

UNO-137

Compact DIN-Rail Controller with Intel® Atom® E3940 CPU, 2 x LAN, 2 x COM, 3 x USB 3.0, 1 x USB 2.0, 2 x DP 1.2, 8 x DI, 8 x DO, 1 x M.2, 1 x mPCIe, and TPM 2.0



Features

- Intel® Atom® E3940 processor (1.6 GHz) with 8GB DDR3L memory
- Wide power input range (10 ~ 36 V_{DC})
- Wide operating temperature range (-40 ~ 70 °C/-40 ~ 158 °F)
- Port isolation for 8 x DI, 8 x DO, 2 x COM
- DP++ ensures HDMI/DVI compatibility
- Dual storage: M.2 2242 SATA SSD and 2.5" HDD/SSD
- Onboard TPM 2.0 provides hardware-based security
- Supports M.2 3042/M.2 3052 module
- Modular design for optional iDoor extension
- Ruggedized DIN-rail kit
- Compliant with IEC 61010-1 safety requirements

Introduction

Advantech's UNO-100 series are DIN-rail integrated controller that feature a modular design for flexible configuration according to specific usage requirements.

UNO-137 is equipped with an Intel® Atom® E3940 processor (1.6 GHz), 8 GB DDR3L RAM, and wide operating temperature range (-40 ~ 70 °C/-40 ~ 158 °F), as well as 2 x LAN, 2 x COM, 3 x USB 3.0, 1 x USB 2.0, 8 x DI, 8 x DO, and 2 x DP 1.2. The controller also supports 1 x full-size mini PCIe, 1 x M.2 (B-key), and 1 x nano SIM card slot for convenient expansion to satisfy diverse industrial applications. Compliant with IEC 61010-1 safety requirements for industrial use, UNO-137 can be equipped with an optional second-stack extension kit that supports Advantech's iDoor technology for integrating additional industrial Fieldbus, wireless communication, I/O, and peripheral modules.

Specifications

General

- **Certification** CE, FCC, UL 61010-2-201, CCC, BSMI
- **Dimensions (W x D x H)** 35 x 105 x 150 mm (1.4 x 4.1 x 5.9 in)
- **Form Factor** Small
- **Enclosure** Aluminum housing
- **Mounting** DIN-rail
- **Weight (Net)** 0.8 kg (1.7 lb)
- **Power Requirement** 10 ~ 36 V_{DC}
- **Power Consumption** 21W (typical), 47W (max.)
*For USB iDoor (PCM-24U2U3-BE): 56W max.
*For PoE iDoor (PCM-24R2PE-AE): 77W max.
- **OS Support** Win 10 2019 LTSC, AdvLinux (Ubuntu 18.04)

System Hardware

- **BIOS** AMI UEFI (128 Mbit)
- **Watchdog Timer** Programmable timer with 255 intervals (1 ~ 255 sec)
- **Hardware Security** TPM2.0
- **Processor** Intel® Atom® E3940, 1.6 GHz (up to 1.8 GHz)
- **Memory** Built-in 8 GB DDR3L, 1600 MHz (Up to 8 GB)
- **Graphics Engine** Intel® HD Graphics
- **Ethernet** Intel® i210-IT GbE, IIEEE802.1AS, 802.3az
- **LED Indicators** 1 x Programmable LED, 1 x power LED, 1 x RTC battery LED, and LAN (active, status)
- **Storage** 1 x 2.5" SSD/HDD (up to 9.5 mm height)
- **Expansion** 1 x Full-size mPCIe (PCIe/USB signal)
1 x M.2 (B-key) 2242 SSD (SATA signal),
3042/3052 cellular module (USB signal)
1 x nano SIM card slot

I/O

- **Isolated Serial Ports** 2 x RS-232/422/485 (terminal block)
50 ~ 115.2 kbps (isolation protection: 2500 V_{DC})
- **LAN** 2 x 10/100/1000 Mbps IEEE 802.3u 1000 BASE-T Fast Ethernet (RJ45)
- **USB** 3 x USB 3.2 Gen 1, 1 x USB 2.0 (Type A)

- **Isolated DI/O** 8 x Digital input channels with 2500 V_{DC} isolation protection
- Wet contact: Logic 0: 10 ~ 30 V_{DC}/
Logic 1: 0 ~ 3 V_{DC}
- Dry contact: Logic 0: Shorted to GND/
Logic 1: Open
8 x Digital output channels
- Output voltage: 5 ~ 30 V_{DC}
- Output capability sink: 500 mA max./channel
- **Displays** 2 x DP 1.2, up to 4096 x 2306 @ 60 Hz
- **Power Connector** 1 x 2-pin terminal block

Environment

- **Operating Temperature*** -40 ~ 70 °C/-40 ~ 158 °F with 0.7m/s airflow, with wide-temperature (-40 ~ 85 °C/-40 ~ 185 °F) peripherals (e.g., SSD, wireless modules)
- 40 ~ 85 °C/-40 ~ 185 °F
 - **Storage Temperature** -40 ~ 85 °C/-40 ~ 185 °F
 - **Relative Humidity** 95% RH @ 40 °C/104 °F, non-condensing
 - **Shock Protection** Operating, IEC 60068-2-27, 50G, half sine, 11ms
 - **Vibration Protection** Operating, IEC 60068-2-64, 4 Grms, random, 5 ~ 500 Hz, 1hr/axis (SSD)
Operating, IEC 60068-2-64, 0.3 Grms, random, 5 ~ 500 Hz, 1hr/axis (HDD)
 - **Ingress Protection** IP40
- *Operating temperature with M.2 SSDs should be maintained under 60 °C/140 °F.

