# ESA AUTOMATION

**Connect ideas. Shape solutions.**

MOTORS

# The Heart of Automation
## and The Art of Innovation

The face of industrial automation is transforming and by making your job easier and ensuring a better future for our industry, ESA Automation remains one of the primary driving forces in this positive change.

For ESA Automation, sustainability and technology can not only coexist, but they can merge, contribute to each other and evolve into something better. We create solutions, not just products, Innovation that will optimize every process, according to our values of dynamism, flexibility and openness.

At ESA Automation, we believe in a boundaryless organization, where technology helps you achieve any goal, with this aim in mind, we develop autonomous, open solutions that require minimum input and that reflect the pioneering principles of the Industry 4.0.

We've been working hard to simplify your job with well-designed, smart products, in line with the Internet of Things (IoT) and the Internet of Services (IoS) principles. Products that offer state-of-the-art technology for the best value for money with professional customer care service and on time worldwide delivery.
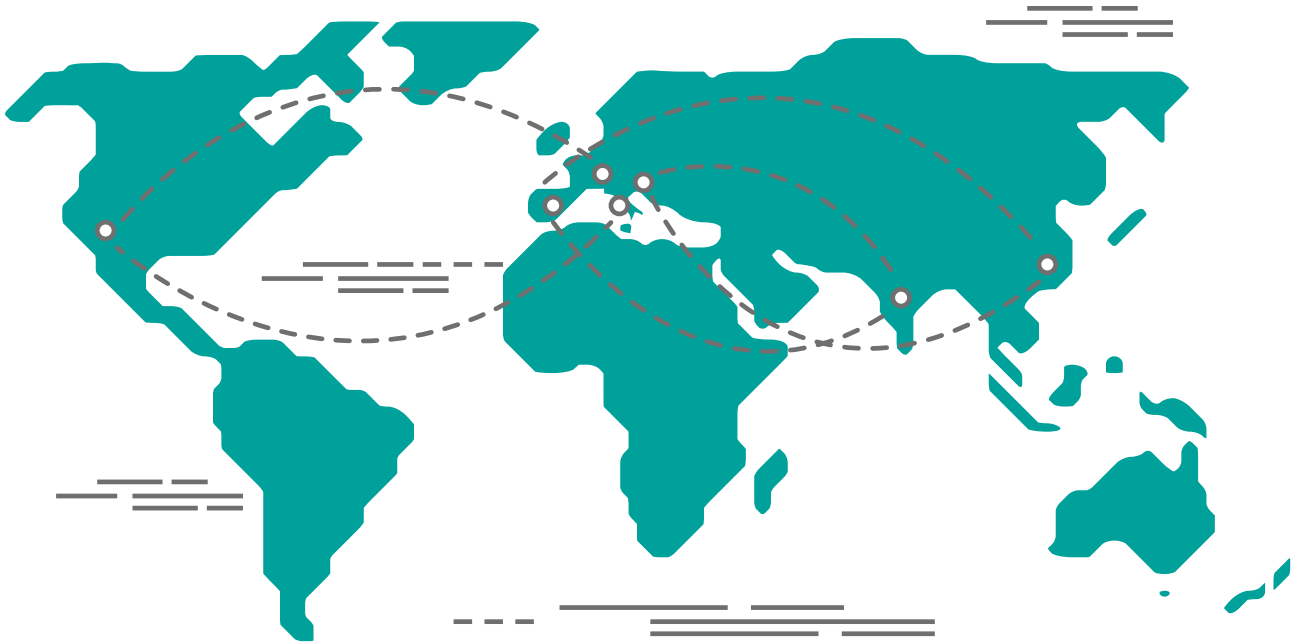
# Borderless innovation
## Join our international community

Since starting our activities in 1975, ESA Automation has maintained its goal: to provide innovative solutions for industrial automation. Today, we have grown to become a multinational and multicultural ethical company with branches in seven countries, and our mission belief is stronger than ever.

We have created an international community, with clients, suppliers, researchers, engineers and stakeholders that share the same passion for innovation and an outstanding ability to create value. We have satisfied industries ever demanding needs for better solutions by expanding and developing into new fields. Together we can work to create a new and better approach to production and industrial automation, and create sustainability through efficiency.

# Overview
Smart Tech. Ease of Use.
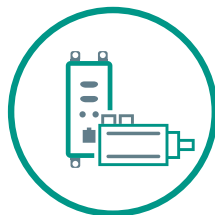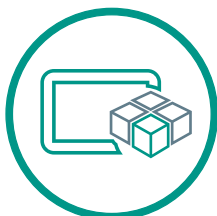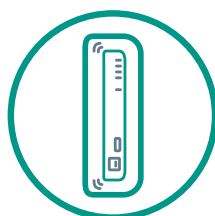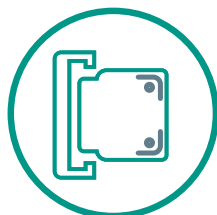
**Make your experience more interactive.**
Explore the world of ESA Automation

# CREW
## Our platform. Your touch.

Crew is the innovative ESA Automation software SCADA that allows you to program any HMI or PC.

The Crew suite consists of an intuitive editor with a modern look and feel, and  the Runtime component  is completely cross-platform. In fact, the Runtime can be displayed both on embedded and open platforms, such as any PC. But Crew is even more versatile: you can also display project pages on mobile devices like smartphones or tablets, thanks to full compatibility with HTML5 technology.

Crew is compatible with the following operating systems:
• Windows XP Pro Service Pack 3
• Windows 7 all versions (32/64 bit)
• Windows 8.1 all versions (32/64 bit)
• Windows 10 all versions (32/64 bit)
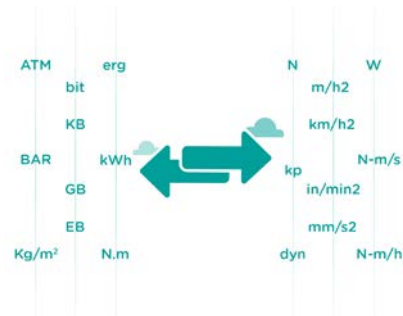
### Unit of measure converter
The unit of measure conversion let you develop one single project regardless of the measurement system in use. It is also possible to dynamically convert the displayed Runtime values according to the default or custom available tables.
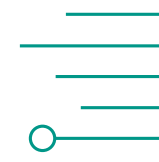
## Scheduler

Thanks to the new Scheduler feature, you can schedule events and associate them to specific actions. The events can be selected from a list where you can find single events or multiple recurrent events.
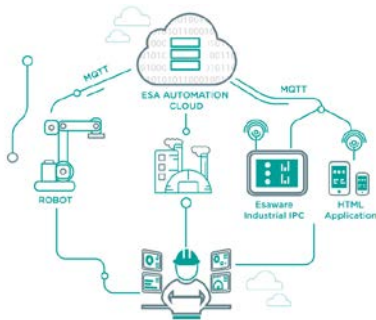
## Data export to ESA Automation Cloud with MQTT protocol

Any device programmed using our Crew SCADA can export data to the ESA Automation Cloud platform with standard MQTT protocol.

## SMS and Email

With Crew, you can easily send SMS and emails for any event occurred in Runtime.

In this way, when something happens in your plant you are immediately notified. In fact, you can receive Production Data Report because Crew allows you to send email with attachments. Users can easily configure SMS and email notifications just adding mobile numbers and email addresses.

Crew allows you to differentiate recipients as addressee, cc or bcc, just like any other email service software. There is also the possibility to send emails and SMS to users that are not listed in the project.

## Database Functionality

Thanks to Crew you can connect to any kind of database and storing data inside it. Any kind of data recovered in Runtime can be stored such as recipes, alarms or trends. It is possible storing single tags and address them directly to the correspondent database table.

Database has a bidirectional connectivity. This allows you to directly read database tables and directly consult data recovered in Runtime, making the historical records' search easy.

Database connectivity is available for both ARM and X86 platforms.

## Crew puts safety first

Crew Runtime conforms to the FDA directives, including the CFR21-part 11 about Food and Drugs, and make it very easy to develop applications in compliance with these regulations. Users can also trace, record and authorize all Runtime activities, for example using an electronic signature.

FDA mandatory password change upon first login: more FDA standards traceability offers the optional possibility to change the password during the first login on Runtime.

## Crew is also App

Crew App has been designed to control your plants from any mobile device, such as smartphones and tablets. Our native app works with a one-hand free logic and together with the read only and editing mode, it makes the usage of any smartphone or tablet much easier.

## Dynamic filters in Runtime

By long-pressing with your finger on the column heading of any view, you can add a dynamic content search filter in an easy and intuitive way. This functionality is very important for maintenance departments. You can find this kind of filters in the Alarm Viewer, Datalog Viewer, Recipe Viewer and the User Viewer.

**EW100 HMI**    **EW100 HMI**

**EW200 IPC**    **EW200 IPC**
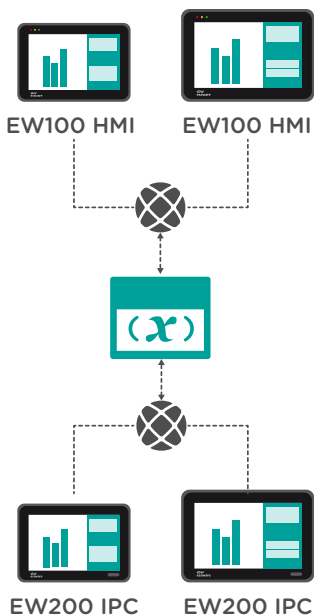
## HMI and IPC network project

Create your own network of HMIs and IPCs with a Master/Slave architecture, in order to share all variables and data through a network among all connected devices.

## Data structure management and array of structure

Crew let you manage and import structures and arrays. Therefore, you can create project variables that point to the elements of the structure.

**HMI / PC**
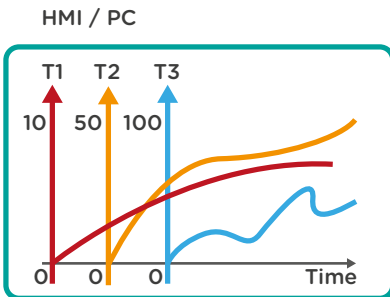
## Visualization and comparison of historical trends in Runtime

Once exported trends from Runtime viewing, it is possible importing them again and making comparisons between different historical traces captured in different intervals.

**HMI / PC**

## Multi-scale visualization on objects trends in Runtime

For an easy consultation, it is possible viewing at the same time the scales of different pens acquired in trends viewing.
It is also possible to have directly autoamatic adjustment of scales.

**HMI / PC**
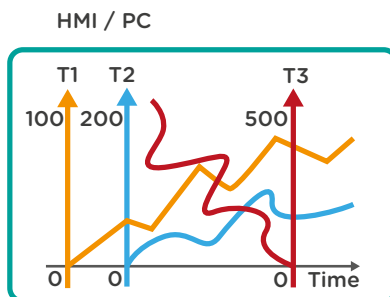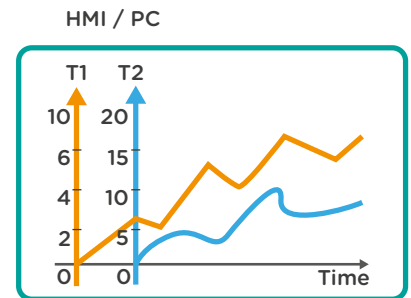
## Management of multi scale position on trend objects

For an easy readability it is possible to decide the scale position of each pen inside the trend viewing.

## User language

With Crew you have the possibilities to relate the visualization language to the logged user.

With this functionalities it is very easy to manage different users with different languages.
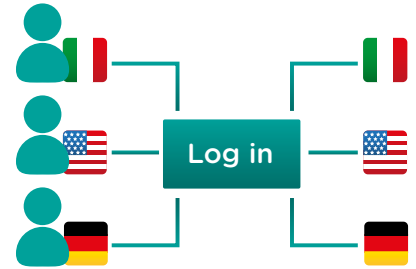
## Simulation

With Crew it is possible to simulate your project and your application without driver.

Inside we have integrated for you Simulation Offline and Simulation Online functionalities.

online simulation

ETH

PLC

offline simulation

## Users from Windows

If your project is inside of the domain network, you are able to import the Users of the project directly from Active Directory of Windows.

User 1
Psw 1
User 2
Psw 2

IPC

User 1
Psw 1
User 2
Psw 2

IPC

ETH

ETH

Windows Server

**Active Directory**
User 1  Psw 1
User 2  Psw 2

SOFTWARE
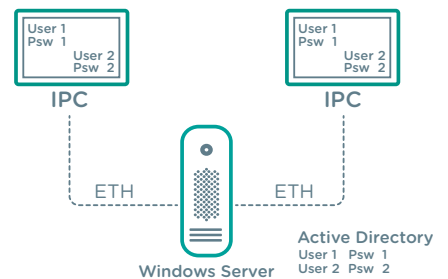
# Everyware
## Control beyond distance

Thanks to the Everyware remote maintenance platform, you can safely control your applications wherever they are. This innovative remote maintenance package eliminates any distance and border between users and their production plants. Without any additional hardware or configuration, you can access, control and modify your system just by using a common internet connection. Everyware starts an encrypted connection between two clients ensuring the system security and giving access to all devices on that system. And if you are in the private network, you can use the Everyware services without any cost.

### HTML5 Client
Now using Everyware is simpler than ever: you are free to use any hardware or operating system you prefer. You don't have to install anything: use any browser and enter your domain by a HTTPS connection.

## Usage statistics

With the new statistics functionality you can keep under control your domain activity.
You can visualize your historical data by each functionality or by time period.

## Everyware App

Thanks to Everyware native App you can manage, through a secure connection, your domain directly with your tablet or smartphone. This application allows you to use chat functionalities to send messages to the remote operator. You can show HTML5 pages on board of our Web Server, and consult for example the production data. We have also implemented the statistics data of domain where showing the different usage of data for each available application. In this way you have under control all the activities of your domain. With Everyware app you can also manage the users, such as adding or deleting users. Moreover it is possible to add License option to enable SMS functionalities.

## Everyware is on the Cloud

Everyware remote maintenance platform is on the Microsoft Azure Cloud infrastructure, offering wider connectivity and reachability.

## SMS and email notifications

Everyware manages for you all SMS and email notifications configured on CREW, making it extremely easy. In fact, you only have to add mail addresses and mobile numbers, forgetting about all the rest. Thanks to Everyware infrastructure, your SMSs will be sent all over the world at the same cost. You have also the possibility to enable and disable SMS and email notifications for each single device or for a folder.

SOFTWARE

## Chat in real time

Thanks to our chat service you are able to cut expensive long distance phone calls and to follow your customers step by step. Chat history is also available: in this way, you can open an old chat transcript that contains maintenance instructions. All language character sets are available in our chat service.
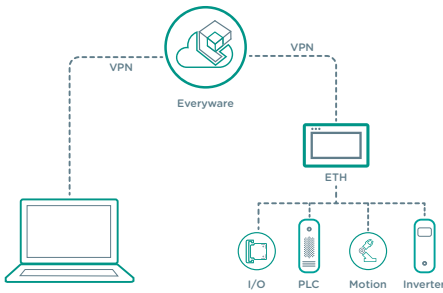


## Access to any network and subnetwork in the plant

Through an encrypted VPN connection between the tele-assistance PC and the devices, you are able to download, debug and upload the application that runs inside.
This guarantees total accessibility to all devices installed in the plant.



## Access to serial devices

Thanks to the virtualization of the serial port inside Ethernet connections, you are able to download, upload and debug the applications that runs in a serial device connected to our HMI or PC.
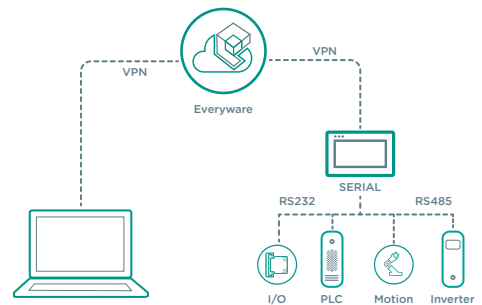
### Work in complete security
Thanks to an encrypted VPN connection based on the TLS1.2 algorithm, your connection with the Everyware infrastructure is protected from any system intrusion attempt, even when you send the SMSs and emails. This is very important to keep your data safe.

### Share files and folders directly with a remote device
Through a standard FTP service, you have the possibility to share all kind of data between the tele-assistance PC and remote devices.
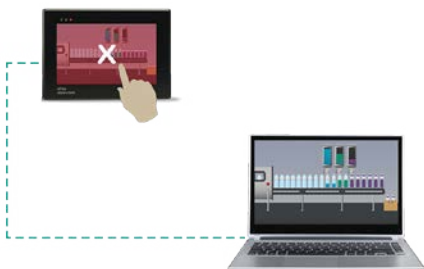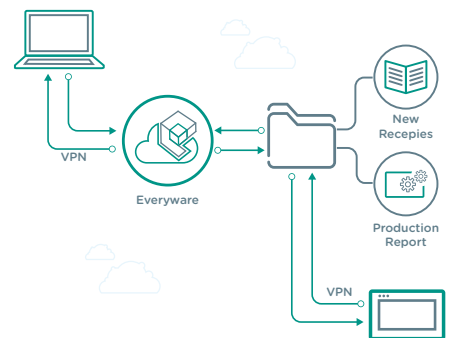
### Remote interaction
With Everyware, you have the possibility to disable the touchscreen during Remote Desktop sessions or to show a system blank page during the session in order to protect the password or the commands.

# Everyware

VPN Tunnel

**Everyware Runtime**

**Everyware HTML5 Client**

Serial Device

**PLC**

Machine

WAN

WAN

**Firewall**

**Firewall**

VPN Tunnel

**PLC**

**Motion**　　**PLC**

**Everyware Server**

**Firewall**

WAN

**Everyware App**
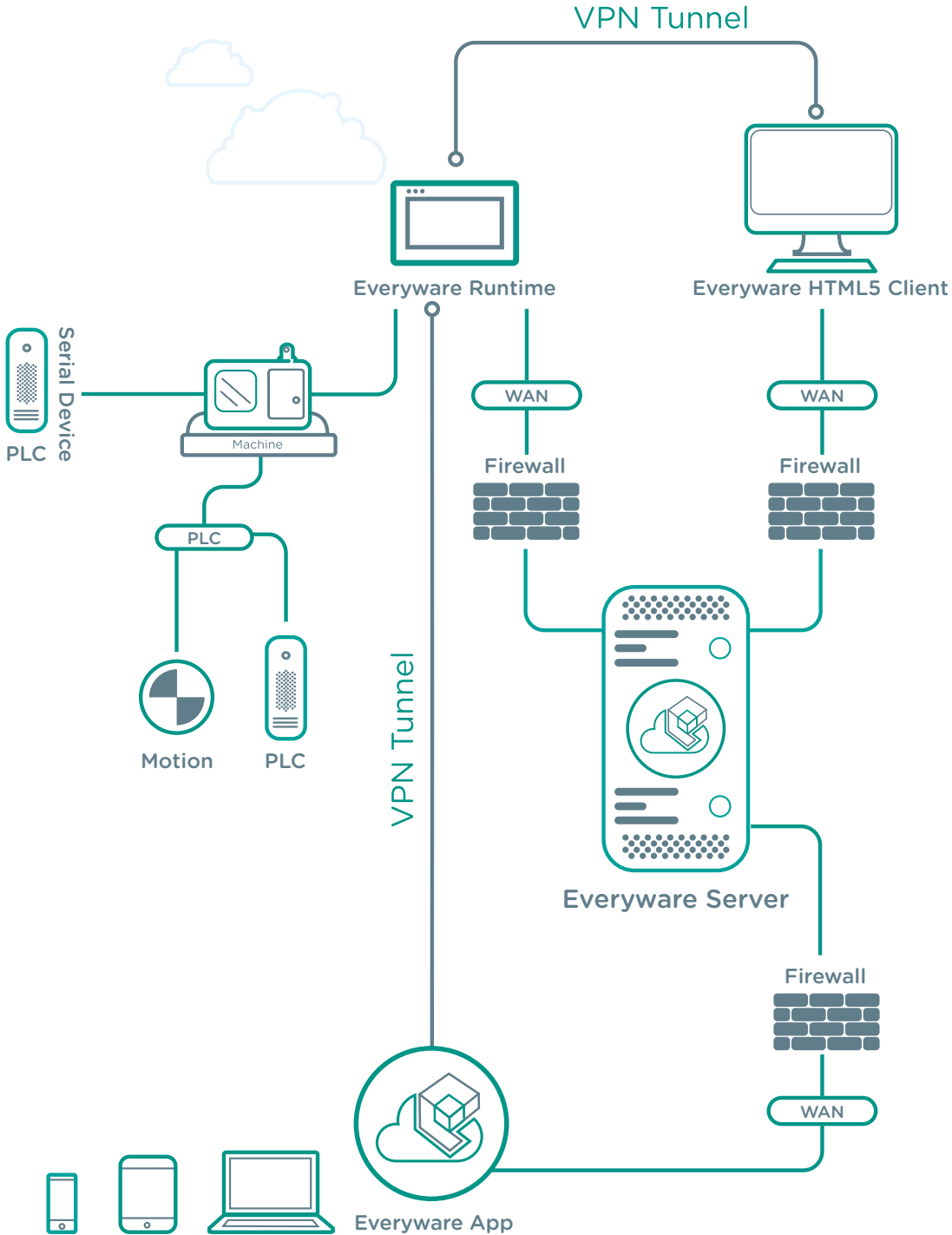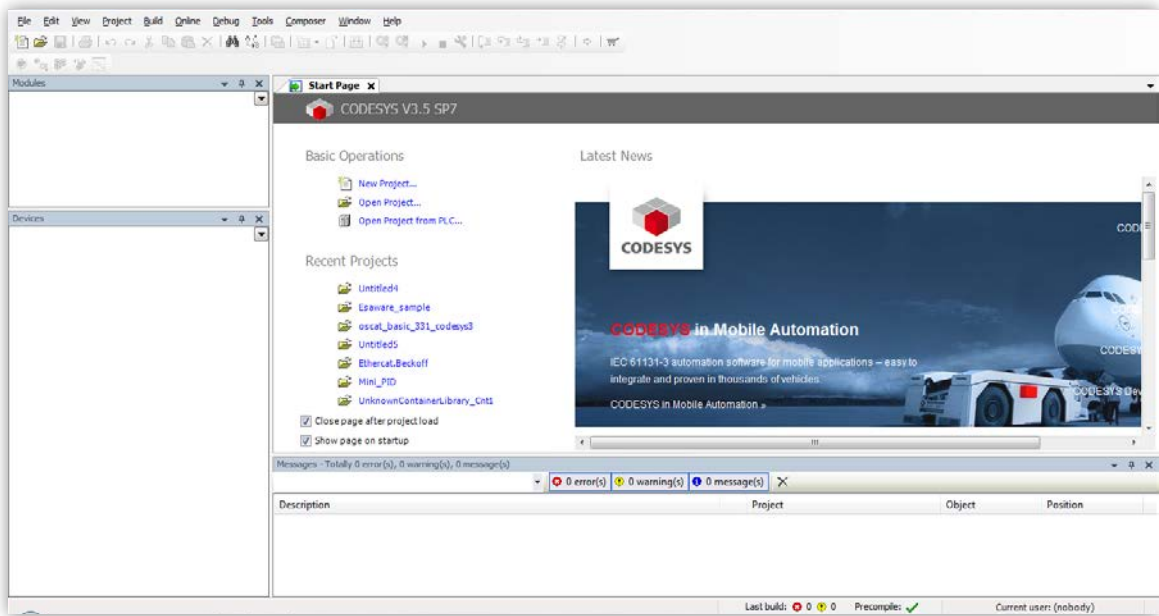
# CODESYS

The most recognized and comprehensive IEC 61131-3 development environment for programming Industrial Controllers.

ESA's seamless integration between CODESYS and Crew enables "one click" sharing of all project information, this time-saving function includes the ability to use CODSYS tags directly in Crew. The combination of CODESYS runtime and EtherCAT Master provides the optimized solution for any local or distributed PLC application.

The following functions and languages are supported :
Ladder diagram
Structured text
Sequential function chart
Continuous function chart
Function block diagram
Integrated visualisation
Trace functions
Offline simulation
All programming languages can be used in combination with one another
Simultaneous conversions possible
All standard data types:
BYTE, WORD, DWORD, SINT, USINT, INT, UINT, DINT
Symbolic operands with no length restriction
Context-sensitive help functions
Global search and replace
Disc space check prior to download
Unlimited number of function parameters

**Within CODESYS environment you will find:**

- Possibilities to have cross platform library to use in different application and projects
- All development languages IEC 61131-3 (FBD, LD, IL, ST, SFC)
- Project configuration with simple wizard
- IntelliSense assistance for the input and configuration of data
- Project comparison and debugging
- Structure management for Tags
- Free Download

Thanks to CODESYS development tool it is possible programming through to the structured language.



Simple interaction with project hardware configuration to go on line with different present partners.

INFO OPERAZIONI
LINEA DI TAGLIO
?

PROG.PLC
1- WAIT TX

| LISTA LAVORO PROGRAMMATA | | | |
|---|---|---|---|
| NR. | LUNGHEZZA | PEZZI | FATTI |
| 1 | 200 | 2 | 0 |

ASSE TRAINO

| QUOTA REALE | VELOCITA REALE | ERRORE INSEGUIM. | DAC (IMPULSI) | DAC (VOLT) |
|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0 | 0.00 |
| 0.00 | 0.00 | | | |

| IMPOSTAZIONE DATI CAMME ELETTRONICHE | GRADI |
|---|---|
| (°) CAMMA 1 - INIZIO AVANZAMENTO LAMIERA | 0 |
| (°) CAMMA 2 - FINE AVANZAMENTO LAMIERA | 0 |
| (°) CAMMA 3 - INIZIO APERTURA TESTA | 0 |
| (°) CAMMA 4 - LIBERO | 0 |
| (°) CAMMA 5 - INIZIO CHIUSURA TESTA | 0 |
| (°) CAMMA 6 - LIBERO | 0 |
| (°) CAMMA 7 - START SOFFIO ARIA PER ESPULSIONE | 0 |
| (°) CAMMA 8 - STOP SOFFIO ARIA PER ESPULSIONE | 0 |

ASSE SVOLGITORE

| QUOTA REALE | VELOCITA REALE | ERRORE INSEGUIM. | DAC (IMPULSI) | DAC (VOLT) |
|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0 | 0.00 |
| 0.00 | 0.00 | | | INVERTI ROTAZIONE |

PRESSA
QUOTA: 0.00
VEL: 0.00

INFO DATI CAMME PRESSA
WORK 0

START  STOP

% VELOCITA ASSE TRAINO  100
% VELOCITA ASSE SVOLGITORE  0

IMPILATORE AZZERATO   MODALITA PNEUMATICA   AUTO   MANO

# CNC & MOTION SOLUTIONS
## e-motion technology

ESA Automation presents the most comprehensive range of "ALL IN ONE" PAC controllers and includes bright high definition touch screens from 4.3" up to the impressive 15".
Discover the potential in our renowned PLC, HMI, CNC, Motion Control and IT server, in one powerful device with the number of I/O and Axis easily increased using our CAN Open expansion boards. Realise the huge advantages of writing a SINGLE APPLICATION that incorporates PLC, CNC and HMI functions. We produce standard ISO (G code) CNC solutions for machining wood, glass, stone, ceramics, plastic, and other materials.
ESA has the right solution to improve your machine.

