



# CATALOG

**Mind  
Over  
Innovation.**



# Industrial Innovation Experts.

ESA is an international reality committed to the industrial revolution for over 40 years. Our ultimate goal is to deliver industrial automation solutions that make the production process more sustainable, efficient, safe and digitalized.

We stand out for our customer orientation, technological excellence, support, reliability and innovation. Through this approach, we focus on the challenges of the market to bring greater value to our customers and to anticipate their needs.

WEB PANEL

HMI-PAC

IPC

MONITOR

DIGITAL SIGNAGE

ERGO

RUGGED TABLET

I/O

DRIVE

DRIVE ON BOARD

SERVO MOTORS

IOT

# WEB PANEL

4.0 evolution of the classic HMI client



ESA Web Panel represents the Industry 4.0 based evolution of the classic HMI client. Thanks to the powerful built-in browser and the true flat display up to 15,6", it optimizes the visualization of production data and of any interface developed in HTML5.

Based on Android or Linux OS add more possibility to be tailored on the customer needs, not only to install any kind of application but also customize the launcher and store server.

## APPLICATIONS

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

- + Display true flat from 7" to 15.6" with capacitive touch screen.
- + Can display production data from any controller that generates HTML5 pages (PC or PLC)
- + Industrial grade hardware based on powerful Cortex A9 quad core processor.
- + 2 Ethernet ports.
- + DDR3L RAM 2 Gb on board.
- + SDHC card reader.
- + Optional serial port and Wi-Fi and 3G communication capability.

- + Enhanced by Automation browser (optional)
  - Has been designed for the automation market
  - Extending significantly the range of control platforms, to visualize HTML5 and Java web pages.
  - Can manage the connection with multiple webservers: once opened, the browser shows the list of controllers to which HMI is connected.
- + Panel and VESA solution as option
- + CE / UL

## LINUX

MODEL	EW107BD4SP0000	EW110BD4SP	EW115BD4SP
Display Size	7"	10.1"	15,6"
Display Technology	TFT		
Display Colors	16 M		
Display Backlight	LED		
Display Brightness (cd/m <sup>2</sup> )	500	350	300
Display Resolution (pixel)	1024 x 600	1280 x 800	1366 x 768
Backlight Life (hours)	50 K	30 K	50 K
Touch Technology	Capacitive		
Processor	ARM Cortex A9 Quad-Core		
RAM	2 GB DDR3L		
Flash	8GB		
Browser	Chromium		
Ethernet Port	1 x 1 GB + 1 x 10 / 100 Mb		
USB Port	2 x vers. 2.0		
Serial Port	1 X RS232/485		
Expansion Slot	1 x MINI PCI express		
Cardbus slot	1 x SDHC		
Power Supply (Vdc)	12 - 32		
Consumption (W)	7	24	24
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	269,3 x 187,3 x 45	416,5 x 265,5 x 45
Cut-out dimensions (W/H) (mm)	185,0 x 125,0	255,5 x 173,5	402,5 x 251,5
Weight (kg)	0.5	1,1	3,7
Protection degree (front)	IP 66		
Certifications	CE / UL	CE	CE / UL

Esaware Web Panel  
Browser-based efficient control

**ANDROID**  
EW107BD - EW110BD

MODEL	EW107BD2SP	EW107BD5SP	EW110BD2SP	EW110BD5SP
Display Size	7"		10,1"	10,1"
Display Technology	TFT		TFT	TFT
Display Colors	16 M		16 M	16 M
Display Backlight	LED		LED	LED
Display Brightness (cd/m <sup>2</sup> )	500		350	350
Display Resolution (pixel)	1024 x 600		1280 x 800	1280 x 800
Backlight Life (hours)	50 K		30 K	30 K
Touch Technology	Capacitive		Capacitive	Capacitive
Processor	ARM Cortex A9 Quad-Core		ARM Cortex A9 Quad-Core	ARM Cortex A9 Quad-Core
RAM	2 GB DDR3L		2 GB DDR3L	2 GB DDR3L
Flash	8GB		8GB	8GB
Browser	Chrome/ WebView (fullscreen)	Automation Browser	Chrome / WebView (fullscreen)	Automation Browser
Ethernet Port	1 x 1 GB + 1 x 10 / 100 Mb		1 x 1 GB + 1 x 10 / 100 Mb	1 x 1 GB + 1 x 10 / 100 Mb
USB Port	2 x vers. 2.0		2 x vers. 2.0	2 x vers. 2.0
Serial Port	1 X RS232/485		1 x RS232 / 485	1 x RS232 / 485
Expansion Slot	1 x MINI PCI express		1 x MINI PCI express	1 x MINI PCI express
Cardbus slot	1 x SDHC		1 x SDHC	1 x SDHC
Power Supply (Vdc)	12 - 32		12 - 32	12 - 32
Consumption (W)	7		24	24
Operating Temperature (°C)	-10 ... + 50 (non condensing)		-10 ... + 50 (non condensing)	-10 ... + 50 (non condensing)
Storage Temperature (°C)	-20 ... + 65		-20 ... + 65	-20 ... + 65
Humidity	<90% (non condensing)		<90% (non condensing)	<90% (non condensing)
External dimensions(W/H/D) (mm)	192 x 132 x 32		269,3 x 187,3 x 45	269,3 x 187,3 x 45
Cut-out dimensions (W/H) (mm)	185,0 x 125,0		255,5 x 173,5	255,5 x 173,5
Weight (kg)	0.5		1,1	1,1
Protection degree (front)	IP 66		IP 66	IP 66
Certifications	CE / UL		CE	CE

Esaware Web Panel  
Browser-based efficient control

**ANDROID**  
EW115BD

MODEL	EW115BD2SP	EW115BD5SP
Display Size	15,6"	
Display Technology	TFT	
Display Colors	16 M	
Display Backlight	LED	
Display Brightness (cd/m <sup>2</sup> )	300	
Display Resolution (pixel)	1366 x 768	
Backlight Life (hours)	50 K	
Touch Technology	Capacitive	
Processor	ARM Cortex A9 Quad-Core	
RAM	2 GB DDR3L	
Flash	8GB	
Browser	Chrome / WebView (fullscreen)	Automation Browser
Ethernet Port	1 x 1 GB + 1 x 10 / 100 Mb	
USB Port	2 x vers. 2.0	
Serial Port	1 x RS232 / 485	
Expansion Slot	1 x MINI PCI express	
Cardbus slot	1 x SDHC	
Power Supply (Vdc)	12 - 32	
Consumption (W)	24	
Operating Temperature (°C)	-10 ... + 50 (non condensing)	
Storage Temperature (°C)	-20 ... + 65	
Humidity	<90% (non condensing)	
External dimensions(W/H/D) (mm)	416,5 x 265,5 x 45	
Cut-out dimensions (W/H) (mm)	402,5 x 251,5	
Weight (kg)	3,7	
Protection degree (front)	IP 66	
Certifications	CE / UL	

# HMI PAC

Control made easy.



ESA HMI PAC is the evolution of the standard ESA HMI including the powerful and well known softPLC runtime Codesys. Both the visualization and the machine control functionalities are embedded in a single product. The I/O can be connected locally or remotely via the real time ethercat bus.

Online Tag sharing between the HMI and the SoftPLC programming environment.

## APPLICATIONS

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

## FEATURES

- + Preloaded Codesys 3.5 runtime
- + Battery powered NVRAM
- + Software Watchdog
- + Hardware Watchdog
- + Ethercat master stack onboard
- + Windows Embedded Compact 7 Pro operating system
- + Preloaded Esaware runtime
- + SNTP Server and Client
- + Aluminium front side PTFE coating
- + True Flat touch screen
- + Front status led
- + CPU Arm Cortex A8 1 GHz
- + Ram DDR3
- + 3 Gb internal memory
- + SDHC v 2.0 (till 25Mbyte)
- + High brightness display (16M colours)



## Esaware HMI + SoftPLC Control made easy

MODEL	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/m <sup>2</sup> )	400	600	400	300
Display Resolution (pixel)	480x272	800x480	1280x800	1366x768
Backlight Life (hours)	50 K			
Processor	ARM Cortex A8			
RAM	256 MB DDR3		512 MB DDR3	
Flash	3 GB			
NVRAM	32 Kb (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 / EN60068-2-2 / EN60068-2-1 / EN60068-2-52 cULus (Certificate no. E189179) / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22			

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

MODEL	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/m <sup>2</sup> )	400	600	400	300
Display Resolution (pixel)	480x272	800x480	1280x800	1366x768
Backlight Life (hours)	50 K			
Processor	ARM Cortex A8			
RAM	256 MB DDR3		512 MB DDR3	
Flash	3 GB			
NVRAM	32 Kb (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 / EN60068-2-2 / EN60068-2-1 / EN60068-2-52 cULus (Certificate no. E189179) / EAC ATEX 2014/34/UE directive Group II Category 3 G D Zone 2/22			

# IPC

## Panel



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

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

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

### FEATURES

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

### APPLICATIONS

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

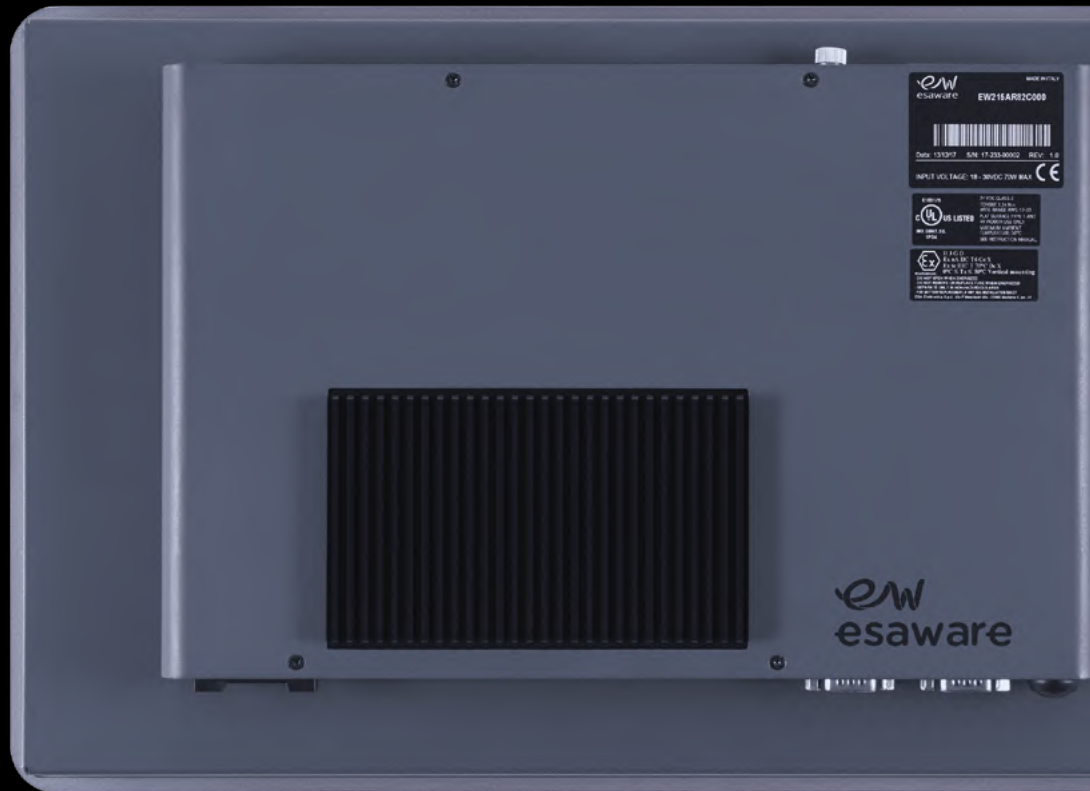
# Esaware Panel IPC (EW200 SLIM) Design your own performance.

MODEL	EW212	EW215	EW218	EW222
Display Size	12,1"	15,6"	18,5"	21,5"
Display Technology	TFT / 16,7 M	TFT / 16,7 M	TFT / 16,7 M	TFT / 16,7 M
Display Brightness (cd/m²)	400	300	300	300
Contrast	1000:01:00	500:01:00	1000:01:00	5000:01:00
Viewing Angle H-V	88/88/88/88	85/85/85/85	85/85/80/80	89/89/89/89
Display Resolution (pixel)	1280x800	1366x768	1366x768	1920x1080
Backlight life (hours)	50K	50K	50K	50K
Touch Technology	Resistive (5 wires) / Capacitive (PCT 10 touches)	Resistive (5 wires) / Capacitive (PCT 10 touches)	Resistive (5 wires) / Capacitive (PCT 10 touches)	Resistive (5 wires) / Capacitive (PCT 10 touches)
Bezel /Chassis	Aluminum - PTFE non-sticking coating/Sheet Steel	Aluminum - PTFE non-sticking coating/Sheet Steel	Aluminum - PTFE non-sticking coating/Sheet Steel	Aluminum - PTFE non-sticking coating/Sheet Steel
CPU Fanless Celeron 4G	Celeron quad core J1900 2,0 GHz (2,42GHz) – 10W	Celeron quad core J1900 2,0 GHz (2,42GHz) – 10W	Celeron quad core J1900 2,0 GHz (2,42GHz) – 10W	Celeron quad core J1900 2,0 GHz (2,42GHz) – 10W
CPU Fanless Celeron 6G	Celeron Quad Core J34551,-5GHz(2,30 GHz) – 10W	Celeron Quad Core J34551,-5GHz(2,30 GHz) – 10W	Celeron Quad Core J34551,-5GHz(2,30 GHz) – 10W	Celeron Quad Core J34551,-5GHz(2,30 GHz) – 10W
CPU Fanless Intel® Core™ 4G	Intel Core i3-4010U 1,7GHz / i7-4650U 1,7GHz (3,3GHz) – 15W	Intel Core i3-4010U 1,7GHz / i7-4650U 1,7GHz (3,3GHz) – 15W	Intel Core i3-4010U 1,7GHz / i7-4650U 1,7GHz (3,3GHz) – 15W	Intel Core i3-4010U 1,7GHz / i7-4650U 1,7GHz (3,3GHz) – 15W
CPU Fanless Intel Core 7G	Intel Core i3-7100U 2,4 GHz / i5-7300U 3,5 GHz / i7-7600U 2,8 GHz – 15W	Intel Core i3-7100U 2,4 GHz / i5-7300U 3,5 GHz / i7-7600U 2,8 GHz – 15W	Intel Core i3-7100U 2,4 GHz / i5-7300U 3,5 GHz / i7-7600U 2,8 GHz – 15W	Intel Core i3-7100U 2,4 GHz / i5-7300U 3,5 GHz / i7-7600U 2,8 GHz – 15W
Chipset	SoC	SoC	SoC	SoC
GPU embedded Celeron J1900	HD Graphics	HD Graphics	HD Graphics	HD Graphics
GPU embedded i-core i3-4010U	HD Graphics 4400	HD Graphics 4400	HD Graphics 4400	HD Graphics 4400
GPU embedded i-code i5-7300U	HD Graphics 620 – up to 1,10 GHz	HD Graphics 620 – up to 1,10 GHz	HD Graphics 620 – up to 1,10 GHz	HD Graphics 620 – up to 1,10 GHz
GPU embedded i-core i7-4650U	HD Graphics 5000	HD Graphics 5000	HD Graphics 5000	HD Graphics 5000
RAM (Celeron quad core)	on board 4GB DDR3L 1066/1333MHz - dual channel -	on board 4GB DDR3L 1066/1333MHz - dual channel -	on board 4GB DDR3L 1066/1333MHz - dual channel -	on board 4GB DDR3L 1066/1333MHz - dual channel -
RAM (Fanless Intel® Core™)	up to 8GB DDR3L SODIMM 1333/1600MHz 204 pin -single channel-	up to 8GB DDR3L SODIMM 1333/1600MHz 204 pin -single channel-	up to 8GB DDR3L SODIMM 1333/1600MHz 204 pin -single channel-	up to 8GB DDR3L SODIMM 1333/1600MHz 204 pin -single channel-
RS232 / RS485	1x RS232 + 1x RS485	1x RS232 + 1x RS485	1x RS232 + 1x RS485	1x RS232 + 1x RS485
USB Port IP66 front	1x -no capacitive-	1x -no capacitive-	1x -no capacitive-	1x -no capacitive-
USB Ports 2.0/3.0 rear	1x 2.0 + 1x 3.0 cpu J1900 / 4x 3.0 cpu Intel®Core™	1x 2.0 + 1x 3.0 cpu J1900 / 4x 3.0 cpu Intel®Core™	1x 2.0 + 1x 3.0 cpu J1900 / 4x 3.0 cpu Intel®Core™	1x 2.0 + 1x 3.0 cpu J1900 / 4x 3.0 cpu Intel®Core™
Ethernet Celeron J1900	2x 1Gb RJ45 Intel I210	2x 1Gb RJ45 Intel I210	2x 1Gb RJ45 Intel I210	2x 1Gb RJ45 Intel I210
Ethernet i-Core™ i3/i7	2x 1Gb RJ45 Intel I210/I218	2x 1Gb RJ45 Intel I210/I218	2x 1Gb RJ45 Intel I210/I218	2x 1Gb RJ45 Intel I210/I218
VGA/DP ( Celeron J1900)	1x / 1x (DP passive cable required)	1x / 1x (DP passive cable required)	1x / 1x (DP passive cable required)	1x / 1x (DP passive cable required)
VGA/HDMI ( Celeron J3455)	1x / 1x	1x / 1x	1x / 1x	1x / 1x
VGA/DP (i-Core™ i3/i5/i7)	1x / 1xDP ++	1x / 1xDP ++	1x / 1xDP ++	1x / 1xDP ++
Expansion Slot	1x miniPCIe CPU J1900 / 2x miniPCIe CPU i-Core	1x miniPCIe CPU J1900 / 2x miniPCIe CPU i-Core	1x miniPCIe CPU J1900 / 2x miniPCIe CPU i-Core	1x miniPCIe CPU J1900 / 2x miniPCIe CPU i-Core
Drives externally accessible	CFast slot (option)	CFast slot (option)	CFast slot (option)	CFast slot (option)
Drives (internal)	HDD min. 500GB / SSD min. 16GB / mSATA min.32GB (options)	HDD min. 500GB / SSD min. 16GB / mSATA min.32GB (options)	HDD min. 500GB / SSD min. 16GB / mSATA min.32GB (options)	HDD min. 500GB / SSD min. 16GB / mSATA min.32GB (options)
Power Supply (Vdc)	15...36 VDC (25W-15" basic)	15...36 VDC (25W-15" basic)	15...36 VDC (25W-15" basic)	15...36 VDC (25W-15" basic)
Consumption (W)	25 - 50	25 - 50	25 - 50	25 - 50
Operating Temperature (°C)	-10 ... + 50 (non condensing)	-10 ... + 50 (non condensing)	-10 ... + 50 (non condensing)	-10 ... + 50 (non condensing)
Storage Temperature (°C)	-20 ... + 65	-20 ... + 65	-20 ... + 65	-20 ... + 65
Humidity	90% (non condensing)	90% (non condensing)	90% (non condensing)	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)	326,0x227,0	422,5x271,5	486,5x307,5	554,5x345,5
Weight (kg)	4,5	6	8,5	10,5
Operating systems	WIN7-WES7-WIN8.1	WIN7-WES7-WIN8.1	WIN7-WES7-WIN8.1	WIN7-WES7-WIN8.1
Protection degree (front)	IP66	IP66	IP66	IP66
Certifications	"CE - EN61000-6-2 / EN61000-6-4 / EN60068-2-6/ EN60068-2-2 / EN60068-2-1 / EN60068-2-52 / cULus (Certificate no. E189179) / EAC / ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22"	"CE - EN61000-6-2 / EN61000-6-4 / EN60068-2-6/ EN60068-2-2 / EN60068-2-1 / EN60068-2-52 / cULus (Certificate no. E189179) / EAC / ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22"	"CE - EN61000-6-2 / EN61000-6-4 / EN60068-2-6/ EN60068-2-2 / EN60068-2-1 / EN60068-2-52 / cULus (Certificate no. E189179) / EAC / ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22"	"CE - EN61000-6-2 / EN61000-6-4 / EN60068-2-6/ EN60068-2-2 / EN60068-2-1 / EN60068-2-52 / cULus (Certificate no. E189179) / EAC / ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22"

# Esaware Panel IPC (EW200 MITX)

Design your own performance.

