

DC13

Rugged 8.4" Panel PC with Front Keys Railway Display Computer

- » 8.4" 4:3 TFT LCD panel
- » 800 x 600 pixels resolution
- » Intel Atom E600 series
- » 1 USB 2.0 Type A
- » 1 Fast Ethernet on M12
- » Power supply via PoE Class 0
- » -30 to +70°C (+85°C) operating temperature
- » Fanless and maintenance-free design
- » IP65 compliant
- » EN 50155 railway compliant



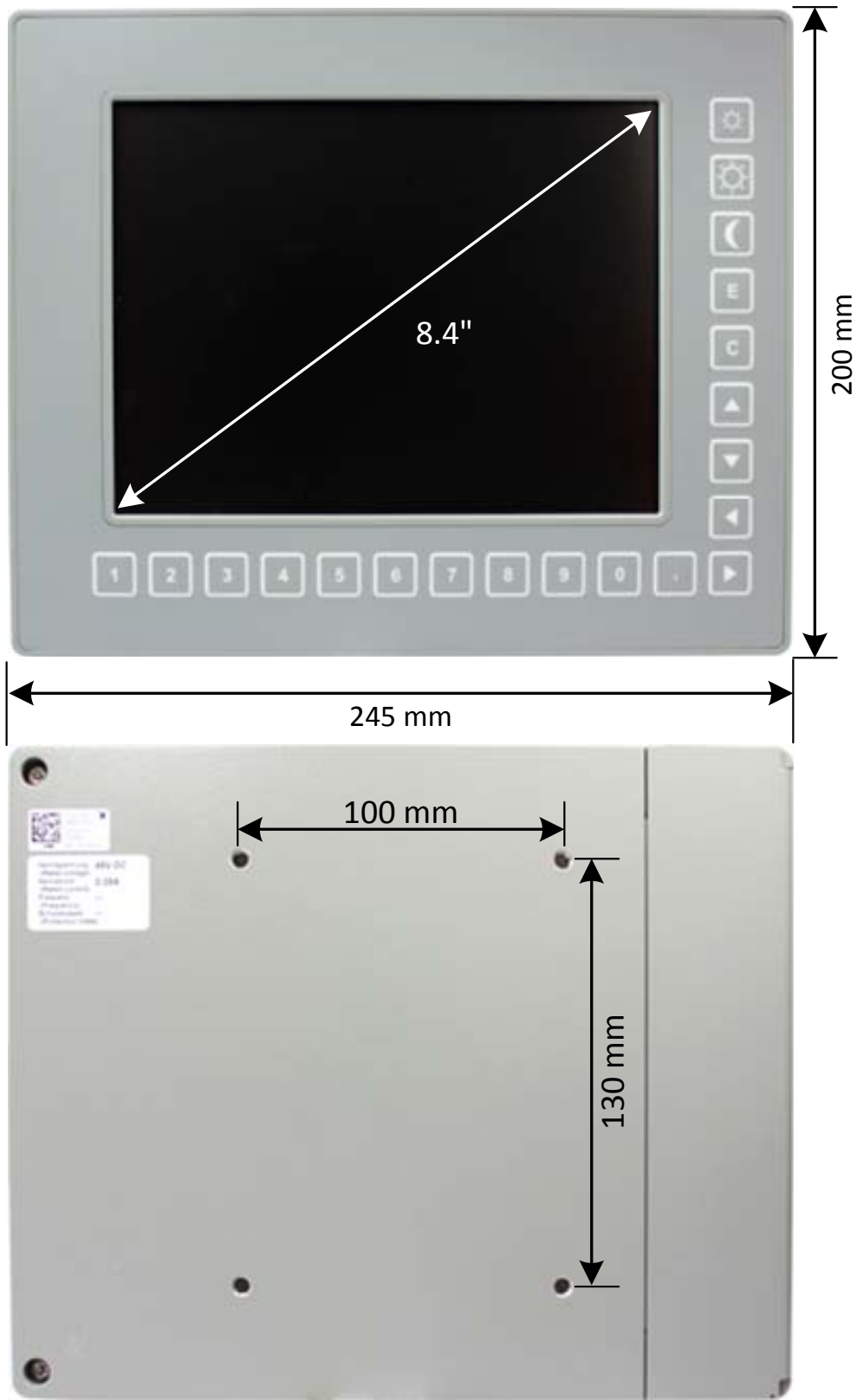
The DC13 panel PC is a rugged, fanless and maintenance-free human-machine interface (HMI) for interactive railway applications with a power consumption of less than 13 W. It is designed as a stand-alone panel and equipped with a 8.4" TFT LCD display with 20 backlit front keys with tactile feedback.

The DC13 is controlled by the Intel Atom E620T running at 0.6 GHz and comes with 512 MB of DDR2 SDRAM and a microSD card slot. The standard interfaces comprise 1 Fast Ethernet (via M12 connector) for Power over Ethernet and 1 USB port. A temperature sensor is provided to monitor and control the display.

