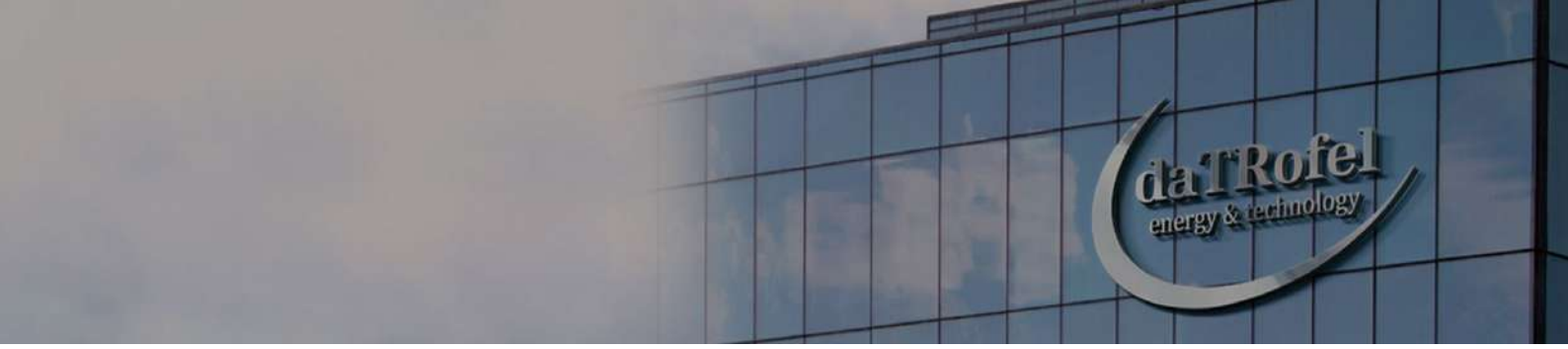
PRODUCT CATALOGUE

daTRofel
energy & technology

www.datrofel.com.tr

POWER
WITH YOU

index



WHY CHOOSE DATROFEL?

Our in-house engineering department provides industrial R&D projects, product development, project designing, consultancy, and technical support, taking excellent care of the quality of their service according to the customer's requirements.

We have a technical service network in various regions worldwide and provide 24/7 remote service for our devices.
To achieve top quality, all the processes, starting from the order until the delivery phase, are supported by our experienced operation team.

All the products powered by DATROFEL comply with ISO 9001 and ISO 14001, EU directives for performance & safety, and even better performances than the EU Code of Conduct on Energy Efficiency standards; all the raw materials used in the production are supplied by the suppliers holding internationally recognized certificates and standards.

POWER
WITH YOU

ABOUT US

DATROFEL Energy & Technology is an energy solutions provider with a wide range of expertise with 22 years of experience in the energy field.

DATROFEL is centrally located in Izmir, Turkey, and provides high-quality Generator Systems, UPS, Voltage regulators, Renewable Energy, and batteries for the industrial, residential, and commercial sectors.

Our energy solutions are designed and manufactured to the greatest extent for protecting from surges and power disturbances with easy installation and energy-saving technology to meet the customer requirements according to their working surroundings.

DATA CENTER | MEDICAL | TRANSPORT | INDUSTRY | EMERGENCY

e-CHARM
SERIES

10-1000 kVA 3:3 PHASE

10-30 kVA 3:1 PHASE

ONLINE UPS

3 LEVEL UPS

96% Efficiency

VFI TYPE — UPS ONLINE

TOWER

PF= 0.9 — POWER FACTOR

Service — SERVICE

HIGHLIGHTS

- True Three Level Rectifier and Inverter Technology
- Ultra High Energy Efficiency

Innovative 3 Level Technology

• e-CHARM Series with Innovative 3 Level Technology is a true on-line double conversion, three-phase UPS system that provides one of the highest level energy efficiencies in the industry.

• Three level inverter & rectifier design e-CHARM Series brings the newest power conversion technology and delivers efficiency up to 96% at 50-75% load operation which is the most common operating range.

BUREAU VERITAS Certification — The e-CHARM Series is attested by Bureau Veritas with regard to performance (EN 62040-3)

Higher Level of Efficiency than the EU CoC for AC UPS

CE TSE TSE-HYB

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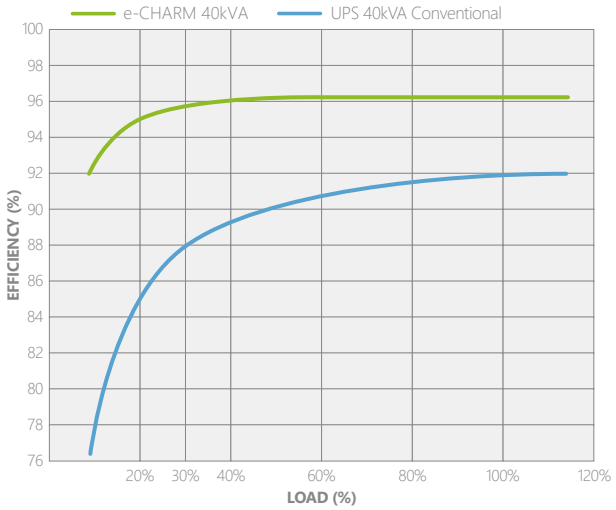
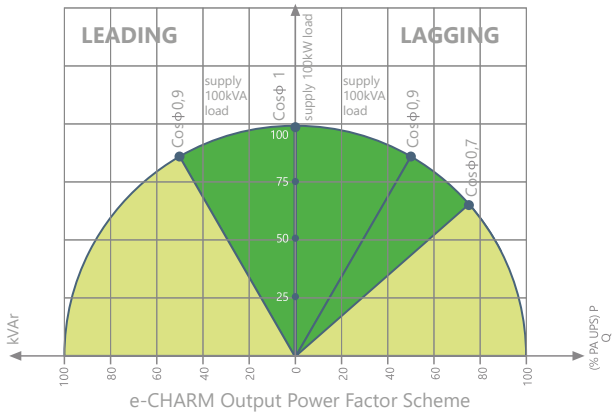
High Efficiency & Low Total Cost of Ownership

- Less energy consumption to supply the loads thanks to high efficiency up to 96%.
- Reduced energy loss.
- Reduced electricity usage and air conditioning requirements.
- Reduction in operating cost of UPS.
- IGBT based power factor correction technology provides input power factor close to 1 (≥ 0,99). The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.
- Low input current total harmonic distortion (THDi) less than 3% helps to avoid the disturbance and expensive harmonic filters.
- Small footprint and easy maintenance.



High Output Power Factor 1

- Output power factor of 1 (kVA=kW) rate provides up to 25% more active power than a traditional UPS.
- Suitable for modern power supply application with unit or capacitive power factor (e.g. new servers generation).
- No reduction in active power from 0,9 leading to 0,9 lagging.



e-CHARM Output Power Factor Scheme

Maximum Availability

- Parallel configuration up to 8 units per redundancy (N+1) and power increase.
- Loop connection helps the UPS system to continue the operation when the connection cable is inturrupted.

Standard Electrical Features

- Parallel-Redundant (N+X) Systems
- Co-Aging
- Dual Input
- Common Battery
- Backfeed Protection
- Cold Start (Optional)
- Advanced Battery Management
- Short Circuit and Overload Protection
- Parallel Ready
- Redundant Power Supply
- Power Walk-in for Progressive Rectifier Start-up when the Mains is Restored
- Battery Temperature Sensor
- Static and Manual Bypass Operation

Advanced Communication Features

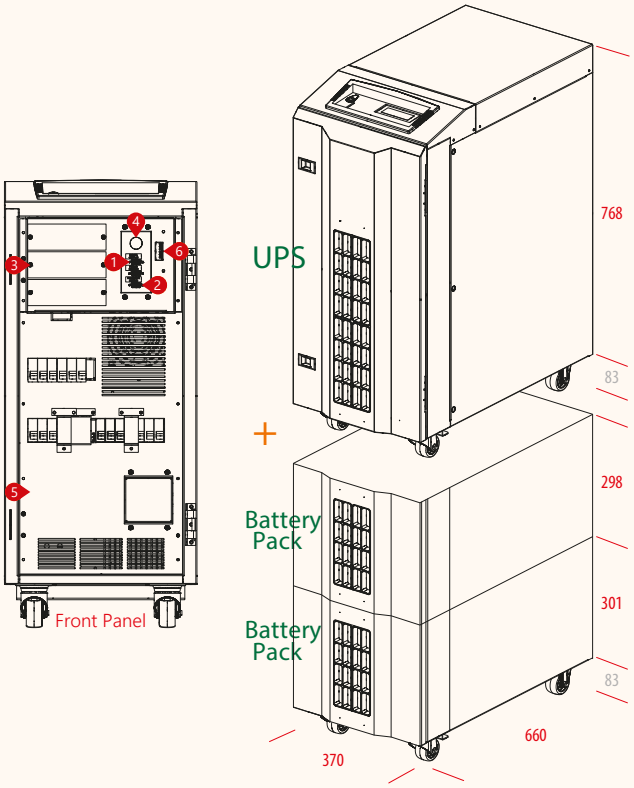
- 1500 Real Time Event Log with Detailed Parameters
- User Friendly Multilingual 320x240 Graphic Display Provides Operation Information
- Monitoring and Shutdown Software
- RS232 Serial and RS485 Ports
- 2 Communication Slots
- ModBUS RTU / ModBUS TCP (Optional)
- Remote Emergency Power Off (Optional)
- Remote Display Panel (Optional)
- Dry Contact (Optional)
- SNMP (Optional)
- ProfiBUS (Optional)

Flexibility

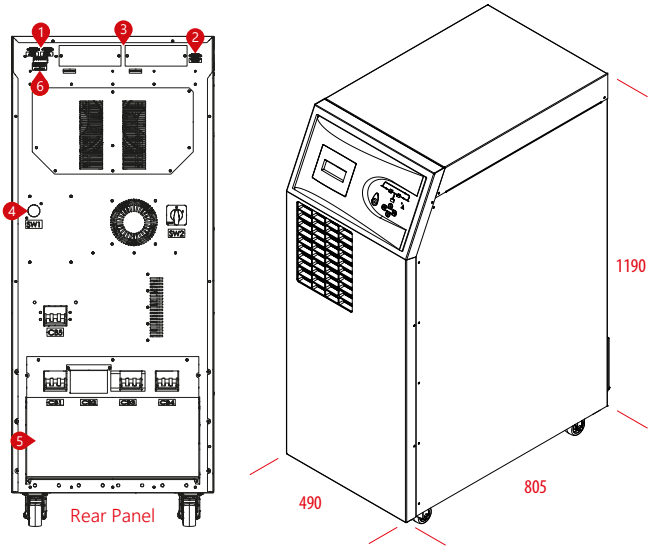
- Temperature sensor for external battery cabinets for extended runtimes.
- External battery cabinets for different sizes of batteries to provide extended runtimes.
- Different sizes of 10-40kVA cabinets for larger capacity of internal batteries when long autonomy times are required.
- 3/1 Phase version is available for 10-30kVA power ratings
- Frequency converter mode.
- Isolation transformers to vary neutral connectivity in the event of separate power sources or for galvanic isolation between input and output.
- Compatible version with EN 50171 for supplying power to emergency lighting systems.

DETAILS

e-CHARM SERIES 10-15-20 kVA

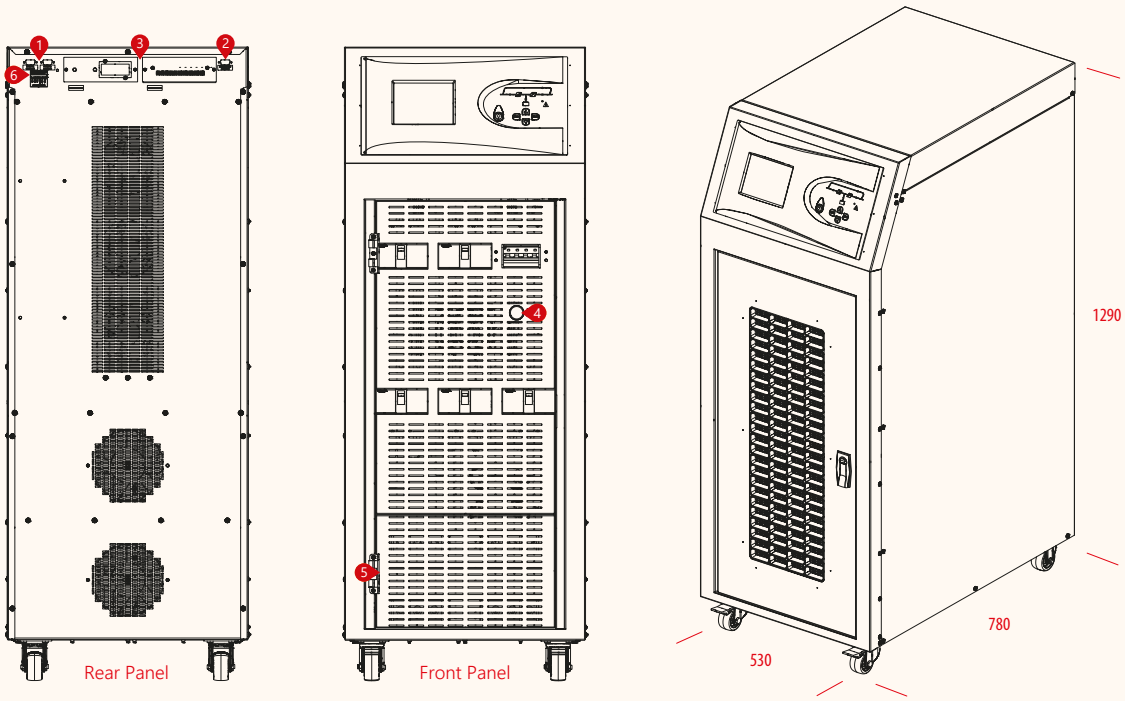


e-CHARM SERIES 10-15-20-30-40-60 kVA



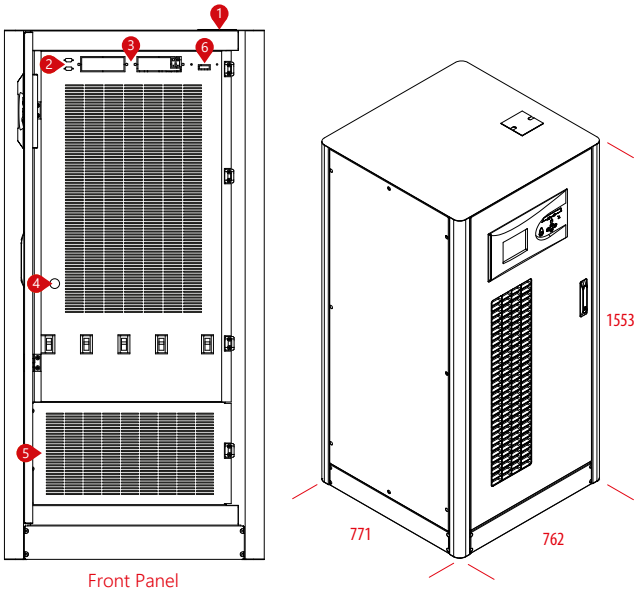
1. Parallel Port Terminal
2. RS232 Terminal
3. Optional Card Slots
4. DC Bus Ramping Up Button
5. Connection Terminal
6. External Battery Temperature Sensor Terminal