### The ESA Automation Application Engineering Service and "Turnkey" customer oriented solutions.

We offer a complete customer oriented automation "Turnkey" solution, including HMI, CNC, PLC and SCADA application development, debug, simulation, and full training of you engineers. Moreover, we provide onsite final testing on the customer's plant or on the end user plant.
Possibility to have customized applications.

For many years we have developed complete machine applications for numerous industrial fields, including:

### MACHINE TOOLS FOR METAL WORKING

### Tube bending machines
For this particular machine we have developed one of the most complete control solution, based on macro user-friendly programming cycles, for single or multiple working machines.
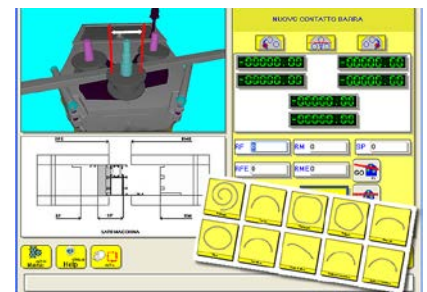
### Band saws cutting machines

We have different applications for these machines, from a basic solution with keyboard and display, to the big touch screen based four axis machine motion and PLC control.

### Screwing machine

We have developed a machine center for working on iron bars, that can provide all kinds of drilling, screwing and milling thanks to a wizard macro programming tool.
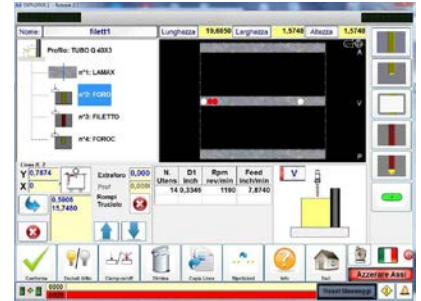
## MACHINE TOOLS FOR WORKING SHEETS

### Laser, water jet and plasma cutting

The complete solution, up to four axis, with integrated standard or gantry axis management, for all Cartesian robots for metal sheet (but also stone, plastic, rubber, paper) cutting and engraving. ISO (G code) interface that can be easily adapted to all the CAD CAM you may need by our post processor making service. Moreover, a lot of scalable tools like DXF to Macro and DXF to ISO generators can be added to the application.

### Press brakes

Like all the other applications, our Press brake application is easy to use and guides you through the making of all your pieces. A flexible graphic editor will guide you through the entire metal sheet manipulating process.

### Cutting, pressing, profiling and straightener metal sheet lines

A completely configurable metal sheet working all-in-one application that includes PLC and Motion control.

## MACHINE TOOLS FOR ALU & PVC WINDOWS PROFILES AND SECTIONS

### Cutting single or double head machines application

The ESA Automation PVC and ALU profiles cutting single or double head machines application synthesizes twenty years of experience. It is our most complete application, including profiles typology management, profiles cutting formulas, importing and exporting tools for the most important windows cad drawing tools.

### Alu profiles machine centers

The 3D simulation tool opens different scenarios of machining programming, as you can decide to work starting from a Macro, from a DXF drawing, from a Macro generated by a DXF drawing, or simply connecting it to an external CAD CAM. Inputs and outputs of the SoftPLC can be configured on a page protected by a password. Moreover, a good oscilloscope function allows you to trigger and to follow the behavior of all axis variables.
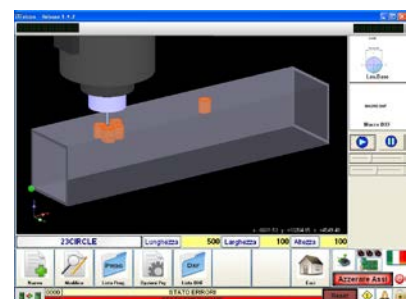
## WOOD WORKING MACHINES

### Wood windows profile machine centers

The wood profile machine center applications by ESA Automation include several machines, from the simplest 3 axis standard wood engraving doors and windows profiles machine centers to the most complete producing line, up to 50 Axes or more.

### Panel machining centers

You can count on several CAD CAM solutions, in order to draw directly on the CNC application the shape you want to engrave, generating directly ISO (G code), together with the availability of Macro programming or using our DXF to ISO and DXF to Macro scalable tools.

### Spindle molder and circular saw solutions

We work for the most important machines producers in the world and we offer a complete range of scalable hardware and software solutions with the best value for money. Our solutions are ready to manage radio controlled registers and tools changing systems.

### Edgebander machines

For these machines, we offer a dedicated hardware and software solution. All the applications are fully configurable, with the possibility to scale the machine layout, activating or deactivating all the edge working groups. We can manage both motorized and pneumatic groups, and the application fully controls the temperature of the gluing groups.
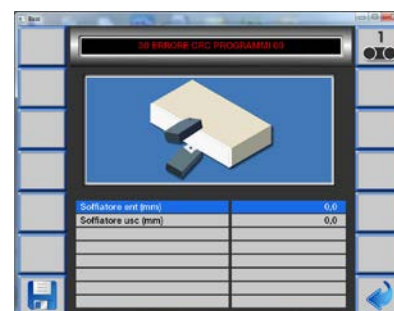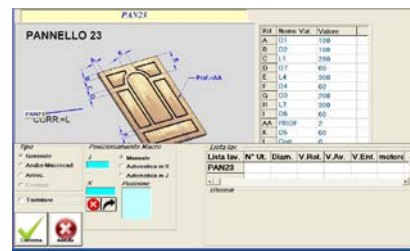
## CABLES AND WIRES WORKING MACHINES

The ESA Automation application for working cables machines is a very powerful control software that can completely manage a 4 axis controlled machine, with a motorized blades group or a pneumatic controlled one. The application can also manage the raw cables and wires database, in order to assign a wiring working order with different kinds of wires and cables. The application supports all the most diffused inkjet fast printers. The working order can be sent by net and web, and can be imported from XLS files. A user-friendly interface allows you to program and configure the order list very quickly.
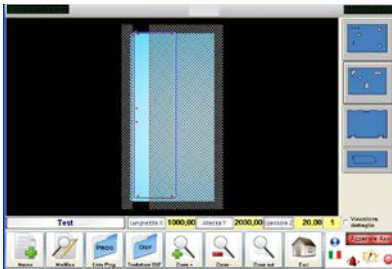
## GLASS VERTICAL AND HORIZONTAL MACHINE CENTERS

The application includes a rich endowment of macros that automatically includes all the "pre-process" necessary to prepare the glass sheet for the final working, without the risk of breaking it. The application can be connected to different CAD CAMs and can be easily configured for different sizes of machine. Finally, it can also support different layouts of axis configuration.
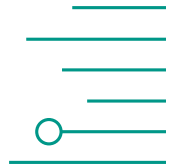
## CERAMIC PLATES PROCESSING PLANTS

Our solution for the tiles production line and press control has been chosen by the main players of this market. It includes the management of the entire production cycle, from the dust dosing on the dies, to the continuous parallelism control and the precise expulsion of the tiles.
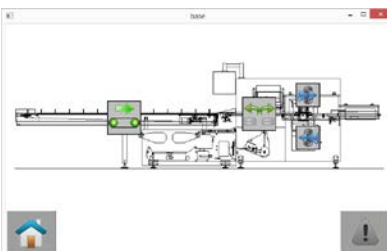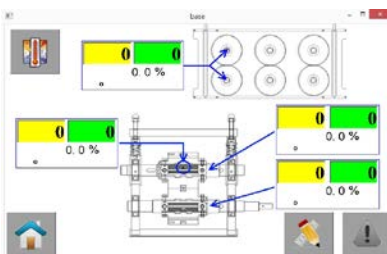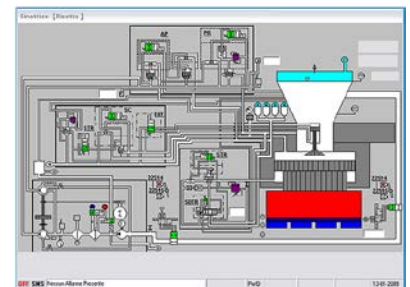
## PACKAGING MACHINES

The ESA Automation flow pack 3 - 5 axis electronic cams based application can manage different machine sizes and layouts. From the standard flow pack with rotating sealing group to the translating one, the app can manage several sealing processing options, as "no product, no bag" or "no phase, no seal". The sealing group temperatures are controlled by the application, and the motor can be driven by digital field buses or by analog or step + dir outputs. Different brands of "on line" inkjet printers are available on the configuration pages, as well as various options in the machine phasing of the electronic cams.
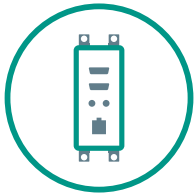
# Esaware Drives
## Sleek design and smart control

EWDD drive is capable of controlling a wide range of Brushless motors starting from 0.7 up to 1000 Nm. It can also be used in single phase for torques of motors lower than 1500 W. EWDD drive can be powered starting from 230 up to 480 Vac.

It is capable of controlling Brushless motors with a wide range of polar torques, from 2 to 24 and it accepts different feedback technologies on the motor.

It has a high-speed precision if associated to high resolution feedback. It is available in several Field Buses with different performances. The mechatronic functions implemented allow non-interpolated single axis or multiple axis applications to perform movements directly on the Drive, even with complex laws of motion. This feature makes it possible to use a PLC or operator panel without an actual axis board, thus optimising the application from a cost-effective view point as well.

**These are EWDD main features:**

- Algorithm for sinusoidal brushless motors with FOC (field oriented control).
- Algorithm for AC motors (vectorial with feedback) with vectorial calculation and estimator of the rotor flux and rotor resistance.
- Mapping of motor without auto-tuning.
- EtherCAT COE, CANOpen DS402, Modbus RTU field networks.
- Control from impulse positioner / analog input.
- Management of torque limit from digital register or from analogue input.
- Internal point-to-point positioner with trapezoidal or S shaped ramps with Jerk parameterisation, interpolated positioner. Forward feed mana gement in point-to-point movements.
- "On board" axes zero management even with axes zero on mechanical stop.
- Incremental Encoder feedback, 2-pole resolver, singleturn and multiturn DSL absolute encoders.
- 11 digital inputs and 4 digital outputs.
- "Motion Detect" function.
- "Push Control" function.

**EWDD 230 Vac models**

| Codes | Controllable motors |
|---|---|
| EWDD200410 4 A nom. 10 A peak | Brushless motor from 0.2 Nm to 2.9 Nm 3000/4500/6000 rpm |
| | AC Special Brushless Motor from 2.5 Nm to 5 Nm 3000  rpm |
| EWDD200615 6 A nom. 15 A peak | Brushless motor from 0.5 Nm to 5 Nm 3000/4500/6000 rpm |
| | AC Special Brushless Motor from 2.5 Nm to 5.5 Nm 3000 rpm |

**EWDD 400 Vac models**

| Codes | Controllable motors |
|---|---|
| EWDD400410 4 A nom. 10 A peak | Brushless motor from 0.2 Nm to 6.5 Nm 3000/4500/6000 rpm |
| | AC Special Brushless Motor from 2.5 Nm to 6 Nm    3000 rpm |
| EWDD400515 5 A nom. 15 A peak | Brushless motor from 0.5 Nm to 7.6 Nm 3000/4500/6000 rpm |
| | AC Special Brushless Motor from 2.5 Nm to 7.2 Nm   3000 rpm |
| EWDD401020 10 A nom. 20 A peak | Brushless motor from 4 Nm to 15 Nm 3000/4500 rpm |
| | AC Special Brushless Motor from 5.5 Nm to 13 Nm 3000 rpm |
| EWDD402040 20 A nom. 40 A peak | Brushless motor from 7 Nm to 27 Nm 3000/4500 rpm |
| | AC Special Brushless Motor from 8 to 29Nm 3000 rpm |
| EWDD402550 25 A nom. 50 A peak | Brushless motor from 10 Nm to 35 Nm 3000/4500 rpm |
| | AC Special Brushless Motor from 8 Nm to 29 Nm 3000 rpm |
| EWDD403090 30 A nom. 90 A peak | Brushless motor from 19 Nm to 50 Nm 3000 rpm |
| | Torque motor 220/270 Nm 556/330 rpm |
| EWDD40600E 60 A nom. 180 A peak | Brushless motor from 28 Nm to 100 Nm 2500/3000 rpm |
| | Torque motor 500 Nm /1000 Nm 500/1000 rpm |

**EWDD 230 to 480 Vac models**

| Codes | Controllable motors |
|---|---|
| EWDD500410 4 A nom. 10 A peak | Brushless motor from 0.2 Nm to 6.5 Nm 3000/4500/6000 rpm |
| | AC Special Brushless Motor from 2.5 Nm to 6 Nm 3000 rpm |
| EWDD500515 5 A nom. 15 A peak | Brushless motor from 0.5 Nm to 7.6 Nm 3000/4500/6000 rpm |
| | AC Special Brushless Motor from 2.5 Nm to 7.2 Nm 3000 rpm |
| EWDD500615 6 A nom. 15 A peak | Brushless motor from 4 Nm to 10 Nm 3000/4500 rpm |
| | AC Special Brushless Motor from 5.5 to 7.2 Nm 3000 rpm |

EWDC drive is designed as an excellent performance/price compromise to control small/medium size Brushless motors and fractional motors powered from 230 Vac and rated up to 900 W. It accepts different feedback technologies on the motor.

It has a good speed precision if associated to high resolution feedback.

The mechatronic functions implemented allow non-interpolated single axis or multiple axis applications to perform positioning directly on the Drive. This makes it possible to use a PLC or operator panel without an actual axis board, thus optimising the application from a cost-effective view point as well.

**These are EWDC main features:**

- Algorithm for sinusoidal brushless motors with FOC (field oriented control).
- Mapping of motor without auto-tuning.
- Controls from CANOpen DS402, Modbus RTU field networks.
- Control from impulse positioner
- Control from analogue input.
- Management of torque limit from digital register or from analogue input.
- Internal point-to-point positioner with trapezoidal or S shaped ramps with Jerk parameterisation, interpolated positioner. Forward feed management in point-to-point movements.
- "On board" axes zero management even with axes zero on mechanical stop.
- Incremental Encoder feedback, singleturn and multiturn DSL absolute digital encoders with BiSS B interface.
- "Motion Detect" function.
- "Push Control "function.

**EWDC**

| Codes | Controllable motors |
|---|---|
| EWDC200306 3 A nom. 6 A peak | Brushless motor from 0.2 Nm to 2 Nm 3000/4500/6000 rpm |
| EWDC200408 4 A nom. 8 A peak | Brushless motor from 0.2 Nm to 4 Nm 3000/4500/6000 rpm |
| EWDC200409 4 A nom. 9 A peak | Brushless motor from 0.2 Nm to 4 Nm 3000/4500/6000 rpm |

This drive is designed to be an effective response in terms of size/performance/price to control small size Brushless motors powered from 230 Vac and rated up to 400 W with 2 up to 5 polar torques and fractional Brushless motors of Nm. It can also control DC motors up to 180 V. It can be powered single phase at 230 Vac or with direct current from 24 to 310 Vdc. It accepts different feedback technologies on the motor. The mechatronic functions implemented allow non-interpolated single axis or multiple axis applications to perform positioning directly on the Drive. This makes it possible to use a PLC or operator panel without an actual axis board, thus optimising the application from a cost-effective view point as well.

**These are EWDE main features:**

- Algorithm for sinusoidal brushless motors with FOC (field oriented control).
- Mapping of motor without auto-tuning.
- Controls from CANOpen DS402, Modbus RTU field networks.
- Control from impulse positioner.
- Control from analogue input.
- Management of torque limit from digital register or from analogue input.
- Internal point-to-point positioner with trapezoidal or S shaped ramps with Jerk parameterisation, interpolated positioner. Forward feed management in point-to-point movements.
- "On board" axes zero management even with axes zero on mechanical stop.
- Incremental Encoder feedback, singleturn and multiturn DSL absolute digital encoders with BiSS B interface.
- "Motion Detect" function.
- "Push Control "function.

EWDE

| Codes | Controllable motors |
|---|---|
| EWDE200205 | Brushless Motor from 0.19 Nm to 2 Nm 3000/4000/6000 rpm<br>DC Motor from 10 W to 100 W 1500/2000/2500 rpm |
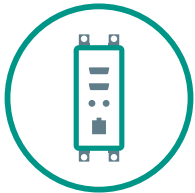
# Esaware Drives
## Versatility is key.

This is a drive designed to manage Brushless motors and fractional DC motors of Nm. It is also capable of controlling small DC motors with or without encoder feedback. The points of excellence of EWDA and EWDB drives are: compact mechanical size and versatility of the controlled motors. It is powered with direct current from 24 to 60 Vdc. It can control Brushless motors with 2 up to 5 polar torques. It accepts different feedback technologies on the motor. It has a good speed precision if associated to high resolution feedback. The mechatronic functions implemented allow non-interpolated single axis or multiple axis applications to perform positioning directly on the Drive. This makes it possible to use a PLC or operator panel without an actual axis board, thus optimizing the application from a cost- effective view point as well.

**These are EWDA and EWSB main features:**

- Algorithm for sinusoidal brushless motors with FOC (field oriented control).
- Mapping of motor without auto-tuning.
- Controls from CANOpen DS402, Modbus RTU field networks.
- Control from impulse positioner.
- Control from analogue input.
- Management of torque limit from digital register or from analogue input.
- Internal point-to-point positioner with trapezoidal or S shaped ramps with Jerk parameterisation, interpolated positioner for complex laws of motion management. Forward feed management in point-to-point movements.
- "On board" axes zero management even with axes zero on mechanical stop.
- Incremental Encoder feedback, singleturn and multiturn DSL absolute digital encoders with BiSS B interface.
- "Motion Detect" function.
- "Push Control "function.

**EWDA - EWDB**

| Codes | Controllable motors |
|---|---|
| EWDA100408 - EWDB100408 | Brushless Motor from 0.19 Nm to 0.5 Nm 3000/4000/6000 rpm DC Motor from 10 W to 50 W 1500/2000/2500 rpm |
| EWDA101020 - EWDB101020 | Brushless Motor from 0.19 Nm to 2 Nm 3000/4000/6000 rpm DC Motor from 10 W to 100 W 1500/2000/2500 rpm |

# ESA Automation's Ethercat Solution

## HMI + Drive + Motor
## Find out our complete solution

EtherCAT
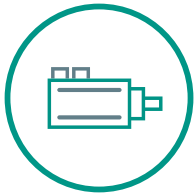
# Esaware Brushless-Torque Motors
## Performance and efficiency

**EWM5 brushless servo motors** are AC synchronous motors, which are distinguished by their good performance and low ripple. Designed to allow high current overloads and to achieve high dynamic performance, they offer a wide range of torques between 0.18 and 200 Nm, distributed over a broad spectrum of standard sizes and flanges. It is possible to have fractional motors of Nm with several types of outputs for motor and signals connections.

It is possible to install several types of feedback, from a resolver to an incremental or absolute encoder, as well as a brake and a standard temperature sensor to detect motor overheating, which can also be detected with the PT100 probe.

Compact motor solutions are also available in terms of length. Motors with 40 and 60 mm flange are available in compact configurations where the gear is integrated in the motor.

**Main features of EWM5 motors**

- Rare earth magnets for high temperatures
- 8-pole construction
- Sinusoidal EMF
- Integrated thermal protection
- Output with rotary connectors
- Ultra compact dimensions
- High protection, smooth casing
- Low cogging
- Wide range of feedback
- Standard flange 40,60,80,85,115,142,190,260 and special non-standard flanges available

**EWM2 torque motors** are the perfect solution for direct rotary movement. This motor series is equipped with high torques and a lower speed compared to the EWM5 line. In fact, there are torques available ranging from 200 to 1000 Nm with 2000 Nm peak solutions and speed from 500 to 1000 rpm.

**Main features of EWM2 motors**

- Rare earth magnets for high temperatures
- 26-pole construction
- Sinusoidal EMF
- Integrated thermal protection
- Motor and signals output on connectors
- Excellent power/weight ratio
- Frameless construction
- Low cogging
- Feedback with incremental encoder with hall effects and with DSL absolute encoder
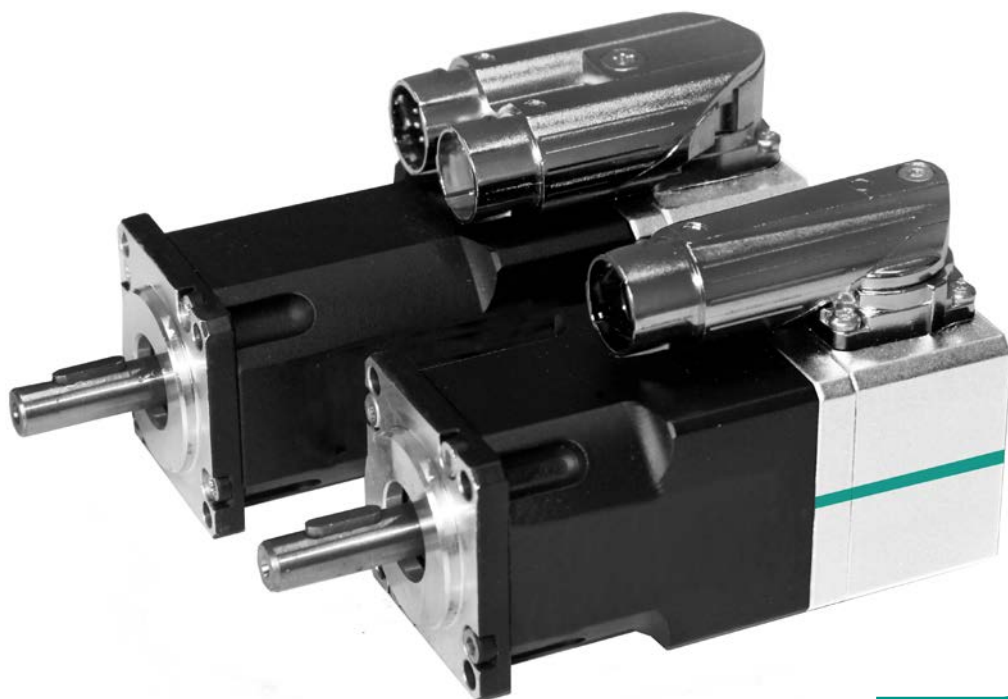
**EWM5**

| Codes | Flange mm | Torque Nm | Current A | Voltage Vac | Speed rpm | Motor Output |
|---|---|---|---|---|---|---|
| EWM5A | 40 | 0,19 - 0,38 | 8,2 - 0,78 | 17 / 32 / 230 | 3000-6000 | Direct cable Y Conn. DSL Conn. Hypertach std |
| EWM5B | 60 | 0,7 - 1,4 | 7 - 8 - 1,7 | 17 / 32 / 230 | 3000-5000 | DSL Conn. Hypertach std |
| EWM5C | 80 | 1,5 - 2,9 4,2 - 5,3 | 1,65 - 3,2 4,6 - 5,8 | 230/400 | 3000-4500 | DSL Conn. Hypertach std |
| EWM5D | 85 | | | | | |
| EWM5E | 115 | 4 - 7,6 11,3 | 2,5 – 4,7 7 | 230/400 | 3000-4500 | DSL Conn. Hypertach std |
| EWM5F | 142 | 10 - 19 27 - 35 | 6,5 - 12,3 15,4 - 20 | 400 | 3000-4000 | Hypertach std |
| EWM5G | 190 | 15 - 28 50 - 70 | 9 - 24 28 - 39 | 400 | 3000 | Hypertach std |
| EWM5I | 260 | 76 - 145 230 | 37/25 -41 65 | 400 | 1500 | Hypertach std |

**EWM2**

| Codes | Torque Nm | Current A | Voltage Vac | Speed rpm | Motor Output |
|---|---|---|---|---|---|
| EWM2A | 200 | 30 | 400 | 1000 | Connector |
| EWM2B | 470 | 75 | 400 | 750-1000 | Connector |
| EWM2C | 938 | 150 | 400 | 400-530 | Connector |
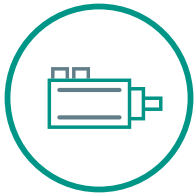
# Esaware Motor Integrated Drive
## Integration between control and motion

The EWDM motor integrated drive series is a product family where electronic and motor are integrated in a compact chassis. This enables a reduction in the volume of electrical cabinets and wiring between the control panel and the automatic machine.

These products are based on motors with different flange, torque and gear.

Despite its integration on the motor, which is always a heat source, the drive does not need to be downgraded in terms of performance or in terms of power supplied to the engine and this because of a sophisticated engineering solution.

The drive is powered at low voltage with a 24 to 60 Vdc power supply. The dynamic performance and flexibility of the implemented mechatronic functions extend its use to a wide range of applications on the machine. It has a good speed accuracy if combined with models with integrated SIN/COS feedback.

The implemented mechatronic functions allow non-interpolated single axis or multiple axis applications to perform movements directly on the motor integrated drive, even with complex laws of motion. This feature makes it possible to use a PLC or operator panel without an actual axis board, thus also optimising application from a cost-effective viewpoint.

