



Working in Electronic Power



MUST **30-120** ^{3 Phase Modular} UPS

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MUST**30-120**

The **MUST 30/120** is an uninteruptible power supply, three phase input/ output, ranging from 15 kVA to 120 kVA (equipped with 15 kVA UPS modules), a double conversion system, provided of DSP technology, designed to work for redundant applications (N+1).



EACH MODULE IS A COMPLETE AND INDEPENDENT UPS:

- Three phase rectifier
- Battery charger
- IGBT inverter
- Static switch
- DSP control logic





A very powerfull **DSP** of **last generation**. That reduces the number of the external components

SYSTEM ADVANTAGES

- 1. Highest reliability (MTBF of the suppling chain 100 times more than the stand alone UPS)
- **2.** Replacement of the fault module, with no supply interruption, (Hot swap)
- **3.** Time to replace the module < 3 min
- 4. Power increasing simply by adding a module unit
- 5. Very low maintenance costs
- 6. Each module is a complete and independent Uninteruptible Power Supply

		MENÙ:
		1. System on
NORMAL	10000 10%	2. System stand-by
	I/P VOLT: 390 392 393	3. Temperature
BATTERY	0/PUOLT: 400 400 400	4. Command
BYPASS	10/ FREQ: 50.0 Hz	5. History
		6. Diagnostic
FAULT		7. Configuration

THE HIGHEST CLASS PERFORMANCES TO SUPPLY THE MOST CRITICAL LOADS

- LOCAL AREA NETWORKS (LAN)
- SERVERS
- INTERNET CENTERS (ISP/ASP/POP)
- DATA CENTERS

- HOSPITAL
- BANKS
- EMERGENCY DEVICES
- TELECOMMUNICATIONS DEVICES
- MILITAR APPLICATION
- INDUSTRIAL PLC
- ALARM SYSTEM
- TRANSPORTATION

The MUST system

1. MINI MUST 30

MINI MUST is the Entry Level to the MUST Family. It is the ideal solution to supply a medium load that requires the redundancy or the possibility to expand the power in the future. Its advantages win against any stand alone UPS solution. The solution is very compact and with the possibility to expand also the autonomy adding up to 3 battery banks in the same cabinet. Power ranging from 15 kVA to 30 kVA (2 modules), 19" rack mounted with the internal battery pack.



2. MUST 60

Modular UPS three phase system ranging from 15 kVA to 60 kVA, 19" rack mounted with the internal battery pack. This solution can include 4 modules 15 kVA providing the following back up time at 75% of nominal load.

Max back up time with internal battery pack			
Nr power modules	kVA	kW at 75% of the rated load	backup time (min)
1	15	9	75
2	30	18	32
3	45	27	16
4	60	36	12

If redundancy is requested (N+1 modules) the max output power will be 45 kVA $% \left(1-\frac{1}{2}\right) =0$



3. MUST 120

Modular UPS three phase system ranging from 15 kVA to 120 kVA, 19" rack mounted, designed for external battery cabinet. The max output power of the MUST cabinet is 120 kVA (8 modules 15 kVA/each). The battery pack are included in the external cabinet. If redundancy is requested (N+1 modules) the max output power is 105 kVA.



MUST 120 kVA

4. MODULAR BATTERY CABINET (2000x1000x800 HxDxW)

It is designed to include up to 40 x 100 Ah battery blocks. This battery pack, with a 75% of the max load, allows a standard autonomy of 20 minutes. Longer back up time is possible simply adding battery cabinets, working in parallel or using other battery packs in shelves.



BATTERY CABINET

User interface

Communication board RS 232, RS 485 => STANDARD

Remote UPS monitoring for alarms, status, measures, historical data.

Communication board SNMP, relay card => OPTIONAL



SNMP Board





Free contacts circuit board

Pin #	Description	I/0
1	UPS Fail	Output
2	Summary Alarm	Output
3	GND	Input
1	Remote Shutdown	Input
5	Common	Input
6	Bypass	Output
7	Battery Low	Output
8	UPS ON	Output
9	Line Loss	Output

Communication interface card AS 400/dry contact.

A very Complete Communication



UPS Control Parameters

incut Frequency Hange	Low Lew/(40.0 - 40.0)		46.0
witaer Roman	Fign Limits 1.0 - 30.0) Low Limits 1.0 - 2191		00 TH C
and the second of the second sec	Hagn Lim 8(221 - 208)		284 - 4
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Allow ON-Hey to Encloth Elisable Audit Watering When UPS Values on Battery	tut Mode	(F. 188	C.88
Aud Billy Warning			
By: Ess Audi de Warning		77 CB	C Liet
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Operation Outlon			
Work On Bypass When UPS Turned O	M.	15 1/16	17 16
Auto Reboot UPS V/Vien AC Input Res	lined	15.744	IT No.

