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Intelligent HMI and Monitors

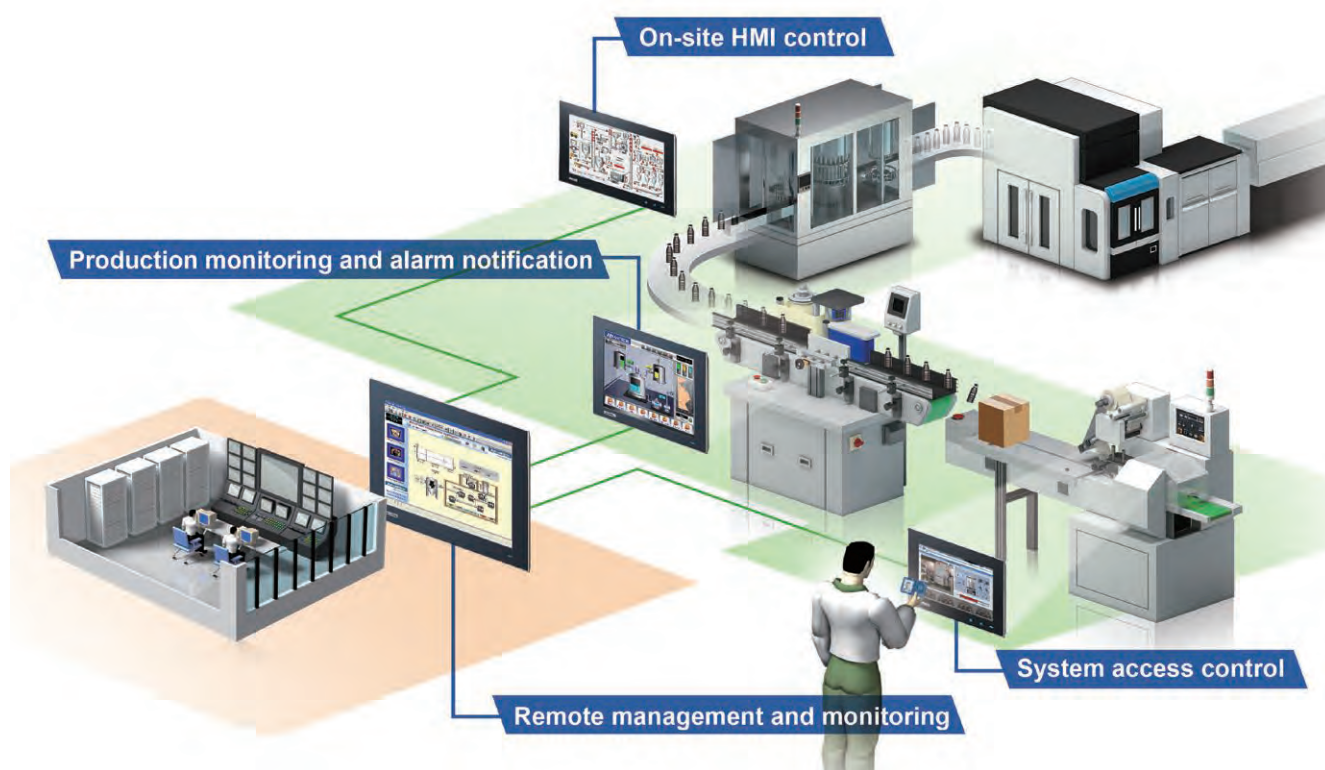
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Introduction

To facilitate data visualization in Industry 4.0 applications, Advantech offers a diverse range of rugged and reliable HMI products of varying size (from 3.5" to 21.5") and screen ratio (4:3 and 16:9). Our HMI product categories include high-performance control panels that can be embedded into equipment and machines, low-power industrial thin clients for process monitoring, web terminals for next-generation smart factory applications, and standard industrial monitors. In addition to standard products, Advantech also provides customized domain-focused products to satisfy the needs of specific industries.

All Advantech HMI products are equipped with relevant software (WebAccess/HMI, WebAccess/SCADA or WISE-PaaS/RMM) as well as Advantech's iDOOR technology, making them suitable for various applications.



Product Categories

Modular Series

In response to ongoing advances in Industry 4.0, Advantech has created its new series of modular panel PC solutions based on three performance-segmented modules — a control panel, industrial thin-client, and industrial monitor. The modular design of our solutions allows the computing box modules to be interchangeably combined with our display modules to provide comprehensive platform solutions for specific field applications. This modularization offers many advantages, including flexible configuration, rapid integration and deployment, reduced system downtime and maintenance costs, and support for future expansion.

Control Panel

Advantech's control panel series of PC-based open control platforms feature a high-performance, fanless design and can be integrated with a wide variety of machines in diverse environments to support complex machine control tasks and data visualization applications. The optimized design includes three Gigabit LANs that support multiple fieldbus communication protocols, an IP66-rated front panel that protects against dust and water ingress, and support for flexible iDOOR and PCIe expansion, making these platforms particularly ideal for industrial automation control operations.

Thin Client Terminals

Advantech's thin client modules feature a compact, fanless, and low-power design that supports multiple aspect ratios (4:3 and 16:9) and allows the modules to be equipped with a range of display sizes (5.7" to 21.5"). These thin client modules are primarily deployed as manufacturing execution systems (MESs) or for work flow monitoring and production process visualization. Under the Industry 4.0 trend, thin clients are widely utilized in distributed control architectures because of their easy deployment and suitability for the centralized management of devices and information. This architecture allows the OS to be quickly dispatched from server to client following a hardware replacement while still ensuring data security.

Operator Panel

With SCADA software moving toward cloud-based applications, simple web-based terminals with HTML5 browser support have become an economical option for process monitoring. Advantech's WebOP series of operator panels feature a range of display sizes (7" to 12") and support multiple communication interfaces (e.g., RS-232/422/485, Ethernet, and USB). Bundled with WebAccess/HMI software, Advantech's WebOP series supports over 450 PLC communication protocols, ensuring convenient integration with equipment made by a comprehensive range of manufacturers.

Domain Focused

In addition to standard products, Advantech provides domain-focused systems with customizable features designed to satisfy specific requirements across various vertical markets. Verified with ATEX Class 1 Division 2/ EN 50155 certification, Advantech's domain-focused rugged HMIs are sufficiently robust for operation in extreme environments typical of the locomotive, food and beverage, oil and gas, and machine tool manufacturing industries. Ensuring system flexibility and compatibility are also major focus points for Advantech when designing domain-focused HMI products.

