



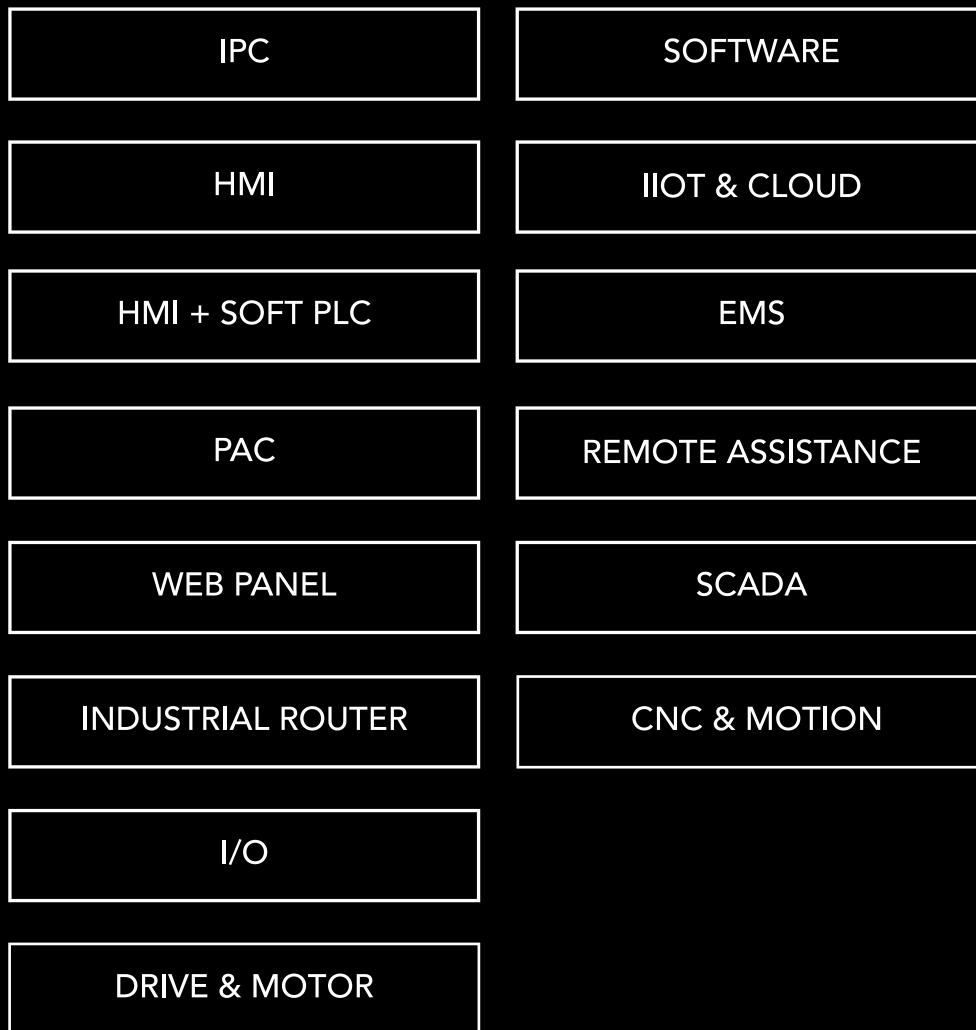
IPC

BOX & PANEL IPC

Connect ideas.
Shape solutions.

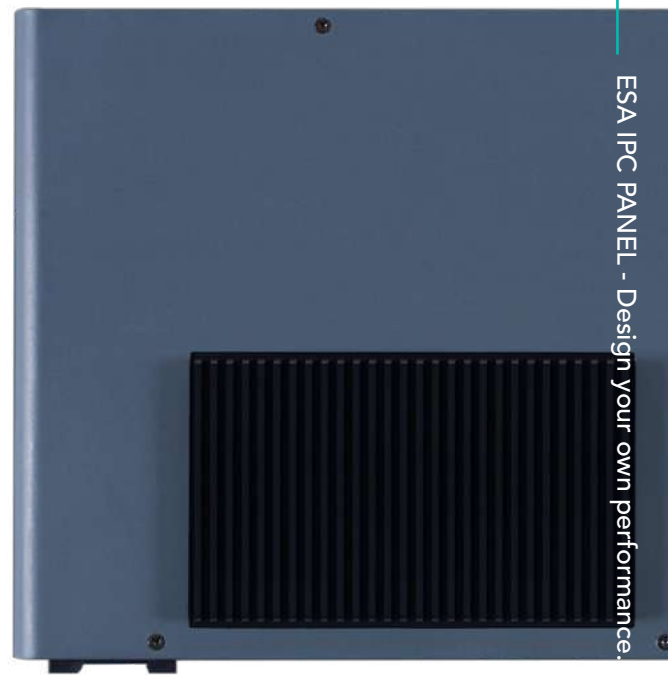
Overview

Smart Tech. Ease of Use.

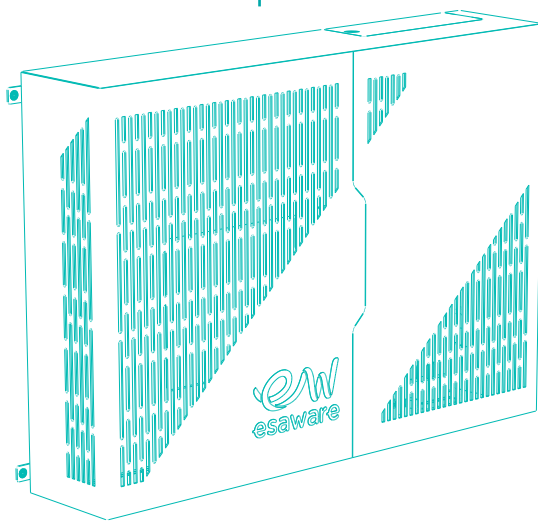




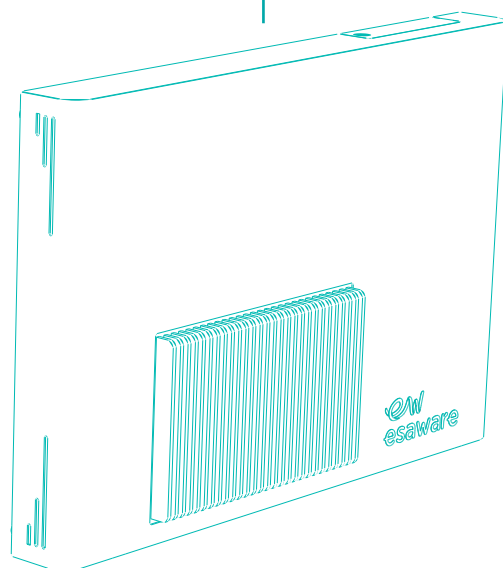
IPC Panel



IPC Panel MITX



IPC Panel SLIM



The ESA panel IPC portfolio includes configurable and all in one industrial PC series with resistive or capacitive touch screen.

Due to this extreme flexibility the product can fit perfectly the customer requirement.

The extended temperature range, fanless architecture and use of anti-vibration components are key concept that will ensure the functionality of the ESA IPC even in any extreme and harsh industrial environment.

FEATURES

- + High resolution and bright LCD available in different size
- + Extended view angle
- + Resistive or multipoint capacitive touchscreen
- + Industrial grade motherboard with multiple processor selection and fanless design
- + Extremely flexible disk drive and RAM configuration
- + RS232 – RS485 serial port

