

# ROTABLOC® RBT

SERIES

**400-2000 kVA**

DYNAMIC UPS



DATA CENTER



MEDICAL



TRANSPORT



INDUSTRY



EMERGENCY



UPS ROTARY  
TYPE



POWER FACTOR



SERVICE



## HIGHLIGHTS

- Total Power Failure Protection
- Outstanding Voltage Conditioning
- Unrivald Lowest Total Cost of Ownership
- Electrical Coupling with Existing or New Genset

## Robust Rotary Technology

- The RBT system consists of a standard synchronous generator with no special windings and a simple steel flywheel. The low speed shaft extends bearing life and reduces maintenance.
- The ROTABLOC® machine is very robust as critical functions do not use fragile components such as power electronics, power capacitors, electro-chemical batteries, active magnetic bearings, electro-mechanical or mechanical friction clutches.

## CERTIFICATES



**POWER**  
FORLIFE

**MAKELSON®**  
Uninterruptible Power Supplies

## Standard Features

- Input / Output Power Measurement
- Fully Automatic Operation
- Voltage-free Interface Signals
- Automatic By-pass

## Options

- Automatic Lubrication System
- Plug & Run Parallel Working
- Supervision Software
- Containerized Solution
- Bearing Monitoring
- Customized Switchgear (Form 4, NEMA)
- Soundproof Enclosure
- Tropical Conditions

## Green Technology

Our highly efficient UPS supports your aims to minimize your environmental impact and mitigate the effects of rising energy costs in the future. Our ROTABLOC® design, almost all steel and copper, ensures that it is over 99.97% recyclable.

- No batteries - no need for expensive replacement cycle / no costly disposal of hazardous materials.
- No air conditioning required - providing a/c for battery rooms is a significant cost and impacts the environment.
- Dynamic Autonomy Control (DAC): Automatic speed adaptation for optimum efficiency at partial load with FULL critical load protection.
- 91% of all voltage interruptions last less than 1 second (European urban locations) the RBT protects the load without generator starts\*.

\*This is configurable to maximize RBT power output or compensate for short interruptions.

### ROTABLOC® RBT Range

TYPE		POWER	
		kVA	kW
50 Hz or 60 Hz			
RBT-400	50/60	400	320
RBT-500	50/60	500	400
RBT-500 HP (PF:1)	50/60	500	500
RBT-630	50/60	630	504
RBT-800	50/60	800	640
RBT-1000	50/60	1000	800
RBT-1250 TW	50/60	1250	1000
RBT-1600 TW	50/60	1600	1280
RBT-1750 TW	50/60	1750	1400
RBT-2000 TW	50/60	2000	1600

## Normal Operation

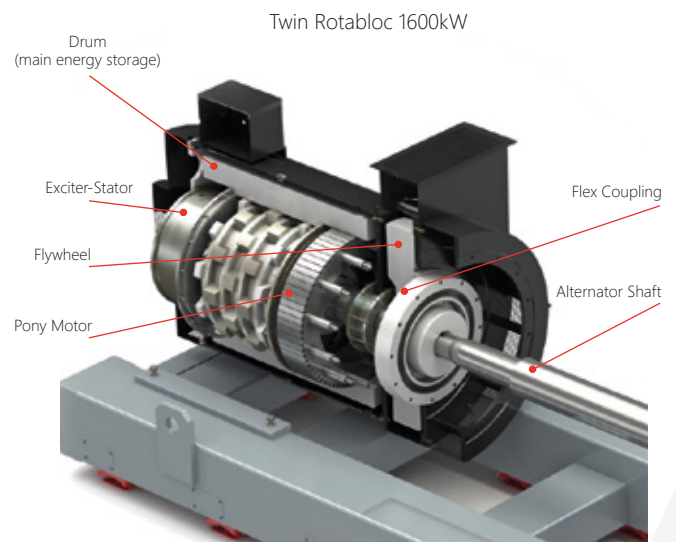
- In normal operation the RBT protects the electrical load from power quality problems eliminating harmonics, flicker, voltage spikes and sags. This power quality protection prevents wear on your facilities infrastructure – including damage to motors and pumps, and reduces the maintenance downtime necessary to repair or replace such assets. These issues can be over 95% of power problems faced by your facility each year.