Industrial Monitors

Independent controllers and industrial PCs embedded in machines require an interface for data processing and visualization, for which Advantech produces industrial monitors in a range of sizes (6", 12.1", 15", 17", 18.5", to 21.5"). Featuring an industrial-grade LED LCD with a backlight lifetime of 50,000 hours, high IP-rated bezel, and wide temperature support, our industrial monitors are equipped to withstand operation in harsh environments. Versatile mounting options (panel, wall, desktop, rack, and VESA arm) are also supported to ensure easy installation for various usage scenarios.



Modular Panel PCs

Panel Module



P/N	FPM-D12T-AE	FPM-D15T-AE	FPM-D17T-AE	FPM-D18W-AE	FPM-D21W-AE
Panel Size	12"	15"	17"	18.5"	21.5"
Resolution	1024 x 768	1024 x 768	1280 x 1024	1366 x 768	1920 x 1080
Touch	5-wire resistive touch	Projected capacitive touch	Projected capacitive touch	Projected capacitive touch	Projected capacitive touch
Wi-Fi Antenna	-	✓	✓	✓	✓
NFC Reader	-	△	△	△	△
IP Rating	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel

Box Module

Coming Soon



P/N	TPC-B200-E12AE	TPC-B200-J12AE	TPC-B500-633AE	TPC-B500-653AE	TPC-B500-6C2AE	TPC-B500-673AE
CPU	Intel® Atom® E3940 Processor	Intel® Celeron® J3455 Processor	Intel® Core™ i3-6100U	Intel® Core™ i5-6300U	Intel® Celeron 3955U	Intel® Core™ i7-6600U
Memory	4 GB DDR3L 1600 MHz SO-DIMM	4 GB DDR3L 1600 MHz SO-DIMM	8 GB DDR4 2133 MHz SO-DIMM	8 GB DDR4 2133 MHz SO-DIMM	4 GB DDR4 2133 MHz SO-DIMM	8 GB DDR4 2133 MHz SO-DIMM
I/O	2 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 2 x GbE, 1 x Line Out, 1 x DP	2 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 2 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP
Expansion	1 x Full-size mini PCIe	1 x Full-size mini PCIe	1 x Half-size PCIe, 2 x full-size mini PCIe	1 x Half-size PCIe, 2 x full-size mini PCIe	1 x Half-size PCIe, 2 x full-size mini PCIe	1 x Half-size PCIe, 2 x full-size mini PCIe
Power Input	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%
Operating System	Microsoft® Windows 10 IoT Enterprise LTSC	Microsoft® Windows 10 IoT Enterprise LTSC	Microsoft® Windows WES7 (32/64-bit), Windows 7 (32/64-bit), Ubuntu 16.04, Windows 10 IoT Enterprise LTSC	Microsoft® Windows WES7 (32/64-bit), Windows 7 (32/64-bit), Ubuntu 16.04, Windows 10 IoT Enterprise LTSC	Microsoft® Windows WES7 (32/64-bit), Windows 7 (32/64-bit), Ubuntu 16.04, Windows 10 IoT Enterprise LTSC	Microsoft® Windows WES7 (32/64-bit), Windows 7 (32/64-bit), Ubuntu 16.04, Windows 10 IoT Enterprise LTSC
Mount Options	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)

Monitor Box Modules



P/N	FPM-B700-AE
Video Interface Available	HDMI, DP, DVI, VGA, iLink
Power Input	24 V _{DC} ± 20%
Mount Options	Panel, stand, and VESA mount
iLINK Technology	Supported

High-Performance Control Panels



Model		TPC-1881WP	TPC-1581WP
CPU		4th Gen. Intel® Core™ i7/i3 Processor	4th Gen. Intel® Core™ i3 Processor
Memory		4 GB DDR3L	4 GB DDR3L
		1600 MHz SO-DIMM	1600 MHz SO-DIMM
		SDRAM	SDRAM
Display	Display Type	TFT LED LCD	TFT LED LCD
	Display Size	18.5"	15.6"
	Max. Resolution	1366 x 768	1366 x 768
	Max. Colors	16.7M	16.7M
	Luminance cd/m ²	300 nits	300 nits
	VieWING Angle (H/V°)	170/160	170/160
	Backlight MTBF	50,000 hr	50,000 hr
		Projected capacitive touch	Projected capacitive touch
Network (LAN)		10/100/1000BASE-T x 2	10/100/1000BASE-T x 2
I/O Ports		RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (Δ) Audio MIC x 1 (Δ)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (Δ) Audio MIC x 1 (Δ)
HDD (Optional)		2.5" SATA HDD	2.5" SATA HDD
Intelligent Keys		Quick access through built-in front bezel function and home key button	Quick access through built-in front bezel function and home key button
CompactFlash Slots		CFast slot x 1	CFast slot x 1
Expansion Slots		Full-size mini PCIe	Full-size mini PCIe
Digital Input/Output		-	-
Ingress Protection		Front panel: IP66	Front panel: IP66
DC Power Input (Voltage)		24 V _{DC} ± 20%	24 V _{DC} ± 20%
Enclosure		Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin
Mounting		Panel mount	Panel mount
Weight		6 kg (13.22 lb)	7 kg (15.44 lb)
Operating Temperature		0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)
Dimensions		488.1 x 309.1 x 56.7 mm (19.2" x 12.2" x 2.2")	419.7 x 269 x 56.7 mm (16.52" x 10.59" x 2.23")
Certification		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System		Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB

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Industrial I/O and Video Solutions

High-Performance Control Panels



Model		TPC-1782H	TPC-1582H	TPC-1282T
CPU		4th Gen. Intel® Core™ i7/i3 Processor	4th Gen. Intel® Core™ i3 Processor	5th Gen. Intel® Core™ i3 Processor
Memory		4 GB DDR3L	4 GB DDR3L	4 GB DDR3L
		1600 MHz SO-DIMM	1600 MHz SO-DIMM	1600 MHz SO-DIMM
		SDRAM	SDRAM	SDRAM
Display	Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD
	Display Size	17"	15"	12.1"
	Max. Resolution	1280 x 1024	1024 x 768	1024 x 768
	Max. Colors	16.7M	16.2M	16.2M
	Luminance cd/m ²	350 nits	400 nits	600 nits
	VieWIng Angle (H/V°)	170/160	160/140	160/140
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr
	Touchscreen	Resistive	Resistive	Resistive
Network (LAN)		10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2
I/O Ports		RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (Δ) Audio MIC x 1 (Δ)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (Δ) Audio MIC x 1 (Δ)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (Δ) Audio MIC x 1 (Δ)
HDD (Optional)		2.5" SATA HDD	2.5" SATA HDD	2.5" SATA HDD
Intelligent Keys		-	-	-
CompactFlash Slots		CFast slot x 1	CFast slot x 1	CFast slot x 1
Expansion Slots		Full-size mini PCIe/half-size PCIe	Full-size mini PCIe/half-size PCIe	Full-size mini PCIe/half-size PCIe
Digital Input/Output		-	-	-
Ingress Protection		Front panel: IP65	Front panel: IP65	Front panel: IP66
DC Power Input (Voltage)		24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%
Enclosure		Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin
Mounting		Desktop, Wall or Panel Mount	Desktop, Wall or Panel Mount	Desktop, Wall or Panel Mount
Weight		6 kg (13.23 lb)	5.5 kg (12.13 lb)	3.2 kg (7.02 lb)
Operating Temperature		0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)
Dimensions		414 x 347.5 x 84 mm (16.3" x 13.68" x 3.31")	383 x 307 x 78.5 mm (15.08" x 12.09" x 3.09")	311.8 x 238 x 77.2 mm (12.28" x 9.38" x 3.04")
Certification		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System		Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB

Industrial Thin-Client Terminals



Model		TPC-1840WP	TPC-1751T		TPC-1551WP
CPU		AMD G-series T56E 1.65GHz	Intel® Atom™ E3827 1.75 GHz Processor	Intel® Celeron® J1900 2.0 GHz Processor	Intel® Atom™ E3827 1.75 GHz Processor
Memory		4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM
Display	Display Type	HD TFT LED LCD	SXGA TFT LED LCD	WXGA TFT LED LCD	
	Display Size	18.5"	17"	15.6"	
	Max. Resolution	1366 x 768	1280 x 1024	1366 x 768	
	Max. Colors	16.7M	16.7M	16.7M	
	Luminance cd/m ²	300 nits	350 nits	400 nits	
	VieWIng Angle (H/V°)	170/160	160/140	170/160	
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	
Touchscreen		Projected capacitive	Resistive	Projected capacitive	
HDD (Optional)		2.5" SATA x 1	via optional kit	via optional kit	
Network (LAN)		10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	
I/O Ports		RS-232 x 3 RS-232/422/485 x 1 - USB 2.0 x 2	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	
CompactFlash Slots		-	CFast slot x 1	CFast slot x 1	
Expansion Slots		Full-size mini PCIe	Full-size mini PCIe	Full-size mini PCIe	
DC Power Input (Voltage)		24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	
Dimensions		488 x 309 x 56.7 mm (19.21" x 12.17" x 2.23")	413.7 x 347.2 x 63.8 mm (16.28" x 13.68" x 2.5")	419.7 x 269 x 61.9 mm (16.52" x 10.59" x 2.44")	
Weight		7 kg	6 kg	5 kg	
Front cover		Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy	
Operating Temperature		0 ~ 55°C (32 ~ 131°F)	-20 ~ 60°C (-4 ~ 140°F)	0 ~ 55°C (32 ~ 131°F)	
Ingress Protection (Front Panel)		IP66	IP66	IP66	
Certification		BSMI, CCC, CE	BSMI, CCC, CE	BSMI, CCC, CE	
		FCC Class A, UL	FCC Class A, UL, KCC	FCC Class A, UL	
Operating System		Windows 7, WES7	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	

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Industrial Thin-Client Terminals



Model		TPC-1551T	TPC-1251T	TPC-1051WP	TPC-651T
CPU		Intel® Atom™ E3827 1.75 GHz Processor	Intel® Atom™ E3827 1.75 GHz Processor	Intel® Atom™ E3827 1.75 GHz Processor	Intel® Atom™ E3827 1.75 GHz Processor
Memory		4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM
Display	Display Type	XGA TFT LED LCD	XGA TFT LED LCD	WXGA TFT LED LCD	VGA TFT LED LCD
	Display Size	15"	12.1"	10.1"	5.7"/6.5"
	Max. Resolution	1024 x 768	1024 x 768	1280 x 800	640 x 480
	Max. Colors	16.7M	16.2M	262K	262K
	Luminance cd/m ²	400 nits	600 nits	300 nits	550/800 nits
	VieWIng Angle (H/V°)	160/140	160/140	170/170	160/140
	Backlight MTBF	50,000 hr	50,000 hr	25,000 hr	50,000 hr
Touchscreen		Resistive	Resistive	Projected capacitive	Resistive
HDD (Optional)		2.5" SATA x 1	2.5" SATA x 1	2.5" SATA x 1	2.5" SATA x 1
Network (LAN)		10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2
I/O Ports		RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1
CompactFlash Slots		CFast slot x 1	CFast slot x 1	CFast slot x 1	CFast slot x 1
Expansion Slots		Full-size mini PCIe	Full-size mini PCIe	Full-size mini PCIe	Full-size mini PCIe
DC Power Input (Voltage)		24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%
Dimensions		383.20 x 307.30 x 61.10 mm (15.09" x 12.10" x 2.41")	311.80 x 238 x 57.2 mm (12.28" x 9.37" x 2.25")	283.1 x 202.3 x 61.4 mm (11.15" x 7.96" x 2.42)	199 x 152 x 58.9 mm (7.83" x 5.98" x 2.32")
Weight		3.9 kg	2.6 kg	2.6 kg	1.5 kg
Front cover		Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy
Operating Temperature		-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 55°C (-4 ~ 131°F)	-20 ~ 60°C (-4 ~ 140°F)
Ingress Protection (Front Panel)		IP66	IP66	IP66	IP66
Certification		BSMI, CCC, CE	BSMI, CCC, CE	BSMI, CCC, CE	BSMI, CCC, CE
		FCC Class A, UL, KCC	FCC Class A, UL, KCC	FCC Class A, UL	FCC Class A, UL
Operating System		Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB

Domain-Focused



Model		IPPC-5211WS	SPC-2140WP/1840WP	SPC-1881WP	FPM-8151H	TPC-8151WM	TPC-8191WM
CPU		Intel Celeron J1900	AMD T56N	Intel® Core™ i7/ i5 / i3 Processor	-	Intel Celeron CPU G3900TE @ 2.30 GHz	Intel Celeron CPU G3900TE @ 2.30 GHz
Memory		4 GB DDR3L SDRAM	4 GB DDR3L SDRAM	4 GB DDR3L SDRAM	-	4 GB DDR3L SDRAM	4 GB DDR3L SDRAM
Display	Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD
	Display Size	21.5"	21.5" / 18.5"	18.5"	15"	15.6"	19.5"
	Max. Resolution	1920 x 1080	21.5": 1920 x 1080 18.5": 1366 x 768	1366 x 768	1024 x 768	1366 x 768	1600 x 900
	Max. Colors	16.7M	16.7M	16.7M	16.2M	16.7M	16.7M
	Luminance cd/m ²	300 nits	300 nits	300 nits	350 nits	300 nits	250 nits
	Viewing Angle (H/V°)	178/178	21.5": 178/178 18.5": 170/160	170/160	160/140	80 (left), 80 (right), 80 (up), 80 (down)	85 (left), 85 (right), 80 (up), 80 (down)
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	50,000 hr	70,000 hr	30,000 hr
	Touchscreen	Projected capacitive touch	Projected capacitive touch	Projected capacitive touch	Resistive	Projected capacitive touch	Projected capacitive touch
Network (LAN)		10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	-	10/100/1000BASE-T x 1	10/100/1000BASE-T x 1
I/O Ports		RS-232/422/485 x 1 RS-232 x 1 USB 3.0 x 1	RS-232 x1 (connection:M12 A-coded, 8-pin male) USB 2.0 x1 (connection:M12 A-coded, 8-pin female) 24 V _{DC} power input (connection:M12 A-coded, 5-pin male)	RS-232 x1 (connection:M12 A-coded, 8-pin male) USB 2.0 x1 (connection:M12 A-coded, 8-pin female) 24 V _{DC} power input (connection:M12 A-coded, 5-pin male)	VGA DVI-D	USB 3.0 x 3 (rear) USB 2.0 x 1 (rear) USB 3.0 x 1 (front)	USB 3.0 x 3 (rear) USB 2.0 x 1 (rear) USB 3.0 x 1 (front)
HDD (Optional)		2.5" SATA HDD	2.5" SATA HDD	2.5" SATA HDD	-	2.5" SATA HDD	2.5" SATA HDD
Expansion Slots		Full-size mini PCIe x1	Full-size mini PCIe x1	Full-size mini PCIe x1	-	-	-
Digital		-	-	-	-	-	-
Input/Output		-	-	-	-	-	-
Ingress Protection		All-Around IP69k	All-Around IP66	All-Around IP66	Front IP66	-	-
DC Power Input (Voltage)		24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20% / 12 V _{DC} /4.75A	19 V _{DC}	19 V _{DC}
Enclosure		Front bezel: Stainless steel Back housing: Aluminum/stainless steel	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy	Front bezel: 316L stainless steel Back housing: Stainless steel	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin
Mounting		VESA and flange adapter for arm and foot mount	VESA	VESA	VESA / Panel Mount	Desktop, Wall or VESA Mount	Desktop, Wall or VESA Mount
Weight		16 kg	9 kg	9 kg	8.5 kg	4.4 kg	5.5 kg
Operating Temperature		0 ~ 50°C (32 ~ 122°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)	-20 ~ 60°C (-4 ~ 140°F)	0 ~ 40°C (32 ~ 130°F)	0 ~ 40°C (32 ~ 130°F)
Dimensions		555 x 346.5 x 81 mm	21.5": 558.4 x 349.8 x 65 mm 18.5": 488 x 309 x 65 mm	488 x 309 x 65 mm	414 x 347.5 x 84 mm	400.74 x 241 x 78.5 mm	510 x 291 x 66 mm
Certification		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	CCC, CE, FCC Class A, UL	CCC, CE, FCC Class A, UL
Operating System		Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	WIN 10 Enterprise LTSB	WIN 10 Enterprise LTSB