**Main features of the EWDM main features:**

- Algorithm for sinusoidal brushless motors with FOC (field oriented control).
- Mapping of motor without needing auto-tuning.
- Field network commands CANOpen DS402, Profinet, Ethernet IP, Modbus over IP.
- Management of torque limit from digital register.
- Internal point-to-point positioner with trapezoidal or S shaped ramps with Jerk parametrisation, interpolated positioner (only on CANOpen DS402). Forward feed management in point-to-point movements.
- "On board" axes zero management even with axes zero on mechanical stop.
- Singleturn absolute magnet encoder feedback with 1024 pulses per revolution and 512 pulses per revolution precision.
- Single/multiturn capacitive absolute encoder feedback, sin-cos 16 sinusoids per revolution, for 4096 revolutions with a precision of 2500 pulses per revolution up to 7500.
- 11 digital inputs and 4 digital outputs.
- Motion Detect" function.
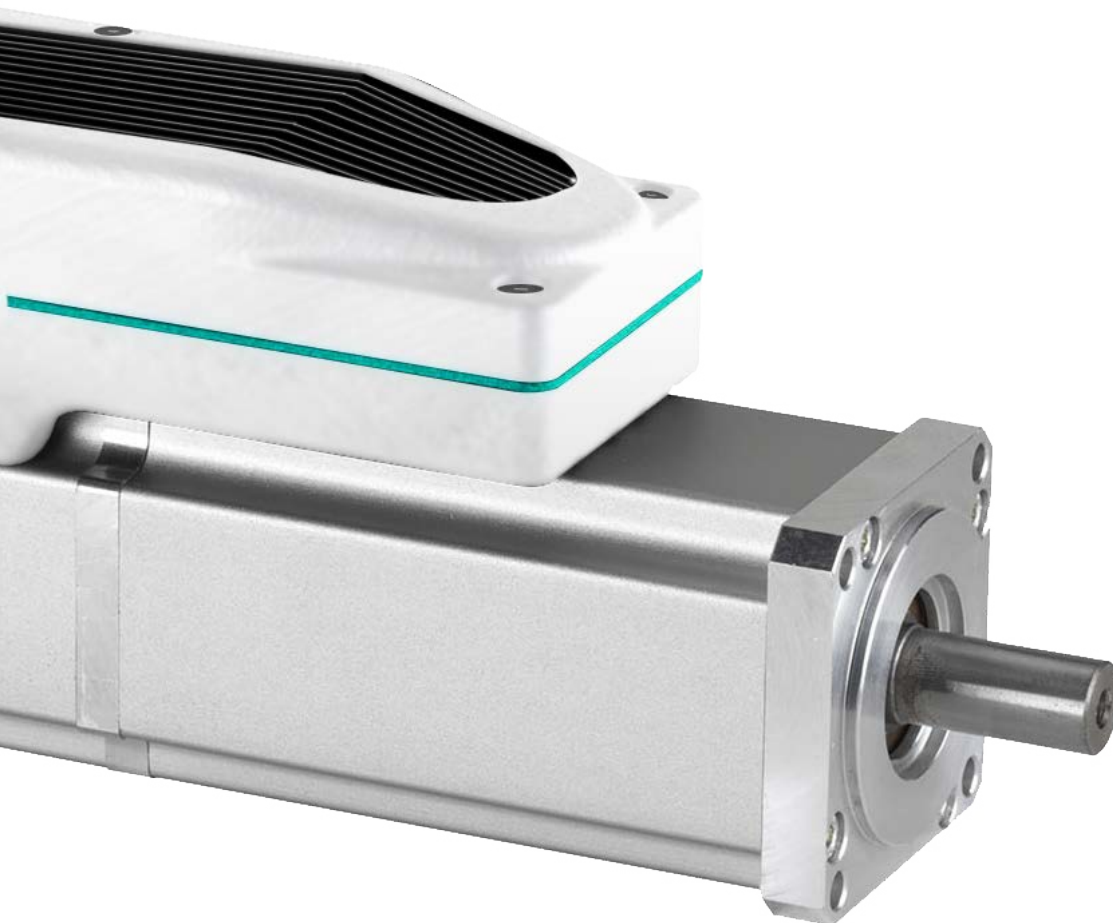
EWDM

| Codes | Description | | Feedback | Gearbox | Brake |
|---|---|---|---|---|---|
| EWDMB107A | Drive on Board with Canopen Nominal Torque: 0,7 Nm Speed: 3000-5000 rpm | | Magnetic single turn Resolution 1024 pulse-turn Precision: 512 pulses turn | Not | Yes or Not |
| | | | | Worm gear | |
| | | | | Planetary gear | |
| | | | Sin/Cos multiturn Resolution : 7500 pulse-turn Precision: 2500 pulses-turn Number of turn 4096 | Not | Yes or Not |
| | | | | Worm Gear | |
| | | | | Planetary gear | |
| EWDMB107C | Drive on Board with Profinet | Nominal Torque: 0,7 Nm Speed: 3000-5000 rpm | Magnetic single turn Resolution 1024 pulse-turn Precision: 512 pulses turn | Not | Yes or Not |
| | | | | Worm gear | |
| | | | | Planetary gear | |
| EWDMB107D | Ethernet IP Modbus over IP | | Sin/Cos multiturn Resolution : 7500 pulse-turn Precision: 2500 pulses-turn Number of turn 4096 | Not | Yes or Not |
| | | | | Worm Gear | |
| | | | | Planetary gear | |
| EWDMB113A | Drive on Board with Canopen Nominal Torque: 1,3 Nm Speed: 3000-4500 rpm | | Magnetic single turn Resolution 1024 pulse-turn Precision: 512 pulses turn | Not | Yes or Not |
| | | | | Worm gear | |
| | | | | Planetary gear | |
| | | | Sin/Cos multiturn Resolution : 7500 pulse-turn Precision: 2500 pulses-turn Number of turn 4096 | Not | Yes or Not |
| | | | | Worm Gear | |
| | | | | Planetary gear | |
| EWDMBB113C | Drive on Board with Profinet | Nominal Torque: 1,3 Nm Speed: 3000-4500 rpm | Magnetic single turn Resolution 1024 pulse-turn Precision: 512 pulses turn | Not | Yes or Not |
| | | | | Worm gear | |
| | | | | Planetary gear | |
| EWDMBB113D | Ethernet IP Modbus over IP | | Sin/Cos multiturn Resolution : 7500 pulse-turn Precision: 2500 pulses-turn Number of turn 4096 | Not | Yes or Not |
| | | | | Worm Gear | |
| | | | | Planetary gear | |

# Esaware HMI
## Control made easy

EW100 is the new generation of HMIs based on a modern, powerful architecture that combines visualization, supervision and control of your applications.

Esaware HMI products fully exploit the potential of the Windows Embedded Compact 7 operating system, the only solution that offers transparent interconnection with any company system together with the well-known reliability of the embedded operating systems.

**Our standard HMI for visualization, control with Remote Maintenace Platform.**

- Operating System Windows Embedded Compact 7 Pro
- Preloaded Everyware runtime
- SNTP Server and Client
- Aluminum Front Side PTFE coating
- True Flat Touch Screen
- Status leds on front
- CPU Arm Cortex A8 1 GHz
- Ram DDR3
- Internal Memory 3 Gbyte
- SDHC v2.0 (up to 25 Mbyte/s)
- High Bright 16 Millions Colors Display

Our Esaware HMI solutions have a widescreen display that can be dimmed up to 100%, and they offer up to 40% more viewing surface compared to a traditional 4:3 display. In addition LED backlit displays excel in durability thanks to a significant energy saving.

In Esaware HMI, esthetics and functionality become one, thanks to the innovative design "Twist": an inclined surface that prevents the retention of dust and other corrosive substances. Safety and durability are further enhanced by a robust aluminum case with PTFE, non-stick, coating.
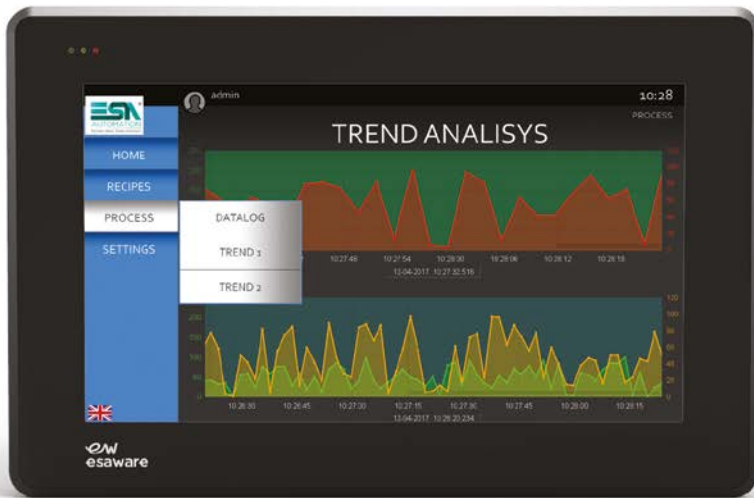
| Features | EW104AA | EW107AA | EW112AA | EW115AA |
|---|---|---|---|---|
| Display Size | 4,3" | 7" | 12,1" | 15,6" |
| Display Technology | TFT | | | |
| Display Colors | 262 K | 16 M | | |
| Display Backlight | LED | | | |
| Display Brightness (cd/m2) | 400 | 600 | 800 | 300 |
| Display Resolution (pixel) | 480 x 272 | 800 x 480 | 1280 x 800 | 1366 x 768 |
| Backlight Life (hours) | 50 K | | | |
| Processor | ARM Cortex A8 | | | |
| RAM | 256 MB DDR3 | | 512 MB DDR3 | |
| Flash | 3 GB | | | |
| Serial Ports | SP1 RS232/485-MPI-COM0; SP2 RS232/485-MPI-COM0; CAN; Profibus | | | |
| Ethernet | 1 x 10/100Mb | | 2 x 10/100Mb | |
| USB Ports | 1 x USB Host + 1 x USB Device | | 2 x USB Host + 1 x USB Device | |
| Cardbus Slot | 1 x SDHC/MMC | | | |
| Power Supply (Vdc) | 12 – 32 | | | |
| Consumption (W) | 4 | 7 | 15 | 19 |
| Operating Temperature (°C) | -10 ... +50 (non condensing) | | | |
| Storage Temperature (°C) | -20 ... +65 | | | |
| Humidity | <90% (non condensing) | | | |
| External dimensions (W/H/D) (mm) | 166 x 112 x 45,9 (61 with double port) | 202 x 142 x 45,9 | 340,5 x 238,5 x 48,6 | 436,5 x 285,5 x 54,4 |
| Cut-out dimensions (W/H) (mm) | 158,5 x 104,5 | 195 x 135 | 326 x 227 | 422,5 x 271,5 |
| Weight (kg) | 0,5 | 0,8 | 2,5 | 4,5 |
| Protection degree (front) | IP66 | | | |
| Certifications | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / cULus (Certificate no. E189179) EAC / ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 | | | |

# Stainless steel HMI
## Extreme durability. High endurance.

The 7" IT107W and 12" IT112 with AISI 304/V2A stainless steel bezel and TRUE-FLAT touch screen make cleaning quick, easy and effective.

Thanks to the front bezel's very high degree of protection, IP69K according to ISO EN 20653, these HMIs offer excellent chemical resistance to highly corrosive substances (such as cleaning chemicals, alkaline substances, etc...) and safeguards against frequent washing at high pressure, such as is normal in the food, pharmaceutical and chemical industries.

The large outside edge radius of curvature on the bezel (4 times the minimum required by law) prevents deposition and contamination of bacteria or microbes on the front. In addition, the front panel complies with DIN EN1672-2, EHEDG guideline and FDA requirements in the food, pharmaceutical and chemical.

The stainless steel HMIs are equipped with industrial displays and high brightness white LED backlight, touch screen technology with 4 or 5 wires that ensures optimal functionality even with superficial damage on the surface.

**Stainless steel HMIs are equipped with:**

- SP1 serial port (RS232 / RS485 with integrated MPI)
- USB port (type of device) for programming the terminal
- COM0 port (RS-232), USB port (host type) for connecting peripheral devices (headboards and mouse), for easy import/export data on USB key and printing reports
- Serial port SP2 (RS232 / RS485 with integrated MPI) CAN, Profibus-DP or ProfiNet
- Ethernet Port 10/100 Mbit
- Slot for Secure Digital and MultiMedia Card (MMC)
- Second slot for Compact Flash memory
- Extended power supply range 18..32 Vdc and extremely low power consumption
- Powered by Polymath

**IP 69K**

| Features | IT107WX | IT112TX / IT112TY |
|---|---|---|
| **Display Size** | 7" | 12,1" |
| **Display Technology** | TFT | |
| **Display Colors** | 65 K | |
| **Display Life (hours)** | 50 K | |
| **Display Backlight** | LED | |
| **Display Resolution (pixel)** | 800 x 480 | 800x600 |
| **Processor** | Intel PXA 270 | |
| **RAM** | 64M | 128M |
| **Flash** | 32M | 64M |
| **Serial Ports** | SP1 (232/485/MPI), SP2 (232/485/MPI), CAN, Profibus | |
| **USB Port Host** | 1 x v 1.1 | 2 x v 1.1 |
| **USB Port Device** | 1 x v 1.1 | 2 x v 1.1 |
| **Cardbus Slot** | 1 x Secure Digital | |
| **Compact Flash Slot** | - | 1 x Compact Flash |
| **Ethernet** | 1 x 10/100 Mb | 2 x 10/100 Mb |
| **Hardware Clock** | Supercapacitor 72h | |
| **Consumption (W)** | 8 | 15 |
| **Power Supply (Vdc)** | 18 ... 32 | |
| **Operating Temperature (°C)** | 0 ... +50 (non condensing) | |
| **Humidity** | <85% (non condensing) | |
| **External Dimensions (W/H/D) (mm)** | 202 x 142 x 39,2 (58,2 with double port) | 336,3 x 256 x 62,9 |
| **Cut-out Dimensions (W/H) (mm)** | 194 x 134 | 314 x 240 |
| **Weight** | ~2,2 | ~ 4,6 |
| **Protection degree (front)** | IP69K | |
| **Certifications** | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / cULus (Certificate no. E189179) EAC / ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 | |

# SmartClick HMI
## Best cost-to-benefit ratio

SC HMI series is an entry-level HMI solution equipped with ABS plastic chassis that guarantees great sturdiness and durability. SC HMIs are available in different sizes 7" (SC107 and SC207) and 10,1" (SC110 and SC210). All wide displays with white LED back-lighting and TRUE-FLAT Touch screen.
Advanced technology combined with wide connectivity.

**SC series is equipped with**

- Ethernet port for programming and communication with the field
- A dual RS232/RS485 serial port with COM0 port functionality, the ESA's OPEN serial port enables communication with any kind of custom solution

# SmartClick
## Software



SmartClick is the software package for configuring SC HMIs. The enhanced features allow for the management of data structures, such as Recipes, Trends, Data Logs, active and historical alarms and User management in a quick and intuitive manner.
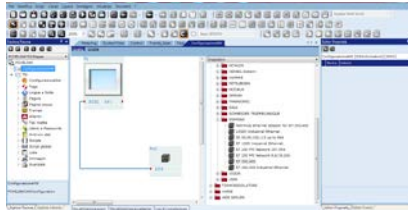
**SmartClick incorporates advanced functionalities including:**

- Rich object library
- Level project page management
- Importing/exporting project data
- Transferring stored data
- Project back-up and restore
- VB script with intellisense
- OFF-LINE and ON-LINE simulator
- Dictionary
- Automatic project storage
- Indirect addressing

| Features | SC107 | SC207 | SC110 | SC210 |
|---|---|---|---|---|
| Display Size | 7" Wide | | 10.1" | |
| Display Technology | TFT | | | |
| Display Colors | 65.536 | | | |
| Display Backlight | LED | | | |
| Display Resolution (pixel) | 800 x 480 | | 1024 x 600 | |
| Backlight life (hours) | 30 K | | | |
| Processor | ARM | | | |
| RAM | 64 MB | 32 MB | 64 MB | |
| Flash | 64 MB | | | |
| First serial port | Port 1 (RS232/RS485/COM0) | Port 1 (RS232/485/MPI) | Port 1 (RS232/RS485/COM0) | Port 1 (RS232/RS485/MPI) |
| Second serial port | Port 2 (RS232/RS485/COM0) | - | Port 2 (RS232/RS485/COM0) | |
| USB Host port | 1 x v 1.1 | | | |
| USB Device port | 1 x v 1.1 | | | |
| Cardbus Slot | 1 x Secure Digital/MMC | | | |
| Ethernet | 1 x 10/100 Mb | | | |
| Chassis | ABS Plastic | | | |
| Hardware clock | Yes | | | |
| Clock battery | Battery (min. durability 5 yrs) | Supercapacitor 72h | | |
| Power Supply (Vdc) | 18 - 32 | | | |
| Consumption (W) | 5 | 8 | | |
| Operating Temperature (°C) | -10 ... + 50 (non condensing) | | | |
| Storage Temperature (°C) | -20 ... + 65 | | | |
| Humidity | <85% (non condensing) | | | |
| External dimensions (W/H/D) (mm) | 198,8 x 137,8 x 40,3 | 202 x 142 x 40 | 280 x 190 x 37,5 | |
| Cut-out dimensions (W/H) (mm) | 190,2 x 129,2 | 194 x 134 | 271 x 181 | |
| Weight (kg) | ~ 0,8 | ~ 1 | ~ 1,4 | |
| Protection degree (front) | IP 65 | | | |
| Certification | CE | | | |

# Keyboard HMI
## Don't touch, just press my keys.

ESA Automation offers the IT series with keyboard.
For applications where direct tactile keyboard input is preferred to a touchscreen keyboard, the IT105TK is perfect. The HMI has a bright 5.7" TFT display with white LED backlight. IP66 protection on the front bezel and comprehensive communication options makes the IT105TK the obvious choice for all your harsh environments.
IT105TK is a terminal with 5,7" TFT Display, resolution 320×240, 65.536 colors.

**These the main features:**

- 18 operative keys
- 12 function keys
- 11 alphanumeric keys
- Powered by Polymath

Each of the function keys available can be configured to suit different projects.

The device memory can be expanded with a SD card. Historic files created in runtime can also be saved.
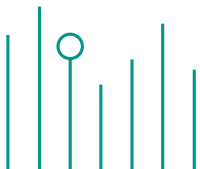
| Features | IT105TK |
|---|---|
| Display Size | 5,7" |
| Display Technology | Graphic LCD TFT |
| Display Colors | 65.536 |
| Display Backlight | LED |
| Display Resolution (pixel) | 320 x 240 |
| Backlight life (hours) | 50 K |
| Operative keys | 18 |
| Function keys | 12 |
| Alphanumeric keys | 11 |
| Processor | Intel (R) PXA270 |
| RAM (MB) | 64 |
| Flash (MB) | 32 |
| First port | SP1 (232/485/MPI) |
| Second port | SP2 (RS232/485/MPI), CAN, Profibus-DP |
| Ethernet | 1 x 10/100 Mb |
| USB Host port | USB 1.1 |
| USB Device port | USB 1.1 |
| Cardbus Slot | Secure Digital / MMC |
| Power supply (Vdc) | 18 - 32 |
| Consumption (W) | ~ 10 |
| Operating Temperature (°C) | 0 ... +50 (non condensing) |
| Storage Temperature (°C) | -20 ... + 65 |
| Humidity | <90% (non condensing) |
| External dimensions (W/D/H) (mm) | 261,2 x 172,4 x 51,6 (70,6 with double port) |
| Cut-out dimensions (W/H) (mm) | 243,5 x 147 |
| Hardware clock | Supercapacitor 72h |
| Weight  (kg) | ~ 1,5 |
| Protection degree (front) | IP66 |
| Certifications | CE/ cULus/ ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 / DNV Vibration EN60068-2-6 / Shock EN60068-2-27 / Humidity EN60068-2-3 |

# Text HMI
## Evergreen solutions for durable control

Where a simple text based operator instructions and hardkey input is favoured, ESA Automation has the answer:
Text HMIs offer cost effective but powerful user/machine interaction with surprising clarity.

**These are some features available on Text HMIs:**

- Applications quickly executed
- Alarms, passwords, recipes
- Mathematical functions
- Two drivers run simultaneously
- Serial or parallel printing
- Integrated Profibus-DP and CAN
- Keyboard input/selection
- Powered by Polymath







### VT50
HMI with text LCD display, 2 rows by 20 characters, 256 KB project, 8 operative keys (5 function keys). Available also with CAN interface.

### VT60
HMI with text LCD display, 4 rows by 20 characters, 256 KB project, 6 operative keys (4 function keys). Available also with CAN interface.

### VT150
HMI with text LCD display, 4 rows by 20 characters, 256 KB project, 25 operative keys (5+5 customizable function keys). Available with Profibus-DP network or with CAN interface.

### VT160
HMI with text LCD display, 4 rows by 20 characters, 256 KB project, 25 operative keys (5+5 customizable function keys), 18 customizable auxiliary keys. Available with Profibus-DP network.

### VT170
HMI with text LCD display, 4 rows by 20 characters, 320 KB project, clock, 32 KB recipes, 36 operative keys (12 customizable function keys).
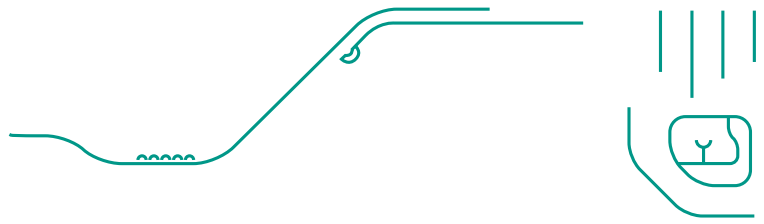
| Features | VT050 | VT060 | VT150 | VT160 | VT170 |
|---|---|---|---|---|---|
| Display Type | Text LCD | | | | |
| Display Backlight | LED | | | | |
| Columns by Rows (text) | 20 x 2 | 20 x 4 | | | |
| Display area size (mm h-v) | 73,5 x 11,5 | 70,4 x 20,8 | | | |
| Text character Matrix (pixels h-v) | 5 x 7 | | | | |
| Character dimensions (mm h-v) | 3,2 x 5,5 | 2,95 x 4,75 | | | |
| Contrast adjustment | Trimmer | | | | |
| Character set | Ascii, Katakana | | | | |
| Project Memory (bytes) | 256K | | | | 320K |
| Recipes/Alarm buffer (bytes) | - | | | | 32K/8K RAM |
| MSP serial port | RS-232/422/485/TTY 20 mA | | | | |
| ASP serial port | - | | | | RS-232 (9 pin) |
| Connection with optional keyboard | - | | Yes | Integrated | - |
| Integrated network (optional) | CAN | | CAN, Profibus-DP | Profibus-DP | - |
| Optional | Profibus-DP, Interbus-S, CAN | | | | |
| ESA-Net (variables) | Client | | | | Server (128), Client |
| Power supply (Vdc) | 18 - 32 | | | | |
| Consumption (W) | 5 | | 15 | | 9 |
| Operating temperature (°C) | 0 ... +50 (non condensing) | | | | |
| Storage temperature (°C) | -20 ... +60 (non condensing) | | | | |
| Humidity | <85% (non condensing) | | | | |
| External dimensions (W/H/D) (mm) | 166 x 86 x 41 | 166 x 86 x 41 | 148 x 188 x 41 | 296 x 188 x 42 | 126 x 196 x 60 |
| Cut-out dimensions (W/H) (mm) | 157x77 | 157x77 | 123 x175 | See installation sheet | 107 x 178 |
| Weight (kg) | 0,5 | 0,5 | 0,7 | 0,88 | 0,9 |
| Protection degree (front) | IP 66 | | IP 65 | | |
| Project Languages | 4 | | 6 | | 8 |
| Password levels/Bit passwords | -/8 | 10/8 | | | |
| Pages/Fields per page | 127/12 | 1024/32 | | | 1024/16 |
| Format of variables | DEC, HEX, BIN, BCD, ASCII, Floating point | | | | |
| Dynamic texts/Lists of images | Value depends on dimensions of project memory | | | | |
| ISA alarms/Info-messages | -/128 | -/1024 | | | 1024/1024 |
| Help messages (pages/info messages/alarms) | 127/128/- | 1024/1024/- | | | 1024/1024/1024 |
| Alarm history buffer | - | | | | 256 |
| Recipes (Number/Variables per recipe) | - | | | | 1024/256 |
| Macros (Number/Commands per macro) | - | | 1024/16 | | |
| Print pages (Total/Number of fields per page) | - | | | | 1024/64 |
| Automatic operations/Timers | 20/20 | | 32/32 | | - |
| Equations | 32 | | | | - |
| Keyboard Operative/function/alphanumeric keys | 8/5/- | 6/4/- | 9/5/11 | 9/23/11 | 13/12/11 |
| Certifications | CE, cULus | | | | |

# Graphic HMI
## Evergreen solutions for durable control

For those applications where more detail is needed than simple text and hard key input is important, the Graphic HMI is invaluable. Capable of importing advanced graphics and having up to 28 keys, these powerful units fulfill a common industrial requirement.