APPLICATION

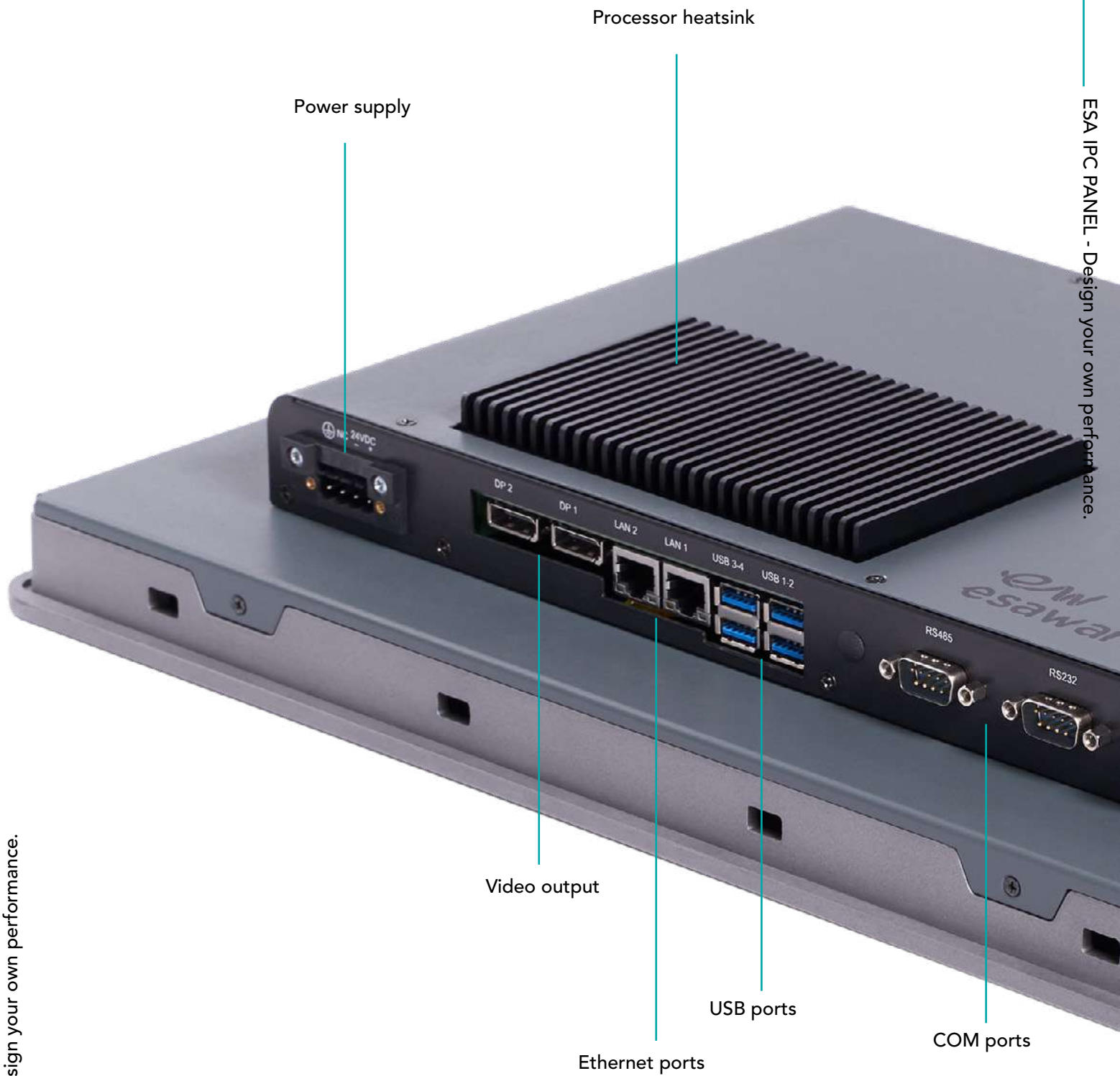
- + Packaging Machine
- + Plastic and rubber machine
- + Steel and Wood working machine
- + CNC
- + Food processing
- + Machine Robotics





IPC PANEL SLIM

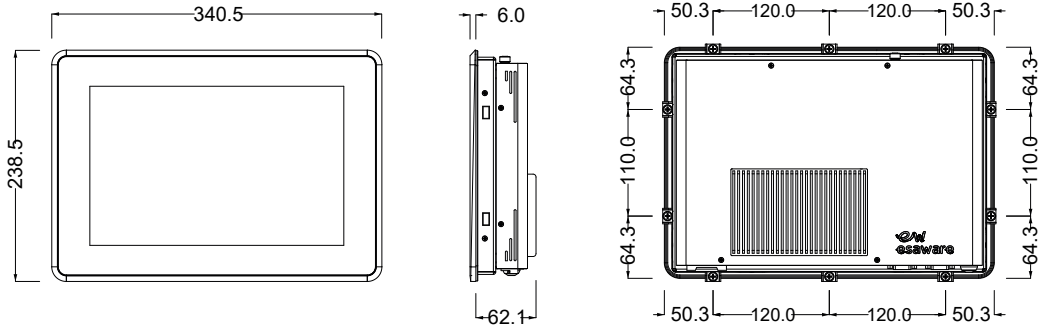
TECHNICAL SPECIFICATIONS



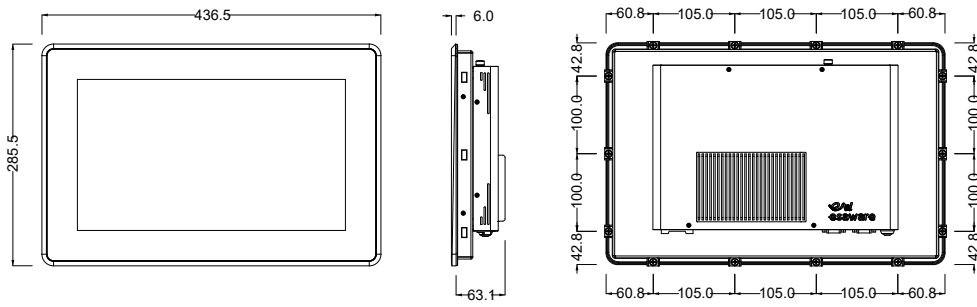
SLIM ESA IPC

The IPC SLIM ESA are compact and fanless. The ideal solution for applications that do not need slots for adding external add-on cards.

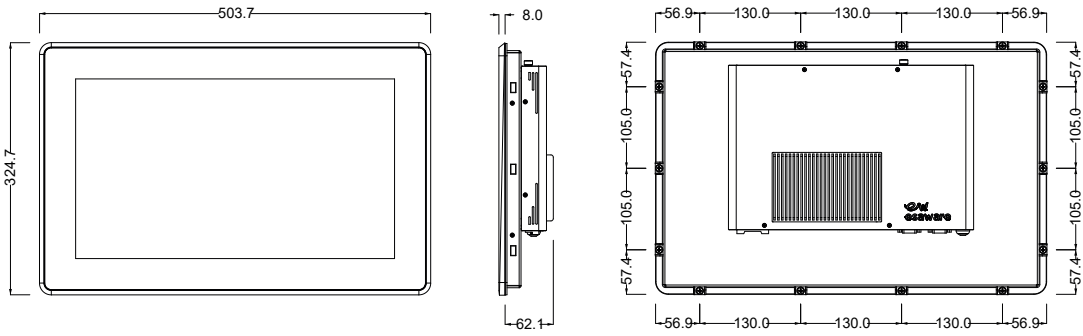
EW212 SLIM



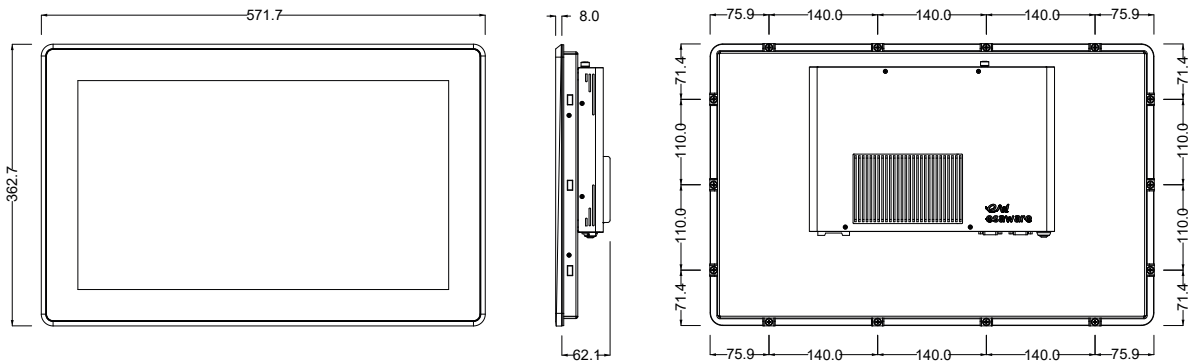
EW215 SLIM



EW218 SLIM



EW222 SLIM



Esaware Panel IPC (EW200 SLIM)

Design your own performance.