MODEL	EW212	EW215	EW218	EW222
Display Size	12,1"	15,6"	18,5"	21,5"
Display Technology	TFT / 16,7 M			
Display Resolution (pixel)	1280X800	1366X768		1920X1080
Touch Technology	Resistive / Capacitive			
Bezel /Chassis	Aluminum with PTFE non-sticking coating / Sheet Steel			
CPU Fanless Celeron	Celeron Quad Core J1900 2,0 GHz			
CPU Fan Intel® Core™ 3G	Intel Core i3-3120ME 2,4GHz/ i5-3610ME 2,7GHz/ i7-3610QE 2,3 GHz			
CPU Fan Intel® Core™ 6G	Intel Celeron G3900TE 2,6GHz/ Intel Core i3-6100TE 2,7GHz/ i5-6500TE 2,3GHz/ i7-6700TE 2,4 GHz			
Chipset	SoC / QM67 / Q170			
GPU embedded	GMA3650 650MHz / HD Graphics - 4000 / HD Graphics 9G 510-530			
RAM (Celeron Quad Core)	up to 8GB DDR3L SODIMM 1333MHz 204 pin			
RAM (Fan Intel® Core™) 3G	up to 16GB DDR3 SODIMM 1333/1600MHz 204 pin			
RAM (Fan Intel® Core™) 6G	up to 32GB DDR4 SODIMM 1866/2133MHz 260 pin			
RS232 / RS485	2x RS232 + 1x RS232-422-485			
USB Port IP66 front	1x -no capacitive-			
USB Ports 2.0/3.0 rear	3/1 Celeron - 4/0 iCore™ 3G – 0/4 iCore™ 6G			
Ethernet (Celeron Quad Core)	2x 1Gb RJ45 Intel I210			
Ethernet (Fan iCore™) 3G	2x 1Gb RJ45 Intel 82579LM / Realtek RTL8111DL			
Ethernet (Fan iCore™) 6G	2x 1Gb RJ45 Intel I210AT / I219LM			
VGA/DVI-D (Celeron Quad Core)	1x / 1x			
VGA/DVI-D (Fan iCore™) 3G	1x / 1x			
DVI-D/HDMI (Fan iCore™) 6G	1x / 1x			
Audio - PS2 (no iCore 6G)	1/0 (Atom-Celeron) – 1/1 (iCore 3G)			
CFast slot	1 x external accessible slot			
Mechanical Slot (optional)	1x PCIe x1 - 1x miniPCIe - 1x PCIe x16 – 1x PCI			
Drives – RAID 0/1	HDD min. 500GB / SSD min. 32GB / CFast min. 4GB - Option			
Power Supply (Vdc)	18...30 VDC (25W-15" basic)			
Consumption (W)	25W - 65W			
Operating Temperature (°C)	-10 ... + 50 (non condensing)			
Storage Temperature (°C)	-20 ... + 65			
Humidity	90% (non condensing)			
External dimensions(W/H/D) (mm)	340,5x238,5x87,8 (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/ EN60068-2-2 / EN60068-2-1 / EN60068-2-52 cULus (Certificate no. E189179) / EAC ATEX 2014/34/UE directive Group II Category 3 GD Zone 2/22			
Operating Systems (32/64 bit according to CPU type)	WIN7 - WES7 - WIN8.1 - WIN10 IoT Enterprise LTSB 2016			



# IPC

## Box



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

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

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

Designed for Industry 4.0 and Edge computing applications.

### FEATURES

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

### APPLICATIONS

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

# EW420

Rugged design.

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

# Esaware EW410 Box IPC

Compact design. Multi-connectivity.

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



MODEL	EW410NF7
Enclosure	Heavy alu extrusion chassis Alluminium heat-sink 1x power led Lockable power connector Wall/VESA/DIN Rail Mounting option
CPU fanless	Intel Celeron J3455E Quad Core, 2M Cache, 1.5GHz (2.3 GHz)
Chipset	SoC
Embedded GPU	HDMI: resolution up to 3840x2160 DP: resolution up to 4096 x 2160 VGA: resolution up to 1920 x 1200
RAM	Up to DDR3L 8GB SO-DIMM
Front I/O	Ethernet: 1 x GbE (RJ45) Serial: 2 x RS232/422/485 (DB9) Display: 1 x VGA - 1 x DP/HDMI combo Buttons: 1xPower - 1xReset Wi-Fi Antenna 3 x Wi-Fi Antenna Holes
Rear I/O	Ethernet: 3 x Gbe LAN (RJ45) USB: 2 x 3.0 Serial: 2 x RS232/RS422/RS485 (DB9)
Drives options	SATA: SSD 128GB, 256GB, 512GB, 1TB HDD 500GB
Operating system	W10 IoT 64bit LTSC 2019 Linux
Operating temperature (°C)	-20 .... +60
Storage temperature (°C)	-40..+85
Humidity	< 95% (non condensing)
Weight (kg)	0,7
Power supply	9 ~ 36 VDC
Dimensions (WxHxD)	180mm x 33mm x 121,2mm
Protection degree	IP20
Certifications	CE/ FCC class A compliant/ UL

# EW327

## 27" Full HD TFT industrial monitor



A modern and robust glass design industrial monitor that does fit perfectly any industrial application.

The full HD resolution and bright 16 million colour display, the capacitive multitouch and the true flat design let the user create a very high level and modern user interface.

Thanks to the 27" and full HD display several software windows can be grouped into the same page providing to the user an immediate and complete control of the machine.

### FEATURES

- + 27" Full HD TFT high brightness display
- + VGA and DVI video input
- + Capacitive multitouch
- + Wide view angle

### APPLICATIONS

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

# EW327

Product Description.

MODEL	EW327
Control buttons	OSD control buttons on back to adjust contrast and brightness
External (W x H x D)	396.5mm x 657.5mm x 58 mm (15.61" x 25.88" x 2.28")
Cut out (W x H)	380.5mm x 641.5mm (14.98" x 25.25")
Material	Front: Aluminum - magnesium alloy anodizing ; Back: Metal paint
Installation	Embedded
Power supply	DC 24V
Power	30W
Video ports	VGA & DVI
Net weight	9KG
Size	27" Full HD TFT
Resolution	1920 x 1080
Color	16.7MB
Display (W x H)	336.15mm x 597.6mm (13.23" x 23.53")
Back light	LED
Pixel pitch	0.311 x 0.311
Brightness	300cd/ m
Contrast	3000 : 1
View	(L)150 / (R)150 / (U)150 / (D)150
Type	Multi capacitive
Transmittance	> 85%
Touch signal	USB
Working temperature	-0~50°C ( -32~122 )
Storage temperature	-20~60°C ( -4~140.6 )
Humidity	5~95%
Working vibration	SSD applied: 1.5 Grms, IEC 60068 -2-64, random, 5 ~ 500 Hz, 1 hr/ axis
Working shock	SSD applied: 10 G, IEC 60068 -2-64
IP	IP65 front
EMC	CE/ FCC Class A compliant

# DIGITAL SIGNAGE MONITOR

55" and 65" Android 4K  
HD industrial class digital  
signage monitor



LUMIA355

LUMIA365

LUMIA355 55" and LUMIA365 65" Android 4K HD industrial class digital signage monitors combines innovative and elegant design with the highest smart performances. Engineered according to the principles of Industry 4.0, they promote production efficiency through their responsiveness and ease of using.

## APPLICATIONS

- + Visualization of the industrial line efficiency and production data dashboards
- + Packaging production line
- + Textile Industry

## FEATURES

### Powerful hardware

- + Android 7.1, RK3288 Quad core processor
- + 4K HD industrial LED display
- + Wifi/RJ45/RS232/USB/GPIO/IR ports
- + True flat front tempered glass front
- + IP55 aluminum front and steel back
- + Capacitive touch screen or without touch screen
- + Multi Video input

### Intelligent System

- + Native and web apps supported
- + Quad viewer, up to 4 source signals on one screen
- + Media player integrated
- + HTML5 browser integrated, Play and control online content
- + Energy-saving automatic backlight control

### Easy use and control

- + Install and launch apps remotely
- + Operate, update, maintain remotely
- + Develop and launch your own content
- + VESA (400mm) and wall fix

# Android based industrial monitor

MODEL		LUMIA 355CVDS000 - LUMIA355NVDS000 (no touch)	LUMIA 365CVDS000 - LUMIA365NVDS000 (no touch)
<b>Size</b>		1348mm*819mm*105mm(L*W*T)	1610mm*1000.4mm*105mm(L*W*T)
<b>Color</b>		Front black, Industrial white back.	Front black, Industrial white back.
<b>Display</b>	Size	55inches (LG) 4K industrial LED	65inches (LG) 4K industrial LED
	Resolution	3840*2160	3840*2160
	Display size	1209.6 × 680.4 mm	1428.48 × 803.52 mm
	Brightness	500cd/m2	500cd/m2
	Contrast	02/03/1900 12:01	02/03/1900 12:01
	Screen ratio	01/01/1970 16:09	01/01/1970 16:09
	Color	16.7M (8-bit + Hi-FRC) , CIE1931 72%	16.7M (8-bit + Hi-FRC) , CIE1931 72%
	View angle	88/88/88/88	88/88/88/88
	Respond time	8 (Typ.)(Tr+Td) (ms)	8 (Typ.)(Tr+Td) (ms)
<b>Board</b>		RK3288 Quad core Cortex A17, double channel LVDS, ARM Mali-T764 GPU. TE, ASTC, AFBC memory compression, support 2160P and 4k H.264 HP 1080P@30fps video decoding	
		1.6 GHz	1.6 GHz
		RAM: 2GB	Flash: 16G
		Flash: 16G	Flash: 16G
		1xTF slot	1xTF slot
		1xGPIO	1xGPIO
		1xIR	1xIR
		2xRS232	2xRS232
		2xUSB 2.0	2xUSB 2.0
		1xRJ45	1xRJ45
		1xHDMI	1xHDMI
		1xVGA	1xVGA
		1xWIFI	1xWIFI
		Android version 7.1	Android version 7.1
<b>PCAP</b>		55" water proof	65" water proof
	Type	Projected capacitive touch screen	Projected capacitive touch screen
	Points	10points	10points
	Transmittance	0.95	0.95
	Resolution	4096x4096	4096x4096
	Life	50000hours	50000hours
	Touch respond time	<=3ms	<=3ms
	Hardness	Mohs 7	Mohs 7
<b>Sound</b>		Built-in speakers	Built-in speakers
<b>Power supply</b>		100-240VAC,50/60HZ	100-240VAC,50/60HZ
<b>Power</b>		190W	230W
<b>Working temperature</b>		-10°C~65°C	-10°C~65°C
<b>Working humidity</b>		10%-90%	10%-90%
<b>Storage temperature</b>		-20°C-60°C	-20°C-60°C
<b>IP</b>		IP55 front	IP55 front
<b>Main features</b>	<b>Customize split screen:</b>	support 1-8 view areas	support 1-8 view areas
	<b>Multi management</b>	multi-level and users manage	multi-level and users manage
	<b>Images formats</b>	.jpg, jpeg.bmp,.png.gif.	.jpg, jpeg.bmp,.png.gif.
	<b>Video formats</b>	.avi, .mkv,.mov,.mp4,.mpg,.is,.vob,.trp,.flv,.wmv	.avi, .mkv,.mov,.mp4,.mpg,.is,.vob,.trp,.flv,.wmv
	<b>Audio formats</b>	.mp3, .wma, .ogg, .aac, .wav	.mp3, .wma, .ogg, .aac, .wav
	<b>File formats</b>	pdf, word, excel, .ppt	pdf, word, excel, .ppt
	<b>Network</b>	3G/4G, wifi, LAN	3G/4G, wifi, LAN
	<b>On/Off</b>	Scheduled on/off	Scheduled on/off
	<b>Remote control</b>	Volume and bright remotely control	Volume and bright remotely control
	<b>U disk</b>	support U disk import files and pictures	support U disk import files and pictures
<b>Certification</b>	CE	2014/53/EU	2014/53/EU

# ERGO

All in one platform solution



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

## APPLICATIONS

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

## FEATURES

- + Industrial Personal Computer All-in-One arm mounted
- + LCD 21.5" wide
- + Resolution 1920x1080
- + LED backlight 50 K/h
- + 16.7M colors
- + Mounting horizontal VESA 100
- + P-CAP Touch screen
- + CPU Intel® Core™ i3-4010U Dual Core 1.7GHz SoC, Fanless
- + 2x miniPCIe slots on the motherboard (mPCIe/mSATA cards)
- + RAM memory 8 GB DDR3L SO-DIMM 204 PIN 1333/1600 MHz single channel
- + SSD 256 GB SATA 2.5"
- + 1 serial port RS232
- + 4 USB (3.0) on the back , 1 on the front
- + 2 DP video ports (DP active cable required)
- + 2 Ethernet ports 10/100/1000 Mbps RJ45 - Intel I210 / I218
- + Power supply 24 VDC
- + Protection degree IP65
- + Operating Temperature 0...50°C
- + Storage Temperature -20...+65°C
- + Humidity 85% no condensing

MODEL	Embedded ARM ERGO122	PC Control ERGO222	Monitor ERGO322
Versions	◊ Touch Capacitive ◊ Full Glass - -	-◊ Touch Capacitive ◊ Full Glass ◊ Dual Touch Capacitive 120° + Keyboard Touch ◊ Dual Touch Capacitive 120° + 12" HMI Touch	◊ Touch Capacitive ◊ Full Glass ◊ Dual Touch Capacitive 120° + Keyboard Touch ◊ Dual Touch Capacitive 120° + 12" HMI Touch
<b>General</b>			
Bezel /Chassis	Aluminum /Sheet Steel	Aluminum /Sheet Steel	Aluminum /Sheet Steel
Mounting	Portrait   Landscape	Portrait   Landscape	Portrait   Landscape
	VESA 100	VESA 100	VESA 100
Power Supply (Vdc)	12...32 VDC	15...36 VDC	18...30 VDC
Consumption (W)	24W for ARM base+ 24W for display keyboard (if any)	45 - 50 W for PC base + 24W for display keyboard (if any)	40W for monitor + 24W for display keyboard (if any)
Operating Temperature (°C)	0 ... + 50 (non condensing)	0 ... + 50 (non condensing)	0 ... + 50 (non condensing)
Storage Temperature (°C)	-20 ... + 65	-20 ... + 65	-20 ... + 65
Humidity	90% (non condensing)	90% (non condensing)	90% (non condensing)
Protection degree (all)	IP65	IP65	IP65
Certifications	CE	CE	CE
Display Size 1	21.5" true flat multi-touch screen	21.5" true flat multi-touch screen	21.5" true flat multi-touch screen
Display Technology	TFT / 16,7 M colors / LED backlight	TFT / 16,7 M colors / LED backlight	TFT / 16,7 M colors/ LED backlight
Display Brightness (cd/m²)	300	300	300
Contrast	5000:1	5000:1	5000:1
Viewing Angle H-V	89/89/89/89	89/89/89/89	89/89/89/89
Display Resolution (pixel)	1920x1080	1920x1080	1920x1080
Backlight life (hours)	50K	50K	50K
Touch Technology	Capacitive	Capacitive	Capacitive
Video input			DVI + VGA
Operating systems	Linux	Windows7 - Windows10 - WES7	
CPU Fanless Celeron 4G	i.MX 6 series 32-bit MPU, Quad ARM Cortex-A9 core, 1GHz	Quad core J1900 2,0 GHz (2,42GHz) – 10W	
CPU Fanless Celeron 6G		Quad core J3455E 1,5 GHz (2,30 GHz) – 10W	
CPU Fanless Intel Core 7G		Intel Core i3-7100U 2,46GHz /i5-7300U/ i7-7600U 2,8GHz – 15W	
RAM	2 GB		
FLASH	8 GB		
LAN	LAN 1xGb RJ45 - 1x10/100Gb RJ45		
RAM (Celeron quad core J1900)		on board 4GB DDR3L 1066/1333MHz - dual channel	
RAM (Celeron quad Core J3455E)		Up to 8GB DDR3L 1866MHz	
RAM (Fanless Intel Core 7G)		Up to 16GB DDR4 2133/1866 MHz 260 pin	
RS232 / RS485 J1900	1x RS232/RS485	1x RS232 + 1x RS485	
RS232 / RS485 J13455/i3/i5/i7		1x RS232/RS485	
USB Ports 2.0/3.0 rear	2x 2.0	1x 2.0 + 1x 3.0 cpu J1900 / 2x2.0 + 2x3.1 CPU J3455E / 4x 3.0 cpu Intel@Core™	rear 1x USB type B
Ethernet Celeron J1900 /J3455E		2x 1Gb RJ45 Intel I210 / 2x1Gb RJ45 Intel I211AT	
Ethernet i-Core™ i3/i5/7G		2x 1Gb RJ45 Intel I210AT/I219LM	
VGA/DP ( Celeron J1900)		1x / 1x (DP passive cable required)	
Drives (internal)		HDD min. 500GB / SSD min. 128GB / mSATA min.32GB (options)	

## 12" display

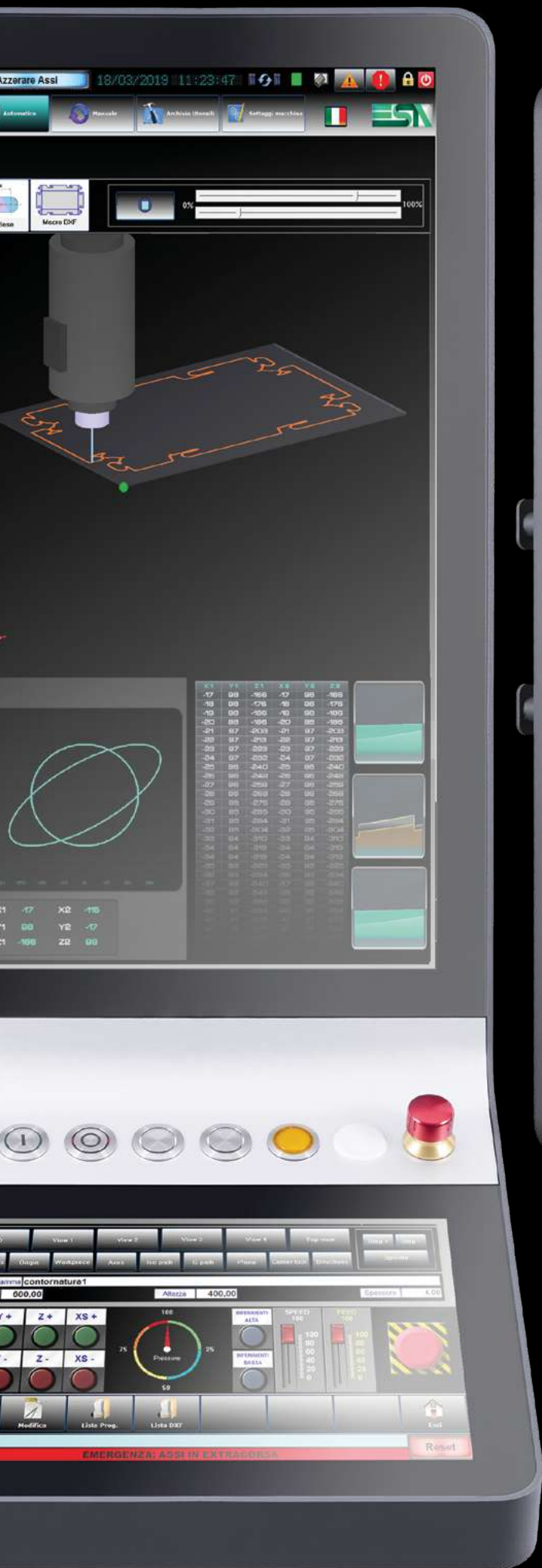
MODEL	Embedded ARM ERGO122	PC Control ERGO222	Monitor ERGO322
Display Size 2 (only on dual Touch) 12"	-	12.1" true flat multi-touch screen	12.1" true flat multi-touch screen
Display Technology		TFT / 16,7 M colors/ LED backlight	TFT / 16,7 M colors/ LED backlight
Display Brightness (cd/m <sup>2</sup> )		400	400
Display Resolution (pixel)		1280x800	1280x800
Backlight life (hours)		50k	50K
Touch Technology		Capacitive	Capacitive
Operating systems		Linux  WEC7	Linux  WEC7
Keyboard Extension   HMI Extension	-	HTML5 Web Browser + Touch keyboard	HTML5 Web Browser + Touch keyboard
	-	Capacitive HMI 12,1" + 1x Ethernet port 10/100 Mbps RJ45, + Crew + Everyware + Codesys	Capacitive HMI 12,1" + 1x Ethernet port 10/100 Mbps RJ45, + Crew + Everyware + Codesys

## Pushbutton

Push button extension	up to 8 x 22 mm standard push-buttons, switches, emergency button, USB, RFID etc.	up to 8 x 22 mm standard push-buttons, switches, emergency button, USB, RFID etc.	up to 8 x 22 mm standard push-buttons, switches, emergency button, USB, RFID etc.
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\* More configurations available online on our web tool configurator





# RUGGED TABLET

LUMIA 7xx



The Lumia rugged tablet is ideal for highly mobile indoor and outdoor applications in any harsh environment condition.

The capacitive multitouch and sunlight viewable display will ensure the data are always available when needed.

Thanks to the scanning trigger accessory and the integrated bar code reader the product will fit perfectly any logistics and automatic store applications.