e-CHARM SERIES 80-100-120 kVA



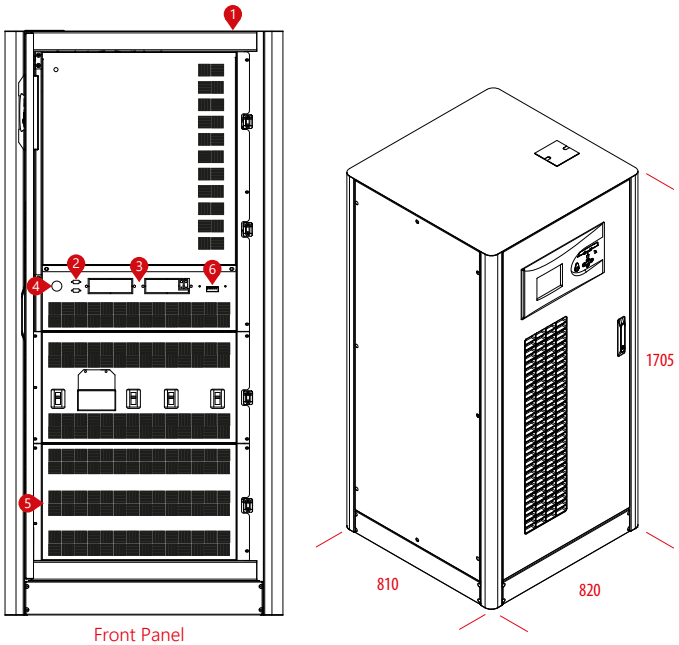
DETAILS

e-CHARM SERIES 80 kVA



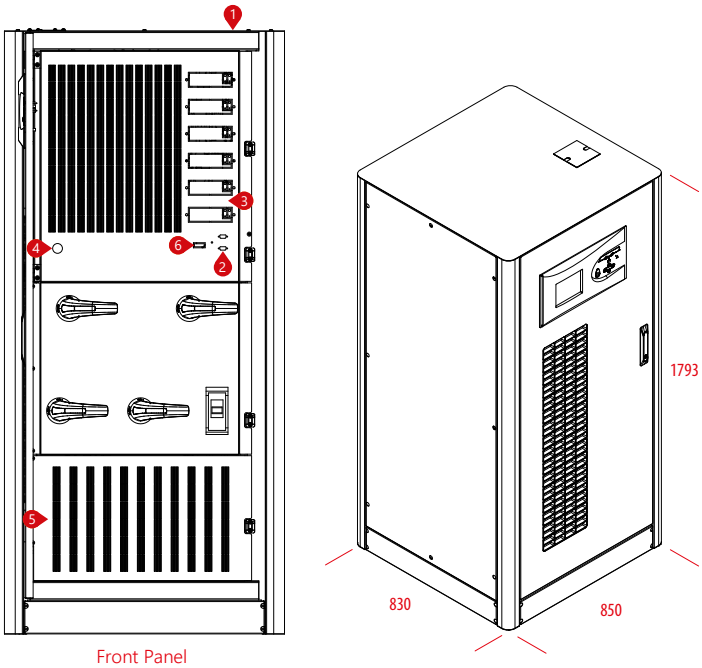
Front Panel

e-CHARM SERIES 100-120 kVA



Front Panel

e-CHARM SERIES 160-200-250 kVA

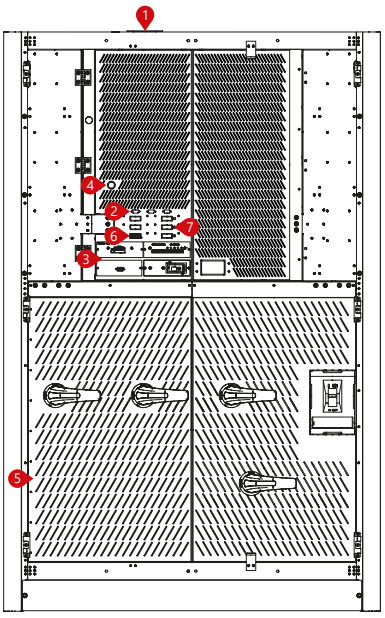


Front Panel

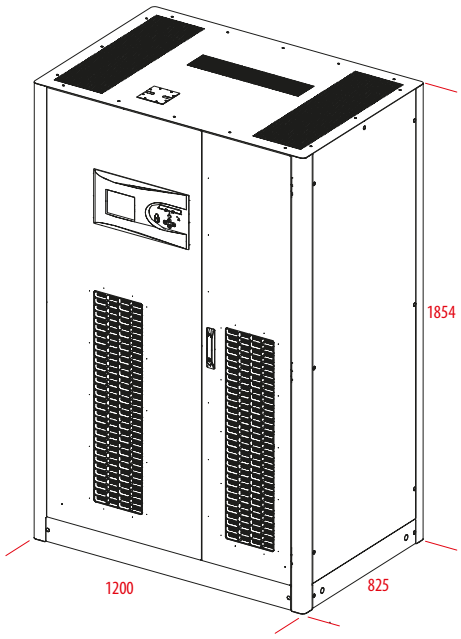
1. Parallel Port Terminal
2. RS232 Terminal
3. Optional Card Slots
4. DC Bus Ramping Up Button
5. Connection Terminal
6. External Battery Temperature Sensor Terminal

DETAILS

e-CHARM SERIES 300-400-50 0 kVA

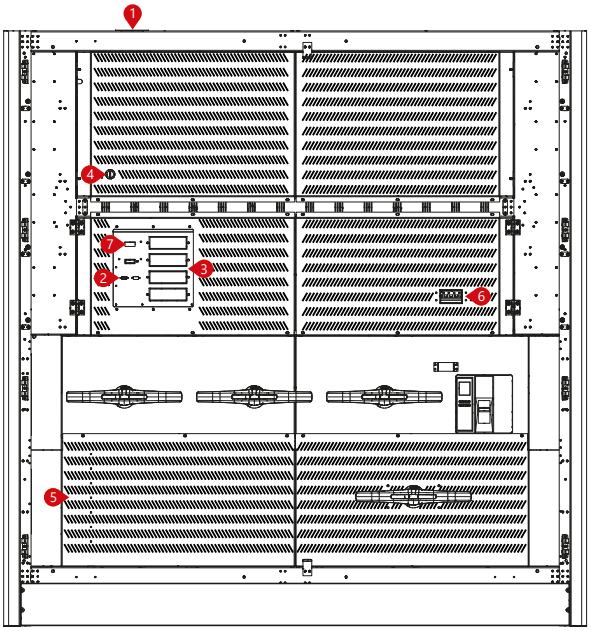


Front Panel

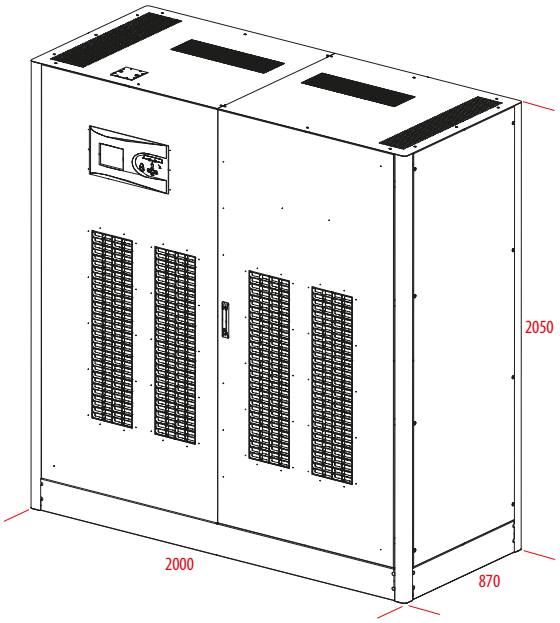


1. Parallel Port Terminal
2. RS232 Terminal
3. Optional Card Slots
4. DC Bus Ramping Up Button
5. Connection Terminal
6. External Battery Temperature Sensor Terminal
7. Optional Slot

e-CHARM SERIES 600-80 0-1000 kVA



Front Panel



MODEL															
Capacity	10kVA	15kVA	20kVA	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	80kVA	100kVA	120kVA
Power Watt	9kW	13.5kW	18kW	9kW	13.5kW	18kW	27kW	36kW	54kW	72kW	90kW	108kW	72kW	90kW	108kW
INPUT															
Nominal Voltage	380/400/415 VAC 3 P+N (Optional 220/380 VAC -37% +22% 3 P+N+PE)														
Voltage Tolerance	-20% +15%														
Frequency Tolerance	50 / 60 Hz ±10% (Selectable)														
Power Factor	>0.99														
Total Harmonic Distortion (THDi)	<3%														
OUTPUT															
Power Factor	0.9 (1 Optional)														
Nominal Voltage	380/400/415 VAC 3 P+N														
Voltage Tolerance	Statik ±1, Dynamic ±3														
Frequency Tolerance	50 / 60 Hz ±0,01% (Battery Mode)														
Output THD	Linear Load <1% / Non-Linear Load <3%														
Crest Factor	3:1														
Overload Capacity*	At 125% Load 10min, At 150% Load 1min														
Efficiency (Online Mode)	96%														
Efficiency (Eco Mode)	99%														
BYPASS															
Nominal Voltage	380/400/415 VAC 3 P+N														
Voltage Tolerance	%15 (Configurable from 10% to 30%)														
Frequency Tolerance	±5 (Selectable)														
BATTERY															
Type	VRLA / GEL														
Quantity (12V DC VRLA)	60														
Charge Capacity	12,5% of Active Power (Nominal 0,1 C10, Adjustable)														
Recharge Time	6-8 hours														
Internal Battery	62 x 7Ah or 9Ah			60 x 7Ah or 9Ah			External Battery			External Battery			External Battery		
ENVIRONMENTAL															
Operating Temperature	For UPS 0°C/+40°C For Battery +15°C/+25°C														
Storage Temperature	For UPS -15°C/+45°C For Battery 0°C/+30°C														
Protection Class	IP20														
Humidity	0-95% (Without Condensation)														
Altitude	<1000m: Correction Factor 1, <2000m: Correction Factor >0.92, <3000m: Correction Factor >0.84														
Noise Level	<53dBA			<53dBA		<55dBA		<60dBA		<65dBA			<65dBA		
COMMUNICATION															
Communication Port	RS232 Standart, RS485 and SNMP Adapter Option														
STANDARDS															
Quality	ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB														
Performance	EN62040-3 (VFI-SS-111, Bureau Veritas Certified)														
EMC/LVD	EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Acredited Test Report														
DIMENSIONS & WEIGHT	10kVA	15kVA	20kVA	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	80kVA	100kVA	120kVA
Cabinet Dimensions (mm) Width	370			490						530			763	810	
Cabinet Dimensions (mm) Depth	660			805						780			771	820	
Cabinet Dimensions (mm) Height	850			1190						1290			1555	1705	
Net Weight (kg)	85	85	85	125	126	131	145	173	323				331	353	368
Packaging Dimensions (mm) Width	500			600						650			900	900	
Packaging Dimensions (mm) Depth	760			900						900			970	970	
Packaging Dimensions (mm) Height	1000			1400						1400			2040	2040	
Gross Weight (kg)	105	105	105	145	146	151	166	193	353				361	383	398

* under certain conditions.
3 Phase in / 1 Phase Out Version is Available. (10 to 30kVA)

MODEL										
Capacity		160kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA
Power Watt		144kW	180kW	225kW	270kW	360kW	450kW	540kW	720kW	900kW
INPUT										
Nominal Voltage		380/400/415 VAC 3 P+N (Optional 220/380 VAC -37% +22% 3 P+N+PE)								
Voltage Tolerance		-20% +15%								
Frequency Tolerance		50 / 60 Hz ±10% (Selectable)								
Power Factor		>0.99								
Total Harmonic Distortion (THDi)		<3%								
OUTPUT										
Power Factor		0.9 (1 Optional)								
Nominal Voltage		380/400/415 VAC 3 P+N								
Voltage Tolerance		Statik ±1, Dynamic ±3								
Frequency Tolerance		50 / 60 Hz ±0,01% (Battery Mode)								
Output THD		Linear Load <1% / Non-Linear Load <3%								
Crest Factor		3:1								
Overload Capacity*		At 125% Load 10min, At 150% Load 1min								
Efficiency (Online Mode)		96%								
Efficiency (Eco Mode)		99%								
BYPASS										
Nominal Voltage		380/400/415 VAC 3 P+N								
Voltage Tolerance		15% (Configurable from 10% to 30%)								
Frequency Tolerance		±5 (Selectable)								
BATTERY										
Type		VRLA / GEL								
Quantity (12V DC VRLA)		60								
Charge Capacity		12,5% of Active Power (Nominal 0,1 C10, Adjustable)								
Recharge Time		6-8 hours								
Internal Battery		External Battery								
ENVIRONMENTAL										
Operating Temperature		For UPS 0°C/+40°C For Battery +15°C/+25°C								
Storage Temperature		For UPS -15°C/+45°C For Battery 0°C/+30°C								
Protection Class		IP20								
Humidity		0-95% (Without Condensation)								
Altitude		<1000m: Correction Factor 1, <2000m: Correction Factor >0.92, <3000m: Correction Factor >0.84								
Noise Level		<72dBA					<74dBA			<75dBA
COMMUNICATION										
Communication Port		RS232 Standart, RS485 and SNMP Adapter Option								
STANDARDS										
Quality		ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB								
Performance		EN62040-3 (VFI-SS-111, Bureau Veritas Certified)								
EMC/LVD		EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Acredited Test Report								
DIMENSIONS & WEIGHT		**160**kVA	**200**kVA	**250**kVA	**300**kVA	**400**kVA	**500**kVA	**600**kVA	**800**kVA	**1000**kVA
Cabinet Dimensions (mm)	Width	830			1200			2000		
	Depth	870			825			870		
	Height	1800			1854			2050		
Net Weight (kg)		475	490	553	830	840	850	1510	1740	1740
Packaging Dimensions (mm)	Width	900			1370			2100		
	Depth	970			845			950		
	Height	2040			2040			2250		
Gross Weight (kg)		505	520	583	870	880	890	1590	1820	1820

* under certain conditions.
3 Phase in / 1 Phase Out Version is Available. (10 to 30kVA)

T3 SOLID

SERIES

10-60 kVA

3:3 PHASE

ONLINE UPS

DATA CENTER | MEDICAL | TRANSPORT | INDUSTRY | EMERGENCY

3 LEVEL UPS

VFI TYPE — UPS ONLINE

TOWER

PF= 1.0 — POWER FACTOR

Service — SERVICE

HIGHLIGHTS

- True Three Level Rectifier and Inverter Technology
- Ultra High Output Galvanic Isolation Transformer Embedded
- Robust and Reliable Design

Highest Reliability with Embedded Isolation Transformer

• T3 SOLID series is a true VFI on-line double conversion, three-phase UPS system with innovative 3 level technology and engineered to provide high level of energy efficiency and reliable and robust protection for most demanding industrial and medical environments.

• Three level inverter and rectifier technology and with embedded isolation transformer makes T3 SOLID series one of the most reliable systems for data security and other critical applications.

BUREAU VERITAS Certification

The T3 SOLID Series is attested by Bureau Veritas with regard to performance (EN 62040-3)

CE TSE TSE-HYB

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Compact Design

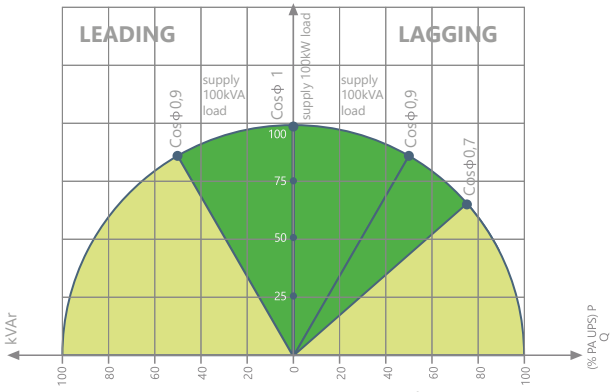
- Designed with an Integrated transformer ensuring galvanic isolation on the output for ultimate safe installation.
- Easy to install and service and can be integrated into harsh commercial and industrial environments.
- Compact footprint and matching battery cabinets.

Low Total Cost of Ownership

- Less energy consumption to supply the loads thanks to high efficiency.
- Reduced energy loss.
- Reduced electricity usage and air conditioning requirements.
- Reduction in operating cost of UPS.
- IGBT based power factor correction technology provides input power factor close to 1 (≥ 0,99). The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.
- Low input current total harmonic distortion (THDi) less than%3 helps to avoid the disturbance and expensive harmonic filters.
- Small footprint and easy maintenance

High Output Power Factor 1

- Output power factor of 1 (kVA=kW) rate provides up to 25% more active power than a traditional UPS.
- Suitable for modern power supply application with unit or capacitive power factor (e.g. new servers generation).
- No reduction in active power from 0,9 leading to 0,9 lagging.



T3 SOLID Output Power Factor Scheme

Maximum Availability

- Parallel configuration up to 8 units per redundancy (N+1) and power increase.
- Loop connection helps the UPS system to continue the operation when the connection cable is inturrupted.

Standard Electrical Features

- Parallel-Redundant (N+X) Systems
- Co-Aging
- Output Galvanic Isolation Transformer Embedded
- Dual Input
- Common Battery
- Frontal Access for Input/Output Cabling
- Backfeed Protection
- Cold Start (Optional)
- Advanced Battery Management
- Short Circuit and Overload Protection
- Parallel Ready
  Redundant Power Supply
- Power Walk-in for Progressive Rectifier Start-up when the
- Mains is Restored
  Battery Temperature Sensor
  Static & Manual Bypass Operation

Advanced Communication Features

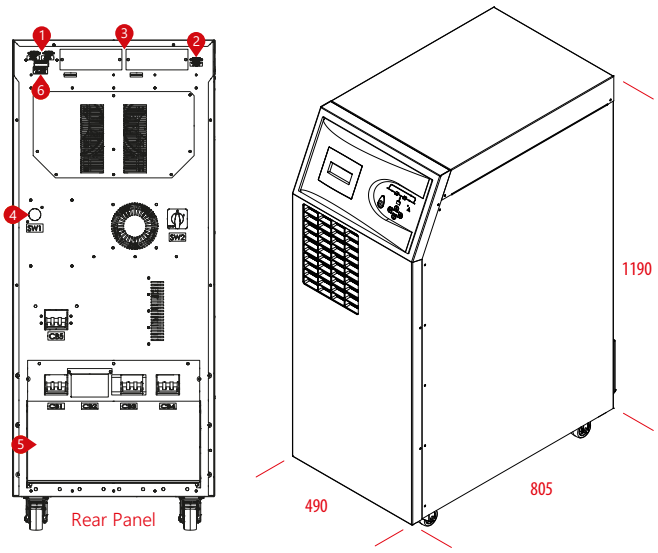
- 1500 Real Time Event Log with Detailed Parameters
- User Friendly Multilingual 320x240 Graphic Display Provides Operation Information
- Monitoring and Shutdown Software
- RS232 Serial and RS485 Ports
- 2 Communication Slots
- ModBUS RTU / ModBUS TCP (Optional)
- Remote Emergency Power Off (Optional)
- Remote Display Panel (Optional)
- Dry Contact (Optional)
- SNMP (Optional)
- Profibus (Optional)

Flexibility

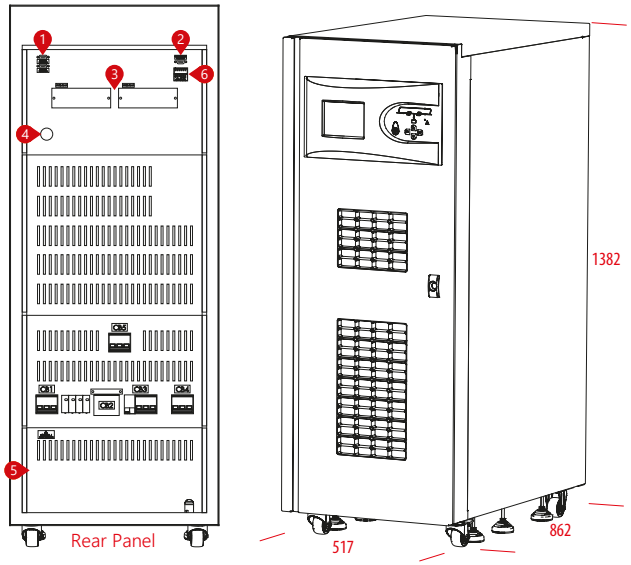
- Optional IP31, IP41, Protection degree for harsh environments.
- Optional tropicalization and anti-corrosion protection for electronic boards.
- Optional temperature sensor for external battery cabinets for extended runtimes.
- External battery cabinets for different sizes of batteries to provide extended runtimes.
- Adaptability to the mains without neutral.