MODELLO	EW212	EW215	EW218	EW222
Display Size	12,1"	15,6"	18,5"	21,5"
Display Technology	TFT / 16,7 M			
Display Brightness (cd/m ²)	400		300	
Contrast	1000	500	1000	5000
Viewing Angle	88/88/88/88	85/85/85/85	85/85/80/80	89/89/89/89
Display Resolution (pixel)	1280X800	1366X768		1920X1080
Backlight life (hours)	50K			
Touch Technology	Resistive (5 wires) / Capacitive (PCT 10 touches)			
Bezel /Chassis	Aluminum with PTFE non-sticking coating / Sheet Steel			
CPU Fanless Celeron 4G	Celeron Quad Core J1900 2,0 GHz (2,42GHz)			
CPU Fanless Celeron 6G	Celeron Quad Core J3455E 1,5GHz (2,30 GHz) – 10W			
CPU Fanless Intel® Core™ 4G	Intel Core i3-4010U 1,7GHz / i7-4650U 1,7GHz (3,3GHz) – 15W			
CPU Fanless Intel Core 7G	Intel Core i3-7100U 2,4 GHz / i7-7600U 2,8 GHz – 15W			
Chipset	SoC			
GPU embedded Celeron J1900	HD Graphics			
GPU embedded Celeron J3455	HD Graphics 500			
GPU embedded i-core i3-4010U	HD Graphics 4400			
GPU embedded i-core i3-7100U	HD Graphics 620 – up to 1,00GHz			
GPU embedded i-core i7-4650U	HD Graphics 5000			
GPU embedded i-core i7-7600U	HD Graphics 620 – up to 1,15 GHz			
RAM (Celeron J1900/J3455E)	on board 4GB DDR3L 1066/1333MHz - dual channel /up to 8GB DDR3L 1866MHz			
RAM (Intel i-Core 4G / 7G)	up to 8GB DDR3L SODIMM 1333/1600MHz 204 pin / up to 16GB DDR4 2133/1866MHz 260 pin			
RS232 / RS485	1x RS232 + 1x RS485			
USB Port IP66 front	1x -no capacitive			
USB Ports 2.0/3.0 rear	1x 2.0 + 1x 3.0 CPU J1900/ 2x2.0 + 2x3.1 CPU J3455E 4 x 3.0 CPU Intel® Core 7G			
Ethernet Celeron J1900 / J3455E	2x 1Gb RJ45 Intel I210 / 2x1Gb RJ45 Intel I211AT			
Ethernet iCore™ i3/i7 4G/7G	2x 1Gb RJ45 Intel I210/I218 / 2x 1Gb RJ45 Intel I210AT/I219LM			
VGA/DP (Celeron J1900 / J3455E)	1x / 1x (DP passive cable required) 1 x VGA + 1 x HDMI			
DP (iCore™ i3/i7 4G / 7G)	2x (DP active cable required) / 1xVGA + 1x DP++			
RAID 0/1	2x SSD on CPU iCore / 2x mSATA on CPU J1900			
Expansion Slot (J3455E / i3 / i7 7G)	1x miniPCIe FS 1 x m.2 B 2242 1 x m.2 E 2230			
Drives externally accessible	CFast slot (option)			
Drives (internal)	HDD min. 500GB / SSD min. 32GB / mSATA min.32GB (options)			
Power Supply (Vdc)	15...36 (25W-15" basic)			
Consumption (W)	25-50			
Operating Temperature (°C)	-10 ... + 50 (non condensing)			
Storage Temperature (°C)	-20 ... + 65			
Humidity	90% (non condensing)			
External dimensions(W/H/D) (mm)	340,5x238,5x66,6(max)	436,5x285,5x66,6(max)	503,7x324,7x62,1	571,7x362,7x62,1
Cut-out dimensions (W/H) (mm)	326x227	422,5x271,5	486,5x307,5	554,5x345,5
Weight (kg)	4,5	6	8,5	10,5
Protection degree (front)	IP 66			
Certifications	CE / EN61000-6-2 / EN61000-6-4 / EN60068-2-6 / EN60068-2-6/27/30 cULus (Certificate no. E189179) / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22			
Operating Systems (32/64 bit according to CPU type)	WIN7 - WES7 - WIN8.1 - WIN10 IoT Enterprise 2016/LTSC 2019			



IPC PANEL MITX

TECHNICAL SPECIFICATIONS

Mother board I/F



COM port

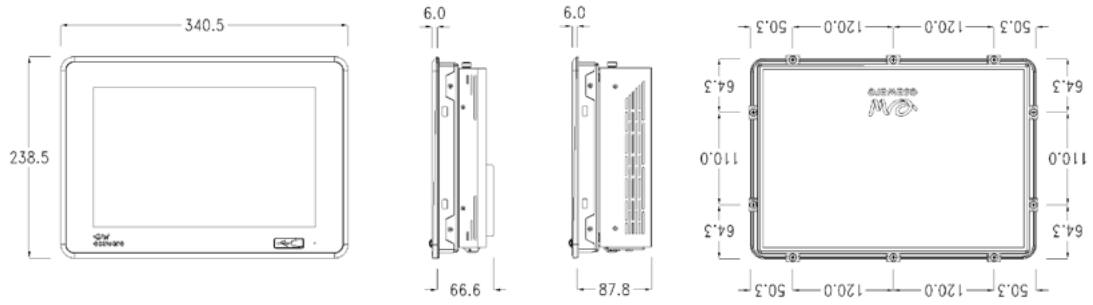
Additional add-on card slot (Optional)

Power supply

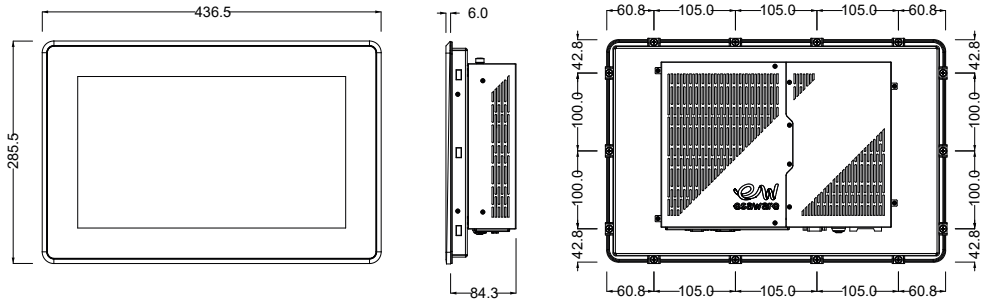
MITX ESA IPC

If your application requires an additional interface card, the MITX version optionally offers PCI or PCIe slot. Fieldbus, communication, wifi, additional video cards can be configured on the MITX IPC or installed later by the customer.

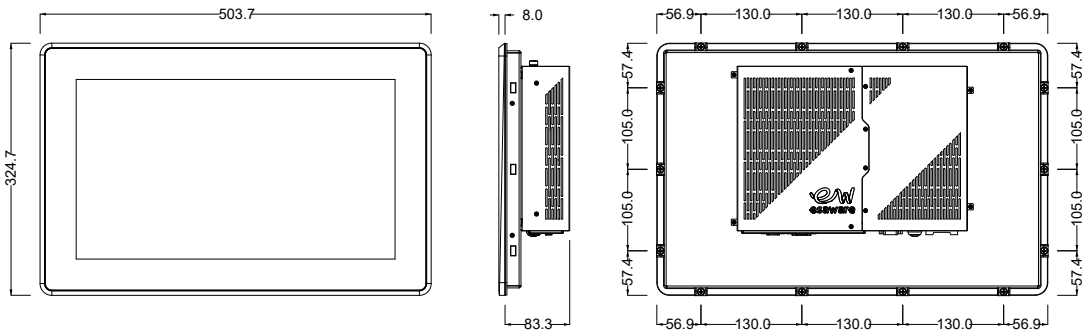
EW212 MITX



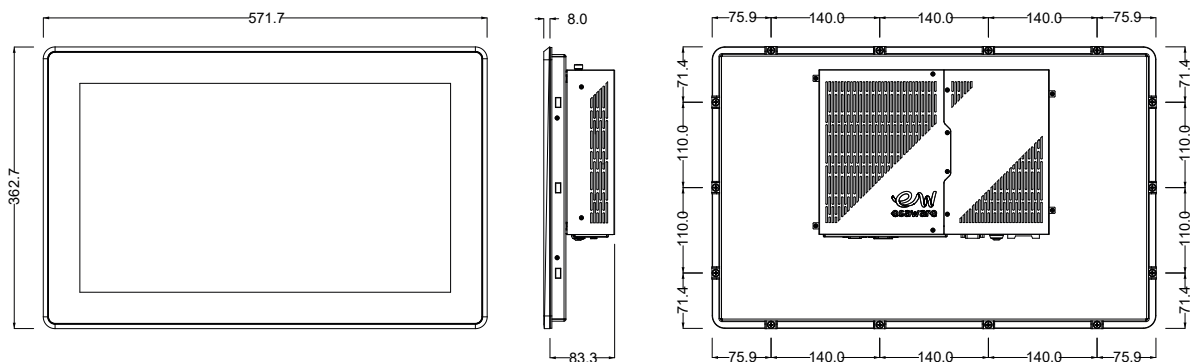
EW215 MITX



EW218 MITX



EW222 MITX



Esaware Panel IPC (EW200 MITX)

Design your own performance.

