

AMAX-PT400

Arm® Cortex®-A53 Quad-core Panel Controller

NEW



Features

- Optimized Linux OS for real-time control
- Achieve 16-axis motion control with 2ms EtherCAT cycle time
- OPC UA and Modbus TCP/RTU for IT connectivity enabled by CODESYS
- EtherCAT, and CANopen for OT connectivity enabled by CODESYS
- Unlimited I/O points, fieldbus networks, and visualization variables for CODESYS applications
- CODESYS Visualization (Target & Web), SoftMotion and CNC/Robotics support provided by different packages
- Advantech Data Connect (ADC) Library provides flexible and highly efficient data connection with 3rd party application software through symbols (PLC Handler) and shared memory (C++/C#)
- NXP Arm® Cortex®-A53 i.MX 8M Mini quad-core processor
- 7" and 10.1" LCD with multi-touch P-CAP and true-flat IP66-rated front panel
- Built in 4 GB DDR4 RAM and 16 GB eMMC storage onboard
- 2 x 10/100/1000 Mbps LANs with optional IEEE 802.3at/af PoE-PD module support (7" and 10.1" only)
- Optional mPCIe expansion modules
- Wide operating temperature range (-20 ~ 60 °C/-4 ~ 140 °F)

Introduction

AMAX-PT400, featuring an NXP Arm® Cortex®-A53 i.MX 8M Mini quad-core processor, is designed for all IoT control requirements. AMAX-PT400 is an all-in-one panel controller positioned as an HMI-centric control solution, which reduces overall system costs and panel space without traditional PLC.

Each AMAX control platform is system-level optimized to provide a reliable real-time environment for running CODESYS Softlogic. The AMAX control platform comes pre-installed with a CODESYS license to enable EtherCAT for OT networks, and supports Modbus and OPC UA for IT networks. Moreover, Advantech also provide flexibles expansion modules, such as EtherCAT I/O moduels from the Slice I/O series and Block I/O series. AMAX delivers a diverse array of control systems in various form factors tailored to meet the demands of different application scenarios.

Hardware Specifications

Part Number		AMAX-PT407W-20010A AMAX-PT407W-20210A AMAX-PT407W-20610A AMAX-PT407W-20810A	AMAX-PT410W-20010A AMAX-PT410W-20210A AMAX-PT410W-20610A AMAX-PT410W-20810A
System Hardware	Processor	NXP Arm® Cortex®-A53 i.MX 8M Mini quad-core 1.6 GHz processor	NXP Arm® Cortex®-A53 i.MX 8M Mini quad-core 1.6 GHz processor
	Panel Size	7", WSVGA TFT LCD, 16:9	10.1", WSVGA TFT LCD, 16: 10
	Max. Resolution	1024 x 600	1280 x 800
	Memory	On-board: 4 GB DDR4	
	Storage	16GB eMMC	
	Retain Memory	FRAM 1MB, accessible via CODESYS	
	Ethernet	2 x GbE Optional module is required to support PoE PD (LAN A) IEEE802.3at PoE-PD standard	2 x GbE Optional module is required to support PoE PD (LAN A) IEEE802.3at PoE-PD standard
	LED Indicator	On display	
	Expansion	1 x M.2 E-Key 2230 for WIFI / Bluetooth	1 x M.2 E-Key 2230 for WIFI / Bluetooth
I/O Interface	Local Digital I/O	N/A	
	Serial Port	1 x RS-232/422/485 (COM 1) 1 x selectable mode for RS-485 and CAN 2.0B (COM 2)	1 x RS-232/422/485 (COM 1) 1 x selectable mode for RS-485 and CAN 2.0B (COM 2)
	LAN Port	2 x 10/100/1000BASE-T Ethernet (RJ45)	2 x 10/100/1000BASE-T Ethernet (RJ45)
	USB Port	1 x USB 2.0 Type-B Client (Internal) 2 x USB 2.0 Type-A Host	1 x USB 2.0 Type-B Client (Internal) 2 x USB 2.0 Type-A Host
	Grounding Protection	Chassis grounding protection	
	Power Connector	1 x 2 pin	
	OS Support	Linux Yocto 4.2	
General	Power Requirements	24 V _{DC} ± 20%	
	Power Consumption	9W (typical), 21W (max)	
	Enclosure	Die-cast aluminum alloy front bezel Metal Shell	
	Mounting	Panel and VESA	
	Weight (Net)	Approx. 2kg	
	Dimensions (W x D x H)	205 x 52 x 146.92 mm	
	Certification	CE, BSMI, CCC, UL, FCC Class A	

Hardware Specifications (Cont.)

