

*Working in Power*



# miniMUST 1090

3 Phase Double Conversion Mini Modular UPS  
10KW - 90KW

- LOCAL AREA NETWORKS (LAN)
- SERVERS
- DATA CENTERS
- INTERNET CENTERS (ISP/ASP/POP)
- INDUSTRIAL PLCS
- EMERGENCY DEVICES (LIGHT, ALARM)
- ELECTROMEDICAL DEVICES
- TELECOMMUNICATION DEVICES
- INDUSTRIAL APPLICATION

# miniMUST<sup>1090</sup>

The miniMUST 1090 is a scaleable, hot-swappable true on-line double conversion modular uninterruptible power supply (UPS) system.

It can be configured as (N+X) to meet the most demanding loads, such as: Data Centers; Servers racks; Industrial automations and other mission critical loads where redundancy; flexibility and reliability are important.

Power module is designed with two capacities. 10PMX and 15PMX with unity output power factor (PF1), 10kVA/ 10kW and 15kVA/ 15kW, thanks to the State of the Art technology, power module has higher capacity and more efficient than others in the completion, it is fully compatible with down-stream loads or devices with it's unity output power factor design, thus no oversizing of UPS is needed



10PMX & 15PMX Power Module  
436(L) x 590(D) x 85(H)



## Integration Flexibility

The flexible miniMUST 1090 series can be integrated to Server / IT racks, to provide a customized one-stop solution for small and medium data center.

## Voltage and Frequency Flexibility

miniMUST 1090 series can be configured to various voltage and frequency depending on the desired electrical systems; such as 3/3; 1/1; 3/1 or 1/3 with the option voltage converter kit.

It can be configured as frequency converter (FC); 50Hz input 60Hz output or vice versa

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## Self-contained Power System

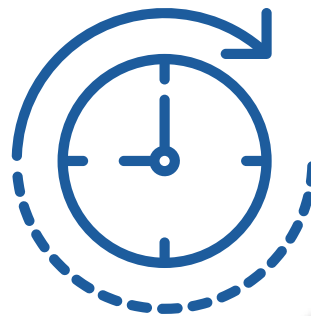
In a single 19" cabinet provides self-contained power system, it consists of:

- Modular UPS scale up to 40kVA/ 40kW in N+1 configuration as either for growth of demand or increase redundancy.
- In-built internal manual bypass to ease of system maintenance.
- 18/ 24 ways PDU for power distribution
- Battery up with runtime 2 x 40 x 12Ah battery for 10-15 mins runtime

## Extended Battery Backup Time

Standard 4A & 6A battery charging current is available for 10PMX and 15PMX power module respective, and is sufficient to meet most customer's expectation.

For special applications, 15A dc charger module is available for large capacity battery if extra-ordinary long backup time is needed. Multiple 15A charger modules can be installed in the UPS chassis to increase overall charger power



### UPS FEATURES

#### IGBT RECTIFIER

- Designed to operate with wide input voltage and frequency range, advance technology achieving input THDi<4% and input PF 0.99 thanks to IGBT Rectifier and PFC control.

#### BATTERY CHARGER

- Distributed battery charger in each module; it is capable of delivering up to 20% of the rated power per UPS module for battery charging. Flexible battery quantity selection from 32 – 44 blocks 12V battery; and intelligent battery temperature compensated kit available for smart battery charging to prolong battery life.

#### USER FRIENDLY ADJUSTABLE PARAMETERS

- New generation high efficiency T type 3 level IGBT power bridge fully digital controlled.

#### HOT-SWAPPABLE STATIC BYPASS MODULE

- Mean time to repair (MTTR) is reduced

# miniMUST<sup>1090</sup>

## miniMUST 1090 Chassis



### Chassis for 2 modules **miniMUST 20i/10X**

designed for up  
to 2 x 10PMX

### **miniMUST30i/15X**

designed for up  
to 2x15PMX



### Chassis for 3 modules **miniMUST30i/10X**

designed for up  
to 3 x 10PMX

### **miniMUST45i/15X**

designed for up  
to 3 x 15PMX



### Chassis for 4 modules **miniMUST40i/10X**

designed for up  
to 4 x 10PMX



### Chassis for 6 modules **miniMUST60i/10X**

designed for up to 6 x 10PMX

### **miniMUST 30i/15X**

designed for up to 6 x 15PMX

#### Note:

15Adc charger module could be swapped with UPS module to increase overall battery re-charge current



# miniMUST1090

## User Friendly Mimic Panel and Remote Monitoring

User friendly 7" colour touch screen with 1021 x 600 pixels resolutions LCD is designed for easy and fast information of UPS at one glance. Programmable dry contacts is available for remote monitoring and external input analogue signal interfacing with UPS