The DC13 is powered over a Power over Ethernet source with a power range of 37 V to 57 V (48 VDC nom.) and is able to operate in a -30 to +70°C environment (+85°C for 10 minutes). The display housing is extremely rugged and compliant with IP65. All electronic components are soldered to withstand shock and vibration and prepared for conformal coating.

A PCI Express Mini Card slot (supported by a microSIM card slot) in combination with an external antenna can be optionally made available to incorporate wireless functions like Wi-Fi, WIMAX, GSM/GPRS, UMTS, HSDPA and LTE. GNSS (GPS/GLONASS) functionality can also be provided on request.

Other screen sizes (7" to 15") or other aspect ratios can be realized easily. Further options include other types of the Intel Atom processor or a larger memory.



Diagram

CPU

- Intel Atom E620T
 - 0.6 GHz processor core frequency
- Chipset
 - Intel EG20T Platform Controller Hub (PCH)

Display

- Screen size: 8.4"
- Resolution: 800 x 600 with aspect ratio 4:3
- Luminance: 350 cd/m²
- Contrast: 400:1
- Response time: Ton+Toff average 10 ms (from white to black)
- Viewing angle: 140°(H)/130°(V)
- LED backlight with brightness control
- Monitored and controlled by a board management controller (display is turned off at extreme temperatures)

Front Keys

- 20 buttons with tactile feedback

Memory

- 512 MB DDR2 SDRAM system memory
 - Soldered
 - 800 MHz memory bus frequency
- microSD card slot
- 4 GB mSATA disk

I/O

- USB
 - One USB 2.0 type A interface
 - EHCI implementation
- Ethernet
 - One 10/100Base-T Ethernet channel
 - Accessible via M12 connector

Intelligent Power Supply with Board Management Controller

- Voltage supervision
- Temperature supervision via sensor
- Backlight control (turns off display at configurable temperatures)
 - 12 V backlight control
 - Backlight enable, backlight dimming
- Real-time clock with buffer functionality via supercapacitor
- Watchdog
- Accessible via SMBus

Power over Ethernet Features

- PD (powered device)
- Supply class 0

Electrical Specifications

- Supply voltage/power consumption:
 - +48 VDC nom. (37..57 V), less than 13 W typ

Mechanical Specifications

- Dimensions: 245 mm x 200 mm x 50 mm
- Weight: approx. 2200 g
- Protected according to IP65

Environmental Specifications

- Temperature range (operation):
 - -30..+70°C for the display panel
 - -40..+70°C, with up to +85°C for 10 minutes according to class Tx (EN 50155) for the computer
 - Display is turned off at extreme temperatures
 - Convection cooling
 - Fanless operation
- Temperature range (storage): -40..+85°C
- Relative humidity (operation): max. 95% non-condensing
- Relative humidity (storage): max. 95% non-condensing
- Altitude: -300 m to +3000 m
- Shock: 50 m/s², 30 ms (EN 61373)
- Vibration (function): 1 m/s², 5 Hz - 150 Hz (EN 61373)
- Vibration (lifetime): 7.9 m/s², 5 Hz - 150 Hz (EN 61373)
- Conformal coating of internal components on request

MTBF

- 200 000 h without display @ 40°C according to IEC/TR 62380 (RDF 2000)
- 40 000 h with display @ 40°C according to IEC/TR 62380 (RDF 2000)

EMC Conformity

- EN 55011 (radio disturbance)
- IEC 61000-4-2 (ESD)
- IEC 61000-4-4 (burst)
- IEC 61000-4-5 (surge)

Software Support

- Windows
- Linux

Options

CPU

- Intel Atom Processor E620/T, E640/T, E660/T or E680/T
- For more details please see the overview matrix of supported processor types

Display

- Screen size from 7" to 15"
- Other aspect ratios
- Various resolutions up to 1280 x 768

Memory

- 512 MB, 1 GB or 2 GB system RAM

I/O

- The following interfaces are not available externally with the standard DC13 housing. The housing must be changed to allow external access to these interfaces:
 - GPS/GLONASS interface
 - Second USB 2.0 interface
 - RS232 UART interface
 - GPI line (General Purpose Input)
- PCI Express Mini Card slot
 - For wireless functions like Wi-Fi, WIMAX, GSM/GPRS, UMTS, HSDPA and LTE
 - Includes microSIM card slot
 - Not available externally with the standard DC13 housing. The housing must be changed to allow external access.
- SA-Adapter slot
 - Supports one UART SA-Adapter (SA1, SA2, SA3 or SA22) or one CAN SA-Adapter (SA8)
 - Not available with the standard DC13 housing. The housing must be changed.

Electrical Specifications

- Input voltages of 48 V, 72 V and 110 V can be implemented on request
 - According to EN 50155 class S2

Other Options

- The product concept is very flexible, there are many other configuration possibilities.
- Please contact our sales team if you do not find your required function in the options.
- Some of these options may only be available for large volumes.

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Up-to-date information, documentation and ordering information:

www.men.de/products/dc13/

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