CHLORIDE

Secure Power Always

MP-NET from 20 to 120 kVA

Uninterruptible power supply

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MKA4L0UKMPN

GOST certification
PRODUCT SERVICE
Certificate No. EMS 76732
Certificate No. FM 11043

Technical data

MP-NET	RATINGS	20	40	60	80	100	120
PRIMARY INPUT							
Nominal voltage[1]	(V)	400 (380, 415 selectable), three-phase + neutral					
Voltage range	(V)	300 to 477					
Minimum voltage without battery discharge	(V)	208Vac (at 70% output load)					
Nominal frequency	(Hz)	50/60 [selectable]					
Frequency range	(Hz)	45 to 65					
Maximum input current @ ambient temperature within the range 0°C to 40°C	(A)	33	66	98	131	164	197
Power factor @ nominal load & nominal input conditions[2]		>0.99					
Input current distortion @ nominal input conditions & nominal output power[3]	(%)	<5					
Walk in/Soft start	(seconds)	30sec					
Rectifier Hold-Off	(seconds)	N/A					
Inrush current / Imax input[4]		≤1					
AC/DC Rectifier efficiency without charging current @ nominal input conditions[2] with resistive load:							
- Half load[6]	≥ (%)	96.5	96.5	96.5	96.5	96.5	96.5
- Full load[6]	≥ (%)	97	97	97	97	97	97
BATTERY							
Permissible battery voltage range	(V)	± 240					
Recommended no. of cells:							
- VRLA[5]		240 cells					
- WET		240 cells					
- NiCd		375 cells					
Float voltage for VRLA @ 25°C	(V/cell)	2.27					
End cell voltage for VRLA	(V/cell)	1.67					
Float voltage temperature compensation		-3.96mV/cell, raise 1°C					
DC ripple current in float mode for a 10 min autonomy as per VDE0510[5]		$<0.02C_{10}$					
Float Voltage stability in steady state condition	(%)	1					
DC ripple voltage without battery	(%)	1					
Optimum battery temperature	(°C)	15 to 25					
Maximum Battery recharge current for 240 cells @ 400V input voltage & nominal load	(A)	5	10	15	20	25	30
Battery output power in discharge mode with nominal output load	(kW)	17	34	51.1	68.1	85.1	102.1
End battery voltage for 240 cells	(V)	±200					
End battery current for 240 cells with nominal output load	(A)	42.5	85.1	127.7	170.2	212.8	255.3
INVERTER OUTPUT							
Nominal apparent power @ 40°C	(kVA)	20	40	60	80	100	120
Nominal active power	(kW)	16	32	48	64	80	96
Nominal output current	(A)	29	58	87	116	145	174
Overload at nominal output voltage for 10 minutes[8]	(%)	<125					
Overload at nominal output voltage for 1 minute[8]	(%)	<150					
Short circuit current for 300ms	(%)	300					
Nominal output voltage	(V)	400 (380, 415 selectable), three-phase + neutral					
Nominal output frequency	(Hz)	50 [60Hz selectable]					
Voltage stability in steady state condition for input (AC & DC) variations and step load (0 to 100%)	(%)	±1					
Voltage stability in dynamic condition for input variation (AC & DC) and step load (0 to 100% and vice versa)	(%)	±7					
Voltage stability in steady state for 100% load imbalance (0, 0, 100)	(%)	±1					
Output frequency stability							
- synchronised with bypass mains	(%)	±5 (±0.1~±5 selectable)					
- synchronised with internal clock		±0.05					
Frequency slew rate	(Hz/sec)	<1					
Output voltage distortion with 100% linear load	(%)	<3					
Output voltage distortion @ reference non linear load as IEC/EN 62040-3	(%)	<5					
Load crest factor handled without derating the UPS	(Ipk/Irms)	3					

