



High Performance **UPS SYSTEMS** for Hyper Critical Applications



10 KVA - 500 KVA
3-Phase On-Line UPS

Orion
REALTIME PROTECTION

**Magna
Series**



MAINS FEATURES:

- + HIGH PERFORMANCE
- + FLEXIBILITY
- + MAXIMUM RELIABILITY
- + NO IMPACT TO THE MAINS
- + SMART BATTERY MANAGEMENT

WITH THE INTEGRATED ISOLATION TRANSFORMER, HIGH OUTPUT POWER FACTOR 1.0 (KVA = KW) AND OPERATING EFFICIENCY OF UPTO 96% IN ONLINE MODE, THE MAGNA SERIES UPS IS SUITABLE FOR A WIDE RANGE OF APPLICATIONS SUCH AS IT & DATA CENTRES, INDUSTRY, HEALTHCARE, TELECOMMUNICATION SYSTEMS AND SECURITY. IT IS ALSO EQUIPPED WITH INPUT POWER FACTOR CORRECTION FUNCTION THAT ALLOWS TO AVOID DISTURBANCES OF THE MAINS SUPPLY..

The MAGNA series UPS is available in ratings from 10kVA to 500 kVA, three-phase input and three-phase output, On-line double conversion technology with front end IGBT based rectifier & inverter according to the VFI-SS-111 standard, as defined by the IEC/ EN 62040-3. This range of UPS has been designed and built with cutting edge technologies and components:

DSP (Digital Signal Processor) controls with inbuilt isolation transformer using copper winding ensures strong capability with unbalanced loads; Generator compatible; large capability of history records storage, Intelligent self-diagnosing function, superior failure protection to guarantee maximum protection of the loads, significant energy savings and zero impact on the supply line. IGBT rectifier technology for high input power factor (> 0.99) and low THDi ($< 3\%$); Compact and small footprint; Unique ventilation design; Strong mixed load capacity and high overload capacity; High MTBF ($> 200,000$ h); Low MTTR (< 0.5 h); Batteries connected directly to the bus, improving the impact resistance of UPS output; Front accessible maintenance and installation against wall allowed - Bottom and sides cable entry compatible.

Flexibility

Magna Series UPS can be used in several modes:

Normal operation: in On Line mode with the load supplied by the inverter through the double conversion of energy from the mains.

Ecomode: load supplied by the emergency mains (up to 99% efficiency) and in case of out of tolerance values, the power is automatically transferred to the inverter.

Smart Active: the UPS automatically determines whether to operate in On-Line mode or Eco-mode accordingly to the statistical data collected of the mains.

Frequency converter: It's possible to select the operational mode of UPS as a frequency converter from 50Hz to 60Hz or viceversa. In this condition, the static bypass is disabled. This mode can be operational both with or without internal batteries.

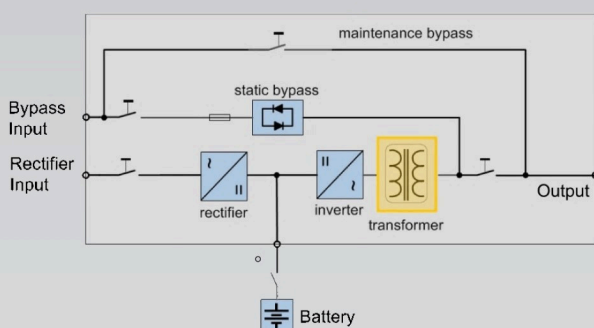
Additional features: UPS is equipped with special devices related to the ventilation in order to increase control and efficiency (Smart Ventilation).

Cold Start: The UPS can be switched-on in case of mains absence too.

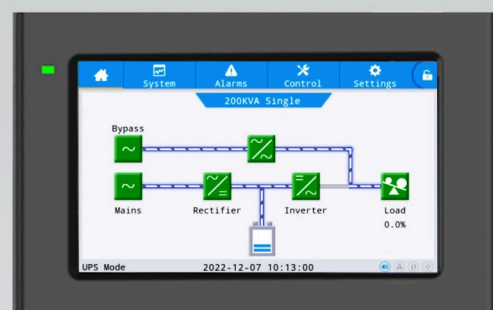
Power Share: allows the selection of critical load depending of the backup time (available up to 125 kVA).

Double Input: available double input feature in case of two mains supply line. (This is standard feature).

