

V2400D Series

Rail computers with Intel® Core™ 3 100U/5 120U/7 150U processor, 2 hot-swappable HDD/SSD slots with locks, 2 mPCIe expansion slots, 24 to 110 VDC power input with isolation, -40 to 70°C operating temperature

Preliminary



Features and Benefits

- Intel® Core™ 3 (100U) or 7 (150U) processor based embedded computer
- 2 DDR5 memory slots with up to 64 GB capacity
- Dual independent displays (HDMI and DisplayPort)
- 2 secure hot-swappable HDD/SSD slots with locks
- 2 1GbE ports with M12 X-coded inner push-pull connectors
- 2 2.5GbE ports with M12 X-coded inner push-pull connectors
- Onboard TPM module for enhanced cybersecurity
- Complies with all EN 50155 mandatory test items¹
- -40 to 70°C wide-temperature design

Certifications



Introduction

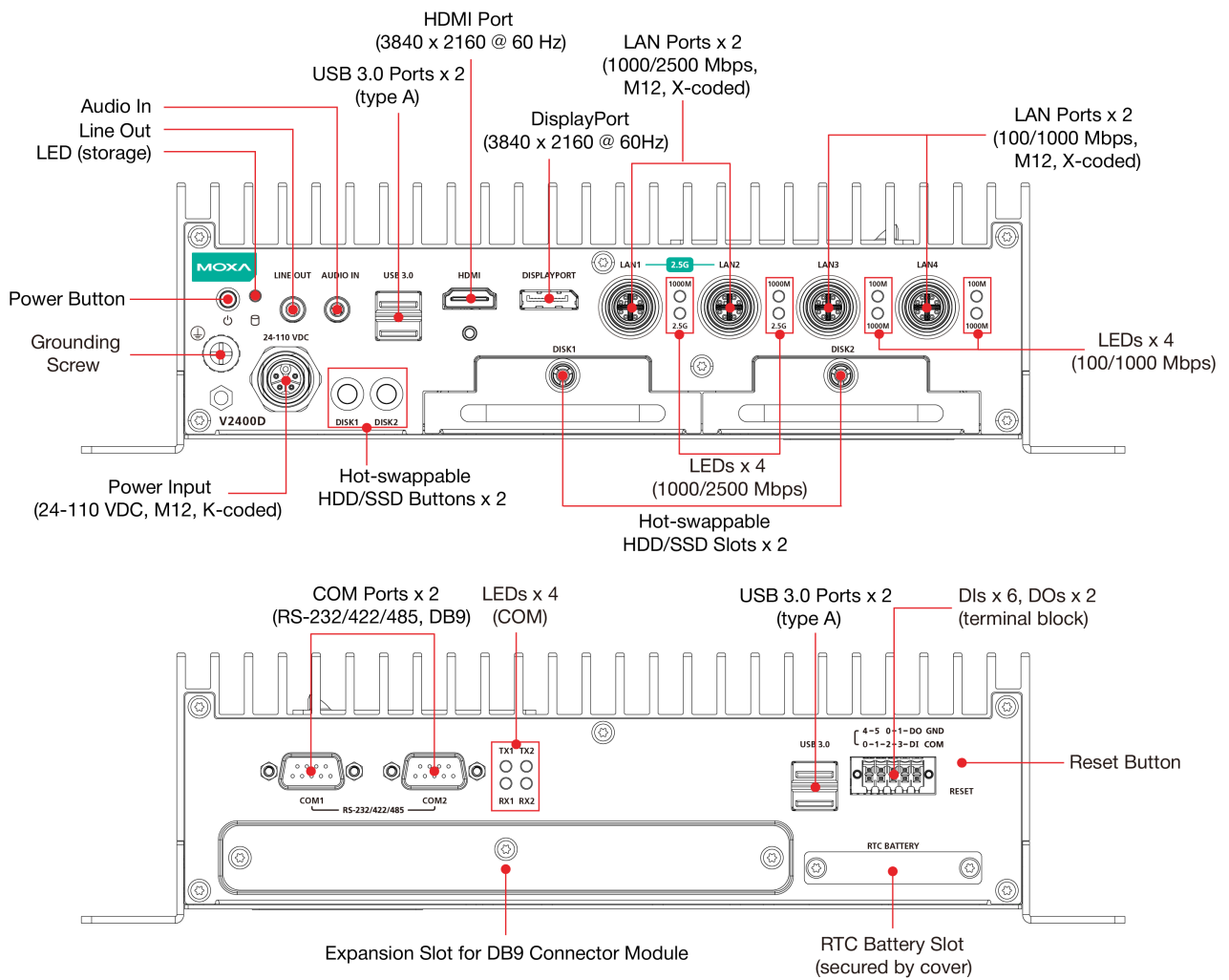
The V2400D Series embedded computers are built around an Intel® Core™ 3/7 processor and come with up to 64 GB DDR5 memory, one internal M.2 2242 M-key storage slot, and two hot-swappable 2.5-inch HDD/SSD storage slots for storage expansion. The computers comply with railway requirements for operating temperature, power input, and EMC, making them suitable for onboard and wayside applications in harsh railway environments.