MODELLO	EW212	EW215	EW218	EW222
Display Size	12,1"	15,6"	18,5"	21,5"
Display Technology	TFT / 16,7 M			
Display Brightness (cd/m²)	400		300	
Contrast	1000	500	1000	5000
Viewing Angle	88/88/88/88	85/85/85/85	85/85/80/80	89/89/89/89
Display Resolution (pixel)	1280X800	1366X768		1920X1080
Backlight life (hours)	50K			
Touch Technology	Resistive (5 wires) / Capacitive (PCT 10 touches)			
Bezel /Chassis	Aluminum with PTFE non-sticking coating / Sheet Steel			
CPU Fanless Celeron	Celeron Quad Core J1900 2,0 GHz			
CPU Fan Intel® Core™ 3G	Intel Core i3-3120ME 2,4GHz/ i5-3610ME 2,7GHz/ i7-3610QE 2,3 GHz			
CPU Fan Intel® Core™ 6G	Intel Celeron G3900TE 2,6GHz/ Intel Core i3-6100TE 2,7GHz/ i5-6500TE 2,3GHz/ i7-6700TE 2,4 GHz			
Chipset	NM10 Atom / SoC / QM67 / Q170			
GPU embedded	GMA3650 650MHz / HD Graphics - 4000 / HD Graphics 9G 510-530			
RAM (Celeron Quad Core)	up to 8GB DDR3L SODIMM 1333MHz 204 pin			
RAM (Fan Intel® Core™) 3G	up to 16GB DDR3 SODIMM 1333/1600MHz 204 pin			
RAM (Fan Intel® Core™) 6G	up to 32GB DDR4 SODIMM 1866/2133MHz 260 pin			
RS232 / RS485	2x RS232 + 1x RS232-422-485			
USB Port IP66 front	1x -no capacitive-			
USB Ports 2.0/3.0 rear	4/0 Atom - 3/1 Celeron - 4/0 iCore™ 3G – 0/4 iCore™ 6G			
Ethernet (Celeron Quad Core)	2x 1Gb RJ45 Intel I210			
Ethernet (Fan iCore™) 3G	2x 1Gb RJ45 Intel 82579LM / Realtek RTL8111DL			
Ethernet (Fan iCore™) 6G	2x 1Gb RJ45 Intel I210AT / I219LM			
VGA/DVI-D (Celeron Quad Core)	1x / 1x			
VGA/DVI-D (Fan iCore™) 3G	1x / 1x			
DVI-D/HDMI (Fan iCore™) 6G	1x / 1x			
Audio - PS2 (no iCore 6G)	1/0 (Atom-Celeron) – 1/1 (iCore 3G)			
CFast slot	1 x external accessible slot			
Mechanical Slot (optional)	1x PCIe x1 - 1x miniPCIe - 1x PCIe x16 – 1x PCI			
Drives – RAID 0/1	HDD min. 500GB / SSD min. 32GB / CFast min. 4GB - Option			
Power Supply (Vdc)	18...30 VDC (25W-15" basic)			
Consumption (W)	25W - 65W			
Operating Temperature (°C)	-10 ... + 50 (non condensing)			
Storage Temperature (°C)	-20 ... + 65			
Humidity	90% (non condensing)			
External dimensions(W/H/D) (mm)	340,5x238,5x87, (max)	436,5x285,5x87, (max)	503,7x324,7x83,3	571,7x362,7x83,3
Cut-out dimensions (W/H) (mm)	326x227	422,5x271,5	486,5x307,5	554,5x345,5
Weight (kg)	4,5	6	8,5	10,5
Protection degree (front)	IP 66			
Certifications	CE - EN61000-6-2 / EN61000-6-4 / EN60068-2-6/27/30 cULus (Certificate no. E189179) / EAC ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22			
Operating Systems (32/64 bit according to CPU type)	WIN7 - WES7 - WIN8.1 - WIN10 IoT Enterprise LTSB 2016/ LTSC 2019			



IPC Box

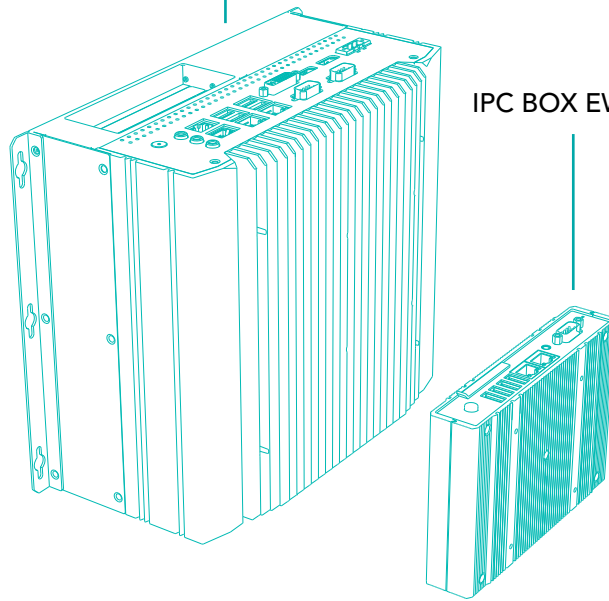
ESA IPC BOX - Rugged design. Expandable technology.

ESA IPC BOX - Rugged design. Expandable technology.



IPC BOX EW420

IPC BOX EW410



The ESA BOX PC portfolio include configurable and extremely compact industrial PC series with multiple hardware configurations.

Due to this extreme flexibility the product can fit perfectly the customer requirement.

The extended temperature range, fanless architecture and use of anti-vibration components are key concept that will ensure the functionality of the ESA IPC even in any extreme and harsh industrial environment.

Designed for Industry 4.0 and Edge computing applications.

FEATURES

- + Extreme compact size
- + Fanless architecture even with high power processor
- + Extended temperature range
- + Industrial grade mainboard with multiple processor selection
- + Extremely flexible disk drive and RAM configuration
- + Up to 4 independent ethernet ports for Industry 4.0 applications
- + RS232 – RS485 serial port

APPLICATION

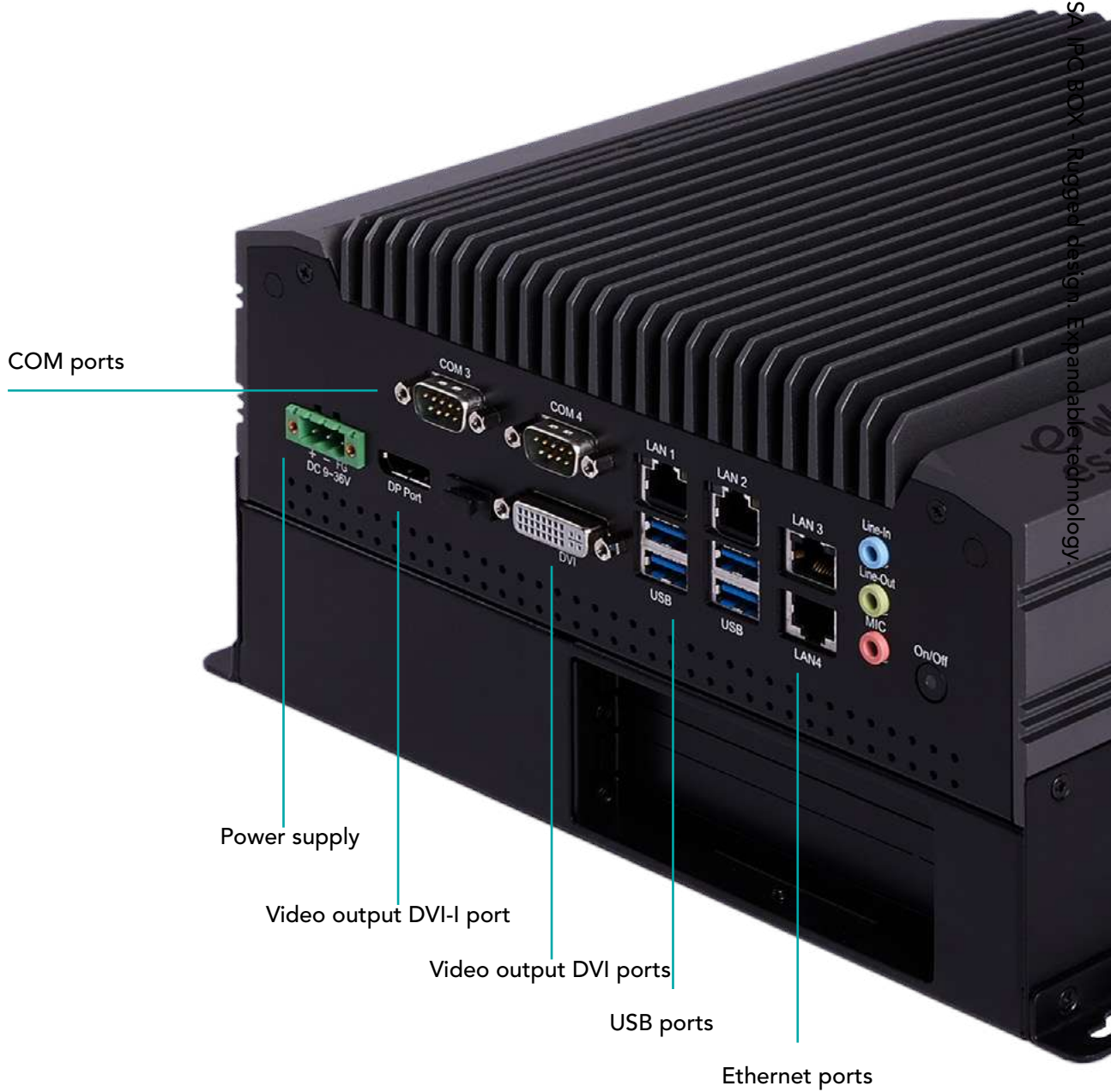
- + Packaging Machine
- + Plastic and rubber machine
- + Steel and Wood CNC
- + Food processing Machine Robotics
- + Industry 4.0 edge computing