**These are some features available on graphic HMIs:**

• On-screen graphics
• Alarms, passwords, recipes
• Use of Windows® fonts
• Importation of graphic images in any format
• Moving graphic objects
• Two drivers run simultaneously
• Serial or parallel printing
• Integrated CAN
• Keyboard input/selection
• Powered by Polymath

### VT130
HMI with 3" graphic LCD display, STN 4 tones of blue, 160×80, 512 KB project, clock, 128 KB recipes, 25 operative keys (5 function keys, 20 customizable). Available also with Profibus-DP network

### VT330
HMI with 10,4" graphic LCD display, 256 colors, 30 rows by 80 characters, VGA (640 x 480), MSP (RS232/422/485/TTY), ASP (RS232/485), LPT (Centronics), 2,3 MB project, clock, 256 KB recipes, 74 operative keys (28 function keys, 16 customizable)

| Features | VT130 | VT330 |
|---|---|---|
| Display Type | Graphic LCD 4 tones of blue STN | Graphic LCD 256 colors TFT |
| Display Backlight | White LED | CCFL |
| Display Resolution (pixel) | 160 x 80 (3") | 640 x 480 (10,4") |
| Backlight life (hours) | 50k | 30k |
| Display area size (mm h-v) | 67 x 37 | 211,2 x 158 |
| Columns by Rows/Character dimensions | Depending on used Font | |
| Contrast adjustment | Software | |
| Character set | Programmable fonts/TTF Windows® (also Unicode) | |
| Project (text+graphic) (bytes) | 640K | 640K+1792K |
| Recipes/Alarm buffer (bytes) | 16K/8K FLASH | 256K/8K RAM |
| Memory card for backup/Expansion (bytes) | - | 8M/4M (graphic) |
| MSP serial port | RS-232/422/485/TTY 20mA | |
| ASP serial port | RS-232 (8 pin) | RS-232/RS485 (15 pin) |
| LPT parallel port | - | Centronics |
| Integrated (option) | Profibus-DP | - |
| Optional | Profibus-DP, CAN, Interbus-S | |
| ESA-Net (variables) | Client | Server (256), Client |
| Power supply (Vdc) | 18 - 32 | |
| Consumption (W) | 10 | 15 |
| Operating temperature (°C) | 0 ... +50 (non condensing) | |
| Storage temperature (°C) | -20 ... +60 | |
| Humidity | < 85% (non condensing) | |
| External dimensions (W/H/D) (mm) | 166 x 100 x 39,6 | 435 x 260 x 74 |
| Cut-out (W/H) (mm) | 157 x 91 | 403 x 240 |
| Weight (kg) | 0,5 | 4 |
| Protection degree (front) | IP 66 | |
| Project Languages | 4 | 8 |
| Password levels/Bit passwords | 10/ 8 | |
| Pages/Fields per page | 64/22 | 1024/304 |
| Format of variables | DEC, HEX, BIN, BCD, ASCII, Floating point | |
| Dynamic texts/Lists of images | Dynamic texts/Lists of images Value depends on dimensions of project memory | |
| ISA alarms/Info-messages | 256/256 | 1024/1024 |
| Help messages (pages/info messages/alarms) | 64/256/256 | 1024/1024/1024 |
| Alarm history buffer | 220 | 256 |
| Recipes (Number/Variables per recipe) | 128/256 | 1024/512 |
| Trends (Memory/Number of samples) | - | 8192/640 |
| Pipelines (Number/Total bytes) | - | 64/512 |
| Print pages (Total/Number of fields per page) | 64/128 | 1024/128 |
| Automatic operations/Timers Equations | - | 32/32/32 |
| Max bargraphs per page (taken together with fields) | 32 | 304 |
| Indicators,potentiometers,selectors per page | - | 256 |
| Project images | BMP, JPEG, TIFF, .... etc | BMP, JPEG, TIFF, PSD, WMF, PNG, EPS, .... etc |
| Hardware clock | Supercapacitor 72 hours | With battery |
| Operative/function/alphanumeric keys | 10/5/10 | 19/28/27 |
| Certifications | CE/ cULus<br>ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 | CE/ cULus |

# HANDHELD HMI
## The power in your hands

Esa Automation offers the handheld solution HMI, with different kind of communication interface, serial and CAN. The handheld HMI is connected to the field with the standard cable. In the handheld solution you find 10 programmable Soft Key. The handheld solution is customizable with a different kind of buttons on the front, and on the rear we have the three-way "operator present" button.

**These are main features of ESA Automation handheld:**

- Over 150 communication protocols for PLCs, inverters, temperature controllers and other devices.
- Fieldbuses connections to MPI and CANopen (only VT505H)
- Up to 150 pages with help, 1500 variables
- Multilanguage, including Oriental and Cyrillic characters
- Recipe handling, Alarms, 10 levels of Passwords
- Moving Graphical objects
- Connection to serial printer
- 10 Function Keys
- Three-way "operator present" button
- Mushroom-shaped start and stop button (lights up with "start")
- IP65 protection all around
- Powered by Polymath



**VT505H HMI**
with 5,7" graphic 4 blue levels STN LCD display (320 x 240), 16 rows by 40 characters, Touch-Screen, 640 KB project, software clock, 16 KB recipes, 10 mt cable



**VT525H HMI**
with 5,7" graphic 16-color STN LCD display (320 x 240), 16 rows by 40 characters, Touch-Screen, 960 KB project, hardware clock, 32 KB recipes, 10 mt cable

| Features | VT505H | VT525H |
|---|---|---|
| Display Size | 5,7" | |
| Display Technology | STN | |
| Display Colors | 4 tones of blue | 16 colors |
| Display Backlight | CCFL | |
| Display Resolution (pixel) | 320 x 240 | |
| Backlight life (hours) | 45k | 50k |
| Touch Screen Matrix (cell dimension in pixels h-v) | 20 x 16 (16x15) | |
| Display area size (mm h-v) | 115,2 x 86,37 | |
| Columns by Rows/Character dimensions | Depending on used Font | |
| Contrast adjustment | Software | |
| Character set | Programmable fonts/TTF Windows® (also Unicode) | |
| Project memory (text+graphic) (bytes) | 640K | 960K |
| Recipes/Alarm buffer (bytes) | 16K/- FLASH | 32K/8K FLASH |
| MSP serial port | RS-232/422/485/TTY 20 mA - on VTHCB (excluded CAN version) | |
| ASP serial port | - | RS-232 - on VTHCB (excluded CAN version) |
| Integrated (option) | CAN | - |
| ESA-Net (variables) | Client | |
| Power supply (Vdc) | 18 - 32 | |
| Consumption (W) | 10 | |
| Operating temperature (°C) | 0 ... + 50 (non condensing) | |
| Storage temperature (°C) | -20 ... + 60 | |
| Humidity | <85% (non condensing) | |
| External dimensions (W/H/D) (mm) | 250 x 222 x 100 | |
| Weight (kg) | 3 | |
| Protection degree | IP 65 on all sides | |
| Project Languages | 4 | 6 |
| Password levels/Bit passwords | 10/8 | |
| Pages/Fields per page | 128/34 | 150/48 |
| Format of variables | DEC, HEX, BIN, BCD, ASCII, Floating point | |
| Dynamic texts/Lists of images | Value depends on dimensions of project memory | |
| ISA alarms/Info-messages | -/256 | 256/256 |
| Help messages (pages/info messages/alarms) | 128/256/- | 150/256/256 |
| Alarm history buffer | - | 220 |
| Recipes (Number/Variables per recipe) | 128/256 | |
| Macros (Number/Commands per macro) | 1024/16 | |
| Print pages (Total/Number of fields per page) | - | 64/128 |
| Automatic Operations/Timers/Equations | 32/32/32 | |
| Max bargraphs per page (taken together with fields) | 34 | 48 |
| Project images | BMP, JPEG, TIFF, PSD, WMF, PNG, EPS, ECC... | |
| Buttons per page | Number of buttons corresponding to the number of Touch-Screen cells | |
| Hardware clock | - | Supercapacitor 72 hours |
| Function keys | 10 | |
| Certifications | CE/cULus | |
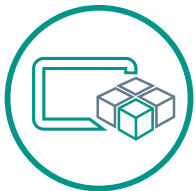
# Esaware HMI + SoftPLC
## Control made easy

Our HMI + SoftPLC CoDeSys + Ethercat master for visualization/ control through remote I/O and Remote Maintenance Platform.
A solution for the control and command of any kind of industrial application. Thanks to the Ethercat Master interface it is possible to connect different devices to the external enviroment.

**These are EW100AB main features:**

- Preloaded CoDeSys v.3.5 Runtime
- Embedded NVRam
- Watchdog Sw
- Wathcdog Hw
- Ethercat Master interface on board
- Operating System Windows Embedded Compact 7 Pro
- Preloaded Everyware runtime
- SNTP Server and Client
- Aluminum Front Side PTFE coating
- True Flat Touch Screen
- Status leds on front
- CPU Arm Cortex A8 1 GHz
- Ram DDR3
- Internal Memory 3 Gbyte
- SDHC v2.0 (up to 25 Mbyte/s)
- High Bright 16 Millions Colors Display



**EW100**

**EtherCAT.**

I/O    I/O    I/O    I/O
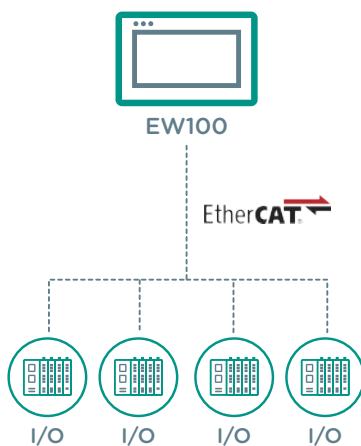
The EW100AB is complemented with Ethercat "real time" Ethernet system enabling high-performance control and communication of compatible I/O and motion control devices.

| Features | EW104AB | EW107AB | EW112AB | EW115AB |
|---|---|---|---|---|
| Display Size | 4,3" | 7" | 12,1" | 15,6" |
| Display Technology | TFT | | | |
| Display Colors | 262 K | 16 M | | |
| Display Backlight | LED | | | |
| Display Brightness (cd/m²) | 400 | 600 | 400 | 300 |
| Display Resolution (pixel) | 480 x 272 | 800 x 480 | 1280 x 800 | 1366 x 768 |
| Backlight life (hours) | 50 K | | | |
| Processor | ARM Cortex A8 | | | |
| RAM | 256 MB DDR3 | | 512 MB DDR3 | |
| Flash | 3GB | | | |
| NVRAM | 32Kb (SoftPLC) | | | |
| Scan Time (µSec) | Typical 30 | | | |
| Serial Ports | SP1 RS232/485-MPI-COM0; SP2 RS232/485-MPI-COM0; CAN; Profibus | | | |
| Ethernet (Ethercat Master) | 1 x 10/100Mb | | 2 x 10/100Mb | |
| USB Ports | 1 x USB Host + 1 x USB Device | | 2 x USB Host + 1 x USB Device | |
| Cardbus Slot | 1 x SDHC/MMC | | | |
| Power Supply (Vdc) | 18 - 32 | | | |
| Consumption (W) | 4 | 7 | 15 | 19 |
| Operating Temperature (°C) | -10 ... + 50 (non condensing) | | | |
| Storage Temperature (°C) | -20 ... + 65 | | | |
| Humidity | <90% (non condensing) | | | |
| External dimensions (W/H/D) (mm) | 166 x 112 x 45,9 (61 with double port) | 202 x 142 x 45,9 | 340,5 x 238,5 x 48,6 | 436,5 x 285,5 x 54,4 |
| Cut-out dimensions (W/H) (mm) | 158,5 x 104,5 | 195 x 135 | 326 x 227 | 422,5 x 271,5 |
| Weight (kg) | 0,5 | 0,8 | 2,5 | 4,5 |
| Protection degree (front) | IP 66 | | | |
| Certifications | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / cULus (Certificate no. E189179) / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 | | | |

# Esaware HMI + SoftPLC + I/O
## Control made easy

Our HMI + SoftPLC CoDeSys + Ethercat master + I/O for visualization/control through onboard I/O and Remote Maintenace Platform. The embedded complete solution for the control and command of any kind of industrial application. Thanks the EW600 I/Os it is possible to create extremely flexible configurations.
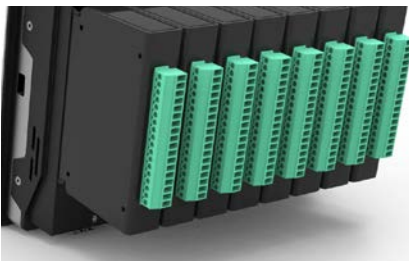
With the addition of an integrated I/O backplane and Esaware EW600 local I/O, the EW100AC is the complete automation control system. The EW100AC "all in one" solution can be expanded with Ethercat "real time" distributed I/O, delivering ultimate flexibility and efficiency.

**These are EW100AC main features:**

- Backplane for EW600 I/O
- Preloaded CoDeSys v.3.5 Runtime
- Embedded NVRam
- Watchdog Sw
- Wathcdog Hw
- Ethercat master interface on board
- Operating System Windows Embedded Compact 7 Pro
- Preloaded Everyware runtime
- SNTP Server and Client
- Aluminum Front Side PTFE coating
- True Flat Touch Screen
- Status leds on front
- CPU Arm Cortex A8 1 GHz
- Ram DDR3
- Internal Memory 3 Gbyte
- SDHC v2.0 (up to 25 Mbyte/s)
- High Bright 16 Millions Colors Display

| Features | EW104AC | EW107AC | EW112AC | EW115AC |
|---|---|---|---|---|
| Display Size | 4,3" | 7" | 12,1" | 15,6" |
| Display Technology | TFT | | | |
| Display Colors | 262 K | 16 M | | |
| Display Backlight | LED | | | |
| Display Brightness (cd/m²) | 400 | 600 | 400 | 300 |
| Display Resolution (pixel) | 480 x 272 | 800 x 480 | 1280 x 800 | 1366 x 768 |
| Backlight life (hours) | 50 K | | | |
| Processor | ARM Cortex A8 | | | |
| RAM | 256 MB DDR3 | | 512 MB DDR3 | |
| Flash | 3GB | | | |
| I/O Slot | 4 | 8 | 12 | 16 |
| NVRAM | 32Kb (SoftPLC) | | | |
| Scan Time (µSec) | Typical 30 | | | |
| Serial Ports | SP1 RS232/485-MPI-COM0 ; SP2 RS232/485-MPI-COM0 ; CAN ; Profibus | | | |
| Ethernet (Ethercat Master) | 1 x 10/100Mb | 2 x 10/100Mb | | |
| USB Ports | 1 x USB Host + 1 x USB Device | | 2 x USB Host + 1 x USB Device | |
| Cardbus Slot | 1 x SDHC/MMC | | | |
| Power Supply (Vdc) | 18 - 32 | | | |
| Consumption (W) | 4 | 7 | 15 | 19 |
| Operating Temperature (°C) | -10 ... + 50 (non condensing) | | | |
| Storage Temperature (°C) | -20 ... + 65 | | | |
| Humidity | <90% (non condensing) | | | |
| External dimensions (W/H/D) (mm) | 166 x 112 x 45,9 (61 with double port) | 202 x 142 x 45,9 | 340,5 x 238,5 x 48,6 | 436,5 x 285,5 x 54,4 |
| Cut-out dimensions (W/H) (mm) | 158,5 x 104,5 | 195,0 x 135,0 | 326,0 x 227,0 | 422,5 x 271,5 |
| Weight (kg) | 0,5 | 0,8 | 2,5 | 4,5 |
| Protection degree (front) | IP 66 | | | |
| Certifications | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / cULus (Certificate no. E189179) / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 | | | |

# Esaware Panel IPC
## Design your own performance

The EW200 Panel IPC line satisfies the latest market and application requirements, thanks to new technological features such as LCD 16:9 widescreen display and resistive and capacitive touchscreen. Esaware Panel IPCs come in different sizes, from 12,1" to 21,5", and have been designed to work flawlessly in any situation.

Our unique Twist design and the PTFE non-stick coating prevent dust and dirt accumulation on the bezel, making it ideal for industrial environments.

Esaware Panel IPC's offer a comprehensive choice of options and configurations while maintaining high performance and lasting reliability.

**These are EW200 Panel IPC MITX main features:**

- SDRAM with DDR3 technology, less consumption but faster than DDR2
- Connection device on SATA 3.0, transfer baud rate up to 6.0 Gb/s.
- PCI /PCIe slot available
- Embedded and long availability Intel processors, based on 3rd and 4th Generation
- LCD wide-screen with LED backlit, 40% extra display surface

**These are EW200 Panel IPC SLIM main features:**

- Extremely reduced depth for CPU module.
- Intel Baytrail and Intel Haswell platforms, both fanless
- Embedded and long delivery 4th generation CPUs, engineered for high performances and low consumption
- CPUs Celeron J1900 quad core, Intel i3-4010U and Intel i7-4650U dual core, significantly increasing the overall performance
- New SoC technology (System-on-Chip): better performance with less components
- Enhanced embedded graphics with API directX 11.1
- RAM DDR3L, USB 3.0, 2 Intel® LANs

SLIM version
CPUs 4th generation FANLESS
USB 3.0
2 independent LANs

MITX version.
Variety of Atom and i-core CPUs
FANLESS and FAN
Accessible dual slot bay 2,5"
2 independent LANs
PCI / PCIe Slot

## EW200 MITX

| Features | 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 Atom<br>CPU Fanless Celeron<br>CPU Fan Intel® Core™ 3G<br>CPU Fan Intel® Core™ 6G | Atom Dual Core N2800 1,86 GHz<br>Celeron Quad Core J1900 2,0 GHz<br>Intel Core i3-3120ME 2,4GHz/ i5-3610ME 2,7GHz/ i7-3610QE 2,3 GHz<br>Intel Celeron G3900TE 2,6GHz/ Intel Core i3-6100TE 2,7GHz/ i5-6500TE 2,3GHz/<br>i7-6700TE 2,4 GHz | | | |
| Chipset | NM10 Atom / SoC / QM67 / Q170 | | | |
| GPU embedded | GMA3650 650MHz / HD Graphics - 4000 / HD Graphics 9G 510-530 | | | |
| RAM (Atom Dual Core)<br>RAM (Celeron Quad Core)<br>RAM (Fan Intel® Core™) 3G<br>RAM (Fan Intel® Core™) 6G | up to 4GB DDR3 SODIMM 1066MHz 204 pin<br>up to 8GB DDR3L SODIMM 1333MHz 204 pin<br>up to 16GB DDR3 SODIMM 1333/1600MHz 204 pin<br>up to 32GB DDR4 SODIMM 1866/2133MHz 260 pin | | | |
| RS232 / RS485 | 2x RS232 + 1x RS232-422-485 | | | |
| USB Port IP66 front<br>USB Ports 2.0/3.0 rear | 1x -no capacitive-<br>4/0 Atom - 3/1 Celeron - 4/0 iCore™ 3G - 0/4 iCore™ 6G | | | |
| Ethernet (Atom Dual Core)<br>Ethernet (Celeron Quad Core)<br>Ethernet (Fan iCore™) 3G<br>Ethernet (Fan iCore™) 6G | 2x 1Gb RJ45 Intel 82574L<br>2x 1Gb RJ45 Intel I210<br>2x 1Gb RJ45 Intel 82579LM / Realtek RTL8111DL<br>2x 1Gb RJ45 Intel I210AT / I219LM | | | |
| VGA/DVI-D (Atom Dual Core)<br>VGA/DVI-D (Celeron Quad Core)<br>VGA/DVI-D (Fan iCore™) 3G<br>DVI-D/HDMI (Fan iCore™) 6G | 1x / 1x (dimmable LCD backlit)<br>1x / 1x<br>1x / 1x<br>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. 16GB / 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 | 85% (non condensing) | | | |
| External dimensions (W/H/D) (mm) | 340,5x238,5x87,8 (max) | 436,5x285,5x87,8 (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) | IP66 | | | |
| Certifications | CE - EN61000-6-2 / EN61000-6-4 / EN60068-2-6/27/30 / cULus (Certificate no. E189179) / EAC<br>ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22 | | | |

## EW200 SLIM

| Features | 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 4G<br>CPU Fanless Intel® Core™ 4G | Celeron Quad Core J1900 2,0 GHz (2,42GHz) – 10W<br>Intel Core i3-4010U 1,7GHz / i7-4650U 1,7GHz (3,3GHz) – 15W | | | |
| Chipset | SoC | | | |
| GPU embedded Celeron J1900 | HD Graphics | | | |
| GPU embedded i-core i3-4010U | HD Graphics 4400 | | | |
| GPU embedded i-core i7-4650U | HD Graphics 5000 | | | |
| RAM (Celeron Quad Core)<br>RAM (Fanless Intel® Core™) | on board 4GB DDR3L 1066/1333MHz - dual channel -<br>up to 8GB DDR3L SODIMM 1333/1600MHz 204 pin -single channel- | | | |
| RS232 / RS485 | 1x RS232 + 1x RS485 | | | |
| USB Port IP66 front<br>USB Ports 2.0/3.0 rear | 1x -no capacitive-<br>1x 2.0 + 1x 3.0 CPU J1900 / 4x 3.0 CPU Intel® Core™ | | | |
| Ethernet Celeron J1900<br>Ethernet iCore™ i3/i7 | 2x 1Gb RJ45 Intel I210<br>2x 1Gb RJ45 Intel I210/I218 | | | |
| VGA/DP (Celeron J1900)<br>DP (iCore™ i3/i7) | 1x / 1x (DP passive cable required)<br>2x (DP active cable required) | | | |
| RAID 0/1 | 2x SSD on CPU iCore / 2x mSATA on CPU J1900 | | | |
| Expansion Slot | 1x miniPCIe CPU J1900 / 2x miniPCIe CPU i-Core | | | |
| Drives externally accessible | CFast slot (option) | | | |
| Drives (internal) | HDD min. 500GB / SSD min. 16GB / 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) | IP66 | | | |
| Certifications | CE / EN61000-6-2 / EN61000-6-4 / EN60068-2-6 / EN60068-2-6/27/30<br>cULus (Certificate no. E189179) / EAC / ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 | | | |

IPC

DEM

WEB PANEL

ROUTER

PANEL IPC

HMI

DATA MANAGER

BOX IPC COMPACT

I/O

BOX IPC RUGGED

INDUSTRY 4.0

MOTORS

DRIVES
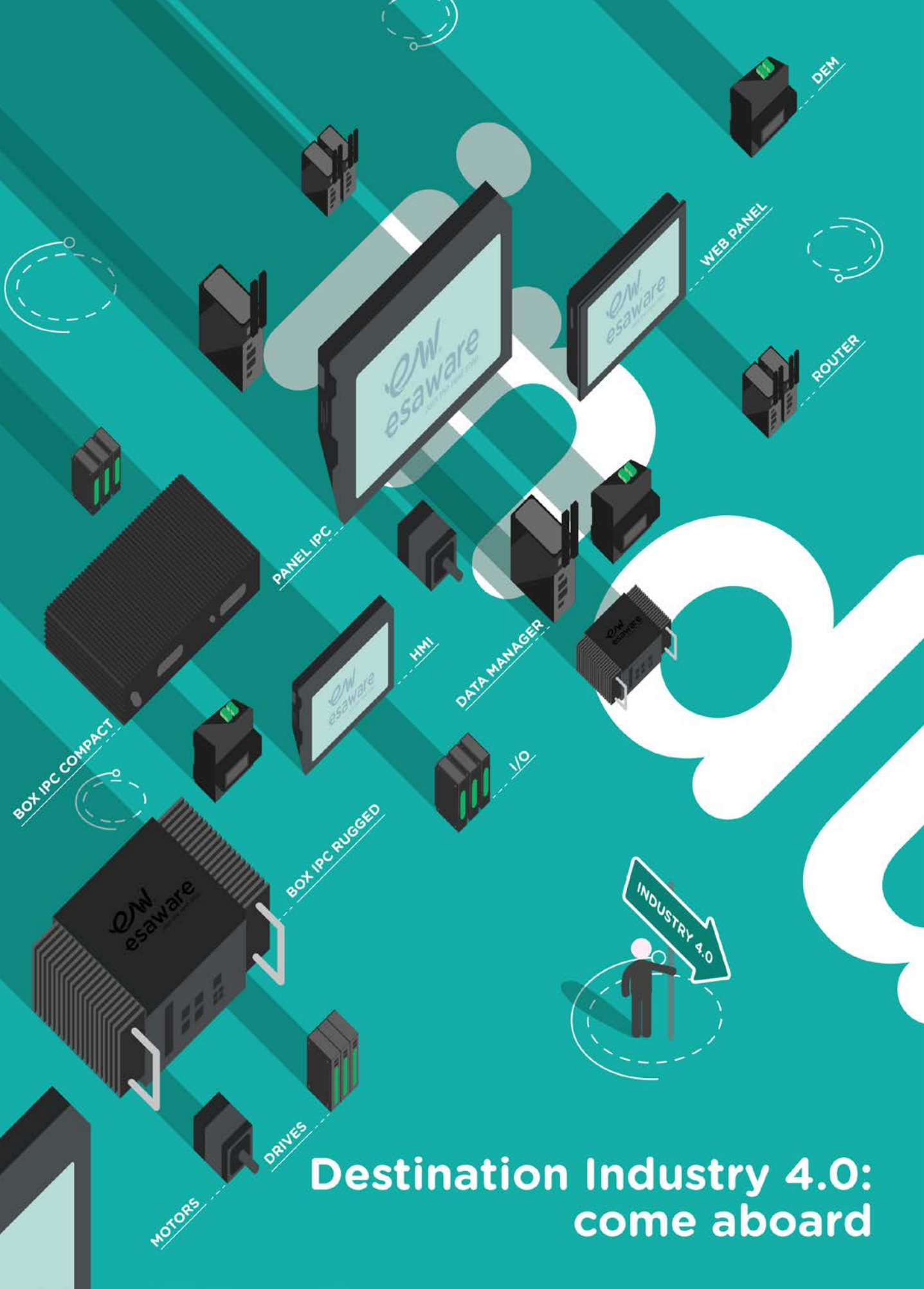
# Destination Industry 4.0:
## come aboard

# Industrial PC Configuration Tool

ESA Automation has equipped its entire sales network with the ingenious PC Configuration Tool. As a result, after consultation with the customer, ESA Automation sales engineer can provide a "tailor-made" quotation that generates a unique IPC code. The whole process from initial customer contact to providing the quotation is quick, efficient and above all provides a detailed product specification for every customer request.

# Panel IPC
## Huge flexibility. Extreme durability.

ESA Automation XS7 industrial PC family offers a complete range of Panel PCs based on different CPUs: Intel iCore i3, i5 and i7, Intel Atom Dual Core and Intel Celeron Quad Core that can meet any automation requirement.

Precise design, quality components and mechanical strength, combined with configuration flexibility make XS7 the perfect IPC solution for harsh environments, including those with high concentrations of dust, severe vibrations or high temperatures.