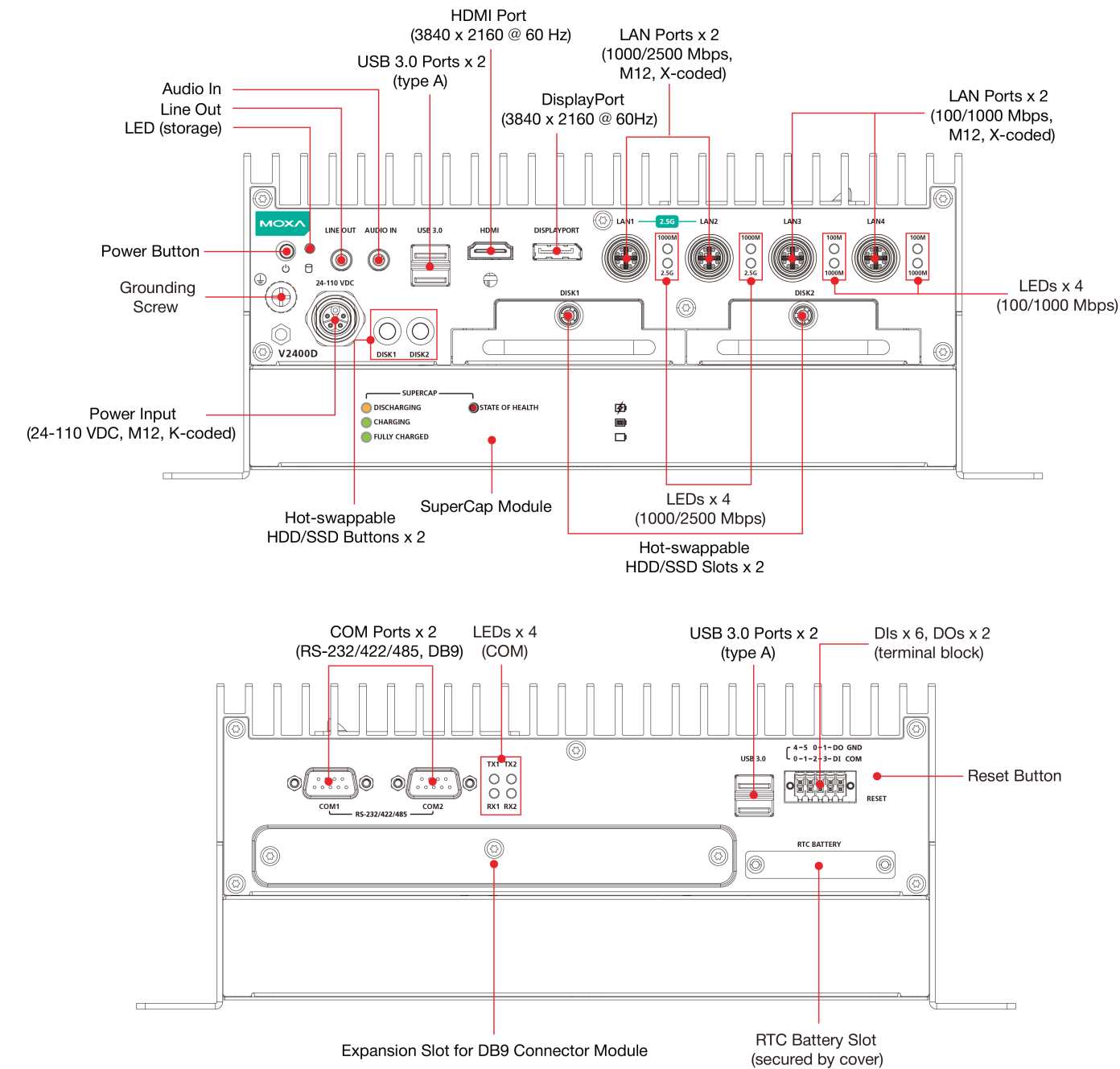
For enhanced data protection, the front-accessible storage slots are equipped with a lock, allowing only authorized personnel to access the storage devices. The V2400D computers provide a rich set of interfaces, including 2 1GbE ports, 2 2.5GbE ports, 2 RS-232/422/485 serial ports, 6 digital inputs, 2 digital outputs, 4 USB 3.0 ports, HDMI, and DisplayPort, enabling seamless integration with onboard systems and field devices.. A built-in TPM 2.0 module further strengthens platform integrity and provides hardware-based protection against unauthorized access and tampering.

