

# AMAX-5580

## Intel® Core™ i7/i5/Celeron® Control IPC With EtherCAT Slice IO Expansion



### Features

- 6th generation Intel® Core™ i7/i5/Celeron with 4GB/8GB DDR4 memory
- 2 x GbE, 4 x USB 3.0, 2 x RS-232 /422/485, 1 x VGA, 1 x HDMI
- Dual power input with alarm output
- Compact and fanless design for DIN-rail mount in Control cabinet
- Maximum 4 expansion capability on left side for AMAX-54XX series module
- Wireless mPCIe module support for 4G/LTE/Wifi/GPS
- Chassis grounding protection
- Local expansion for AMAX-5000 series IO module
- EtherCAT cable redundancy through AMAX-5079 extension module
- Programmable LED indicators for RUN/ERR/PROG1/PROG2
- Dual Power/Battery error LED indicators
- Optimized BIOS for Real-time control software demand

### Introduction

Advantech's AMAX-5580 is a compact and powerful Control IPC with an Intel Core i7/i5/Celeron CPU. It is the ideal open control platform to be combined with AMAX-5000 Series EtherCAT Slice IO modules, and features flexible I/O expansion, network capability through various interfaces, and support dual power input for robust power system. It has a built-in standard mPCIe interface for communication module like NVRAM or Wifi module. AMAX-5580 is the best solution for Data collection, transmission, control and analysis application. Seamless integration with I/O can reduce costs and fulfill diverse range of automation projects.

### Specifications

#### General

- **Certification** CE, FCC, UL
- **Dimensions (W x H x D)** 139 x 100 x 80 mm
- **Form Factor** Fanless and passive cooling
- **Enclosure** Aluminum housing
- **Mounting** DIN-rail
- **Weight (Net)** 1.3 kg
- **Power Requirement** 24 V<sub>DC</sub> ± 20%
- **Power Consumption** 15 W (Typical), 42 W (Max)
- **OS Support** Windows 7 32/64 bit, Windows 10 64bit, UbuntuLinux

#### System Hardware

- **BIOS** AMI EFI 128Mbit Flash BIOS
- **Watchdog Timer** Programmable 255 levels timer interval, from 1 to 255 sec
- **Processor** Intel® Core™ i7-6600U 2.6GHz Dual Core, 4MB L2  
Intel® Core™ i5-6300U 2.4GHz Dual Core, 3MB L2  
Intel® Celeron 3955U 2.0GHz Dual Core, 2MB L2  
Integrated PCH-LP
- **System Chip** Dual DDR4, default 4G\*1 for Celeron and 4G\*2 for i5/i7
- **Memory** Intel® Gen 9 LP GT2
- **Graphics Engine** Intel® i210-IT GbE, 802.1Qav, IEEE1588/802.1AS, 802.3az
- **Ethernet** Power, Storage, Battery, and 2x programmable LEDs
- **LED Indicators** 1 x M.2 2280 M-Key slot (SATA Signal only)
- **Storage** 1 x Full-size mPCIe Slot (USB2 or PCIe Signal)
- **Expansion** AMAX-5400 function modules from left side (max. 4)  
AMAX-5000 EtherCAT Slice IO from right side  
(necessary add 1 x AMAX-5001 power module)

#### I/O Interfaces

- **Serial Ports** 2 x RS-232/422/485, DB9, 50 ~ 115.2kbps
- **LAN Ports** 2 x RJ45, 10/100/1000 Mbps
- **USB Ports** 4 x USB ports (4 x USB 3.0 compliant )  
1 x internal USB
- **Display** 1 x VGA, support up to 1920 x 1200 @ 60 Hz 24 bpp  
1 x HDMI, support up to 4096 x 2160 @ 24Hz 24bpp
- **Power Connector** Dual power input with alarm output
- **Grounding Protection** Chassis ground isolation

#### Environment

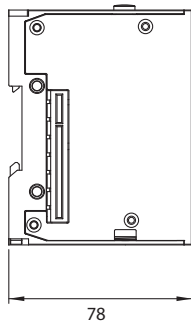
- **Operating Temperature** -10 ~ 60°C (-4 ~ 140°F) @ 5 ~ 85% RH with 0.7m/s
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Relative Humidity** 95% RH @ 40°C, non-condensing
- **Shock Protection** Operating, IEC 60068-2-27, 10G, half sine, 11 ms
- **Vibration Protection** Operating, IEC 60068-2-64, 1 Grms, random, 5 ~ 500 Hz, 1hr/axis (M.2)

### Ordering Information

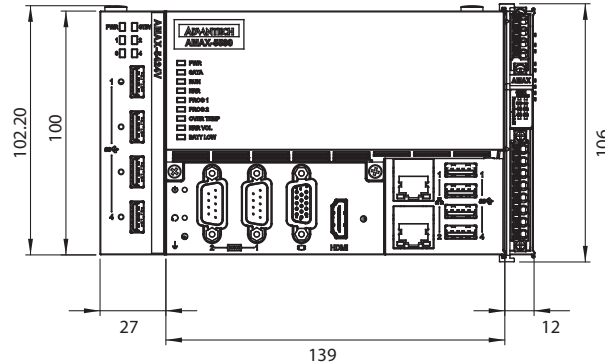
Category	P/N	Description	Hardware Spec				
			OS	CPU	Storage	DRAM	MRAM
Control Platform (Hardware)	AMAX-5580-C3000A	Control Platform Intel® Celeron 2.0 GHz, Dual Core, 4G DDR4	-	Intel® Celeron	-	4G	-
	AMAX-5580-54000A	Control Platform Intel® Core™ i5 2.4 GHz, Dual Core, 8G DDR4	-	Intel® Core™ i5	-	8G	-
	AMAX-5580-74000A	Control Platform Intel® Core™ i7 2.6 GHz, Dual Core, 8G DDR4	-	Intel® Core™ i7	-	8G	-