**These are XS7 Panel IPC main features:**

• Wide choice of LCD size and touch screens from 7" wide up to 19"
• High configuration flexibility with HDD, SSD, mSATA/CFast, PCI/PCIe slot, CPU and RAM
• Elegant and precise industrial design, available with aluminum or INOX stainless steel finishing for the front bezel
• Removable HDD/SSD
• RAID function

# XS7 Industrial Panel Dynamic iCore

| Features | XS712 | XS715 | XS717 | XS719 |
|---|---|---|---|---|
| Display Size | 12,1" SVGA - 12,1" XGA | 15" | 17" | 19" |
| Display Technology | TFT | | | |
| Display Colors | 16,7 M | | | |
| Display Backlight | LED | | | |
| Backlight life (hours) | 50 K | | | |
| Display Resolution  (pixel) | 800x600 (SVGA) - 1024x768 (XGA) | 1024 x 768 | 1280 x 1024 | |
| Touch screen  Type | Analog resistive (5 wires) | | | |
| CPU Fan Intel® Core™ 2G<br>CPU Fan Intel® Core™ 6G | Intel® Celeron B810 1.6GHz, Intel® Core i3-2330E 2.2 GHz, i5-2510E 2.5 GHz, i7-2710QE 2.1GHz<br>Intel® Celeron G3900TE 2,6GHz/ Intel® Core i3-6100TE 2,7GHz/ i5-6500TE 2,3GHz/ i7-6700TE 2,4 GHz | | | |
| Chipset | QM67PCH / Q170 | | | |
| Graphics embedded | Intel HD Graphics – 3000 / HD Graphics 9G 510-530 | | | |
| DMI | DMI2 5GT/s -  DMI3 8GT/s (iCore 6G) | | | |
| RAM (Fan Intel® Core™) 2G<br>RAM (Fan Intel® Core™) 6G | up to 16GB DDR3 SODIMM 204pin Dual Channel 1066/1333 MHz<br>up to 32GB DDR4 SODIMM 1866/2133MHz 260 pin | | | |
| Hard disk/SSD (opt.) | min. 500 GB SATA 2,5" / SSD 16 GB | | | |
| Internal CF/CFast (opt.) | 1 x | | | |
| External CF/CFast (opt.) | 1 x | | | |
| RS232 serial port | 2 x | | | |
| RS485 serial port | 1 x | | | |
| USB on front (2.0) IP66 | 1x | | | |
| USB on rear (2.0/3.0) | 4/0 (iCore 2G) -  0/4 (iCore 6G) | | | |
| Ethernet (iCore™) 2G<br>Ethernet (iCore™) 6G | 2x 1Gb RJ45    Intel 82579LM / Realtek RTL8111DL<br>2x 1Gb RJ45   Intel I210AT / I219LM | | | |
| Green led on front | 1 x | | | |
| PS/2 keyboard / mouse port | 1 x (iCore 2G) | | | |
| PCI Slot (opt.) | 1x PCI / 2x PCI / PCIe x1 / PCIe x16 | | | |
| mPCIe slot | 2x (iCore 6G) | | | |
| Wi-Fi card (opt.) | PCIe | | | |
| Video port | 1x DVI-D / VGA (iCore™ 2G) - 1x  DVI-D / HDMI (iCore™ 6G) | | | |
| Audio port | MIC IN + Line IN + Line OUT (Fan iCore™ 2G) | | | |
| External (W x H x D) (mm) | 336 x 256 x 81 | 425 x 300 x 85,5 | 446 x 346 x 84 | 508 x 384 x 92,5 |
| Cut-out (W x H) (mm) | 320 x 240 | 393 x 275 | 426 x 326 | 477 x 355 |
| Power supply (Vdc) | 18...30 max 75 W | 18...30 max 85 W | 18...30  max 95 W | |
| Power consumption (24 Vdc basic config - NO PCI CARDS) (W) | 48/58 | 55/65 | 67/77 | |
| Protection level | IP 66 on front | | | |
| Operating temperature (°C) | 0...+50 | | | |
| Storage temperature (°C) | -20...+65 | | | |
| Humidity | 90% | | | |
| Weight (kg) | ~ 5 | ~ 6,5 | ~ 9 | ~ 11 |
| Certifications | CE / ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22<br>Environment EN 60068-2-6/27/30/ Immunity EN 61000-6-2 / Emissions 61000-6-4 | | | |
| Optional kits | | | | |
| Frontal INOX with True-flat Touch screen | 12,1" / 15" / 19"  -  No LED/USB frontal | | | |
| RAID 2xHDD function | Yes | | | |
| Removable HDD/SSD | Yes | | | |
| DVD-RW Sata | External (opt.) | | | |
| Operating System (32/64 bit according to CPU type) | WIN7 - WES7 - XP Pro for Embedded - WIN8.1 - WIN10 | | | |

## XS7 Industrial Panel PC Fanless

| Features | XS708 | XS712 | XS715 | XS717 | XS719 |
|---|---|---|---|---|---|
| Display Size | 8,4" | 12,1" SVGA - XGA | 15" | 17" | 19" |
| Display Technology | TFT | | | | |
| Display Colors | 16,7 M | | | | |
| Display Backlight | LED | | | | |
| Lamp life (min. at 25 °C) | 50 K | | | | |
| Display Resolution (pixel) | 800 x 600 | 800x600 (SVGA) 1024x768 (XGA) | 1024 x 768 | 1280 x 1024 | |
| Touch screen Type | Analog resistive (4 wires) | Analog resistive (5 wires) | | | |
| CPU Fanless Celeron CPU Fanless Intel® Core™ | Celeron quad Core J1900 2,0 GHz (2,42GHz) – 10W Intel Core i3-4010U 1,7GHz / i7-4650U 1,7GHz (3,3GHz) – 15W | Intel® ATOM Dual Core 1,86 GHz N2800 | | | |
| Chipset | SoC | NM10 | | | |
| GPU embedded Celeron J1900 GPU embedded iCore i3-4010U GPU embedded iCore i7-4650U | HD Graphics HD Graphics 4400 HD Graphics 5000 | Intel® GMA 3650 | | | |
| DMI | - | DMI 2,5 GT/s | | | |
| RAM (Celeron Quad Core) RAM (Fanless Intel® Core™) | on board 4GB DDR3L 1066/1333MHz - dual channel - up to 8GB DDR3L SODIMM 1333/1600MHz 204 pin -single channel- | Up to 4GB DDR3 SODIMM 204 pin | | | |
| Hard disk / SSD (optional) | - | min. 500 GB SATA 2,5" / SSD 16 GB | | | |
| Compact Flash Slots Internal (opt.) | - | 1 x | | | |
| CF / CFast Slot External (opt.) | 1 x CFast | 1 x CF | | | |
| RS232 serial port | 1 x | 2 x | | | |
| RS485 serial port | 1 x | | | | |
| USB on front (2.0) IP66 | 1 x | | | | |
| USB on rear (2.0 - 3.0) | 0/4 | 4/0 | | | |
| Ethernet Celeron J1900 Ethernet iCore™ i3/i7 | 2x 1Gb RJ45 Intel I210 2x 1Gb RJ45 Intel I210/I218 | 2x 1Gb Intel 82574 | | | |
| Green led on front | 1 x | | | | |
| Slot (opt.) | - | 1x PCI / 2x PCI | | | |
| Mini PCIe slot | 1x | 1x | | | |
| PCIe slot x1 (opt.) | - | 1x | | | |
| Wi-Fi card (opt.) | Wi-Fi Mini PCIe | PCI / PCIe 1x | | | |
| VGA/DP (Celeron J1900) DP (iCore™ i3/i7) | 1x / 1x (DP passive cable required) 2x (DP active cable required) | 1xVGA + 1x DVI-I (single-link digital signal only) | | | |
| Audio port | - | Line-in + Line-out + Mic-in | | | |
| External (WxHxD) (mm) | 250 x 190 x 80 | 336 x 256 x 81 | 425 x 300 x 85,5 | 446 x 346 x 84 | 508 x 384 x 92,5 |
| Cut-out (WxH) (mm) | 241 x 180 | 320 x 240 | 393 x 275 | 426 x 326 | 477 x 355 |
| Back-up with battery | 1x | | | | |
| Power supply (Vdc) | 18...30 max 50W | 18...30 max 75W | 18...30 max 85W | 18...30 max 95W | 18...30 max 95W |
| Power consumption (24 Vdc basic config - NO PCI CARDS) (W) | 30 | 36 | 43 | 55 | |
| Protection level | IP 66 on front | | | | |
| Operating temperature (°C) | 0...+50 | | | | |
| Storage temperature (°C) | -20...+65 | | | | |
| Humidity | 90% | | | | |
| Weight (kg) | ~3 | ~5 | ~6,5 | ~9 | ~11 |
| Certifications | CE, ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 Environment EN 60068-2-6/27/30 / Immunity EN 61000-6-2 / Emissions 61000-6-4 | | | | |

Optional kits

| | XS708 | XS712 | XS715 | XS717 | XS719 |
|---|---|---|---|---|---|
| Frontal INOX with True-flat Touch screen | 12,1" / 15" / 19" - No LED/USB frontal | | | | |
| RAID 2xHDD function | - | Yes | | | |
| Removable HDD/SSD | - | Yes | | | |
| DVD-RW SATA | - | External (opt.) | Internal (opt.) | | |
| Operating system (32/64 bit according to CPU type) | WIN7 - WES7 - WIN8.1 - WIN10 | WES2009 - Win® XP Pro SP3 MUI - WIN7 - WES7 | | | |

## XS7 Industrial Panel PC Fanless Celeron

| Features | XS712 | XS715 | XS717 | XS719 |
|---|---|---|---|---|
| Display Size | 12,1" SVGA - 12,1" XGA | 15" | 17" | 19" |
| Display Technology | TFT | | | |
| Display Colors | 16,7 M | | | |
| Display Backlight | LED | | | |
| Backlight life (hours) | 50 K | | | |
| Display Resolution (pixel) | 800x600 (SVGA) - 1024x768 (XGA) | 1024 x 768 | 1280 x 1024 | |
| Touch screen Type | Analog resistive (5 wires) | | | |
| CPU Fanless 4G | Intel® Celeron Quad Core J1900 2,00 GHz | | | |
| Chipset | SoC | | | |
| Graphics embedded | Intel® HD Graphics | | | |
| RAM | Up to 8GB DDR3L 1333 MHz SODIMM 204 pin | | | |
| Drives (internal) | min. 500 GB SATA 2,5" / SSD 16 GB / mSATA 32 GB CFast min.4GB (options) | | | |
| CFast Slots External (opt.) | 1 x | | | |
| RS232 serial port | 2 x | | | |
| RS485 serial port | 1 x | | | |
| USB on front (2.0) IP66 | 1 x | | | |
| USB on rear (2.0/3.0) | 3/1 | | | |
| Slot (options) | 1PCI / 2PCI / 1PCIe x1 | | | |
| Wi-Fi card (opt.) | PCI / PCIe1x / mPCIe | | | |
| Video port | 1xVGA + 1x DVI-D (single-link digital signal only) | | | |
| Audio port | MIC IN + Line OUT | | | |
| Ethernet ports RJ45 | 2 x Ethernet 1Gb Intel I210 | | | |
| External Dimensions (WxHxD) (mm) | 336 x 256 x 81 | 425 x 300 x 85,5 | 446 x 346 x 84 | 508 x 384 x 92,5 |
| Cut-out Dimensions (WxH) (mm) | 320 x 240 | 393 x 275 | 426 x 326 | 477 x 355 |
| Back-up with battery | 1 x | | | |
| Power supply (Vdc) | 18...30 max 75W | 18...30 max 85 W | 18...30 max 95 W | 18...30 max 95 W |
| Power consumption (24 Vdc basic config - NO PCI CARDS) (W) | 36 | 43 | 55 | |
| Protection level | IP 66 on front | | | |
| Operating temperature (°C) | 0...+50 | | | 18..30 max 95 W |
| Storage temperature (°C) | -20...+65 | | | |
| Humidity | 90% | | | |
| Weight (kg) | ~ 5 | ~ 6,5 | ~ 9 | ~ 11 |
| Certifications | CE, ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 Environment EN 60068-2-6/27/30 / Immunity EN 61000-6-2 / Emissions 61000-6-4 | | | |

**Optional kits**

| | | |
|---|---|---|
| Frontal INOX with True-flat Touch screen | 12,1" / 15" / 19" - No LED/USB frontal | |
| RAID 2xHDD function | Options | |
| Removable HDD/SSD | Options | |
| DVD-RW SATA | External (opt.) | Internal |
| Operating system (32/64 bit according to CPU type) | WIN7 - WES7 ~ WIN8.1 - WIN10 | |

# Stainless Steel Panel IPC
## Extreme durance. High endurance.

ESA Automation XS7 industrial PC family is also available with bezel in Stainless Steel.

The XS7 INOX V2A stainless steel products conform to FDA 21 / EN1672-2 a meeting Food Processing, Pharma and Chemical industry safety and hygiene requirements.

ESA Automation's XS7 industrial PCs are designed, built and tested to ATEX (Zone 2/22, category 3 G/D) and EN60068-2-6/27/30 enabling these robust units to safely withstand vibration, shock and humidity expected in these severe environments.

**These are XS7 stainless steel Panel IPC main features:**

- Wide choice of LCD size and touch screens from 7" wide up to 19"
- High configuration flexibility with HDD, SSD, mSATA/CFast, PCI/PCIe slot, CPU and RAM
- Elegant and precise industrial design, available with aluminum or INOX stainless steel finishing for the front bezel
- True-flat touch screen front bezel
- Removable HDD/SSD
- RAID function



Outward inclined INOX surface to prevent bacterial or microbial loads from depositing.
**True-flat** touch screen offers hygienic prevention and easy cleaning.

## XS7 Panel Dynamic iCore Stainless Steel

| Features | XS712 | XS715 | XS719 |
|---|---|---|---|
| Display Size | 12,1" SVGA - 12,1" XGA | 15" | 19" |
| Bezel in Stainless steel | 6 mm of smooth and seamless inox frame with True-Flat Touch screen, No LED / USB on the front | | |
| Display Technology | TFT | | |
| Display Colors | 16,7 M | | |
| Display Backlight | LED | | |
| Backlight life (hours) | 50 K | | |
| Display Resolution  (pixel) | 800x600 (SVGA) - 1024x768 (XGA) | 1024 x 768 | 1280 x 1024 |
| Touch screen  Type | Analog resistive (5 wires) | | |
| CPU Fan Intel® Core™ 2G | Intel® Celeron B810 1.6GHz / Intel® iCore i3-2330E 2.2 GHz / i5-2510E 2.5 GHz / i7-2710QE 2.1GHz | | |
| 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 | QM67PCH  / Q170 | | |
| Graphics embedded | Intel HD Graphics - 3000 | | |
| DMI | DMI2 5GT/s - DMI3 8GT/s (iCore 6G) | | |
| RAM (Fan Intel® Core™) 2G | up to 16GB DDR3 SODIMM 204pin Dual Channel 1066/1333 MHz | | |
| RAM (Fan Intel® Core™) 6G | up to 32GB DDR4   SODIMM 1866/2133MHz 260 pin | | |
| Hard disk/SSD (opt.) | min. 500 GB SATA 2,5" / SSD 16 GB | | |
| Internal Compact Flash (opt.) | 1 x | | |
| External Compact Flash Slots (opt.) | 1 x | | |
| RS232 serial port | 2 x | | |
| RS485 serial port | 1 x | | |
| USB on rear (2.0/3.0) | 4/0 (iCore 2G) -  0/4  (iCore 6G) | | |
| Ethernet (iCore™) 2G | 2x 1Gb RJ45    Intel 82579LM / Realtek RTL8111DL | | |
| Ethernet (iCore™) 6G | 2x 1Gb RJ45   Intel I210AT / I219LM | | |
| PS/2 keyboard / mouse port | 1 x (iCore 2G) | | |
| PCI slot (opt.) | 1x PCI / 2x PCI / PCIe x1 / PCIe x16 | | |
| mPCIe slot | 2x (iCore 6G) | | |
| Wi-Fi card (opt.) | PCIe | | |
| Video port | 1x DVI-D / VGA (iCore™ 2G) - 1x DVI-D / HDMI (iCore™ 6G) | | |
| Audio port | MIC IN + Line IN + Line OUT (Fan iCore™ 2G) | | |
| Ethernet ports RJ45 | 2 x Ethernet 10/100/1000 Mbit Intel 82579 - RTL 8111 | | |
| External (W x H x D) (mm) | 336 x 256 x 81 | 425 x 300 x 85,5 | 508 x 384 x 92,5 |
| Cut-out (W x H) (mm) | 320 x 240 | 393 x 275 | 477 x 355 |
| Power supply (Vdc) | 18...30 max 75 W | 18...30 max 85 W | 18...30 max 95 W |
| Power consumption (W) (24 Vcc basic config - NO PCI CARDS) | 48/58 | 55/65 | 67/77 |
| Protection level | IP 69K on front | IP 66 on front | |
| Operating temperature (°C) | 0...+50 | | |
| Storage temperature (°C) | -20...+65 | | |
| Humidity | 90% | | |
| Weight (kg) | ~5 | ~6,5 | ~11 |
| Certifications | CE / ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22 Environment EN 60068-2-6/27/30 / Immunity EN 61000-6-2 / Emissions 61000-6-4 | | |

| Optional kits | | | |
|---|---|---|---|
| RAID 2xHDD function | Yes | | |
| Removable HDD/SSD | Yes | | |
| DVD-RW Sata | External (opt.) | | |
| Operating system (32/64 bit according to CPU type) | WIN7 - WES7 - XP Pro for Embedded - WIN8.1 - WIN10 | | |

## XS7 Industrial Panel PC Fanless Stainless Steel

| Features | XS712 | XS715 | XS719 |
|---|---|---|---|
| Display Size | 12,1" SVGA - 12,1" XGA | 15" | 19" |
| Bezel in Stainless steel | 6 mm of smooth and seamless inox frame with True-Flat Touch screen, No LED / USB on the front | | |
| Display Technology | TFT | | |
| Display Colors | 16,7 M | | |
| Display Backlight | LED | | |
| Backlight life (hours) | 50 K | | |
| Display Resolution (pixel) | 800x600 (SVGA) 1024x768 (XGA) | 1024 x 768 | 1280 x 1024 |
| Touch screen Type | Analog resistive (5 wires) | | |
| CPU (Atom) CPU (Celeron) | Intel® ATOM Dual Core 1,86 GHz N2800 Intel® Celeron Quad Core 2,00 GHz J1900 | | |
| Chipset(Atom) Chipset (Celeron) | NM10 SoC | | |
| Graphic (Atom) Graphic (Celeron) | Intel® GMA 3650 Intel® HD Graphics | | |
| DMI | DMI 2,5 GT/s / - | | |
| RAM (Atom) RAM (Celeron) | Up to 4GB DDR3 1066 MHz SODIMM 204 pin Up to 8GB DDR3L 1333 MHz SODIMM 204 pin | | |
| Drives (internal) Atom | min. 500 GB SATA 2,5" / SSD 16 GB / CF2GB | | |
| Drives (internal) Celeron | min. 500 GB SATA 2,5" / SSD 16 GB / CFast 4GB - mSATA 32 GB | | |
| CF / CFast (external) | 1x CF (Atom)/ 1x CFast (Celeron) (option) | | |
| RS232 serial port | 2 x | | |
| RS485 serial port | 1 x | | |
| USB on rear (2.0/3.0) | 4/0 (Atom) - 3/1 (Celeron) | | |
| Ethernet ports RJ45 | 2 x 1Gb Intel 82574 (Atom) - 2 x 1Gb Intel I210 (Celeron) | | |
| PCI / PCIe Slot (opt.) | PCI / 2xPCI / PCIe x1 / PCIe x16 | | |
| Mini PCIe slot | 1 x | | |
| Wi-Fi card (opt.) | PCI / mPCIe / PCIe1x | | |
| VGA/DVI-D | 1/1 dimmable LCD backlit (Atom) | | |
| VGA/DVI-D | 1/1 | | |
| Audio port | Line-in + Line-OUT + MIC-IN (Atom) - MIC-IN + Line-OUT (Celeron) | | |
| External (WxHxD) (mm) | 336 x 256 x 81 | 425 x 300 x 85,5 | 508 x 384 x 92,5 |
| Cut-out (WxH) (mm) | 320 x 240 | 393 x 275 | 477 x 355 |
| Back-up with battery | 1 x | | |
| Power supply (Vdc) | 18...30 max 75W | 18...30 max 85 W | 18...30 max 95 W |
| Power consumption (W) (24 Vdc basic config - NO PCI CARDS) | 36 | 43 | 55 |
| Protection level | IP 69K on front | IP 66 on front | |
| Operating temperature (°C) | 0...+50 | | |
| Storage temperature (°C) | -20...+65 | | |
| Humidity | 90% | | |
| Weight (kg) | ~ 5 | ~ 6,5 | ~ 11 |
| Certifications | CE / ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 Environment EN 60068-2-6/27/30 / Immunity EN 61000-6-2 / Emissions 61000-6-4 | | |

### Optional kits

| | XS712 | XS715 | XS719 |
|---|---|---|---|
| RAID 2xHDD function | Yes | | |
| Removable HDD/SSD | Yes | | |
| DVD-RW Sata | External (opt.) | Internal (opt.) | |
| Operating system (32/64 bit according to CPU type) | WES2009 - Win® XP Pro SP3 MUI - WIN7 - WES7 - WIN8.1 - WIN10 | | |
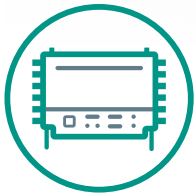
# Esaware Box IPC
## Rugged design. Expandable technology.

The new Box IPC range that fulfills even the toughest industrial requirements.
Esaware EW400 rugged Box IPCs have been designed for harsh industrial environments.
The EW400 series is particularly suited when thermal shocks and critical temperature conditions are required, -20 / +60 °C .

**These are EW400 Rugged main features:**

• Fanless design
• Rugged structure
• A technologically advanced heat dissipation system and an operating Temperature between -20 and + 60°C
• Heat-pipe cooling: an efficient active cooling system that allows the device to maintain superior computing performances without CPU throttling even in high temperature environments
• Up to CPU i7 quad core
• Equipped with the state-of-the-art I/F; USB 3.0, CFast, PCIe/PCI expansions



Side A - Detail of CFast slot , serial ports and main power push button switch.
APO or ATX selection.



Side B - Huge I/F capability towards the field, 3 display ports , 4 USB 3.0 , 2 independent LAN ports.

| Features | EW400 Atom | EW400 Intel Core |
|---|---|---|
| Aluminium Enclosure | Heavy duty steel chassis<br>Selection ATX/APO via Bios<br>LED green on/off<br>On/Off push-button<br>LED red HDD<br>Lockable power connector<br>Aluminum heat-sink with Heat-Pipe thermal system | |
| CPU Fanless | Atom Dual Core D2550 1,86 GHz | Intel Core i3-3120ME 2,4GHz<br>Intel Core i7-3610QE Quad 2,3GHz |
| Chipset | NM10 DMI 2,3GT/s | QM77 DMI 5GT/s |
| GPU embedded | GMA3650 min 640 MHz | HD Graphics 4000 650/1000 MHz |
| RAM | 2GB RAM up to 16GB DDR3 | 4GB RAM up to 16GB DDR3 SODIMM 204-pin 1333 MHz |
| I/F | 2 x RS232/422/485 Sub-D 9 pin<br>3 x RS232 Sub-D 9 pin<br>6 x USB ver.2.0<br>2 x Ethernet 1 Gbit RJ45 – Intel 82574L<br>1 x miniPCIe slot<br>1 x VGA<br>1 x DVI-D<br>1 x Line Out / Mic In<br>1 x CFast slot external access | 2 x RS232/422/485 Sub-D 9 pin<br>3 x RS232 Sub-D 9 pin<br>4 x USB ver. 3.0<br>2 x Ethernet 1 Gbit RJ45 - Intel 82579/82574L<br>1 x miniPCIe slot<br>1 x VGA<br>1 x DVI-D<br>1 x HDMI<br>1 x Line Out / Mic In<br>1 x CFast slot external access |
| Drives | HDD min. 500GB/SSD min. 16GB/CFast min. 4GB | HDD min. 500GB/SSD min. 16GB/CFast min. 4GB<br>[RAID 0-1 optional] |
| Mechanical slot (opt.) | - | 2 x slot (1xPCIe x1 + 1PCI) |
| Operating Temperature (°C) | -20...+ 60 (non condensing) | |
| Storage Temperature (°C) | -40 ... +80 | |
| Humidity | <90% (non condensing) | |
| Weight (kg) | 3 | 4,5/6 (0/2 slot ver.) |
| Power supply (Vdc) | 9...26 - 22W (2GB + HDD) | 9...26 - 45W (i3 - 4GB+HDD) |
| Dimensions (W/H/D) (mm) | 299x216x59 | 337x239x77 / 337x239x122 (0/2 slot ver.) |
| Operating system (32/64 bit according to CPU type) | WIN7 - WES7 | |
| Protection degree | IP20 | |
| Certifications | CE / EN61000-6-2 / EN61000-6-4 / EAC | |

![esaware logo] Join the next step.

# Esaware Box IPC
## Compact design. Multi-connectivity.

Esaware EW410 Box IPC series offers a multi-functions compact version designed for industrial applications.

EW410 thanks to its compactness and the variety of I/F can be used in any industrial or professional application.

By means of lateral fixing plates or DIN-RAIL mount accessory, EW410 can be easily installed directly into the machine or positioned inside the electrical cabinet.

**These are EW410 Compact main features:**

- Fanless design
- High performances in a compact size
- Multi I/F to communicate with the field
- Serial, USB, ETH, and mini PCIe slot to support mSATA, 3G and Wi-Fi cards.
- An elegant and functional design with aluminum heat-sink for highly efficient passive heat dissipation
- Dual monitor control function.
- SSD or HDD support (CPU J1900 only)
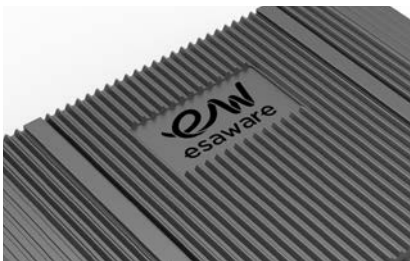


Full covered with aluminum heat-sink for optimal conventional heat dissipation.



Detail of I/F ports
2 or 4 independent LANs
4 USB 2.0 - 3.0
2 multi serial ports
Main push button switch

**Features**

| Aluminium Enclosure | Heavy alu extrusion chassis<br>Aluminum Heat-Sink<br>LED green on/off<br>Selection ATX/APO via Bios<br>On/Off push-button<br>LED blue HDD<br>Lockable power connector<br>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<br>Resolution 1920 x 1080 DVI<br>Resolution 2560 x 1600 VGA | GMA3650<br>Resolution 1920 x 1080 DVI /VGA |
| RAM | RAM 4GB DDR3L 1066 MHz on board | RAM 2GB DDR3 1066 MHz on board |
| I/F | 2 x RS232/422/485 Sub-D 9 pin<br>1 x RS232/422/485 8-bit DIO 9 pin<br>4 x USB ver. 2.0<br>1 x USB ver. 3.0<br>1 x DVI-I<br>4 x Ethernet 1 Gbit RJ45 - Intel I210<br>2 x MiniPCIe slot (1x mSATA)<br>1 x SIM slot<br>(RS485 Auto Direct.Control) | 2 x RS232/422/485 Sub-D 9 pin<br>4 x USB ver. 2.0<br>2 x Ethernet 1 Gbit RJ45 - Intel 82574L<br>3 x MiniPCle slot (1x mSATA)<br>1 x DVI-I<br>1 x Line Out / Mic In<br>1 x CFast slot external access<br>1 x SIM slot<br>(RS485 Auto Direct.Control) |
| Drives options | mSATA/SSD/HDD | CFast/mSATA |
| Operating Temperature (°C) | 0...+60 (non condensing) | |
| StorageTemperature (°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 | 161x108x32 |
| Operating system (32/64 bit according to CPU type) | WIN7 - WES7 – WIN8.1 – WIN10 – UBUNTO 14 | WIN7 - WES7 - WES2009 – UBUNTO 12 |
| Protection degree | IP20 | |
| Certifications | CE - EN61000-6-2 / EN61000-6-4 / EAC | |

# Box IPC
## Endurance and reliability

XB300 industrial BOX PC family offers a complete range of products able to fully satisfy any automation requirement.
XB300 industrial BOX PC range gives the maximum power to your applications thanks to the possibility to choose between several CPUs of series Intel® Core™ and Core 2 Duo, Celeron B810, Celeron Core Duo T3100, Intel Core2Duo P8400, Intel Atom N270 , with or without slots, 2 or 3 PCI/PCIe on board.
XB300 BOX PC range has a modular architecture in order to best exploit the potential of Intel CPUs, ensuring both low energy consumption and high performance.
XB300's aluminum finned cover also permits a quick heat dissipation generated from the internal motherboard components.