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Industrial Operator Panel



Model		WOP-3070T	WOP-3100T	WOP-3120T	WOP-2040T		WOP-2070T		WOP-2100T	
Ordering Information		WOP-3070T-C4BE	WOP-3100T-C4BE	WOP-3120T-C4AE	WOP-2040T-S1AE	WOP-2040T-N1AE	WOP-2070T-S2AE	WOP-2070T-N2AE	WOP-2100T-S2AE	WOP-2100T-N2AE
CPU		RISC 32 bits, 600 MHz (ARM® Cortex™-A8)	ARM Cortex A8 600Mhz	ARM Cortex A8 600Mhz	RISC (32-bit, 200 MHz)		RISC (32-bit, 200 MHz)			
Backup Memory		128 KB	128 KB	FRAM 1M bit (=128K Byte, 64 word)	128 KB		128 KB			
Working Memory		DDR2 256M Bytes	DDR2 256 MB on board	DDR2 256 MB on board	32 MB SDRAM		64 MB SDRAM		64 MB SDRAM	
Storage		512MB on board SLC type	512MB on board SLC type	512MB on board SLC type	8MB NOR Flash		8 MB NOR Flash			
		-	-	-	-	128M NAND Flash	-	128M NAND Flash	-	128M NAND Flash
Operating System		Microsoft® Windows CE 6.0	Microsoft® Windows CE 6.0	Microsoft® Windows CE 6.0	HMI RTOS, WebOP Designer 2.0		HMI RTOS, WebOP Designer 2.0			
Display	Type	WVGA (16:9) TFT LCD	WSGA (17:10) TFT LCD	XGA (16:9) TFT LCD	WQVGA (16:9) TFT LCD		WVGA (16:9) TFT LCD		WSVGA (16:9) TFT LCD	
	Size	7"	10.1"	12"	4.3"		7"		10.1"	
	Max. Resolution	800 x 480	1024 x 600	1024 x 768	480 x 272		800 x 480		1024 x 600	
	Max. Colors	65,536 colors	64K	64K	65,536		65,536		65,536	
	Luminance (cd/m²)	500	550 nits	500 nits	400		300		250	
	Viewing Angle (H/V°)	140/120	140/110	160/140	100/95		140/130		140/110	
	Backlight Life (hr)	50,000	50,000	50,000	LED, 20,000		LED, 20,000		LED, 20,000	
Dimming		Adjustable	-	-	-		-		-	
Touchscreen		5 wire Analog Resistive	5 wires Analog resistive	5 wires Analog resistive	4-wire analog resistive		4-wire analog resistive		4-wire analog resistive	
Power-On LED		✓	✓	✓	✓		✓		✓	
Communication	COM1	RS-232/422/485 (DB9)	RS-232/422/485 (DB9 Male)	RS-232/RS-422,RS-485 (DB9), 300~115.2 kbps	RS-232/422/485 (DB9)		RS-232/422/485 (DB9)		RS-232/422/485 (DB9)	
Interface	COM2	RS-422/485 (Terminal 4pin+Ground)	RS-422/485 (Terminal Plug 4-Pin)	RS-422/RS-485 (Terminal 4 pin+Ground), 300~115.2 kbps	RS-422/485 (5-pin terminal)		RS-422/485 (5-pin terminal)		RS-422/485 (5-pin terminal)	
	COM3	RS-485 (Terminal 2pin)	RS-485 (Terminal Plug 2-Pin)	RS-485 (Terminal 2 pin), 300~115.2 kbps	RS-232 (COM1: 5/7/8-pin)		RS-232 (COM1: 5/7/8-pin)		RS-232 (COM1: 5/7/8-pin)	
	CAN	Terminal 2pin	Terminal Plug 2-Pin	Terminal Plug 2-Pin	-		-		-	
	Ethernet (RJ45)	10/100-BaseT	10/100-BaseT	10/100-BaseT	-	10/100 BASE-T	-	10/100 BASE-T	-	10/100 BASE-T
I/Os	USB Client	USB 2.0 Client x 1	USB 2.0 Client x 1	USB 2.0 Client x 1	✓		✓		✓	
	USB Host	USB 2.0 Host x 1 (Top)	USB 2.0 Host x 1	USB 2.0 Host x 1 (Top)	✓		✓		✓	
	Micro-SD Slot	✓	✓	✓	-	✓	-	✓	-	✓
	SD Slot	-	-	-	-		-		-	
	Audio	1 Lin out / 1 Mic in	1 Line-out / 1 Mic-in	1 Line-out / 1 Mic-in	-		-		-	
	Power Isolation	✓	✓	✓	-		-		-	
I/O Isolation		✓	✓	✓	-		-		-	
Power Supply Voltage		24 V _{DC} ± 10%	24 V _{DC} ± 10%	24 V _{DC} ± 10%	24 V _{DC} ± 10%		24 V _{DC} ± 10%		24 V _{DC} ± 10%	
Power Consumption		7W Typical	9 W	20 W	5 W		10 W		10 W	
Dimensions W x H x D (mm)		203.4 x 150 x 43.7 mm (8.01" x 5.91" x 1.72")	271.5 x 213.5 x 43.2 mm (10.69" x 8.41" x 1.7")	311.8 x 238 x 54.5 mm (12.28" x 9.37" x 2.15")	130 x 106.2 x 36.4 mm (5.11" x 4.18" x 1.43")		188 x 143.3 x 30 mm (7.4" x 5.64" x 1.18")		269.8 x 212 x 37.4 mm (10.62" x 8.35" x1.47")	
Cut-out Dimensions W x H (mm)		192 x 138.5 mm (7.56" x 5.45")	260 x 201.5 mm (10.24" x 7.93")	302.5 x 228.5 mm (12.1" x 9.14")	118.5 x 92.5 mm (4.66" x 3.64")		175 x 132.5 mm (6.89" x 5.21")		259.5 x 201.5 mm (10.22" x 7.93")	
Enclosure		Die-cast aluminum alloy front bezel	PC + ABS	PC + ABS	PC + ABS		PC + ABS		PC + ABS	
Net Weight		1 kg (2.20 lbs)	1.2 kg (2.65 lbs)	2.5 kg (5.51 lb)	0.3 kg (0.66 lb)		0.6 kg (1.32 lb)		1.2 kg (2.64 lb)	
Operating Temperature		-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	0 ~ 50°C (32 ~ 122°F)		0 ~ 50°C (32 ~ 122°F)		0 ~ 50°C (32 ~ 122°F)	
Storage Temperature		-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)	-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)	
Humidity		10% ~ 90% RH @ 40°C, non-condensing	10 ~ 90% RH @ 40°C, non-condensing	10 ~ 90% RH @ 40°C, non-condensing	10 ~ 90% RH @ 40°C, non-condensing		10 ~ 90% RH @ 40°C, non-condensing		10 ~ 90% RH @ 40°C, non-condensing	
Ingress Protection		IP66	Front panel: IP66	Front panel: IP66	Front panel: IP66		Front panel: IP66		Front panel: IP66	
Certification		CE, FCC, BSMI, CCC, UL-508	CE, BSMI, CCC, UL, FCC Class A	CE, BSMI, CCC, UL, FCC Class A	CE, FCC, BSMI, CCC, UL		CE, FCC, BSMI, CCC, UL		CE, FCC, BSMI, CCC, UL	

Industrial monitors



Model		FPM-7211W	FPM-7181W	FPM-7151W	FPM-7151T	FPM-7121T	FPM-7061T
Display	Display Type	Full HD	WXGA	WXGA	XGA	XGA	VGA
	Display Size	21.5"	18.5"	15.6"	15"	12.1"	6.5"
	Max. Resolution	1920 x 1080	1366 x 768	1366 x 768	1024 x 768	1024 x 768	640 x 480
	Max.Colors	16.7M	16.7M	16.7M	16.7M	16.2M	16.2M
	Luminance cd/m ²	300	300	300	400	600	800
	Viewing Angle (H/V°)	178/178	170/160	170/160	160/140	160/140	160/140
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr
Video Port		VGA/DVI-D	VGA/DVI-D	VGA/DVI-D	VGA/DP	VGA/DP	VGA/DP
Touchscreen		Combo	Combo	Combo	Combo	Combo	USB
OSD (onscreen display)		Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable
Power Input Voltage		100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)
DC Power Input(voltage)		24 V	24 V	24 V	24 V	24 V	24 V
Operating Temperature		0 ~ 55°C	0 ~ 55°C	0 ~ 55°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C
Storage Temperature		-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-30 ~ 70°C	-30 ~ 70°C	-30 ~ 70°C
Dimensions		558.4 x 349.8 x 47.7 mm	488 x 309 x 47.7 mm	419.7 x 269 x 47.7 mm	383.2 x 307.3 x 48.2 mm	311.8 x 238 x 44.5 mm	199 x 152 x 46.1 mm
Cut-out Dimensions		550.3 x 341.8 mm	479.3 x 300.3 mm	412.4 x 261.7 mm	374.5 x 298.5 mm	303 x 229 mm	189.1 x 142.1 mm
Weight		8 kg	6 kg	5 kg	4.2 kg	2.6 kg	1.2 kg
Certifications		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System		Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux

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Industrial I/O and Video Solutions

