

MULTI PLUS

MLT 160-200kVA



Industrial UPS

Highlights

- Range 160-200 kVA
- High efficiency up to 96.2%
- Zero impact
- Flexibility of use
- Advanced communications

“Zero impact source”

The MULTI PLUS solves installation problems in systems where the power supply has limited power available, where the UPS is supported by a generator or where there are compatibility problems with loads that generate harmonic currents; MULTI PLUS has a zero impact on its power source, whether this is the mains power supply or a generator:

- Input current distortion up to <2.5%;
- Input power factor 0.99;
- Power walk-in function that ensures progressive rectifier start up;
- Start up delay function, to restart the rectifiers when mains power is restored if there are several UPS in the system.

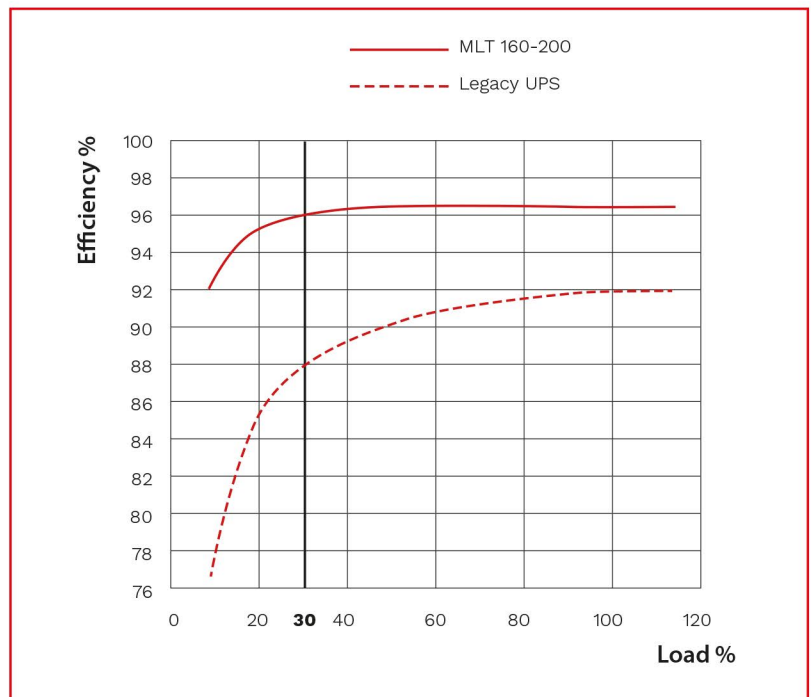
In addition, MULTI PLUS plays a filtering and power factor correction role in the power network upstream of the UPS, as it eliminates harmonic components and reactive power generated by the power utilities.

Introduction

The MULTI PLUS series is ideal for protecting Data Centers and telecommunications systems, IT networks and critical systems in general, where the risks connected with poor energy supply can compromise the continuity of activities and services. The MULTI PLUS series is available in 160-200 kVA models with three-phase input and output and ON LINE double conversion technology in accordance with VFI-SS-111 classification (as set out in standard IEC EN 62040-3). MULTI PLUS is designed and built using state-of-the-art technology and components. It has a fully controlled IGBT rectifier to minimise the impact on the grid. It is controlled by a DSP (Digital Signal Processor) microprocessor, to provide maximum protection to the powered loads with no impact on downstream systems and optimised energy savings.

High efficiency

State-of-the-art three-level NPC inverters are used across the power range (160-200 kVA) to achieve an operating efficiency of 96.2%. This technology halves (50%) the energy dissipated in a year by traditional UPS, with an efficiency level of 92%. Its exceptional performance makes it possible to recover the capital investment cost in less than three years of operation.



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Battery care system

Proper battery care is critical to ensuring correct UPS operation in emergency conditions. The battery care system consists of a series of features and capabilities to optimise battery management and obtain the best performance and operating life possible. Battery recharging: MULTI PLUS is suitable for use with hermetically sealed lead-acid (VRLA), AGM and GEL batteries and Open Vent and Nickel Cadmium batteries. Depending on the battery type, different charging methods are available:

- One-level voltage recharge, typically used for widely available VRLA AGM batteries;
- Two-level voltage recharge according to IU specification;
- Charge blocking system to reduce electrolyte consumption and lengthen the life of VRLA batteries. Recharge voltage compensation based on temperature in order to prevent excessive battery charges or overheating. Battery tests to diagnose in advance any reduction in performance or problems with the batteries. Deep discharge protection: during extended low-load discharges, the end-of-discharge voltage is increased - as recommended by battery manufacturers - to prevent damage or reduced battery performance. Ripple current: recharge ripple current (residual AC component) is one of the main causes of reduced reliability and battery life. Using a high frequency battery charger, MULTI PLUS reduces this value to negligible levels, prolonging battery life and maintaining high performance over a long period of time. Wide voltage range: the rectifier is designed to operate within a wide input voltage range (up to -40% at half load), reducing the need for battery discharge and thus helping to extend battery life.