## FEATURES

- + Fully rugged IP67 protection level (Water-Dust resistant)
- + Military certifications (MIL-STD810G) for vibration, shock, drop
- + Fanless
- + Capacitive 10 points multitouch
- + Rain, glove and finger-pen touch enabled
- + 8 hours operation battery life with 100% charging in less than 2.5 hours
- + Battery hotswap which enables NON-STOP working
- + Light weight

## APPLICATIONS

- + Medical
- + Maintenance
- + Vehicle management
- + Logistics
- + Smart robot
- + Smart factory
- + Training
- + Wireless AVG and robot control
- + Paperless checklist
- + Augmented reality

# LUMIA 704

MODEL	LUMIA 704MTAAAR0	
Product Form	Type	Rugged handheld Terminal
	Dimension	155.8*72*25
	Weight	292 g
	Device Color	black
LCD	Screen Size	4 inch 3:5
	Resolution	480*800 IPS
	Brightness	300Nit
TP	Touch Panel	Multipoint 5points Capacitive Glass + film , Rigidity: above 7H-Anti-scratch
Camera	Front	Front2.0MP
	Rear	8.0MP,with flash and auto-focus
Speaker	Built-in	Embedded 8Ω/0.7W speaker x 1
Mic	Built-in	Sensitivity:-42db, output resistance2.2kΩ
Earphone	Built-in	built inx 1
Battery	type	polymer Li,battery loadable
	Capacity	3.8V/4400mAh
	Endurance	7hrs
CPU	Type	MT8735A Quad-core ARM® Cortex-A53 MPCore TM
	Speed	2GB/ LPDDR3
RAM	DDR3L	32G
ROM	Emmc	electronic compass
Compass	Built-in	Gravity acceleration sensor
G_sensor	Built-in	Gravity acceleration sensor
WIFI	WIFI	WIFI 802.11(a/b/g/n) Frequency 2.4G+5.8G dual band WIFI,
Bluetooth	Built-in	BT4.0 (BLE) class1transmission distance:10m
3G/4G	Built-in	CMCC 5M: LTE 1/2/3/4/5/7/17/20/38/39/40/41 WCDMA 1/2/5/8 TD-SCDMA 34/39 GSM 2/3/5/8
GPS	Built-in	support GPS;Capture sensitivity:-160 dBm; Cool Start Time:<60 seconds, Hot start time:<28seconds, frequency::0.25 Hz ... 10 MHz (configurable)
2D barcode scanner	Built-in	Honeywell3680
TF slot	Extensive External Memory	support SDHC/SDXC x1 max:64G
SIM slot	SIM card	SIMx1
USB2.0 interface	data transmission	Micr usb2.0*1 OTG
Earphone Jack	Audio Output	φ3.5mm standard earphone jack x1
HOME key	home	HOME*1
Menu Key	Menu	MENU*1,
Back Key	Back	BACK*1,
barcode	barcode	barcode *1
POGO PIN	docking charger	charging function x1
Power on	press key	power key x1
Volume + -	press key	Volume + - x1
others	press key	0-9 number keys, #key, *key, Fn key, back, ENT key, aA key
Operating System	OS version	Android8.1
Certificate System	IP65	IP65 Report: Water resistance: IP-X5
	CE NB RED (2014/53/EU)	Healt & Safety: EN 62209-1:2006; EN 62209-2:2010; EN 50566:2013 EN 62479:2010; EN 50360:2001/A1:2012 EN 60950-1:2006/A2:2013
		EMC: EN 301 489-1 V2.2.0, EN 301 489-3 V2.1.1 EN 55032:2015, EN 55024:2010+A1:2015 EN 301 489-17 V3.2.0
		Radio: EN 300 328 V2.2.0, EN 301 893 V2.1.1 EN 303 413 V1.1.0, EN 300 440 V2.1.1 EN 300 330 V3.1.1
	MIL-STD-810G	Y
Battery	UN38.3,MSDS,IEC62133	
Enviroment	Drop Height	1.2m composite wood floors, in operation status
	Operate Temperature	-10 °C to 50 °C
	Store Temperature	-20 °C to 60 °C
	Humidity	Humidity: 95% Non-Condensing

# LUMIA 705

MODEL	LUMIA 705MTA1AR0	
Product Form	Type	Rugged Handheld Terminal
	Dimension	156*74*17
	Weight	260 g
	Device Color	black
LCD	Screen Size	5 inch 16:9
	Resolution	720*1280
	Brightness	300 Nit
TP	Touch Panel	Multitouch 5points Capacitive, Glass + Film, Rigidity: above 7H-Anti-scratch
Camera	Front	Front2.0MP
	Rear	Rear 8.0MP,with flash and auto-focus
Speaker	Built-in	Embedded 8Ω/0.7Wspeaker x 1
Mic	Built-in	Sensitivity:-42db, output resistance2.2kΩ
Earphone	Built-in	built inx 1
Battery	type	polymer Li-on
	Capacity	3.8V/4000mAh
	Endurance	7hrs
CPU	Type	MT8735A Quad-core ARM® Cortex-A53 MPCore TM
	Speed	1.45GHz
RAM	DDR3L	2GB/ LPDDR3
ROM	Emmc	64GB
Compass	Built-in	electronic compass
G_sensor	Built-in	Gravity acceleration sensor
Light sensor	Built-in	yes
range sensor	Built-in	yes
led indicate	Built-in	In charging led
WIFI	WIFI	WIFI 802.11(a/b/g/n) Frequency 2.4G+5.8G dual band WIFI,
Bluetooth	Built-in	BT4.0 (BLE) class 1 transmission distance: 10m
3G/4G	Built-in	CMCC 5M: LTE 1/2/3/4/5/7/17/20/38/39/40/41 WCDMA 1/2/5/8 TD-SCDMA 34/39 GSM 2/3/5/8
GPS	Built-in	GPS;Capture sensitivity: -160 dBm; Cool Start Time: <60 seconds, Hot start time: <28seconds, frequency:0.25 Hz ... 10 MHz (configurable)
2D barcode scanner	Built-in	Honeywell3680
TF slot	Extensive External Memory	support SDHC/SDXC x1 max: 128G
SIM slot	SIM card	SIMx1
USB2.0 interface	data transmission	Micr usb2.0*1 OTG
Earphone Jack	Audio Output	3.5mm standard earphone jack x1
System HOME key	home	HOME*1
Barcode	barcode	barcode *1
POGO PIN	docking charger	charging function x1
Power on	press key	power key x1
Volume + -	press key	Volume + - x2
Others	press key	MENU*1, BACK*1, CUSTOM*1
Operating System	OS version	Andriod 8.1
Certificate System	IP65	IP65 Report: Water resistance: IP-X5, Dust resistance: IP-6X
	CE NB RED (2014/53/EU)	Health & Safety: EN 62209-1:2006; EN 62209-2:2010; EN 50566:2013 EN 62479:2010; EN 503060:2001/A1:2012 EN 60950-1:2006/A2:2013
		EMC: Draft EN 301 489-1 V2.2.0, EN 301 489-3 V2.1.1 EN 55032:2015, EN 55024:2010+A1:2015 Draft EN 301 489-17 V3.2.0
		Radio: EN 300 328 V2.1.1, EN 301 893 V2.1.1 EN 303 413 V1.1.0, EN 300 440 V2.1.1 EN 300 330 V2.1.1
	MIL-STD-810G	Y
	Battery	UN38.3,MSDS,IEC62133
	Enviroment	Drop Height
Operate Temperature		-10 °C to 50 °C
Store Temperature		-20 °C to 60 °C
Humidity		Humidity: 95% Non-Condensing

# LUMIA 708 CH

MODEL	LUMIA708CH11W00 / LUMIA708CH11WR0	
Product Form	Type	Rugged Tablet
	Dimension	228*145*16.5mm
	Weight	715g
LCD	Screen Size	8"
	Resolution	800*1280
	Brightness	450Nit
TP	Touch Panel	Multipoints Capacitive, Glass+Glass, Rigidity: above 7H-Anti-scratch
Camera	Front	2.0MP
	Rear	5.0MP
Speaker	Built-in	Embedded 8Ω/0.8W waterproof speakerx 1
Mic	Built-in	Sensitivity:-42db, output resistance2.2kΩ
Battery	Type	build in polymer li-ion battery
	Capacity	3.7V/8500mAh
	Endurance	8Hrs
CPU	Type	Intel Cherrytrail Z8350
	Speed	1.44Ghz-1.92GHz
RAM	LPDDR3	4GB
Disk	Emmc	64GB
G_sensor	build in	Gravity acceleration sensor
WIFI	WIFI module	WIFI 802.11(a/b/g/n/ac) Frequency 2.4G+5.8G dual band WIFI intel 3165D2WG
Bluetooth	build in	BT4.2 (BLE) class1 transmission distance: 10m
4G	build in	EC25 LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8
GPS	build in	U-blox NEO-7 Support :GPS; Capture sensitivity: -160 dBm;Cool Start Time:<50second, Hot start time:<28seconds, frequency: 0.25 Hz ... 10 MHz (configurable)
TF slot	Extensive External Memory	support TF x1 max:128G
USB Interface	Extend external memory and data transfer	USB2.0*1 (Host)
NFC Reader	Integrated Near Field Communication reader	ISO IEC14443-A 14443B – 15693 – 18092
Earphone Jack	Audio Output	φ 3.5mm standard earphone jack x1
DC Jack	Power	DC 5V 3A 3.5mm Power connector
HDMI	Video Output	HDMI 1.4a Type C x1
Docking connector	pogo Pin	12pin Pogo Pin x1
Power Adaptor	Standard	AC100V ~ 240V, 50Hz/60Hz output DC 5V/3A
Operating System	OS version	Windows 10 IoT English
Certifications	IP67	
	CE NB RED (2014/53/EU)	Safety: EN 60950-1:2006+A11:2009+A1:2010 +A12:2011+A2:2013 Health: EN 50566:2013/AC:2014 EN 62209-2:2010, EN 62479:2010
		EMC: Draft EN 301 489-1 V2.2.0, Final Draft EN 301 489-3 V2.1.1 Draft EN 301 489-17 V3.2.0, Draft EN 301 489-52 V1.1.0 EN 55032:2015, EN 55024:2010+A1:2015 EN 61000-3-2:2014, EN 61000-3-3:-2013
		Radio: EN 300 328 V2.1.1, EN 301 893 V2.1.1, EN 300 440 V2.1.1 EN 300 413 V1.2.1, EN 301 908-1 V11.1.1 EN 300 908-2 V11.2.1, EN 301 511 V12.5.1
	MIL-STD-810G	
	Battery	UN38.3, MSDS,IEC62133
	Drop Height	1.2m
	Operate Temperature	-10 °C to 50 °C
Store Temperature	-30 °C to 70 °C	
Humidity	Humidity: 95% Non-Condensing	

# LUMIA 708 QM

MODEL	LUMIA708QM11A00 / LUMIA708QM11AR0	
Product Form	Type	Rugged Tablet
	Dimension	228*145*16.5mm
	Weight	715g
LCD	Screen Size	8"
	Resolution	800*1280
	Brightness	450cd/m <sup>2</sup>
TP	Touch Panel	Multipoints Capacitive, Glass+Glass, Rigidity: above 7H-Anti-scratch
Camera	Front	5.0MP
	Rear	13MP
Speaker	build in	Embedded 8Ω/0.8W waterproof speakerx 1
Mic	build in	Sensitivity:-42db, output resistance2.2kΩ
Battery	Type	build in polymer li-ion battery
	Capacity	3.7V/8500mAh
	Endurance	6Hrs
CPU	Type	Snapdragon MSM8953 (8core)
	Speed	2.0GHz
RAM	Memory	4GB/ LPDDR3
Disk	EmmC	64GB
Indicator light	build in	Indicator light of charge, red light will flash when device has low power. red long light when charging, green long light when full power
L-Sensor	Built-in	light Sensor *1
Compass	Built-in	Compass Sensor *1
Gyro Sensor	Built-in	Gyro Sensor *1
G_sensor	Built-in	Gravity acceleration sensor
WIFI	WIFI module	WIFI 802.11 b/g/n/a/ac frequency 2.4G+5G dual band WIFI,
Bluetooth	build in	BT4.1(BLE)
2G/3G/4G	build in	CMCC 4M: LTE B1,B3,B5,B7,B8,B20,B38,B39,B40,B41 WCDMA 1/2/5/8 GSM 2/3/5/8
GPS	build in	support:GPS+Glonass;Capture sensitivity:-140 dBm;Cool Start Time:<50秒,Hot start time:<5秒,GPS frequency:1575.42MHz,Glonass frequency:1602MHZ
TF slot	Extensive External Memory	x1 max:128G
USB Interface		standard USB 2.0x1 , type C x1(data&charging)
Earphone Jack	Audio Output	φ 3.5mm standard earphone jack x1
DC Jack	Power	DC 5V 3A φ 3.5mm Power connector x1
HDMI	Video Output	HDMI 1.4a Type C x1
Extensive Slot	pogo Pin	12pin Pogo Pin x1
Operating System	OS version	Android 10.0 GMS
Certificate System	IP67	
	CE NB RED (2014/53/EU)	Health & Safety: EN 62209-2:2010; EN 50566:2017 EN 62479:2010 EN 62368-1:2014+A11:2017
		EMC: EN 301 489-1 V2.2.3, EN 301 489-3 V2.1.1 EN 55032:2015, EN 55035:2017 Draft EN 301 489-17 V3.2.2 EN 301 489-19 V2.1.1
		Radio: EN 300 328 V2.2.2, EN 301 893 V2.1.1 EN 303 413 V1.1.1, EN 300 440 V2.1.1 EN 300 330 V1.1.1
	MIL-STD-810G	Y
	Battery	UN38.3, MSDS,IEC62133
Drop Height	1.2m composite wood floors, in operation status	
Operate Temperature	-10 °C to 50 °C	
Store Temperature	-20 °C to 60 °C	
Humidity	Humidity: 95% Non-Condensing	

# LUMIA 710 CH

MODEL	LUMIA710CH11W00 LUMIA710CH11W0F LUMIA710CH11WRF	NFC reader + Finger print reader + 2D barcode reader
Product Form	Type	Rugged Tablet
	Dimension	280*187*22mm
	Weight	1014g
LCD	Screen Size	10.1"
	Resolution	800*1280
	Brightness	400 cd/m2
TP	Touch Panel	10 points Capacitive, Glass+Glass, Rigidity: above 7H-Anti-scratch
Camera	Front	2.0MP
	Rear	5.0MP
Speaker	Built-in	Embedded 8Ω/0.8W waterproof speaker x 1
Mic		Sensitivity:-42db, output resistance:2.2kΩ
Battery	Type	Lithium-ion polymer battery, removable
	Capacity	3.7V/10000mAh
	Endurance	8hrs
CPU	Type	Intel cherry Trail Z8350
	Speed	1.44Ghz-1.92GHz
RAM	LPDDR3	4GB
ROM	Emmc	64GB
WIFI	WIFI Module	WIFI 802.11(a/b/g/n/ac) Frequency 2.4G+5.8G dual band WIFI intel 3165D2WG
Bluetooth	Built-in	BT4.2 (BLE) class1 transmission distance:10m
4G	Built-in	EC25-EC LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8
GPS	Built-in	Capture sensitivity: -160 dBm; frequency: 0.25 Hz ... 10 MHz
TF slot	Extensive External Memory	TF x1 max: 128G
USB Interface	External memory and data transfer	USB2.0*1 (Host)
Earphone Jack	Audio Output	∅3.5mm standard earphone jack x1
DC Jack	Power	DC 5V 3A ∅3.5mm Power connector x1
HDMI	Video Output	HDMI 1.4a Type C x1
NFC Reader	Integrated Near Field Communication reader	ISO IEC14443-A 14443B – 15693 - 18092
Finger print reader	GF3208	Resolution 88x108 Up to 10 finger prints
Extensive Slot	pogo Pin	12pin Pogo Pin x1
DB9 PORT	Serial port	*1 (RS232) TTL
RJ45 PORT	internet port	*1 10/100
Certificate System	IP65	IP65
	CE NB RED (2014/53/EU)	Safety: EN 60950-1:2006+A11:2009+A1:2010+ A12:2011+A2:2013 Health: EN 50566:2013/AC:2014 EN 62209-2:2010, EN 62479:2010
		EMC: Draft EN 301 489-1 V2.2.0, Draft EN 301 489-17 V3.2.0 Draft EN 301 489-19 V2.1.0, Draft EN 301 489-52 V1.1.0 EN 55032:2015, EN 55024:2010+A1:2015 EN 61000-3-2:2014, EN 61000-3-3:2013
		Radio: EN 300 328 V2.2.1, EN 301 893 V2.1.1 EN 300 413 V1.2.1, EN 301 908-1 V11.1.1 EN 300 908-2 V11.2.1, EN 301 511 V12.5.1
	MIL-STD-810G	YES
	certification of explosion protection	Ex ic IIB T4 Gc
	CCC	YES
Battery	UN3803 MSDS,IEC62133	
Product Reliability	Drop Height	80cm
	Operate Temperature	-10 °C to 50 °C
	Store Temperature	-20 °C to 60 °C
	Humidity	Humidity: 95% Non-Condensing

# LUMIA 710 SK

MODEL	LUMIA710SK22W00 LUMIA710SK22WRO LUMIA710SK22W0F LUMIA710SK22WRF	
		+ 2D barcode reader + finger print reader
Product Form	Type	Rugged Tablet
	Dimension	280*187*22mm
	Weight	1014g
LCD	Screen Size	10.1 "
	Resolution	1200×1920
	Brightness	330 cd/m2
TP	Touch Panel	10 points Capacitive, Glass+Glass, Rigidity: above 7H-Anti-scratch
Camera	Front	2.0MP
	Rear	8.0MP
Speaker	Built-in	Embedded 8Ω/0.8W waterproof speaker x 1
Mic		Sensitivity:-42db, Output resistance:2.2kΩ
Battery	Type	Lithium-ion polymer battery , removable
	Capacity	7.4V/5000mAh
	Endurance	6hrs
CPU	Type	Intel® Skylake M3-7Y30
	Speed	2.20 GHz
RAM	DDR3L	8GB
SSD	NGFF SSD	128GB
G_sensor	Built-in	Gravity acceleration sensor
WIFI	WIFI Module	WIFI 802.11(a/b/g/n/ac) dual frequency 2.4G+5.8G WIFI intel 3165D2WG (3.3v)
Bluetooth	Built-in	BT4.2 (BLE) class1 transmitted distance:10m
4G	Built-in	EC25-EC LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8
GPS	Built-in	U-blox NEO-7,Support:GPS; Capture sensitivity:-160 dBm;Cool Start Time:<50 second, Hot start time:<28 second, Frequency:0.25 Hz ... 10 MHz (configurable)
TF Slot	Extensive External Memory	Support TF x1 max:128G
SIM Slot	SIM Slot	SIM x1
Micro usb	USB2.0	USB 2.0*1
type A usb	USB3.0	USB 3.0*1
DC Jack	Power	DC 12V 4A ϕ 4.0mm Power connector x1
Earphone Jack	Audio Output	ϕ 3.5mm Standard Earphone Jack x1
HDMI Jack	Audio&Video Output	HDMI 1.4a Type C x1
Finger print reader	GF3208	Resolution 88x108 Up to 10 finger prints
Extensive Slot	Pogo Pin	12pin Pogo Pin x1
DB9 PORT	Serial port	*1 (RS232) TTL Electrical Level
RJ45 PORT	Ethernet port	*1(10/100 Self-adaption)
Operating System	OS version	windows 10 IoT English
Certificate System	IP65	IP65
		Safety: EN 60950-1:2006+A11:2009+A1:2010+ A12:2011+A2:2013 Health: EN 50566:2017 EN 62209-2:2010, EN 62479:2010
	CE NB RED (2014/53/EU)	EMC: Draft EN 301 489-1 V2.2.0, Final Draft EN 301 489-3 V2-1-1 Draft EN 301 489-17 V3.2.0; Draft EN 301 489-19 V2.1.0, EN 55032:2015, EN 55024:2010+A1:2015 EN 61000-3-2:2014, EN 61000-3-3:2013
		Radio: EN 300 328 V2.1.1, EN 300 440 V2.1.1 EN 300 413 V1.1.1
	MIL-STD-810G	YES
	CCC	YES
Battery		UN3803,MSDS,IEC62133,Aviation, Ocean shipping reports
Product Reliability	Drop Height	80cm
	Operate Temperature	-10 °C to 50 °C
	Store Temperature	-20 °C to 60 °C
	Humidity	Humidity: 95% Non-Condensing



# LUMIA 710 QM

MODEL	LUMIA710QM11A00 LUMIA710QM11A00 LUMIA710QM11ARF		+ 2D barcode reader + Finger Print
Product Form	Type	Rugged Tablet	
	Dimension	280*187*22mm	
	Weight	1014g	
LCD	Screen Size	10.1"	
	Resolution	800*1280	
	Brightness	400cd/ m2	
TP	Touch Panel	Multipoints Capacitive, Glass+Glass, Rigidity: above 7H-Anti-scratch	
Camera	Front	5.0MP	
	Rear	13MP	
Speaker	build in	Embedded 8Ω/0.8W waterproof speakerx 1	
Mic	build in	Sensitivity:-42db, output resistance2.2kΩ	
Battery	Type	build in polymer li-ion battery	
	Capacity	3.7V/10000mAh	
	Endurance	8 hours	
CPU	Type	Snapdragon MSM8953(8core)	
	Speed	2.0GHz	
RAM	DDR3L	4GB	
ROM	storage	64GB	
Indicator light	build in	Indicator light of charge, red light will flash when device has low power. red long light when charging, green long light when full power	
L-Sensor	Built-in	light Sensor *1	
Compass	Built-in	Compass Sensor *1	
Gyro Sensor	Built-in	Gyro Sensor *1	
G_sensor	Built-in	G_sensor *1	
WIFI	WIFI module	WIFI 802.11 b/g/n/a/ac frequency 2.4G+5G dual band WIFI,	
Bluetooth	build in	BT4.1(BLE)	
2G/3G/4G	build in	CMCC 4M: LTE B1,B3,B5,B7,B8,B20,B38,B39,B40,B41 WCDMA 1/2/5/8 GSM 2/3/5/8	
GPS	build in	support:GPS+Glonass;Capture sensitivity:-140 dBm;GPS frequency:1575.42MHz	
TF slot	Extensive External Memory	x1 max:128G	
SIM slot	SIM card	SIM card x1	
USB Interface	External memory and data transfer	USB 2.0x1	
Earphone Jack	Audio Output	ϕ3.5mm standard earphone jack x1	
DC Jack	Power	DC 5V 3A ϕ3.5mm Power connector x1	
HDMI	Video Output	HDMI 1.4a Type C x1	
Finger print reader	GF3208	Resolution 88x108 Up to 10 finger prints	
Extensive Slot	pogo Pin	12pin Pogo Pin x1	
Operation System	OS version	Android 9.0	
Certificate System	IP65	IP65	
	CE NB RED (2014/53/EU)	Healt & Safety: EN 62209-2:2010; EN 50566:2017 EN 62479:2010 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013	
		EMC: EN 301 489-1 V2.2.3, EN 301 489-3 V2.1.1 EN 55032:2015, EN 55035:2017 Draft EN 301 489-17 V3.2.2, EN 301 489-19 V2.1.1 EN 61000-3-2:2014, EN 61000-3-3:2013	
		Radio: EN 300 328 V2.1.1, EN 301 893 V2.1.1 EN 303 413 V1.1.1, EN 300 440 V2.2.1	
	MIL-STD-810G	Yes	
Battery	UN38.3, MSDS,IEC62133		
Product Reliability	Drop Height	1m	
	Operate Temperature	-10 °C to 50 °C (-20 °C to 60 °C optional)	
	Store Temperature	-30 °C to 70 °C	
	Humidity	Humidity: 95% Non-Condensing	