IPC BOX 420

TECHNICAL SPECIFICATIONS

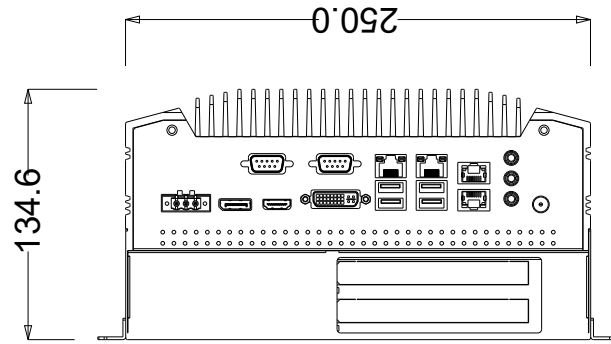
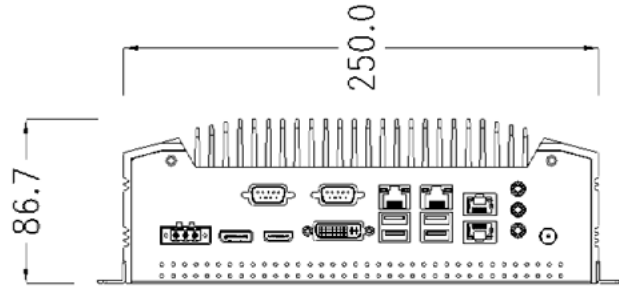
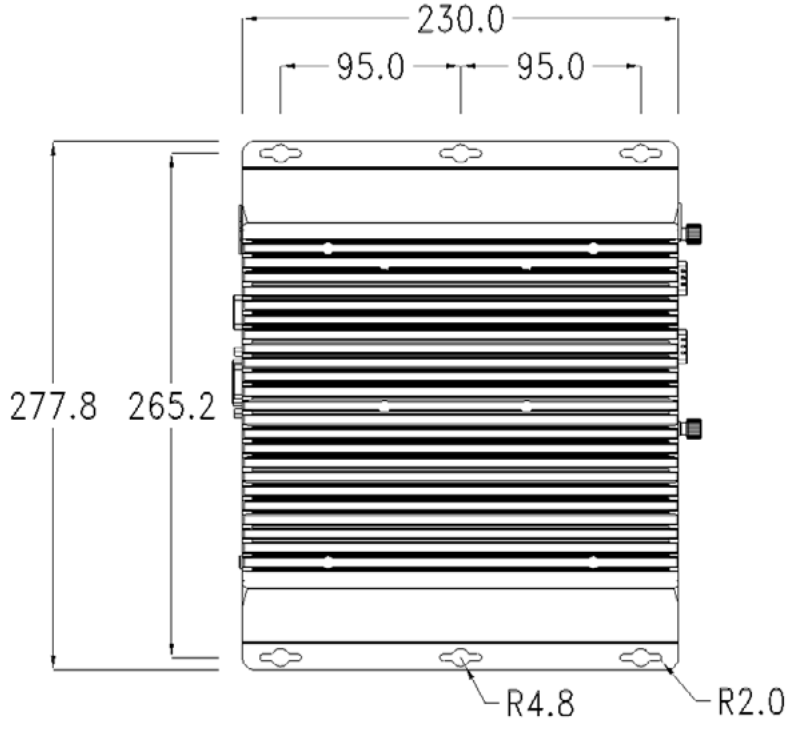


EW420 High performance box IPC box PC

High performance box industrial PC with fanless design and extended temperature range.

Ideal for industry 4.0 and edge computing applications. Flexible configuration both in term of processor, RAM and disk drive.

PCIe slots optionally available for add-on cards. (ETH,wifi,RS232/485,video cards).



2 x PCIe

EW420

Rugged design.

MODELLO	EW420
Heavy duty steel chassis	Selection ATX/APO via BIOS LED green on/off On/Off push-button LED red HDD Lockable industrial power connector Aluminium Heat-sink
CPU Fanless	Core i7-6700TE Quad Core 2,4 GHz Fanless Core i5-6500TE Quad Core 2,3 GHz Fanless Core i3-6100TE Dual Core 2,4 GHz Fanless Celeron G3900TE Dual Core 2,4 GHz Fanless
Chipset	H170 DMI 8GT/s
GPU embedded	HD Graphics 530 CPU icore HD Graphics 510 CPU Celeron
RAM	RAM up to 32GB DDR4 SODIMM 260-pin 2133 MHz
I/F	2 x RS232/422/485 Sub-D 9 pin 2 x RS232 Sub-D 9 pin 4 x USB ver. 3.0 + 2x ver- 2.0 4 x Ethernet 1Gbit RJ45 - Intel 82574L 1 x DP port + 1 x DVI-I + 1 x HDMI 1 x Line In-Out / Mic In 3 x MiniPCIe slot FS (one mSATA) 1 x connector GPIO 8bit 4DI/4DO
Drives (options)	2x HDD (min. 500GB) /SSD (min 64GB) on extractable drawer(s) RAID 0-1 [optional]
Mechanical slot (opt.)	2 x slot (PCIe x1)
Operating Temperature (°C)	0... +50 (non condensing)
Storage Temperature (°C)	-40 ... +85
Humidity	< 90% (non condensing)
Weight (kg)	4,5/5,5 (0/2 slot ver.)
Power supply (Vdc)	9...36
Power consumption (24 Vdc – basic config – NO PCI CARDS) (W)	55 (i7-4GB+HDD) max 56,3 without PCI 60,4 with PCI
Dimensions (W/H/D) (mm)	280x230x87 / 280x230x135 (0-2 slot ver.)
Operating system (32/64 bit according to CPU type)	WIN7 – WES7 – WIN 8.1 – WIN 10 IoT Enterprise LTSB 2016 / LTSC 2019
Protection degree	IP 20
Certifications	CE / EN61000-6-2 / EN61000-6-4 / EAC



IPC BOX 410

TECHNICAL SPECIFICATIONS

COM port

Ethernet ports

USB ports

on/off switch

on/off switch

Ethernet ports

USB port

COM ports



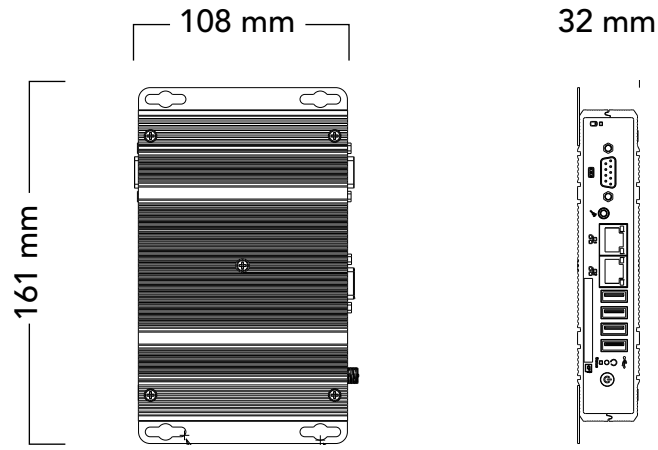
EW410 extreme compact box IPC

Extreme compact box industrial PC with fanless design and extended temperature range.

