

POWERTRONIX
MIZAR
10 ÷ 15 kVA
DT 0386-E03

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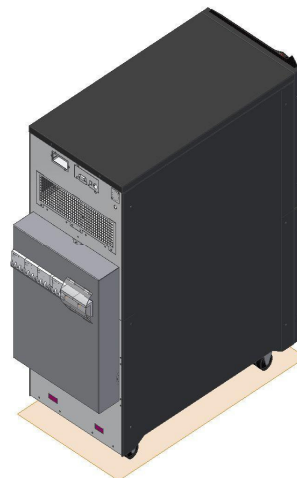
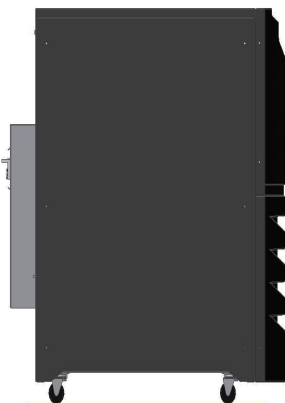
INTRODUCTION

Present document defines technical specs of a three phase UPS named *MIZAR* covering the power range from 10 to 15 kVA ON-LINE DOUBLE CONVERSION Uninterruptible Power Supply Systems with forced ventilation cooling. These equipments are characterized by reduced size and high efficiency, thanks to the conversion topology, which doesn't need transformers between mains, inverter and load.

MIZAR UPS belongs to the "double conversion" equipments family, with all advantages given by this topology and without any penalty in total efficiency.

All sizes have the same cubicle.

Following is shown the picture of the system :



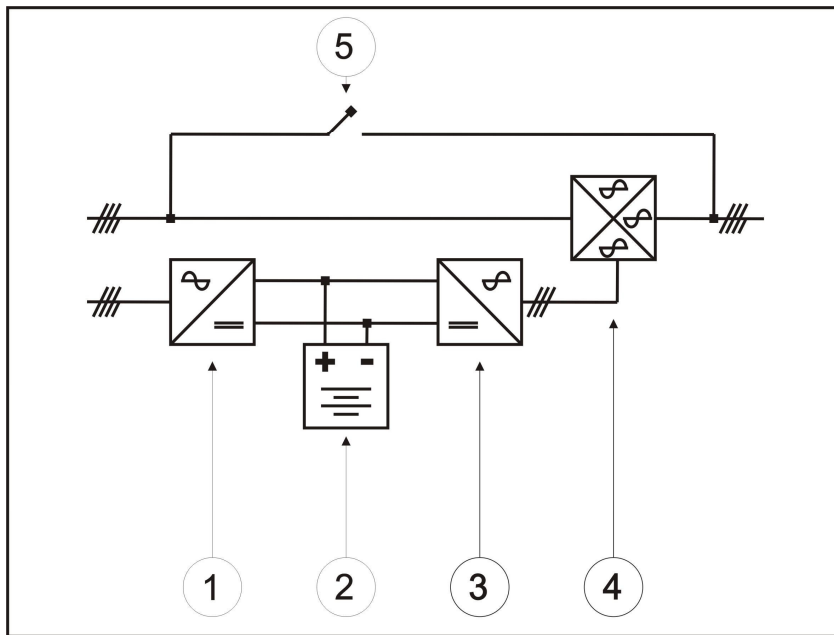
GENERAL FEATURES

- Double conversion, digital control, trafoless power module with IGBT HF switching, Cubicle arrangement as Powertronix style
- All the electronic mounted on the same removable power module Cables inlet from the bottom
- IP 20 protection degree
- UPS control and signalling developed on the single board
- Communications Boards on the rear of the UPS
- Modem remote supervision available
- UPS diagnostic and management on teleservice from the factory through SNMPadapter
- Control panel with LCD display, EPO integrated
- Remote EPO facility
- Connection to a PC available
- RS 232 C serial port with DB9 connector
- SNMP adapter available
- Software development with the most popular operating systems (Windows, Novell, Unix, OS/2).
- Additional free contacts for main remote alarms

As proposed for other POWERTRONIX products, suitable options are available to increase behavioural level referred to power management and/or power quality as indicated in the following items:

- Connection to PC or local line available.
- Isolation of the load through transformer.
- More UPS in parallel possibility.
- Isolation of the inverter line and/or reserve line.