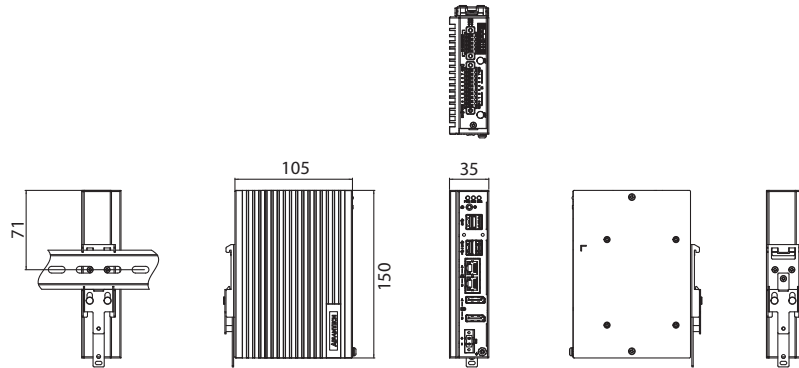
Installation Scenario

DIN-rail mounting installation

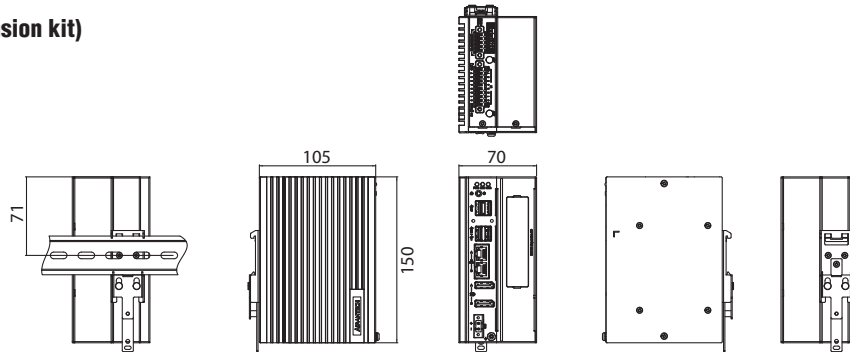


Dimensions

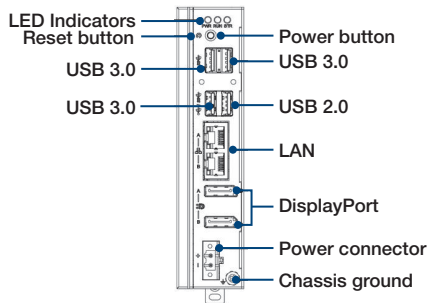
Unit: mm



(With optional extension kit)



Front I/O



Extension Kit

- UNO-137-ID1EA UNO-137 second-stack extension kit with 1 x iDoor slot (refer to the extension kit datasheet for more detail)

Embedded OS

- (TBD)

Optional Accessories

- UNO-137-VEGA330 Accessory kit for VEGA-330

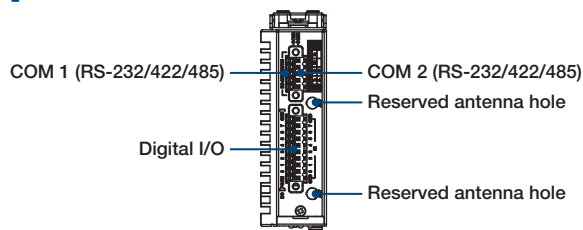
DIN-Rail Power Supply

- UNO-IPS2460-AE 60W Compact DIN-rail power supply
- 96PSD-A120W24-MN A/D 100 ~ 240V, 120W, 24V NDR DIN rail
- PSD-A120W24 DIN rail A/D 100 ~ 240V, 120W, 24V (recommended for use with PoE iDoor module)

Adapter & Power Cable

- XARK-ADP-90MDH Adaptor A/D 100 ~ 240V, 90W, 19V, W/PFC C6 cord end, 2 pin
- 1700001524 Power Cord UL 3P 10A 125V 183cm for US
- 170203183C Power Cord EU 3P 2.5A 250V 183cm for EU
- 170203180A Power Cord BSI 3P 2.5A 250V 183cm for UK
- 1700019146 Power Cord CCC 3P 2.5A 250V 183cm for CN
- 1700018553 Power Cord SAA 3P 2.5A 250V 183cm for AU
- 96PSA-A120W19T2-3 Adaptor A/D 100-240V 120W 19V C14 cord end 62368 (recommended for use with PoE iDoor module)
- 1702002600 Power cable US plug, 1.8 M (industrial grade)
- 1702002605 Power cable EU plug, 1.8 M (industrial grade)
- 1702031801 Power cable UK plug, 1.8 M (industrial grade)
- 1700000596 Power cable China/Australia plug, 1.8 M (industrial grade)