1. This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, click here: www.moxa.com/doc/specs/EN_50155_Compliance.pdf

Appearance

V2406D-C3-CT-T/V2406D-C7-CT-T





Specifications

Computer

CPU	C3 models: Intel® Core™ 3 processor 100U C7 models: Intel® Core™ 7 processor 150U
System Memory Slot	SODIMM DDR5 slots x 2 (64 GB max)
Storage Slot	Internal: M.2 M key 2242 slots x 1* *Installed by Moxa before product is shipped. Not accessible to users. External for expansion: 2.5-inch HDD/SSD slots x 2

Expansion Slots	mPCIe slots x 1
Supported OS	Windows 10 IoT Enterprise LTSC 2021 Windows 11 IoT Enterprise LTSC 2024 Linux: Debian 13 Ubuntu 22.04 LTS (driver) Moxa Industrial Linux 4 See www.moxa.com/MIL

Computer Interface

Ethernet Ports	Auto-sensing 100/1000 Mbps Ethernet (M12 X-coded inner push-pull connector) x 2 Auto-sensing 100/1000/2500 Mbps Ethernet (M12 X-coded inner push-pull connector) x 2
Serial Ports	RS-232/422/485 ports x 2 (software-selectable, DB9 male connector)
Digital Input	DIs x 6
Digital Output	DOs x 2
Video Output	HDMI x 1, HDMI connector (type A) DisplayPort x 1
USB 3.0	USB 3.0 hosts x 4, type-A connectors
TPM	TPM v2.0

Digital Inputs

Connector	Screw-fastened Euroblock terminal
Sensor Type	Dry contact Wet contact (PNP)
Dry Contact	Logic 0: Short to GND Logic 1: Open
Wet Contact (COM to DI)	Logic 0: 10 to 30 VDC Logic 1: 0 to 3 VDC
Isolation	3k VDC

Digital Outputs

Connector	Screw-fastened Euroblock terminal
Current Rating	200 mA per channel
I/O Type	Sink
Voltage	0 to 30 VDC
Isolation	3k VDC

Serial Interface

Connector	DB9 male
Baudrate	50 bps to 115.2 kbps
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark

Flow Control	RTS/CTS, XON/XOFF, Automatic Data Direction Control (ADDC) for RS-485, RTS Toggle (RS-232 only)
Isolation	2k VDC
Serial Signals	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
Supercapacitors (PLP module)	
Energy Storage	2400 watt-second @ 2.45 V (custom) 2116 watt-second @ 2.3 V (standard)
Charge/discharge Cycle	500,000 @ 20°C
LED Indicators	
System	Power x 1 Storage x 1
LAN	2 per port (10/100/1000 Mbps)
Serial	1 per port (Tx, Rx)
PLP Module	Discharging, Charging, Fully Charged, State of Health
Power Parameters	
Power Connector	M12 K-coded male
Input Voltage	24 to 110 VDC
Power Consumption	V2406D-C3/C7-CT-T: 103.92 W (max) 59.52 W (average) V2406D-C3/C7-PLP-CT-T: 120.72 W (max) 59.52W (average)
Physical Characteristics	
Housing	Aluminum
IP Rating	IP30
Dimensions (without ears)	V2406D-C3/C7-CT-T: 250 x 75 x 150 mm (9.84 x 2.95 x 5.91 in) V2406D-C3/C7-PLP-CT-T: 250 x 110 x 150 mm (9.84 x 4.33 x 5.91 in)
Weight	Product only: V2406D-C3/C7-CT-T: 2.6 kg (5.73 lb) V2406D-C3/C7-PLP-CT-T: 3.7 kg (8.16 lb) Product with wall-mounting kit: V2406D-C3/C7-CT-T: 2.8 kg (6.17 lb) V2406D-C3/C7-PLP-CT-T: 4.1 kg (9.04 lb)
Installation	Wall mounting (default)
Protection	PCB conformal coating

Environmental Limits

Operating Temperature	V2406D-C3/C7-CT-T: -40 to 70°C V2406D-C3/C7-PLP-CT-T: -40 to 65°C
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Railway	EN 50155 EN 50121-4 EN 50121-3-2
Railway Fire Protection	EN 45545-2
Safety	EN 62368-1 IEC 62368-1 UL 62368-1
Shock	IEC 60068-2-27 IEC 61373 EN 50155
Vibration	IEC 60068-2-64 IEC 61373 EN 50155

Declaration

Green Product	RoHS, CRoHS, WEEE
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MTBF

Time	V2406D-C5/C7-CT-T: 1,192,592 V2406D-C5/C7-PLP-CT-T: 1,036,309 hrs
Standards	Telcordia (Bellcore), GB