# LUMIA 710 I5

MODEL	LUMIA710I522W00 LUMIA710I522WR0	+ 2D barcode reader
Product Form	Type	Rugged Tablet
	Dimension	290*196*22 mm
	Weight	1300g
LCD	Screen Size	10.1"
	Resolution	1200x1920
	Brightness	330 cd/m2
TP	Touch Panel	10 points Capacitive, Glass+Glass, Rigidity: above 7H-Anti-scratch
Camera	Front	2.0MP
	Rear	8.0MP
Speaker	Built-in	Embedded 8Ω/0.8W waterproof speaker x 1
Mic		Sensitivity:-42db, output resistance:2.2kΩ
Battery	Type	Lithium-ion polymer battery, removable
	Capacity	7,4V/10000mAh
	Endurance	10hrs
CPU	Type	8th generation Intel Icore I5
	Speed	3,40GHz
RAM	LPDDR4	8GB
ROM	SSD	128GB
WIFI	WIFI Module	WIFI 802.11(a/b/g/n/ac) Frequency 2.4G+5.8G dual band WIFI intel 3165D2WG
Bluetooth	Built-in	BT4.2 (BLE) class1 transmission distance:10m
4G	Built-in	EC25-EC LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8
GPS	Built-in	Capture sensitivity: -160 dBm; frequency:0.25 Hz ... 10 MHz
TF slot	Extensive External Memory	TF x1 max:128G
USB Interface	External memory and data transfer	USB3.0*1 (Host)
Earphone Jack	Audio Output	φ 3.5mm standard earphone jack x1
DC Jack	Power	DC 5V 3A φ 3.5mm Power connector x1
HDMI	Video Output	HDMI 1.4a Type C x1
NFC Reader	Integrated Near Field Communication reader	ISO IEC14443-A 14443B – 15693 - 18092
Extensive Slot	pogo Pin	12pin Pogo Pin x1
DB9 PORT	Serial port	*1 (RS232) TTL
RJ45 PORT	internet port	*1 10/100
Operating System	OS version	windows 10 IoT English
Certificate System	IP65	IP65
	CE NB RED (2014/53/EU)	Healt & Safety: EN 62368-1:2014+A11:2017 EN 62209-2:2010; EN 50566:2017 EN 62479:2010
		EMC: EN 301 489-1 V2.2.3, EN 301 489-3 V2.1.1 EN 55032:2015, EN 55035:2017 EN 301 489-17 V3.2.3, EN 301 489-19 V2.1.1
		Radio: EN 300 328 V2.2.2, EN 301 893 V2.1.1 EN 303 413 V1.1.1, EN 300 440 V2.2.1
	MIL-STD-810G	YES
	CCC	YES
	Battery	UN3803, MSDS,IEC62133
Product Reliability	Drop Height	80cm
	Operate Temperature	-10 °C to 50 °C
	Store Temperature	-20 °C to 60 °C
	Humidity	Humidity: 95% Non-Condensing

# LUMIA 710 I7

MODEL	LUMIA710I732W00 LUMIA710I732WR0	+ 2D barcode reader
Product Form	Type	Rugged Tablet
	Dimension	290*196*22 mm
	Weight	1300g
LCD	Screen Size	10.1"
	Resolution	1200x1920
	Brightness	330 cd/m2
TP	Touch Panel	10 points Capacitive, Glass+Glass, Rigidity: above 7H-Anti-scratch
Camera	Front	2.0MP
	Rear	8.0MP
Speaker	Built-in	Embedded 8Ω/0.8W waterproof speaker x 1
Mic		Sensitivity:-42db, output resistance:2.2kΩ
Battery	Type	Lithium-ion polymer battery, removable
	Capacity	7,4V/10000mAh
	Endurance	10hrs
CPU	Type	8th generation Intel Icore I7
	Speed	3,40GHz
RAM	LPDDR4	8GB
ROM	SSD	128GB
WIFI	WIFI Module	WIFI 802.11(a/b/g/n/ac) Frequency 2.4G+5.8G dual band WIFI intel 3165D2WG
Bluetooth	Built-in	BT4.2 (BLE) class1 transmission distance:10m
4G	Built-in	EC25-EC LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8
GPS	Built-in	Capture sensitivity: -160 dBm; frequency:0.25 Hz ... 10 MHz
TF slot	Extensive External Memory	TF x1 max:128G
USB Interface	External memory and data transfer	USB3.0*1 (Host)
Earphone Jack	Audio Output	φ 3.5mm standard earphone jack x1
DC Jack	Power	DC 5V 3A φ 3.5mm Power connector x1
HDMI	Video Output	HDMI 1.4a Type C x1
NFC Reader	Integrated Near Field Communication reader	ISO IEC14443-A 14443B - 15693 - 18092
Extensive Slot	pogo Pin	12pin Pogo Pin x1
DB9 PORT	Serial port	*1 (RS232) TTL
RJ45 PORT	internet port	*1 10/100
Operating System	OS version	windows 10 IoT English
Certificate System	IP65	IP65
	CE NB RED (2014/53/EU)	Healt & Safety: EN 62368-1:2014+A11:2017 EN 62209-2:2010; EN 50566:2017 EN 62479:2010
		EMC: EN 301 489-1 V2.2.3, EN 301 489-3 V2.1.1 EN 55032:2015, EN 55035:2017 EN 301 489-17 V3.2.3, EN 301 489-19 V2.1.1
		Radio: EN 300 328 V2.2.2, EN 301 893 V2.1.1 EN 303 413 V1.1.1, EN 300 440 V2.2.1
	MIL-STD-810G	YES
	CCC	YES
	Battery	UN3803, MSDS,IEC62133
Product Reliability	Drop Height	80cm
	Operate Temperature	-10 °C to 50 °C
	Store Temperature	-20 °C to 60 °C
	Humidity	Humidity: 95% Non-Condensing

# LUMIA 712 CH

MODEL	LUMIA712CH12W00 LUMIA712CH12WR0	+ 2D barcode reader
Product Form	Type	12.2"
	Dimension	319.6*216*23.4 mm
	Weight	1500g
LCD	Screen Size	12.2"
	Resolution	1920*1200
	Brightness	280Nit
TP	Touch Panel	10 point capacitive, Glass+Glass, Rigidity: 7H above, anti-scratch,
Camera	Front	2.0MP
	Rear	5.0MP
Speaker	Built-in	built-in 8Ω/0.8W water-proof speaker x2
Mic	Built-in	sensitivity:-42db, Output resistance:2.2kΩ
Battery	Type	Lithium-ion polymer, removable
	Capacity	3.7V/12600mAh
	Endurance	8Hrs
CPU	Type	Intel Cherrytrail Z8350
	Speed	1.44Ghz-1.92GHz
RAM	DDR3L	4GB
ROM	Emmc	128GB
G_sensor	Built-in	gravity sensor
WIFI	WIFI Module	WIFI 802.11(a/b/g/n/ac) Frequency 2.4G+5.8G dual band WIFI
Bluetooth	Built-in	class1 transmission distance:10m
4G	Built-in	EC25-EC LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8
GPS	Built-in	Capture sensitivity: -160 dBm;frequency:0.25 Hz ... 10 MHz
TF slot	Extensive External Memory	TF x1 max:128G
SIM card slot	3G/4G communication	SIM card x1
USB connector	Extensive external memory and data transfer	USB 2.0*2 (4pin) Host
		USB 3.0*1
MICRO USB connector	USB2.0	MICRO USB x1
Earphone Jack	Audio Output	φ 3.5mm standard earphone jack x1
DC Jack	Power	DC 5V 3A φ 3.5mm power adaptor x1
HDMI	Video Output	HDMI 1.4a x1
Serial port connector	Serial Port	DB9 (RS232) x1 DB9 (RS485) x1
RJ45 connector	Ethernet port	10/100Mbps x1
NFC Reader	Integrated Near Field Communication reader	ISO IEC14443-A 14443B - 15693 - 18092
Extensive connector	pogo Pin	12pin Pogo Pin x1
	power	On/Off
	volume	volume up/volume down
F KEY	Scanner	Code scanner(back of unit) x1
program	Program Key	Self define key x2
Operation System	OS version	Windows 10 IOT English;
Certificate System	IP65	IP65
	CE NB RED (2014/53/EU)	Safety: EN 60950-1:2006+A11:2009+A1:2010+ A12:2011+A2:2013
		Healt: EN 50566:2013/AC:2014 EN 62209-2:2010, EN 62479:2010
		EMC: Draft EN 301 489-1 V2.2.0, Draft EN 301 489-17 V3.2.0; Draft EN 301 489-19 V2.1.0 EN 55032:2015, EN 55024:2010+A1:2015 EN 61000-3-2:2014, EN 61000-3-3--2013
	Radio: EN 300 328 V2.2.1, EN 301 893 V2.1.1 EN 300 413 V1.2.1	
MIL-STD-810G	Y	
Product Reliability	Battery	UN38.3,MSDS,IEC62133
	Drop Height	80cm
	Operate Temperature	-10 °C to 50 °C
	Store Temperature	-20 °C to 60 °C
	Humidity	Humidity: 95% Non-Condensing

# LUMIA 712 SK

MODEL	LUMIA712SK22W00 LUMIA712SK22WR0	+2D barcode reader
Product Form	Type	Rugged Tablet
	Dimension	319,6*216*23,4 mm
	Weight	1500g
LCD	Screen Size	12,2"
	Resolution	1920x1200
	Brightness	280 cd/m2
TP	Touch Panel	10 points Capacitive, Glass+Glass, Rigidity: above 7H-Anti-scratch
Camera	Front	2.0MP
	Rear	5.0MP
Speaker	Built-in	Embedded 8Ω/0.8W waterproof speaker x 1
Mic		Sensitivity:-42db, Output resistance:2.2kΩ
Battery	Type	Lithium-ion polymer battery , removable
	Capacity	7.4V/6300mAh
	Endurance	6hrs
CPU	Type	Intel® Skylake M3-7Y30
	Speed	2.20 GHz
RAM	DDR3L	8GB
SSD	NGFF SSD	128GB
G_sensor	Built-in	Gravity acceleration sensor
WIFI	WIFI Module	WIFI 802.11(a/b/g/n/ac) dual frequency 2.4G+5.8G WIFI intel 3165D2WG (3.3v)
Bluetooth	Built-in	BT4.2 (BLE) class1 transmitted distance:10m
4G	Built-in	EC25-EC LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8
GPS	Built-in	U-blox NEO-7,Support:GPS; Capture sensitivity:-160 dBm, Cool Start Time:<50 second, Hot start time:<28 second, Frequency:0.25 Hz ... 10 MHz (configurable)
TF Slot	Extensive External Memory	Support TF x1 max : 128G
SIM Slot	SIM Slot	SIM x1
Micro usb	USB2.0	USB 2.0*1
type A usb	USB3.0	USB 3.0*1
DC Jack	Power	DC 12V 4A ϕ 4.0mm Power connector x1
Earphone Jack	Audio Output	ϕ 3.5mm Standard Earphone Jack x1
HDMI Jack	Audio&Video Output	HDMI 1.4a Type C x1
NFC Reader	Integrated Near Field Communication reader	ISO IEC14443-A 14443B - 15693 - 18092
Extensive Slot	Pogo Pin	12pin Pogo Pin x1
DB9 PORT	Serial port	*1 (RS232) TTL Electrical Level
RJ45 PORT	Ethernet port	*1(10/100 Self-adaption)
Operation System	OS version	windows 10 IoT English
Certificate System	IP65	IP65
	CE NB RED (2014/53/EU)	Safety: EN 60950-1:2006+A11:2009+A1:2010+ A12:2011+A2:2013 Healt: EN 50566:2013/AC:2014 EN 62209-2:2010, EN 62479:2010
		EMC: Draft EN 301 489-1 V2.2.0, Draft EN 301 489-17 V3.2.0 Draft EN 301 489-19 V2.1.0, Draft EN 301 489-52 V1.1.0 EN 55032:2015, EN 55024:2010+A1:2015 EN 61000-3-2:2014, EN 61000-3-3:-2013
		Radio: EN 300 328 V2.1.1, EN 301 893 V2.1.1 EN 300 413 V1.1.1
	MIL-STD-810G	YES
	CCC	YES
Battery	UN3803, MSDS,IEC62133,Aviation, Ocean shipping reports	
Product Reliability	Drop Height	80cm
	Operate Temperature	-10 °C to 50 °C
	Store Temperature	-20 °C to 60 °C
	Humidity	Humidity: 95% Non-Condensing

# LUMIA 714

MODEL	LUMIA714I511WB0
OS	Windows 10 Pro/Windows 7 Pro
LCD	14" IPS TFT LCD FHD (1920 x 1080)
	1000nit LumiBond® display,sunlight readable
CPU	Intel® Core™ i5-6200U 2.3GHz~2.8GHz, Intel® Turbo Boost, 3MB Intel® Smart Cache
RAM	4GB DDR4
SSD	64G SSD
Button	8 buttons
Touch	Capacitive touch screen
Slots	1 x SIM card
	Micro SD card slot
I/O	1 x Audio and micropone
	1 x DC in Jack
	2 x USB 3.0
	1 x USB 2.0
	1 x HDMI
	1 x Docking connector 24-pin
	1 x Camera 8MP auto focus rear camera
	1 x 10/100/1000 base-T ETH
	Wifi-Intel® Dual Band Wireless-AC 8260, 802.11ac
	EM7430C
	Bluetooth (v4.2)
Security	Intel® vPro™
	TPM 2.0
	Kensington lock
Power	100-240VAC, 50 / 60Hz, 65W
	2x Li-Ion battery 10.8V,3220mAh
	LifeSupport™ battery swappable technology
Dimension	369 x 248 x 32.5 mm
Weight	2.3 kg
Rugged	MIL-STD-810G and IP65 certification
	4 inches height break proof
	e-Mark car certification
CE RED (2014/53/EU)	EN 300 328 V2.1.1 (2016-11); EN 300 440 V2.1.1 (2017-03)
	EN 301 489-1 V2.1.1 (2017-02); EN 301 489-3 V2.1.1 (2017-03)
	EN 301 489-17 V3.1.1 (2017-02); EN 301 489-19 V2.1.0 (2017-02)
	EN 301 489-52 V1.1.0 (2016-11)
Environment	Working:-20°C ~ 60°C
	Storage:-50°C ~ 70°C
	Humidity:95% RH , non-condensing



# I/O

## EW620 network remote I/O



EW620 is the new distributed Input Output system for up to 63 modules made by ESA Automation. With 10 different fieldbuses including EtherCAT, CANOpen, modBUS and a multiple configuration of both digital and analog inputs and outputs, it is the ideal solution for distributed control of field device signals. The easy integration with the ESA Automation platform consisting in HMI, control and servodrive and the guarantee of an excellent price/performance ratio mean that the product can be used in different applications and markets not only industrial. The EW620 product cabling solution called Remove Terminal Block (RTB) together with the toolless system allow easy maintenance and management of the multiple connection cables.

- + Different fieldbuses accepted thanks to the modularity of the couplers
- + Digital input or output modules up to 32 points
- + Analog input or output modules with up to 16 channels and 16 bit resolution
- + Special modules such as encoder input, thermocouples, synchronous serial input
- + RTB for contact removal without rewiring
- + Module clamping system on DIN rail easily accessible
- + Sealing ring for cable fixing

### FEATURES

- + Fieldbus standard: EtherCAT o CANOpen
- + Optional Fieldbus: modBUS, ProfiNET, CC-Link
- + Working temperature -20 .. +60°C
- + Internal BUS: <1ms (128Bytes), 2ms (256Bytes), 4ms (512Bytes)
- + Number of module for each coupler: 63
- + Protection degree: IP20
- + Compliance / certification: CE | UL

### APPLICATIONS

- + Industrial automation
- + Robotics
- + In-Plant production
- + Handling & Packaging



## EW610 / ComRio



EW610 and COM-RIO 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.

Main features:

- + EtherCAT, Modbus RTU protocol (EW610)
- + CANOpen DS401, Modbus RTU protocol (COM-RIO)
- + Communications status LED on bus
- + Communication set via dip –switches
- + The digital inputs have a hardware filter

### FEATURES

- + Stand alone compact I/O module
- + Separate power supply
- + Ready to fit in the machine body
- + Mixed digital/analog solution
- + Special module for pressure input

### APPLICATIONS

- + Industrial automation
- + Robotics
- + In-Plant production
- + Handling & Packaging

# EWDU

The easiest and the most compact servo drive



EWDU is the new compact, cheaper and simple servo drive from ESA Automation.

Ready to control different types of motors like standard brushless servo motor and also DC servo motor with current up to 10A, low voltage configuration and incremental encoder feedback

The drive is powered at low voltage in a range from 24 to 60 Vdc power supply for the power section and 24Vdc for the control section.

Inside it has a double CPU for high speed response with a firmware set-up function like:

- + Brake motor control capability
- + Torque and positioning control
- + Speed control with adjustable ramps with or without jerk
- + Motor table configuration

Key point of the new EWDU servo drive is the easy set-up; thanks to the drivewatcher software you are able to set-up the motor parameter with one digit only. The best performances of the drive and motor combinations are guaranteed by our skilled technical people that have already set-up into the firmware drive all ESA motor database and tested all configurations.

## FEATURES

- + Feedback: Incremental Encoder or Halls Sensor
- + Fieldbus: CAN DS402 - EtherCAT
- + 4 digital Inputs / 2 digital output
- + 1 analog input +/- 10V differential (12 bit )
- + Protection Level: IP20
- + Standards: CE

## APPLICATIONS

- + Packaging Machine
- + Handled
- + Life & Science
- + Industrial automation

MODEL	EWDU
<b>General Specifications</b>	
Power Supply	24 .. 60 Vdc
Control Supply	24 Vdc
Nominal Current	10 A
Peak Current	20 A
Analogue Input	1 +/- 10V differential
Digital Input	4 PNP
Digital Output	2 Insulated – 0,5A
Communication	RS422 – CANopen – EtherCAT
Control Type	Speed – Torque – Position Mode
Brake Resistor	Not available
Power Loss	@ stand by = 5 W @ I nom = 20 W
<b>Mechanical</b>	
Dimensions	135 (h) x 82 (w) x 28.5 (L) mm
Weight	0,4 kg

## Environmental Conditions

Working Temperature	0 °C ... + 40 °C, max 55 °C at 55 °C consider derating drive's rated I by 50%
Stocking Temperature	-25 °C ... +85°C
Altitude	Up to 1000 m above sea level without de-rating.
Humidity	Operating: 5% ... 85% non-condensing Storage: 5% ... 95% non-condensing.
Vibration	Conformal to IEC60068-2-6
Protection Degree	IP20

## Standard

EN 61800-3:2004 + A1:2012	Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods
EN 61800-2 2015	Adjustable speed electrical power drive systems - Part 2: General requirements - Rating specifications for low voltage adjustable speed a.c. power drive systems
EN 61800-5-1 (2007)	Adjustable speed electrical power drive systems - Part 5-1: Safety requirements - electrical, thermal and energy requirements
2014/30/EU	European Directive on electromagnetic compatibility
2014/35/EU	European Low Voltage Directive
2011/65/EU	European RoHS Directive

# EWDL

## ESA Servo Package Low Power



the new esaware drive low power (EWDL) with the esaware motors (EWML) made the servo-package solution based on the EtherCAT fieldbus designed as an excellent performance/price powered at 230 Vac and rated up to 1 kW.

Available in the 3 sizes of 100W, 400W and 750W nominal power, this family drive allows a decentralized motion control approach, executed by EtherCAT fieldbus or CANOpen DS402.

Inside offers a control algorithm with very fast sampling, advanced speed, torque and position loop controls plus the addition of filters for correct system setting. These ensure fast system response times, high accuracy and efficiency.

The EWDL series also offers features such as anti-vibration, automatic in-line setting, preselectable positioning, stand-alone programs with integrated motion control and more.

The configuration wizard on the ESA Servo Suite tool optimizes inertia detection for accuracy and allows you to quickly set control parameters and minimize commissioning time.

UL certification and STO safety features available on EWDL reduce time and cost, no need additional cabling.