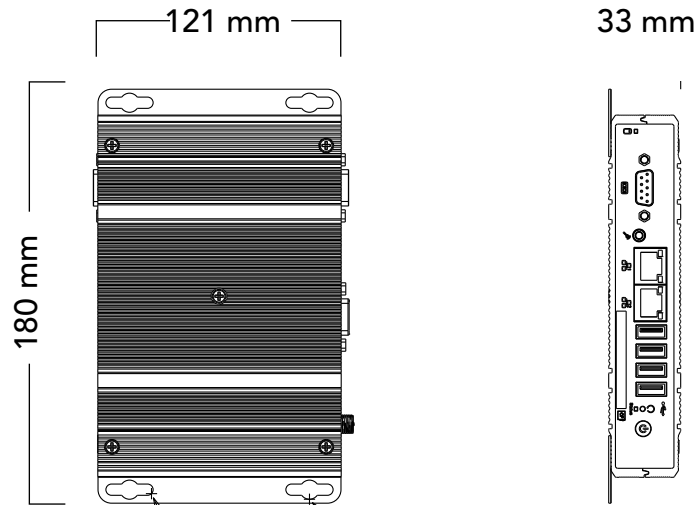
Ideal for industry 4.0 and edge computing applications. Flexible configuration both in term of processor, RAM and disk drive.

Dimensions

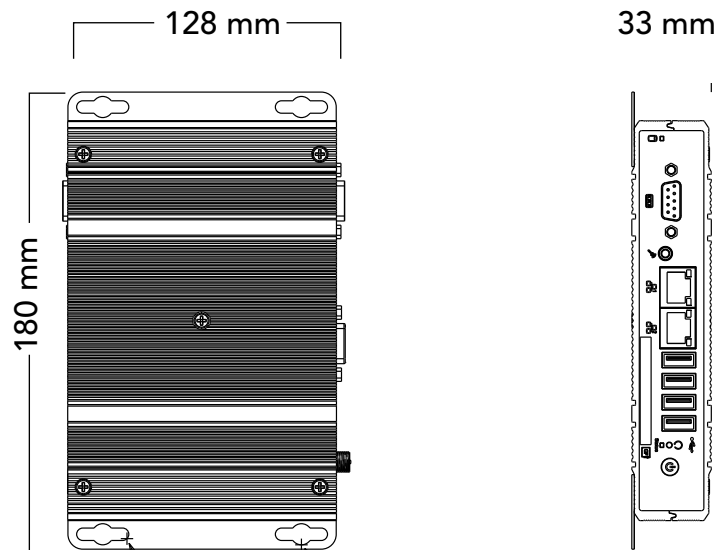
BOX - EW410NF2



BOX - EW410NF6



BOX - EW410NF7



Esaware EW410 Box IPC

Compact design. Multi-connectivity.

	EW410NF6	EW410NF2
Aluminum Enclosure	Heavy alu extrusion chassis Aluminum heat-sink Selection ATX/APO via Bios LED green on/off On/Off push-button LED blue HDD Lockable power connector Wall/VESA/DIN rail – mounting options	Heavy alu extrusion chassis Aluminum heat-sink Selection ATX/APO via Bios LED green on/off On/Off push-button LED blue HDD Lockable power connector Wall/VESA/DIN rail – mounting options
CPU Fanless	Celeron Quad Core J1900 2,00 GHz	Atom Dual Core D2550 1,86 GHz
Chipset	SoC	NM10 DMI 2,5GT/s
GPU embedded	HD Graphics Resolution 1920 x 1080 DVI Resolution 2560 x 1600 VGA	GMA3650 Resolution 1920 x 1080 DVI/VGA
RAM	4GB DDR3L 1066 MHz on board	2GB DD3 1066MHz on board
I/F	2 x RS232/422/485 Sub-D 9 pin 1 x RS232/422/485 8-bit DIO 9 pin 4 x USB ver. 2.0 1 x USB ver. 3.0 1 x DVI-I 4 x Ethernet 1 Gbit RJ45 – Intel I210 2 x miniPCIe slot (1x mSATA) 1 x SIM slot (RS485 Auto Direct Control)	2 x RS232/422/485 Sub-D 9 pin 4 x USB ver. 2.0 2 x Ethernet 1 Gbit RJ45 – Intel 82574L 3 x miniPCIe slot (1x mSATA) 1 x DVI-I 1 x Line Out / Mic In 1 x CFast slot external access 1 x SIM slot (RS485 Auto Direct Control)
Drives options	mSATA/SSD/HDD	CFast/mSATA
Operating Temperature (°C)	0 ... + 60 (non condensing)	
Storage Temperature (°C)	-20 ... +80	
Humidity	< 85% (non condensing)	
Weight (kg)	0,8	0,7
Power supply (Vdc)	9...36 max 20W	9...26 max 20W
Dimensions (W/H/D) (mm)	180 x 121 x 33	161 x 108 x 32
Operating system (32/64 bit according to CPU type)	WIN7 – WES7 – WIN8.1 – WIN10 – UBUNTU 14	XPpro – WIN7 – WES7 – WE2009 – UBUNTU 12
Protection degree	IP 20	
Certifications	CE / EN61000-6-2 / EN61000-6-4 / EAC	

	EW410NF7
Enclosure	Heavy alu extrusion chassis Alluminium heat-sink 1x power led 1x Status led Lockable power connector Wall/VESA/DIN Rail Mounting option
J3455E	I/F expansion 1x mSATA FS 1x mPCIe FS 1x M.2 (2230E) 1x SIM socket - nano -
CPU Fanless	Intel J3455E, 2M Cache, 1.5GHz (2.3 GHz)
Chipset	SoC
Embedded GPU	HDMI: resolution up to 3840x2160 DP: resolution up to 4096 x 2160 VGA: resolution up to 1920 x 1200
RAM	DDR3L 8GB SO-D SO-DIMM 1866 MHz
I/F	Serial: 2 x RS232/485 (DB9) Display: 1 x VGA - 1 x DP/HDMI combo Buttons: 1xPower - 1xReset Wi-Fi / 3G : Antenna 3 x Antenna Holes Ethernet: 4x I210IT x Gbe LAN (RJ45) USB: 2 x 3.0 Serial: 2 x RS232/RS422/RS485 (DB9) Expansion 1x mSATA FS 1x mPCIe FS 1x M.2 (2230E) 1x SIM slot - nano -
Drives options	SATA 3.0 : SSD or HDD 2.5"
Operating system	WIN10 IoT enterprise LTSC 2019 64bit Linux support
Operating temperature (°C)	-20 +60
Storage temperature (°C)	-40..+85
Humidity	< 95% (non condensing)
Weight (kg)	0,7
Power supply	9 ~ 36 VDC
Dimensions (WxHxD)	180mm x 128mm x 33mm
Protection degree	IP20
Certifications	CE / EN 61000-6-2 / EN 61000-6-4 , FCC class A / UL in progress

IPC Accessories

PCIe 3CAN	additional CAN ports for realtime applications based on INTIME technology
XCFINDSLC	industrial compact flash different size
XCFASTINDSLC	industrial CFast different size
ESAKVMRECEIVER	KVM receiver module
ESAKVMTRANSMITTER	KVM transmitter module
XACCPE0KBTS00	On screen keyboard
EWUPS00000000BK	UPS DC-DC 24V / Lithion battery / Smart SW



ERGO

All in one platform solution

Connect
ideas.
Shape
solutions.

Overview Configuration



- 1. IPC
- 2. HMI+SOFTLPC
- 3. HMI
- 4. WEBPANEL
- 5. MONITOR
- 6. CUSTOM BUTTON SLOTS

- 1. KEYBOARD TOUCH
- 2. HMI+SOFTPLC
- 3. WEB PANEL
- 4. CUSTOM KEYBOARD

KVM OPTION



RFID option

USB

- 1. IPC
- 2. HMI+SOFTLPC
- 3. HMI
- 4. WEBPANEL
- 5. MONITOR

ERGO is the new all-in-one machine control system by ESA. A solution designed to deliver the highest level of flexibility, ergonomics and customization. With a true flat projected capacitive multi-touch screen and a 21.5" million colors TFT display, it offers a very wide choice of configurations and customizable options, including buttons, touch keypads and even an additional 12.1" HMI. In order to maximize productivity, ERGO comes into two true flat versions: classical and 120° ergonomic. Finally, thanks to its rough design and easy installing system, it can be installed in any work environment (even the harshest ones), both in landscape and in portrait mode.