Top I/O



Ordering Information

- UNO-137-E13BA Compact DIN-rail controller with Intel® E3940 CPU (1.6 GHz), 8 GB DDR3L, 2 x LAN, 2 x COM, 4 x USB, 8 x DI/O

Extension Kit



Advantech offers an optional second-stack extension kit for expanding the system functionalities

UNO-137-ID1EA

Second-stack extension kit with 1 x iDoor slot (for UNO-137-E13BA)

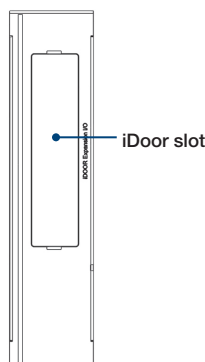


Specifications

General	
Ports	1x iDoor slot
Dimensions (W x D x H)	35 x 105 x 150 mm (1.4 x 4.1 x 5.9 in)
Weight	0.2 kg (0.4 lb)

Note: The system operating temperature can be maintained at 60 °C/140 °F with most iDoor modules (excluding PoE and USB 3.0 modules)

Front I/O



Ordering Information

Part Number	Description
UNO-137-ID1EA	UNO-137 second-stack extension kit with 1 x iDoor slot

Supported iDoor Modules

iDoor Industrial Fieldbus Communication	
PCM-26D2CA-AE	2-port isolated CANBus mPCIe, CANOpen, DB9
PCM-26D1DB-MAE/SAE	1-port Hilscher netX100 FieldBus mPCIe, PROFIBUS, DB9, Master/Slave
PCM-26R2PN-MAE/SAE	2-Port Hilscher netX100 FieldBus mPCIe, PROFINET, RJ45, Master/Slave
PCM-26R2EC-MAE/SAE	2-port Hilscher netX100 FieldBus mPCIe, EtherCAT, RJ45, Master/Slave
PCM-26R2EI-MAE/SAE	2-port Hilscher netX100 FieldBus mPCIe, EtherNet/IP, RJ45, Master/Slave
PCM-26R2S3-MAE/SAE	2-port Hilscher netX100 FieldBus mPCIe, Sercos III, RJ45, Master/Slave
PCM-26R2PL-MAE/SAE	2-port Hilscher netX100 FieldBus mPCIe, POWERLINK, RJ45
iDoor Smart Digital/Analog I/O	
PCM-24D2R4-BE	2-port isolated RS-422/485, mPCIe, DB9
PCM-24D2R2-BE	2-port isolated RS-232, mPCIe, DB9
PCM-24D4R4-BE	4-port non-isolated RS-422/485 mPCIe, DB37 cable
PCM-24D4R2-BE	4-port non-isolated RS-232 mPCIe, DB37 cable
PCM-24R1TP-AE	1-port Gigabit Ethernet, Intel® 82574L, mPCIe, RJ45
PCM-24R2PE-AE	2-port Gigabit Ethernet, IEEE 802.3af (PoE)- compliant, mPCIe, RJ45
PCM-24R2GL-AE	2-port Gigabit Ethernet, Intel® i350, mPCIe, RJ45
PCM-27D24DI-AE	24-channel isolated digital I/O with counter mPCIe, DB37
iDoor CORE	
PCM-2300MR-AE	MR4A16B, MRAM, 2 MB, mPCIe
PCM-23C1CF-BE	1 x CFast slot with cover protection
PCM-23U1DG-CE	USB slot w/ lock for USB dongle, half-size mPCIe
PCM-24U2U3-BE	2-port USB 3.0, mPCIe, USB-A type
PCM-27J3AU-AE	3-port audio stereo, mPCIe, 3.5-mm jack
iDoor Wired/Wireless Communication	
PCM-24S2WF-BE	Wi-Fi 802.11 a/b/g/n 2T2R w/Bluetooth 4.0, half-size mPCIe, antennas
PCM-24S34G-EBE	LTE/HSPA+/GPRS and GPS, full-size mPCIe, 4G/GPS antennas for EMEA/APAC
C-PCM-24S24G-4AV-1	Cellular iDoor module, LTE Cat. 4 for AT&T/Verizon
C-PCM-24S24G-1A-1	Cellular iDoor module, LTE Cat. 1 for AT&T
C-PCM-24S24G-1V-1	Cellular iDoor module, LTE Cat. 1 for Verizon
C-PCM-24S24G-MAV-1	Cellular iDoor module, LTE Cat. M1 for AT&T/Verizon