### FEATURES

- + Incremental Encoder feedback 2500ppr
- + FieldBUS: EtherCAT or CANopen
- + 8 digital input / 4 digital output
- + 6 operation mode conformal EtherCAT standards
- + IP 20 Protection Degree
- + Safety Standards – Safe Torque Off
- + Standards: CE, UL, UR

### APPLICATIONS

- + Packaging
- + Position Tables
- + Delta Robot X-Y
- + Polisher, Conveyor
- + Industrial Automation

### Technical Characteristics

MODEL	EWDL2S20x250000	EWDL2S40x250000	EWDL2S70x250000
<b>General Specifications</b>			
Input Power Main Circuit	Single / Three-phase, 200~240VAC ±10%, 50/60Hz		
Input Power Control Circuit	Single, 200~240VAC ±10%, 50/60Hz		
Nominal Current (A)	1,75	3	4,5
Peak Current (A)	5,25	9	13,5
Withstand Voltage	Primary to earth: withstand 1500 VAC, 1 min, (Leakage current: 20 mA) [220V Input]		
Control Method	PWM Sinusoidal wave drive		
Analogue Input	2 inputs (12Bit A/D:2 input) – Only for CANopen Version -		
Digital Input	8 optical isolated multi function inputs, 5-24VDC, 20mA		
Digital Output	4 optical isolated multi function outputs, 5-24VDC, 20mA		
Communications	RS-232 (for configuration) – EtherCAT-CANopen		
Operation Mode (EtherCAT)	Profile Position (PP) – Profile Velocity (PV) – Torque Profile (TQ) – Cyclic Synchronous Position (CSP) – Cyclic Synchronous Velocity (CSV) – Homing (HM) – Q Program		
Front Panel	4 keys (MODE, UP, DOWN, SET) , 5-digit LED Display		
Regeneration Resistor	Built-in regenerative resistor (external resistor is also enabled.)		
Additional Features	Simple Soft PLC QProgram based on SCL		
<b>Mechanical</b>			
Dimensions	W.41 x D.145 x H.150 (mm)	W.55 x D.145 x H.150 (mm)	W.65 x D.176 x H.150 (mm)
Weight	0,89 kg	1,21 kg	1,63 kg

### Environmental Conditions

Working temperature:	0°C to 50°C (If the ambient temperature of servo drive is higher than 45°C, please install the drive in a wellventilated location)
Stocking temperature:	20°C .. + 65°C
Altitude	Lower than 1000m
Humidity	10 to 85%RH or less both Operating and Storage
Vibration	9,8m/s <sup>2</sup> or less, 10 - 60Hz (Do not use continuously at resonance frequency)
Protection Degree	IP20

### Standard

EN 61800-3:2004 + A1:2012	Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods
EN 61800-5-1 (2007)	Adjustable speed electrical power drive systems - Part 5-1: Safety requirements - electrical, thermal and energy requirements
2014/30/EU	European Directive on electromagnetic compatibility
2014/35/EU	European Low Voltage Directive
2011/65/EU	European RoHS Directive
UL	Power Conversion Equipment UL508C
STO	afety Torque Off according to EN ISO 13849

# miniECO+

Best performance to cost ratio



miniECOplus drive is designed as an excellent performance/price compromise to control small/medium size brushless servomotors powered at 230 Vac and rated up to 1 kW.

Available in the size of 4 A nominal current, this drive allows a decentralized motion control approach, executed by CANopen DS402 or ModBUS fieldbus. Inside has a double CPU for high speed response with a firmware set-up functions like:

- + Pulse positioner
- + Analogue control
- + Fieldbus ethernet based control
- + Emulated Encoder

Different feedback input from the brushless servomotors like incremental encoder or absolute BiSS, for an high resolution positioning.

Key point of the new miniECO servo drive is the easy set-up; thanks to the drive watcher software you are able to set-up the motor parameter with one digit only. The best performances of the drive and motor combinations are guaranteed by our skilled technical people that have already set-up into the firmware drive all ESA motor database and tested all configurations. STO Safety Functions on board reduce time and cost, no need additional cabling.

## FEATURES

- + Feedback Incremental Encoder or BiSS absolute
- + CANopen DS402 - Modbus RTU
- + 2 digital Inputs / 4 digital output
- + 2 analog input +/- IOV differential
- + Protection Level: IP20
- + Standards: CE and cUL
- + STO Safety Torque Off SIL2 integrated

## APPLICATIONS

- + Packaging Machine
- + Position table
- + Delta robot X-Y
- + Conveyor
- + Industrial automation

## Technical Characteristics

MODEL	9XEKO2S0408U	9XEKO2S0409U
<b>General Specifications</b>		
Input Power Main Circuit	Single / Three-phase, 200-240VAC ±10%, 50/60Hz	
Input Power Control Circuit	Single, 24VDC ±15%	
Nominal Current (A)	4	4
Peak Current (A)	8	9
Control Method	PWM Sinusoidal wave drive	
Analogue Input	2 inputs (12Bit 0-10V and +/-10V)	
Digital Input	2 optical isolated +24 Vdc (DIR / PULSE)	
Digital Output	3 optical isolated outputs Drive OK, EOJ, Brake, 5-24VDC, 50mA	
Communications	RS-485 – CANopen - ModBUS	
Front Panel	2 keys (MODE, SET) , 2-digit LED Display	
Regeneration Resistor	Built-in regenerative resistor (external resistor is also enabled.)	
Standard Functions	Analog Input, Pulse	
Additional Features	DivENC board or BiSS Board	
<b>Mechanical</b>		
Dimensions	W.68 x D.126 x H.161 (mm)	
Weight	1.06	

## Environmental Conditions

Working temperature:	0 ... + 40 (de-rate by 50% up to 55°C)
Stocking temperature:	-25°C .. + 85°C
Altitude	Up to 1000 m above sea level without derating
Humidity	5 to 95%RH or less both Operating and Storage
Vibration	9,8m/s <sup>2</sup> or less, 10 - 60Hz (Do not use continuously at resonance frequency)
Protection Degree	IP20

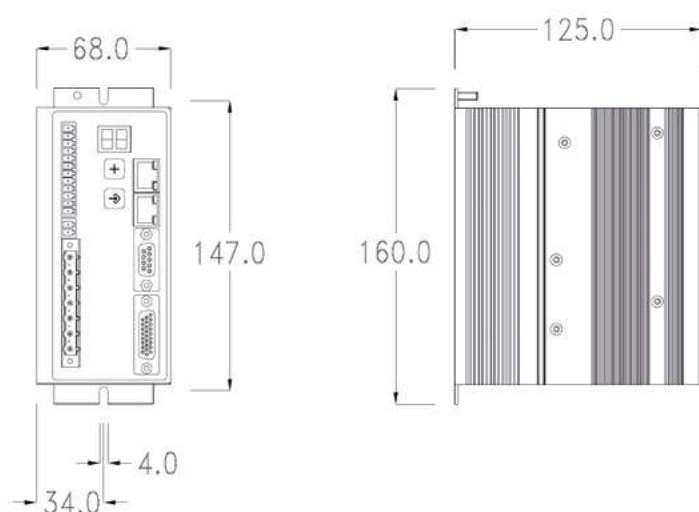
## Standard

2014/35/UE - 2014/35/EU	Direttiva Bassa Tensione / Low Voltage Directive / Directive Basse Tension / Niederspannungsrichtlinie / Directiva de Baja Tensión:
2014/30/UE - 2014/30/EU	Direttiva EMC / EMC directive / Directive CEM / EMV-Richtlinie / Directiva EMC:
2011/65/UE – 2011/65/EU	Direttiva RoHS / RoHS Directive / Directive RoHS / RoHS-Richtlinie / Directiva RoHS:
CEI EN 61800-3 2005 + A1:2013	EMC requirements and specific test methods
CEI EN 61800-2 1999-2009	General requirements. Rating specifications
CEI EN 61800-5-1 2009	Safety requirements. Electrical, thermal and energy
UL Listed	File number E468356

## Order Code

	9 x	ECO	x	x	x	x	x	x	x
<b>Drive Family</b>	9XEKO								
<b>Power Supply</b>	2	230 Vac							
<b>Version</b>	S	mini ECO Plus							
<b>Nominal Current</b>	0408	4 A nom. / 8 A pk (1,05kW @ 230V)							
	0409	4 A nom. / 9 A pk (1,05kW @ 230V)							
<b>Options</b>	U	Standard - UL Certified							
	12	Option - Encoder Repeater							
	18	Option - BiSS Encoder input							

## Dimensions



# ECO TECH

Smart Control.  
Simple Design.



ECO Tech drive is capable of controlling a wide range of brushless motors starting from 0.7 up to 1000 Nm and also is ready to pilot the asynchronous motors, thanks the special algorithm design.

Available in a size range from 4 A to 60 A nominal current, with a voltage supply from 230 Vac to 400 Vac this drive allows a decentralized motion control approach, executed by several fieldbuses available like EtherCAT, CANopen DS402, ModBUS RTU.

The capability to accept different feedback device like incremental encoder, resolver, absolute encoder and also Hiperface DSL® provide a high-resolution response in the positioning mode.

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 optimizing the application from a cost-effective view point as well.

Easy set-up and simple commissioning are guarantee by a special firmware design with one-digit set-up for the motor combination. Finally, a simple Safety Stop circuit inside of the ECO Tech drive reduce the timing to connect and cost

## FEATURES

- + Feedback: standard Incremental Encoder, optional DSL absolute feedback or resolver
- + Fieldbus: CAN DS402, EtherCAT or ModBUS RTU
- + 12 digital Inputs / 4 digital output
- + 2 analog input +/- 10 V differential
- + Protection Level: IP20
- + Standards: CE and UL (only for ext range)
- + Safety Torque Off circuit integrated
- + High overload capability

## APPLICATIONS

- + Industrial automation
- + Position table
- + Delta robot X-Y
- + Conveyor
- + Industrial automation



## 230Vac Voltage supply

MODEL	9XEKO2T0410x	9XEKO2T0615x
<b>General Specifications</b>		
Input Power Main Circuit	Single / Three-phase, 200~240VAC ±10%, 50/60Hz	
Input Power Control Circuit	Single, 24VDC ±15%	
Nominal Current (A)	4	6
Peak Current (A)	10	15
Control Method	PWM Sinusoidal wave drive	
Analogue Input	2 inputs (12Bit 0-10V and +/-10V)	
Digital Input	12 optical isolated +24 Vdc (Configurable)	
Digital Output	4 optical isolated outputs 500 mA + 1 Drive OK relay 100mA	
Communications	RS-485 – CANopen - ModBUS	
Front Panel	2 keys (MODE, SET) , 2-digit LED Display	
Regeneration Resistor	Built In 68 Ohm 100 W (external is also available)	
Standard Functions	Analog Input, Pulse, SAP, MSQ, Electronic Gearbox, electronic CAM	
Additional Features	EtherCAT Board, DSL Board	
<b>Mechanical</b>		
Dimensions	H. 186 x L. 68 x D.150 (mm)	H. 186 x L. 82 x D.150 (mm)
Weight	1.3 kg	1.5 kg

## 400Vac Voltage supply

MODEL	9XEKO4T0410x	9XEKO4T0512x	9XEKO4T1020x	9XEKO4T2040x	9XEKO4T2550x	9XEKO4T3090x	9XEKO4T60180x
Input Power Main Circuit	Three-phase, 400VAC ±10%, 50/60Hz						
Input Power Control Circuit	+24 Vdc – 0.5 A		+24 Vdc – 0.75 A		+24 Vdc – 1 A		+24 Vdc – 2 A
Nominal Current (A)	4	5	10	20	25	30	60
Peak Current (A)	10	12	20	40	50	90	180
Control Method	PWM Sinusoidal wave drive						
Analogue Input	2 inputs (12Bit 0-10V and +/-10V)						
Digital Input	12 optical isolated +24 Vdc (Configurable)						
Digital Output	4 optical isolated outputs 500 mA + 1 Drive OK relay 100mA						
Communications	RS-485 – CANopen - ModBUS						
Front Panel	2 keys (MODE, SET) , 2-digit LED Display						
Regeneration Resistor	Built In 150 Ohm 100 W (external is also available)		Built In 150 Ohm 150 W (external is also available)		external		
Standard Functions	Analog Input, Pulse, SAP, MSQ, Electronic Gearbox, electronic CAM						
Additional Features	EtherCAT Board, DSL Board						
<b>Mechanical</b>							
Dimensions	H. 227 x L. 73 x D.190 (mm)	H. 227 x L. 87 x D.190 (mm)	H. 270 x L. 104 x D. 224 (mm)	H. 270 x L. 104 x D. 224 (mm)	H. 390 x L. 140 x D. 250 (mm)		H. 487 x L. 216 x D. 250 (mm)
Weight	2.2 kg	2.5 kg	4.2 kg	4.2 kg	8.5 kg	9.7 kg	

## Technical Characteristics

### 480Vac Voltage supply

MODEL	ECO4T0410xxxEXTU	ECO4T0512xxxEXTU	ECO4T0615xxxEXTU
<b>General Specifications</b>			
Input Power Main Circuit	Single / Three-phase, 230 – 400 – 480 Vac ±10%, 50/60Hz		
Input Power Control Circuit	24 Vdc		
Nominal Current (A)	4	5	6
Peak Current (A)	10	12	15
Control Method	PWM Sinusoidal wave drive		
Analogue Input	2 inputs (12Bit 0-10V and +/-10V)		
Digital Input	12 optical isolated +24 Vdc (Configurable)		
Digital Output	4 optical isolated outputs 500 mA + 1 Drive OK relay 100mA		
Communications	RS-485 – CANopen - ModBUS		
Front Panel	2 keys (MODE, SET) , 2-digit LED Display		
Regeneration Resistor	Built In 150 Ohm 100 W (external is also available)		
Standard Functions	Analog Input, Pulse, SAP, MSQ, Electronic Gearbox, electronic CAM		
Additional Features	EtherCAT Board, DSL Board		
<b>Mechanical</b>			
Dimensions	H. 227 x L. 75 x D.190 (mm)		
Weight	2,2 kg	2,5 kg	2,6 kg

### Environmental Conditions

Working temperature:	0 ... + 40 (de-rate by 50% up to 55°C)
Stocking temperature:	-25°C .. + 85°C
Altitude	Up to 1000 m above sea level without derating
Humidity	5 to 95%RH or less both Operating and Storage
Vibration	9,8m/s <sup>2</sup> or less, 10 - 60Hz (Do not use continuously at resonance frequency)
Protection Degree	IP20

### Standards

2014/35/UE - 2014/35/EU	Direttiva Bassa Tensione / Low Voltage Directive / Directive Basse Tension / Niederspannungsrichtlinie / Directiva de Baja Tensión:
2014/30/UE - 2014/30/EU	Direttiva EMC / EMC directive / Directive CEM / EMV-Richtlinie / Directiva EMC:
2011/65/UE – 2011/65/EU	Direttiva RoHS / RoHS Directive / Directive RoHS / RoHS-Richtlinie / Directiva RoHS:
CEI EN 61800-3 2005 + A1:2013	EMC requirements and specific test methods
CEI EN 61800-2 1999-2009	General requirements. Rating specifications
CEI EN 61800-5-1 2009	Safety requirements. Electrical, thermal and energy
UL Listed	File number E468356 (only for Extended Range version)

**M4**  
BRK +  
BRK -

**CN1**  
+24V  
OV24  
OK  
TEN  
IEN  
REF  
REF/  
OV  
EXTREF  
PULSE  
DIR  
CONCLR

**M1**  
L1  
L2  
L3

**M5**  
HVDC+  
HVDC-

**M2**  
W  
V  
U  
SH

**CN7**  
L/A  
IN  
RUN  
L/A  
OUT  
ERR

**CN8**  
C  
N  
1  
0

DSL +  
DSL -  
SH  
BRK +  
BRK -  
SH  
DSL OK  
DSL ERROR

**FIELD BUS**

**ESN**

ESA elettronica S.p.A.  

Cod. 9XECC04T0512E25  
Sp. MT A042  
Rev. 10 5.25 RM 4.1 S/N C993  
Opt. ETHERCAT+DSL

AC-INPUT 400 V ±10% 50/60Hz 3 Phase - 5.5 AMPS	AC-OUTPUT 370V ±10% 3 Phase 2.7 kW A 5.0
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Made in Italy  
Date: 17/05/2017

# EWDB

## ESA Integrated Servodrive



EWDB Motor Integrated Servo-Drive is a synchronous servo motor with an integrated drive control, combine compact dimensions with space-saving machine design by eliminating a drive in a cabinet.

The drive, powered at low voltage with 24 to 60 Vdc power supply simplify the connections structure of the axis with simple connectors. The dynamic performance and the flexibility of the implemented mechatronic functions extend its use in various applications on the machine.

The EWDB is based on motors with 60 mm flange, torque from 0.7 to 1.3 Nm with or without integrated gearbox. Despite the thrust integration and on-board

housing of the motor, which is typically a source of heat, the drive does not need to be downgraded in terms of both performance and power delivered to the motor, and this is due to a sophisticated engineering solution. Thanks to the integrated feedback, the product has good speed accuracy and position control.

EWDB has 4 industrial water-resistant connectors at the rear, 2 at the top for fieldbus communication such as CANOpen (standard), EtherCAT or EthernetIP, and 2 at the bottom for I/O connections and power supply.

Commissioning is the easiest as possible thanks to the complete characterization of the motor.

### FEATURES

- + SinCos Absolute single turn Encoder
- + FieldBUS: EtherCAT, CANopen, EthernetIP
- + 4 digital input
- + IP 65 Protection Degree
- + Standards: CE

### APPLICATIONS

- + Packaging Machine
- + Handled
- + AGV
- + Life & Science
- + Setting machine

MODEL	EWDB1210xx0A00	EWDB1220xx0A00
<b>Drive Section</b>		
Input Power Main Circuit	From 24Vdc to 60Vdc – All data referred to 48Vdc +/-10%	
Input Power Control Circuit	24Vdc	
Output Current	10A	
Peak Current (for 2 s)	20A	
Control Method	PWM Sinusoidal wave drive	
Analogue Input	no	
Digital Input	4 x +24 Vdc (Drive Enable – Limit Switch 1, 2 – Homing)	
Digital Output	no	
Status Led	For status and alarms warning	
Communication	RS-485 (for configuration) – CANopen – EtherCAT - ProfinetIO	
Protection	I <sup>2</sup> T, thermal	
Brake management	Integrated; immediate stop or in ramp mode (optional)	
Configuration drive	With Drivewatcher Software	
Power Loss	7,2W @ stand-by – 24,3W @ I nominal	
<b>Motor Section</b>		
Stall Torque	0.7 Nm	1,3 Nm
MaxTorque	2.4 Nm	4 Nm
Rated Speed	3500 rpm	3000 rpm
Max Mechanical Speed	6000 rpm	6000 rpm
Motor Inertia	0.13 kgcm <sup>2</sup>	0.23 kgcm <sup>2</sup>
Voltage Constant +/- 5%	6 V/Krpm	8 V/Krpm
Torque Constant +/- 5%	0.1 Nm/A	0.132 Nm/A
Flange	60	
<b>Dimensions</b>		
[Interaxis x Centering]	1.63 x C.40 mm	
Weight	1,8	2,3
Weight with brake		
Connection Type	Connectors M17 for power and M12 for signal / fieldbus	

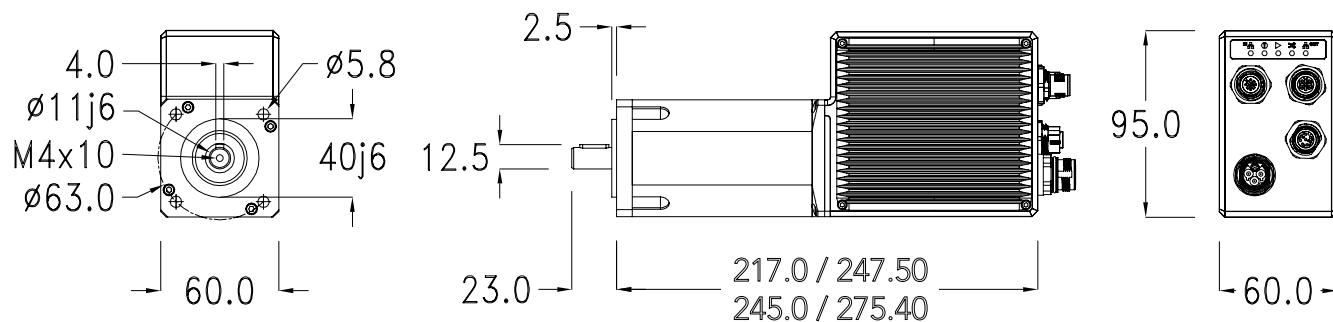
## Environmental Conditions

Working temperature:	0°C to 40°C
Stocking temperature:	-20°C .. + 65°C
Altitude	Lower than 1000m
Humidity	5 to 85%RH or less both Operating and Storage
Vibration	9,8m/s <sup>2</sup> or less, 10 - 60Hz (Do not use continuously at resonance frequency)
Protection Degree	IP65

## Standard

2014/35/UE - 2014/35/EU	Direttiva Bassa Tensione / Low Voltage Directive / Directive Basse Tension / Niederspannungsrichtlinie / Directiva de Baja Tensión:
2014/30/UE - 2014/30/EU	Direttiva EMC / EMC directive / Directive CEM / EMV-Richtlinie / Directiva EMC:
2011/65/UE – 2011/65/EU	Direttiva RoHS / RoHS Directive / Directive RoHS / RoHS-Richtlinie / Directiva RoHS:
CEI EN 61800-3 2005 + A1:2013	EMC requirements and specific test methods
CEI EN 61800-2 1999-2009	General requirements. Rating specifications
CEI EN 61800-5-1 2009	Safety requirements. Electrical, thermal and energy

## Dimensions



## Order Code

	1	5	6	7	8	9	10	11-12	13	14-15
EWD	x	x	x	x	x	x	x	x	x	x
<b>Products</b>										
B = Drive on Motor										
<b>Supply Voltage (SV)</b>										
1 = 24 Vdc a 60 Vdc										
<b>Motor Size - Flange (MSF)</b>										
2 = Flange 60										
<b>Motor Size - Torque (MST)</b>										
1 = 0,7 Nm 2500rpm										
2 = 1,3 Nm - 3000 rpm										
<b>Brake (B)</b>										
0 = No Brake										
1 = Brake Fitted										
<b>Fieldbus (FT)</b>										
A = Can Open DS 402										
D = Profinet IO										
I = Ethernet/IP										
E = EtherCAT (in develop)										
<b>Feedback (FB)</b>										
A = Absolute SinCos Encoder										
B = Hall Sensors										
<b>Mechanical Interface (MEI)</b>										
A4 = Flange 40/63, shaft 9x25										
00 = Flange 40/63, shaft 11x23										
48 = Flange 50/70, shaft 14x30										
<b>Gearboxes (GEA)</b>										
A = Without Gearbox										
B = With Gearbox										
<b>Special (SPC)</b>										
00 - No Special										
xx - Special Code										



# SERVO MOTORS

## EWML Brushless Servo Motors



Esaware motor are made with 3 different mechanical flange size, 40, 60 and 80mm and 3 power level 100W, 400W, 750W; inside an high performance encoder ensure well accuracy and stability.