Advanced communication

MULTI PLUS is equipped with a backlit graphic display (240x128 pixels) providing UPS information, measurements, operating states and alarms in different languages. The default screen displays UPS status, graphically indicating the status of the various assemblies (rectifier, batteries, inverter, bypass).

- Advanced multi-platform communications for all operating systems and network environments: UPSMON monitoring and shutdown software included for Windows operating systems 11, 10, 8, Hyper-V, Server 2022, 2019, 2016 and previous versions, Windows Server Virtualization Hyper-V, macOS, Linux, Citrix XenServer and other Unix operating systems;
- Compatible with VMware infrastructures to perform graceful shutdown of hosts and clusters; to perform Vmotion and prioritised shutdown of VM thanks to NetMan 208 Network card;
- Compatible with Nutanix and Syneto infrastructures to perform graceful shutdown of hosts; to perform prioritised shutdown of VM thanks to NetMan 208 Network card;
- Compatible with remote monitoring service;
- RS232 port and USB ports;
- 3 slots for the installation of optional communications accessories such as network adapters, potential free contacts, etc.;
- R.E.P.O. Remote Emergency Power Off for switching off the UPS via a remote emergency button;
- Input for the connection of the auxiliary contact of an external manual bypass;
- Input for synchronisation from an external source;
- Graphic display panel for remote connection.

Max reliability & availability

Distributed parallel configuration of up to 8 units per redundant (N+1) or power parallel system. The UPS continue to operate in parallel even if the connection cable is interrupted (Closed Loop).

Low running costs

A combination of advanced technology high performance components allows MULTI PLUS to provide exceptional performance and efficiency:

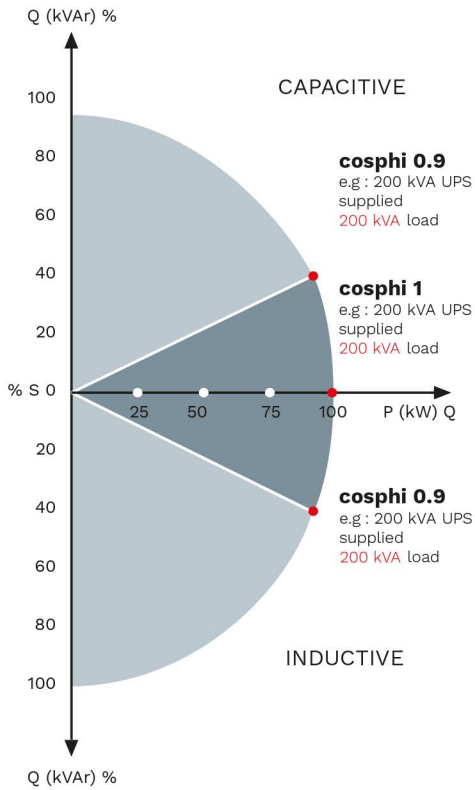
- The type of input stage (IGBT rectifier) ensures an input power factor close to 1 with low current distortion, avoiding the need for bulky and expensive filters;
- Unity output power factor for MLT 160-200 make it suitable to any Data Center application ensuring full power availability no matter what the utilities power factor range (typically from 0.9 lagging to 0.9 leading);
- More active power than a traditional UPS, guaranteeing a greater margin when sizing UPS for potential future load increases;
- Smart ventilation principle on MLT 160-200 manages the number of operating fans and their speed according to room temperature and load level. This preserves the life span of the fans and at the same time we reduce noise level and overall power consumption for unnecessary UPS ventilation.



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Flexibility

With its flexible configuration, performance, accessories and options, MULTI PLUS is suitable for use in a wide range of applications:

- Suitable for powering capacitive loads, such as blade servers, without any reduction in active power from 0.9 lead to 0.9 lag;
- ON LINE, ECO, SMART ACTIVE and STANDBY OFF operating Modes -compatible with centralised power systems (CPSS) applications;
- Frequency Converter Mode;
- Configurable EnergyShare sockets (as standard) to preserve runtime for the most critical loads or to be activated only when mains power fails;
- Cold Start to switch on the UPS even when there is no mains power present;
- Optional temperature sensor for external battery cabinets, to assist recharge voltage compensation;
- High power battery chargers to optimise charge time in the event of long runtimes;
- Optional dual input mains power supply;
- Isolation transformers for modifying the neutral earthing (separate power sources), or for galvanic isolation between the input and output;
- Different sized battery cabinets and capacities, for extended runtimes;
- MLT 160-200 could be equipped with a side mounted top entry cabinet to arrange UPS cabling from the top.