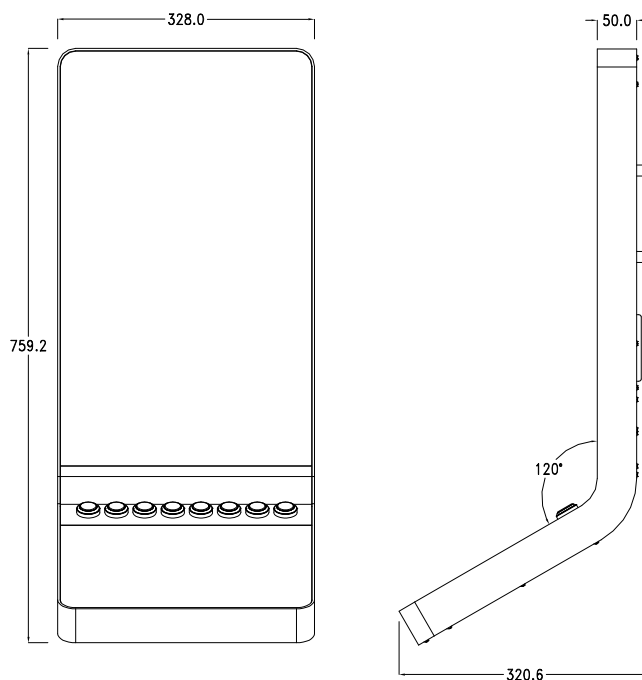
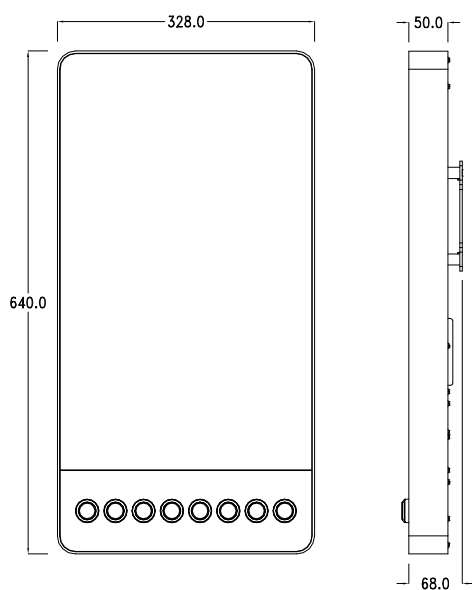
APPLICATION

- + Packaging Machine
- + Plastic and rubber machine
- + Steel and Wood working machine
- + CNC
- + Food processing machine
- + Robotics

FEATURES

- + Industrial Personal Computer All-in-One arm mounted
- + LCD 21.5" wide
- + Resolution 1920x1080
- + LED backlight 50 K/h
- + 16.7M colors
- + Mounting horizontal VESA 100
- + P-CAP Touch screen
- + CPU Intel® Core™ i3-4010U Dual Core 1.7GHz SoC, Fanless
- + 2x miniPCIe slots on the motherboard (mPCIe/mSATA cards)
- + RAM memory 8 GB DDR3L SO-DIMM 204 PIN 1333/1600 MHz single channel

- + SSD 256 GB SATA 2.5"
- + 1 serial port RS232
- + 4 USB (3.0) on the back , 1 on the front
- + 2 DP video ports (DP active cable required)
- + 2 Ethernet ports 10/100/1000 Mbps RJ45 - Intel I210 / I218
- + Power supply 24 VDC
- + Protection degree IP65
- + Operating Temperature 0...50°C
- + Storage Temperature -20...+65°C
- + Humidity 85% no condensing



Front view

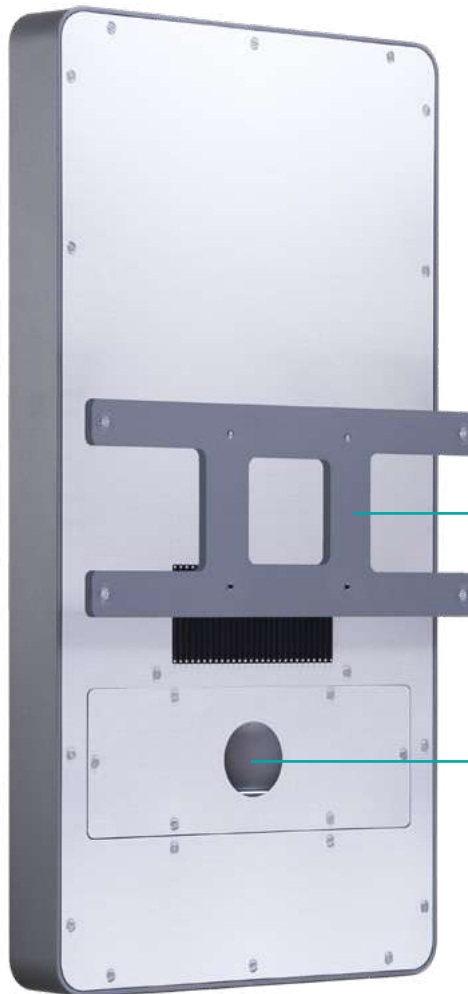
Back view

LCD 21.5" Touch
1920 x 1080



VESA arm
attachment

Compatible with
any cable gland
(\varnothing 42mm/ IP69K)



Portrait Configuration

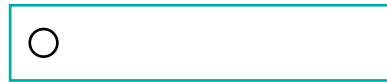


Landscape Configuration





1 button of your choice + RFID



Empty slots



Custom button slots



1 button emergency



7 button slots + 1 emergency



Many options for different users

Thanks to its high level of configurability, ERGO perfectly embodies the new concept of human-machine interface 4.0. The device is equipped with a flat capacitive multi-touch screen and a 21.5" TFT display.

RFID option

1 button of your choice





Empty slots



Custom button slots



1 button emergency

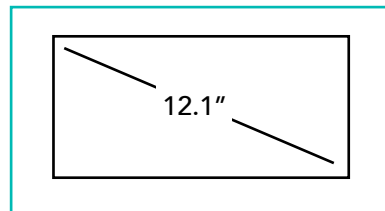


7 button slots + 1 emergency

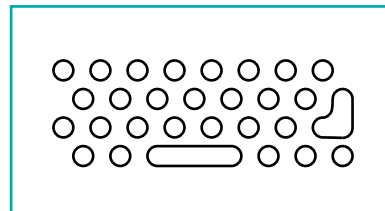


+

Display LCD touch 12.1"



Full QWERTY Keyboard



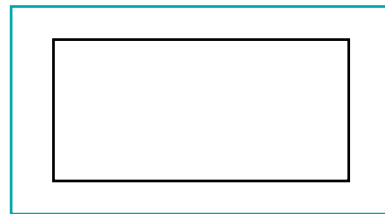
Many options for different users

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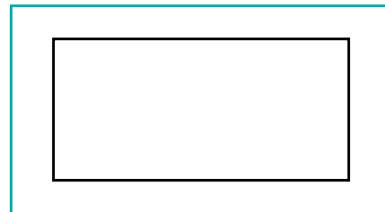
It also gives the user a choice of numerous configuration options, including a dual 12.1" visual area, touch keyboards and additional buttons.



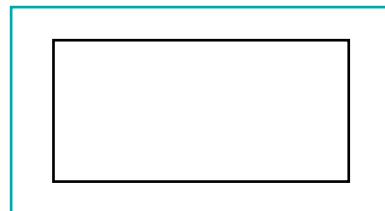
WEB PANEL



HMI



HMI+SOFTPLC



ERGO with Integrated HMI solution.

All in one product that do combine the flexibility of an industrial PC with the real time performance of a powerful HMI with integrated softPLC, motion and Ethercat master fieldbus.

Main 21.5" display with capacitive touch screen.

PC based applications.

Scada, data collection and analisys, web based applications.

Additional 12.1" display with capacitive touch.

Powerful HMI with more than 100 communication drivers.

Integrated real time soft PLC based on the IEC 61131 standard.

ESA Softmotion function blocks based on the PLCOpen standard.

Ethercat master stack for real time communication with remote I/O and drives.