DETAILS

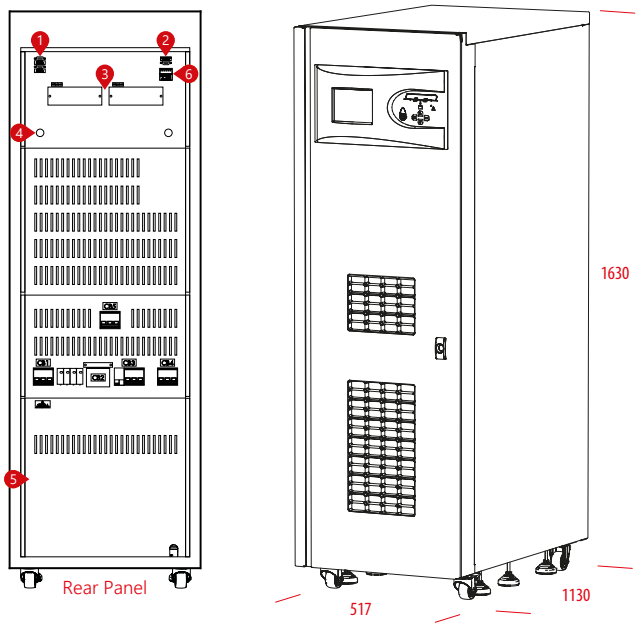
T4 SOLID SERIES 10-15 kVA



T4 SOLID SERIES 20 kVA



T4 SOLID SERIES 30-40-60 kVA



1. Parallel Port Terminal
2. RS232 Terminal
3. Optional Card Slots
4. DC Bus Ramping Up Button
5. Connection Terminal
6. External Battery Temperature Sensor Terminal

MODEL							
Capacity		10kVA	15kVA	20kVA	30kVA	40kVA	60kVA
Power Watt		10kW	15kW	20kW	30kW	40kW	60kW
INPUT							
Voltage Range		380/400/415 VAC 3 Phase +N (Optional 220/380 VAC -37% +22% 3P+N+PE)					
Power Factor		At Full Load >0.99					
Frequency Range		45 - 65 Hz (Selectable)					
Total Harmonic Distortion (THDi)		<3%					
OUTPUT							
Voltage Range		380/400/415 VAC 3 Phase + N					
Voltage Tolerance		Static ±1, Dynamic ±3					
Efficiency		94.5%					
Frequency Tolerance		50Hz / 60Hz ±0,01% (Battery Mode)					
THD (THDv)		Linear Load <2%					
		Non-Linear Load <5%					
Crest Factor (CF)		3:1					
Overload Capacity*		At 125% Load 10min, at 150% Load 1min					
BATTERY							
Quantity (12V DC VRLA)		60					
Charge Capacity		12,5% of Active Power (Nominal 0,1 C10, Adjustable)					
ENVIRONMENTAL							
Operating Temperature		For UPS 0°C/+40°C For Battery +15°C/+25°C					
Storage Temperature		For UPS -15°C/+45°C For Battery 0°C/+30°C					
Protection Class		IP20					
Humidity		0-95% Without Condensation					
Altitude		<1000m, Correction Factor 1. <2000m, Correction Factor >0.92, <3000m; Correction Factor >0.84					
Noise Level		<53 dBA		<55 dBA		<60 dBA	
COMMUNICATION							
Communication Port		RS232 Standart, RS485 and SNMP Adapter Option					
STANDARDS							
Quality		ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB					
Performance		EN62040-3 (VFI-SS-111, Bureau Veritas Certified)					
EMC/LVD		EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Acredited Test Report					
DIMENSIONS & WEIGHT		10kVA	15kVA	20kVA	30kVA	40kVA	60kVA
Cabinet Dimensions (mm)	Width	490		517	517		
	Depth	805		862	1130		
	Height	1190		1382	1630		
Net Weight (kg)		235	260	350	343	452	785
Packaging Dimensions (mm)	Width	600		670	620		
	Depth	900		900	1180		
	Height	1400		1630	1830		
Gross Weight (kg)		260	285	375	403	512	855

* under certain conditions.

T4 SOLID

SERIES

80-400 kVA 3:3 PHASE

ONLINE UPS

DATA CENTER | MEDICAL | TRANSPORT | INDUSTRY | EMERGENCY

VFI TYPE — UPS ONLINE

TOWER

PF= 0.9 — POWER FACTOR

Service — SERVICE

HIGHLIGHTS

- Built In Inverter Transformer for DC-AC Galvanic Protection
- DSP Vector Control at Input and Output
- Innovative Smart IGBT Control
- Programmable Input Power
- Entire Efficiency Control System

Highest Reliability and Robust Protection for Industrial Loads

• T4 SOLID Series is a true VFI on-line double conversion, three-phase UPS system and engineered to provide high level of energy efficiency and reliable and robust protection for most demanding industrial and medical environments.

• DSP Vector Control Technology and Inverter Transformer makes T4 SOLID Series one of the most reliable systems for data security and other critical applications.

BUREAU VERITAS Certification

The T4 SOLID Series is attested by Bureau Veritas with regard to performance (EN 62040-3)

CE TSE TSE-HYB

POWER WITH YOU

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Compact Design

- Designed with an Integrated transformer on the inverter output ensuring galvanic isolation on the output for ultimate safe installation.
- Easy to install and service and can be integrated into harsh commercial and industrial environments.
- Compact footprint and matching battery cabinets.

Low Total Cost of Ownership

- Less energy consumption to supply the loads thanks to high efficiency.
- Reduced energy loss.
- Reduced electricity usage and air conditioning requirements.
- Reduction in operating cost of UPS.
- IGBT based power factor correction technology provides input power factor close to 1 (≥ 0,99). The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.
- Low input current total harmonic distortion (THDi) less than%3 helps to avoid the disturbance and expensive harmonic filters.
- Small footprint and easy maintenance

High Output Power Factor 0.9

- Output power factor of 0.9 rate.
- Suitable for modern power supply application with unit or capacitive power factor (e.g. new servers generation).
- No reduction in active power from 0,9 leading to 0,9 lagging.

Maximum Availability

- Intelligent parallel operation up to 8 units per redundancy (N+X) and power increase.

Standard Electrical Features

- Parallel-Redundant (N+X) Systems
- Co-Aging
- Transformer Based Technology
- Dual Input
- Common Battery
- Frontal Access for Input/Output Cabling
- Backfeed Protection
- Cold Start (Optional)
- Advanced Battery Management
- Short Circuit and Overload Protection
- Parallel Ready
  Redundant Power Supply (Optional)
- Power Walk-in for Progressive Rectifier Start-up when the
- Mains is Restored
  Battery Temperature Sensor
  Static & Manual Bypass Operation

Advanced Communication Features

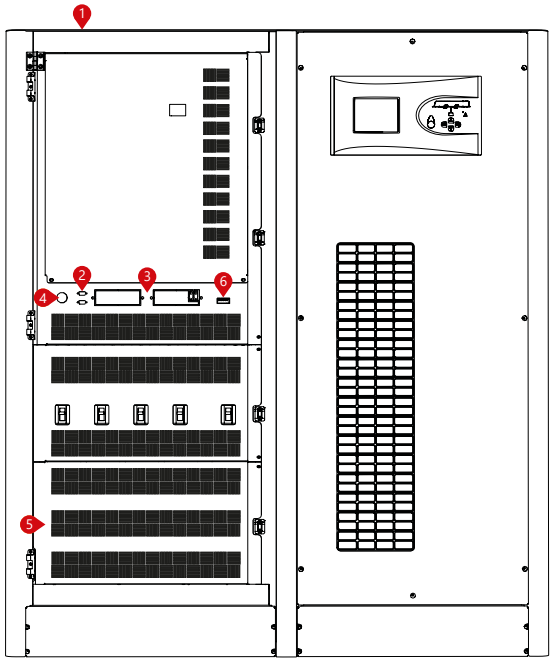
- 1500 Real Time Event Log with Detailed Parameters
- User Friendly Multilingual 320x240 Graphic Display Provides Operation Information
- Monitoring and Shutdown Software
- RS232 Serial and RS485 Ports
- 2 Communication Slots
- ModBUS RTU / ModBUS TCP (Optional)
- Remote Emergency Power Off (Optional)
- Remote Display Panel (Optional)
- Dry Contact (Optional)
- SNMP (Optional)
- Profibus (Optional)

Flexibility

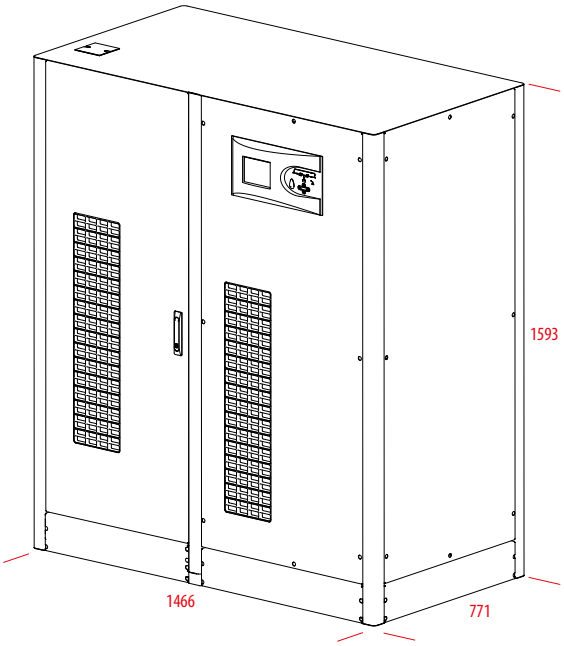
- Optional IP31, IP41, Protection degree for harsh environments.
- Optional tropicalization and anti-corrosion protection for electronic boards.
- Optional temperature sensor for external battery cabinets for extended runtimes.
- External battery cabinets for different sizes of batteries to provide extended runtimes.
- Adaptability to the mains without neutral.

DETAILS

T4 SOLID SERIES 80 kVA

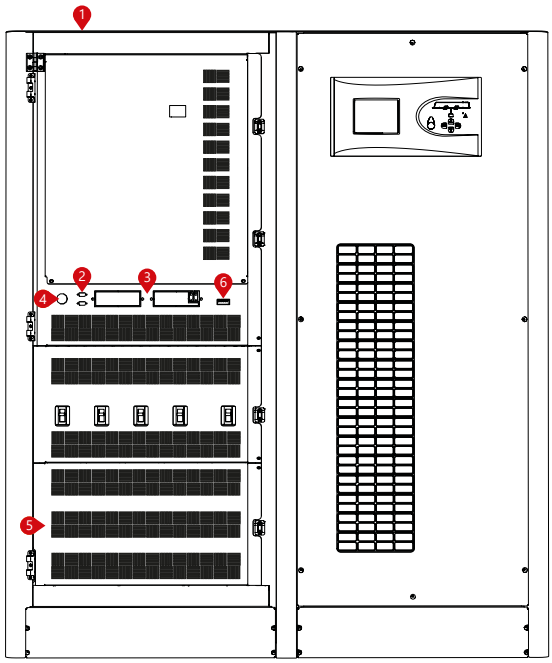


Ön Panel

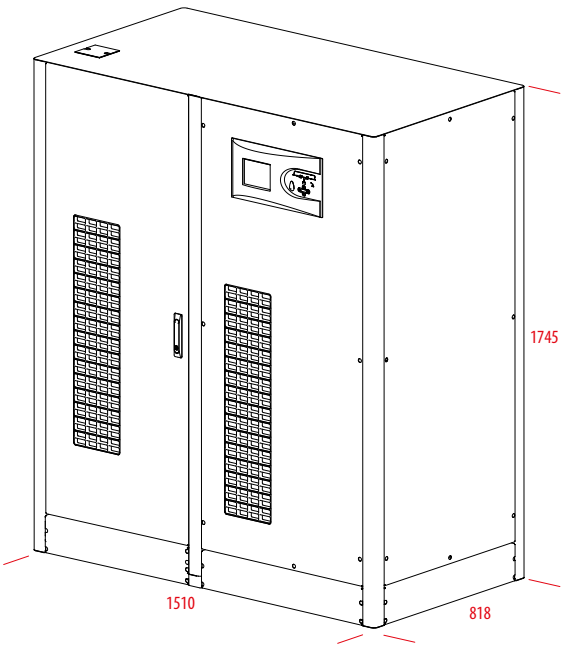


T4 SOLID SERIES 100-120 kVA

1. Parallel Port Terminal
2. RS232 Terminal
3. Optional Card Slots
4. DC Bus Ramping Up Button
5. Connection Terminal
6. External Battery Temperature Sensor Terminal

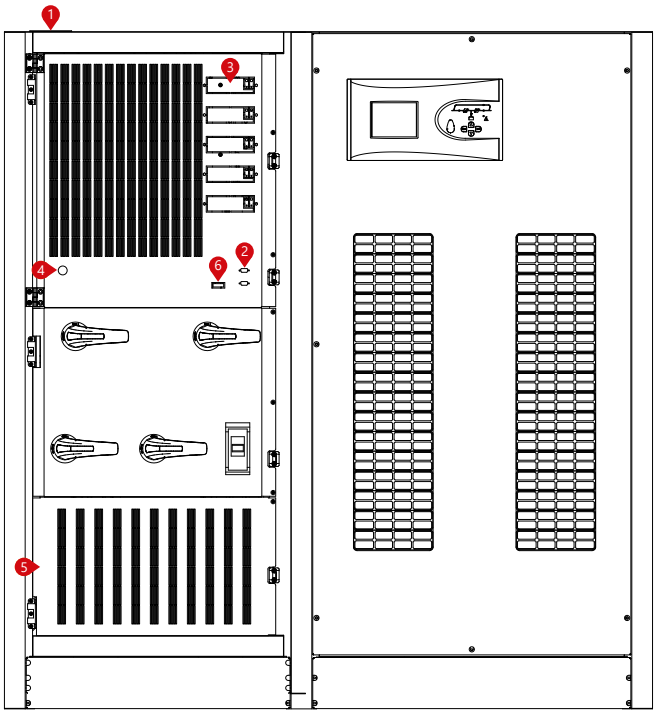


Front Panel

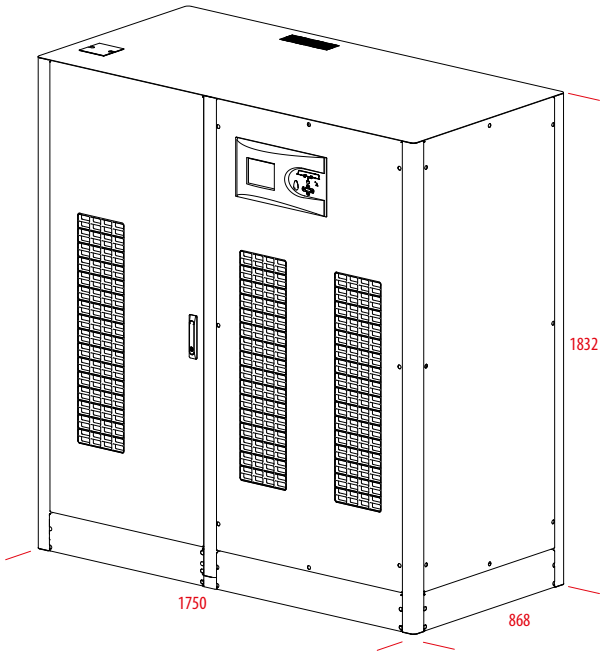


DETAILS

T4 SOLID SERIES 160-200 kVA

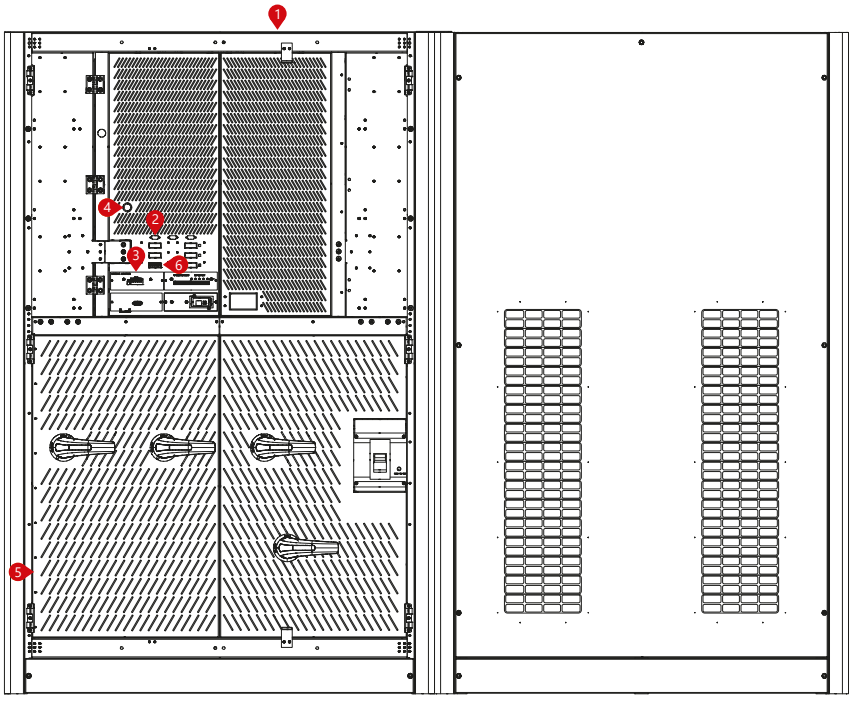


Front Panel

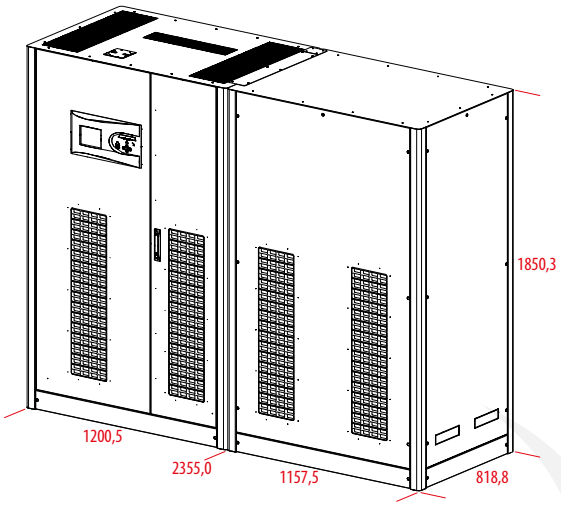


T4 SOLID SERIES 300-400 kVA

1. Parallel Port Terminal
2. RS232 Terminal
3. Optional Card Slots
4. DC Bus Ramping Up Button
5. Connection Terminal
6. External Battery Temperature Sensor Terminal