## Dimensions

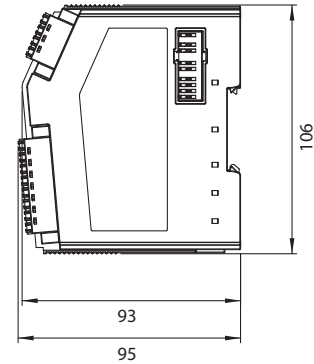
Unit: mm



AMAX-5400 Series Expansion



AMAX-5580 CPU Module



AMAX-5000 EtherCAT Slice IO

## Accessories

### M.2 Mkey SATA Storage Module

- **SQF-S8BZ1-32GDSDE** SQF SATA M.2 2280 650-D 32G 3DsTLC (-40~85°C)
- **SQF-S8BZ1-64GDSDE** SQF SATA M.2 2280 650-D 64G 3DsTLC (-40~85°C)
- **SQF-S8BZ2-128GDSDE** SQF SATA M.2 2280 650-D 128G 3DsTLC (-40~85°C)
- **SQF-S8BZ4-256GDSDE** SQF SATA M.2 2280 650-D 256G 3DsTLC (-40~85°C)
- **SQF-S8BV2-512GDSDE** SQF SATA M.2 2280 650-D 512G 3DTLC (-40~85°C)
- **SQF-S8BV4-1TDSDE** SQF SATA M.2 2280 650-D 1T 3D TLC (-40~85°C)

### NVRAM Module

- **PCM-2300MR-AE** 2MB MRAM, mPCIe interface

### DIN-Rail Type Power Supply Module

- **PSD-A60W24** DIN Rail AC to DC 100-240V 60W 24V
- **PSD-A120W24** DIN Rail AC to DC 100-240V 120W 24V
- **96PSD-A240W24-MN** DIN Rail AC to DC 100-240V 240W 24V

## Embedded OS

- **20703WE7PS0023** WES7P X64 MUI for AMAX-5580
- **20703WE7PS0029** WES7P X86 MUI for AMAX-5580
- **20703WX9HS0034** Win10 LTSC 2019 x64 AMAX-5580 (i7)
- **20703WX9VS0038** Win10 LTSC 2019 x64 AMAX-5580 (i5)
- **20704WX9ES0001** Win10 LTSC 2019 x64 AMAX-5580 (Celeron)
- **20704LEB1S0000** AdvLinuxTu v2.0.5.4 AMAX-5580/UNO-137&1372G

### Real-Time Control Software

- **360TCDSWRTEVA1** CODESYS Control V3 License RTE TV+WV
- **360TCDSW00SMA1** CODESYS Control V3 License RTE SM TV+WV
- **360TCDSW0CNCA1** CODESYS Control V3 License RTE SM CNC TV+WV

\*\*For individual SoftMotion / CNC & Robotics upgrade request please contact PM

## Expansion Modules

### AMAX-5400 Series Expansion Module (left side)

- **AMAX-5400E** PCIe-mini card with SIM card slot
- **AMAX-5410** 2 x GigE expansion module
- **AMAX-5410P** 2 x PoE expansion module
- **AMAX-5424V** 4 x USB 3.0 with full bandwidth
- **AMAX-5490** 2 x isolated RS-232/422/485
- **AMAX-5495** 2 x CAN module
- **AMAX-5493M** 1 x Profibus-DP module

### AMAX-5000 EtherCAT Slice IO Module (right side)

- **AMAX-5001** Smart Power Input module with 4-Ch DI
- **AMAX-5015** 4-Ch RTD (2/3 wire)
- **AMAX-5017V** 6-Ch Voltage AI, multi-gain 16-bit
- **AMAX-5017C** 6-Ch Current AI, 0-20/4-20mA 16-bit
- **AMAX-5018** 6-Ch T/C, J,K,T,E,R,S,B, mV, Open detect
- **AMAX-5024** 4-Ch AO multi-gain, 16-bit
- **AMAX-5051** 8-Ch Iso. DI
- **AMAX-5052** 16-Ch Iso. DI
- **AMAX-5056** 8-Ch Iso. DO sink type
- **AMAX-5056SO** 8-Ch Iso. DO source type
- **AMAX-5057** 16-Ch Iso. DO sink type
- **AMAX-5057SO** 16-Ch Iso. DO source type
- **AMAX-5080** 2-Ch Counter/Encoder 32-bit
- **AMAX-5074** EtherCAT coupler
- **AMAX-5079** EtherCAT extension
- **AMAX-5051T** 2-Ch timestamp, 6-ch w/o timestamp DI
- **AMAX-5056T** 2-Ch timestamp DO
- **AMAX-5017H** 4-Ch 10KHz High speed AI (preliminary)
- **AMAX-5081** 1-Ch TTL/RS-422 Encoder/Counter (preliminary)