Specifications are subject to change. Please refer to the current datasheet on www.grayhill.com for the most current published specifications for this product.

Grayhill

INTUITIVE HUMAN INTERFACE SOLUTIONS

Graphic MicroDisplay

- Easily display custom graphic icons, text boxes and active gauge elements.
  - Use PC-based software tools to develop graphic objects
  - Store graphic objects in on-board flash memory
  - Recall objects at run time via J1939 commands
  - Recall objects at run time using the menu object
  - Recall objects at run time using the screen list object
- Controlled via J1939 PGNs
  - Native coding not required
- Ideal for off-highway vehicle applications
  - Virtual gauges
  - Diagnostic menus
  - Fault indicators & service reminders
- Rated for off-highway vehicles
  - Extended operating temperature range: -50° C to +85°C (with heater)
  - Protected against the ingress of liquids and dust: IP67 rated seal
- 3.2-inch backlit LCD (256x128)
  - Excellent daylight readability
  - Transflective LCD with anti-glare
  - Software controlled RGB backlighting
  - Four level grayscale graphics
- Custom Options Available
  - Keypad backlight color
  - Key colors and legends
  - Icons/screens pre-loaded
- System Interface
  - One CAN-bus port
  - Two 200mA outputs (standard option)
  - Three discrete inputs (standard option
  - One RS-485 serial port (custom option)
- Styled to sit next to Grayhill standard 20-button 3K Keypad

The MicroDisplay makes it easy to create screens with custom graphics, text and even gauges that automatically adjust based on J1939 values.

Due to its innovative design, native coding is not required for custom user interfaces. Screens and graphic objects are created with the included PC software tool and stored in the on-board flash memory.

When in use the MicroDisplay can be controlled two different ways. First, a vehicle's ECU (Electrical Control Unit) can send and receive commands to control the display. Second, with the new Menu Object and Screen List Object the display can be programmed to provide stand-alone functionality. The menu object allows users to enter and navigate a menu using the menu key. The Screen List Object allows users to quickly navigate through favorite screens (objects) by pressing one of the right and left arrow buttons.

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	ANSI/ASAE EP455 5.1.1	Level 2: -50°C to +85°C with optional heater -25°C to +85°C without heater
Storage Temperature	ANSI/ASAE EP455 5.1.2	Level 2: -50°C to +85°C
Thermal Shock	ANSI/ASAE EP455 5.1.3	-40°C to 70°C at a rate of 4°C/min (1 hour at extremes)
Altitude (Barometric Pressure)	ANSI/ASAE EP455 5.2	101.3kPa to 18.6kPa
Sand and Dust	SAE J1455	
Solar Radiation	ISO 4892-2	Method B
Wash Down	ANSI/ASAE EP455 5.6	Level 2
Humidity	ANSI/ASAE EP455 5.13	96% humidity at 35°C for 240 hours
Salt Fog	ANSI/ASAE EP455 5.9	5% aqueous solution of NaCl @ 35°C and a pH between 6.5 and 7.2 for 48 hours
Chemical resistance	ISO 16750-5 EP 455 5.8.2	
Ingress Protection	IP67	with mating connector

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

Agriculture

Construction

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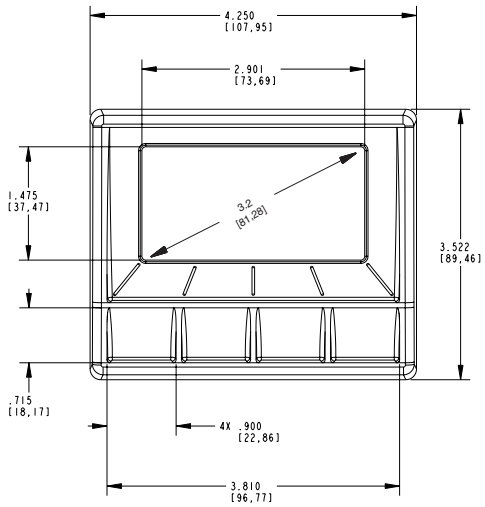
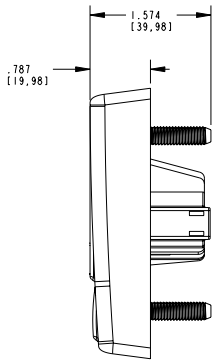
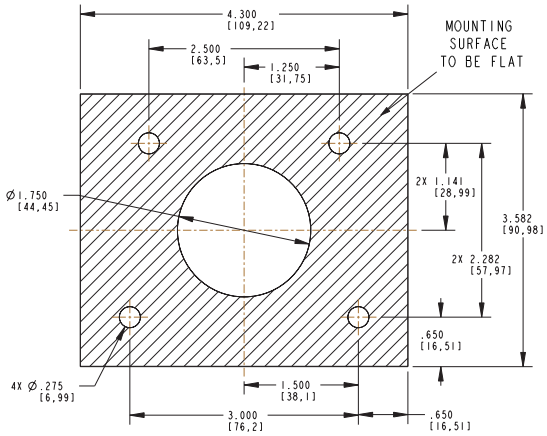
INTUITIVE HUMAN INTERFACE SOLUTIONS