Front Panel



MODEL								
Capacity		80kVA	100kVA	120kVA	160kVA	200kVA	300kVA	400kVA
Power Watt		72kW	90kW	108kW	144kW	180kW	270kW	360kW
INPUT								
Voltage Range		380/400/415 VAC 3 Phase (Optional 220/380 VAC -37% +22% 3P+PE)						
Power Factor		At Full Load >0.99						
Frequency Range		45 - 65 Hz						
Total Harmonic Distortion (THDi)		<3%						
OUTPUT								
Voltage Range		380/400/415 VAC 3 Phase + N						
Voltage Tolerance		Static ±1, Dynamic ±3						
Efficiency		92%						
Frequency Tolerance		50Hz / 60Hz ±0,01% (Battery Mode)						
THD (THDv)		Linear Load <2%						
		Non-Linear Load <5%						
Crest Factor (CF)		3:1						
Overload Capacity*		At 125% Load 10min, at 150% Load 1min						
BATTERY								
Quantity (12V DC VRLA)		50						
Charge Capacity		12,5% of Active Power (Nominal 0,1 C10, Adjustable)						
ENVIRONMENTAL								
Operating Temperature		For UPS 0°C/+40°C For Battery +15°C/+25°C						
Storage Temperature		For UPS -15°C/+45°C For Battery 0°C/+30°C						
Protection Class		IP20						
Humidity		0-95% Without Condensation						
Altitude		<1000m, Correction Factor 1. <2000m, Correction Factor >0.92, <3000m; Correction Factor >0.84						
Noise Level		<65 dBA			<72 dBA			
COMMUNICATION								
Communication Port		RS232 Standart, RS485 and SNMP Adapter Option						
STANDARDS								
Quality		ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB						
Performance		EN62040-3 (VFI-SS-111, Bureau Veritas Certified)						
EMC/LVD		EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Acredited Test Report						
DIMENSIONS & WEIGHT		80kVA	100kVA	120kVA	160kVA	200kVA	300kVA	400kVA
Cabinet Dimensions (mm)	Width	1466	1510		1750		2355,0	
	Depth	771	818		868		818,8	
	Height	1593	1745		1832		1850,3	
Net Weight (kg)		860	935	996	1189	1258		
Packaging Dimensions (mm)	Width	1580	1580		1930			
	Depth	870	870		970			
	Height	1980	1980		2120			
Gross Weight (kg)		930	1005	1066	1269	1338		

* under certain conditions.

DATA CENTER | MEDICAL | TRANSPORT | INDUSTRY | EMERGENCY

e-MAGIC

SERIES

10-1000 kVA 3:3 PHASE

10-30 kVA 3:1 PHASE

ONL INE UPS

VFI TYPE — UPS ONLINE

TOWER

PF= 0.9 — POWER FACTOR

Service — SERVICE

HIGHLIGHTS

- IGBT PWM Rectifier & Inverter Technology
- Low Input Current THD (<3%)
- High Input Power Factor (>0.99)

DSP Power Factor Corrected IGBT Rectifier

• Equipped with its new IGBT rectifier e-MAGIC Series keeps your critical loads protected while its space-saving compact design and front access for maintenance successfully reduce mean time to repair (MTTR).

• Thanks to the wide variety of accessories and options e-MAGIC Series presents maximum flexibility advantage to users and optimizes total cost of ownership.

BUREAU VERITAS Certification

The e-MAGIC Series is attested by Bureau Veritas with regard to performance (EN 62040-3)

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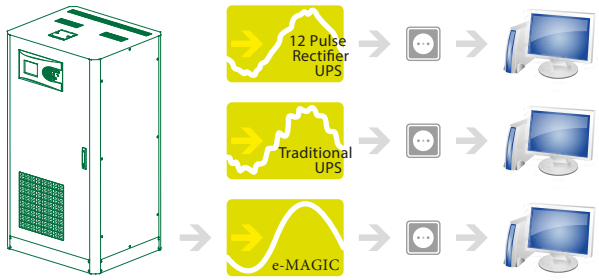
High Performance & Low Total Cost of Ownership

- IGBT based power factor correction technology provides input power factor close to 1 (≥ 0,99). The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.
- Low input current total harmonic distortion (THDi) less than 3% helps to avoid the disturbance and expensive harmonic filters.
- Small footprint and easy maintenance.



	THD	Power Factor
e-MAGIC with IGBT Rectifier	<3%	<0.99
Traditional UPS with Input Filter	<10%	<0.95
UPS without Input Filter	<25%	<0.85

High Input Power Factor

- 0,99 Input power factor ensures clean and sinusoidal input current.
- The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.

Maximum Availability

- Parallel configuration up to 8 units per redundancy (N+1) and power increase.
- Loop connection helps the UPS system to continue the operation when the connection cable is inturrupted.

Standard Electrical Features

- Backfeed Protection
- Cold Start (Optional)
- Advanced Battery Management
- Short Circuit and Overload Protection
- Parallel Ready
- Redundant Power Supply
- Power Walk-in for Progressive Rectifier Start-up when the Mains is Restored.
- Battery Temperature Sensor
- Static & Manual Bypass Operation

Advanced Communication Features

- 1500 Real Time Event Log with Detailed Parameters
- User Friendly Multilingual 320x240 Graphic Display Provides Operation Information
- Monitoring and Shutdown Software
- RS232 Serial and RS485 Ports
- 2 Communication Slots
- ModBUS RTU / ModBUS TCP (Optional)
- Remote Emergency Power Off (Optional)
- Remote Display Panel (Optional)
- Dry Contact (Optional)
- SNMP (Optional)
- ProfiBUS (Optional)

Flexibility

- Temperature sensor for external battery cabinets for extended runtimes.
- External battery cabinets for different sizes of batteries to provide extended runtimes.
- Frequency converter mode.
- Isolation transformers to vary neutral connectivity in the event of separate power sources or for galvanic isolation between input and output.
- Compatible version with EN 50171 for supplying power to emergency lighting systems.

MODEL																
Capacity		10kVA	15kVA	20kVA	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	80kVA	100kVA	120kVA
Power Watt		9kW	13.5kW	18kW	9kW	13.5kW	18kW	27kW	36kW	54kW	72kW	90kW	108kW	72kW	90kW	108kW
INPUT																
Nominal Voltage		380/400/415 VAC 3 P+N (Optional 220/380 VAC -37% +22% 3 P+N+PE)														
Voltage Tolerance		-20% +15%														
Frequency Tolerance		50 / 60 Hz ±10% (Selectable)														
Power Factor		>0.99														
Total Harmonic Distortion (THDi)		<3%														
OUTPUT																
Power Factor		0.9														
Nominal Voltage		380/400/415 VAC 3 P+N														
Voltage Tolerance		Statik ±1, Dynamic ±3														
Frequency Tolerance		50 / 60 Hz ±0,01% (Battery Mode)														
Output THD		Linear Load <1% / Non-Linear Load <3%														
Crest Factor		3:1														
Overload Capacity*		At 125% Load 10min, At 150% Load 1min														
Efficiency (Online Mode)		Up to 92%														
Efficiency (Eco Mode)		Up to 99%														
BYPASS																
Nominal Voltage		380/400/415 VAC 3 P+N														
Voltage Tolerance		%15 (Configurable from 10% to 30%)														
Frequency Tolerance		±5 (Selectable)														
BATTERY																
Type		VRLA / GEL														
Quantity (12V DC VRLA)		62														
Charge Capacity		25% of Active Power (Nominal 0,1 C10, Adjustable)														
Recharge Time		6-8 hours														
Internal Battery		62 x 7Ah or 9Ah			60 x 7Ah or 9Ah			External Battery								
ENVIRONMENTAL																
Operating Temperature		For UPS 0°C/+40°C For Battery +15°C/+25°C														
Storage Temperature		For UPS -15°C/+45°C For Battery 0°C/+30°C														
Protection Class		IP20														
Humidity		0-95% (Without Condensation)														
Altitude		<1000m: Correction Factor 1, <2000m: Correction Factor >0.92, <3000m: Correction Factor >0.84														
Noise Level		<53dBA			<53dBA		<55dBA		<60dBA		<65dBA			<65dBA		
COMMUNICATION																
Communication Port		RS232 Standart, RS485 and SNMP Adapter Option														
STANDARDS																
Quality		ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB														
Performance		EN62040-3 (VFI-SS-111, Bureau Veritas Certified)														
EMC/LVD		EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Acredited Test Report														
DIMENSIONS & WEIGHT		10kVA	15kVA	20kVA	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	80kVA	100kVA	120kVA
Cabinet Dimensions (mm)	Width	370			490						530			763	810	
	Depth	660			805						780			771	820	
	Height	850			1190						1290			1555	1705	
Net Weight (kg)		85	85	85	125	126	131	145	173	323	222	231	240	331	353	368
Packaging Dimensions (mm)	Width	500			600						650			900	900	
	Depth	760			900						900			970	970	
	Height	1000			1400						1400			2040	2040	
Gross Weight (kg)		105	105	105	145	146	151	166	193	353	253	261	270	361	383	398

* under certain conditions.
3 Phase in / 1 Phase Out Version is Available. (10 to 30kVA)

MODEL										
Capacity		160kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA
Power Watt		144kW	180kW	225kW	270kW	360kW	450kW	540kW	720kW	900kW
INPUT										
Nominal Voltage		380/400/415 VAC 3 P+N (Optional 220/380 VAC -37% +22% 3 P+N+PE)								
Voltage Tolerance		-20% +15%								
Frequency Tolerance		50 / 60 Hz ±10% (Selectable)								
Power Factor		>0.99								
Total Harmonic Distortion (THDi)		<3%								
OUTPUT										
Power Factor		0.9								
Nominal Voltage		380/400/415 VAC 3 P+N								
Voltage Tolerance		Statik ±1, Dynamic ±3								
Frequency Tolerance		50 / 60 Hz ±0,01% (Battery Mode)								
Output THD		Linear Load <1% / Non-Linear Load <3%								
Crest Factor		3:1								
Overload Capacity*		At 125% Load 10min, At 150% Load 1min								
Efficiency (Online Mode)		Up to 92%								
Efficiency (Eco Mode)		Up to 99%								
BYPASS										
Nominal Voltage		380/400/415 VAC 3 P+N								
Voltage Tolerance		15% (Configurable from 10% to 30%)								
Frequency Tolerance		±5 (Selectable)								
BATTERY										
Type		VRLA / GEL								
Quantity (12V DC VRLA)		62								
Charge Capacity		25% of Active Power (Nominal 0,1 C10, Adjustable)								
Recharge Time		6-8 hours								
Internal Battery		External Battery								
ENVIRONMENTAL										
Operating Temperature		For UPS 0°C/+40°C For Battery +15°C/+25°C								
Storage Temperature		For UPS -15°C/+45°C For Battery 0°C/+30°C								
Protection Class		IP20								
Humidity		0-95% (Without Condensation)								
Altitude		<1000m: Correction Factor 1, <2000m: Correction Factor >0.92, <3000m: Correction Factor >0.84								
Noise Level		<72dBA					<74dBA			<75dBA
COMMUNICATION										
Communication Port		RS232 Standart, RS485 and SNMP Adapter Option								
STANDARDS										
Quality		ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB								
Performance		EN62040-3 (VFI-SS-111, Bureau Veritas Certified)								
EMC/LVD		EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Acredited Test Report								
DIMENSIONS & WEIGHT		160kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA
Cabinet Dimensions (mm)	Width	830			1200			2000		
	Depth	870			825			870		
	Height	1800			1854			2050		
Net Weight (kg)		475	490	553	830	840	850	1510	1740	1740
Packaging Dimensions (mm)	Width	900			1370			2100		
	Depth	970			845			950		
	Height	2040			2040			2250		
Gross Weight (kg)		505	520	583	870	880	890	1590	1820	1820

* under certain conditions.
3 Phase in / 1 Phase Out Version is Available. (10 to 30kVA)

e-MAGIC S

SERIES

10/15/20 kVA

3:3 PHASE | 3:1 PHASE

ONLINE UPS

DATA CENTER | MEDICAL | INDUSTRY | TRANSPORT | EMERGENCY

VFI TYPE — UPS ONLINE

TOWER

PF= 0.9 — POWER FACTOR

Service — SERVICE

FEATURES

- High Frequency and True Double-Conversion
- DSP (Digital Signal Processors) Technology
- Input Power Factor Correction (PFC)
- Wide Input Voltage Range (110~300V)
- Output Power Factor 0.9
- Cold Start
- Auto Sensing Frequency
- ECO Mode Operation for Energy Saving
- Selectable Output Voltage via LCD
- 50Hz/60Hz Frequency Converter Mode Available
- Selectable Battery Low Voltage via LCD
- Power-On Self Test
- Advanced Battery Management (ABM)
- Short Circuit and Overload Protection
- Automatically Charging Battery at UPS Off Mode
- Fan Speed Auto Control when Load Varies
- Generator Compatible
- Emergency Power Off (EPO)
- Standard RS232 Communication Port
- Manual Bypass
- USB/SNMP Communication Port (Optional)
- Extension Battery Bank (Optional)

BUREAU VERITAS Certification

The e-MAGIC S Series is attested by Bureau Veritas with regard to performance (EN 62040-3)

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MODEL				
Capacity		**10**kVA / **9**kW	**15**kVA / **13,5**kW	**20**kVA / **18**kW
INPUT				
Related Voltage		380 / 400 / 415 VAC, (3Ph+N+PE) -20% +15%		
Voltage Range		208 - 478 VAC		
Frequency		50 Hz: 45-55 Hz; 60 Hz: 54-66 Hz (Auto Sensing)		
Power Factor		≥0,99		
Bypass Frequency Range		50-60 Hz ±10%		
Harmonic Distortion		≤3% (100% Non-Linear Load)		
ECO Range		Max. Voltage: 220V: +25% (Optional +10%, +15%, +20%), 230V: +20% (Optional +10%, +15%), 240V: +15% (Optional +10%)		
		Min. Voltage: -45% (Optional -20%, -30%)		
Generator		Compatible		
OUTPUT				
Voltage Range		380V / 400V / 415 VAC (3Ph+N+PE)		
Power Factor		0.9		
Voltage Regulation		±1%		
Frequency	AC Mode	±1%, ±2% , ±4%, ±5%, ±10% (Optional)		
	Battery Mode	50-60 ± 0.1 Hz		
Waveform		Pure Sinewave		
Crest Factor		3:1		
Harmonic Distortion		≤2% (Linear Load) ≤5% (Non-Linear Load)		
Transfer Time		Battery Mode to Inverter Mode 0ms, Inverter to Bypass Mode 0ms		
Output Dynamic Tolerance		At 100% Load ±5%		
Overload Capability	AC Mode	≤110%: 60min.; ≤125%: 10min.; ≤150%: 1min. ≥150% turn to Bypass Mode Immediately		
	Battery Mode	>150% Bypass Mode		
Parallel Operation		Optional		
EFFICIENCY				
AC Mode		93,5%	94,5%	
Battery Mode		92,5%	93,5%	
ECO Mode		98%		
BATTERY				
DC Voltage		240-480 VDC	360-480 VDC	480 VDC
Inbuilt Battery		60x12V 7/9Ah	60x12V 7/9Ah	40x12V 7/9Ah
Charge Current		5A		
Typical Recharge Time		8 hour		
PROTECTION				
Full Protection		Overload, Short Circuit ve Battery Charge-Discharge Protection, RFI/EMI Filtre, IP20		
SYSTEM FEATURES				
Charge Current		Smart Charging System		
Over-temperature		Line Mode: Turn to Bypass; Backup Mode: Shut Down UPS Immediately		
Intelligent Alarm System		Line Failure, Low Battery, Overload, System Failure		
LED&LCD Monitor		Line Mode, Battery Mode, Bypass Mode, Battery Low, Overload & UPS Fault		
ALARM				
Utility Failure		Line Mode, Low Battery, Overload, System Fault		
Battery Low		Alarm and Shut Down		
Overload		Overload		
UPS Fault		System Fault		
ENVIRONMENTAL				
Operation Temperature		0°C~40°C		
Storage Temperature		-25°C~55°C		
Humidity		0%~90%		
Altitude		<1500 m		
Noise Level		<50 dB		
COMMUNICATION				
Communication Interface		USB, RS232, RS485, Parallel Port, Dry Contact, Smart Port, SNMP Card (Optional), Relay Card (Optional)		
Software		Muser4000, Sofeware		
Emergency Power Off		Dry Contact (Optional)		
STANDARDS				
Safety		IEC/EN62040-1, IEC/EN60950-1		
EMC		IEC/EN62040-2, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8		
DIMENSIONS & WEIGHT		**10**kVA	**15**kVA	**20**kVA
Dimensions WxDxH (mm)		342 x 860 x 827		
Net Weight (kg)				

e-FLEX

SERIES

10-2080 kVA 3:3 PHASE

MODULAR ONLINE UPS

DATA CENTER | MEDICAL | TRANSPORT | INDUSTRY | EMERGENCY

96% Efficiency

VFI TYPE — UPS ONLINE | MODULAR SYSTEM | PF= 1.0 — POWER FACTOR | Service — SERVICE

HIGHLIGHTS

- High Performance, Modular 3-Phase Power Protection
- Scalable up to 2080kVA, with 96% High Efficiency

Modular UPS Design for High Density Data Centers

- e-FLEX Series is a scalable, redundant Modular UPS system designed to cost effectively provide high level availability for high density data centers and critical applications.
- True Online Double Conversion and advanced DSP control technology.
- Modular Architecture can scale power and runtime as demand grows or as higher levels of availability required.
- Combines the modular design with the N+X parallel redundancy technology.
- The maximum capacity of a single cabinet is 520kVA. Cabinets can operate in parallel configuration to build a system of up to 2080kVA.