INTERNAL UPS CONFIGURATION



The multilingual LCD display provides direct access to the main UPS functions:



1. SYSTEM ON
2. SYSTEM STAND-BY
3. TEMPERATURE
4. COMMANDS
5. HISTORY LOG
6. WAVEFORM
7. DIAGNOSTICS
8. CONFIGURATION

Zero impact on the mains

The Magna Series UPS is designed to have a nearly zero impact on the power source, both mains or generator. This is made possible by the following elements:

- Input rectifier with PFC
- DSP
- Use of IGBT power components
- Possibility to set START DELAY from 1 to 120 secs programmable
- Possibility to set a SOFT START of input rectifier from 1-125 secs programmable

The Magna UPS also acts also as a filter since it eliminates harmonic components and reactive power.



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Maximum reliability and performances

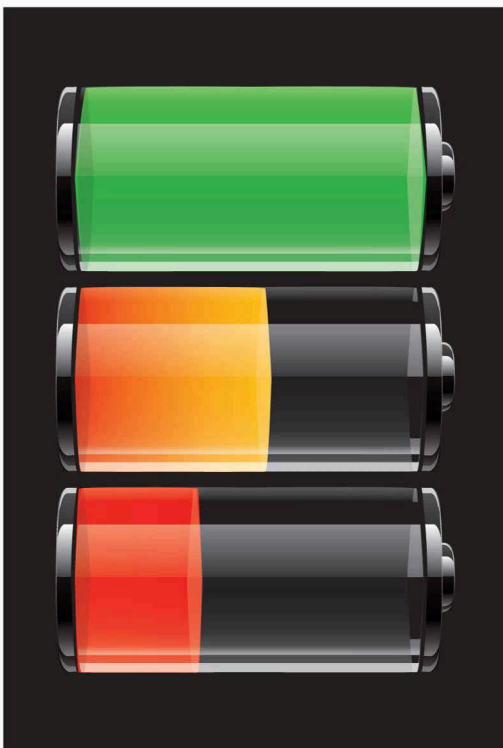
The Magna Series UPS is a Transformer based UPS with inverter structure designed on three levels with high switching frequency IGBT modules.

This ensures:

- High performances
- High efficiency (up to 96%)
- Lower noise level
- Lower input Harmonics (<3%) • High Output power factor



Smart battery management



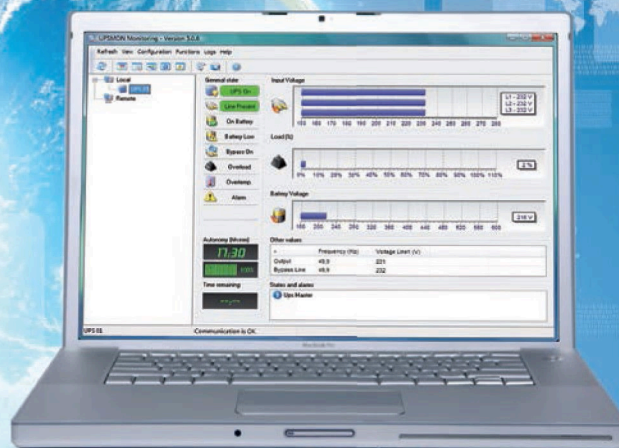
Magna UPS is equipped with an intelligent battery monitoring that optimizes its performances, and monitors the status and lengthens the operating lifetime.

The battery management provides:

- Control of the temperature (optional) and voltage recharging balance in order to avoid excessive recharge and battery overheating
- Scheduled battery test
- Protection against slow-discharge
- Low ripple current
- Possibility to operate with different types of batteries, such as ermetic lead acid (VRLA), opened valve AGM and NiCd.

SUPPORTED OPERATING SYSTEMS

Windows 8/10/11 and later; Windows Server; Linux; Novell Netware; Mac OS X; IBM OS/2 Warp and Server; HP OPEN VMS; the most widely used UNIX operating system: IBM AIX, HP UNIX, SUN Solaris INTEL and SPARC, SCO Unix and UnixWare, Silicon Graphic IRIX, Compaq Tru64 UNIX and DEC UNIX, BSD UNIX and FreeBSD UNIX, NCR UNIX