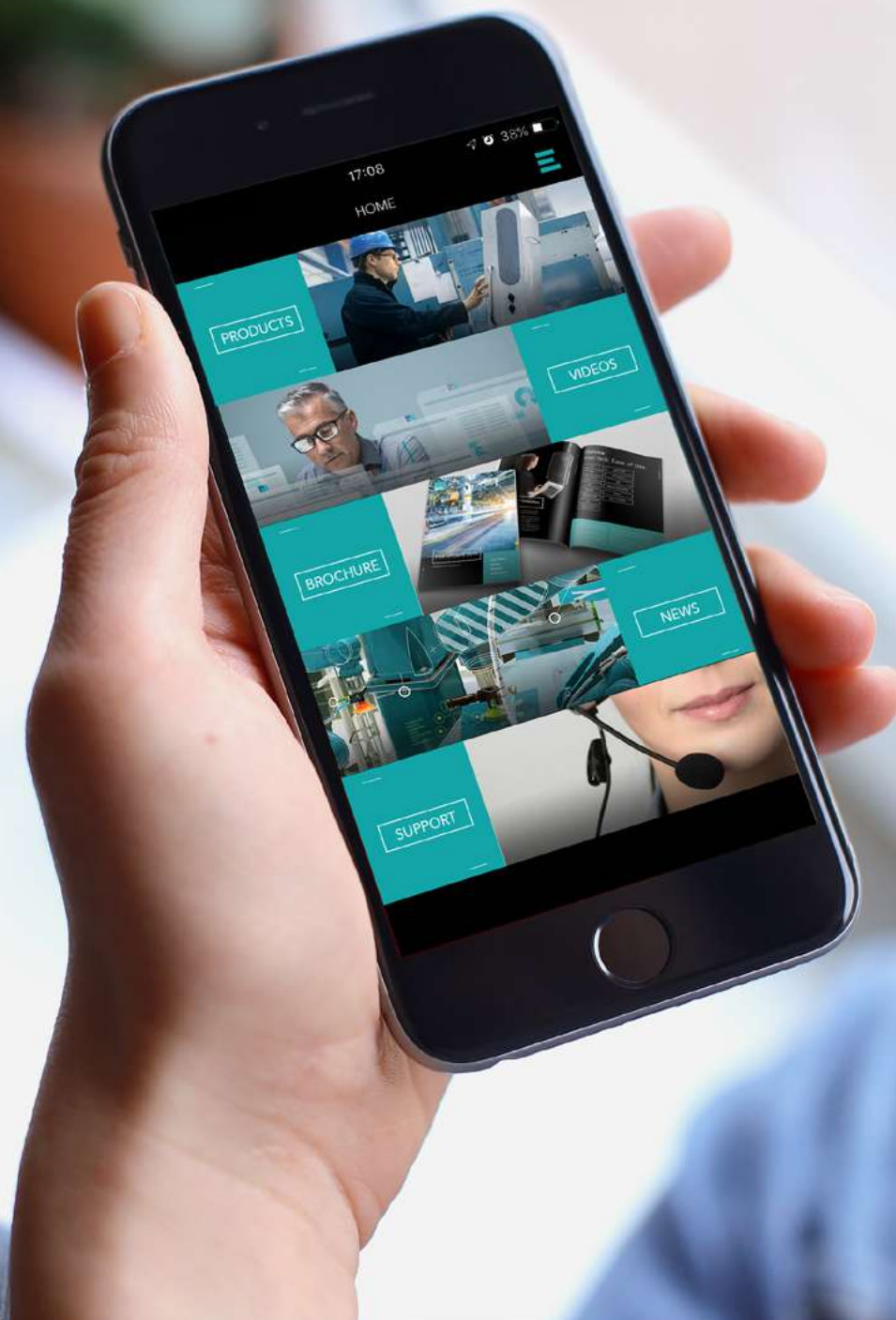


ERGO

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS (MORE CONFIGURATIONS AVAILABLE ONLINE ON OUR WEB TOOL CONFIGURATOR)

MODEL	Embedded ARM ERGO122	PC Control ERGO222	Monitor ERGO322
Versions	- Touch Capacitive - Full Glass	- Touch Capacitive - Full Glass - Dual Touch Capacitive 120° + Keyboard Touch - Dual Touch Capacitive 120° + 12" HMI Touch"	- Touch Capacitive - Full Glass - Dual Touch Capacitive 120° + Keyboard Touch - Dual Touch Capacitive 120° + 12" HMI Touch"
General			
Bezel /Chassis	Aluminum /Sheet Steel	Aluminum /Sheet Steel	Aluminum /Sheet Steel
Mounting	Portrait Landscape	Portrait Landscape	Portrait Landscape
	VESA 100	VESA 100	VESA 100
Power Supply (Vdc)	12...32 VDC	15...36 VDC	18...30 VDC
Consumption (W)	24W for ARM base+ 24W for display keyboard (if any)	45 - 50 W for PC base + 24W for display keyboard (if any)	40W for monitor + 24W for display keyboard (if any)
Operating Temperature (°C)	-10 ... + 50 (non condensing)	-10 ... + 50 (non condensing)	-10 ... + 50 (non condensing)
Storage Temperature (°C)	-20 ... + 65	-20 ... + 65	-20 ... + 65
Humidity	90% (non condensing)	90% (non condensing)	90% (non condensing)
Protection degree (all)	IP65	IP65	IP65
Certifications	CE / UL	CE / UL	CE / UL
Display Size 1	21.5" true flat multi-touch screen	21.5" true flat multi-touch screen	21.5" true flat multi-touch screen
Display Technology	TFT / 16,7 M colors / LED backlight	TFT / 16,7 M colors / LED backlight	TFT / 16,7 M colors/ LED backlight
Display Brightness (cd/m²)	300	300	300
Contrast	5000:1	5000:1	5000:1
Viewing Angle H-V	89/89/89/89	89/89/89/89	89/89/89/89
Display Resolution (pixel)	1920x1080	1920x1080	1920x1080
Backlight life (hours)	50K	50K	50K
Touch Technology	Capacitive	Capacitive	Capacitive
Video input			DVI + VGA
Operating systems	Linux	Windows7 - Windows10 - WES7	
CPU Fanless Celeron 4G	Quad Core i.MX6 1.2 GHz Cortex A9 Linux	Celeron quad core J1900 2,0 GHz (2,42GHz) – 10W	
CPU Fanless Intel® Core™ 4G		Intel Core i3-4010U 1,7GHz / i7-4650U 1,7GHz (3,3GHz) – 15W	
RAM	2 GB		
FLASH	8 GB		
LAN	LAN 1xGb RJ45 - 1x10/100Gb RJ45		
RAM (Celeron quad core)		on board 4GB DDR3L 1066/1333MHz - dual channel -	
RAM (Fanless Intel® Core™)		up to 8GB DDR3L SODIMM 1333/1600MHz 204 pin -single channel-	
RS232 / RS485	1x RS232/RS485	1x RS232 + 1x RS485	
USB Ports 2.0/3.0 rear	2x 2.0	1x 2.0 + 1x 3.0 cpu J1900 / 4x 3.0 cpu Intel®Core™	1x USB 2.0 type A – rear 1x USB type B
Ethernet Celeron J1900		2x 1Gb RJ45 Intel I210	
Ethernet i-Core™ i3/i7		2x 1Gb RJ45 Intel I210/I218	
VGA/DP (Celeron J1900)		1x / 1x (DP passive cable required)	
DP (i-Core™ i3/i7)		2x (DP active cable required)	
RAID 0/1		2x SSD on cpu i-core	
Drives (internal)		HDD min. 500GB / SSD min. 64GB / mSATA min.32GB (options)	
Display Size 2 (only on dual Touch)	-	12.1" true flat multi-touch screen	12.1" true flat multi-touch screen
Display Technology		TFT / 16,7 M colors / LED backlight	TFT / 16,7 M colors/ LED backlight
Display Brightness (cd/m²)		400	400
Contrast		800:1	800:1
Viewing Angle H-V		80/80/65/80	80/80/65/80
Display Resolution (pixel)		1920x1080	1920x1080
Backlight life (hours)		50k	50K
Touch Technology		Capacitive	Capacitive
Operating systems		Linux WEC7	Linux WEC7
Keyboard Extension HMI Extension	-	HTML5 Web Browser + Touch keyboard	HTML5 Web Browser + Touch keyboard
	-	"Capacitive HMI 12,1" + 2 Ethernet port 10/100 Mbps RJ45, + Crew + Everyware + Codesys + Esa Motion Function Blocks Library"	"Capacitive HMI 12,1" + 2 Ethernet port 10/100 Mbps RJ45, + Crew + Everyware + Codesys + Esa Motion Function Blocks Library"
Push button extension	up to 8 x 22 mm standard push-buttons, switches, emergency button, USB, RFID etc.	up to 8 x 22 mm standard push-buttons, switches, emergency button, USB, RFID etc.	up to 8 x 22 mm standard push-buttons, switches, emergency button, USB, RFID etc.



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