Environment	Operating Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
	Storage Temperature	-30 ~ 70 °C (-22 ~ 158 °F)	-30 ~ 70 °C (-22 ~ 158 °F)
	Relative Humidity	95% RH @ 40 °C, non-condensing	95% RH @ 40 °C, non-condensing
	Shock Protection	Operating, IEC 60068-2-27, 10G, half sine, 11 ms (eMMC)	Operating, IEC 60068-2-27, 10G, half sine, 11 ms (eMMC)
	Vibration	Operating, IEC 60068-2-64, 2 Grms, random, 5 ~ 500 Hz (eMMC)	Operating, IEC 60068-2-64, 2 Grms, random, 5 ~ 500 Hz (eMMC)
LCD Panel	Panel Size	7"	10.1"
	Panel Type	WSVGA TFT LCD	WXGA TFT LCD
	Aspect Ratio	16:9	16:10
	Max. Resolution	1024 x 600	1280 x 800
	Max. Colors	16M	16M
	Luminance (nits)	425	500
	Viewing Angle (H/V)	170/170	170/170
	Backlight Life	50000	50000
	Treatment	Anti-glare	Anti-glare
	Contrast Ratio	800:1	800:1
	LED Indicator	Yes	Yes

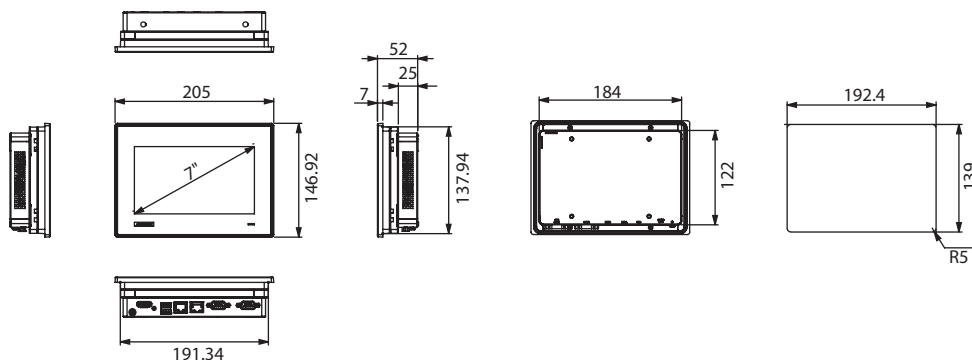
CODESYS Package

Part Number		AMAX-PT407W-20010A AMAX-PT410W-20010A	AMAX-PT407W-20210A AMAX-PT410W-20210A	AMAX-PT407W-20610A AMAX-PT410W-20610A	AMAX-PT407W-20810A AMAX-PT410W-20810A
CODESYS Basic Run Time	Runtime	CODESYS Linux Control V3 SP20			
	OT Network	EtherCAT MainDevice, CANopen Manager			
	IT Network	Modbus/TCP Client and Server, Modbus/RTU Client, OPC UA Server			
	EtherCAT I/O Connection	No I/O Points Limitation			
CODESYS HMI	Visualization	N/A	Web Visualization (WV, Web Browser)		
	Tags		Unlimited Tags		
CODESYS SoftMotion	Motion Control Benchmark	N/A	N/A	16-Axis with 2 ms cycle time [Test under Linux CODESYS, EtherCAT CSP mode, PTP (point-to-point) command]	
	EtherCAT Servo Connection			No Axes Limitation in EtherCAT Servo Drive connections.	
CODESYS CNC & Robotics	CNC Interpolator	N/A	N/A	N/A	No axes interpolation limitations.