Shutdown Parameters

Burney Blocks Trees	· JONHLINE	1	the state
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MUST **30-120**

	TECHNICAL SPECIFICATIONS
MODEL	MUST 30-120
Nominal power	from 15kVA to 120kVA
	INPUT
Voltage	380V/400V/415V, 3 phases 4 wires
Voltage tolerance	294Vac to 520Vac
Frequency	50/60 ± 4Hz
Power Factor	≥ 0.99
THDi %	< 5%
	BYPASS
Voltage	380V/400V/415V, 3 phases 4 wires
Voltage tolerance	305Vac to 457Vac (selectable)
	OUTPUT
Voltage	380V/400V/415V, 3 phases 4 wires
Static voltage stability	≤ 1.5%
Frequency	50Hz / 60Hz ± 0,05% (battery)
Power factor	0,8
Overload protection	Load < 105% no transfer to bypass; $105\% \le load < 115\%$ transfer to bypass after 5 min; $115\% \le load < 125\%$ transfer to bypass after 1 min; load $\ge 125\%$ transfer after 1 sec.
	MODULE
Nominal power	15kVA / 12kW
Efficency	> 91% at full load
	BATTERY
Battery nominal voltage	480 Vcc
Battery connections	3 wires (positive / neutral / negative)
Charger output voltage	273 ± 1% Vdc
Туре	VRLA sealed
Max load current	4,5A for each module (selectable by LCD display)
	MECHANICAL
Acustical Noise (at 1 mt from the	
UPS with 8 modules)	≤ 62dB
UPS with 8 modules) Ambient operative temperature	≤ 62dB 0°C - 40°C
UPS with 8 modules) Ambient operative temperature Relative umidity (Max)	≤ 62dB 0°C - 40°C 90% (non condensing)
UPS with 8 modules) Ambient operative temperature Relative umidity (Max) Ambient store temperature	≤ 62dB 0°C - 40°C 90% (non condensing) -15°C - +55°C
UPS with 8 modules) Ambient operative temperature Relative umidity (Max) Ambient store temperature Module weight	≤ 62dB 0°C - 40°C 90% (non condensing) -15°C - +55°C 35kg
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UPS with 8 modules) Ambient operative temperature Relative umidity (Max) Ambient store temperature Module weight Module dimensions (mm) Mini Must Dimension (mm)	≤ 62dB 0°C - 40°C 90% (non condensing) -15°C - +55°C 35kg 440(W) x 700(D) x 131(H) 600(W) x 1000(D) x 1500(H)
UPS with 8 modules) Ambient operative temperature Relative umidity (Max) Ambient store temperature Module weight Module dimensions (mm) Mini Must Dimension (mm) Cabinet Dimensions / Must 60 (mm)	≤ 62dB 0°C - 40°C 90% (non condensing) -15°C - +55°C 35kg 440(W) × 700(D) × 131(H) 600(W) × 1000(D) × 1500(H) 600(W) × 1000(D) × 2000(H)
UPS with 8 modules) Ambient operative temperature Relative umidity (Max) Ambient store temperature Module weight Module dimensions (mm) Mini Must Dimension (mm) Cabinet Dimensions / Must 60 (mm) Cabinet Dimensions / Must 120 (mm)	≤ 62dB 0°C - 40°C 90% (non condensing) -15°C - +55°C 35kg 440(W) × 700(D) × 131(H) 600(W) × 1000(D) × 1500(H) 600(W) × 1000(D) × 2000(H) 600(W) × 1000(D) × 2000(H)
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UPS with 8 modules) Ambient operative temperature Relative umidity (Max) Ambient store temperature Module weight Module dimensions (mm) Mini Must Dimension (mm) Cabinet Dimensions / Must 60 (mm) Cabinet Dimensions / Must 120 (mm) Safety	≤ 62dB 0°C - 40°C 90% (non condensing) -15°C - +55°C 35kg 440(W) × 700(D) × 131(H) 600(W) × 1000(D) × 1500(H) 600(W) × 1000(D) × 2000(H) 600(W) × 1000(D) × 2000(H) 500(W) × 1000(D) × 2000(H) EN50091-1-1/EN62040-1-1

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