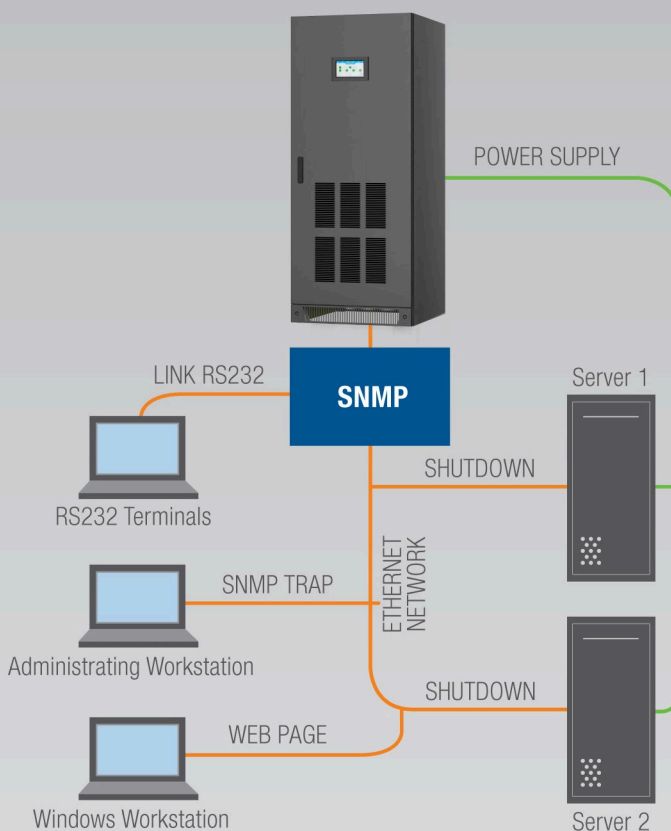
UPSMON offers easy UPS management. The software displays real-time information in the charts and values for critical data such as mains voltage, UPS load and battery charge. It allows remote interrogation of logs and operating parameters to help diagnose alarms and potential fault conditions. The software allows you to perform an automatic shutdown of connected equipment, in order to ensure its safety.

Advanced communication

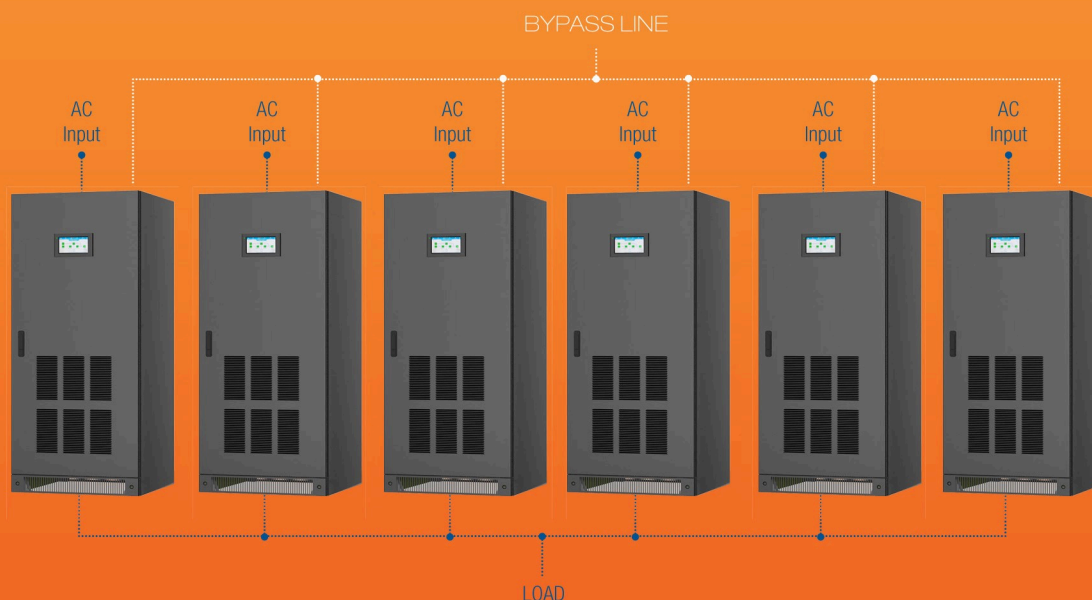


- The alphanumeric display provides very detailed information of measures, states and alarms with 8 different languages.
- Communication is cross-platform and supports all operating systems and network including monitoring software, UPSMON shut down with SNMP agent too.
- There are 3 slots for the installation of optional communication accessories such as network adapters, free contacts, ... etc.
- There are hardware devices like:
 - REPO (Remote Emergency Power Off) for emergency switch off of the UPS through emergency button.
 - Connection of the auxiliary contact of an external manual by-pass available
 - Input for synchronization from an external power source.
 - Remote LCD.