**These are XB300 main features:**

• Wide choice of configurations with/ without  PCI slot, 2 or 3 PCI/PCIe
• High configuration flexibility with modular HDD,SSD,PCI slot, CPU and RAM
• Removable HDD/SSD
• RAID function
• Industrial design that can meet any automation requirement
• Low energy consumption thanks to the aluminum finned cover that permits a quick heat dissipation
• Easy installation and maintenance on cabinets or on a side of the machine
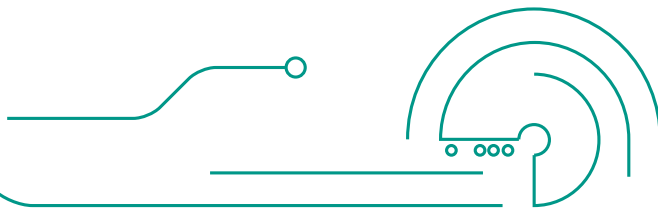
| Features | XB300 3 Slots iCore | XB300 0PCI Celeron/ C2D | XB300 2PCI Celeron/ C2D |
|---|---|---|---|
| CPU Fanless | Intel® iCore i3-3120ME 2.4 GHz, i5-3610ME 2.7 GHz Cel. B810 1,6 GHz | Intel® Celeron Core Duo T3100 1,9 GHz Intel® Core2Duo P8400 2,26 GHz | |
| Chipset | QM77 | GM45+ICH9M | |
| FSB | DMI 5GT/s | 800/1066 MHz | |
| RAM | up to 16 GB DDR3 | up tp 8 GB DDR3 | |
| Hard disk / SSD (opt.) | min. 500 GB 2,5" SATA / SSD 16 GB | min. 500 GB 2,5" SATA / SSD 16 GB | |
| Compact flash slot External access | 1 x | 1 x | |
| RS232 serial port | 2 x | 2 x | |
| RS485 serial port | 2 x | - | |
| USB ports (2.0/3.0) | 2x / 6x | 4 x | |
| Power ON green LED frontal | 1 x | 1 x | |
| HDD red led | 1 x | 1 x | |
| ATX/APO selector | via software | 1 x | |
| PS/2 keyboard / mouse | USB | 1 x | |
| 1 Slot | 1x PCI | - | 2 x PCI |
| 2 Slot | 1x PCIe x8 | - | 2 x PCI |
| 3 Slot | 1x PCIe x8 | - | 2 x PCI |
| Wi-Fi card (opt.) | internal USB / PCI | | internal USB / PCI |
| Video port | 1 x DVI-I (single-link) + 1 x HDMI | 1 x VGA + 1 x DVI-I (single-link digital signal only) | |
| Audio port | MIC IN + Line OUT | MIC IN + Line IN + Line OUT | |
| Ethernet ports RJ45 | 2 x Ethernet 10/100/1000 Mbit RTL 82574 | 2 x Ethernet 10/100/1000 Mbit RTL 8111C | |
| External (W x H x D) (mm) | 203,2 x 268 x 125 | 203,5 x 268 x 80 | 203,2 x 268 x 125 |
| Back-up with battery | 1 x | 1 x | |
| Power supply (Vdc) | 11..32 - max 95 W | 11..32 - max 95 W | |
| Power consumption (24 Vdc - basic config - NO PCI CARDS) (W) | 42/54 | 54/42 | |
| Protection degree | IP20 | | |
| Weight (kg) | 5,5 | 4,5 | 5 |
| Operating temperature (°C) | 0 .. +50 | | |
| Storage temperature (°C) | -20...+60 | | |
| Humidity | 85% | | |
| Certifications | CE / Immunity EN 61000-6-2 / Emissions 61000-6-4 | | |
| Optional kits | | | |
| RAID 2xHDD function | 1 x | | |
| Removable HDD/SSD (opt.) | 1 x | | |
| Operating system (32/64 bit according to CPU type) | WIN7 - WES2009 - Win® XP Pro SP3 MUI | | |

# VESA IPC
## Overcoming space

15" Industrial Touch PC for VESA mount.

The VESA industrial PC is the ideal solution to overcome constraints caused by limited space for the installation of a Panel PC on a machine. The VESA XV715 PC can be easily orientated to fit the different operational requirements in an area giving the operator maximum freedom of movement in the workspace.

Simply and quickly mounted via its VESA 75/100 attachment the XV715, from ESA Automation, is powered by an Intel® ATOM N2800 Fanless third generation Intel® Atom Dual Core microprocessor. It comes with a white LED backlit 15" LCD touchscreen and is highly configurable with HDD, SSD, CF and RAM options. Built for industry the XV7 has an IP66 front panel and an IP54 robust steel rear casing, the PC's modern design allows for ease of maintenance and access to removable HDD, SSD and CF.

VESA XV715 can be ordered with the following operating systems: WIN7, WES7, WES 2009, XP pro for Embedded.

**These are XV7 Vesa IPC main features:**

- 15" LCD display with Touch Screen and white LED back-lighting.
- CPU Intel® ATOM N2800 Fanless , the third generation of Intel® Atom Dual Core microprocessor
- Extreme mounting simplicity thanks to the VESA 75/100 attachment holes
- High configuration flexibility with HDD, SSD, CF and RAM options
- IP66 on front and IP54 on rear

## XV7 VESA IPC Fanless

| Features | XV715 |
|---|---|
| Display Size | 15" |
| Display Technology | TFT |
| Display Colors | 262 K |
| Display Backlight | LED |
| Life (min. at 25 °C) | 50k |
| Display Resolution  (pixel) | 1024 x 768 |
| Touch screen  Type | Analog resistive (5 wires) |
| CPU Fanless | Intel® ATOM Dual Core N2800 1.86 GHz |
| Chipset | Intel® NM10 |
| Graphics embedded | Intel® GMA 3650 |
| DMI | 2,5 GT/s |
| RAM | up to 4 GB DDR3 DIMM 204 pin |
| Removable HDD / SSD / mSATA (opt.) | min. 500 GB SATA 2,5" / SSD 16 GB / mSATA 32GB |
| Compact Flash Slot  Internal (opt.) | 1 x |
| Compact Flash Slot External (opt.) | 1 x |
| RS232 serial port | 1 x |
| RS485 serial port | 1 x |
| USB on front (2.0) IP66 | 1 x |
| USB on rear (2.0) | 2 x |
| Green led on front | 1 x |
| Mini PCIe | 1 x |
| Wi-fi card (opt.) | miniPCIe 1 x |
| Video port | 1 x VGA |
| Ethernet port RJ45 | 2 x Ethernet 10/100/1000 Mbit Intel 82574 |
| External (WxHxD) (mm) | 425 x 300 x 77 (mm) |
| Cut-out (WxH) (mm) | - |
| Back-up with battery | 1 x |
| Power supply (Vdc) | 18...30 max 85 W |
| Power consumption (W) (24 Vdc - basic config) | 43 |
| Protection level | IP 66 on front / IP54 on rear |
| Operating temperature (°C) | 0...+50 (non condensing) |
| Storage temperature (°C) | -20...+65 |
| Humidity | 90% (non condensing) |
| Weight (kg) | 7,5 |
| Certifications | CE / Environment EN 60068-2-6/27/30 / Immunity EN 61000-6-2 / Emissions 61000-6-4 |
| Operating system (32 bit) | WIN7 - WES7 - WES 2009 - XP Pro for Embedded |

# Esaware UPS
## Uninterruptible Power Supply

Smart UPS designed for power backup of electronic devices and in particular Industrial PCs.

It consists in a stand-alone static device which includes DC/DC power supplier and ion lithium battery pack as a power storage. Wide DC input range and stable DC output, it is the ideal solution in all those applications where unstable power supply is a real danger and where a sudden current interruption may occur during the working time.

Easy to install, thanks to its different mounting plates, it can be easily installed into the electrical cabinet or directly into the machine.

Lithium batteries deliver higher-quality performance in a safer, longer-lasting package. Possibility to install it afterwards on existing systems or machines. Proper shutdown of the Operating Systems and applications running on the IPC.

**These are EW UPS main features:**

- Compact and All-in-One device
- Space saving
- Power DC/DC
- Battery charger
- Battery pack
- Blue LEDs for status information
- Rapid battery charging
- Ion lithium technology for energy storage

**The SMART functions of EWUPS are:**

- Serial communication RS232
- SW app included
- Battery monitoring
- Charging monitoring
- Parameterization of threshold values
- Set-point configurations
- Auto & Safe shutdown of IPC running Win7-Win8-Win10

| Features | EWUPS |
|---|---|
| Cell Specs | 2000 mAh 6S1P   -   UR18650RX CELL |
| Battery type | Li-ion (Lityum-ion) 3,6V |
| Input voltage (VDC) | 18-32 |
| Output voltage (VDC) | by battery Buffer 22 / by main line 25 |
| Output LOAD (W) | 60 |
| Cycle Life | Tested for 300 times  charge/discharge at 100% capacity |
| Reverse polarity protection | YES |
| Short circuit protection | YES |
| Over temperature protection | YES |
| Overcharge protection | YES |
| Recharge time (hours) | 4 |
| Discharging time to 50% at 20 °C | 24' 30W  /  12'  60W |
| RS232 | 1x PC connection |
| USB 2.0 | 2x USB ports for device charging |
| APP SW | Battery status monitoring / Automatic OS shut down |
| Status LED blue | Power / Battery level - charging |
| DC - in | Lockable power connector |
| DC - out | 4-pin ATX 12 connector |
| Operating Temperature of battery (°C) | Charge 0-40   - Discharge -20 ~ +50 |
| Operating Temperature of power supply (°C) | 0-50 |
| Storage Temperature (°C) | -20-+60 |
| Operating Humidity | 0-90% |
| Humidity | 90% (non condensing) |
| Weight (kg) | 0,7 |
| Mounting | Wall / DIN RAIL options |
| External Dimension (WxHxD) mm | 163x108x49,6 |
| Certifications | CE - RoHs |

# PAC BOX
## e-motion technology

ESA Automation's PAC BOX Solution.

The "blind" PAC is ideal for those applications that need the power of our renowned PLC, CNC, Motion Control and IT server but require external/remote visualisation. Available as either Non OS ARM based or X86 real time Windows based the Human Interface can be provided by an external application (BOX ARM) or the PAC can host HMI pages managed by standard keyboard, mouse, monitor etc. (BOX 1000).

**These are main features of Pac Box**

- Arm or PC Windows ® Real Time based CPU available
- Several on board digital PLC  I/O*
- Up to 1200 mA max current on digital output
- Short circuit protected digital output
- On board configurable 0-10V / 0-20 mA 12 bit analog input*
- On board Axis input for motion Control & CNC applications *
- 5V /12 V configurable on board encoder power supply
- Line driver / Open Collector encoder type configurable on board  input
- Mono/bidirectional encoder input configurability
- On board Analog  and / or Step + Dir outputs  for drives controls
- Up to 6 Can Bus (Can Open Ds 301 -402 profile) ports for digital drives control  & expansion
- Linear, Circular, Polar interpolation
- Electronic Cams Controls, Gantry Axis, Tool compensation: complete CNC functions  availability

**\* expandable by Esa Remote I/O system**
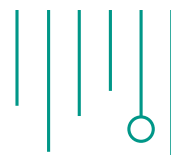
| Features | Windows Real Time Based CNC System BOX 1000 BOX CNC |
|---|---|
| CPU | Intel Atom D525 Dual Core 1,86 GHz |
| Main Storage memory | 1 x flash disks (different sizes available) |
| Serial Ports | 1 x RS232 |
| Universal Serial Port Bus - USB | 4 x USB 2.0 |
| Mouse and Keyboard | 1 x PS/2 port |
| Integrated Sound card | 1 x Audio port set (jack 3,5 mm for audio line output , mic input) |
| Field Bus | 3 x CAN BUS , prot. Can Open (+3 optional) |
| Lan Ethernet | 1 x Ethernet 10/100/1000 |

| Features | Box Arm |
|---|---|
| CPU | Cortex M3 / Arm 7 |
| Digital input | 20 x PNP, with LED status indicator |
| Digital outputs | 20 x solid state 24Vdc PNP, max current 1,2 A each, divided in 3 groups (three different output supply common input) (8+8+4) with LED status indicator |
| Analog inputs | 6 x resolution 12 bit, configurable by jumpers as 0-10V, 4-20 mA |
| 4 Axes | 4 x encoder input (zero ) Line Driver or Open Collector/Push Pull, voltage 12 or 5 V (configurable by jumper) (bandwidth: 1,5 Mhz) - 4 x analog output +-10V 12 bit - 4 PWM output or 4 x stepper outputs (step + direction) |
| Main Flash storage memory | 1 x removable SD Flash 1 GB |
| Serial Ports | 2 x RS232 + 1 x RS485 |
| Lan Ethernet – Teleservice | 1 x Ethernet TCP /IP - FTP compatible - Modbus/TCP server, with remote desktop function |
| Serial ports | 1 x RS232 + 1 x RS485 |
| Lan Ethernet – Teleservice | 1 x Ethernet TCP /IP - FTP compatible - Modbus/TCP server, with remote desktop function |
| Universal Serial Bus Port - USB | 1 x USB 2.0 for pen drive |
| Field Bus | 2 x CAN BUS MASTER, Can Open protocol |
| Real Time Clock (RTC) | 1 x Real Time Clock : 24 hours with SCHEDULER (real calendar) |

# PAC TOUCH
## e-motion technology

ESA Automation offers  PAC Touch Solutions ARM based.

The most complete range of " ALL IN ONE "  PAC  controls. Starting from the little 4,3" to the bigger, 15" touch screen display,  discover our famous, powerful   PLC, HMI, MOTION CONTROL , CNC and IT server in only one instrument.  Discover the adavantages of writing  A SINGLE  APPLICATION grouping together the PLC CYCLE, CNC and  HMI INTERFACE.  You'll find the right hardware solution to improve your machine.

All our system can be connected to our complete range of CAN Open  Expansions boards , to increase the I/O and Axis integrated equipment.

**These are main features of Pac Touch**

- Arm or PC Windows ® Real Time Fanless based CPU available
- 4,3" - 5,7" - 7" - 8,4" , 10" , 12", 15" on board display available
- Easily customizable front panels
- Several on board digital PLC I/O*
- Up to 1200 mA max current on digital output
- Short circuit protected digital output
- On board configurable 0-10V / 0-20 mA  12 bit analog input*
- On board Axis input for Motion Control & CNC applications *
- 5V /12 V configurable on board encoder power supply
- Mono/bidirectional encoder input configurability
- Line driver / Open Collector encoder type configurable on board  input
- On board Analog  and / or Step + Dir outputs  for drives controls
- Up to 6 Can Bus (Can Open Ds 301 -402 profile)  ports for digital drives control  & expansion
- Linear,  Circular, Polar interpolation
- Electronic Cams Controls, Gantry Axis , Tool compensation: all complete CNC functions availability
- Ready  to use  applications availability for several  industrial branches
- Large flash memory data storage capability  for powerful data logging applications

**\* expandable by Esa Remote I/O system**

| Features | TS804 Visual PLC + CNC |
|---|---|
| Touch Screen Display | 4,3" Color, resolution 480x272 |
| Main CPU | CPU Arm 7 |
| Digital inputs | 16 x 24Vdc, PNP with led |
| Digital Outputs | 16 x solid state, 24Vdc, PNP, 1,2Amp each with led |
| Configurable I/O | 2 x configurable by external jumpers as:<br>2 x analog output ±10V – resolution 14 16 bit or:<br>2 x STEPPER+DIR (12V push pull – max 1 Mhz) or:<br>2 x Analog Inputs 14 bit – 0-3,3V |
| Encoder inputs | 2 x encoder inputs settable as Line driver or open collector, 12 or 5V encoder supply (settable by ext jumpers), 1,5 mhz bandwidth |
| Analog outputs | 2 x ± 10V |
| Analog intputs | 2 x 0-3,3V (0-10V or 0-20 mA can be obtained with external resistors) |
| Main Flash storage memory | 1 x removable SD Flash min 1 GB |
| Serial ports | 2 x RS232 |
| Lan Ethernet – Teleservice | 1 x Ethernet TCP /IP - Ftp compatible - Modbus/TCP server, with remote desktop function |
| Universal Serial Bus - USB | 1 x USB 2.0 for pen drive |
| Field Bus | 1 x CAN BUS MASTER , Can Open protocol |
| Real Time Clock (RTC) | 1 x Real Time Clock : 24 hours with SCHEDULER (real calendar) |

| Features | TS804L Visual PLC + CNC | TS804LX Visual PLC + CNC |
|---|---|---|
| Touch Screen Display | 4,3" Color, resolution 480x272 | |
| Main Cpu | CPU Arm 7 | |
| Digital inputs | 4 x 24Vdc, PNP | 8 x 24Vdc, PNP* |
| Digital outputs | 4 x solid state, 24Vdc, PNP, 1,2 A each | 8 x solid state, 24Vdc, PNP, 1,2 A each |
| Configurable I/O | - | 4 x configurable as digital inputs 24VDC or outputs |
| Analog inputs | 4 x configurable by jumper as 0-20 mA, 0-10V – 0-3,3 V | 4 x configurable by jumper as 0-20 mA, 4-20 mA, 0-10 V: 2 are configurable for direct input thermoresistance Pt 100 |
| Analog outputs | 2 x configurable as 0-20 mA / 0- 10 V / PWM Stepper (to be specified before purchasing) | 2 x configurable as 0-20 mA / ± 10 V / PWM |
| Main Flash storage memory | 1 x removable SD Flash 1 GB | |
| Encoder inputs | 1 x Input Line driver , Push Pull or Open Collector - 150 Khz bandwidth | 2 x inputs PNP Open Collector (on inputs 5-8 digital) - bandwidth 200 Khz |
| Serial ports | 2 x RS 232 + 1 x RS 485 | 1 x RS 232 + 1 x RS 485 |
| Lan Ethernet – Teleservice | 1 x Ethernet TCP /IP - Ftp compatible - Modbus/TCP server, with remote desktop function | |
| Universal Serial Bus - USB | 1 x USB 2.0 for pen drive | |
| Field Bus | 1 x CAN BUS MASTER , Can Open protocol | |
| Real Time Clock (RTC) | 1 x Real Time Clock : 24 hours with SCHEDULER (real calendar) | |

**Features**                                                    **TS680 ARM Visual Plc + CNC**

| CPU | Cortex M3 - Arm 7 |
|---|---|
| Touch Screen Display | 5,7" LED color, resolution 320x240 |
| Digital inputs | 20 x PNP, with LED status indicator |
| Digital outputs | 20 x solid state 24Vdc PNP, max current 1,2 A each, divided in 3 groups (three different output supply common input) (8+8+4) with LED status indicator |
| Analog inputs | 6 x resolution 12 bit, configurable by jumpers as 0-10V, 4-20 mA |
| 4 Axes | 4 x encoder input (zero) Line Driver or Open Collector/Push Pull, voltage 12 or 5V (configurable by jumper) (bandwidth: 1,5 Mhz) - 4 analog output +-10V 12 bit - 4 PWM output or 4 stepper outputs (step + direction) |
| Main Flash storage memory | 1 x removable SD Flash 1 GB |
| Serial ports | 2 x standard RS 232 + 1 x standard RS 485 |
| Lan Ethernet – Teleservice | 1 x Ethernet TCP /IP - FTP compatible - Modbus/TCP server, with remote desktop function |
| Universal Serial Port Bus - USB | 1 x USB 2.0 for pen drive |
| Field Bus | 2 x CAN BUS MASTER , Can Open protocol |
| Real Time Clock (RTC) | 1 x Real Time Clock : 24 hours with SCHEDULER (real calendar) |

**Features**                                                    **TS970 ARM Visual Plc + CNC**

| CPU | Cortex M3 / Arm 7 |
|---|---|
| Display Touch Screen | 7" LED color, 800x480 resolution |
| Digital inputs | 20 x PNP, with LED status indicator |
| Digital outputs | 20 x solid state 24Vdc PNP, max current 1,2 A each, divided in 3 groups (three different output supply common input) (8+8+4) with LED status indicator |
| Analog inputs | 6 x resolution 12 bit, configurable by jumpers as 0-10 V, 4-20 mA |
| 4 Axes | 4 x encoder input (zero) Line Driver or Open Collector/Push Pull, voltage 12 or 5V (configurable by jumper) (bandwidth: 1,5 Mhz) - 4 analog output +-10V 12 bit - 4 PWM output or 4 stepper outputs (step + direction) |
| Main Flash storage memory | 1 x removable SD Flash 1 GB |
| Serial ports | 2 x standard RS 232 + 1 x standard RS 485 |
| Lan Ethernet – Teleservice | 1 x Ethernet TCP /IP - Ftp compatible - Modbus/TCP server, with remote desktop function |
| Universal Serial Port Bus - USB | 1 x USB 2.0 for pen drive |
| Field Bus | 2 x CAN BUS MASTER , Can Open protocol |
| Real Time Clock (RTC) | 1 x Real Time Clock : 24 hours with SCHEDULER (real calendar) |

**Features**                                                    **TS690 ARM Visual Plc + CNC**

| CPU | Cortex M3 - Arm 7 |
|---|---|
| Touch Screen Display | 10,4" - color, 800x600 resolution |
| Digital inputs | 20 x PNP, with LED status indicator |
| Digital outputs | 20 x solid state 24Vdc PNP, max current 1,2 A each, divided in 3 groups (three different output supply common input) (8+8+4) with LED status indicator |
| Analog inputs | 6 x resolution 12 bit, configurable by jumpers as 0-10 V, 4-20 mA |
| 4 Axes | 4 x encoder input (zero) Line Driver or Open Collector/Push Pull, voltage 12 or 5V (configurable by jumper) (bandwidth: 1,5 Mhz) - 4 analog output +-10V 12 bit - 4 PWM output or 4 stepper outputs (step + direction) |
| Main Flash storage memory | 1 x removable SD Flash 1 GB |
| Serial ports | 2 x standard RS 232 + 1 x standard RS 485 |
| Lan Ethernet – Teleservice | 1 x Ethernet TCP /IP - Ftp compatible - Modbus/TCP server, with remote desktop function |
| Universal Serial Port Bus - USB | 1 x USB 2.0 for pen drive |
| Field Bus | 2 x CAN BUS MASTER , Can Open protocol |
| Real Time Clock (RTC) | 1 x Real Time Clock : 24 hours with SCHEDULER (real calendar) |

**Features**                                            **TS7002 ARM Visual Plc + CNC**

| | |
|---|---|
| CPU | Cortex  M3 / Arm 7 |
| Touch Screen Display | 12" LED color, resolution  800x600 |
| Digital inputs | 20 x PNP,  with LED status indicator |
| Digital outputs | 20 x solid state 24Vdc PNP, max current 1,2 A each, divided in 3 groups (three different output supply common input)  (8+8+4) with LED status indicator |
| Analog inputs | 6 x resolution 12 bit, configurable by jumpers  as 0-10 V, 4-20 mA |
| 4 Axes | 4 x encoder input (zero)  Line Driver or  Open Collector/Push Pull,  voltage 12 or 5V (configurable by jumper) (bandwidth: 1,5 Mhz) - 4 analog output  +-10V 12 bit - 4 PWM  output or   4 stepper outputs (step + direction) |
| Main  Flash storage memory | 1 x removable SD Flash 1 GB |
| Serial ports | 2 x standard RS 232  + 1 x standard RS 485 |
| Lan  Ethernet – Teleservice | 1 x Ethernet  TCP/IP  -  FTP compatible - Modbus/TCP server,  with remote desktop function |
| Universal Serial Port Bus  - USB | 1 x USB 2.0 for pen drive |
| Field Bus | 2 x CAN BUS MASTER , Can Open   protocol |
| Real Time Clock  (RTC) | 1 x Real Time Clock : 24 hours with SCHEDULER (real calendar) |

**Features**                                            **TS7002RT Windows Real Time Based CNC System**

| | |
|---|---|
| CPU | Intel Atom D525 Dual Core  1,86 GHz |
| Touch Screen Display | 12" 4:3  color, resolution 800x480  (Optional: 1024x768) |
| Main Storage memory | 1 x flash disks  (different sizes available) |
| Serial Ports | 1 x RS 232 |
| Universal Serial Port Bus  - USB | 4 x USB 2.0 |
| Mouse and Keyboard | 1 x PS/2 port |
| Integrated Sound card | 1 x Audio port set  (jack 3,5 mm for audio line output, mic input) |
| Field Bus | 3 x CAN BUS , Can Open   protocol (+3 optional) |
| Lan  Ethernet | 1 x Ethernet  10/100/1000 |

**Features**                                            **TS7005RT Windows Real Time Based CNC System**

| | |
|---|---|
| CPU | Intel Atom D525 Dual Core  1,86 GHz |
| Display Touch Screen | 12" 4:3 color, resolution 1024x768 |
| Main Storage memory | 1 x flash disks  (differect sizes avilable) |
| Serial Ports | 1 x RS 232 |
| Universal Serial Port Bus  - USB | 4 x USB 2.0 |
| Mouse and Keyboard | 1 x PS/2 port |
| Integrated Sound card | 1 x Audio port set  (jack 3,5 mm for audio line output , mic input) |
| Field Bus | 3 x CAN BUS , Can Open   protocol (+3  optional) |
| Lan  Ethernet | 1 x Ethernet  10/100/1000 |

# PAC KEYBOARD
## e-motion technology

ESA Automation offers a keyboard solution.

PAC KEYBOARD is a Non OS ARM based fully integrated PLC, HMI, MOTION CONTROL, CNC and IT server for those that want the benefits of a hard keyboard for data entry. Providing superior gloved hand operation and faster data entry when necessary, PAC KEYBOARD is ideal for heavy industries, wood working machinery.