ONE LINE DIAGRAM:



Descriptions:

1. IGBT power input
2. Battery
3. Inverter power IGBT
4. Static Switch
5. Manual By-Pass

REGULATIONS AND STANDARDS

This UPS family is designed according to the following regulations and standards:

Electromagnetic compatibility CEE 89/336

- | | |
|-------------------|---|
| CEI-EN 62040-1-1: | Uninterruptible power systems (UPS)
Part 1-1: General and safety requirements for UPS used
in operator access area |
| CEI EN 62040-1-2: | Uninterruptible power systems (UPS)
Part 1-2: General and safety requirements for UPS used
in restricted access locations |
| CEI EN 62040-2: | Uninterruptible power systems (UPS)
Part 2: Electromagnetic compatibility (EMC)
requirements |
| CEI EN 62040-3: | Uninterruptible power systems (UPS)
Part 3: Method of specifying the performance and test
requirements |

GENERAL DATA

UPS MIZAR 10-15 KVA

GENERAL

Configuration	On-Line Double conversion
Input	H.F. technology IGBT switching TrafoLess
Inverter	H.F. technology IGBT switching TrafoLess
S.Switch	Static Switch Relay technology
Cooling system	Air Forced

MECHANICALS CHARACTERISTICS

Lodging	Dedicated Cabinet
Colour	RAL 7016
Mechanical protection degree IP	IP 20
Positioning	Pictures on pages 13 and 14
Cables Input	Bottom on the rear
Mechanical Dimensions	900 x 390 x 900 mm (h x l x p)

AMBIENT CONDITIONS

Operating temp. range	0-40° C
Batteries temp. range	+20 ÷ +30 °C
Relative Humidity	< 90% (without condensates)
Maximum installation height without derating	Until 1000m uls (1% derating every 100m started from 1000m up to 2000m)
Temperature range	-20°÷ + 70°C (UPS) +20°÷ +30°C (Batteries)

DISPLAY

LCD-Display	Display LCD 4 rows x 20 characters e 4 functions buttons + EPO local
Lighting Alarms	Led status green colour UPS OK/ Led status red alarm
Acoustics Alarms	Yes

COMMUNICATION

RS232	1 standard
Free contacts	N° 4 contacts : UPS run / UPS on bypass / Mains OK / Battery end discharge
SNMP SLOT	Yes
Maintenances Software	RS232
Parallel communications	RS232 Optic

GENERAL DATA

UPS MIZAR 10-15 KVA

BATTERIES

Nominal Voltages	720 VDC
Floating Voltage	810 VDC
N° of elements	360
Periodic battery test	Si / programmable
Internal batteries	5Ah/7Ah/9Ah

WEIGHTS

UPS without batteries (Kg)	65 Kg
UPS with batteries (Kg)	230 Kg

AMBIENT CONDITIONS

Exchanged Air	500 m ³ /h (massima)
Noise	58 dB (A)

OPTIONAL

Battery extension	Separate cabinet 2 x 60 x (5Ah/7Ah/9Ah)
Transformers	Galvanic insulation (Separate cabinet)
Shutdown	Powershut Plus
Software for diagnostics	Generex PTX
SNMP-Adapter	Connect the UPS to the net
Remote Panel	For indications about UPS status at distance