Higher Level of Efficiency than the EU CoC for AC UPS

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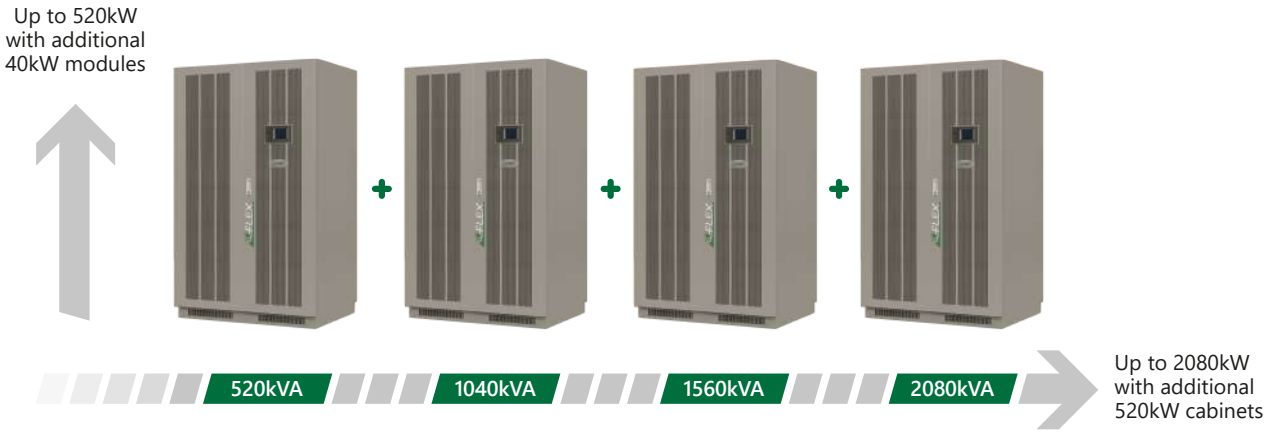
Scalable Modular Architecture

Scalable up to the highest active power rating available through two dimensional modularity: Vertical and Horizontal.

- Capacity of single power module is 10-15-20-25-30-40-50kVA
- The height of single hot swappable power module is 3U
- Standard 1.4m cabinet can hold up to 5 of power modules
- Standard 2m cabinet can hold up to 13 of power modules
- The single UPS cabinet capacity can reach 520KVA and UPS cabinets can operate in parallel configuration to build a system of up to 2080kVA

Modules	Output Power	Dimensions (WxHxD)	Weight
e-FLEX 3310-RM	10kVA 3/3 Module	443x131x580mm 3U	26kg
e-FLEX 3315-RM	15kVA 3/3 Module	443x131x580mm 3U	30kg
e-FLEX 3320-RM	20kVA 3/3 Module	443x131x580mm 3U	31kg
e-FLEX 3325-RM	25kVA 3/3 Module	443x131x580mm 3U	31kg
e-FLEX 3330-RM	30kVA 3/3 Module	443x131x580mm 3U	32kg
e-FLEX 3340-RM	40kVA 3/3 Module	443x131x580mm 3U	33kg
e-FLEX 3350-RM	50kVA 3/3 Module	443x131x625mm 3U	34kg



"Size What You Need Now and Pay as You Grow"

Standart Electrical Features

- Output Power Factor: 0.9 (Optional 1.0)
- Hot Swappable Maintenance (UPS & Battery)
- Separated Bypass
- Maintenance Bypass
- Parallelable up to 4 Cabinets
- Common Battery
- Control of On/Off State of each Module
- Freely Set the Charge Current
- Intelligent Charging
- Mid or Small Power Distributing System
- Selectable Battery Voltage 3 Input 3 Output ±216VDC/±228VDC/±240VDC (32/34/36/38/40pcs)

Advanced Communication Features

- RS232 (USB)
- RS485 Communication Interface
- SNMP Card (Optional)
- Relay Card (Optional)
- Centralized Monitor Module that is Hot Swappable
- Single Module LCD Display
- Control Monitoring with 5" Color LCD Graphic Display

UPS Cabinet Control Panel

Module Control Panel

Hot Swappable Battery Modules

Plug and play battery modules ensures uninterrupted power to protected equipment while batteries are being replaced. Allows quick and easy battery replacement.

- Each Battery Module Consists of 18 pcs 7Ah/9Ah
- Only 3U Height
- Simply Plug into UPS System

3 U Battery Box Optional

19"Matching Battery Cabinets (Optional)

N+X Parallel Redundancy

e-FLEX series UPS adopts N+X parallel redundancy design, users can set different redundancy according to the importance of the load. While the number of redundancy modules are more than two, the availability of UPS system will achieve 99.999% and the MTBF will be more than 15,000,000 hours which can satisfying the reliability requirement of critical load. The UPS redundancy degree can be set through the LCD, when the load exceeds the set value, the UPS will alarm in time.

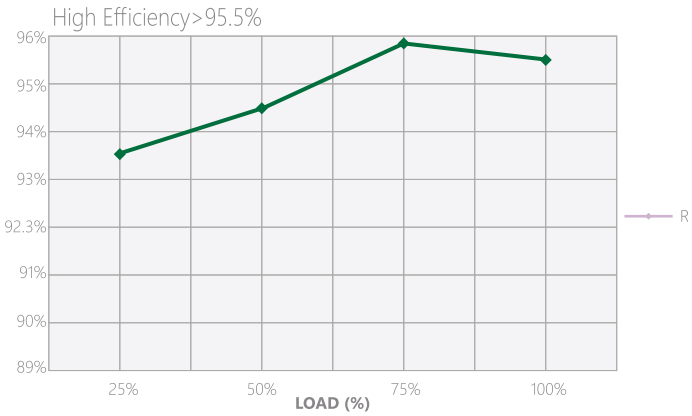
Independent Control System

Every power module is equipped independent control system, and control itself independently according to the sharing message, and the fault module separates from the system automatically.

High Efficiency and Low Total Cost of Ownership

e-Flex Designed for highly economical energy consumption and is a perfect fit in your data center and server room. Offering efficiency of up to 96%, THDi of 2% and unity Input Power Factor without harmonic filters e-FLEX delivers:

- Significant energy savings
- Lower cooling costs
- Smaller generator sizing



- High input power factor (>0.99) and low input Total Harmonic Distortion (THDi<2%) minimizes installation costs by enabling the use of smaller generators and cabling.
- Fully-rated power kVA equals kW feature option reduces cost by eliminating the need for an oversized UPS for Power Factor Corrected (PFC) loads.

10kVA/15kVA/20kVA/25kVA/ 30kVA 3:3 phase

40kVA 3:3 phase

MODEL													
CAPACITY													
UPS Cabinet		10~100 kVA	20~100 kVA	20~200 kVA	25~250 kVA	30~150 kVA	30~300 kVA	40~200 kVA	40~320 kVA	40~520 kVA	40~800 kVA	40~1040 kVA	40~1560 kVA
Paralleling		Up to 6 Frame	Up to 6 Frame	Up to 6 Frame	Up to 6 Frame	Up to 6 Frame	Up to 6 Frame	Up to 6 Frame	Up to 6 Frame	Up to 4 Frame	Up to 2 Frame	Up to 2 Frame	Up to 1 Frame
e-FLEX Module		10kVA/10kW, 15kVA/15kW, 20kVA/20kW, 25kVA/25kW, 30kVA/30kW, 40kVA/40kW, 50kVA/50kW											
INPUT													
Phase		3 Phase 4 Wires and Ground											
Rated Voltage		380/400/415 VAC											
Voltage Range		208~478 VAC or 120 VAC~276 VAC											
Frequency Range (Hz)		40~70 Hz											
Power Factor		>0.99											
Bypass Voltage Range		Max. Voltage: +15% (Optional +5%, +10%, +25%) Min. Voltage: -45% (Optional -20%, -30%)											
		Frequency Protection Range: ±10%											
Current Harmonic		<2% (100% Non-Linear Load)											
Generator Input		Support											
OUTPUT													
Phase		3 Phase 4 Wires and Ground											
Rated Voltage		220/240 VAC 380/400/415 VAC											
Power Factor		1											
Voltage Precision		±1%											
Output Frequceny		(50/60±0.1%) Hz											
Crest Factor		3:1											
THD		≤1% With Linear Load ≤4% With Non-Linear Load											
Efficiency		96%											
COMMUNICATION													
UPS Cabinet		RS232, RS485, Intelligent Slot x 2 (SNMP Card, Relay Card, Dry Contact Optional)											
INTERFACE													
e-FLEX Series UPS Module		RS232											
BATTERY													
Voltage		±192V / ±204V / ±216V / ±228V / ±240V DC; Battery Quantity (Optional)											
Charge Current (A)	UPS Cabinet	60A Max	30A Max	60A Max	60A Max	50A Max	100A Max	50A Max	80A Max	130A Max	200A Max	260A Max	390A Max
	Module	6A/10A/(20A Optional) Max (Charge Current can be Set According to Battery Capacity Installed)											
Crest Factor Backup Time		Depends on the Capacity of External Batteries											
THD Transfer Time		Utilty to Battery : 0ms; Utily to Bypass: 0ms											
PROTECTION													
Overload	Normal Mode	Load ≤110%: Last 60min, ≤125%: Last 10min, ≤150%: Last 1min, ≥150% Shut Down UPS Immediately											
	Battery Mode	Load ≤110%: Last 10min, ≤125%: Last 1min, ≤150%: Last 1s ≥150% Shut Down UPS Immediately											
ENVIRONMENTAL													
Operating Temperature		0°C ~ 40°C											
Storage Temperature		-25°C ~ 55°C											
Humidity		0 ~ 95% Non-Condensing											
Noise	Number of Modules ≤5	<55 dBA (1m)											
	Number of Modules >5	<65 dBA (1m)											
Altitude		<1500m											
DIMENSIONS & WEIGHT		10~100 kVA	20~100 kVA	20~200 kVA	25~250 kVA	30~150 kVA	30~300 kVA	40~200 kVA	40~320 kVA	40~520 kVA	40~800 kVA	40~1040 kVA	40~1560 kVA
Unit Dimensions WxDxH (mm)	UPS Cabinet	600x840 x1400	600x840 x1400	600x1100 x2000	600x1100 x2000	600x840 x1400	600x1100 x2000	860x600 x2000	860x600 x2000	860x1200 x2000	860x1800 x2000	860x3000 x2000	1100x4800 x2000
	Module	443 x 580 x 131 (3U)											
Weight (kg)	UPS Cabinet	170	170	270	275	152	280	205	310	514	1600	1810	2800
	Module	10kVA: 26kg; 15kVA: 30kg; 20kVA: 31kg; 25kVA: 31kg; 30kVA: 32kg; 40kVA: 33kg											
INDUSTRY STANDARD		CE, IEC 62040-2, IEC 62040-1, IEC 62040-3, IEC61000-4, IEC60950-1											

e-LEXI
SERIES

650-2200 VA
LINE INTERACTIVE UPS

HOME/OFFICE

VI TYPE
UPS LINE INTERACTIVE

TOWER

PLUG & PLAY

USB

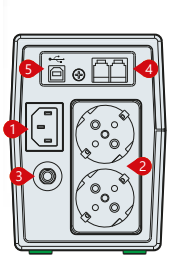
LCD
LCD DISPLAY (1200-1500-2200VA)

FEATURES

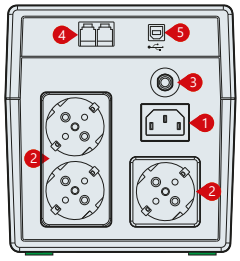
- LED Display (650-850)
- LCD Display (1200-1500-2200)
- Voltage Range, Operation Mode, Battery Charge and Load Quantity Monitoring via LCD Display (1200-1500-2200)
- Microprocessor-Based Digital Control
- Automatic Voltage Stabilization
- Automatic Breaker
- Frequency Adaptive
- User Friendly Alarm System
- Cold Start
- Auto Restart while AC is Recovering
- Simulated Sine Wave Output
- Intelligent Battery Management
- Short Circuit and Over Discharged Protection
- Automatically Charging Battery at UPS Off Mode
- USB Communication Port
- RJ11/RJ45 Protection

DETAILS

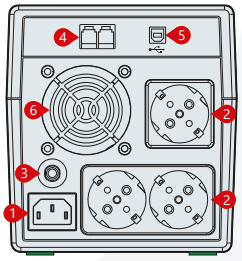
1. AC Input
2. Outlet
3. Breaker
4. RJ11/RJ45
5. USB
6. Fan



Rear Panel
650-850 VA



Rear Panel
1200-1500 VA



Rear Panel
2200 VA

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MODEL					
Capacity	**650**VA / **390**W	**850**VA / **510**W	**1200**VA / **720**W	**1500**VA / **900**W	**2200**VA / **1320**W
INPUT					
Related Voltage	230 VAC				
Voltage Range	170-280 VAC (±%5)				
Frequency	50 Hz (±%10)				
OUTPUT					
Voltage Range	220 VAC				
Voltage Precision	±10% (Battery Mode)				
Frequency	50 Hz ±%1 (Akü Modu)				
Transfer Time	2-6ms Typical, 10ms max.				
Waveform	Modified Sine Wave (Battery Mode)				
EFFICIENCY					
Line Mode	Normal Mode: >95%, AVR Mode: >88%				
Battery Mode	>60%				
BATTERY					
Battery Configuration	1 x 12V/7Ah	1 x 12V/9Ah	2 x 12V/7Ah	2 x 12V/9Ah	2 x 12V/9Ah
Charge Current	1A				
Recharge/Charging Time	6-8 hours for Recharging up to 90% Capacity				
Backup Time	~16 min.	~20 min.	~30 min.	~50 min.	~50 min.
PROTECTION					
Full Protection	Overload, Short Circuit, Battery Charge-Discharge Protection				
INDICATION					
Display	LED		LCD		
ALARM					
Battery Mode	Sounding every 10 seconds				
Low Battery	Sounding every 1 seconds				
Overload	Sounding every 0.5 seconds				
Fault	Continuously Sounding				
ENVIRONMENTAL					
Operating Temperature	0 ~ 40ºC				
Storage Temperature	-20ºC ~ 55ºC				
Relative Humidity	0 - 95ºC (Non Condensing)				
Audible Noise (at 1m)	≤40 dB				
COMMUNICATION					
Communication Port	USB				
Software	Windows Family / Linux / Mac				
DIMENSIONS & WEIGHT	**650**VA	**850**VA	**1200**VA	**1500**VA	**2200**VA
Dimensions WxDxH (mm)	101 x 298 x 142		150 x 353 x 162		
Packaging Dimensions WxDxH (mm)	142 x 332 x 213		192 x 405 x 235		

e-MOJO
SERIES

HOME/OFFICE | EMERGENCY | MEDICAL | INDUSTRY

1/2/3 kVA
1:1 PHASE

ONLINE UPS

VFI TYPE — UPS ONLINE
TOWER
PF= 0.9 — POWER FACTOR
PLUG & PLAY

1kVA

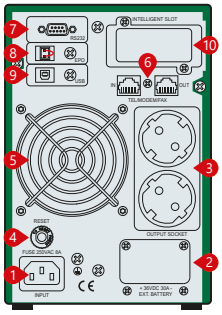
2/3kVA

FEATURES

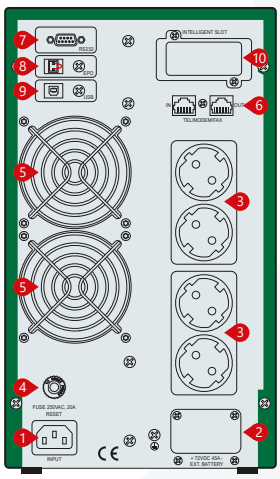
- High Frequency and True Double-Conversion
- DSP (Digital Signal Processors) Technology
- Input Power Factor Correction (PFC)
- Wide Input Voltage Range (110~300V)
- Output Power Factor 0.9
- Cold Start
- Auto Sensing Frequency
- ECO Mode Operation for Energy Saving
- Selectable Output Voltage via LCD
- Output Bypass Settable via LCD
- Power-On Self Test
- Advanced Battery Management (ABM)
- Short Circuit and Overload Protection
- Automatic Charging in Off Mode
- Auto Control Fan Speed when Loads Varies
- Generator Compatible
- Standard RS232 Communication Port and RJ45 Protection
- USB/SNMP Communication Port *(Optional)*
- Emergency Power Off (EPO) *(Optional)*
- Extension Battery Bank *(Optional)*
- Built-In Isolation Transformer *(Optional)*