**These are main features of Pac Box**

- Arm Cpu Based
- 5,7" on board display
- 32 keys with 5 programmable function keys
- Customizable front panel layout
- Esa "You Tool" integrated development tool for your HMI + PLC + CN "ALL IN ONE" programming
- Several on board digital PLC I/O*
- Up to 1200 mA max current on digital output, with over current thermal protection
- On board configurable 0-10V / 0-20 mA 12 bit analog input*
- On board Axis input for Motion Control & CNC applications *
- 5V /12 V configurable on board encoder power supply
- Line driver / Open Collector encoder type configurable on board input
- On board Analog and / or Step + Dir outputs for drives controls
- Up to 2 Can Bus (Can Open Ds 301 -402 profile) ports for digital drives control & expansion
- Large flash memory data storage capability for powerful data logging applications

**\* expandable by Esa Remote I/O system**

## EC909 ARM Visual Plc + CNC

**Features**

| CPU | Arm 7 |
|---|---|
| Display | 5,7" LED color, 320x240 resolution |
| Keyboard | 32 keys |
| Digital inputs | 20 x PNP, with LED status indicator |
| Digital outputs | 20 x solid state 24Vdc PNP, max current 1,2 A each, divided in 3 groups (three different output supply common input) (8+8+4) with LED status indicator |
| Analog inputs | 6 x resolution 12 bit, configurable by jumpers as 0-10V, 4-20 mA |
| 4 Axes | 4 x encoder input (zero) Line Driver or Open Collector/Push Pull, voltage 12 or 5V (configurable by jumper) (bandwidth: 1,5 Mhz) - 4 x analog output +-10V 12 bit - 4 PWM output or 4 x stepper outputs (step + direction) |
| Main Flash storage memory | 1 x removable SD Flash 1 GB |
| Serial ports | 2 x standard RS232 + 1 x standard RS485 |
| Lan Ethernet – Teleservice | 1 x Ethernet TCP /IP - Ftp compatible - Modbus/TCP server, with remote desktop function |
| Universal Serial Bus Port - USB | 1 x USB 2.0 for pen drive |
| Field Bus | 2 x CAN BUS MASTER , Can Open protocol |
| Real Time Clock (RTC) | 1 x Real Time Clock : 24 hours with SCHEDULER (real calendar) |

# Esaware Web Panel
## Browser-based efficient control

Esaware Web Panel is based on Android operating system. Chrome browser, pre-installed on Esaware Web Panel, allows you to visualize any kind of web pages from a local or remote WEB Server.

Thanks to Chrome you can also visualize web pages from our Web Server that is available on all Esaware HMI. Esaware EW107BD is also available with MicroBrowser software, the ideal tool to visualize contents from Saia PLC or developed with CODESYS TargetVisu ver. 2.X.

Esaware Web Panel is also available with a RS232/485 serial port, that allows the communication through standard protocol with devices equipped with this kind of interface.

Esaware EW107BD is fully compatible with HTML5 and Web Socket technologies.

Esaware Web Panel is also equipped with a dedicated app store, ESA AppStore, created on purpose to allow the update of existing apps.

EW107BD has been created to satisfy users' needs. Not only you have the possibility to install any kind of application, but you can also customize the installed launcher and the store server, that is used to update the apps.

**These are EW100BD main features:**

- Linux/Android Operating Systems
- Chrome Browser
- Micro Browser
- SNTP Server and Client
- Aluminum Front Side PTFE coating
- True Flat Touch Screen
- CPU Arm Cortex A9 Quad Core
- Ram DDR3L
- Internal Memory 8 Gbyte
- SDHC v2.0 (up to 25 Mbyte/s)
- High Bright 16 Millions Colors Display
- Wi-Fi and 3G

## Capacitive Web Panel for Thin Client Application

| Features | EW107BD200 | EW107BD2SP | EW107BD300 |
|---|---|---|---|
| Display Size | | 7" | |
| Display Technology | | TFT | |
| Display Colors | | 16M | |
| Display Backlight | | LED | |
| Display Brightness (cd/m²) | | 500 | |
| Display Resolution (pixel) | | 1024x600 | |
| Backlight life (hours) | | 50K | |
| Touch Technology | | Capacitive | |
| Processor | | ARM Cortex A9 Quad-Core | |
| RAM | | 4 GB DDR3L | |
| Flash | | 8 GB | |
| Browser | Chrome | | Chrome/Microbrowser |
| Ethernet Port | | 1 x 1 GB + 1 x 10 / 100 Mb | |
| USB Ports | | 2 x vers. 2.0 | |
| Serial Port (Only Linux Version) | - | 1 X RS232/485 | - |
| Expansion Slot | | 1 x MINI PCI express | |
| Cardbus Slot | | 1 x SDHC | |
| Power Supply (Vdc) | | 12 - 32 | |
| Consumption  (W) | | 7 | |
| Operating Temperature (°C) | | -10  ...  + 50 (non condensing) | |
| Storage Temperature (°C) | | -20  ... + 65 | |
| Humidity | | <90% (non condensing) | |
| External dimensions (W/H/D) (mm) | | 192 x 132 x 32 | |
| Cut-out dimensions (W/H) (mm) | | 185 x 125 | |
| Weight (kg) | | 0,5 | |
| Protection degree (front) | | IP 66 | |
| Certifications | | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 | |
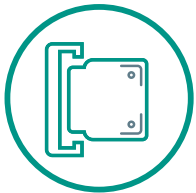
# Embedded I/O
## Clack & Play

Esaware I/O modules complete our HMI EW100AC series, giving you the ability to fully command and control all of your applications.

All EW600 I/Os are modular, which means that it is possible to create different configurations depending on your needs. They have been designed to guarantee excellent ergonomics and to be extremely easy to install. In fact, they offer a fast cabling system with cage clamps and can be cabled just by extracting the connectors. In addition, Esaware I/O modules are configurable via software without any dip switch or any other kind of hardware configuration.

I/O
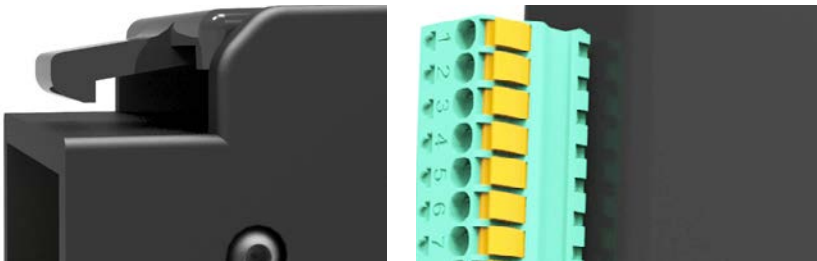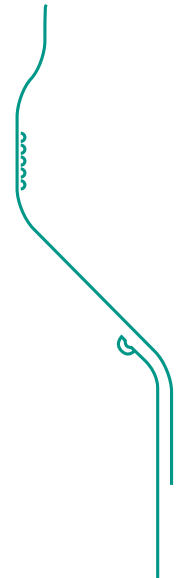
## Digital I/O – EW600B

Mixed opto-isolated input and output modules to prevent signal from suffering due to high voltages, by isolating the circuits using a LED and a receiver. That is why opto-isolators are the best solution to secure control over your plant at any time.

**EW600B08B04  8 Digital Input + 4 Digital Output**

| | |
|---|---|
| Supply Voltage (Vdc) | 24 |
| Isolation | Optoisolated |
| Input Numbers | 8 |
| Input Type | PNP, NPN |
| Output Numbers | 4 |
| Output Type | PNP (300 mA/output) |
| Operating Temperature (°C) | -10  ... + 50 (non condensing) |
| Storage Temperature (°C) | -20  ... + 65 |
| Humidity | <90% (non condensing) |
| External dimensions (W/H/D) (mm) | 96 x 72 x 20 |
| Protection Degree | IP 20 |
| Certifications | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 (mounted on EW100AC) |

## Analog I/O – EW600A

Mixed input and output modules to manage analog signals produced by the field and to regulate all actuators. Thanks to a powerful signal-processing unit, they guarantee high precision control.

**EW600A03A02  3 Analog Input + 2 Analog Output**

| | |
|---|---|
| **Supply Voltage (Vdc)** | 24 |
| **Input Numbers** | 3 |
| **Input Type** | 0 / 5 V, 0 / 10 V, +10 / -10 V, 0 / 20 mA, 4 / 20 mA |
| **Output Numbers** | 2 |
| **Output Type** | 0 / 5 V, 0 / 10 V, +10 / -10 V, 0 / 20 mA, 4 / 20 mA |
| **Resolution** | 16 Bit |
| **Operating Temperature (°C)** | -10  ...  + 50 (non condensing) |
| **Storage Temperature (°C)** | -20  ...  + 65 |
| **Humidity** | <90% (non condensing) |
| **External dimensions (W/H/D) (mm)** | 96 x 72 x 20 |
| **Protection Degree** | IP 20 |
| **Certifications** | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 (mounted on EW100AC) |

## High Speed Input – EW600C

Opto-isolated input modules for fast signal input or fast counter up to 100 KHz.

**EW600C02N00  2 High Speed Input**

| | |
|---|---|
| **Supply Voltage (Vdc)** | 24 |
| **Input Numbers** | 2 |
| **Input Type** | Incremental Pulse / Differential Phase (4x) / Up/Down / Pulse + Direction (5-30 Vdc) |
| **Isolation** | Optoisolated |
| **Frequency (KHz)** | 100 |
| **Operating Temperature (°C)** | -10  ...  + 50 (non condensing) |
| **Storage Temperature (°C)** | -20  ...  + 65 |
| **Humidity** | <90% (non condensing) |
| **External dimensions (W/H/D) (mm)** | 96 x 72 x 20 |
| **Protection Degree** | IP 20 |
| **Certifications** | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 (mounted on EW100AC) |

I/O

## Thermocouples Input – EW600D

Input modules for thermocouples sensors with internal or external cold junctions. Thanks to the powerful signal-processing unit, they guarantee very high resolution.

**EW600D06N00 6 Thermocouple Input**

| Input Numbers | 6 |
|---|---|
| Input Type | K / J / E / T / N / B / R / S |
| Resolution (°C) | + 0,1 / - 0,1 |
| Cold Junction | Internal and External |
| Operating Temperature (°C) | -10 ... + 50 (non condensing) |
| Storage Temperature (°C) | -20 ... + 65 |
| Humidity | <90% (non condensing) |
| External dimensions (W/H/D) (mm) | 96 x 72 x 20 |
| Protection Degree | IP 20 |
| Certifications | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 (mounted on EW100AC) |

## Thermoresistances Input – EW600E

Input modules for thermoresistance sensors. Thanks to the powerful signal-processing unit, they guarantee very high resolution.

**EW600E04N00 4 Resistance Thermometer Input**

| Input Numbers | 4 |
|---|---|
| Input Type | Pt100 / Pt200 / Pt500 / Pt1000 / Ni100 / Ni1000 |
| Resolution (°C) | + 0,1 / - 0,1 |
| Operating Temperature (°C) | -10 ... + 50 (non condensing) |
| Storage Temperature (°C) | -20 ... + 65 |
| Humidity | <90% (non condensing) |
| External dimensions (W/H/D) (mm) | -10 ... + 50 non condensing |
| Protection Degree | IP 20 |
| Certifications | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 (mounted on EW100AC) |

## High Speed Output – EW600N
High speed output modules to command signals up to 300 KHz.

**EW600N00C04 4 High Speed Output**

| | |
|---|---|
| **Supply Voltage (Vdc)** | 24 |
| **Output Numbers** | 4 |
| **Isolation** | Optoisolated |
| **Output Type** | CW/CCW - Pulse+Direction  12 – 32VDc push-pull |
| **Output Current (mA)** | 5 - 10 |
| **Resolution (Hz – KHz)** | 200Hz – 300KHz |
| **Operating Temperature (°C)** | -10  ...  + 50 (non condensing) |
| **Storage Temperature (°C)** | -20  ... + 65 |
| **Humidity** | <90% (non condensing) |
| **External dimensions (W/H/D) (mm)** | 96 x 72 x 20 |
| **Protection Degree** | IP 20 |
| **Certifications** | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / EAC<br>ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 (mounted on EW100AC) |

## PWM (Pulse with modulation) Output – EW600N
PWM output modules to command signals up to 300 KHz.

**EW600N00E04 4 PWM Output**

| | |
|---|---|
| **Supply Voltage (Vdc)** | 24 |
| **Output Numbers** | 4 |
| **Isolation** | Optoisolated |
| **Output Type** | PWM – 12 – 32 Vdc push-pull |
| **Output Current (mA)** | 5 - 10 |
| **Resolution (Hz – KHz)** | 200Hz – 300KHz |
| **Operating Temperature (°C)** | -10  ...  + 50 (non condensing) |
| **Storage Temperature (°C)** | -20  ... + 65 |
| **Humidity** | <90% (non condensing) |
| **External dimensions (W/H/D) (mm)** | 96 x 72 x 20 |
| **Protection Degree** | IP 20 |
| **Certifications** | CE / EN60068-2-6 / EN60068-2-27 / Humidity EN60068-2-30 / EAC<br>ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 (mounted on EW100AC) |

# Remote I/O
## High density in a small size

EW610 remote I/O are designed to be housed directly on the machine. Their main features of the sturdiness and I/O density in small spaces. They are housed in sturdy metal containers with wall fixing or DIN rails. They are easy to install as they are supplied with connectors with screw-on terminals. Each unit represents a single node which can be set via Dip-Switches. There are interesting mixes of digital input/outputs and analogue input/outputs, relay outputs, inputs for thermocouples etc.

**These are EW610 main features:**

- CANOpen DS401, Modbus RTU protocol
- Communications status LED on bus
- Communication set via dip –switches
- The digital inputs have a hardware filter

| Codes | Description |
|---|---|
| EW610A16080 | 16 digital inputs / 8 digital outputs |
| EW610A16160 | 16 digital inputs / 16 digital outputs |
| EW610A1616P | 16 digital inputs / 8 digital outputs / 8 programmable inputs and outputs |
| EW610A1616R | 16 digital inputs / 8 digital outputs / 8 relay outputs 5 A 250 VAC |
| EW610BDAEC0 | 4 digital inputs / 4 digital outputs / 4 analog inputs +/-10 volt resolution 1024 points<br>4 analog outputs +/-10V resolution 1024 points, differential encoder input A,A/ B,B/Index Index/ |
| EW610BDAHS0 | 4 digital inputs / 4 digital outputs / 4 analog inputs +/-10 volt resolution 1024 points<br>4 analog outputs +/-10V resolution 1024 points, 2 fast inputs 24 Volt |
| EW610BDA0A0 | 16 digital inputs / 8 digital outputs / 4 analog inputs +/-10 volt resolution 65536 points<br>2 analog outputs +/-10V resolution 65536 points |
| EW610BDATC0 | 16 digital inputs / 8 digital outputs / 4 inputs for thermocouples<br>2 analog outputs +/-10V resolution 65536 points |
| EW610BDADA0 | 16 digital inputs / 8 digital outputs / 2 analog inputs +/-10 volt resolution 65536 points<br>2 analog outputs +/-10V resolution 65536 points, 2 inputs 4-20 mA |
| EW610BDAPT0 | 16 digital inputs / 8 digital outputs / 2 analog inputs +/-10 volt resolution 65536 points<br>2 analog outputs +/-10V resolution 65536 points, 2 inputs for PT100 2-4 wires |
| EW610BPRPR0 | Module for the direct detection of compressed air pressure with air pipes directly on the module.<br>4 inputs from 200 to 750 mBAR . resolution 10 mBAR , precision 50 mBAR |
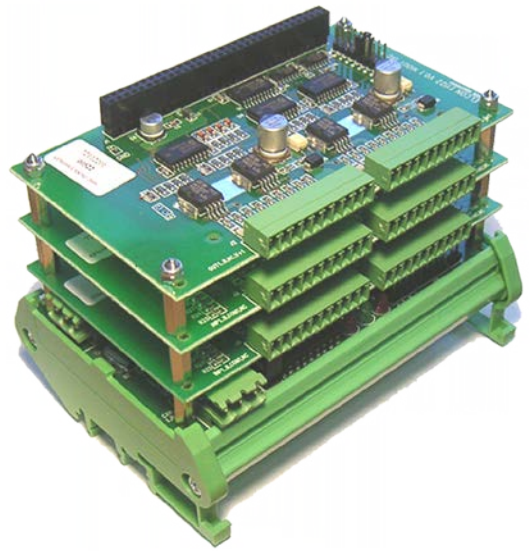
# Remote I/O
## e-motion technology

Distributed I/O modules and remote AXES represents the best technical solution for anyone engaged in automation engineering, significant cost reductions can be achieved by simplifying wiring and commissioning on any machine.

Thanks to their modularity and the numerous models available you can, strategically distribute the elements to simplify and optimize the on-board machine systems.

The connection between the PAC and the modules is made via a CAN bus network on a standard CAN Open protocol, which provides noise immunity, with the consequent security of the data transmitted, and extremely fast installation.

**These are main features of Remote I/O**

- Can Bus - Standard Can Open DS 301 (Ds 402) profile
- 3 different layouts available (din rail / wall mounted / boxed)
- Local Risk  high speed CPU
- Up to 700 mA max current on digital output
- Short circuit protected digital output
- NPN/PNP configurable digital  input
- 5V /12 V configurable on board encoder power supply
- Line driver / Open Collector encoder type configurable on board  input
- Zero  (Z and Z/)  input logic state configurability
- Mono/bidirectional encoder input configurability
- Up to 200 Khz encoder input
- Step + Dir configurable PNP /NPN output
- Up to 65 Khz stepper output
- Drive "OK" or "Fault" separate digital input
- 5V or 12V on board configurable Step + Dir output voltage





**Uncompromising remote control axes**
the E1127 Can Bus Axis card is equipped with two encoder inputs with a band of 200 KHz which is fully configurable (line drivers, 5V or 12V open collector). The E1123 version allows the same performance by managing stepper motors or drives directly with Step+Dir output.

**Maximum ergonomics**
the vertical mounting system exclusive to ESA Automation is the most ergonomic solution on the market.

**Total configurability**
each E1120 bridge can fit eight ESA Automation Can Bus cards. Up to 127 E1120 bridges can be routed on one CAN channel.

I/O
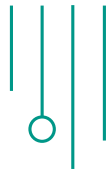
**E1120**

| Card  CAN NODE  DIN rail | BRIDGE |
|---|---|
| Power Supply | +24Vdc power consumption 100mA |
| I/O | Local BUS for expansion cards E1121, E1122, E1123, E1 124, E1127, E1191, E1192 |
| Dimensions | 128 x93 mm |

**E1121**

| Card 16 DIGITAL INPUTS PNP/NPN Opto for E1120 | INPUT |
|---|---|
| INP Power Supply | Common with +24Vdc (NPN) or ground (PNP) in groups of 8 |
| Inputs | The input stage is sized for a value of Vin > +15Vdc (typical +24Vdc) |

**E1122**

| Card 16 DIGITAL OUTPUTS PNP for E1120 | OUTPUT |
|---|---|
| OUT Power Supply | 2 common with +24Vdc, common GND with E1120 |
| Outputs | Typical current 500mA each output, maximum 700mA in groups of 4 |
| Protections | From short-circuit, temperature |

**E1123**

| Card 2 STEPPER AXES for E1120 | STEPPER |
|---|---|
| Control Outputs | PNP +5V or +12V ( Enable, DIR, Current) |
| STEPPER Outputs | PNP or NPN |
| Frequency | min 38Hz, max 65KHz |
| Fault Input | PNP or NPN +5V, +12V, +24V |

**E1124**

| Card 8 ANALOG INPUTS for E1120 | ANALOG |
|---|---|
| POT power supply | Reference voltage + 5Vdc 5mA for external potentiometers |
| Inputs | Independently selectable as 0/5V - 0/10V - 0/20mA resolution 12bit |

**E1127**

| Card 2 ANALOG AXES for E1120 | AXIS |
|---|---|
| ENC Power Supply | + 12V+5V selectable separately for the 2 axes |
| ENCODER | Line-Driver/Open Collector (mono/bi-directional) |
| Analog Output | 2 x +- 10V 12 bit |
| Frequency | Open Collector: 100Khz, Line Driver:200Khz |

**Layout**

| DIN rail Layout | DIN rail module for combination of up to 8 cards with E1120 BRIDGE |
|---|---|
| Boxed Layout | Stainless Steel module for combination of up to 3/6 CARDS with E1120 BRIDGE |
| Wall Mounted Layout | Wall Mounted  module   for combinations up to 8 cards on  E1120 BRIDGE |

# Esaware Industrial Monitor
## Innovative design. Elegant technology.

With the EW300 series, Esaware offers a wide range of industrial monitors that combine innovative and elegant design with the highest industrial engineering  standards. EW300 Industrial Monitors have been designed to ensure high performance and durable reliability  in harshest industrial environments.

All EW300 monitors share the same well designed bezel as the EW200 Panel IPCs.

**The main features of EW300 Industrial Monitors are:**

• LCD wide screen
• Resistive or capacitive touchscreen
• Multi Video inputs
• Multi touchscreen outputs.
• Reduced depth



Detail of true-flat touch screen along with twisted aluminum bezel and ATEX IP66 frontal USB port.



Our unique Twist design and the PTFE non-stick coating prevent dust and dirt accumulation on the bezel.

| Features | EW315 | EW322 |
|---|---|---|
| Display Size | 15,6" | 21,5" |
| Display Technology | TFT | |
| Display Colors | 16,7M | |
| Display Brightness (cd/m²) | 300 | |
| Contrast | 500 | 5000 |
| Viewing Angle | 85/85/80/80 | 89/89/89/89 |
| Display Resolution (pixel) | 1366x768 | 1920x1080 |
| Backlight life (hours) | 50k | |
| Touch Technology | Resistive (5 wires) / Capacitive (PCT 10 touches) | |
| Bezel /Chassis | Aluminium - PTFE no-sticking coating / Sheet Steel | |
| Front USB | 1x USB 2.0 type A – rear 1x USB type B | |
| Rear touch outputs | 1x USB 2.0 type B + 1x RS232 sub-din 9pins | |
| Video input | DVI-D + VGA | |
| Power Supply (Vdc) | 18...30 | |
| Operating Temperature (°C) | 0 ... + 50 (non condensing) | |
| Storage Temperature (°C) | -20 ... + 65 | |
| Humidity | <85% (non condensing) | |
| External dimensions (W/H/D) (mm) | 437x286x58 | 572x363x61 |
| Cut-out dimensions (W/H) (mm) | 422,5x271,5 | 554,5x345,5 |
| Weight (kg) | 5 | 9,5 |
| Protection degree (front) | IP66 | |
| Certifications | CE / EN61000-6-2 / EN61000-6-4 / EN60068-2-6/27/30 ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 | |

# Industrial Monitor
## Endurance and reliability

The ESA Automation XM7 series offers a complete range of Industrial Monitors.

Affordable, complete, elegant, reliable, versatile: XM7 industrial monitors family represents the perfect solution for any automation requirement, from industrial to building automation and security to utility. The XM7 provides flexible, display, control and connectivity to any category of system.

Precise design, use of high quality components, extreme mechanical sturdiness.

The rugged 6mm aluminum or INOX bezel make XM7 suitable for all harsh environments such as those with high concentrations of dust, intense vibrations or high temperatures.

**Main features of XM7 series:**

- Wide choice of LCD and touch screens, from 7" wide up to 19"
- LCD 4:3 with LED backlit
- Multi inputs for video signals.
- Multi outputs for touch screen
- Elegant and meticulous industrial design
- Front bezel in aluminum finishing.
- INOX bezel fitted with true flat touch screen
- Frontal USB on aluminum version.
- IP66 protection degree

The XM7 aluminum series are designed, built and tested to comply with the ATEX Directives. (Zone 2/22, category 3 G/D) and EN60068-2-6/27/30 enabling these robust units to safely withstand vibration, shock and humidity expected in these severe environments.

| Features | XM7W7 | XM708 | XM712 | XM715 | XM717 | XM719 |
|---|---|---|---|---|---|---|
| Display Size | 7" Wide | 8,4" | 12,1" | 15" | 17" | 19" |
| Bezel aluminium | 6mm thickness | | | | | |
| Technology | TFT 262 K colors | | | TFT 16,2 M colors | TFT 16,7 M colors | |
| Display Backlight | LED | | | | | |
| Brightness cd/m2 | 500 | 450 | 370 | 350 | 380 | 400 |
| Contrast | 600:1 | | | 700:1 | 1000:1 | |
| Viewing angle H-V | 70-60 | 75-75 | 140-120 | | 170-170 | |
| Lamp life (min a 25°C) | 50k | | | | | |
| Resolution (pixel) | 800 x 480 | 800 x 600 | 1024 x 768 | | 1280 x 1024 | |
| Touch technology | Analog resistive (4 wires) | | Analog resistive (5 wires) | | | |
| Touch output | RS232 +  USB | | | | | |
| USB frontal IP66 / USB rear (2.0) | 1 x | | | | | |
| Green Led Power ON | 1 x | | | | | |
| VGA/DVI-I */S-Video/Video composite | 1 x (* digital signal only single-link) | | | | | |
| External (WxHxD) | 228 x 155 x 66,7 | 250 x 190 x 66,7 | 336 x 256 x 56,7 | 425 x 300 x 57,2 | 446 x 346 x 59,7 | 508 x 384 x 64,2 |
| Cut-out (WxH) | 219 x 145 | 241 x 180 | 321 x 240 | 393 x 275 | 426 x 326 | 477 x 353 |
| Power supply (Vdc) | 18...30 max 50W | | | | | |
| Power consumption (W) | 30 | | 35 | | 45 | |
| Protection degree | IP66 front | | | | | |
| Operating temperature (°C) | 0...50 (non condensing) | | | | | |
| Storage temperature (°C) | -20...+65 | | | | | |
| Humidity | 90% (non condensing) | | | | | 9,00 |
| Weight (Kg) | 2,2 | 2,6 | 4,0 | 6,0 | 7,5 | |
| Certifications | CE / ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 Enviromental EN60068-2-6/27/30 / Immunity EN61000-6-2 / Emission EN 61000-6-4 | | | | | |

# Stainless Steel Industrial Monitor
## Extreme durability. High endurance.

The ESA Automation XM7 series is available with Stainless steel front bezel.

The rugged 6mm INOX bezel makes XM7 suitable for all harsh environments such as those with high concentrations of dust, intense vibrations or high temperatures.

INOX V2A stainless steel products are particularly suited for environments where compliance with health and hygiene norms are required.