## Mains Failure

- During mains failure the RBT protects the load and maintains the power supply at the precise voltage and frequency by supplying energy to the alternator from the Accumulator without need for electronic power conversion.
- Whilst these 'blackout' events are fewer in number, for organizations where power is always required during operation, interruption of mains electricity leading to loss of production (including restart time), wastage of part processed materials and a dented reputation could be very costly.

## Extended Mains Failure

- Under extended mains failure, the load is automatically transferred to your chosen back-up energy source, usually a diesel genset. Once a stable mains supply returns the RBT will safely transfer the load back and be ready to act again.



## Simply Reliable Solutions to Power Quality Issues

Data Centres, Banking, Telecommunications, Airports, Healthcare, Industrial, Manufacturing, Government, Defense, Water, Treatment, Alternative Energy, Stadiums, Research, in fact all installations where continuous running is required, demand a filtered, continuous and sustainable power supply solution.

Features	Benefits
Outstanding voltage conditioning	<ul style="list-style-type: none"> <li>Protects equipment against mains voltage fluctuations, sags and microcuts</li> <li>Naturally compensates power factor without need for PFC equipment</li> <li>Filters load harmonics and voltage harmonics from mains</li> <li>Eliminates flicker</li> </ul>
Total power failure protection	<ul style="list-style-type: none"> <li>Sustainable continuous power supply</li> <li>Ride-through mode covers 90% of mains failures without genset start</li> <li>Flexible DRUPS solution when configured with standard genset</li> </ul>
Robust rotary technology	<ul style="list-style-type: none"> <li>Conventional electrical / mechanical machine</li> <li>High reliability</li> <li>Low cost maintenance</li> </ul>
High efficiency	<ul style="list-style-type: none"> <li>Energy saving</li> <li>Unrivaled low Total Cost of Ownership (TCO)</li> <li>Green technology</li> </ul>
High short-circuit power	<ul style="list-style-type: none"> <li>Fast fault-clearing capacity ensuring protections selectivity</li> <li>Suitable for high peak currents (motors and mechanical loads)</li> <li>Suitable for high crest factors (non-linear loads)</li> </ul>
Modular and resilient "Plug & Run" paralleling	<ul style="list-style-type: none"> <li>Flexibility from day one</li> <li>Scalability for future extension</li> <li>High resilience thanks to full redundancy without single point of failure</li> <li>Ideal for Tier III / Tier IV applications (Uptime Institute)</li> </ul>
Easy interfacing	<ul style="list-style-type: none"> <li>User-friendly digital display (HMI)</li> <li>Basic interface via simple contacts</li> <li>Powerful communication features : <ul style="list-style-type: none"> <li>SCADA / BMS interface via MODBUS RTU/TCP</li> <li>Internet access</li> <li>PC supervision</li> <li>Remote monitoring, alarming and paging features</li> </ul> </li> </ul>
Low maintenance	<ul style="list-style-type: none"> <li>Simple maintenance operations</li> <li>Unaffected up-time: no need to stop UPS during maintenance</li> <li>Automatic Lubrication System for maximum reliability and lowest TCO</li> </ul>

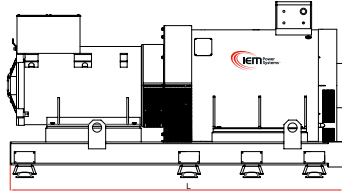
## Medium Voltage

- Recognition of the advantages of Medium Voltage (MV) systems in facilities with high power requirements is growing. The benefits include: ease of power distribution, lower TCO, improved safety, reduced maintenance / greater reliability, enhanced flexibility in current and future power infrastructure and improved green credentials with lower embodied energy and lower energy usage.
- Makelsan can provide DRUPS systems that will support MV in your facility, delivering high quality, continuous MV power to your operation. We are experts in Medium Voltage and can utilize Vesta-AR arc-resistant metal-clad switchgear, is the leading MV solution for distributing power safely and efficiently throughout your building.