DETAILS

1. AC Input
2. DC Input
3. Outlet
4. Breaker
5. Fan
6. Modem/Tel/Fax
7. RS232
8. USB *(Optional)*
9. EPO *(Optional)*
10. SNMP/AS400 *(Optional)*



Rear Panel 1kVA



Rear Panel 2/3kVA

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MODEL									
Capacity	**1**kVA / **900**W			**2**kVA / **1800**W			**3**kVA / **2700**W		
INPUT									
Related Voltage	208V / 220V / 230V / 240 VAC								
Voltage Range	110 ~ 176 VAC (Linear Derating Between 50% and 100% load); 176 ~ 280 VAC (No Derating); 280 ~ 300 VAC (Derating 50%)								
Frequency	40 ~ 70 Hz (Auto Sensing)								
Power Factor	≥ 0.99								
Bypass Voltage Range	-25% ~ +15% (Settable)								
OUTPUT									
Voltage Range	208V / 220V / 230V / 240 VAC (Settable via LCD)								
Voltage Regulation	±1%								
Frequency	45 ~ 55 Hz or 55 ~ 65 Hz (Synchronized Range); 50 / 60 Hz ±0.1 Hz (Battery Mode)								
Waveform	Sinusoidal								
Crest Factor	3:1								
Harmonic Distortion	≤2% (Linear Load); ≤5% (Non-Linear Load)								
Nominal Voltage	Mains Mode to Battery Mode: 0ms Inverter Mode to Bypass Mode: 4ms (Typical)								
Overload Capability	105% ~ 125%: Transfer to Bypass in 1min 125% ~ 150%: Transfer to Bypass in 30s >150%: Transfer to Bypass in 300ms								
EFFICIENCY									
Mains Mode	≥90%			≥91%			≥92%		
Battery Mode	≥85%			≥86%			≥87%		
ECO Mode	≥95%			≥96%			≥97%		
BATTERIES									
DC Voltage	24 V	36 V	36 V	48 V	72 V	72 V	72 V	96 V	96 V
Inbuilt Battery	2 x 7Ah	3 x 7Ah	External	4 x 7Ah	6 x 7Ah	External	6 x 7Ah	8 x 7Ah	External
Charging Current (Max.)	1A		6A	1A		6A	1A		6A
Recharge Time	8 hour								
ALARMS									
Utility Failure	Beep / 4sec								
Low Battery	Beep / 1sec								
Overload	Beep Twice / 1sec								
UPS Fault	Long Beep								
ENVIRONMENTAL									
Operating Temperature	0 ~ 40ºC								
Relative Humidity	0 ~ 90% (Non-Condensing)								
Noise Level	≤45 dB (1m)								
COMMUNICATION									
RS232 (Standard) / USB (Optional)	Supports Windows® 98/2000/2003/XP/Vista/2008/Windows® 7/8/10								
SNMP (Optional)	Power Management from SNMP Manager and Web Browser								
DIMENSIONS & WEIGHT	**1**kVA / **900**W			**2**kVA / **1800**W			**3**kVA / **2700**W		
Dimension WxDxH (mm)	144 x 336 x 214	144 x 414 x 214	144 x 336 x 214	191 x 418 x 335				191 x 464 x 335	191 x 418 x 335
Packaging Dimensions WxDxH (mm)	232 x 417 x 318	231 x 492 x 316	232 x 417 x 318	318 x 533 x 471				320 x 573 x 471	318 x 533 x 471
Net Weight (kg)	9.5	13	6	18	25.7	10.5	27.2	32	11
Gross Weight (kg)	10.5	14.2	7	19.5	27.4	12	29	34	12.5

e-MOJO
SERIES

HOME/OFFICE | EMERGENCY | MEDICAL | INDUSTRY | DATA CENTER | TRANSPORT

6/10 kVA
1:1 PHASE

ONLINE UPS

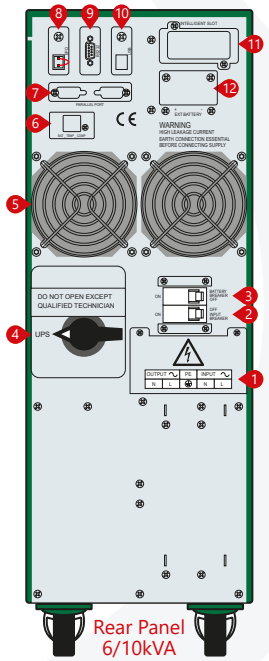
VFI TYPE — UPS ONLINE
TOWER
PF= 0.9 — POWER FACTOR
Service — SERVICE

FEATURES

- High Frequency and True Double-Conversion
- DSP (Digital Signal Processors) Technology
- Input Power Factor Correction (PFC)
- Wide Input Voltage Range (110~300V)
- Output Power Factor 0.9
- Cold Start
- Auto Sensing Frequency
- ECO Mode Operation for Energy Saving
- Selectable Output Voltage via LCD
- 50Hz/60Hz Frequency Converter Mode Available
- Selectable Battery Low Voltage via LCD
- Power-On Self Test
- Advanced Battery Management (ABM)
- Short Circuit and Overload Protection
- Automatically Charging Battery at UPS Off Mode
- Fan Speed Auto Control when Load Varies
- Generator Compatible
- Standard RS232 Communication Port
- USB/SNMP Communication Port *(Optional)*
- Emergency Power Off (EPO) *(Optional)*
- Extension Battery Bank *(Optional)*
- Manual Bypass
- N+X Redundancy Parallel *(Optional)*

DETAILS

1. Input-Output Terminal
2. Input Breaker
3. Battery Breaker
4. Maintenance Switch
5. Fan
6. Battery Temperature Sensor
7. Parallel Card *(Optional)*
8. EPO
9. RS232
10. USB *(Optional)*
11. SNMP/AS400 *(Optional)*
12. BAT_NTC *(Optional)*



Rear Panel 6/10kVA

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POWER WITH YOU

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MODEL			
Power Watt		**6**kVA / **5400**W	**10**kVA / **9000**W
INPUT			
Related Voltage		208V / 220V / 230V / 240 VAC	
Voltage Range		Half Load (110-300) ±5 VAC, Full Load (160-300) ±5 VAC	
Frequency		40 ~ 70 Hz (Auto Sensing)	
Power Factor		≥0.99	
Bypass Voltage Range		160V - Rated Output Voltage +32V	
OUTPUT			
Voltage Range		208V / 220V / 230V / 240 VAC (Setting Available via LCD)	
Voltage Regulation		±1%	
Frequency		45 ~ 55 Hz or 55 ~ 65 Hz (Synchronized Range); 50 / 60 Hz ±0.1 Hz (Battery Mode)	
Waveform		Pure Sine Wave	
Crest Factor		3:1	
Harmonic Distortion		≤2% (Linear Load); ≤5% (Non-Linear Load)	
Transfer Time		AC Mode to Battery Mode: 0ms Inverter Mode to Bypass Mode: 0ms	
Overload Capability		105% ~ 125%: Transfer to Bypass after 3min 125% ~ 150%: Transfer to Bypass after 30sec >150%: Transfer to Bypass after 100ms	
EFFICIENCY			
AC Mode		≥92%	
Battery Mode		≥91%	
ECO Mode		≥98%	
BATTERIES			
DC Voltage		192V-240V	
Inbuilt Battery		16-22 x 7-9Ah	
Charge Current	Standard Model	3.5A	
	Long Time Model	1A / 3.5A / 7A	
Typical Recharge Time		8 hours Recover to 90% Capacity	
ALARMS			
Utility Failure		Beep / 4sec	
Low Battery		Beep / 1sec	
Overload		Beep Twice / 1sec	
UPS Fault		Long Beep	
ENVIRONMENTAL			
Humidity		20-90% RH @ 0-40ºC (Non-Condensing)	
Noise Level		≤50 dB (1m)	
COMMUNICATION			
RS232 (Standard) / USB (Optional)		Supports Windows® 98/2000/2003/XP/Vista/2008/Windows® 7/8/10	
SNMP (Optional)		Power Management from SNMP Manager and Web Browser	
DIMENSIONS & WEIGHT		**6**kVA	**10**kVA
Dimensions WxDxH (mm)		262 x 650 x 735	
Packaging Dimensions WxDxH (mm)		440 x 720 x 940	
Net Weight (kg)		64.1	70.8
Gross Weight (kg)		72.2	78.9

e-MOJO
SERIES

HOME/OFFICE | EMERGENCY | MEDICAL | INDUSTRY | DATA CENTER | TRANSPORT

10/15/20 kVA
3:1 PHASE

ONLINE UPS

VFI TYPE — UPS ONLINE
TOWER
PF= 0.9 — POWER FACTOR
Service — SERVICE

10kVA

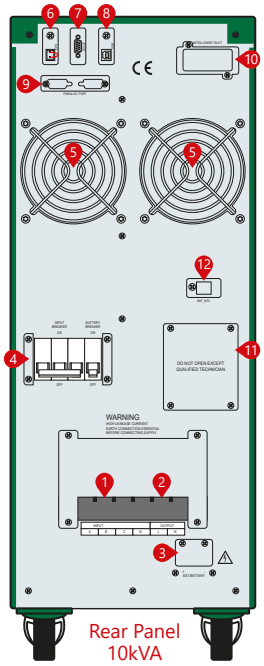
15/20kVA

FEATURES

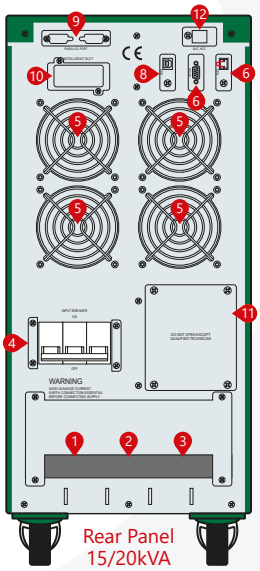
- High Frequency and True Double-Conversion
- DSP (Digital Signal Processors) Technology
- Input Power Factor Correction (PFC)
- Wide Input Voltage Range (110~300V)
- Output Power Factor 0.9
- Optimized Battery Configuration: 192V / 240V
- Cold Start
- Auto Sensing Frequency
- ECO Mode Operation for Energy Saving
- 50Hz/60Hhz Frequency Conversion Mode
- Selectable Output Voltage via LCD
- Selectable Battery Shutdown Voltage (Eod) via LCD
- Selectable Input Mode via LCD (3:1 or 1:1)
- Power-On Self Test
- Advanced Battery Management (ABM)
- Short Circuit and Overload Protection
- Automatically Charging in Off Mode
- Fan Speed Auto Control when Load Temperature Varies
- Generator Compatible
- Standard RS232/USB Communication Port
- Standard Emergency Power Off (EPO)
- RS485/SNMP/AS400 Communication Port *(Optional)*
- Extension Battery Bank *(Optional)*
- Manual Bypass
- N+X Redundancy Parallel *(Optional)*

DETAILS

1. AC Input
2. Output
3. Ext. Battery
4. Breaker
5. Fan
6. EPO
7. RS232
8. USB
9. Parallel Card *(Optional)*
10. SNMP/AS400 *(Optional*
11. Manual Bypass
12. BAT_NTC *(Optional)*



Rear Panel 10kVA



Rear Panel 15/20kVA

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MODEL				
Power Watt		**10**kVA / **9**kW	**15**kVA / **13.5**kW	**20**kVA / **18**kW
INPUT				
Related Voltage		3 : 1 : 360V / 380V / 400V / 415 VAC 1 : 1 : 208V / 220V / 230V / 240 VAC (Settable via LCD)		
Voltage Range		3 : 1 : Half Load (190 ~ 520) ±5 VAC, Full Load (277 ~ 520) ±5 VAC		
Frequency		40 ~ 70 Hz (Auto Sensing)		
Power Factor		3 : 1 ≥ 0.95; 1 : 1 ≥ 0.99		
BYPASS				
Voltage Range		160V Rated Output Voltage +32V		
Frequency		50 / 60 Hz ±5 Hz		
OUTPUT				
Voltage Range		208V / 220V / 230V / 240 VAC (Settable via LCD)		
Voltage Regulation		±1%		
Frequency		Synchronized with Utility in Mains Mode; 50 / 60 ±0.2 Hz in Battery Mode		
Waveform		Sinusoidal		
Crest Factor		3:1		
Harmonic Distortion		≤2% (Linear Load); ≤5% (Non-Linear Load)		
Transfer Time		0 ms		
Overload Capability		105% ~ 125%: Transfer to Bypass in 3min 125% ~ 150%: Transfer to Bypass in 30sec >150%: Transfer to Bypass in 1sec		
EFFICIENCY				
Mains Mode		≥92%		
Battery Mode		≥91%		
ECO Mode			≥98%	
BATTERIES				
DC Voltage		192 VDC / 240 VDC		
Inbuilt Battery		20 x 7Ah (16 Opt.)	-	-
Charge Current	Standard Model	3.5A	-	-
	Long Time Model	1A / 3.5A / 7A		
Recharge Time		8 hour		
ALARMS				
Utility Failure		Beep / 4sec		
Low Battery		Beep / 1sec		
Overload		Beep Twice / 1sec		
UPS Fault		Long Beep		
ENVIRONMENTAL				
Humidity		20-90% RH @ 0-40ºC (Non-Condensing)		
Noise Level		≤55 dB (1m)	≤60 dB (1m)	
COMMUNICATION				
RS232 (Standard) / USB (Optional)		Supports Windows® 98/2000/2003/XP/Vista/2008/Windows® 7/8/10		
SNMP (Optional)		Power Management from SNMP Manager and Web Browser		
DIMENSIONS & WEIGHT		**10**kVA	**15**kVA	**20**kVA
Dimensions WxDxH (mm)		262 x 580 x 732 (S)	262 x 580 x 628 (H)	
Packaging Dimensions WxDxH (mm)		359 x 687 x 937 (S)	359 x 687 x 832 (H)	
Net Weight (kg)		25.5 (H), 74.0 (S)	38.5 (H)	39.0 (H)
Gross Weight (kg)		29.0 (H), 83.5 (S)	47.0 (H)	47.5 (H)

• (S) means standard model, (H) means long time model.

e-MOJO RT
SERIES

HOME/OFFICE · EMERGENCY · MEDICAL · INDUSTRY · DATA CENTER · TRANSPORT

1/2/3 kVA
1:1 PHASE

ONLINE UPS

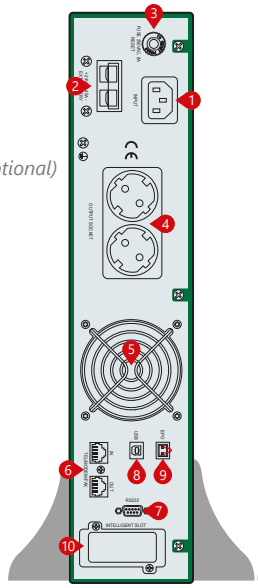
VFI TYPE — UPS ONLINE
RACK/TOWER
PF= 0.9 — POWER FACTOR
PLUG & PLAY

FEATURES

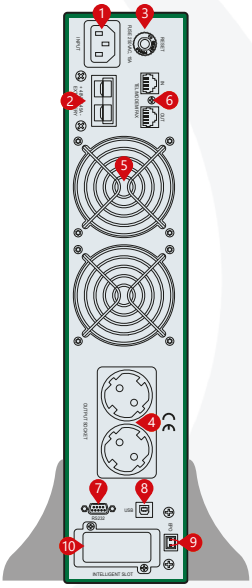
- High Frequency and True Double-Conversion
- DSP (Digital Signal Processors) Technology
- Input Power Factor Correction (PFC)
- Wide Input Voltage Range (110~300V)
- Output Power Factor 0.9
- Cold Start
- Auto Sensing Frequency
- ECO Mode Operation for Energy Saving
- Selectable Output Voltage via LCD
- Output Bypass Settable via LCD
- Power-On Self Test
- Advanced Battery Management (ABM)
- Short Circuit and Overload Protection
- Automatic Charging in Off Mode
- Auto Control Fan Speed when Loads Varies
- Generator Compatible
- Standard RS232 Communication Port And RJ45 Protection
- USB/SNMP Communication Port *(Optional)*
- Emergency Power Off (EPO) *(Optional)*
- Extension Battery Bank *(Optional)*
- Built-In Isolation Transformer *(Optional)*

DETAILS

1. AC Input
2. DC Input
3. Breaker
4. Outlet
5. Fan
6. Modem/Tel/Fax
7. RS232
8. USB *(Optional)*
9. EPO *(Optional)*
10. SNMP/AS400 *(Optional)*