DIMENSIONS







ELECTRICAL PERFORMANCE SPECIFICATIONS

Maximum load	ANSI/ASAE EP455 5.1.1	Level 2
Jump start voltage	EP455 5.10.2	36V for 60 minutes; -36V for 60 minutes
Short circuit protection	EP455 5.10.4	36V
Reverse polarity protection	EP455 5.10.3	-36V
Starting profile	ISO 16750-2	Level II code C, Level IV code A
Battery-less operation	ANSI/ASAE EP455 5.11.3	Level 2
Load dump	ISO 7637-2 Test Pulse 5b	Us* = 60V
Switching spikes	ISO 7637-2 Test Pulse 3a and 3b	
Wire harness inductance	ISO 7637-2 Test Pulse 2a and 2b	
Wire harness inductance-switching	ISO 7637-3 Test Pulse a and b	
Inductive load pulse	ANSI/ASAE EP455 5.11.4	
Mutual coupling	ANSI/ASAE EP455 5.11.6 Level 2	
Alternator field decay	ANSI/ASAE EP455 5.11.2	

ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS

ESD	ANSI/ASAE EP455 5.12	Level 1 +/- 25KV
Radiated Immunity	EP455 5.16	Level 1
Conducted emissions	SAE J1113-41	Level 4
Radiated emissions	ISO14982	

CE COMPLIANCE

EMC	EN 13309:2010	ESA

MECHANICAL PERFORMANCE

Vibration, Random	ANSI/ASAE EP455 5.15.1	2h each axis @52.4m/s2 RMS overall acceleration and spectral power density of 2m2/s3 from 50Hz to 2000Hz
Vibration, Sinusoidal	ANSI/ASAE EP455 5.15.2	A logarithmic sweep from 10Hz to 2000Hz to 10Hz over a period of 20 minutes for 4 hours in each of 3 orthogonal axes with amplitude 1.5mm from 10Hz to 40Hz and a constant acceleration of 35m/s2 RMS from 40Hz to 2KHz
Shock / Crash Safety	ANSI/ASAE EP455 5.14	11ms half sine pulse of 490 m/s2 in 3 perpendicular axes
Drop	ANSI/ASAE EP455 5.14.2 Level 1	Drop component 400 mm onto a hardwood benchtop on all practical edges.

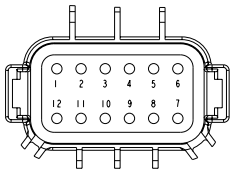
specifications subject to change

PART NUMBER	DESCRIPTION
3D32XK-200	MicroDisplay with CAN, I/O
3D32HK-200	MicroDisplay with CAN, I/O and heater
3D32XKR-200	MicroDisplay with CAN
3D32HKR-200	MicroDisplay with CAN and heater
3D32CABLE-1	MicroDisplay Programming Cable with Power Supply

MOUNTING INFO

Use M6 Nut (1mm pitch)
Max Torque 25 in-lbs

REAR CONNECTOR



Mating Connector: DEUTSCH DT06-12SA

0	Function
1	V in Positive
2	V Return
3	RS-485 +
4	RS-485 -
5	Digital in 1
6	Digital in 2
7	Digital in 3
8	Digital out 1
9	Digital out 2
10	CAN shield
11	CAN HI
12	CAN LOW

CONTACT GRAYHILL FOR CUSTOM OPTIONS

Grayhill, Inc.
561 Hillgrove Avenue
LaGrange, Illinois 60525
phone: (708) 354-1040
fax: (708) 354-2820

Bulletin 1144
Rev 06/14

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Grayhill:

3D32XKR-200 3D32HK-100 3D32XK-100 3D32HKR-100 3D32XK-200 3D32HKR-200 3D32XKR-100