Low cogging rotors built for power, speed and accuracy

- + High energy magnets provide enhanced peak torque
- + Skewed magnets minimize cogging for smooth speed control and accurate positioning
- + Double bonded magnets and precision balanced, for smooth reliable high speed performance

The simplicity of mechanical construction and only the optional brake make the product very economical, which can be combined with all gearboxes on the market.

CE, RoHS and UL certifications complete the product, making it available for the various reference markets.

### FEATURES

- + Encoder 2500ppr on board
- + High torque in a small package:
- + 40mm, 60mm and 80mm flanges
- + Low cost non sealed connectors,
- + Low cogging design
- + Standard brake option
- + Shaft seal
- + IP65 protection level
- + All motors are CE, RoHS, and UL recognized

### APPLICATIONS

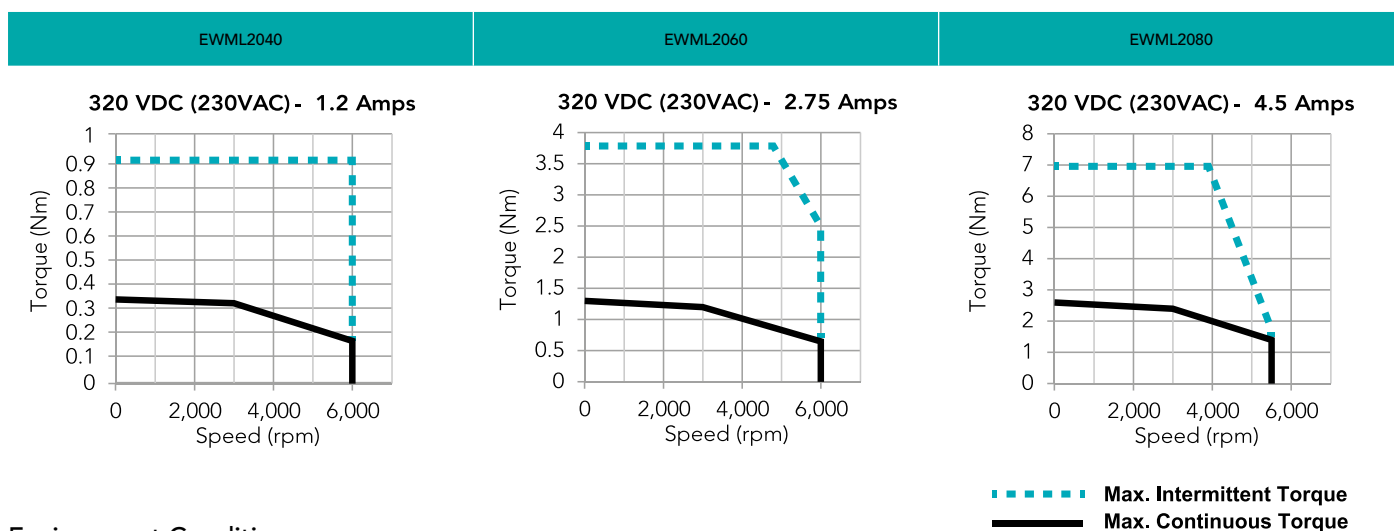
- + Textile
- + Packaging
- + Industrial Equipment
- + Delta Robot X-Y
- + Wood Working
- + Semiconductor



## Technical Characteristics

MODEL	EWML2040EDx00	EWML2060EDx00	EWML2080EDx00
General Specifications			
Rated Output Power	100W	400W	750W
Rated Speed	3000 rpm		
Max. Mechanical Speed	6000 rpm		
Rated Torque	0,32 Nm	1,27 Nm	2,4 Nm
Continuous Stall Torque	0,34 Nm	1,27 Nm	2,6 Nm
Peak Torque	0,93 Nm	3,8 Nm	6,9 Nm
Rated Current	1,2 A (rms)	2,7 A (rms)	4,5 A (rms)
Continuous Stall Current	1,27 A (rms)	2,7 A (rms)	4,9 A (rms)
Peak Current	3,6 A (rms)	8,1 A (rms)	13,5 A (rms)
Inertia	0,0428 kgcm <sup>2</sup>	0,272 kgcm <sup>2</sup>	0,89 kgcm <sup>2</sup>
Inertia - With Brake Option	0,0494 kgcm <sup>2</sup>	0,326 kgcm <sup>2</sup>	0,97 kgcm <sup>2</sup>
Voltage Constant +/- 5%	16,6 V/krpm	29 V/krpm	36,6 V/krpm
Torque Constant +/- 5%	0,271 Nm/A	0,484 Nm/A	0,543 Nm/A
Numero di poli	8	8	8
Mechanical			
Flange	40 mm	60 mm	80 mm
Dimensions [Interaxis x Centering]	1.46 x C.30 mm	1.70 x C.50 mm	1.90 x C.70 mm
Shaft Dimensions [DxL]	8 x 25 mm	14 x 30 mm	19 x 40 mm
Weight	0,55 kg	1,4 kg	2,6 kg
Weight with Brake	0,8 kg	1,9 kg	3,4 kg

## Curves



## Environment Conditions

Working temperature:	0°C to 40°C
Stocking temperature:	-20°C .. + 80°C
Altitude	Lower than 1000m
Humidity	85%RH or lower (free from condensing) both Operating and Storage
Vibration	49 m/s <sup>2</sup>
Protection Degree	IP65

## Standards

2014/35/EU	European Low Voltage Directive
EN 60034-1	Rotating electrical machines part 1
EN 60034-5	Rotating electrical machines part 5
2011/65/EU	European RoHS Directive
UL	(cURus) standards

# SERVO MOTORS

Standard and customizing motors



9MDSM Series brushless servomotors from ESA combine exceptional precision and motion quality, high dynamic performance and very compact dimensions. A large set of torque / speed characteristics, options and customization possibilities are available, making 9MDSM Series servomotors the ideal solution for most servosystems' applications.

## FEATURES

- + Style according to IEC 34-7
- + Protection type IP65
- + Natural Cooling or with servo fan in option
- + Safety brake like option
- + CE & UL Certifications

## APPLICATIONS

- + Life Science Diagnostic
- + Tooling Machines
- + Pulp & Paper
- + Packaging
- + Aerospace
- + Continuous Process

<b>Motor Type</b>	<b>Permanent magnet synchronous servomotors</b>
<b>Power Range</b>	0.1 kW to 60 kW
<b>Torque Range</b>	0.19 Nm to 320 Nm
<b>Speed Range</b>	0 to 6000 rpm
<b>Voltage supply</b>	24V – 48 V – 230 V – 400 V
<b>Feedback</b>	Incremental Encoder, Resolver, absolute feedback
<b>Connections</b>	M15 – M17 – M23 – M40 Connectors

## Technical Data

### Size 0

Description Winding Code	Symbol	Motor UM	9MDSM504		9MDSM505	
			1	3	1	3
Stall Torque	M <sub>0</sub>	Nm	0,19		0,38	
Maximum Torque	M <sub>pk</sub>	Nm	0,6	0,6	1,3	1,3
Stall Current	I <sub>0</sub>	A	0,78	1,52	1,2	3
Peak current	I <sub>pk</sub>	A	3,12	6,08	4,8	12
Maximum mechanical revs	N <sub>mec</sub>	min <sup>-1</sup>	8500		8500	
Maximum revs @ 230Vac	N <sub>MAX</sub>	min <sup>-1</sup>	8000	-	8000	-
Maximum revs @ 50Vac	N <sub>max</sub>	min <sup>-1</sup>	-	3600	-	4100
Voltage constant	K <sub>E</sub>	V/Krpm	14,7	7,4	19	7,7
Torque constant	K <sub>T</sub>	Nm/A	0,25	0,122	0,32	0,13
Rotor Inertia	J <sub>R</sub>	Kg cm <sup>2</sup>	0,037		0,061	
Resist. @ 20°C	R <sub>U-V</sub>	ohm	27	6,8	14	2,4
Induct. @ 1 kHz	L <sub>U-V</sub>	mH	11	2,6	7,9	1,25
Weight	m	Kg	0,53		0,68	

## Technical Data

### Size 2

Description Winding Code	Symbol	Motor	9MDSM521		9MDSM522	
		UM	1	2	1	2
Stall Torque	M <sub>0</sub>	Nm	0,7		1,4	
Maximum Torque	M <sub>pk</sub>	Nm	2,5	2,5	4,7	4,9
Stall Current	I <sub>0</sub>	A	1,6	1	2,8	1,7
Peak current	I <sub>pk</sub>	A	6,4	4	11	7
Maximum mechanical revs	N <sub>mec</sub>	min <sup>-1</sup>	8500		8500	
Maximum revs @ 230Vac	N <sub>MAX</sub>	min <sup>-1</sup>	6200	3600	6300	3900
Maximum revs @ 400Vac	N <sub>max</sub>	min <sup>-1</sup>	8000	6000	8000	6000
Voltage constant	K <sub>E</sub>	V/Krpm	27	44	30	49
Torque constant	K <sub>T</sub>	Nm/A	0,45	0,73	0,5	0,82
Rotor Inertia	J <sub>R</sub>	Kg cm <sup>2</sup>	0,13		0,23	
Resist. @ 20°C	R <sub>U-V</sub>	ohm	8,6	23	3,2	8,4
Induct. @ 1 kHz	L <sub>U-V</sub>	mH	10	27	5,6	13
Weight	m	Kg	1,2		1,7	

### Size 3

Description Winding Code	Symbol	Motor	9MDSM531		9MDSM532		9MDSM533		9MDSM534	
		UM	1	2	1	2	1	2	1	2
Stall Torque	M <sub>0</sub>	Nm	1,5		2,9		4,2		5,3	
Maximum Torque	M <sub>pk</sub>	Nm	5,1	4,8	10	10	14	14	18	18
Stall Current	I <sub>0</sub>	A	1,65	1,1	3,2	2	4,6	2,9	5,8	3,4
Peak current	I <sub>pk</sub>	A	6,6	4	13	8	19	12	24	15
Maximum mechanical revs	N <sub>mec</sub>	min <sup>-1</sup>	7000		7000		7000		6000	
Maximum revs @ 230Vac	N <sub>MAX</sub>	min <sup>-1</sup>	3100	1800	3200	1900	3300	2000	3300	1900
Maximum revs @ 400Vac	N <sub>max</sub>	min <sup>-1</sup>	6000	3500	6000	3500	6000	3500	5000	3000
Voltage constant	K <sub>E</sub>	V/Krpm	55	86	55	88	55	88	55	93
Torque constant	K <sub>T</sub>	Nm/A	0,91	1,42	0,91	1,45	0,91	1,45	0,91	1,54
Rotor Inertia	J <sub>R</sub>	Kg cm <sup>2</sup>	0,92		1,72		2,53		3,33	
Resist. @ 20°C	R <sub>U-V</sub>	ohm	9	23	3,4	8,3	1,9	5	1,4	4
Induct. @ 1 kHz	L <sub>U-V</sub>	mH	16	35	7	18	4,5	12	3,5	11
Weight	m	Kg	2,4		3,5		4,6		5,7	

### Size 4

Description Winding Code	Symbol	Motor	9MDSM541		9MDSM542		9MDSM543	
		UM	1	2	1	2	1	2
Stall Torque	M <sub>0</sub>	Nm	4		7,6		11,3	
Maximum Torque	M <sub>pk</sub>	Nm	14	14	26	26	40	39
Stall Current	I <sub>0</sub>	A	4,4	2,5	7,8	4,7	11,9	7
Peak current	I <sub>pk</sub>	A	18	10	31	19	47	28
Maximum mechanical revs	N <sub>mec</sub>	min <sup>-1</sup>	6500		6500		6500	
Maximum revs @ 230Vac	N <sub>MAX</sub>	min <sup>-1</sup>	3200	1800	3100	1800	3200	1800
Maximum revs @ 400Vac	N <sub>max</sub>	min <sup>-1</sup>	6000	3000	5000	3000	5000	3000
Voltage constant	K <sub>E</sub>	V/Krpm	55	96	59	98	59	98
Torque constant	K <sub>T</sub>	Nm/A	0,91	1,59	0,98	1,62	0,98	1,62
Rotor Inertia	J <sub>R</sub>	Kg cm <sup>2</sup>	5		9,6		14	
Resist. @ 20°C	R <sub>U-V</sub>	ohm	2,3	6,9	0,95	2,7	0,5	1,5
Induct. @ 1 kHz	L <sub>U-V</sub>	mH	5,6	16	2,9	7,5	1,6	4,9
Weight	m	Kg	5,6		8,5		11,4	

## Size 5

Description Winding Code	Symbol	Motor	9MDSM551		9MDSM552		9MDSM553		9MDSM554	
			UM	1	2	1	2	1	2	1
Stall Torque	M <sub>lo</sub>	Nm	10		19		27		35	
Maximum Torque	M <sub>pk</sub>	Nm	36	34	65	66	93	93	119	118
Stall Current	I <sub>lo</sub>	A	10,5	6,5	16	12,3	21	15,4	25	20
Peak current	I <sub>pk</sub>	A	42	26	64	50	84	62	100	80
Maximum mechanical revs	N <sub>mec</sub>	min <sup>-1</sup>	6500		6500		5500		5500	
Maximum revs @ 230Vac	N <sub>MAX</sub>	min <sup>-1</sup>	3000	1900	2600	2000	2400	1700	2200	1800
Maximum revs @ 400Vac	N <sub>max</sub>	min <sup>-1</sup>	5000	3000	4500	3000	4500	3000	4000	3000
Voltage constant	K <sub>E</sub>	V/Krpm	62	93	72	93	78	106	85	106
Torque constant	K <sub>T</sub>	Nm/A	1,02	1,54	1,2	1,54	1,3	1,74	1,4	1,74
Rotor Inertia	J <sub>R</sub>	Kg cm <sup>2</sup>	22		43		65		87	
Resist. @ 20°C	R <sub>U-V</sub>	ohm	0,65	1,61	0,34	0,61	0,25	0,46	0,18	0,32
Induct. @ 1 kHz	L <sub>U-V</sub>	mH	2,6	7	1,9	3,3	1,7	2,7	1,7	1,9
Weight	m	Kg	11		16		21		26	

## Size 6

Description Winding Code	Symbol	Motor	9MDSM561		9MDSM562		9MDSM563		9MDSM564	
			UM	1	2	1	2	1	2	1
Stall Torque	M <sub>lo</sub>	Nm	15		28		50		70	
Maximum Torque	M <sub>pk</sub>	Nm	42	38	72	72	127	130	177	184
Stall Current	I <sub>lo</sub>	A	12	9	24	12,5	28	18	39	26
Peak current	I <sub>pk</sub>	A	37	27	72	38	84	55	117	80
Maximum mechanical revs	N <sub>mec</sub>	min <sup>-1</sup>	5500		5500		4500		4500	
Maximum revs @ 230Vac	N <sub>MAX</sub>	min <sup>-1</sup>	2300	1800	2400	1300	1800	1100	1800	1200
Maximum revs @ 400Vac	N <sub>max</sub>	min <sup>-1</sup>	4000	3000	4000	2500	3000	2000	3000	2000
Voltage constant	K <sub>E</sub>	V/Krpm	79	100	72	134	108	169	108	162
Torque constant	K <sub>T</sub>	Nm/A	1,32	1,66	1,17	2,22	1,78	2,8	1,78	2,7
Rotor Inertia	J <sub>R</sub>	Kg cm <sup>2</sup>	54		91		177		264	
Resist. @ 20°C	R <sub>U-V</sub>	ohm	0,6	0,95	0,26	0,74	0,16	0,36	0,09	0,16
Induct. @ 1 kHz	L <sub>U-V</sub>	mH	3,4	6,5	2,1	5,3	1,3	3,2	0,8	1,8
Weight	m	Kg	17		23		36		50	

## Size 7

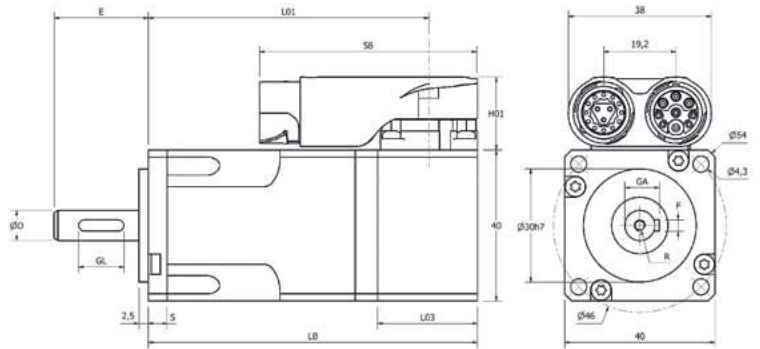
Description Winding Code	Symbol	Motor	9MDSM571		9MDSM572		9MDSM5.73	
			UM	1	2	1	2	1
Stall Torque	M <sub>lo</sub>	Nm	76		145		230	
Maximum Torque	M <sub>pk</sub>	Nm	210	203	408	399	618	632
Stall Current	I <sub>lo</sub>	A	37	25	70	41	104	65
Peak current	I <sub>pk</sub>	A	111	75	210	123	312	195
Maximum mechanical revs	N <sub>mec</sub>	min <sup>-1</sup>	4000		4000		4000	
Maximum revs @ 230Vac	N <sub>MAX</sub>	min <sup>-1</sup>	1500	1000	1500	900	1400	900
Maximum revs @ 400Vac	N <sub>max</sub>	min <sup>-1</sup>	2600	1800	2600	1600	2500	1500
Voltage constant	K <sub>E</sub>	V/Krpm	126	183	126	216	135	216
Torque constant	K <sub>T</sub>	Nm/A	2.1	3	2.1	3.6	2.2	3.6
Rotor Inertia	J <sub>R</sub>	Kg cm <sup>2</sup>	484		941		1398	
Resist. @ 20°C	R <sub>U-V</sub>	ohm	0.14	0.28	0.05	0.12	0.03	0.08
Induct. @ 1 kHz	L <sub>U-V</sub>	mH	1.5	3.1	0.8	2.2	0.6	1.5
Weight	m	Kg	50		81		112	

## Dimensions

### Size 0

WORKING DIMENSIONS	LB	L01	L03	H01
9MDSM504x0xx	87.5	74.5	26.5	19.4
9MDSM505x0xx	105.5	92.5		
9MDSM504x1xx	119.5	106.5	26.5	25.5
9MDSM505x1xx	137.5	124.5		

Value referred to feedback TTL 1024 i/g, Resolver

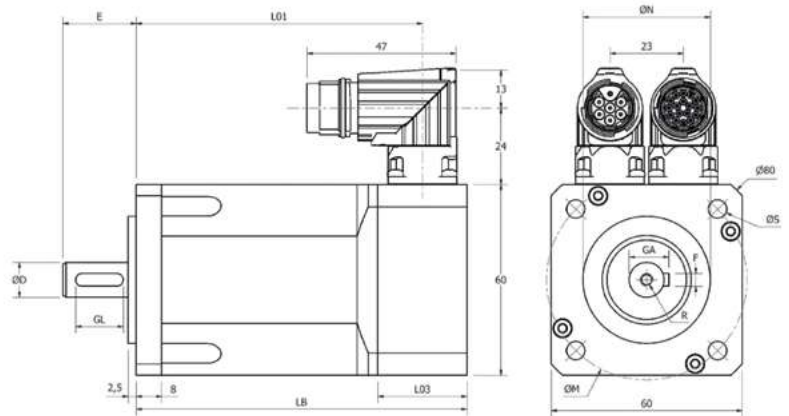


SIZE 0	SHAFT
D	8h6
E	25
GL	12
GA	9.2
F	3
R	M3x8

### Size 2

WORKING DIMENSIONS	LB	L01	L03
9MDSM521x0xx	104	90	28
9MDSM522x0xx	132	118	
9MDSM521x1xx BRAKE	134.5	120.4	
9MDSM522x1xx BRAKE	162.4	148.4	

Value referred to feedback TTL 2048i/g, Resolver,



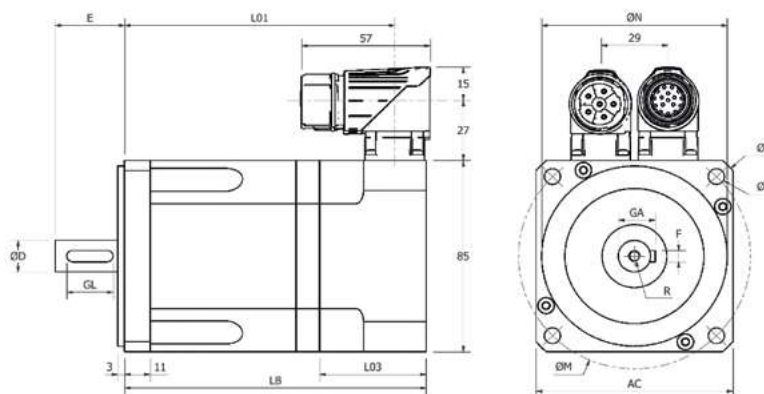
SIZE 2	SHAFT
D	11j6 14j6
E	23 30
GL	15 20
GA	12.5 16
F	4 5
R	M4x10 M5x15

SIZE 2	FLANGE
	40/63 50/70
N	40j6 50j6
M	63 70
S	5.8 5.5

### Size 3

WORKING DIMENSIONS	LB		L01		L03
SHAFT - ØD	14	19	14	19	31
9MDSM531x0xx	115	125	101	111	
9MDSM532x0xx	145	155	131	141	
9MDSM533x0xx	175	185	161	171	
9MDSM534x0xx	205	215	191	201	
9MDSM531x1xx BRAKE	163	163	149	149	
9MDSM532x1xx BRAKE	193	193	179	179	
9MDSM533x1xx BRAKE	223	223	209	209	
9MDSM534x1xx BRAKE	253	253	283	283	