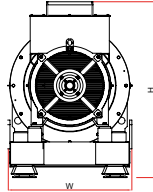


## DETAILS

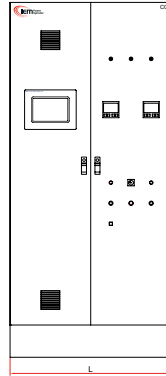
### ROTABLOC® RBT SERIES 400 kVA



L x W x H 2895 x 1080 x 1529 mm  
Net weight 7850 kg  
Protection IP23

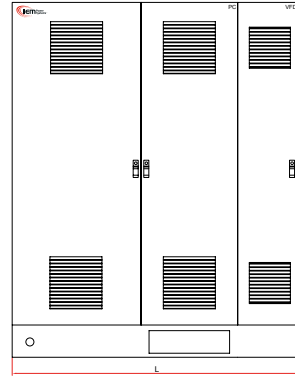


Control Cabinet

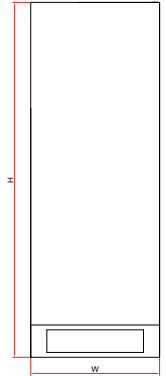


L x W x H 1000 x 500 x 2200 mm  
Net weight 305 kg  
Protection IP43

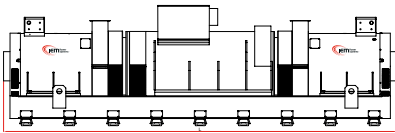
Power Cabinet



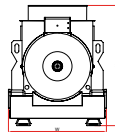
L x W x H 1800 x 800 x 2200 mm  
Net weight 1575 kg  
Protection IP43



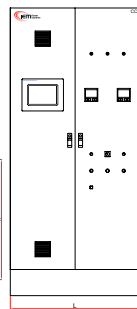
### ROTABLOC® RBT SERIES 2000 kVA



L x W x H 6058 x 1510 x 1852 mm  
Net weight 22340 kg  
Protection IP23



Control Cabinet

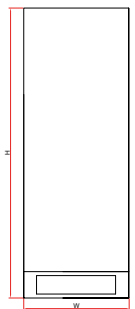


L x W x H 1000 x 500 x 2200 mm  
Net weight 305 kg  
Protection IP43

Power Cabinet



L x W x H 4200 x 800 x 2200 mm  
Net weight 4590 kg  
Protection IP43



## Performances and Characteristics

MODEL	RBT-400	RBT-500	RBT-500HP	RBT-630	RBT-800	RBT-1000	RBT-1250TW	RBT-1600TW	RBT-1750TW	RBT-2000TW
Voltage	3 x 400 / 480 V									
Frequency	50 / 60 Hz									
Nominal Phase Current	577 A	722 A	722 A	909 A	1155 A	1443 A	1804 A	2309 A	2526 A	2887 A
Protection by Upstream Breaker	630 A	800 A	1000 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	3200 A
Nominal Apparent Power	400 kVA	500 kVA	500 kVA	630 kVA	800 kVA	1000 kVA	1250 kVA	1600 kVA	1750 kVA	2000 kVA
Nominal Active Power	320 kW	400 kW	500 kW	504 kW	640 kW	800 kW	1000 kW	1280 kW	1400 kW	1600 kW
Nominal cos	0.9 Leading to 0.8 Lagging									
Efficiency at Nominal Load	95.3%	95.8%	96.5%	95.5%	96.4%	96.8%	95.5%	96%	95.5%	96%
Autonomy (Adjustable)	12s				11.3s	10s	12s	11.3s	11.4s	10s
Maximum Energy Storage	7.2 MJ					8.0 MJ	14.4 MJ	14.4 MJ	16 MJ	
Ambient Temperature	0-40°C / 32-104°C									
Max Power Dissipation for Ventilation Design	25 kW	30 kW	30 kW	35 kW	40 kW	50 kW	70 kW	80 kW	90 kW	100 kW
Altitude (Without de-rating)	≤1000 m / 3280 ft									
Humidity	≤90%									