MLT 160-200



MLT 160-200 with top cable entry

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OPTIONS

SOFTWARE

UPSmOn 6
PowerNetGuard

ACCESSORIES

SNMP_MLT
MULTICOM 302
MULTICOM 352
MULTICOM 372
MULTICOM 384

MULTICOM 411
MULTICOM 421
MULTI I/O
MULTIPANEL
MBB 400 A 4P

PRODUCT ACCESSORIES

Battery temperature sensor
Parallel Kit
Powerful battery charger

Programmable relay board
MULTICOM 392
IP rating IP30/IP31
Top cable entry
Eyebolts kit

BATTERY CABINET

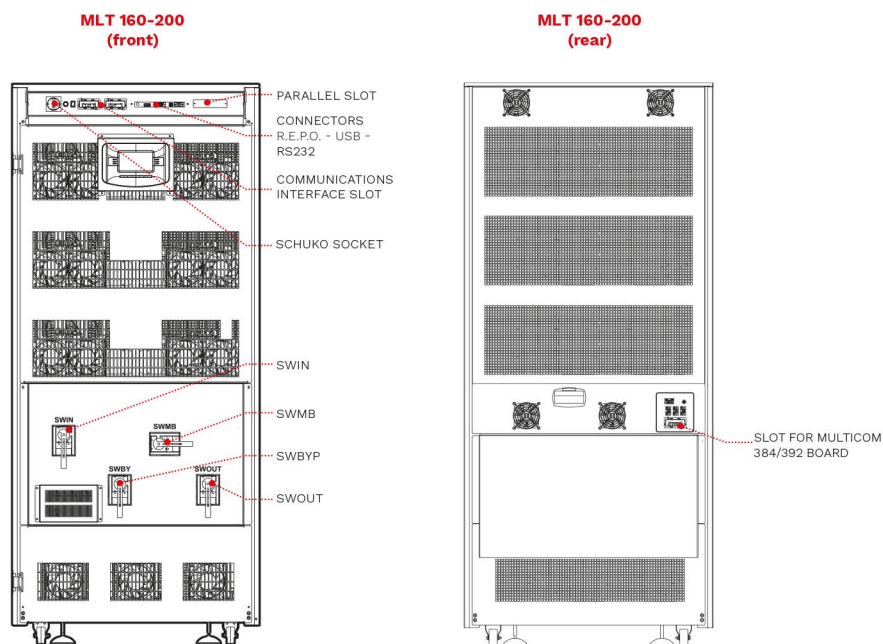
| MODELS | CBV-ML12009 CBV-ML4040 CBV-ML40120 |
|------------|---|
| UPS MODELS | up to 200 kVA ¹ |

Dimensions WxDxH [mm]

CBV-ML12009: 400x820x1325
CBV-ML4040: 650x750x1600
CBV-ML40120: 860x800x1900

¹ According with battery cabinet fuse associated.

DETAILS



MULTI PLUS

MLT 160-200kVA

| MODELS | MLT 160 | MLT 200 |
|--|--|------------|
| INPUT | | |
| Rated voltage [V] | 380 / 400 / 415 three-phase + N | |
| Rated frequency [Hz] | 50 / 60 | |
| Voltage tolerance [V] | 400 ±20% @ full load ¹ | |
| Frequency tolerance [Hz] | 40 - 72 | |
| Power factor @ full load | 0.99 | |
| Current distortion | THDI ≤3% | THDI ≤2.5% |
| BYPASS | | |
| Rated voltage [V] | 380 / 400 / 415 three-phase + N | |
| Number of phases | 3 + N | |
| Voltage tolerance (ph-N) [V] | 180 / 264 (selectable) | |
| Rated frequency [Hz] | 50 or 60 (selectable) | |
| Frequency tolerance | ±5% (selectable) | |
| Bypass overload | 125% for 60 min, 150% for 10 min | |
| OUTPUT | | |
| Nominal power [kVA] | 160 | 200 |
| Active power [kW] | 160 | 200 |
| Power factor | 1 | |
| Number of phases | 3 + N | |
| Rated voltage [V] | 380 / 400 / 415 three-phase + N (selectable) | |
| Static variation | ±1% | |
| Dynamic variation | ±3% | |
| Crest factor [lpeak/lrms] | 3:1 | |
| Voltage distortion | ≤1% with resistive linear load / ≤3% with non-linear load | |
| Frequency [Hz] | 50 / 60 | |
| Frequency stability during battery operation | 0.01% | |
| BATTERIES | | |
| <i>For wider tolerance conditions apply.</i> | | |
| Type | VRLA AGM/GEL/NiCd/Li-ion/Supercaps | |
| Recharge time | 6 h | |
| OVERALL SPECIFICATIONS | | |
| Weight without batteries [kg] | 450 | 460 |
| Dimensions (WxDxH) [mm] | 840x1035x1900 | |
| Communications | 3 slots for communications interface / USB / RS232 | |
| Ambient temperature for the UPS | 0 °C - +40 °C | |
| Recommended temperature for battery life | +20 °C - +25 °C | |
| Range of relative humidity | 5-95% non-condensing | |
| Colour | RAL 7016 | |
| Noise level at 1 m [dBA±2] (SMART ACTIVE) | <50 | |
| IP rating | IP20 | |
| SMART ACTIVE efficiency | up to 99% | |
| Standards | European directives: LV 2014/35/EU low voltage Directive EMC 2014/30/EU electromagnetic compatibility Directive Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2; RoHS compliant Classification in accordance with IEC EN 62040-3 (Voltage Frequency Independent) VFI - SS - 111 | |
| Moving the UPS | castors | |

¹ For wider tolerance conditions apply.