Industrial monitors



Model		FPM-5191G	FPM-5171G	FPM-5151G	FPM-2170G	FPM-2150G	FPM-2120G
Display	Display Type	SXGA	SXGA	XGA	SXGA	XGA	SVGA
	Display Size	19"	17"	15"	17"	15"	12"
	Max. Resolution	1280 x 1024	1280 x 1024	1024 x 768	1280 x 1024	1024 x 768	800 x 600
	Max.Colors	16.7M	16.7M	16.2M	16.7M	16.2M	16.2M
	Luminance cd/m ²	350	350	400	350	400	450
	Viewing Angle (H/V°)	170/160	160/140	160/140	160/140	160/140	160/140
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr
Video Port		VGA/DVI	VGA/DVI	VGA/DVI	VGA	VGA	VGA
Touchscreen		Combo	Combo	Combo	Combo	Combo	Combo
OSD (onscreen display)		Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable
Power Input Voltage		100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Adapter)	100 ~ 240 V (Adapter)	100 ~ 240 V (Adapter)
DC Power Input		10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	12 V	12 V	12 V
Operating Temperature		0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C
Storage Temperature		-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C
Dimensions		481.93 x 384.6 x 59 mm	481.9 x 355.9 x 55 mm	449.92 x 315.63 x 50.5 mm	413.72 x 347.22 x 52.13 mm	383 x 307 x 48.13 mm	311 x 237 x 40.63 mm
Cut-out Dimensions		454 x 338 mm	454 x 338 mm	424 x 293 mm	400.92 x 334.42 mm	374.5 x 298.5 mm	303 x 229 mm
Weight		8.5 kg	7 kg	6 kg	5.6 kg	4.5 kg	4 kg
Certifications		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL
Operating System		Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux



Model		FPM-3191G	FPM-3171G	FPM-3151G	FPM-3121G
Display	Display Type	SXGA	SXGA	XGA	XGA
	Display Size	19"	17"	15"	12.1"
	Max. Resolution	1280 x 1024	1280 x 1024	1024 x 768	1024 x 768
	Max. Colors	16.7M	16.7M	16.2M	16.2M
	Luminance cd/m ²	350	350	350	600
	Viewing Angle (H/V°)	170/160	160/140	160/140	160/140
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	50,000 hr
Video Port		VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI
Touchscreen		Combo	Combo	Combo	Combo
OSD (onscreen display)		Front panel control buttons	Front panel control buttons	Front panel control buttons	Front panel control buttons
Power Input Voltage		100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)
DC Power Input		10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V
Operating Temperature		-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C
Storage Temperature		-30 ~ 80°C	-30 ~ 80°C	-30 ~ 80°C	-30 ~ 80°C
Dimensions		482 x 399.2 x 67 mm	482 x 354.8 x 63.5 mm	312 x 224 x 60 mm	312 x 224 x 60 mm
Cut-out Dimensions		441 x 376.4 mm	447.2 x 329.2 mm	303.5 x 229.5 mm	303.5 x 229.5 mm
Weight		10.65 kg	9.25 kg	7.73 kg	4.07 kg
Certifications		CE, FCC Class A, BSMI, CCC, UL	CE, FCC Class A, BSMI, CCC, UL	CE, FCC Class A, BSMI, CCC, UL	CE, FCC Class A, BSMI, CCC, UL
Operating System		Windows XP/Vista/7/8/10/XPE, Linux	Windows XP/Vista/7/8/10/XPE, Linux	Windows XP/Vista/7/8/10/XPE, Linux	Windows XP/Vista/7/8/10/XPE, Linux

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Industrial I/O and Video Solutions

General Panel PC

NEW

New Generation



Model	PPC-3060S	PPC-3100S/3120S/3150S			PPC-3150SW/3180SW/3210SW			PPC-3100/3120	
CPU	Intel® Celeron® 1.58 GHz Processor (Dual Core)	Intel® Celeron® 1.83 GHz Processor (Quad Core)			Intel® Pentium® 1.1 GHz Processor (Quad Core)	Intel® Celeron® 1.83 GHz Processor (Quad Core)		Intel® Atom™ 1.6GHz Processor (Quad Core)	
Memory	1 x SO-DIMM DDR3L 1333 MHz (max. 4 GB)	1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)			1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)	1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)		1 x SO-DIMM DDR3L (max. 8 GB)	
Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	
Display Size	6.5	10.4	12.1	15	15.6	18.5	21.5	10.4	12.1
Screen Ratio	4:3	4:3			16:9		16:9	4:3	
Max. Resolution	640 x 480	800 x 600 / 1024 x 768	1024 x 768	1024 x 768	1366 x 768	1366 x 768	1920 x 1080	800 x 600	1024 x 768
Luminance cd/m ²	800	400 / 350	500	400	400	300	300	400	600
Viewing Angle (H/V°)	160,140	160,140 / 176,176	160,140		170,160	170,160	178,178	160,140	
Backlight MTBF	50,000 hr	30,000 hr	30,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	30,000 hr	50,000 hr
Touchscreen	5-wire resistive	Projected capacitive multi-touch/5-wire resistive			Projected capacitive multi-touch/5-wire resistive			5-wire resistive	
Network (LAN)	2 x GbE (Intel I211-AT)	2 x GbE (Intel I211-AT)			2 x GbE (Intel I211-AT, Intel I219LM)	2 x GbE (Intel I211-AT)		2 x GbE	
IO Ports	2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 2 x USB 2.0, 1 x USB 3.0	2 x serial ports: 1 x RS-232, 1x RS-232/422/485 (adjustable via BIOS) 2 x USB 2.0, 1 x USB 3.0 (for PPC-3100S-RAE) 1 x USB 2.0, 1 x USB 3.0 (for PPC-3100S-PBE)			2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 1 x USB 2.0, 2 x USB 3.0 1 x line out	2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 1 x USB 2.0, 1 x USB 3.0		5 x serial ports: 4 x RS-232, 1 x isolated RS-422/485 4 x USB 3.0 1 x DB15 VGA 1 x HDMI 1 x line out, 1 x mic in	
Storage	1 x 2.5" SATA bay 1 x mSATA bay	1 x 2.5" SATA bay 1 x mSATA bay			1 x 2.5" SATA bay 1 x mSATA bay	1 x 2.5" SATA bay 1 x mSATA bay		1 x 2.5" SATA bay 1 x mSATA bay	
Expansion	1 x full-size mini PCIe	1 x full-size mini PCIe			1 x full-size mini PCIe	1 x full-size mini PCIe		1 x PCIe x1; 1 x PCI (only PPC-3120) 1 x full-size mini PCIe	
Power Input (Voltage)	12 ~ 24 V _{DC}	12 ~ 24 V _{DC}			12 ~ 24 V _{DC}	12 ~ 24 V _{DC}		9 ~ 32 V _{DC}	
Enclosure	Front: Aluminum alloy Back: SECC	Aluminum alloy			Aluminum alloy	Aluminum alloy		Front: Aluminum alloy Back: Plastic + SECC	
Ingress Protection	Front panel: IP65	Front panel: IP65			Front panel: IP65	Front panel: IP65		Front panel: IP65	
Mounting	Panel, VESA 75, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM			Panel, VESA 75, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM		Panel, VESA 75, wall, stand, ARM	
Operating Temperature	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD			0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD		0 ~ 50°C (32 ~ 122°F) with 2.5" SATA SSD -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or 2.5" SATA SSD	
Storage Temperature	-30 ~ 60°C (-22 ~ 140°F)	-40 ~ 60°C (-40 ~ 140°F)			-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)		-40 ~ 60°C (-40 ~ 140°F)	
Dimensions	197.6 x 150.6 x 41 mm (7.8" x 5.9" x 1.6")	272 x 217 x 46 mm (10.7" x 8.5" x 1.8")	317 x 246 x 49 mm (12.5" x 9.7" x 1.9")	391.3 x 312.4 x 51.5 mm (15.4" x 12.3" x 2.0")	419.7 x 269 x 54 mm (16.52" x 10.59" x 2.16")	488 x 309 x 55 mm (19.21" x 12.17" x 2.16")	558.4 x 349.8 x 56.2 mm (22" x 13.8" x 2.2")	271.8 x 216.8 x 57.5 mm (10.7" x 8.53" x 2.26")	317 x 217 x 60.5 mm (12.5" x 9.7" x 2.4")
Weight	1.5 kg	1.9 kg	2.1 kg	4 kg	5.4 kg	7 kg	7.5 kg	2.5 kg	3.3 kg
Certification	BSMI, CCC, CB, UL, CE, FCC Class B	BSMI, CCC, CB, UL, CE, FCC Class B			BSMI, CCC, CB, UL, CE, FCC Class B	BSMI, CCC, CB, UL, CE, FCC Class B		BSMI, CCC, CB, UL, CE, FCC Class B	
Operating System	Windows 7/8.1/10, WES7, WEC7, Linux, Android 4.4	Windows 7/8.1/10, WES7, WEC7, Linux, Android 4.4			Windows 10, Linux, Android	Windows 7/8.1/10, WES7, WEC7, Linux, Android 4.4		Windows 10, Linux, Android	