The bezel made of INOX stainless steel includes the true-flat resistive touch screen.

The XM7 INOX series conforms to FDA 21 / EN1672-2 and they are the optimal solution for Food, Pharmaceutical and Chemical industries.

The XM7 INOX series is equipped with a true-flat resistive touch screen meeting Food Processing, Pharma and Chemical industry safety and hygiene requirements.

The XM7 INOX V2A stainless steel are designed, built and tested to comply with the ATEX Directives. (Zone 2/22, category 3 G/D) and EN60068-2-6/27/30 enabling these robust units to safely withstand vibration, shock and humidity expected in these severe environments.

**Main features of XM7 INOX V2A stainless steel series:**

- Wide choice of LCD and touch screens, from 7" wide up to 19"
- LCD 4:3 with LED backlit
- Multi inputs for video signals
- Multi outputs for touch screen
- Elegant and meticulous industrial design
- Bezel available in INOX stainless steel finish with TRUE FLAT touch screen
- IP69K protection degree on 7" and 12,1"
- IP66 protection degree on 15" and 19"

| Features | XM7W7 | XM712 | XM715 | XM719 |
|---|---|---|---|---|
| Display Size | 7" Wide | 12,1" | 15" | 19" |
| Bezel Inox V2A | 6mm thickness | | | |
| Technology | TFT 262 K colors | | TFT 16,2 M colors | TFT 16,7 M colors |
| Display Backlight | LED | | | |
| Brightness cd/m2 | 500 | 370 | 350 | 400 |
| Contrast | 600:1 | | 700:1 | 1000:1 |
| Viewing angle H-V | 70-60 | 140-120 | | 170-170 |
| Lamp life (min a 25°C) | 50k | | | |
| Resolution (pixel) | 800 x 480 | 800 x 600 | 1024 x 768 | 1280 x 1024 |
| Touch technology | Analog resistive true flat (4 wires) | Analog resistive true flat (5 wires) | | |
| Touch output | RS232 + USB | | | |
| USB frontal IP66 / USB rear (2.0) | None | | | |
| Green Led Power ON | None | | | |
| VGA/DVI-I */S-Video/Video composite | 1 x (* digital signal only single-link) | | | |
| External (WxHxD) | 228 x 155 x 66,7 | 336 x 256 x 56,7 | 425 x 300 x 57,2 | 508 x 384 x 64,2 |
| Cut-out (WxH) | 219 x 145 | 321 x 240 | 393 x 275 | 477 x 353 |
| Power supply (Vdc) | 18...30 max 50W | | | |
| Power consumption (W) | 30 | 35 | | 45 |
| Protection degree | IP69K  front 7" / 12,1"   -   IP66  front 15" / 19" | | | |
| Operating temperature (°C) | 0...50 (non condensing) | | | |
| Storage temperature (°C) | -20...+65 | | | |
| Humidity | 90% (non condensing) | | | |
| Weight (Kg) | 3,0 | 5,0 | 7,0 | 10,5 |
| Certifications | CE / ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22 Enviromental EN60068-2-6/27/30 / Immunity EN61000-6-2 / Emission EN 61000-6-4 | | | |

# Esaware Industrial Router
## Stay connected

EW500 Esaware is the new series of industrial router that allows to connect any device to Everyware Remote Platform. Thanks to EW500 industrial router you can connect through an encrypted VPN connection all your plants.

EW500 is available with up to 4 LAN ports on board to communicate with devices reducing installation costs.

Other options are available: such as communication through a mobile connection. This option allows to install Esaware router where it is not possible to have a wired connection.

EW500 is also equipped with Firewall functionality. The connection is more secure thanks to available filters such as port level filter and package level filter.

Thanks to embedded Input/Output you can decide when starting a remote assistance session and knowing in real time if the assistance session is active.

**These are EW 500 main features:**

• Everyware Runtime Preloaded
• HTML5 configuration
• Din Rail mounting
• Integrated Firewall
• Wi-Fi comunication
• 2G/3G comunication
• Serial Port RS232/485

| Features | EW500A0000 | EW500A0002 | EW500A0100 | EW500A0102 |
|---|---|---|---|---|
| Runtime Everyware | Preinstalled | | | |
| Operating System | Linux | | | |
| Firewall | Integrated | | | |
| Processor | Arm Cortex A8 | | | |
| RAM | 256 MB DDR3 | | | |
| Flash | 2GB | | | |
| Wan Port | 1 x 10/100 Mb | | | |
| LAN Ports | 2 x 10/100 Mb | | 4 x 10/100 Mb | |
| Serial Ports | RS232/485 | | | |
| USB Ports | 1 x USB Host | | | |
| Slot | 1 x SDHC/MMC | | | |
| Input | 3 x PNP/NPN | | | |
| Output | 3 x PNP 300 mA for each output | | | |
| Wireless Option | N.A. | 2G/3G/3G+ EDGE/HSPA | N.A. | 2G/3G/3G+ EDGE/HSPA |
| Antenna | N.A. | Yes | N.A. | Yes |
| Status LED | Six on Front | | | |
| Power Supply (Vdc) | 12 - 32 | | | |
| Consumption (W) | 5 | | | |
| Operating Temperature (°C) | -10 ... +50 (non condensing) | | | |
| Storage Temperature (°C) | -20 ... +65 | | | |
| Humidity | <90% (non condensing) | | | |
| External dimensions (W/H/D) (mm) | 55,4 x 160 x 133,2 | | | |
| Protection degree | IP 20 | | | |
| Weight (kg) | 0,5 | | | |
| Certifications | CE | | | |

# Your efficiency under control.

Check your energy consumption at every
stage of the production process with
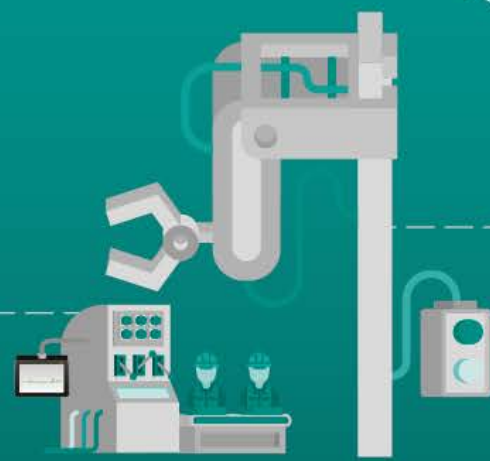ESA Automation energy efficiency solutions.

Water Meter

GAS Meter

EW800 DTM

GPRS

Radio

Electricity Meter

WiFi

Steam Meter

esaware

Energyaware

Energy Data
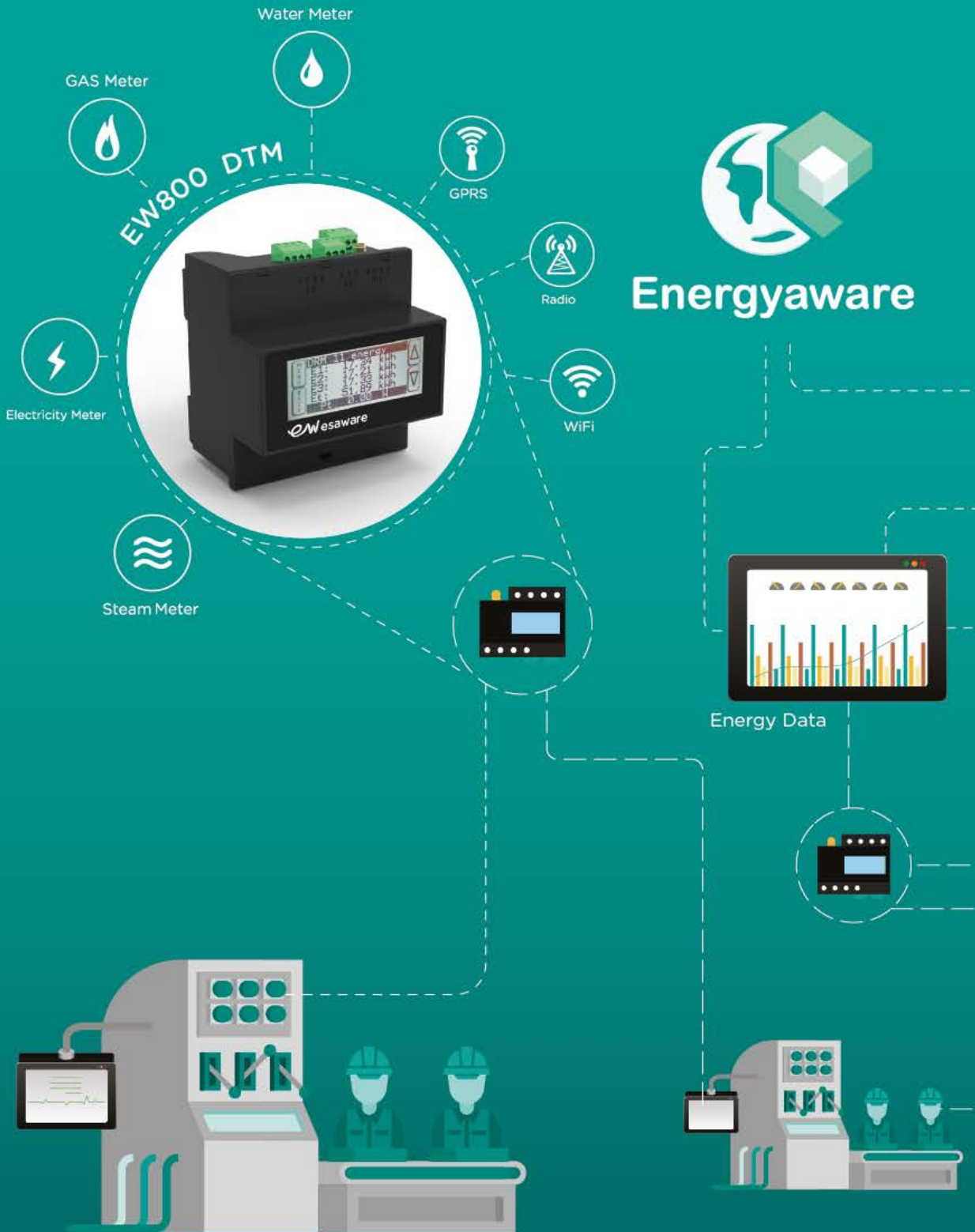
EW900 DATA MANAGER

EW800 DEM

INDUSTRY 4.0

ESA Automation and the solutions for the Smart Factory

# Energy Management
## Focus your energy.

ESA Automation SMART METER technological platform continuously monitors and records energy consumption (Electricity, Gas, Water, etc.) providing the data which give any organization the insight to make energy improvement decisions based on knowledge and not speculation.
Just connect the CTs and go.

The pre-installed Software on the Data Manager performs all the functions of an advanced Energy Management System from acquisition of consumption data and the secure access to the historical data to the remote control via VPN of smart meter networks.

This new approach, exploiting the IOT (Internet of Things) paradigm, moves the intelligence to the distributed sensors (EW800 Smart Meter). Each individual sensor makes its information to be available to the data manager (EW900 Data Manager) which publishes the accumulated data using free HTML5 web pages which can be displayed on anything from a smartphone or tablet up to a PC.

The use of wireless infrastructures (RF868, 3G, 4G, Wi-Fi) and a distributed modular system gives ESAs EMS both low entry costs and low total cost of ownership.

---

## SMART METERS EW800

ESA Automations EW800 Smart Meters are the building blocks of a modular energy monitoring system, providing accurate energy consumption figures in order to deliver distributed analysis of energy usage profiles. In addition to the measurement of standard energy values, the EW800 provides the appropriate quality parameters of the supply network. Up to 250 EW800 smart meters can be controlled by one EW900 Data Manager also via the RF868 radio interface.

### Data Manager EW900

Esa Automation's EW900 compact Data Manager is capable of acquiring and managing consumption data (Electric, Gas, Water, etc.) from up to 250 measurement devices (DEM, DTM, DRM, etc.). EW900 hardware options include up to 3 LANs, Wi-Fi, 3G mobile, RF868 radio, USB port and 3 digital in-3 digital out. All EW900 products come with the pre-installed Energyaware software, for easy management via standard browser, including real time visualization of all collected data, with advanced graphics.
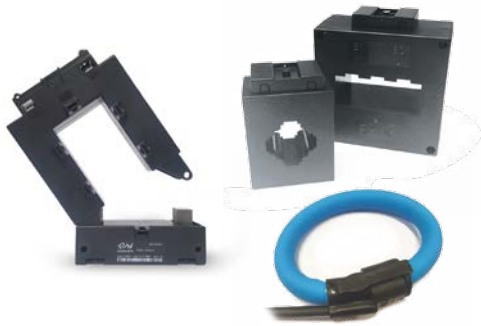
### Accessories EW8ET

Current Transformers - Rogowski Coil Sensors -Voltage Transformers for usage with EW800B (DTM) and EW800C (DRM).

### Kit ESCo EW8BX

ESA Automation's ESCo Kit provides any user with an extremely quick and easy method of implementing an EMS (Energy Management System). The pre-wired, certified kit includes all the hardware and software you need to start monitoring and logging usage data, conveniently mounted in a GRP cabinet, just supply power and connect the CT/RC for the circuits to be monitored. The pre-installed software begins to record consumption immediately. Expanding the basic system is
simply done by the addition of extra meters.
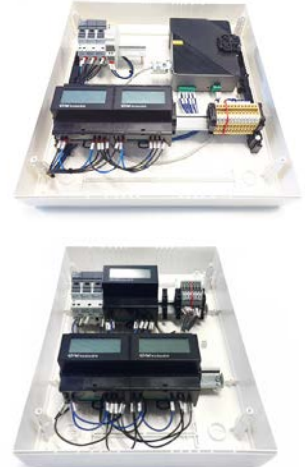
### Energyaware

Software pre-installed on the Data Manager for measurement, monitoring, local and remote control of smart meter networks. The software performs all the funtionality of an advanced Energy Management System. Starting from the acquisition of consumption data, up to the remote control via VPN, including the secure access to the historical data loaded into databases and advanced graphics.

| Features | | EW800A DEM | EW800B DTM | EW800C DRM |
|---|---|---|---|---|
| Connections | | Single-phase<br>Three-phase 4 wires with Y load<br>Three-phase 4 wires with D load | Single-phase<br>Two-phase<br>Three-phase with neutral<br>Three-phase without neutral | |
| Measuring inputs | Current Channels | Direct<br>up to 64A (45kW) three-phase connection,<br>up to 21A (15kW) single-phase connection | with external Current Transformers | with external Rogowski coils |
| | Voltage Channels | Direct<br>(max rated voltage phase-neutral 230Vac) | Direct<br>(max rated voltage phase-neutral 230Vac) or<br>with external Voltage Transformer<br>(rated secondary voltage 100-115Vac, for LV or MV application) | |
| Power supply | | self-powered | 100÷230Vac | |
| Communication | | RS485 ModBus (in all EW800... models)<br><br>Radio RF868 MHz (only in EW800...200 models)<br><br>Ethernet (only in EW800...300 models) | | |
| Digital Isolated Input/Output | | 2  I/O module option (configurable by Data Manager) | | |
| Measures | | Voltage (phase-neutral and phase-phase)<br>Current (phase values and neutral value)<br>Imported Active Energy (phase values and total value)<br>Exported Active Energy (phase values and total value)<br>Imported Active Power (phase values and total value)<br>Exported Active Power (phase values and total value)<br>Reactive Power with sign (phase values and total value)<br>Apparent Power (phase values and total value)<br>Power Factor (phase values and total value)<br>Frequency | | |
| Harmonic analysis | | THD (in voltage / current signal)  Harmonics 1st ...51st  (in voltage / current signal) | | |
| Accuracy | Active Energy<br>(according to IED 62053-21) | Class 1 | | |
| | Reactive Energy<br>(according to IED 62053-23) | Class 2 | | |
| | Current and Voltage | ≤ 0,5% | | |
| Display | | LCD (256 x 96 pixel) and  resistive touch screen | | |
| Case | Mounting | DIN rail | DIN rail | |
| | No. DIN modules | 7 | 5 | |
| | External dimensions (mm) | 126 x 100 x 70 | 90 x 96 x 70 | |

ENERGY MANAGEMENT

| Features | | EW900A | EW900B |
|----------|---|--------|--------|

| | | | |
|---|---|---|---|
| **Processor** | **CPU type/clock** | Cortex A8 / 800 MHz | |
| | **RAM** | 256 MB | |
| **Memory** | **Internal Flash** | Up 2 GB (for application software and log file) | |
| | **SD Card espansion** | Up to 64 GB (for Data Logging) | |
| **Energy Management Software** | **Pre-Installed** | EnergyBasic | |
| | **Option** | EnergySend, EnergyAll, EnergyAlarm and EnergyFFT | |
| | | EnergyConA0... (only in EW900 with GPRS/HPSA module) | |
| **Power Supply** | | 24 Vdc | |
| **Communication** | **Fieldbuses** | 1 RS485 ModBus RTU,<br>1 ModBus TCP/IP | 1 RS485 ModBus RTU,<br>3 ModBus TCP/IP<br>Radio RF868 MHz |
| | **Remote** | Ethernet HTTP: JASON, FTP, OpenVPN | |
| | | GPRS/HSPA (only in EW900...B... model) | |
| | | WiFi (only in EW900...C... model) | |
| **Digital Isolated Input/Output** | | 3 I/O module (totally configurable) | |
| **Smart sensors** | **Type** | Electricity meter, Water meter, Gas meter, Steam meter, etc. | |
| | **Network Dimension** | Up to 250 devices | |
| **Case** | **Mounting** | DIN rail | |
| | **Dimensions (mm)** | 56 x 171 x 140 | |

**Features**                                   EW8ETA

| Type | | Compact Current Transformers | Accuracy |
|------|------|------|------|
| 1# size | Rated Current | 150A | |
| 2# size | Rated Current | 250A | |
| | | 500A | 0,5% |
| | | 1.000A | |
| 3# size | Rated Current | 500A | |
| | | 1.000A | |
| 4# size | Rated Current | 2.000A | |



**Features**                                   EW8ETB

| Type | | Split-Core Current Transformers | Accuracy |
|------|------|------|------|
| 1# size | Rated Current | 100A | |
| | | 250A | |
| 2# size | Rated Current | 500A | 0,5% |
| | | 1.000A | |
| 3# size | Rated Current | 1.000A | |



**Features**                                   EW8ETC

| Type | Rogowski Coil |
|------|------|
| Primary current range | 1 ÷ 5.000A |
| Accuracy | 1% |
| Coil Lenght | 250mm or 400mm |
| Coil internal diameter | 68mm or 115mm |
| Auxiliary cable lenght | 2.000mm or 6.000mm |

ENERGY MANAGEMENT

**CLOUD COMPUTING**

# Industry 4.0
**ESA Automation** and the **solutions**
for the **Smart Factory**

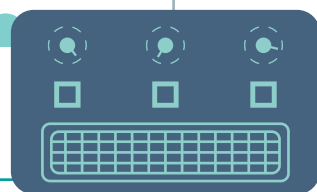DRIVES - MOTORS

SERVICES

CNC-MOTION

AUTOMATION CONTROL

esaware
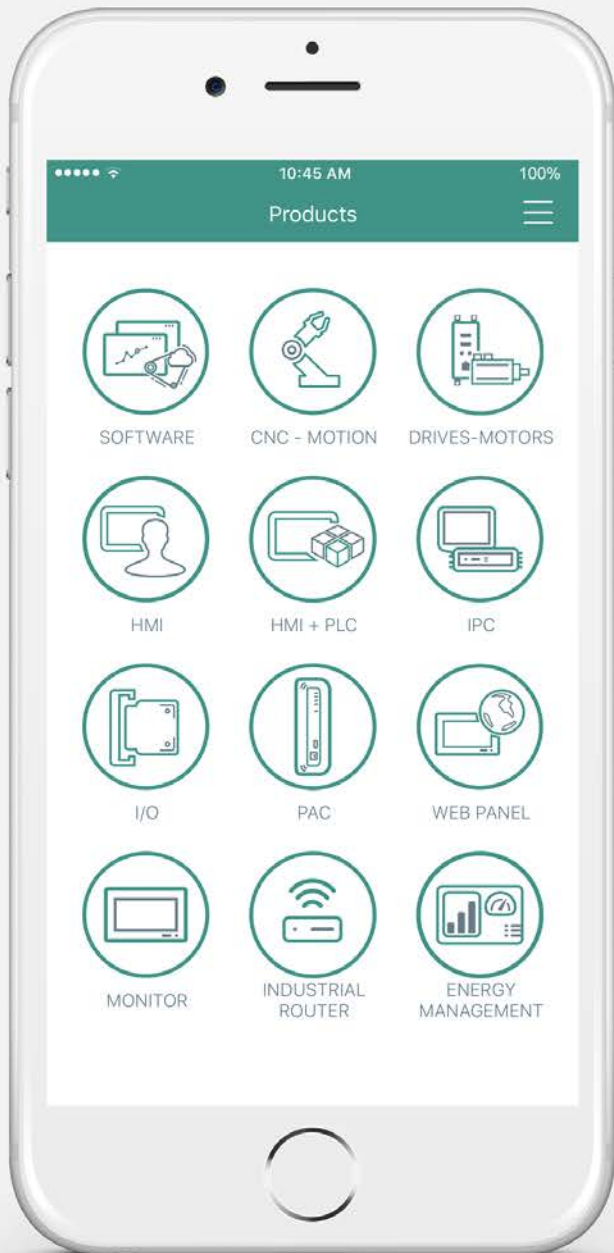
SOFTLOGIC CONTROL

ENERGY MANAGEMENT

# Download our free App to get

# ESA Catalog

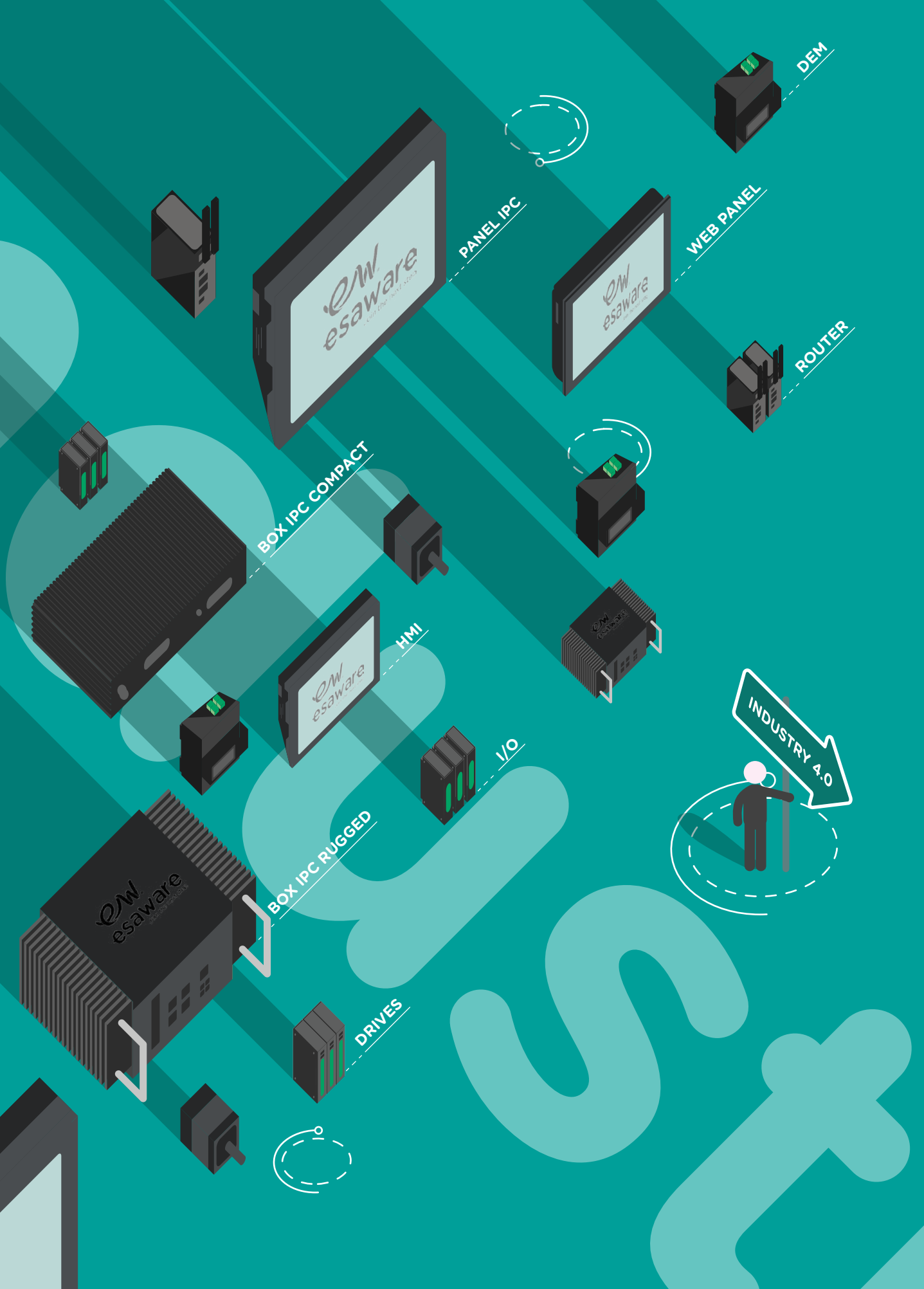## on your smartphone or tablet

The complete range of ESA Automation products on your smartphone and tablet with one tap.

SOFTWARE

CNC - MOTION

DRIVES-MOTORS

HMI

HMI + PLC

IPC

I/O

PAC

WEB PANEL

MONITOR

INDUSTRIAL ROUTER

ENERGY MANAGEMENT

ESA® AUTOMATION

## Download from

Available on the App Store

ANDROID APP ON Google Play

DEM

PANEL IPC

WEB PANEL

ROUTER

BOX IPC COMPACT

HMI

I/O

BOX IPC RUGGED

DRIVES

INDUSTRY 4.0

# ESA
## AUTOMATION
Connect ideas. Shape solutions.

## INDUSTRY 4.0
**ESA Automation** and the **solutions** for the **Smart Factory**

At ESA Automation we pride ourselves in designing, manufacturing and supplying the most technically advanced automation solutions available worldwide. We invest heavily in research and development to maintain our record of intuitive, high speed, reliable and sustainable products.

By utilising the latest hardware and software innovations ESA Automation's engineers ensure our products and solutions are future proof and by implementing state of the art smart technology they guarantee ease of use.

Our mission is to create solutions not just products.
Our job is to simplify yours.

**2017**