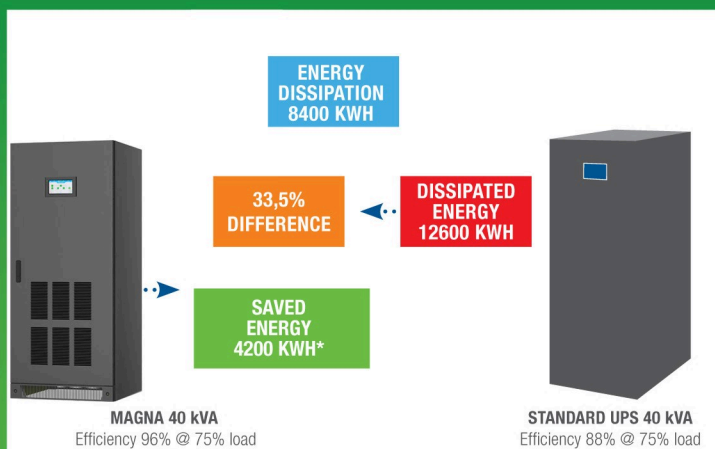
Direct connection with ethernet



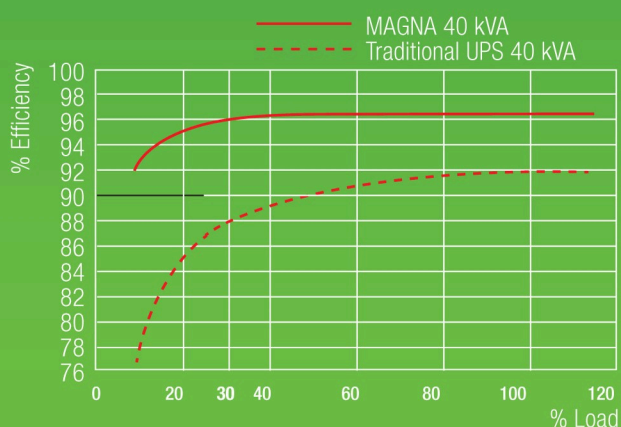
Parallel configuration



The Parallel redundant configuration consists in putting in parallel more than one UPS of the same size connected together into a single output bus. The MAGNA can work in parallel up to 4 units with three-phase in/single-phase out models and up to 6 units with three-phase / three-phase models. This configuration allows proper operation even in case of failure of one of the UPSs.



*in the case of standard of 0.15 € / kWh contract, the saving is € 630,00 per year



Green Technology

MAGNA is designed with technologies that ensure high efficiency up to 96.5%. This allows in a year, saving over 50% energy usage, compared to other similar products on the market.

The MAGNA dimensions permit to make it suitable for application in small spaces maintaining excellent performances.

Magna Series



Technical specifications

MAGNA - MXT SERIES (WITH INTEGRATED ISOLATION TRANSFORMER)

MODEL	MX010T	MX015T	MX020T	MX030T	MX040T	MX060T	MX080T	MX100T	MX120T
Capacity	10 kVA/ 10 kW	15 kVA/ 15 kW	20 kVA/ 20 kW	30 kVA/ 30 kW	40 kVA/ 40 kW	60 kVA/ 60 kW	80 kVA/ 80 kW	100 kVA/ 100 kW	120 kVA/ 120 kW
INPUT									
Rated voltage	380 V/400 V/415 Vac								
Voltage range	305 V - 480 V AC								
Rated frequency	50/60 Hz								
Frequency range	50/60 Hz ±5 Hz								
Power factor	≥0.99								
Total harmonic distortion (THDi)	≤3%								
Bypass voltage range	± 20% (settable)								
Delayed start of rectifier	1 - 300 s (settable via display panel)								
ECO voltage range	± 10% (settable)								
OUTPUT									
Voltage	380 V/400 V/415 Vac								
Voltage regulation	± 1%								
Frequency	Synchronized with utility in mains mode; 50 / 60 Hz ± 0.1% in battery mode								
Waveform	Sinusoidal								
Power factor	1.0								
Crest factor	3:1								
Total harmonic distortion (THDV)	≤1% (linear load); ≤3% (non-linear load)								
Transfer time	AC mode to battery mode: 0 ms Inverter mode to bypass mode: 0 ms Inverter mode to ECO mode: 5 - 10 ms								
overload	105%: long time running, 105% - 110% for 1 h, 110% - 125% for 10 min, 125% - 150% for 1 min, 150% - 200% for 200 ms, > 200% for 100 ms								
Slight adjustment of inverter output voltage	± 5 V								
BATTERIES									
DC Voltage	12V x configured battery number (settable via display panel)								
Number of battery	32 - 40 pcs (settable)								
Charging current	10 A default / settable								
Charging	Three-stage charging, auto switch floating / equalizing charge								
Battery state display	Display battery backup time, battery remaining capacity								
Battery self-test	Settable periodic self-test; manually configurable test time and voltage								
SYSTEM									
Efficiency	AC-AC mode: 96%; ECO mode: ≥98.5%								
Max. Parallel numbers	6								
Protections	Short-circuit - overload - overvoltage – under-voltage - low battery – over-temperature - fan fault								
Communications	RS232 / RS485 / dry contacts (standard), SNMP (optional)								
IP rating	IP20								
EMI	EN62040-2								
EMS	IEC61000-4-2 (ESD) IEC61000-4-3 (RS) IEC61000-4-4 (EFT) IEC61000-4-5 (surge)								
OTHERS									
Temperature & Humidity	0-50°C with derating @1% per deg C and 0-40°C without derating 0-95% RH (non-condensing)								
Noise level	55 dB					60 dB	65 dB		
Dimensions (W x D x H) (mm)	400 x 800 x 1100					600 x 700 x 1500	700 x 800 x 1700		
Packaged dimensions (W x D x H) (mm)	490 x 920 x 1250					700 x 600 x 1650	800 x 900 x 1850		
Net / Gross weight (kg)	158/200	165/207	175/217	210/252	260/302	460/480	590/620	630/660	690/720