NEW



Model	PPC-3150/3170/3190			PPC-3151	PPC-4151W/4211W		PPC-3181SW/3211SW	
CPU	Intel® Atom™ 1.91 GHz Processor (Quad Core)			6th Gen Intel® Core™ i5 processor (Dual Core)	4th Gen. Intel® Core™ i5/i3 Processor (Dual Core)		6th Gen Intel® Core™ i5 processor (Dual Core)	
Memory	1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)			1 x SO-DIMM DDR4 1866/2133 MHz (max. 16 GB) (1.2 V)	1 x SO-DIMM DDR3L 1333/1600 MHz (max. 8 GB)		1 x SO-DIMM DDR4 1866/2133 MHz (max. 16 GB)	
Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD		TFT LED LCD	
Display Size	15	17	19	15	15.6	21.5	18.5	21.5
Screen Ratio	4:3			4:3	16:9		16:9	
Max. Resolution	1024 x 768	1280 x 1024	1280 x 1024	1024 x 768	1366 x 768	1920 x 1080	1366 x 768	1920 x 1080
Luminance cd/m ²	400	350	350	400	400	300	300	300
Viewing Angle (H/V°)	160,140	160,140	170,160	160,140	170,160	178,178	170,160	178,178
Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr
Touchscreen	5-wire resistive			Projected capacitive multi-touch	Projected capacitive multi-touch/5-wire resistive		Projected capacitive multi-touch	
Network (LAN)	2 x GbE (Intel I210)			2 x GbE (Intel® I211-AT, I219LM)	2 x GbE (Intel I211-AT, Intel I218LM)		2 x GbE (Intel I211-AT, Intel I219LM)	
IO Ports	5 x serial ports: 4 x RS-232 (2 x external and 2 x via internal pin header, requires optional module), 1 x USB 3.0, 3 x USB 2.0 1 x VGA 1 x DVI.1a 1 x GPIO (8 channels, TTL level) via internal pin header (requires optional module) 1 x line out, 1 x mic in			5 x serial ports: 4 x RS-232 (2 x via internal pin header, requires additional optional module), 1 x isolated RS-422/485, 4 x USB 3.0 1 x VGA 1 x DVI.1a 1 x GPIO (8 channels, TTL level) via internal pin header 1 x line out, 1 x mic in	5 x serial ports: 4 x RS-232, 1 x isolated RS-422/485, 4 x USB 3.0 (rear), 1 x USB 2.0 (right side) 1 x DB15 VGA 1 x display port (1.2) 1 x line out, 1 x mic in		2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 2 x USB 3.0, 2 x USB 2.0 (right side) 1 x HDMI	
Storage	1 x 2.5" SATA bay 1 x mSATA bay			1 x 2.5" SATA bay 1 x M.2 bay (22 x 42 mm)	1 x 2.5" SATA bay 1 x mSATA bay	2 x 2.5" SATA bay (Intel RAID) 1 x mSATA bay	1 x 2.5" SATA bay 1 x mSATA bay	
Expansion	1 x PCI (standard); 1 x PCIe x1 (in the accessory box) 1 x Full-size mini PCIe Optional: 1 x CFast; 1 x CF card; 1 x Internal USB dongle; 2 x RS-232 or 1 x RS-232 + 1 x GPIO			1 x PCIe x4 (standard); 1 x PCI (in the accessory box) 1 x Full-size mini PCIe Optional: 1 x CFast; 1 x CF card; 1 x Internal USB dongle; 2 x RS-232 or 1 x RS-232 + 1 x GPIO	1 x PCIe x4 (standard); 1 x PCI (in the accessory box) 1 x Full-size mini PCIe		1 x Full-size mini PCIe	
Power Input (Voltage)	9 ~ 32 V _{DC}			9 ~ 32 V _{DC}	9 ~ 32 V _{DC}	12 ~ 32 V _{DC}	12 ~ 24 V _{DC}	
Enclosure	Plastic			Front: Aluminum alloy Back: Plastic	Front: Aluminum alloy Back: Plastic		Aluminum alloy	
Ingress Protection	Front panel: IP65			Front panel: IP65	Front panel: IP65		Front panel: IP65	
Mounting	Panel, VESA 75, wall, stand, ARM			Panel, VESA 75, wall, stand, ARM	Panel, VESA 75/100, wall, stand, ARM		Panel, VESA 100, wall, stand, ARM	
Operating Temperature	0 ~ 50°C (32 ~ 122°F) with 2.5 SATA HDD -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or 2.5 SATA SSD			0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 45°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 45°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 45°C (32 ~ 104°F) with HDD	
Storage Temperature	-40 ~ 60°C (-40 ~ 140°F)			-40 ~ 60°C (-40 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)	
Dimensions	396.5 x 317.6 x 65.3 mm (15.6" x 12.5" x 2.57")	442.0 x 362.0 x 69.5 mm (17.4" x 14.3" x 2.74")	458.2 x 384 x 67.3 mm (18" x 15" x 2.6")	391.4 x 312.5 x 55.35 mm (15.41" x 12.3" x 2.18")	419.7 x 269 x 59 mm (16.52" x 10.59" x 2.32")	558.4 x 349.8 x 63.6 mm (22" x 13.8" x 2.5")	488 x 309 x 61 mm (19.21" x 12.17" x 2.4")	558.4 x 349.8 x 62.3 mm (22" x 13.8" x 2.45")
Weight	5.3 kg	6.3 kg	7.9 kg	5.4 kg	5.69 kg	7.8 kg	7.6 kg	8.1 kg
Certification	BSMI, CCC, CB, UL, CE, FCC Class A			BSMI, CCC, CB, UL, CE, FCC Class B	BSMI, CCC, CB, UL, CE, FCC Class B		BSMI, CCC, CB, UL, CE, FCC Class B	
Operating System	Windows 7/8.1/10, WES7, WEC7, Linux			Windows 7/8.1/10, Linux	Windows 7/8.1/10, WES7, Linux		Windows 7/8.1/10, WEC7, Linux	