Warranty

Warranty Period	3 years
Details	See www.moxa.com/warranty

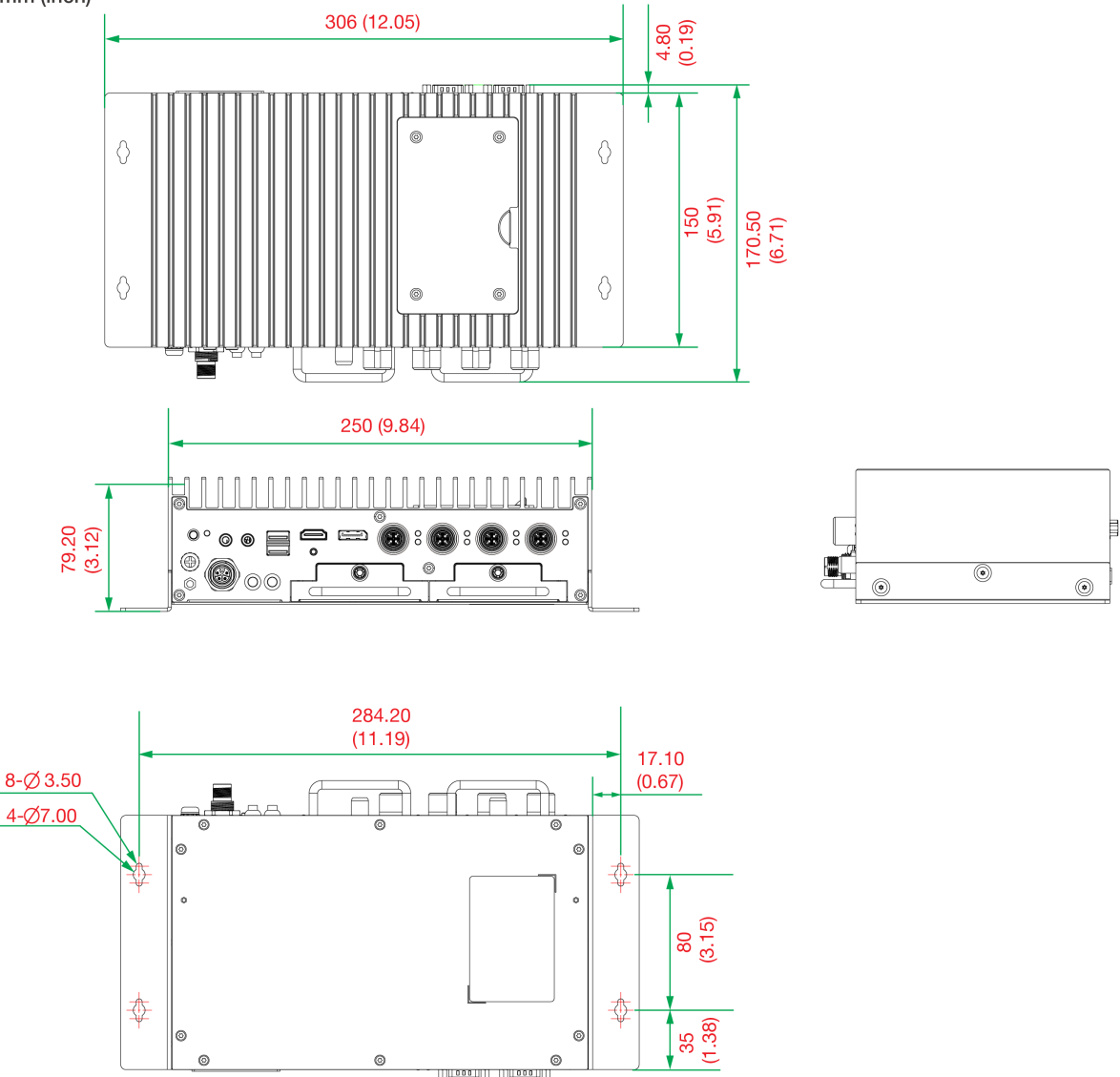
Package Contents

Device	1 x V2400D Series computer
Installation Kit	1 x wall-mounting kit 2 x keys (to lock the external M.2 M-key slot trays) 1 x HDMI cable clamp (with 1 M3 x 5 mm screw)
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