MP-NET	RATINGS	20	40	60	80	100	120
INVERTER OUTPUT							
Phase angle precision with balanced loads	(degrees)	1.5°					
Phase angle precision with 100% unbalanced loads	(degrees)	2°					
DC/AC Inverter efficiency @ nominal input conditions[2] with resistive load:							
- Half load[6]	≥ (%)	96.5	96.5	96.5	96.5	96.5	96.5
- Full load[6]	≥ (%)	97	97	97	97	97	97
Output power upgrading with ambient temperature:							
- At 25°C	(%)	110					
- At 30°C	(%)	105					
- At 40°C	(%)	100					
STATIC BYPASS							
Nominal bypass voltage[1]	(V)	400 (380, 415 selectable), three-phase + neutral					
Nominal frequency	(Hz)	50/60 [selectable]					
Frequency range	(Hz)	±5 (±0.5 ~ ±5 selectable)					
Voltage range	(%)	±15 (±8 ~ ±15 selectable)					
Transfer time with inverter synchronised to bypass:							
- Inverter to Bypass	(ms)	<1					
- Bypass to Inverter	(ms)	<1					
Transfer time with inverter not synchronised to bypass	(ms)	<10					
SYSTEM DATA							
AC/AC efficiency without charging current @ nominal input conditions[2] with resistive load:							
- 25% load[6]	(%)	92.5	92.5	92.5	92.5	92.5	92.5
- 50% load[6]	(%)	93.5	93.5	93.5	93.5	93.5	93.5
- 75% load[6]	(%)	94	94	94	94	94	94
- 100% load[6]	(%)	95	95	95	95	95	95
- VFD[6]	(%)	98					
Heat dissipation:							
- Recharge mode	(kW)	3.6	7.1	10.7	14.2	17.7	21.3
Noise @ 1 metre as per ISO 3746[8]	(dBA ± 2dBA)	65	67	69	70	70	70
Protection degree with open doors		IP20					
Mechanical dimensions:							
- Height	(mm)	1165				1700	
- Width	(mm)	520				520	
- Depth	(mm)	910				950	
No. of cabinets		1					
Frame colour	(RAL scale)	9005					
Weight	(kg)	169	199	229	259	349	379
Cable entry		Bottom					
Access		Front/Side/Rear					
Cooling		Forced Ventilation					
ENVIRONMENTAL							
Temperature:							
- Operating temperature[7]	(°C)	0 to 40					
- Maximum relative humidity @ 20°C (non condensing)	(%)	<95					
Max altitude above sea level without derating	(m)	1500					

(1) In case of a split input configuration, the primary input and the bypass input must have a common neutral. The neutral conductor may be connected only to the bypass or primary mains but it must be present (bypass and primary neutrals are solidly connected inside the UPS).
(2) At nominal voltage and nominal frequency.
(3) With input voltage at nominal value and with voltage distortion THDv <1%.
(4) "Imax input" parameter can be calculated using the maximum input power @ 400V in battery recharge mode.
(5) Permitted number of cells = 240
(6) For tolerances see IEC/EN 60146-1-1 or DIN VDE 0558.
(7) Recommended average daily ambient temperature 35°C with a maximum of 40°C for 8 hours.
(8) Conditions Apply.

This publication is issued to provide outline information only and is not deemed to form any part of any offer and/or contract. The company has a policy of continuous product development and improvement, and we therefore reserve the right to vary any information without prior notice. **MK44L0UKMPN REV. 3 - 07/2010**

CHLORIDE

Secure Power Always

MP-NET from 20 to 120 kVA

Chloride's MP-NET is a modular solution designed to grow with evolving load requirements, making it the perfect solution to power modular distributed networks.

MP-NET has been developed to meet the highest standards of serviceability, flexibility and scalability, while also having maximum energy and space saving features, guaranteeing maximum availability.

The smart solution that easily adapts to run time requests

MP-NET offers the most secure and flexible system architecture able to grow with your business. This modular solution is made up of a bespoke cabinet that is able to house 20 kVA power modules. Bespoke cabinets are available in two sizes to suit either up to 4 or 6 power modules. Power modules can easily be added to the cabinet at any time without dropping the load or making other changes to the battery bank.