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	TECHNICAL SPECIFICATIONS						
Capacity / Module Model	10kVA – 90kVA 10PMX (10kVA/ 10kW), 15PMX (15kVA/ 15kW)						
	INPUT						
Rated voltage (Vn)	380V/ 400V/ 415V, 3 phase + N (common neutral with Bypass input)						
Voltage tolerance (V)	-40% to +20% Vn						
Frequency & Range	50Hz/ 60Hz auto sensing, 40Hz to 70Hz						
THDi%	≥0.99 & ≤4%						
	BATTERY						
Type	VRLA battery; Vented lead acid battery & NiCad battery						
Charging Method	Two level & Cyclic charging according to EN 50272-2						
Ripple voltage	Approximately 0%						
	INVERTER OUTPUT						
Rated Power (kVA/ kW)	10kVA/kW – 90kVA/kW						
Module power factor	1						
Rated Voltage & Stability (V)	±1.5% from 0% to 100% linear load						
Frequency & Stability (Hz)	50/60 Hz ± 0.1%						
Dynamic Stability (V)	≤5% for step load according to IEC62040-3						
Overload	110% for 60mins; 125% for 10mins; 150% for 1min; >150% for 200ms						
	BYPASS						
Rated voltage (V)	380V/ 400V/ 415V, 3 phase + N						
Voltage tolerance (V)	Default -20% / +15%. Upper threshold +10%; 20%; 25% selectable, lower threshold: -10%; -30%; -40% selectable						
Frequency & Range	50/60Hz, selectable ±1Hz, ±3Hz, ±5Hz						
Rated current (A)	28A ~ 135A depending on chassis model						
	ENVIRONMENTAL DATA						
Operating Temperature	0°C to 40°C (Note: VRLA battery life is halved for every 10°C increase in temperature from 20°C)						
Relative Humidity	<95% non-condensing						
Colour	RAL7021 for side panel; black for module						
Efficiency	95% at Double Conversion On-line / 99% ECO Mode						
Compliance Standard	General & Safety: IEC EN62040-1-1; EMC: IEC EN62040-2 (C3); Performance & Test: IEC EN62040-3						
	MODULEPHYSICAL DATA						
Module Model	10PMX			15PMX			
Size (LxDxH) mm & weight	436 x 590 x 85 (mm) / 15.3kg						
	CHASSIS PHYSICAL DATA						
Chassis model (miniMUST)	20i/10X	30i/15X	30i/10X	45i/15X	40i/10X	60i/10X	90i/15X
Size (LxDxH) mm & weight	485x700x400 mm / 42kg		485x751x575 mm / 55kg		485x700x575 mm/ 51kg	485x751x1033 mm / 70kg	
Sound level at 1m	56dBA	58dBA	56dBA	58dBA	56dBA		58dBA
Mimic Panel	7" colour touch screen, 1024 x 600 resolution & LED						
In-built breakers/ isolator	Bypass & Manual Bypass		Manual Bypass		Bypass & Manual Bypass	Manual Bypass	
Cable entry	Rear bottom						
Compliance standards	EN50091-1-1/IEC62040-1-1/AS62040-1-1 for General & safety requirements for UPS used in operator access areas EN50091-2/ IEC62040-2/ AS62040-2 (C3) for EMC for UPS EN50091-3/ IEC62040-3/ AS62040-3 for Method of specifying performance and test requirements of UPS						
Cabinet protection rating	IP20						
Interface	Standard: Dry contacts, RS232, RS485, USB / Optional: SNMP						

**Note:** UPS specification and data may subject to change for improvement without prior notice

# TECHNICAL **ASSISTANCE** SERVICE

**UPService**, our technical assistance facility uses highly trained engineers to provide a reliable and competent technical support and after-sales service.