Rear Panel 1kVA



Rear Panel 2-3kVA

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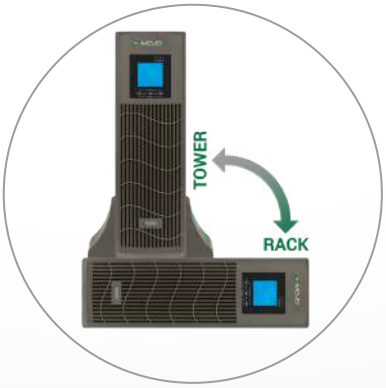
MODEL									
Capacity	**1**kVA / **900**W			**2**kVA / **1800**W			**3**kVA / **2700**W		
INPUT									
Rated Voltage	208V / 220V / 230V / 240 VAC								
Voltage Range	110~176 VAC (Linear Derating Between 50% and 100% Load); 176~280 VAC (No Derating); 280~300 VAC (Derating 50%)								
Frequency Range	45 ~ 70 Hz (Auto Sensing)								
Power Factor	≥0.99								
Bypass Voltage Range	-25% ~ +15% (Settable)								
OUTPUT									
Voltage Range	208V / 220V / 230V / 240 VAC (Settable via LCD)								
Voltage Regulation	±1%								
Frequency Range	45 ~ 55 Hz or 55 ~ 65 Hz (Synchronized Range); 50 / 60 Hz ± 0.1 Hz (Battery Mode)								
Waveform	Sinusoidal								
Crest Factor	3:1								
Harmonic Distortion	≤2% (Linear Load); ≤5% (Non-Linear Load)								
Transfer Time	Mains Mode to Battery Mode: 0ms Inverter Mode to Bypass Mode: 4ms (Typical)								
Overload Capability	105% ~ 125%: Transfer to Bypass in 1min; 125% ~ 150%: Transfer to Bypass in 30s; >150%: Transfer to Bypass in 300ms								
EFFICIENCY									
Mains Mode	≥90%			≥91%			≥92%		
Battery Mode	≥85%			≥86%			≥87%		
ECO Mode	≥95%			≥96%			≥97%		
BATTERY									
DC Voltage	24V	36V	36V	48V		72V	72V	96V	96V
Inbuilt Battery	2 x 7Ah	3 x 7Ah	External	4 x 7Ah		External	6 x 7Ah	8 x 7Ah	External
Charging Current (Max.)	1A		6A	1A		6A	1A		6A
Recharge Time	8h								
ALARMS									
Utility Failure	4s Per Beep								
Low Battery	1s Per Beep								
Overload	1s Twice Beep								
UPS Fault	Long Beep								
ENVIRONMENTAL									
Operating Temperature	0 ~ 40ºC								
Relative Humidity	0 ~ 90% (Non-Condensing)								
Noise Level	≤50 dB (1m)								
COMMUNICATIONS									
RS232 (Standard) / USB (Optional)	Supports Windows® 98/2000/2003/XP/Vista/2008/Windows® 7/8/10								
SNMP (Optional)	Power Management from SNMP Manager and Web Browser								
DIMENSIONS & WEIGHT	**1**kVA			**2**kVA			**3**kVA		
Dimensions WxDxH (mm)	440x468x88			440x658x88		440x468 x88	440x658 x88	440x468x88 (UPS) 440x440x88 (BAT)	440x468 x88
Packaging Dimensions WxDxH (mm)	545x592x198			545x782x198		545x592 x198	545x782 x198	545x592x198 (UPS) 590x580x200 (BAT)	545x592 x198
Net Weight (kg)	12.26	13.78	7.58	22.73	25.86	9.66	29.26	9.45 (UPS) 27.2 (BAT)	10.04
Gross Weight (kg)	15.78	17.3	11.1	26.63	29.76	13.18	33.16	12.97 (UPS) 30.2 (BAT)	13.56

e-MOJO RT
SERIES

HOME/OFFICE | EMERGENCY | MEDICAL | INDUSTRY | DATA CENTER | TRANSPORT

6/10 kVA
1:1 PHASE

ONLINE UPS



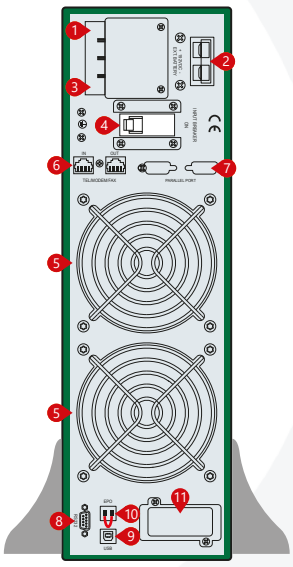
VFI TYPE — UPS ONLINE
RACK/TOWER
PF= 0.9 — POWER FACTOR
Service — SERVICE

FEATURES

- High Frequency and True Double-Conversion
- DSP (Digital Signal Processors) Technology
- Input Power Factor Correction (PFC)
- Wide Input Voltage Range (110~300V)
- Output Power Factor 0.9
- Cold Start
- Auto Sensing Frequency
- ECO Mode Operation for Energy Saving
- Selectable Output Voltage via LCD
- Output Bypass Settable via LCD
- Power-On Self Test
- Advanced Battery Management (ABM)
- Short Circuit and Overload Protection
- Automatic Charging in Off Mode
- Auto Control Fan Speed when Loads Varies
- Generator Compatible
- Standard RS232 Communication Port and RJ45 Protection
- USB/SNMP Communication Port *(Optional)*
- Emergency Power Off (EPO)
- Extension Battery Bank *(Optional)*
- Built-In Isolation Transformer *(Optional)*

DETAILS

1. AC Input
2. DC Input
3. Outlet
4. Breaker
5. Fan
6. Modem/Tel/Fax
7. Parallel Card *(Optional)*
8. RS232
9. USB *(Optional)*
10. EPO
11. SNMP/AS400 *(Optional)*



Rear Panel
6-10kVA

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MODEL			
Capacity		**6**kVA / **5400**W	**10**kVA / **9000**W
INPUT			
Related Voltage		208V / 220V / 230V / 240 VAC	
Voltage Range		Half Load (115-295) ±5 VAC, Full Load (165-295) ±5 VAC	
Frequency		40 ~ 70 Hz (Auto Sensing)	
Power Factor		≥0.99	
Bypass Voltage Range		160V - Rated Output Voltage +32V	
OUTPUT			
Voltage Range		208V / 220V / 230V / 240 VAC Setting Available via LCD	
Voltage Regulation		±1%	
Frequency		Synchronized with Utility in Mains Mode: 50 / 60 Hz ±0.2 Hz (Battery Mode)	
Waveform		Sinusoidal	
Crest Factor		3:1	
Harmonic Distortion		≤2% (Linear Load); ≤5% (Non-Linear Load)	
Transfer Time		Mains Mode to Battery Mode: 0ms Inverter Mode to Bypass Mode: 0ms	
Overload Capability		105% ~ 125% for 3min 125% ~ 150% for 30s >150% for 1s	
EFFICIENCY			
AC Mode		≥92%	
Battery Mode		≥91%	
ECO Mode		≥98%	
BATTERIES			
DC Voltage		192V	
Inbuilt Battery		16 x 7Ah	16 x 9Ah
Charge Current	Standard Model	1A	
	Long Time Model	1A / 3A / 5A / 8A	
Recharge Time		8h	
ALARMS			
Utility Failure		Beep / 4s	
Low Battery		Beep / 1s	
Overload		Beep Twice / 1s	
UPS Fault		Long Beep	
ENVIRONMENTAL			
Humidity		20-90% RH @ 0-40ºC (Non-Condensing)	
Noise Level		≤55 dB (1m)	
COMMUNICATION			
RS232 (Standard) / USB (Optional)		Supports Windows® 98/2000/2003/XP/Vista/2008/Windows® 7/8/10	
SNMP (Optional)		Power Management from SNMP Manager and Web Browser	
DIMENSIONS & WEIGHT		**6**kVA	**10**kVA
Long Time Model			
Dimensions WxDxH (mm)		440 x 555 x 132	
Packaging Dimensions WxDxH (mm)		535 x 660 x 215	
Net Weight / Gross Weight (kg)		16.4 / 20.7	17.1 / 21.4
Standard Model			
Dimensions WxDxH (mm)		440 x 555 x 132 (UPS), 440 x 555 x 132 (BAT)	
Packaging Dimensions WxDxH (mm)		535 x 660 x 215 (UPS), 540 x 685 x 235 (BAT)	
Net Weight / Gross Weight (kg)		16.4 / 20.7 (UPS), 43.6 / 47.1 (BAT)	17.1 / 21.4 (UPS), 49.6 / 53.1 (BAT)

RIGEL ST

SERIES

10-2000 kVA 3:3 PHASE

1-30 kVA 1:1 PHASE

STATIC VOLTAGE STABILIZER

INDUSTRY TRANSPORT MEDICAL

TOWER PF= 0.8 POWER FACTOR Service SERVICE

HIGHLIGHTS

- Microprocessor Controlled Voltage Stabilisation
- Precise Output Voltage Accuracy
- True Static-Modular Design with Thyristor Technology
- High Voltage Regulation Speed
- Maintenance Free

Highly Reliable and Endurable Static Design

• Microprocessor controlled Static design stabilizers automatically regulate and protect the loads against dangerous voltage changes.

• Compatible with all load types and offering independent phase control, they deliver ultra-fast response times in correcting under / over voltages, sags and surges - making them ideal for highly sensitive / mission critical loads and applications.

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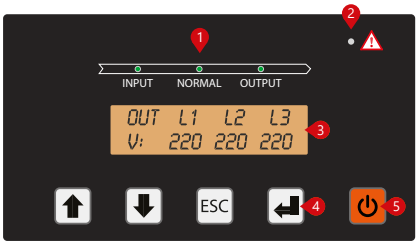
Standart Electrical Features

- Wide Input Voltage Range
- Precise Output Voltage Accuracy ±1% to ±5%
- Ultra Fast Voltage Regulation (500V/s)
- True 32-bit Microcontroller Controlled
- High Efficiency >97%
- Independent Phase Regulation to Correct Voltage aand Load Imbalance
- Electronic Protection Against to Over Load, Low Voltage, High Voltage, Over Temperature, Over Current and Short Circuit
- Overload Protection up to 150%
- Fast Responsive to Voltage Surges
- User Friendly, Easy and Comprehensive LCD Display and Mimic Diagram



1. Input Led
   Bypass Led
   Normal Led
   Output Led
2. Alarm/Warning Led
3. LCD Display
4. Menu Keys
5. On/Off Button

- Advanced Alarm Menu
- Manual Bypass
- Auto Restart when Mains Available
- Full Electronic Static Structure with No Moving Parts, Delivering a 'Maintenance Free' Voltage Regulation Solution
- Compact Design with High Quality Material and Minimum Malfunction Hazard
- Designed, Manufactured and Supplied to Comply with
- Fully CE Compliant and Labelled

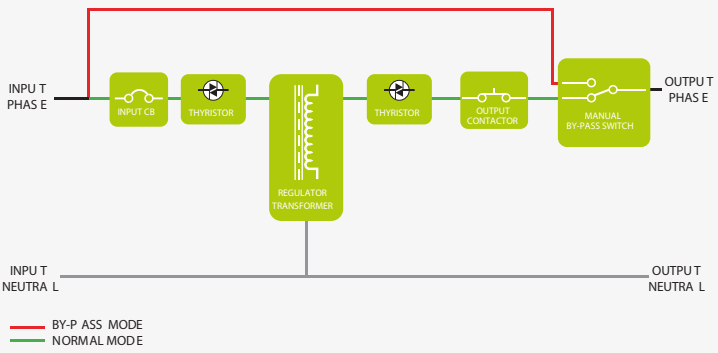
Flexibility

- Available at any required input voltage value and range.
- Available at any required output voltage value and tolerance from ±1% to ±5%.
- Output voltage can be adjusted by the LCD panel.
- Functionable with 50Hz and 60Hz.
- Optional MCCB can be added to the output to provide additonal protection.
- Isolation transformer or voltage changing auto-transformer can be added for both input and output.
- Indoor and outdoor special cabinets with various IP protection classes can be provided.
- Optional EMC-filters at both input and output.
- Optional high-voltage protection and surge arrester.
- Optional Modbus.

MICROPROCESSOR CONTROLLED THYRISTOR TECHNOLOGY

Based on high speed semiconductor (Thyristor) technology and all digital microprocessor control, RIGEL ST Series Static Voltage Stabilizers continuously monitor the incoming supply. Should the incoming voltage rise or drop, the stabilizers will automatically control the output to ensure the voltage reaching the load equipment always remains constant at the requisite voltage.

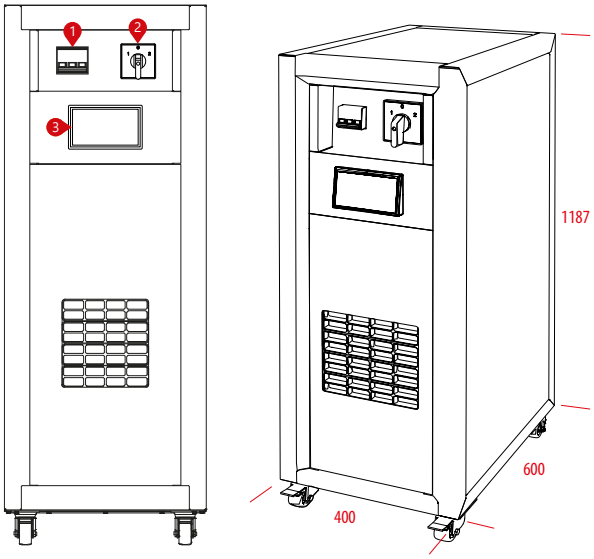
Inbuilt spike protection ensures the load is continuosly protected against harmful mains born high energy spikes and surges.



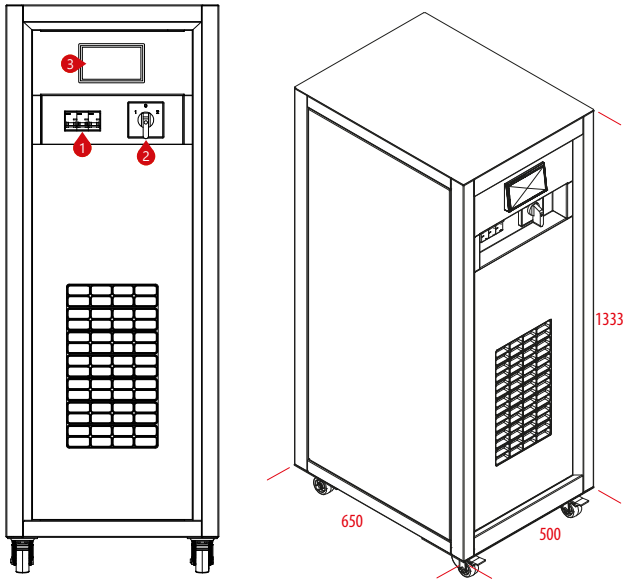
Static Voltage Stabilizer Single Line Diagram