MP-NET represents the best solution for parallel redundant systems; maximising system efficiency, and minimising the total cost of ownership thanks to:

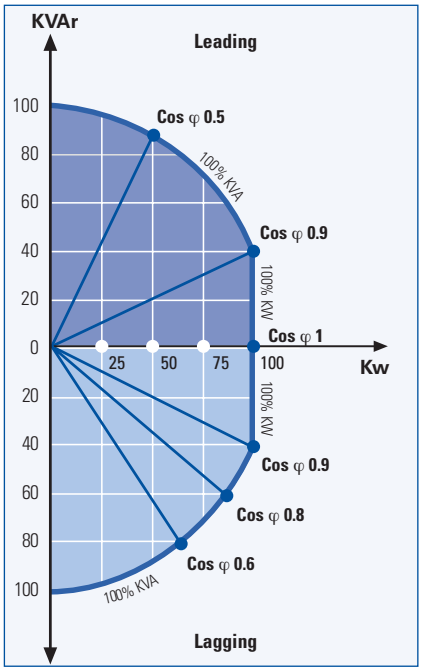
- Hot Swap plug-in modules
- High conversion efficiency
- Reduced footprint (optimising layout space and transport costs)
- Optimised N+1 redundant configurations up to 5N+1.

Key performances

MP-NET offers the most secure and flexible system architecture together with intelligent double conversion.

The main features of the MP-NET are:

- IGBT double conversion technology
- Excellent input performances:
  - PF > 0.99
  - THDi < 5%
- High conversion efficiency (up to 98%)
- Output PF up to 0.9
- Capability to power leading and lagging loads without derating
- 300% short circuit current
- Dual separated rectifier and bypass input
- Cold start



MP-NET: adapts to business needs for maximum availability

MP-NET is easy to install and service thanks to its modular design.

The Hot Swap feature makes it possible to plug in a power module while maintaining maximum load security. This means that the power module is replaceable without having to transfer the load to the raw mains. Furthermore making it easy for the user to perform basic service interventions.

The replacement or scaling is achieved without any risk of handling errors (that could potentially damage the system or even cause the load to crash).

Each power module provides a 5A battery charging current, guaranteeing full redundancy and long autonomy battery configurations, making it compatible with many different types of installations.

Hot Swappable plug-in/out power modules make MP-NET perfectly suitable for parallel redundant configurations, especially when minimum space impact is required.

Geographical modularity - maximum flexibility for customised solutions

MP-NET is a dynamic modular UPS ideal for applications such as data centres, transport, communications, and distributed networks.

MP-NET is designed to meet the changing requirements of loads located in different geographical areas, making it the best solution to maximise system efficiency, reduce running costs and minimise the total cost of ownership. The flexible design of the power modules makes it possible to move them easily from one bespoke cabinet to another. The module is capable of powering any kind of load, leading or lagging, with no derating, and via the LIFE.net system it is also possible to constantly monitor the actual power offered. These elements combined, allow for the optimisation of energy consumption even in large distributed networks.

Optimum space impact

It is possible to have a 100 kVA N+1 configuration in a space of just:

W 520 x H 1700 x D 950

and a 60 kVA N+1 configuration in a space of just:

W 520 x H 1165 x D 910

Interfaces

Communication

MP-NET features a centralised high resolution LCD display with eight languages, allowing for easy interaction with all modules through the navigation menu.
It also contains detailed information and measures of:

- UPS system status
- Each single power module
- Battery
- Electrical parameters

The UPS is perfectly suitable for use in any network or building management system and offers the following standard communication features:

- EPO
- I/P contact closure (two)
- I/P port for external battery temperature sensor
- Battery cabinet status
- Two smart slots (for LIFE.net and Connectivity cards).

Hardware Connectivity

MP-NET includes a complete suite of connectivity solutions, ensuring the monitoring and control of the networked UPS, through the TCP/IP protocol. A complete set of adaptors allow MP-NET to be integrated with building and Automation Systems via TCP/IP, MODBUS and JBUS. An external sensor box is available for monitoring the environmental conditions where the UPS systems are installed. A relay I/O card with programmable output can be inserted into the slot to monitor UPS systems and modules.

Software Connectivity

A complete suite of software tools allows for automatic and scheduled shutdowns as well as a variety of other features that help manage the system and its peripheral components. The software works in conjunction with the Connectivity Card to provide easy, unattended shutdown of multiple computer systems across the network. It also enables the simultaneous monitoring of UPS locally and remotely. The hierarchical design makes it easy to manage UPS intuitively.