Dimensions

Unit: mm

AMAX-PT407W

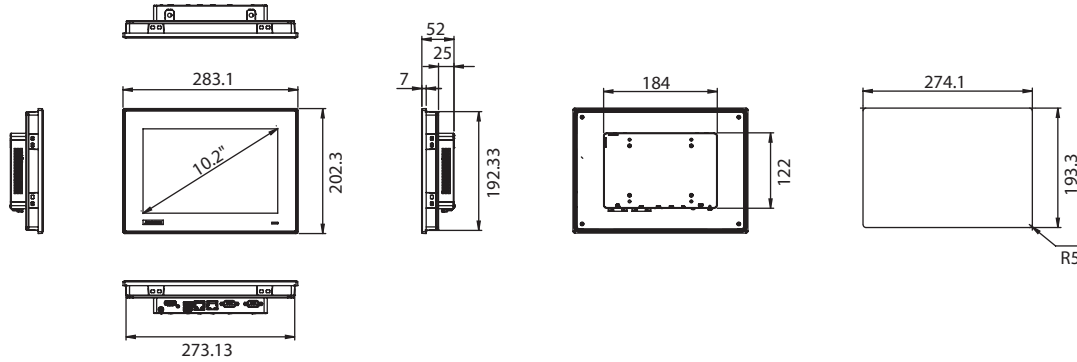


Panel Cutout Dimensions: 192.4mm x 139.0mm

Dimensions

Unit: mm

AMAX-PT410W



Panel Cutout Dimensions: 274.1mm x 193.3mm

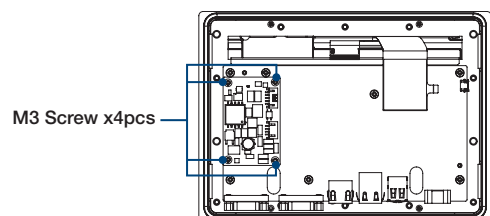
Ordering Information

AMAX P/N	Description	NVRAM Installable ⁽³⁾	Linux Control V3	WV	Soft Motion	CNC & Robotics	Linux OS Version	CDS Runtime version (Version selectable)
AMAX-PT407W-20010A	TPC-107W, 7" NXP Cortex A53 quad-core processor, LCDS(1)	N	✓				Linux Yocto	SP 20 Patch4
AMAX-PT407W-20210A	TPC-107W, 7" NXP Cortex A53 quad-core processor, LCDS+W	N	✓	✓				
AMAX-PT407W-20610A	TPC-107W, 7" NXP Cortex A53 quad-core processor, LCDS+WS	N	✓	✓	✓			
AMAX-PT407W-20810A	TPC-107W, 7" NXP Cortex A53 quad-core processor, LCDS+WSC	N	✓	✓	✓	✓		
AMAX-PT410W-20010A	TPC-110W, 10" NXP Cortex A53 quad-core processor, LCDS	N	✓				Linux Yocto	SP 20 Patch4
AMAX-PT410W-20210A	TPC-110W, 10" NXP Cortex A53 quad-core processor, LCDS+W	N	✓	✓				
AMAX-PT410W-20610A	TPC-110W, 10" NXP Cortex A53 quad-core processor, LCDS+WS	N	✓	✓	✓			
AMAX-PT410W-20810A	TPC-110W, 10" NXP Cortex A53 quad-core processor, LCDS+WSC	N	✓	✓	✓	✓		

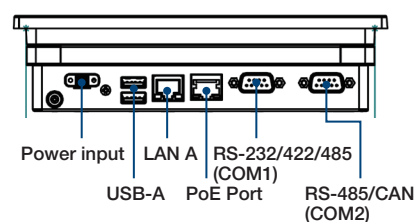
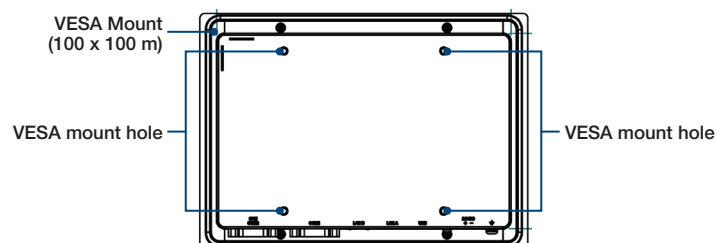
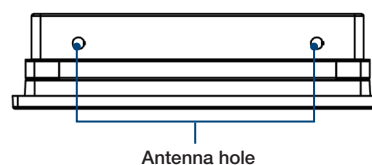
Optional Accessories

- **96PSA-A60W24T2-3** Adaptor A/D 100 ~ 240V 60W 24V C14 cord-end terminal
- **1702002600** Power cable with US plug, 1.8 M
- **1702002605** Power cable with EU plug, 1.8 M
- **1702031801** Power cable with UK plug, 1.8 M
- **1702031836** Power cable with China/Australia plug, 1.8 M
- **98R4T100W00** PoE Module

PoE Module Expansion



External I/O



Packing List

Item	Part No.	Depiction	AMAX-PT407W	AMAX-PT410W
			Qty	Qty
Lock Cable	1990026085S000	WC LOCKLINE CABLE 62x8mm WL3-60T For SCH	2	2
Plug-In Block	1652002209	PLUG-IN BLOCKDIP 2P(F)	1	1
Cable	1703011001-11	A Cable G-TEM 4.3 100CM C=GR/Y	1	1
Clamp	1962055040	CLAMPER PPC-55 M1632611 A2	4	8
Clamp Screw	1935042520	Screw M4x25L R/S D=8.3 H=2.5 (2+) ST BZn	4	8

Please note: If some optional modules are offered with the system, additional system certificates may be required in certain regions/countries.
Please contact Advantech for certificate compliance.