Value referred to feedback EQI1130, TTL 2048i/g, Resolver, SEL52



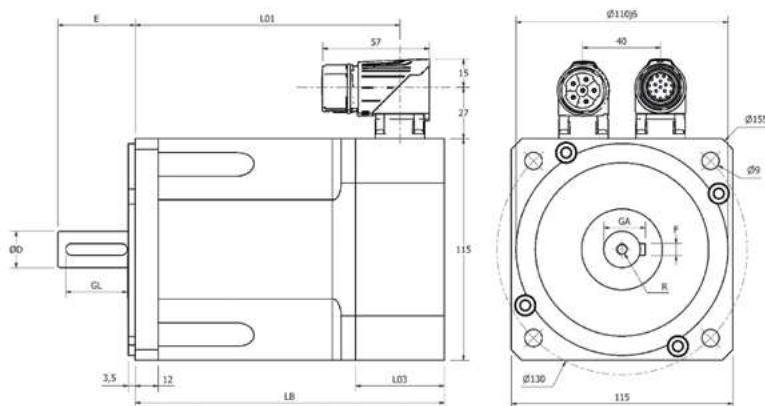
SIZE 3	SHAFT	
D	14j6	19j6
E	30	40
GL	20	32
GA	16	21.5
F	5	6
R	M5x15	M6x16

SIZE 3	FLANGE	
	56B5	63B5
N	80j6	95j6
M	100	115
S	7	9

### Size 4

WORKING DIMENSIONS	LB	L01	L03
9MDSM541x0xx	146.5	123.5	31
9MDSM5.42	186.5	163.5	
9MDSM5.43	226.5	203.5	
9MDSM5.41 BRAKE	195.5	172.5	
9MDSM5.42 BRAKE	235.5	212.5	
9MDSM5.43 BRAKE	275.5	232.5	

Value referred to feedback TTL 2048i/g, Resolver,



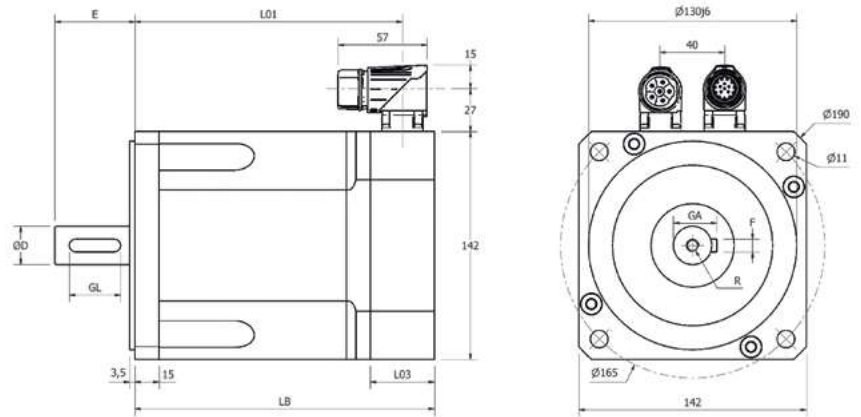
SIZE 4	SHAFT	
D	19j6	24j6
E	40	50
GL	32	32
GA	21.5	27
F	6	8
R	M6x16	M6x16

## Dimensions

### Size 5

WORKING DIMENSIONS	LB	L01	L03
9MDSM551x0xx	174	154	27
9MDSM552x0xx	224	204	
9MDSM553x0xx	274	254	
9MDSM554x0xx	324	304	
9MDSM551x1xx BRAKE	227.5	207.5	
9MDSM552x1xx BRAKE	277.5	257.5	
9MDSM553x1xx BRAKE	327.5	307.5	
9MDSM554x1xx BRAKE	377.5	357.5	

Value referred to feedback TTL 2048i/g, Resolver

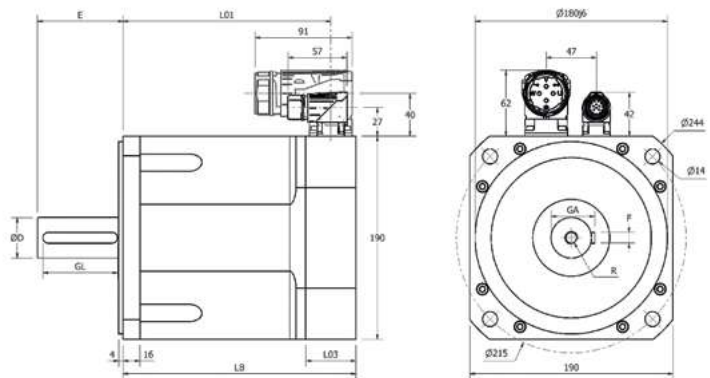


SIZE 5	SHAFT	
D	24j6	32k6
E	50	58
GL	32	45
GA	27	35
F	8	10
R	M8x15	M12x22

### Size 6

WORKING DIMENSIONS	LB	L01	L03
9MDSM561x0xx	163	139.5	27
9MDSM562x0xx	198	174.5	
9MDSM563x0xx	288	264.5	47
9MDSM564x0xx	334.5	334.5	
9MDSM561x1xx BRAKE	233.5	210	27
9MDSM562x1xx BRAKE	268.5	245	
9MDSM563x1xx BRAKE	358.5	335	47
9MDSM564x1xx BRAKE	428.5	405	

Value referred to feedback TTL 2048 i/g, Resolver



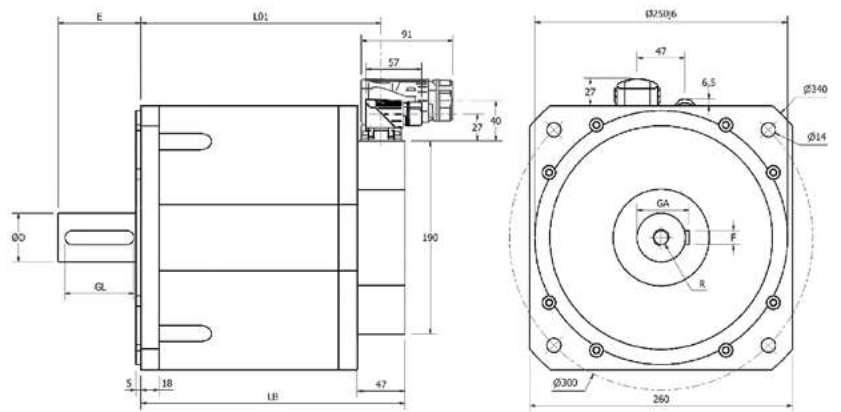
SIZE 6	SHAFT	
D	32k6	38k6
E	58	80
GL	45	70
GA	35	41
F	10	10
R	M12x22	M12x28



## Size 7

WORKING DIMENSIONS	LB	L01	L03
9MDSM571x0xx	261	214	47
9MDSM572x0xx	341	294	
9MDSM573x0xx	421	374	
9MDSM571x1xx BRAKE	314	267	
9MDSM572x1xx BRAKE	394	347	
9MDSM573x1xx BRAKE	474	427	

Value referred to feedback TTL 2048i/g, Resolver



SIZE 7	SHAFT
D	48k6
E	82
GL	70
GA	51.5
F	14
R	M16x25

# SERVO MOTORS

## Compact Brushless Servomotors



For all applications where inertia and compactness are the most important features, ESA has a special version of 9MDSM motor with shorter length. This solution provides a shorter motor with high value of inertia.

### FEATURES

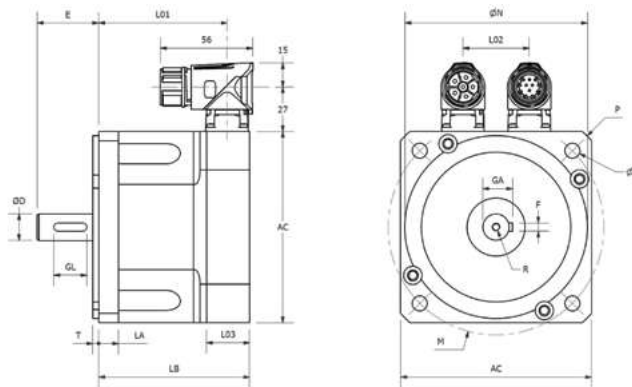
- + Style according to IEC 34-7
- + Protection type IP65
- + Natural Cooling
- + CE & UL Certifications
- + Incremental Encoder Feedback
- + Safety brake in option

### APPLICATIONS

- + Life Science Diagnostic
- + Special Machine
- + Medical applications
- + Continuous Process

## Technical characteristic - Overview

Motor Type	Permanent magnet synchronous servomotors
Power Range	0.3 kW to 3 kW
Torque Range	1 Nm to 8 Nm
Speed Range	0 to 6500 rpm
Voltage supply	230 V – 400 V
Feedback	Incremental Encoder
Connections	M23 Connectors



## Technical Data

Description	Symbol	Motor	9MDSM530		9MDSM540		9MDSM550		9MDSM560
			UM	1	2	1	2	1	2
Stall Torque	M <sub>0</sub>	Nm	1		2,1		5		8
Maximum Torque	M <sub>pk</sub>	Nm	3,6	3,6	7,3	6,9	17	17	7,3
Stall Current	I <sub>0</sub>	A	1,7	1,1	3,3	2,1	7,3	4,6	3,3
Peak current	I <sub>pk</sub>	A	7	4,5	13	8	29,2	18	13
Maximum mechanical revs	N <sub>mec</sub>	min <sup>-1</sup>	7000		6500		6500		5500
Maximum revs @ 230Vac	N <sub>MAX</sub>	min <sup>-1</sup>	4500	3000	4500	3000	4500	3000	4500
Maximum revs @ 400Vac	N <sub>max</sub>	min <sup>-1</sup>	6500	5500	6000	5000	6000	5000	6000
Voltage constant	K <sub>E</sub>	V/Krpm	36	56	39	61	41	66	39
Torque constant	K <sub>T</sub>	Nm/A	0,6	0,93	0,65	1	0,68	1,1	0,65
Rotor Inertia	J <sub>r</sub>	Kg cm <sup>2</sup>	0,7		2,8		12		27
Resist. @ 20°C	R <sub>U-V</sub>	ohm	7,9	19	3,5	8,6	1	2,3	0,6
Induct. @ 1 kHz	L <sub>U-V</sub>	mH	11	25	6,3	16	2,7	6,8	10
Weight	m	Kg	2		3,6		6		40

## Dimensions : mm

Motor Type		9MDSM530	9MDSM540	9MDSM550	9MDSM560
Without brake	AC	85	115	142	190
	NJ6	80	110	130	180
	M	100	130	165	215
	P	114	155	190	244
	S	7	9	11	14
	T	3	3,5	3,5	4
	LA	11	12	15	16
	DJ6	14	19	24	28
	E	30	40	50	60
	R	M5x15	M6x16	M8x16	M10x20
	F	5	6	8	8
	GL	20	32	32	32
	GA	16	21,5	27	31
	LB	87	94	108,5	120
	L01	73,5	80,5	95	106,5
	With brake	L02	29	40	40
L03		26	26	27	27
L01		101,5	124	134,5	143,5
	LB	115	137	148	157

# SERVO MOTORS

## Asynchronous Servomotor 9MMVQ



The MVQ series of asynchronous squirrel-cage motors is a range specially designed for all automation applications that do not require high dynamic performance, but offers far greater value than conventional DC systems.

### FEATURES

- + Squirrel-cage
- + Nominal voltage 180 Vac and 330Vac
- + IP 44 protection without fan, IP 21 with fan, IP54 upon request
- + Class F insulation
- + Ambient temperature: 25° .. + 55°C
- + Storage temperature: 25° .. + 70°C
- + Natural cooling and forced ventilation
- + 4 pole resolver
- + Shielded bearings lubricated for life
- + Shaft with key and standard screwthread hole .
- + Black finish
- + Thermal protection using PTC with threshold at 130°C
- + Flange B5 and B14

### APPLICATIONS

- + Special Machine
- + Wood machine
- + Glass machine

Motor Type	Asynchronous squirrel-cage
Power Range	0.75 kW to 9 kW
Torque Range	2.5 Nm to 29 Nm
Speed Range	0 to 3000 rpm
Voltage supply	180 V – 330 V
Feedback	Resolver
Connections	Terminal box + feedback connector

## Technical Data

Motor Type	Nominal Torque Nm	Peak Torque Nm	Continuous current A	Nominal Speed Rpm	Torque Constant Nm/A	Rotor Inertia 10 <sup>-4</sup> kgm <sup>2</sup>	Weight Kg	Drive Voltage
9MMVQ6330214x	2.5	5	3.5	3000	0.71	400	6.5	230
9MMVQ6330414x	2.8	7	1.6	3000	1.75	400	6.5	400
9MMVQ7130219x	5.5	11	6	3000	0.91	1800	9.7	230
9MMVQ7130419x	5.8	14	2.5	3000	2.32	1800	9.7	400
9MMVQ8030219x	8	16	8.7	3000	0.92	3500	13.6	230
9MMVQ8030419x	9.5	24	4.2	3000	2.27	3500	13.6	400
9MMVQ9030424x	13	30	7.5	3000	1.6	5000	18.25	400
9MMVQ0030428x	22	55	13.5	3000	1.6	8000	26.5	400
9MMVQ1230428x	29	71	18	3000	1.56	11500	34.5	400

## Brake specifications

Details		9MMVQ63	9MMVQ71	9MMVQ80	9MMVQ90	9MMVQ00	9MMVQ12
Supply Voltage	Vdc	24	24	24	24	24	24
Supply Current	A	0.65	0.9	0.9	1.2	1.42	1.66
Static brake holding torque	Nm	2	5	5	8	16	40
Max.angular backlash	Min	20	20	20	20	20	20
Inertia	10 <sup>-6</sup> Kg <sup>m</sup> <sup>2</sup>	15	20	20	120	140	160
Weight	Kg	0.9	1.5	1.5	2.7	2.9	4.6
Length motor + L brake	mm	45	55	55	60	80	80

# IOT

## HIDRA Industrial Switch



ESA provides a wide range of industrial ethernet switches that feature industrial grade reliability, network redundancy, embedded security features, easy management.

The ESA portfolio includes unmanaged, managed Layer2, managed Layer3, PoE and IP67 switches specially designed for outdoor and harsh applications.

- + Redundancy through ITU-T G.8032 ERPS ring, RSTP, STP, MRP (client) compatible ring
- + CE, UL, NEMA, Atex zone-2, IP67 certified
- + Virtual LAN segmentation
- + Modbus, Profinet and Ethernet Ip support
- + IEC62443 Cybersecurity standard compliant

### FEATURES

- + 10/100/1000 RJ45 ports and 100/1000 BASE-X SFP slots
- + Power over Ethernet ports with 24V DC power supply (ESNET08UG8P800V). No need of a specific power supply.
- + Redundant DC power input
- + Reverse Polarity Protection
- + DIN-Rail, slim-size metal housing
- + Wide temperature operations, from -40°C to 70°C
- + Support IEEE 802.3/802.3u/802.3x
- + Powerful Layer2 and Layer3 management

### APPLICATIONS

- + Packaging Machine
- + Handled
- + Life & Science
- + Industrial automation
- + Automotive

# HIDRA Industrial Switch

## Unmanaged

MODEL	HIDRA05U000000X	HIDRA05UG50000A	HIDRA08U000000X
<b>Ethernet</b>			
Connector	RJ45	RJ45	RJ45
Ports	5	5	8
Transmission rate	10/100 Mbps	10/100/1000 Mbps	10/100 Mbps
PoE support	NO	NO	NO
PoE voltage booster	NO	NO	NO
Standards	IEEE802.3, 802.3u, 802.3x	IEEE802.3, 802.3u, 802.3x, 80.3z	IEEE802.3, 802.3u, 802.3ab
Flow control	IEEE 802.3x for Flow Control, back pressure flow control IEEE 802.1q/p for VLAN Tagging and Class of Service IEEE 802.3az for Energy Efficient Ethernet	IEEE 802.3x for Flow Control, back pressure flow control IEEE 802.1q/p for VLAN Tagging and Class of Service IEEE 802.3az for Energy Efficient Ethernet	IEEE802.3X flow control, back-pressure flow control
Jumbo frame Size	9216 byte	10K Bytes	9216 byte
Auto MDI/MDI-X	Yes	Yes	Yes
<b>Power</b>			
Input voltage	12 - 48 VDC	12 - 48 VDC	9-48 VDC
Power Consumption	4.0 Watts Max	4.0 Watts Max	4.05 Watts
Connector	Lockable 5-pin terminal blocks	Lockable 5-pin terminal blocks	5.08mm 5 pin Terminal Block
Redundancy	YES	YES	YES
Reverse Polarity Protection	YES	YES	YES
<b>Physical characteristics</b>			
Housing	SPCC Black	SPCC Black	Alluminium
Protection level	IP30	IP30	IP30
Installation	DIN Rail	DIN Rail	DIN Rail
Dimension (WxHxD)	Slim type, 23mm x 94mm x 72mm	Slim type, 23mm x 94mm x 72mm	45.2 x 90 x 78 mm
Weight	420g	420g	255g
Led indicators	PWR1, PWR2, Alarm, ALM, LAN	PWR1, PWR2, Alarm, ALM, LAN	PWR1, PWR2
<b>Environmental</b>			
Operating Temperature	-40 to 70°C	-40 to 70°C	-10°C~70°C
Storage Temperature	-40 to 85°C	-40 to 85°C	-40°C~85°C
Ambient Relative Humidity	5 to 95%, 55°C (non-condensing)	5 to 95%, 55°C (non-condensing)	5 to 95%, 55°C (non-condensing)
<b>Certifications</b>			
Safety	UL/IEC 62368-1, UL/IEC(CB) 60950-1	UL/IEC(CB) 61010-2-201	UL60950-1 2nd Ed. / CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC62368-1 / IEC62368-1)
FCC (EMI)	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A
CE (EMI)	EN 55032:2013 EN 61000-3-2: 2014, Class A EN 61000-3-3: 2013 EN 61000-6-4: 2007 + A1: 2011	EN 55032:2015/AC:2016 Class A EN 61000-3-2: 2014 EN 61000-3-3: 2013 EN 61000-6-4: 2007 + A1: 2011	European Standard EN55032:2012+AC:2013 Class A. EN61000-3-2:2014, EN 61000-3-3:2013
CE (EMS)	EN 55024: 2010 EN 61000-6-2:2005 + AC: 2005 IEC 61000-4-2: 2008 IEC 61000-4-3: 2010 IEC 61000-4-4: 2012 IEC 61000-4-5: 2014 IEC 61000-4-6: 2013 IEC 61000-4-8: 2009 IEC 61000-4-11: 2005	EN 55024: 2010 EN 61000-6-2:2005 + AC: 2005 IEC 61000-4-2: 2008 IEC 61000-4-3: 2010 IEC 61000-4-4: 2012 IEC 61000-4-5: 2014 IEC 61000-4-6: 2013 IEC 61000-4-8: 2009 IEC 61000-4-11: 2005	EN55024:2010(IEC 61000-4-2:2008) IEC61000-4-3:2006/A1:2007/A2:2010, IEC 61000-4-4:2012 IEC 61000-4-5:2014, IEC 61000-4-6:2013 IEC 61000-4-8 :2009, IEC 61000-4-11:2004
ATEX	NO	NO	NO
Rail Traffic	NO	NO	NO
<b>Testing report</b>			
Shock	IEC 60068-2-27	MIL-STD-810F Method 516.5	IEC 60068-2-27
Drop	IEC 60068-2-32	MIL-STD-810F Method 516.5	IEC 60068-2-32(ISTA Test Procedure 2A)
Vibration	IEC 60068-2-6	MIL-STD-810F Method 514.5 C-1 & C-2	IEC 60068-2-64
RoHS	YES	YES	YES
MTBF	20 years	20 years	30 years