UPS MIZAR 10 – 15 KVA

TYPE KVA	10	15
Power KVA	10	15
Power factor	Cos φ 0,8	Cos φ 0,8
INPUT		
N° of phases	3 Ph+N 1Ph+N	3 Ph+N 1Ph+N
Nominal input voltage	3ph + N 380/400/415 VAC ±10% 1ph + N 220/230/240 VAC ±10%	
Nominal voltage (reserve line)	3ph + N	380/400/415 VAC ±20%
	1ph + N	220/230/240 VAC ±20%
Nominal Frequency	50/60 Hz	
Admitted variation	40/70 Hz	
Max current absorbed (Vin = -20% 400V)	20A	20A
Cos φ	1	1
Power factor		
Input distortion	<3%	<3%
Soft start	20 seconds	
Max battery recharge current	7	2.25
OUTPUT		
Number of phases	3 Ph+N 1Ph+N	
Nominal output voltage	3ph + N 380/400/415 VAC 1ph + N 220/230/240 VAC	
Nominal output current (A) (400V nom.)	15	22
Output voltage static variation	±1% (UPS Class 1 CEI/IEC 62040-3 par 5.3.1)	
Output voltage dynamic variation (0-100% load)	±5% (UPS Class 1 CEI/IEC 62040-3 par 5.3.1)	
Output frequency	50/60 Hz	
Tolerance of mains voltage synchronization	±1% / ±2% / ±5% / ±10%	
Max Slew Rate with mains present	± 1 Hz per sec	
Output frequency accuracy with internal electric oscillator	± 0,005 Hz	
Output wave form	Sinus wave (UPS Class 1 CEI/IEC 62040-3 par 5.3.1.2)	
Output THD with linear load	<3%	<3%
Output THD with non linear load	UPS Class 1 (CEI/IEC 62040-3 par 6.3.8.1)	
Efficiency according to the load	Diagram on page 10	
Total max losses (W) B.Ch MAX current	533	834
No load consumption (W)	300	300
Admitted Overload	OVRD <125% Pn 10min OVRD >125% Pn 5sec.	

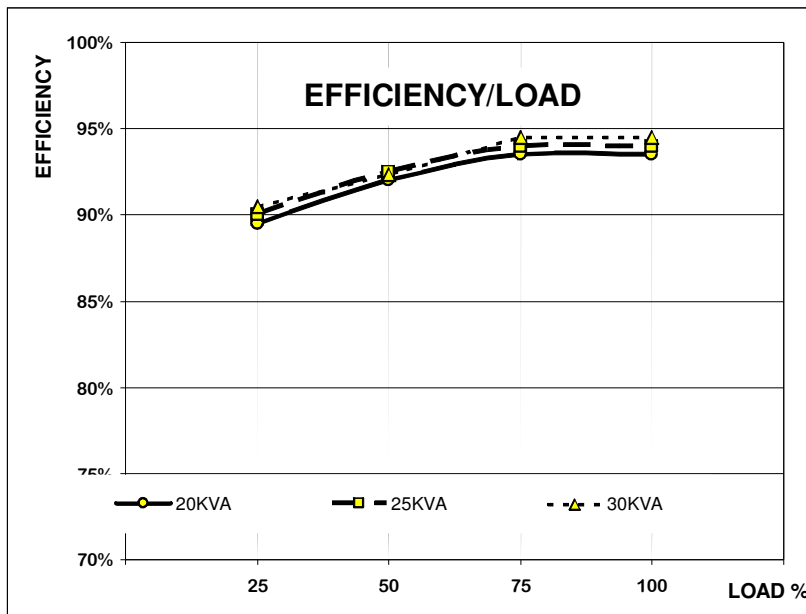
UPS MIZAR 10 – 15 KVA

Type KVA	10	15
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Bypass

Nominal voltage	3ph + N	380/400/415 VAC	±20%
	1ph + N	220/230/240 VAC	±20%
Voltage tolerance		±10%	
Frequency		50/60 Hz	
Admitted current overload		10 I _n per 100 ms.	
Commutation times (max)			
Inverter-Bypass		<1ms	
Bypass – Inverter and automatic return		<1ms	
Overload / Failure		<5ms	
By pass manual		According to the rotary switch	

Efficiency / Load Diagram



Normal mode configuration

UPS CONFIGURATIONS

All the sizes are available in the following configurations :

- Single phase input / single phase output
- Three phases input / single phase output
- Three phases input / three phases output
- Stand alone
- Hot stand-by
- Parallel mode or power parallel

The parallel configuration is type bypass distributed.