Note: UPS specification and data are subject to change without notice



MAGNA - MXX SERIES (WITH INTEGRATED ISOLATION TRANSFORMER)

MODEL	MX080X	MX100X	MX120X	MAX160X	MX200X	MX250X	MX300X	MX400X	MX500X
Capacity	80 kVA / 80 kW	100 kVA/ 100 kW	120 kVA/ 120 kW	160 kVA/ 160 kW	200 kVA/ 200 kW	250 kVA/ 250 kW	300 kVA/ 300 kW	400 kVA/ 400 kW	500 kVA/ 500 kW
INPUT									
Input wiring	Three-phase five-wire (3Ø + N + PE)								
Rated voltage	380 V/400 V/415 Vac								
Voltage range	305 V - 480 V AC								
Rated frequency	50 / 60 Hz								
Frequency range	50 / 60 Hz ± 5 Hz								
Power factor	≥0.99								
Total harmonic distortion (THDi)	≤3%								
Input current-limiting	1.1 times of rated current (0.1 - 1.1 settable)								
Rectifier delay start	10 s (1 - 300 settable)								
Bypass voltage range	± 20% (settable)								
OUTPUT									
Output wiring	Three-phase five-wire (3Ø + N + PE)								
Rated voltage	380 V / 400 V/ 415 VAC								
Voltage regulation accuracy	± 1%								
Voltage regulation	0 V (± 1 - ± 5 V settable)								
Frequency	Synchronized with utility in mains mode; 50 / 60 Hz ± 0.1% in battery mode								
Power factor	1.0								
Total harmonic distortion (THDV)	≤1% (linear load); ≤3% (non-linear load)								
Crest factor	3:1								
Overload capability	110% for 60 min, 125% for 10 min; 150% for 1 min; 150% - 200% for 200 ms, > 200% for 100 ms								
BATTERIES									
DC voltage	480 Vdc (support 384 Vdc / 432 Vdc)								
Number of batteries	40 pcs 12V (support 32 / 36 / 40 pcs)								
Charging current	Charging rate (settable) x battery capacity (settable) x number of battery groups (settable)								
SYSTEM									
Efficiency	Line mode ≥96.0%, ECO mode ≥98.5%			Line mode ≥ 96.00%, ECO mode ≥ 99.00%					
Max. number of parallel connections	6								
Protections	Short-circuit, overload, over temperature, overvoltage, under voltage, battery low voltage and fan failure								
Communications	Standard configuration: RS232, RS485, dry contacts Optional configuration: SNMP card, temperature compensation, SMS alarms								
Display	5.7 inches LCD touch screen								
OTHERS									
Operating temperature	0-50°C with derating @1% per deg C and 0-40°C without derating								
Storage temperature	- 25°C - 55°C (without battery)								
Humidity	0% - 95% (non-condensing)								
Altitude	4 1000 m. Above 1000 m, derating 1% for each additional 100 m								
IP rating	IP 20								
Noise level at 1 m	<65dB							<70 dB	
Dimensions (WxDxH) (mm)	800 x 800 x 1800			800 x 860 x 1700	1210 x 860 x 1950			2380 x 860 x 1950	
Packaged dimensions (WxDxH) (mm)	900 x 900 x 2050			900 x 1003 x 1950	1300 x 1000 x 2200			1300 x 1000 x 2200 (x2)	
Net / Gross weight (kg)	580/630	630 / 680	680/730	790/810	1135/ 1200	1275/ 1340	1355/ 1420	2090/ 2200	2300/ 2410

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