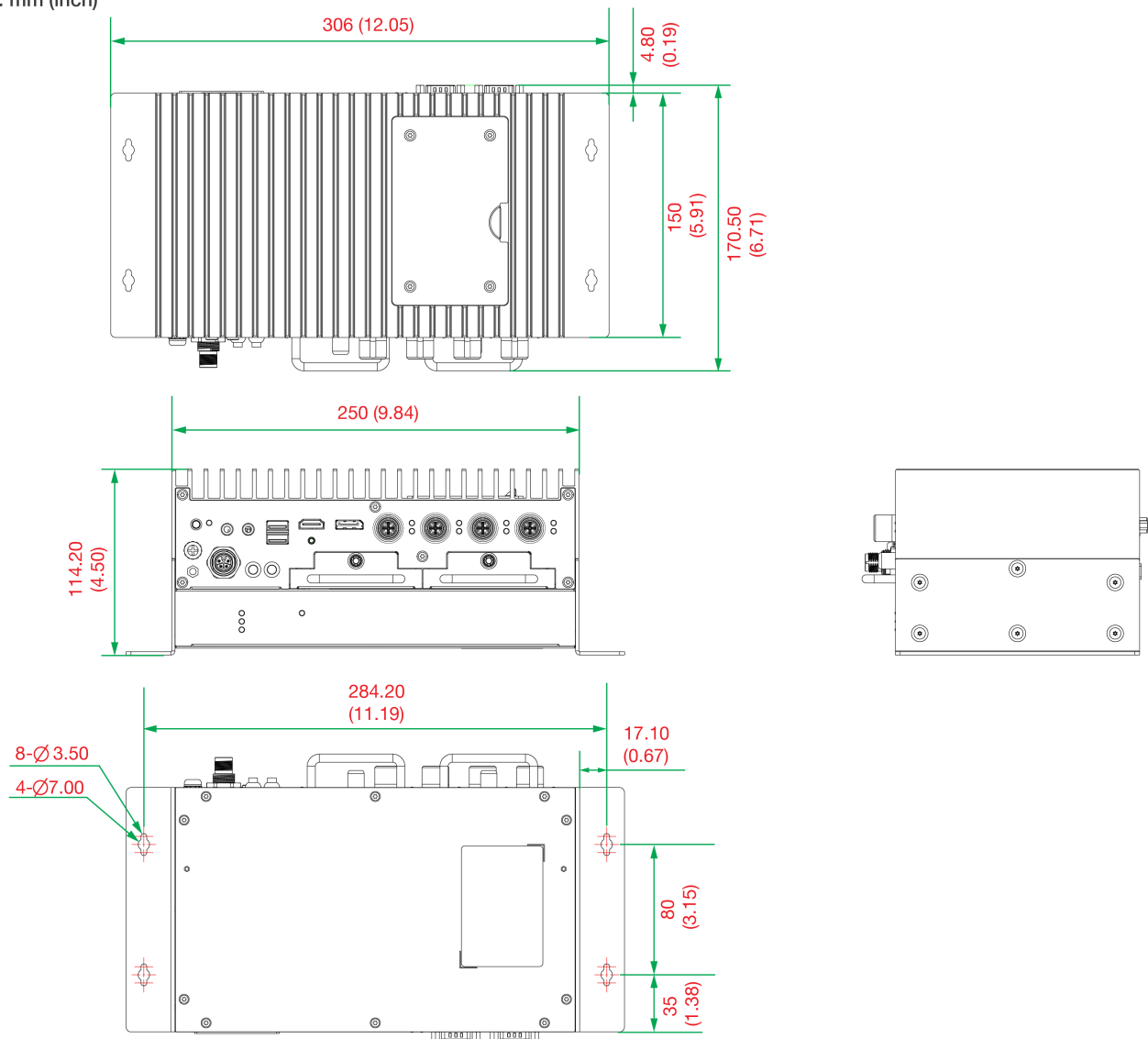
V2406D-C3-CT-T/V2406D-C7-CT-T

Unit: mm (inch)



V2406D-C3-PLP-CT-T/V2406D-C7-PLP-CT-T

Unit: mm (inch)



Ordering Information

Model Name	CPU	Memory	M.2 2242 M-key Internal Storage	2.5-inch HDD/SSD External Expansion	GbE Ports	Serial	DI/DO	USB 3.0	Power Input	Operating Temp.
V2406D-C3-CT-T	Intel® Core™ 3 100U	2 DDR5 (optional)	1 (optional via CTOS)	2 (optional)	2 1GbE 2 2.5GbE	2 (3-in-1)	6/2	4	24 to 110 VDC	-40 to 70°C
V2406D-C3-PLP-CT-T	Intel® Core™ 3 100U	2 DDR5 (optional)	1 (optional via CTOS)	2 (optional)	2 1GbE 2 2.5GbE	2 (3-in-1)	6/2	4	24 to 110 VDC	-40 to 70°C
V2406D-C7-CT-T	Intel® Core™ 7 150U	2 DDR5 (optional)	1 (optional via CTOS)	2 (optional)	2 1GbE 2 2.5GbE	2 (3-in-1)	6/2	4	24 to 110 VDC	-40 to 70°C
V2406D-C7-PLP-CT-T	Intel® Core™ 7 150U	2 DDR5 (optional)	1 (optional via CTOS)	2 (optional)	2 1GbE 2 2.5GbE	2 (3-in-1)	6/2	4	24 to 110 VDC	-40 to 70°C

Accessories (sold separately)

Cables

CBL-M12KFF5POPEN-O-150-IP67	K-coded female M12-to-5-pin open wire power cable, orange, IP67-rated, 1.5 m
CBL-M12XMM8P-Y-300-IP67	X-coded male M12-to-8-pin open wire cable, yellow, IP67-rated, 3 m
CBL-M12XMM8P-Y-100-IP67	X-coded male M12-to-8-pin open wire cable, yellow, IP67-rated, 1 m
CBL-M12XMM8PRJ45-Y-200-IP67	X-coded male M12-to-RJ45 Ethernet cable, yellow, IP67-rated, 2 m

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