MODEL	HIDRA08UG80000X	HIDRA08UG8P800V	HIDRA05UG50000X	HIDRA05UG500007
<b>Ethernet</b>				
Connector	RJ45	RJ45	RJ45	M12 connector (A or X coding)
Ports	8	8	5	5
Transmission rate	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
PoE support	NO	YES (8)	NO	NO
PoE voltage booster	NO	Yes (Max support 120W)	NO	NO
Standards	IEEE802.3, 802.3u, 802.3ab	IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE802.3x	IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.3x Flow Control	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT
Flow control	IEEE802.3X flow control, back-pressure flow control	IEEE 802.3x for Flow Control, back pressure flow control IEEE 802.3af/at for Power-over-Ethernet IEEE 802.3az Energy Efficient Ethernet IEEE 802.1Q for VLAN Tagging IEEE 802.1p for CoS	IEEE802.3X flow control, back-pressure flow control	IEEE 802.3x for Flow Control, Back pressure and pause frame based flow control schemes
Jumbo frame Size	9217 byte	10K Bytes	10K bytes	10k bytes
Auto MDI/MDI-X	Yes	Yes	Yes	Yes
<b>Power</b>				
Input voltage	9-48 VDC	12~57 VDC	12-52 VDC	12-48 VDC
Power Consumption	4.05 Watts	12~23VDC, max total 60W 24~57VDC, max total 120W	6 Watts	5 W
Connector	5.08mm 5 pin Terminal Block	Terminal block	Terminal block	-Pin A-Code Male M12
Redundancy	YES	NO	NO	NO
Reverse Polarity Protection	YES	YES	YES	YES
<b>Physical characteristics</b>				
Housing	Aluminium	Metal	SECC	Aluminum Housing
Protection level	IP30	IP30	IP30	IP67 protection according to EN 60529
Installation	DIN Rail	DIN Rail	DIN Rail	Wall mount
Dimension (WxHxD)	45.2 x 90 x 78 mm	54 x 145 x 113 mm	32 x 90 x 110 mm	105.7 x 196 x 48.3 mm
Weight	255g	700g	420g	650 g
Led indicators	PWR1, PWR2	P1, P2, Fault, SFP1-2, PoE LED	PWR1, PWR2, Alarm, RJ45 Act/Link	PWR1, PWR2, LAN1, LAN2, LAN3, LAN4, LAN5
<b>Environmental</b>				
Operating Temperature	-10°C~70°C	-40°C~70°C	-40°C~70°C	-40°C~75°C
Storage Temperature	-40°C~85°C	-40°C~85°C	-40°C~85°C	-40°C~85°C
Ambient Relative Humidity	5 to 95%, 55°C (non-condensing)	5 to 95%, 55°C (non-condensing)	5%~95%, 55°C (Non-condensing)	5%~95%, 55°C (Non-condensing)
<b>Certifications</b>				
Safety	UL60950-1 2nd Ed. / CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC62368-1 / IEC62368-1)	UL62368-1:2014(2nd Ed.) CB/IEC60950-1:2005(2nd Ed.) CB/IEC62368-1:2014(2nd Ed.)	UL 61010-2-201, UL C1D2	EN 60950-1:2006 UL/IEC(CB) 61010-2-201
FCC (EMI)	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A	NO	FCC Part 15 Subpart B Class A
CE (EMI)	European Standard EN55032:2012+AC:2013 Class A. EN61000-3-2:2014, EN 61000-3-3:2014	EN 55032:2015 +AC:2016 Class A EN 61000-3-2: 2014, Class A EN 61000-3-3: 2013 EN 61000-6-4: 2007+ A1: 2001 EN 55024: 2010+ A1:2015 EN 61000-6-2:2005+ AC : 2005	EN 55032 EN 61000-6-4 EN 55024 EN 61000-6-2	EN 55032 EN 55024 EN 61000-3-3 EN 61000-6-2 EN 61000-6-4
CE (EMS)	EN55024:2010(IEC 61000-4-2:2008) IEC61000-4-3:2006/A1:2007/ A2:2010, IEC 61000-4-4:2012 IEC 61000-4-5:2014, IEC 61000-4-6:2013 IEC 61000-4-8 :2009, IEC 61000-4-11:2005	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8
ATEX	NO	NO	ATEX Zone 2	NO
Rail Traffic	NO	NO	EN50155 / EN50121-4	NO
<b>Testing report</b>				
Shock	IEC 60068-2-27	MIL-STD-810F Method 516.5	MIL-STD-810F Method 516.5	MIL-STD-810G Method 516.5
Drop	IEC 60068-2-32(ISTA Test Procedure 2A)	MIL-STD-810F Method 516.5	MIL-STD-810F Method 516.5	MIL-STD-810F Method 516.5
Vibration	IEC 60068-2-64	MIL-STD-810F Method 514.5 C-1 & C-2	MIL-STD-810F Method 514.5 C-1 & C-2	MIL-STD-810F Method 514.5 C-1 & C-2
RoHS	YES	YES	YES	YES
MTBF	30 years	20 years	20 years	20 years



MODEL	HIDRA16UG20000X
<b>Ethernet</b>	
Connector	RJ45
Ports	16
Transmission rate	2 x 10/100 Mbps 14 x 10/100/1000 Mbps
PoE support	NO
PoE voltage booster	NO
Standards	IEEE802.3, 802.3u, 802.3ab
Flow control	IEEE802.3X flow control, back-pressure flow control IEEE802.1p packet prioritization (for profinet CC-A)
Jumbo frame Size	9216 byte
Auto MDI/MDI-X	Yes
<b>Power</b>	
Input voltage	12~48 VDC
Power Consumption	7.4 Watts
Connector	Terminal block
Redundancy	YES
Reverse Polarity Protection	YES
<b>Physical characteristics</b>	
Housing	Alluminium
Protection level	IP30
Installation	DIN Rail
Dimension (WxHxD)	54 mm x 113mm x 145mm
Weight	700g
Led indicators	PWR1, PWR2
<b>Enviromental</b>	
Operating Temperature	-10°C~60°C
Storage Temperature	-20°C~70°C
Ambient Relative Humidity	5 to 95%, 55°C (non-condensing)
<b>Certifications</b>	
Safety	EN60950-1:2006, UL/IEC(CB) 60950/62368
FCC (EMI)	FCC Part 15, Subpart B, Class A
CE (EMI)	FCC Part 15, Subpart B, Class A EN 55032 EN 55024 EN 61000-6-4 EN 61000-6-2
CE (EMS)	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11
ATEX	NO
Rail Traffic	NO
<b>Testing report</b>	
Shock	IEC 60068-2-27
Drop	IEC 60068-2-32
Vibration	IEC 60068-2-6
RoHS	YES
MTBF	20 years

# Managed

MODEL	HIDRA08MG8000X	HIDRA08MG8P800X	HIDRA08MG8P4F4X	HIDRA08MG80007
<b>Interface</b>				
Connector	8	8	8	8
Ethernet Ports	8 x RJ45	8 x RJ45	4 x RJ45	8 x M12
SFP Ports	NO	NO	4 x SFP	NO
Transmission rate	10/100/1000BASE-T(X) auto negotiation speed	10/100/1000BASE-T(X) auto negotiation speed	10/100/1000BASE-T(X) auto negotiation speed	10/100/1000BASE-T(X) auto negotiation speed
Fiber Ports	NO	NO	100BASE-FX / 1000BASE-X SFP slot	NO
PoE support	NO	YES	YES	NO
PoE voltage booster	NO	YES	YES	NO
Console	RS232 (RJ45 connector)	RS232 (RJ45 connector)	RS232 (RJ45 connector)	RS232 (A-coding M12 connector)
Relay Output	2 relay outputs with current carrying capacity of 2A @30VDC	2 relay outputs with current carrying capacity of 2A @30VDC	2 relay outputs with current carrying capacity of 2A @30VDC	2 relay outputs with current carrying capacity of 1A @ 24 VDC (through A-coding M12 connector)
DIP Switches	Ring Control	Ring Control	Ring Control	NO
Reset button	YES	YES	YES	NO
<b>Technology</b>				
Standards	IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X	IEEE802.3af / 802.3at for Power-over-Ethernet IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X	IEEE802.3af / 802.3at for Power-over-Ethernet IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X	IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X
Flow control	IEEE802.3x for Flow Control IEEE802.1D-2004 for Spanning Tree Protocol IEEE802.1w for Rapid STP IEEE802.1Q for VLAN Tagging IEEE802.1p for Class of Service IEEE8021X for Authentication IEEE802.3ad for Port Trunk with LACP	IEEE802.3x for Flow Control IEEE802.1D-2004 for Spanning Tree Protocol IEEE802.1w for Rapid STP IEEE802.1Q for VLAN Tagging IEEE802.1p for Class of Service IEEE8021X for Authentication IEEE802.3ad for Port Trunk with LACP	IEEE802.3x for Flow Control IEEE802.1D-2004 for Spanning Tree Protocol IEEE802.1w for Rapid STP IEEE802.1Q for VLAN Tagging IEEE802.1p for Class of Service IEEE8021X for Authentication IEEE802.3ad for Port Trunk with LACP	IEEE 802.1d-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.1X for Authentication IEEE 802.3ad for Port Trunk with LACP
Protocols	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Relay/Client, BootP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP(Gmail), RMON, HTTP, Syslog, MRP (Client), LLDP, IEEE 1588 PTP V1/V2, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Modbus/TCP, UDLD, Security, Trunk,LACP, MLD, 802.1Q VLAN, Port Based VLAN,MAC-Based VLAN, IP-Subnet-Based VLAN, Protocol-Based VLAN, QinQ,802.1x, ARP spoof Prevention, DHCP snooping, IP source Guard, Dynamic ARP Inspection, DHCP relay Agent	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Relay/Client, BootP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP(Gmail), RMON, HTTP, Syslog, MRP (Client), LLDP, IEEE 1588 PTP V1/V2, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Modbus/TCP, UDLD, Security, Trunk,LACP, MLD, 802.1Q VLAN, Port Based VLAN,MAC-Based VLAN, IP-Subnet-Based VLAN, Protocol-Based VLAN, QinQ,802.1x, ARP spoof Prevention, DHCP snooping, IP source Guard, Dynamic ARP Inspection, DHCP relay Agent	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Relay/Client, BootP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP(Gmail), RMON, HTTP, Syslog, MRP (Client), LLDP, IEEE 1588 PTP V1/V2, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Modbus/TCP, UDLD, Security, Trunk,LACP, MLD, 802.1Q VLAN, Port Based VLAN,MAC-Based VLAN, IP-Subnet-Based VLAN, Protocol-Based VLAN, QinQ,802.1x, ARP spoof Prevention, DHCP snooping, IP source Guard, Dynamic ARP Inspection, DHCP relay Agent	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping,GARP,GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client), LLDP, IEEE 1588 PTP V1/V2, IEEE 1588 Hardware E2E Transparent Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring
Automation profiles	Profinet CC-B v2.33 certified, GSDML file provided	Profinet CC-B v2.33 certified, GSDML file provided	Profinet CC-B v2.33 certified, GSDML file provided	Modbus/TCP status registers
MIB	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415
<b>Switch Properties</b>				
Priority Queues	8	8	8	8
Max. Number of Available VLANs	256	256	256	4096
VLAN ID Range	VID 1 to 4094	VID 1 to 4094	VID 1 to 4094	VID 1 to 4094
Static IGMP Groups	256	256	256	128
Dynamic IGMP Groups	256	256	256	256
MAC Table Size	16K	16K	16K	16k
Packet Buffer Size	12 Mbit	12 Mbit	12 Mbit	1.5Mb

MODEL	HIDRA08MG8000X	HIDRA08MG8P800X	HIDRA08MG8P4F4X	HIDRA08MG80007
<b>Power</b>				
Input voltage	9-48 VDC	9-48 VDC	9-48 VDC	12~57 VDC
Input current	3.0A @24V	3.0A @24V	3.0A @24V	1.19A @24V
Connector	Removable 5-pin Terminal Block	Removable 5-pin Terminal Block	Removable 5-pin Terminal Block	2 x S-Coding M12 connectors (4 Pin)
Redundancy	YES	YES	YES	YES
Reverse Polarity Protection	YES	YES	YES	YES
<b>Physical characteristics</b>				
Housing	Metal	Metal	Metal	Aluminium, IP67 protection according to EN 60529
Protection level	IP30	IP30	IP30	IP67
Installation	DIN-Rail	DIN-Rail	DIN-Rail	Wall-mount
Dimension (WxHxD)	60.3mm x 137.9mm x 164mm	60.3mm x 137.9mm x 164mm	60.3mm x 137.9mm x 164mm	216mm x 232mm x 72mm
Weight	1200g	1200g	1200g	2000 g
Led indicators	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, PoE	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, PoE	PWR1, PWR2, Alarm, Ethernet Act/Link, Ring
<b>Environmental</b>				
Operating Temperature	20°C~70°C	20°C~70°C	20°C~70°C	-40°C~75°C
Storage Temperature	-40°C~85°C	-40°C~85°C	-40°C~85°C	-40°C~85°C
Ambient Relative Humidity	5%~95%, 55°C (Non-condensing)	5%~95%, 55°C (Non-condensing)	5%~95%, 55°C (Non-condensing)	5%~95%, 55°C (Non-condensing)
<b>Certifications</b>				
Safety	UL60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC/EN62368-1 & IEC/EN60950-1)	UL60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC/EN62368-1 & IEC/EN60950-1)	UL60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC/EN62368-1 & IEC/EN60950-1)	EN 60950-1:2006, UL/IEC(CB) 61010-2-201
EMC	FCC Part 15, Subpart B, Class A / EN 61000-6-4:2007+A1:2011 / EN 61000-6-2:2005	FCC Part 15, Subpart B, Class A / EN 61000-6-4:2007+A1:2011 / EN 61000-6-2:2005	FCC Part 15, Subpart B, Class A / EN 61000-6-4:2007+A1:2011 / EN 61000-6-2:2005	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4,
Rail traffic	NO	NO	NO	EN50155, EN50121-4, IEC60571, EN45545-2
Test	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11
<b>Testing report</b>				
Shock	IEC 60068-2-27	IEC 60068-2-27	IEC 60068-2-27	MIL-STD-810G Method 516.5
Drop	IEC 60068-2-32	IEC 60068-2-32	IEC 60068-2-32	MIL-STD-810F Method 516.5
Vibration	IEC 60068-2-64	IEC 60068-2-64	IEC 60068-2-64	MIL-STD-810F Method 514.5 C-1 & C-2
Traffic control	NEMA TS-2	NEMA TS-2	NEMA TS-2	NO
RoHS	YES	YES	YES	YES
MTBF	11 years	11 years	11 years	20 years

# Layer 3

MODEL	HIDRA083G80000X
<b>Interface</b>	
Connector	8
Ethernet Ports	8 x RJ45
SFP Ports	NO
Transmission rate	10/100/1000BASE-T(X) auto negotiation speed
Fiber Ports	NO
PoE support	NO
PoE voltage booster	NO
Console	RS232 (RJ45 connector)
Relay Output	2 relay outputs with current carrying capacity of 1A @24VDC
DIP Switches	Ring Control and Profinet settings
Reset button	NO
<b>Technology</b>	
Standards	IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X
Flow control	IEEE802.3x for Flow Control IEEE 802.3x for Flow Control IEEE 802.1d-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 8021x for Authentication IEEE 802.3ad for Port Trunk with LACP
Protocols	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client),LLDP,802.1x,EAP,RADIUS,TACACS+,Mirror port, QoS, ACL
Layer-3 Protocols	Routing: IPv4 Unicast static routing, RIP v1/v2, OSPFv2, Multicast: IGMPv1/v2/v3, DVMRP, PIM-DM, PIM-SM, PIM-SSM Routing Redundancy: VRRP (Virtual Router Redundancy Protocol)
Redoundancy	ITU-T G.8032 ERPS Ring, STP, RSTP, MSTP, Compatible Ring/Chain, U-Ring
Time Synchronization Network Synchronization	Precision Network Synchronization
Time Synchronization NTP Server/Client, SNTP	IEEE1588v1 OC/BC (Software) IEEE1588v2 E2E TC (Hardware) - ns acc. IEEE1588v2 OC/BC (Software)
Automation profiles	Modbus/TCP status registers
SNMP MIB	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 2674
<b>Switch Properties</b>	
Priority Queues	8
VLAN Table	4096
MAC based VLAN	512
VLAN ID Range	VID 1 to 4094
Trunk Group	4
Static IGMP Groups	256
Dynamic IGMP Groups	256
MAC Table Size	16K
Packet Buffer Size	1.5MB
Jumbo frame	9216 Byte
<b>Power</b>	
Input voltage	9-57 VDC
Input current	1.4A
Connector	5-Pin 5.08mm Lockable Terminal Block
Redoundancy	YES
Reverse Polarity Protection	YES

MODEL	
<b>Physical characteristics</b>	
Housing	Aluminium
Protection level	IP30
Installation	DIN-Rail
Dimension (WxHxD)	54mm x 113mm x 145 mm
Weight	800g
Led indicators	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed
<b>Environmental</b>	
Operating Temperature	-20°C~70°C
Storage Temperature	-40°C~85°C
Ambient Relative Humidity	5%~95%, 55°C (Non-condensing)
<b>Certifications</b>	
Safety	UL 60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / EN 60950-1 / CB
EMC	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4
Traffic Control	NEMA TS-2
Rail traffic	EN50155 - EN50121-4
Test	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11
<b>Testing report</b>	
Shock	MIL-STD-810G Method 516.5
Drop	MIL-STD-810F Method 516.5
Vibration	MIL-STD-810F Method 514.5 C-1 & C-2
High Altitude	Certified for altitudes up to 4,000m, according to IEC 60068-2-13
RoHS II	YES
MTBF	20 years

# IOT

## HIDRA Access Point



ESA wireless access point provide robust, reliable and cost effective solutions for industrial applications that requires wireless connectivity.

### FEATURES

- + Configuration via webserver pages and management utility
- + 4 GHz frequency support
- + 5 GHz frequency support to reduce interferences on 2.4 GHz with other wireless devices
- + Client isolation
- + Different operating mode and topology options
- + FCC, ETSI, NCC certified wireless equipment
- + Industrial grade device designed for harsh environment
- + Security: encryption and virtual network segmentation

### APPLICATIONS

- + Packaging machine
- + Handheld
- + Life & science
- + Industrial automation
- + Automotive

# HIDRA Access Point

MODEL	HIDRAWIFI00000
<b>Network Interface</b>	
Connector	RJ45
Speed	IEEE802.3u, 10/100/1000 Mbps
<b>Power characteristics</b>	
Input Voltage	9VDC - 48VDC
Input Current(9VDC)	0.65A
Power Consumption	Approx. 5.85W (max)
Reverse Polarity Protection	Yes
Connector	pin Lockable Terminal Block
<b>Mechanicals</b>	
Protection Rating	IP30
Dimensions(W X H x D)	47 X 110 X 90 mm
Weight	500g
Installation	DIN-Rail, wall mount (optional kit)
Reset Button	Yes
WPS / Wi-Fi Direct Button	Yes
<b>Enviroment</b>	
Operating Temperature	-10°C ~ 60°C (14°F ~ 140°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Ambient Relative Humidity	5 ~ 95% RH, (non-condensing)
<b>Hardware characteristics</b>	
Watchdog	Hardware built in
Ethernet Switch & PHY	IEEE802.3ab 1000 Base-T
<b>Software features</b>	
Operation Modes	AP, WDS Hybrid, AP Client
Wireless Security	WEP, WPA, WPA2, TKIP, AES, 802.1x
Network Security	Client Isolation, Firewall / Filtering, Turn off Radio
Alerts Event	E-mail / SNMP Trap
Supported Protocols	ICMP, TCP, UDP, DHCP Server/Client, DNS, SNMP, NTP, SMTP, HTTP, IPv4, 802.1x, RADIUS, STP, WPS, Syslog
<b>Regulatory requirements</b>	
EMS - EMC	EN55032, EN55024, EN 301489-1 V2.2.0; EN301489-17 V3.2.0; FCC 15B (Class A), CNS 13438
Radio	FCC 15C 15.247, FCC 15E 15.407, EN 301893 V2.1.1, EN 300328 V2.1.1, NCC LP00002
EMF	EN 62311: 2008, EN 50385: 2002
<b>Test</b>	
Safety	UL60950-1/CB, EN60950-1, IEC/EN 62368-1, CNS 14336-1
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF	15 years (MIL-HDBK-217F)
RoHS	Yes
<b>Wireless</b>	
Wireless PCI-e Module	Atheros AR9382
Tx / Rx	2T2R MIMO (2x2 with MCS 0-15)
Standard Conformance	802.11a, 802.11b, 802.11g, and 802.11n
<b>Operating frequency</b>	
<b>2.4Ghz</b>	
United States (FCC)	2412-2462(20Mhz)/2422-2452(40Mhz)
Europe (ETSI)	2412-2472(20Mhz)/2422-2462(40Mhz)
Taiwan (NCC)	2412-2462(20Mhz)/2422-2452(40Mhz)

MODEL	HIDRAWIFI000000
<b>5GHz</b>	
United States (FCC)	5180-5240, 5745-5825(20MHz)/5190-5230, 5755-5795(40Mhz)
Europe (ETSI)	5180-5240(20MHz)/5190-5230(40Mhz)
Taiwan (NCC)	5280-5320, 5745-5825(20MHz)/5310, 5755-5795(40Mhz)
<b>Data rate</b>	
802.11a	6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11b	1, 2, 5.5 and 11Mbps
802.11g	6, 9, 12, 18, 24, 36, 48, 54Mbps
802.11n	20MHz bandwidth: 1Nss: 65Mbps @ 800GI, 72.2Mbps @ 400GI (Max.) 40MHz bandwidth: 1Nss: 135Mbps @ 800GI, 150 Mbps @ 400GI (Max.)
<b>Antenna (2.4 GHz)</b>	
Gain	3 dBi
Connector	SMA(R) Female
<b>Output Power</b>	
802.11b	+14dBm
802.11g	+17dBm @ 6, 9, 12,18,24Mbps / +17dBm @ 36Mbps / +16dBm @ 48Mbps / +16dBm @ 54Mbps
802.11n 2.4GHz/HT20	+16dBm @ MCS 0 +16dBm @ MCS 4 +16dBm @ MCS 1 +16dBm @ MCS 5 +16dBm @ MCS 2 +16dBm @ MCS 6 +16dBm @ MCS 3 +15dBm @ MCS 7
802.11n 2.4GHz/HT40	+15dBm @ MCS 0 +15dBm @ MCS 4 +15dBm @ MCS 1 +15dBm @ MCS 5 +15dBm @ MCS 2 +15dBm @ MCS 6 +15dBm @ MCS 3 +14dBm @ MCS 7
<b>Antenna (5 GHz)</b>	
Gain	5 dBi
Connector	Dual SMA(R) Female
<b>Output Power</b>	
802.11a	+15dBm @ 6, 9, 12, 18, 24Mbps / +15dBm @ 36Mbps / +14dBm @ 48Mbps / +12dBm @ 54Mbps
802.11n 5GHz/HT20	+15dBm @ MCS 0/8 +15dBm @ MC4/12 +15dBm @ MCS 1/9 +11 - 14dBm @ MCS 5/13 +15dBm @ MCS 2/10 +9 - 12dBm @ MCS 6/14 +15dBm @ MCS 3/11 +7 - 10dBm @ MCS 7/15
802.11n 2.4GHz/HT40	+14dBm @ MCS 0/8 +15dBm @ MCS 1/9 +14dBm @ MCS 2/10 +14dBm @ MCS 3/11 +14dBm @ MCS 4/12 +10 - 13 dBm @ MCS 5/13 +8 - 11dBm @ MCS 6/14 +6 - 9dBm @ MCS 7/15







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