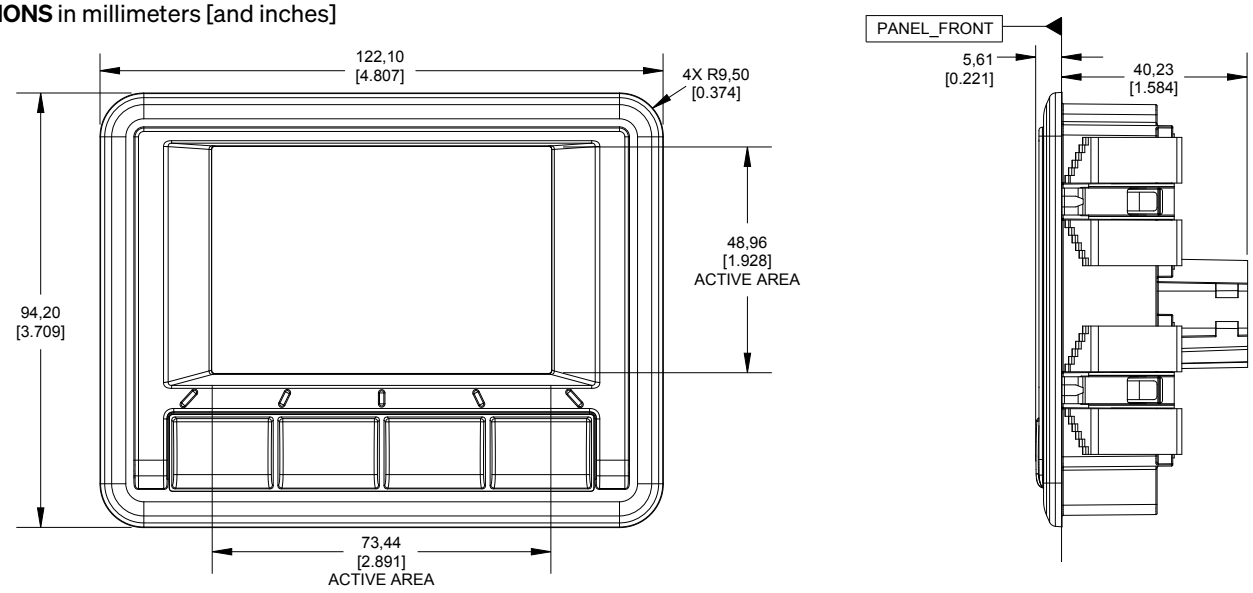
Environmental Specifications

Operating Temperature	ISO 16750-4 Section 5.1.1.2, 5.1.2.2	-30 °C to +75 °C
Storage Temperature	ISO 16750-4 Section 5.1.1.1, 5.1.2.1	-40 °C to +85 °C
Thermal Shock	ISO 16750-4 Section 5.4.3	
Altitude (Barometric Pressure)	ANSI/ASAE EP455 5.2.2	101.3 kPa to 18.6 kPa
Ingress: Wash Down	ISO 20653	IPX9K
Ingress: Submersion	ISO 20653	IPX7
Ingress: Sand and Dust	ISO 20653	IP6K
Solar Radiation	ISO 4892-2	Method B, Cycle 2
Storage Humidity	ISO 16750-4	85% humidity at 40 °C for 240 hrs
Chemical Resistance	ISO 16750-5	Table 1 except battery fluid and runway de-icer
Screen Impact	IK7 rating	2 joules

Electromagnetic Compatibility Specifications

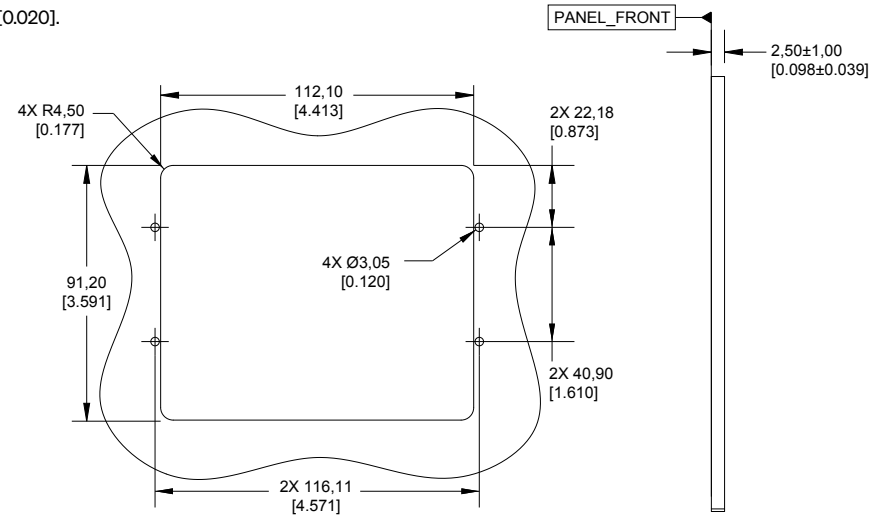
ESD	ISO 10605-2008 (Handling) ISO 10605-2008 (Powered)	±25 kV Air, ±15 kV contact ±20 kV Air, ±15 kV contact
Radiated Immunity	ISO11452-2	ALSE: 80-2000 MHz CW 100 V/M ALSE: 80-2000 MHz AM Mod 1 KHz 80% 100 V/M ALSE: 800-2000 MHz PM1 Mod 100 V/M
Conducted Emissions	CISPR25	Level 3
Radiated Emissions	ISO14982	
Conducted Immunity	ISO 11452-4	0.5-400 MHz 100 mA, 1 KHz AM 80% Mod 0.5-400 MHz 100 mA, CW

DIMENSIONS in millimeters [and inches]

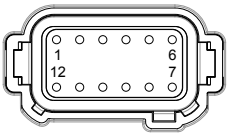


RECOMMENDED PANEL CUT OUT

Tolerances for this sheet are ±0.50 [0.020].



REAR CONNECTOR



Mating Connector: DEUTSCH DT06-12SA

PINOUT

Pin	Function	Pin	Function	Pin	Function	Pin	Function	Pin	Function	Pin	Function
1	VIN Positive	**2**	VIN Return	**3**	NC	**4**	NC	**5**	NC	**6**	NC
7	NC	**8**	NC	**9**	NC	**10**	NC	**11**	CAN1 HI	**12**	CAN1 LO

NC is no connect — reserved for future use.

VERSATILE DISPLAY. ORDER INFORMATION.

ITEM	CAN1	CAN2	RTC
3D35EVW-100	Y	Y	Y

Specifications are subject to change.