It is possible to have maximum n°8 unit in parallel.

The communications between the unit of the parallel system is ring type by optical fibres.

UPS USER INTERFACE

LCD display 4 rows x 20 characters and 4 functions buttons + local EPO

The display is divided in the following 6 menus :

MENU	N°	NOTE
UPS Status and alarms	1	Default menu
Measurements	2	It show all the measure of the UPS
Command UPS	3	ON-OFF inverter, switching load, battery test
Panel setup	4	Date-Time setting, battery test setting display languages setting
Historical events	5	It store the last 1024 events happens with date and time
Service Mode	6	Only for service dept.

Measures:

- *Input mains voltages*
- *Output voltages*
- *Output frequency*
- *Battery voltage*
- *Battery autonomy*
- *Input currents*
- *Output currents*
- *Output power kVA*
- *Battery current (with sign)*
- *Cooling system temperature*

UPS REMOTE PANEL

The signals transferred are the following :

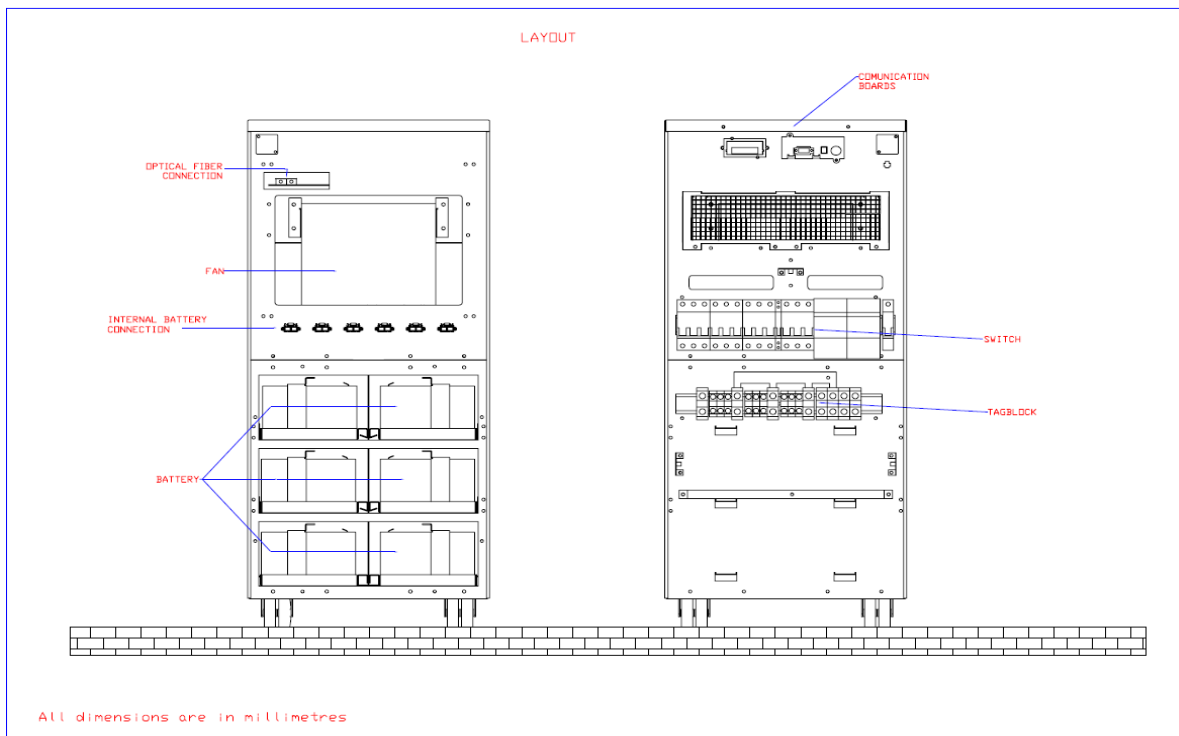
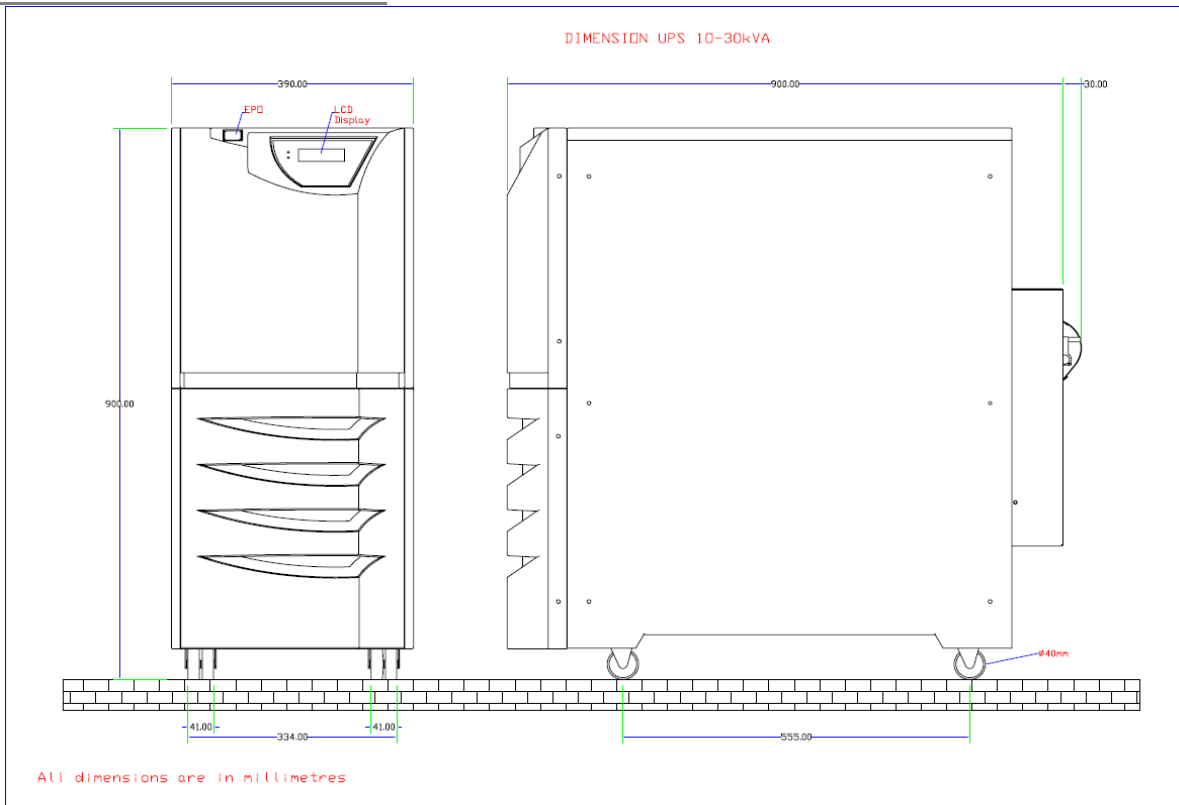
- *Inverter Run*
- *On automatic Bypass*
- *Mains Present*
- *Battery Low*

Serial Interface:

CS121 SNMP ADAPTER per il collegamento in rete dell'UPS.

RS 232 port to be connected to a local PC, which has to be equipped with UPSMAN software.

DIMENSIONS AND POSITIONING



DIMENSIONS AND POSITIONING