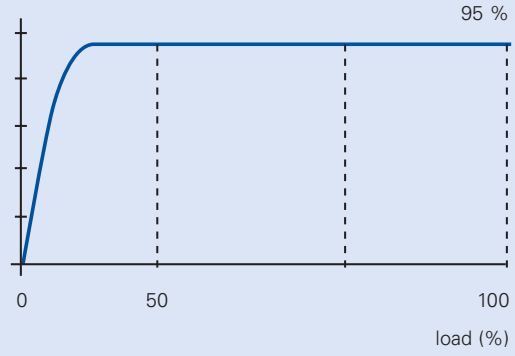
Tailored sizing for maximum efficiency

Tailoring your power protection system to use only the necessary power required makes for a smart investment which is more economic to run.

The modular design of this UPS allows it to work at maximum efficiency by offering the possibility of adding or removing modules according to the load requirement. This in turn enables it to obtain significant energy savings even at partial load.

A power upgrade can be made whenever necessary avoiding system oversizing which could potentially lead to higher running costs.

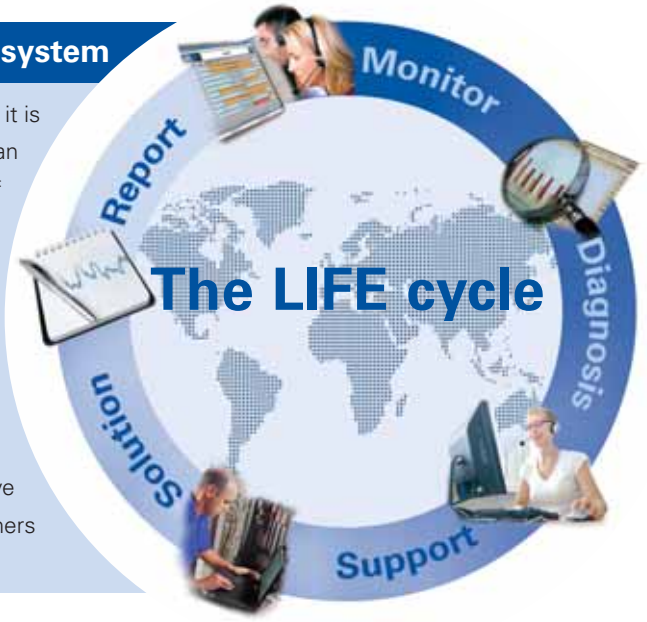
Efficiency Curve of MP-NET 5N+1 configuration



Service and LIFE.net 24/7 remote diagnostic system

Installation is only the beginning of your relationship with Chloride as it is essential that your critical power protection system is maintained in an optimum state of readiness at all times. The innovative range of maintenance and support services available from Chloride ensure reliability for life-long protection. Chloride takes responsibility for the health of your UPS units 24 hours per day.

LIFE.net is the maintenance program which includes the remote diagnosis, monitoring and managing of the operational status of UPS and power distribution systems. LIFE.net provides early warning of any alarm condition or out of tolerance status, allowing effective proactive maintenance and fast incident response, giving customers complete security and peace of mind.



Maximise *availability*

Pre-emptive maintenance
LIFE.net provides early warning of more than 150 separate parameters allowing real-time diagnosis and swift identification and resolution of operating anomalies.

Minimise *downtime*

Immediate identification of problems
Should an emergency condition arise, a Chloride engineer in the 24x7 manned service centre carries out an immediate fault analysis and instigates appropriate corrective action.

Reduce *operating costs*

Superior asset management
Through comprehensive data collection and analysis, LIFE.net's detailed reporting system provides valuable information on power and equipment trends, over any selected period of time.

Chloride Customers worldwide include:

Alcatel
American Telecom
Asia Multi Media
Bank of America
Barclays
BBC
Bennet
Berlin Airport
Beyond
Carlton TV
Citibank
Credit Suisse
Dubai international Airport
Ericsson
Fastweb
France Telecom
HSBC
Intel
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