



# MUST400

20-60 kVA

MODULAR THREEPHASE UPS

3:3

The ideal solution for:

- ✓ *DATA CENTER & SERVER*
- ✓ *INTERNET CENTERS*
- ✓ *LOCAL AREA NETWORK*
- ✓ *TELECOMMUNICATIONS*

# OVERVIEW

MUST400 series is modular and online double conversion UPS for sensitive equipments. The power rating covers from 20 to 60 kVA, which delivers the best combination of **reliability, functionality, hot-swappable** and **flexibility**.



Modular design  
with Full Hot Swap  
System



Intelligent module  
and system protection  
design



Strong load  
adaptability for linear  
and non-linear loads



High  
flexibility



Parallel  
operation

## STATIC BYPASS

MUST400 is equipped with a centralized static bypass. The bypass module is **totally HOT SWAP**, and it is sized for the full system power. This allows faster maintenance and replacement time.

This specific architecture allows to hold a **higher short-circuit current** compared to a distributed bypass, while keeping very high availability (MTBF).

## BATTERY CHARGER

Each power module has its own battery charger, with single or double charge level, temperature compensation, and end-of-discharge control. This allows for redundancy operation as well as a **wide battery capacity to be installed**.

It is also possible to carry out **automatic or manual tests**, so to monitor batteries status and to prevent any kind of fault.

# INTERNAL BATTERY SOLUTION

MUST400 can contain up to three 20 kVA power modules and 16 removable battery trays with 10 9Ah/12V batteries each (equal to 16 minutes of autonomy with a typical 32 kW load in N+1 configuration) complete with batteries breaker. For greater autonomies, an external battery cabinet can be connected. The battery modules are designed with HOT SWAP technology to ensure safe and fast battery maintenance/inspection.



MODEL	MUST400-60
Maximum system power	60 kVA / 54 kW
Module power	20 kVA / 18 kW
MAIN INPUT	
Grid system	3 Phases + Neutral + Ground
Rated voltage / Frequency	380/400/415 VAC (Phase-Phase), 50/60 Hz
Voltage range	304~478 VAC (Phase-Phase), full load 228V~304 Vac (Phase-Phase), load decreases linearly according to the min phase voltage
Frequency range	40~70 Hz (rectifier operating range)
Power factor	>0.99
Current THDi	<3%
BYPASS INPUT	
Grid system	3 Phases + Neutral + Ground
Rated voltage / Frequency	380/400/415 VAC (Phase-Phase), 50/60 Hz
Voltage range	Default: -20% ~ +20% Selectable: -40% ~ +20%
Frequency range	Selectable, $\pm 2.5$ Hz, $\pm 1$ Hz, $\pm 10$ Hz, $\pm 20$ Hz
Bypass overload	125%, long term operation 125%<load<130%, 1 hour 130%<load<150%, 6 minutes load>1000%, 100 milliseconds
OUTPUT	
Rated voltage / Frequency	380/400/415 VAC (Phase-Phase), 50/60 Hz
Power factor	0.9
Voltage THDv	<1.5% (from 0% to 100% linear load); <5% (full non-linear load according to IEC/EN62040-3)
Voltage precision	$\pm 1.5$ % (0-100% linear load)
Transient response	<5% for step load (20-80%; 100-20%)
Transient recovery	<30 ms for step load (0-100%; 100-0%)
Inverter overload	110%, 60 minutes 125%, 1 minute 150%, 5 seconds >150%, 200 milliseconds
Frequency regulation	50/60 Hz $\pm 0.1$ %
Synchronized range	$\pm 2$ Hz (Selectable: $\pm 1$ ~ $\pm 5$ Hz)
Synchronized slew rate	Selectable, 0.5 Hz/S ~ 3 Hz/S, default 2 Hz/S
Crest factor	3:1
BATTERIES	
Battery rate voltage	$\pm 240$ VDC (selectable)
Number of batteries*	Standard: 40 batteries 12 V Selectable: 32-44 batteries 12 V (<36 only with reduced power, pf=0.8)
Charger voltage precision	1%
Batteries arrangement	Internal and/or external
Battery type	Pb / Ni-Cd
SYSTEM	
Efficiency	Normal operation: 95% Eco Mode operation: 99% Battery operation: 95%
Display	LED + LCD + Touch screen
Protection degree	IP20
Interface	Standard equipment: RS232, RS485, USB, dry contacts, Cold Start Optional: SNMP, parallel kit, dust filter
ENVIRONMENT	
Operating temperature	0 ~ 40 °C
Storage temperature	-40 ~ 70 °C
Relative humidity	0 ~ 95% (no condensing)
Noise (dBA at 1 meter far)	65 dB maximum
Altitude	<1000 m; load derated 1% per 100 m, from 1000 ~ 2000 m
MECHANICAL DATA	
Power module dimensions W*D*H (mm)	440*590*134
Power module weight (Kg)	22
Cabinet dimensions W*D*H (mm)	600*900*2000
Cabinet weight (Kg)	260
Colour	Cabinet: RAL 7021 textured - Door: RAL 7012

Note: technical specifications and data could be changed without notification

\* Our standard battery cabinets are 20+20 batteries

# GTEC SERVICE

GTEC supports its customers throughout the whole product life cycle, providing technical assistance and after-sales service at the highest professional standards, so to produce the best partnership experience.



**MAINTENANCE** is an essential activity in order to guarantee a safe and stable load protection. GTEC shows maximum care about this topic, providing the best service in terms of experience, instrumentation and safety level.



Through the dedicated **CALL CENTER**, customers receive prompt answers to any request, and the specialized technicians directly schedule maintenance activities.



The partnership between GTEC and its customers gets consolidated through the **TRAINING SESSIONS** proposal for technical staff, so that each user can operate on the UPSs with maximum consciousness and safety.



Also, in the GTEC Service offers, a **PROJECT CONSULTING** team is available, in order to provide the best solution according to the designer's needs.

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