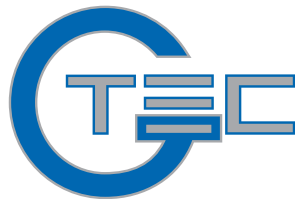
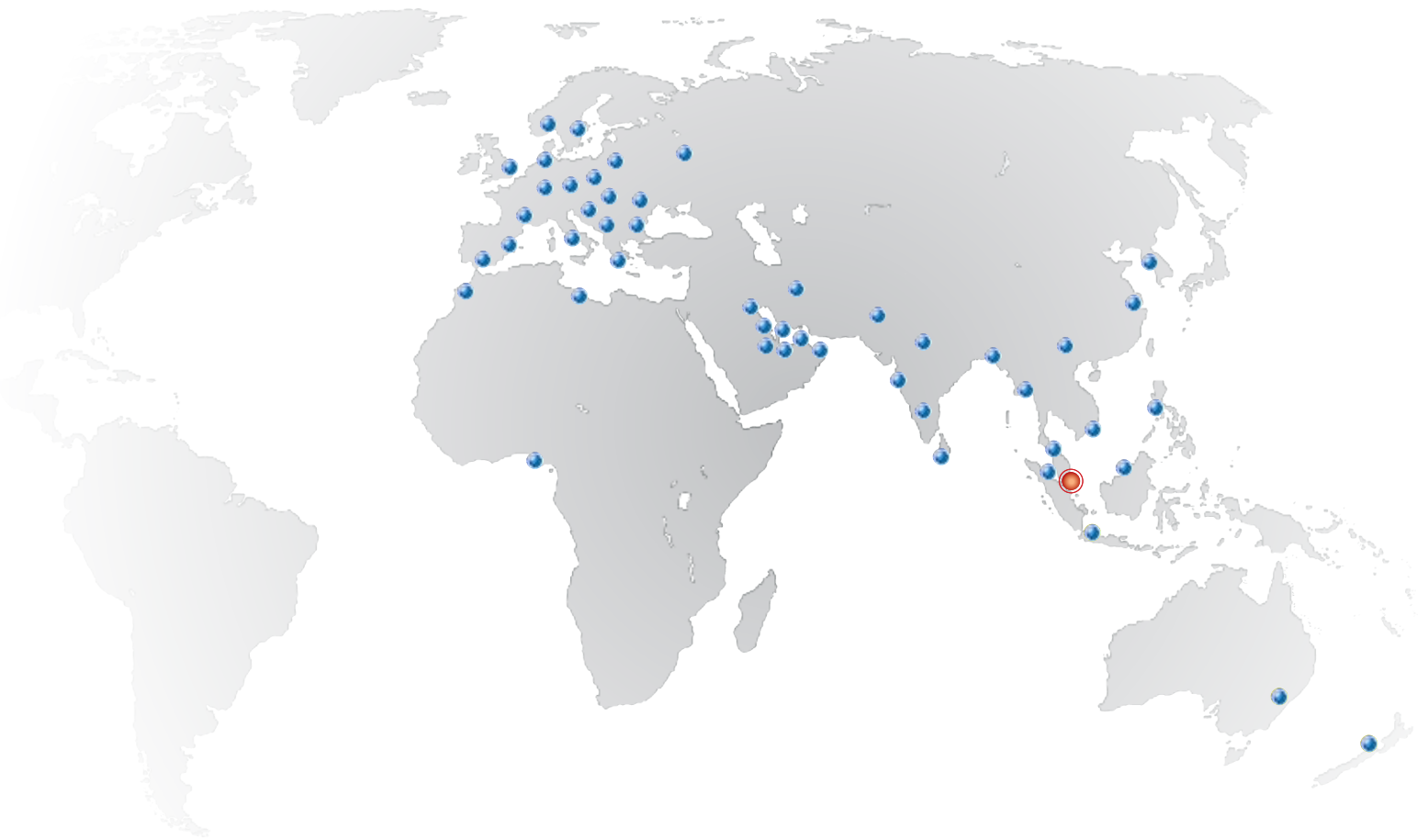
UPService can provide customers with:

- A dedicated CALL CENTRE for connection to the UPService organisation. UPService personnel are always available and ready to provide advice and assistance regarding UPS installation, maintenance, fault finding and repair.
- FAST & READY A fast repair on site is guaranteed through the use of state-of-the-art UPS technology and the professionalism of the UPService personnel and Authorised Assistance Centres. UPService guarantees that failed parts are replaced with original ones, tested and updated in order to maintain the safety, reliability and operating characteristics of the UPS.
- COMMISSIONING AND START-UP UPService can provide assistance during commissioning and startup of the UPS equipment on-site with additional training during handover to site personnel. UPService engineers can also verify site suitability, analyse and advise on potential problems, and disconnect and relocate equipment. UPService recommends that all hardwired installations are commissioned by UPService engineers.
- MAINTENANCE CONTRACTS can be provided by UPService to minimise response times and repair costs. Contracts range from periodic inspections to comprehensive cover including labour and materials.
- The TELEGUARD software package provides remote 24x7 UPS supervision. TeleGuard can interrogate G-TEC UPS connected to a local telephone line to check on their operating logs and system status. Should the UPS report an alarm condition, the UPService Call Centre is immediately notified and a dedicated customer response activated. Routine site reports can be sent automatically to customer personnel.
- UPService organises regular TECHNICAL TRAINING COURSES for UPS operators and installers.



TECHNICAL  
**ASSISTANCE** SERVICE

G-Tec Asia Pacific Pte Ltd



***Working in Power***



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