- 1 Software and Industry Solutions
- 2 Industrial Server
- 3 Intelligent System
- 4 Intelligent HMI and Monitors
- 5 Automation Computers and Controllers
- 6 Industrial Communication
- 7 Remote I/O Modules
- 8 Industrial I/O and Video Solutions

General Panel PC



Model	PPC-6151C/6171C/6191C-RTAE PPC-MB-8260AE			PPC-6151C/6171C/6191C-RMAE Support certified mini-ITX motherboards			PPC-6120
CPU	6th Gen. Intel® Core™ i3/i5/i7/Celeron® Processor			Support processor up to 45W TDP depending on the Mini-ITX motherboard			4th Gen. Intel® Core™ i3/i5/i7/Celeron® Processor
Memory	1 x SO-DIMM DDR4 2133 MHz (max. 16 GB)			Subject to mini-ITX motherboard specifications			2 x SO-DIMM DDR3/DDR3L 1066/1333 MHz (max. 16/8 GB per SO-DIMM)
Display Type	TFT LED LCD			TFT LED LCD			TFT LED LCD
Display Size	15	17	19	15	17	19	12.1
Screen Ratio	4:3			4:3			4:3
Max. Resolution	1024 x 768	1280 x 1024	1280 x 1024	1024 x 768	1280 x 1024	1280 x 1024	1024 x 768
Luminance cd/m ²	400	350	350	400	350	350	600
Viewing Angle (H/V°)	160,140	160,140	170,160	160,140	160,140	170,160	160,140
Backlight MTBF	50,000 hr			50,000 hr			50,000 hr
Touchscreen	Projected capacitive multi-touch/5-wire resistive			Projected capacitive multi-touch/5-wire resistive			5-wire resistive
Network (LAN)	2 x GbE (Intel I211)			Subject to mini-ITX motherboard specifications			2 x GbE (Intel I211, Intel I217LM)
IO Ports	5 x serial ports: 3 x RS-232 (by cabling), 1 x RS-232/422/485, 1 x RS-232, 4 x USB3.0 (ext.), 2 x USB2.0 (int. pin head) 1 x DP 1.3, 1 x VGA 1 x line out, 1 x mic in 1 x GPIO (8-bit) (by cabling)			4 x Reserved ports 2 x WLAN antenna ports Subject to mini-ITX motherboard specifications			5 x serial ports: 4 x RS-232, 1 x isolated RS-422/485 4 x USB 3.0 (Ext.), 2 x USB 2.0 (int. pin head) 1 x display port 1.2 1 x VGA 1 x line out, 1 x mic in
Storage	1 x 2.5" SATA bay 1 x mSATA bay			2 x 2.5" SATA bay			1 x 2.5" SATA bay 1 x mSATA bay
Expansion	1 x PCIe x4 (standard); 2 x PCI (in the accessory box) Optional: 2 x PCIe x1 1 x PCIe x1 + 1 x PCI 1 x Full-size mini PCIe or 1 x mSATA Bay			Subject to mini-ITX motherboard specifications			1 x PCIe x4 or 1 x PCI (Optional) 1 x Full-size mini PCIe
Power Input (Voltage)	100 ~ 240 V _{AC}			100 ~ 240 V _{AC}			12 ~ 30 V _{DC}
Enclosure	Front: Aluminum alloy Back: Plastic			Front: Aluminum alloy Back: Plastic			Plastic
Ingress Protection	Front panel: IP65			Front panel: IP65			Front panel: IP65
Mounting	Panel, VESA 75/100, wall, stand, ARM			Panel, VESA 75/100, wall, stand, ARM			Panel, VESA 75, wall, stand, ARM
Operating Temperature	0 ~ 50°C (32 ~ 122°F)			0 ~ 50°C (32 ~ 122°F)			0 ~ 50°C (32 ~ 122°F)
Storage Temperature	-30 ~ 60°C (-22 ~ 140°F)			-30 ~ 60°C (-22 ~ 140°F)			-40 ~ 60°C (-40 ~ 140°F)
Dimensions	391.4 x 312.5 x 103.6 mm (15.4" x 12.3" x 4.08")	437 x 357 x 107.6 mm (17.2" x 14.06" x 4.2")	454 x 379.8 x 107.5 mm (17.9" x 15" x 4.2")	391.4 x 312.5 x 103.6 mm (15.4" x 12.3" x 4.08")	437 x 357 x 107.6 mm (17.2" x 14.06" x 4.2")	454 x 379.8 x 107.5 mm (17.9" x 15" x 4.2")	325 x 253.8 x 73.8 mm (12.80" x 9.99" x 2.91")
Weight	5.03 kg	5.4 kg	5.8 kg	5.03 kg	5.4 kg	5.8 kg	3.8 kg
Certification	BSMI, CCC, CB, UL, CE, FCC Class A			CB, UL, CE, FCC classA			BSMI, CCC, CB, UL, CE, FCC Class A
Operating System	Windows 7/8.1/10, Linux			Subject to mini-ITX motherboard specifications			Windows 7/8.1/10, Linux, WEC7, WES7P