DETAILS

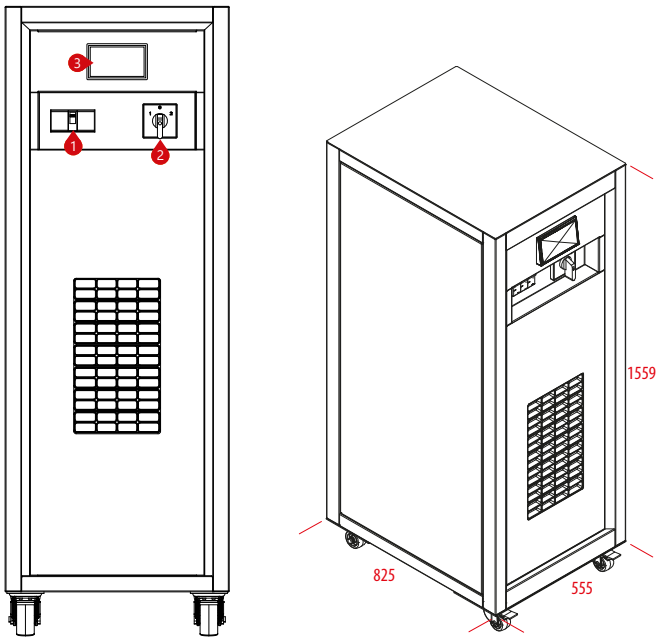
RIGEL ST SERIES 10-30 kVA



RIGEL ST SERIES 40-60-75 kVA



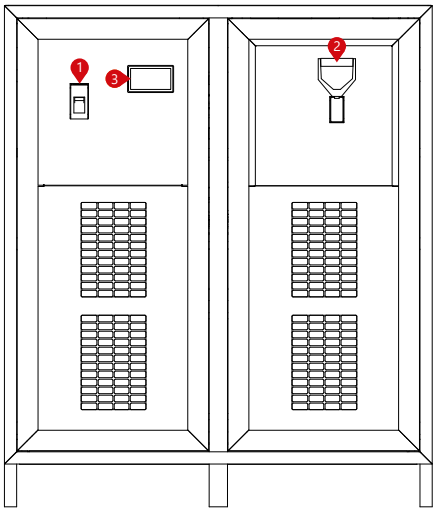
RIGEL ST SERIES 100-120-150 kVA

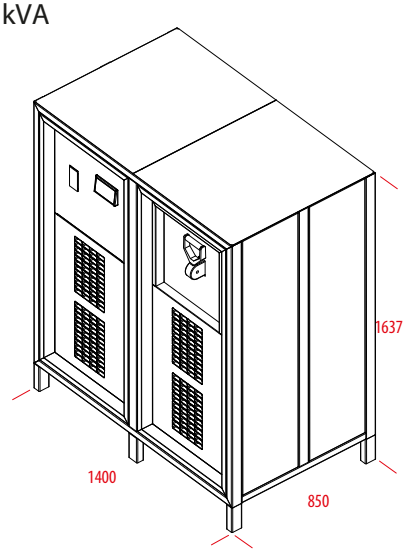


1. Input Switch
2. Bypass Switch
3. LCD Display
4. Optional Card Slot
5. Connection Terminal (Rear Panel)

DETAILS

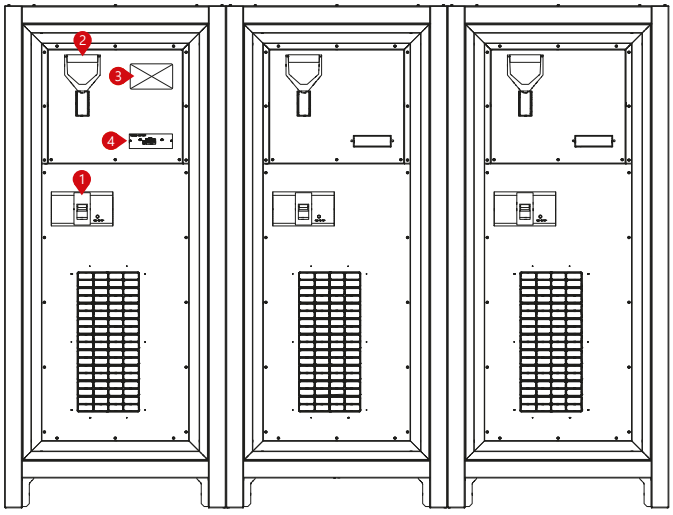
RIGEL ST SERIES 200-300-400-500 kVA

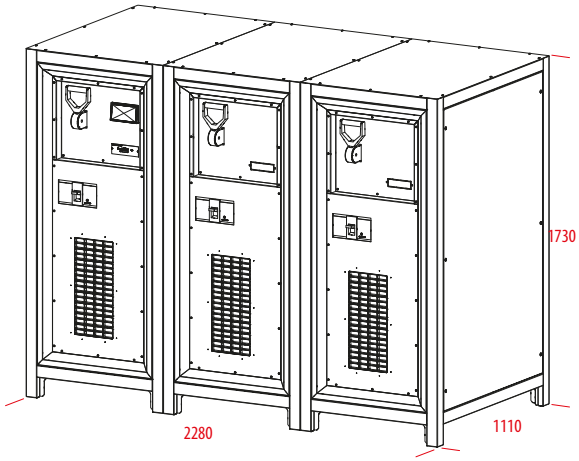




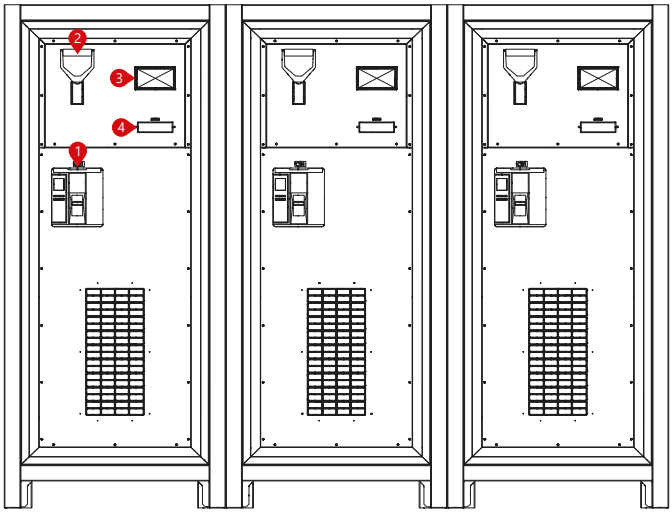
1. Input Switch
2. Bypass Switch
3. LCD Display
4. Optional Card Slot
5. Connection Terminal (Rear Panel)

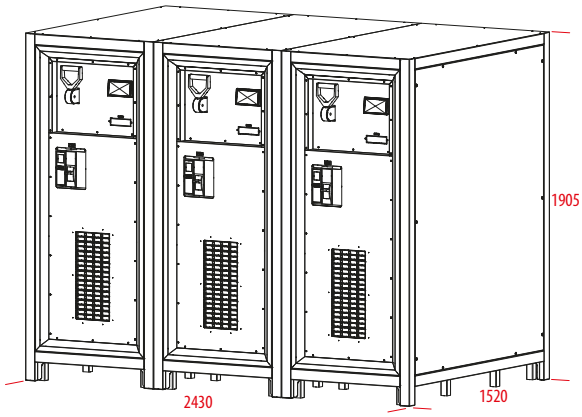
RIGEL ST SERIES 600-800-1000-1250 kVA





RIGEL ST SERIES 1600-2000 kVA





MODEL																							
Capacity (kVA)		10	15	22,5	30	45	60	75	100	120	150	200	250	300	400	500	600	800	1000	1250	1600	2000
INPUT																						
In. Vol. Correct. Interval		275~450 VAC (Optional: 190V~485V)																				
Operation Frequency		50~60 Hz (±10%)																				
Line Input Protection		Overcurrent Thermic Fuse																				
OUTPUT																						
Output Voltage		380 VAC RMS ±3% (Std.)				380 VAC RMS ±5% (Optional 1% to 5%)																
Overloading		10min 125% Load, 1min 150% Load, 10sec 200% Load, 20ms 500% Load																				
Correction Speed		500 Volt/sec																				
Upturn Period		20ms																				
Output Protection		Short Circuit, Overload, Overtemperature, Over and Low Voltage Protections																				
WORKING PRINCIPLE		Microprocessor Controlled, Full Automatic, Static, Semi Conductor Electronic Structure Maintenance Free																				
CONTROL PANEL																						
Display and Buttons		Load Level, Input-Output Voltage																				
Alert Message		Input Low/High, Output Low/High, Overtemperature																				
GENERAL																						
Efficiency		>97% (Full Load)																				
Mechanical Bypass		"Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On/Off																				
Protection Level		IP20																				
Standard		TS EN 61000-6-2:2006, TS EN 61000-6-3:2007 (EMC), IEC60204-1+A1:2008 (LVD)																				
ENVIRONMENTAL																						
Operating Temperature		-10ºC~50ºC																				
Storage Temperature		-25ºC~60ºC																				
Relative Humidity		<90%, DIN (40040)																				
Altitude		<2000m																				
Noise Level		<50 dB				<55 dB			<58 dB			<58 dB					<63 dB					
DIMENSIONS & WEIGHT		10	15	22,5	30	45	60	75	100	120	150	200	250	300	400	500	600	800	1000	1250	1600	2000
Cabinet Dimensions (mm)	Width	400				500			555			1400					2280				2430	
	Depth	600				650			825			850					1110				1520	
	Height	1187				1333			1559			1637					1730				1905	
Weight (Kg)		80	95	112	120	175	203	233	277	320	369	639	705	775	857	930	1670	1800	1890	2110	2820	3150

MODEL										
Capacity (kVA)		1	2	3	5	7,5	10	15	20	30
INPUT										
In. Vol. Correct. Interval		120~230 / 145~245 / 160~250 VAC								
Operation Frequency		50~60 Hz (±10%)								
Line Input Protection		Overcurrent Thermic Fuse								
OUTPUT										
Output Voltage		220 VAC RMS ±3% (Std.)		220 VAC RMS ±5% (Optional 1% to 5%)						
Overloading		10min 125% Load, 1min 150% Load, 10sec 200% Load, 20ms 500% Load								
Correction Speed		500 Volt/sec								
Upturn Period		20ms								
Output Protection		Short Circuit, Overload, Overtemperature, Over and Low Voltage Protections								
WORKING PRINCIPLE		Microprocessor Controlled, Full Automatic, Static, Semi Conductor Electronic Structure Maintenance Free								
CONTROL PANEL										
Display and Buttons		Load Level, Input-Output Voltage								
Alert Message		Input Low/High, Output Low/High, Overtemperature								
GENERAL										
Efficiency		>97% (Full Load)								
Mechanical Bypass		"Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On/Off								
Protection Level		IP20								
Standard		TS EN 61000-6-2:2006, TS EN 61000-6-3:2007 (EMC), IEC60204-1+A1:2008 (LVD)								
ENVIRONMENT										
Operating Temperature		-10ºC~50ºC								
Storage Temperature		-25ºC~60ºC								
Relative Humidity		<90%, DIN (40040)								
Altitude		<2000m								
Noise Level		<50 dB								
DIMENSIONS & WEIGHT		1	2	3	5	7,5	10	15	20	30
Dimensions (mm)	Width	192		260				430		
	Depth	361		453				596		
	Height	352		416				777		

RIGEL SR

SERIES

6-2000 kVA 3:3 PHASE

1-50 kVA 1:1 PHASE

SERVO VOLTAGE STABILIZER

IP20, IP21, IP31, IP44, IP54,
Versions Available

INDUSTRY TRANSPORT MEDICAL

TOWER PF= 0.8 POWER FACTOR Service SERVICE

HIGHLIGHTS

- Servo Motor
- Microcontroller Controlled Voltage Regulation
- Precision Output Voltage Control
- Full Automatic

Reliable Solution for All Electrical Devices Requiring Precise and Fast Adjustment

• Datrofel Servo Voltage Stabilizer comprise of variac, transformer, servo motor and microprocessor control circuit.

• Measuring the mains voltage with microprocessor electronic card, can arrange the position of servo motor and provide the output voltage 220/230/240/380/400 or 415VAC.

• It can be used initially in military and industrial, especially in main machines that require precise and fast adjustment, lifts and facilities with inrush current problems.

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Standart Electrical Features

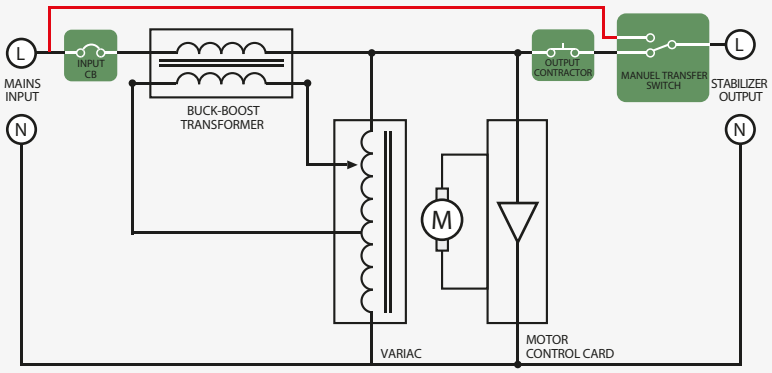
- Microprocessor Controlled
- Precise Output Voltage Correction Accuracy ±1%
- High Efficiency >96%
- Overcurrent, High Temperature, High-Low Voltage and Short Circuit Protection
- At 100%-125% Load 1min, At Above 125% Load 10sec
- Input Voltage, Output Voltage-Current, % Load and Transformer Temperature via User Friendly Panel
- Advanced Alarm Menu
- Manual Bypass
- Unaffected Chassis Technology by Dust, Moisture, Vibration
- Fan Cooling System
- Compact Design with High Quality Materials
- Minimum Fault Risk
- User Friendly LCD Display and Mimic Diagram
- CE Certified

Flexibility

- Available at any required input voltage value and range.
- Available at any required output voltage value and tolerance from ±1% to ±5%.
- Output voltage can be adjusted by the LCD panel.
- Functionable with 50Hz and 60Hz.
- Optional CB can be added to the output to provide additonal protection.
- Isolation transformer can be added for both input and output.
- Indoor and outdoor special cabinets with various IP protection classes can be provided.
- High voltage or lightning protection to input or output units can be added.

MICROPROCESSOR CONTROLLED SERVO TECHNOLOGY

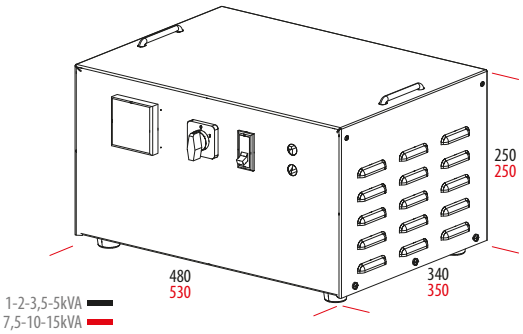
The MSR Series Servo Voltage Regulator transfers the electrical energy received from the grid to the output and continuously monitors the output voltage magnitude. If there is a deterioration in the output voltage according to the desired output voltage values, the microcontroller control unit immediately changes the position of the variac with the help of the motor and ensures that the output voltage remains within the appropriate values. Thus, the Servo Voltage Regulator (Servo) obtains a voltage magnitude between the desired values at the output by adding (or subtracting) the voltage magnitude of the appropriate additional energy generated by the electrical energy it receives from the network to the voltage magnitude of the grid.

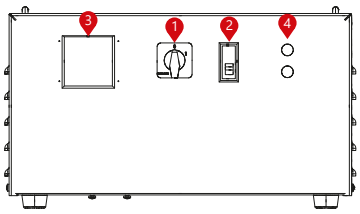


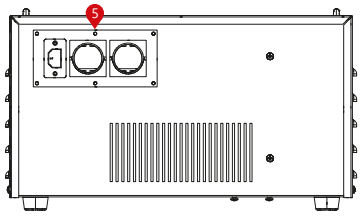
Servo Voltage Stabilizer Block Diagram

DETAILS

RIGEL SR SERIES 1-2-3,5-5-7,5-10-15 kVA 1:1F

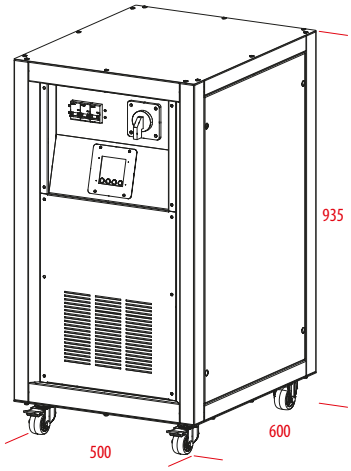


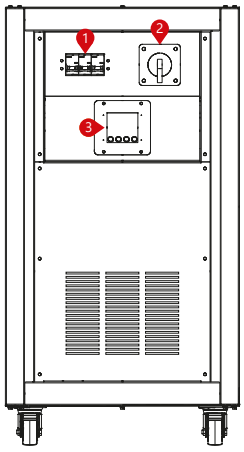




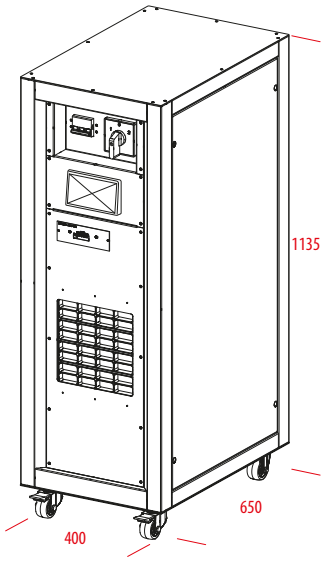
RIGEL SR SERIES 20-25-30-40-50 kVA 1:1F

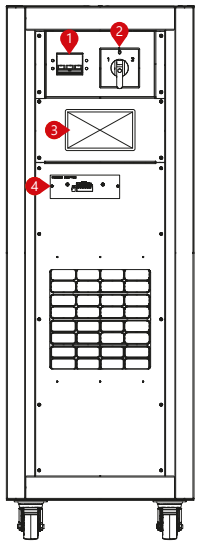
1. Input Switch
2. Bypass Switch
3. User Panel
4. Optional Card Slot
5. Connection Terminal (Rear Panel)



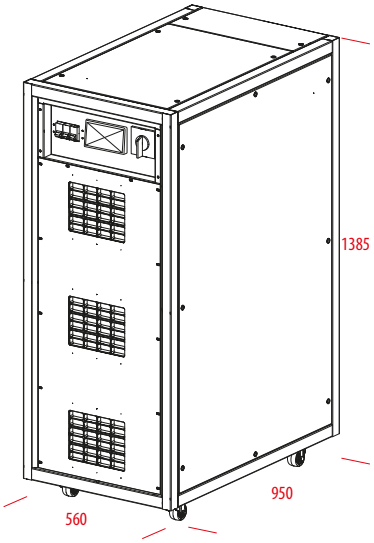


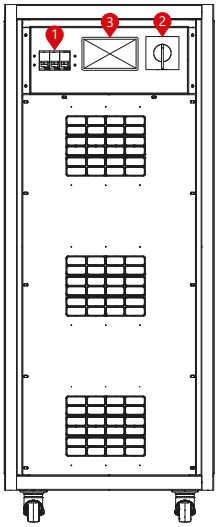
RIGEL SR SERIES 6-10,5-15-22,5-30-45 kVA 3:3F



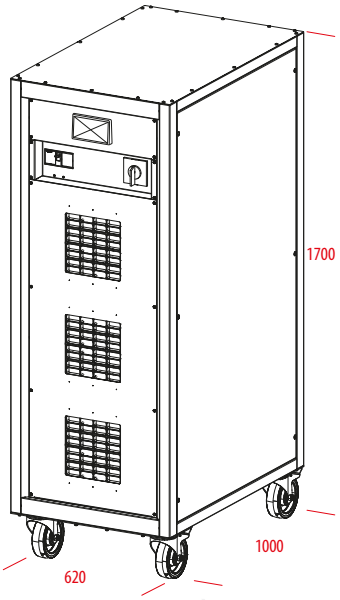


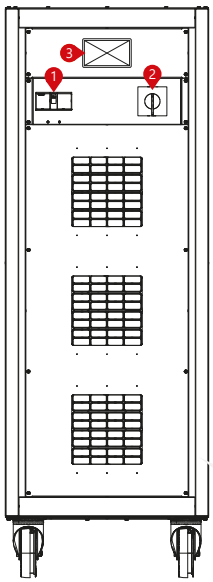
RIGEL SR SERIES 60-75-100 kVA 3:3F





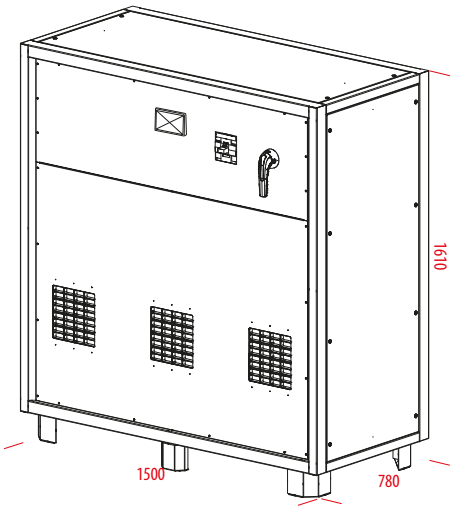
RIGEL SR SERIES 120-150 kVA 3:3F

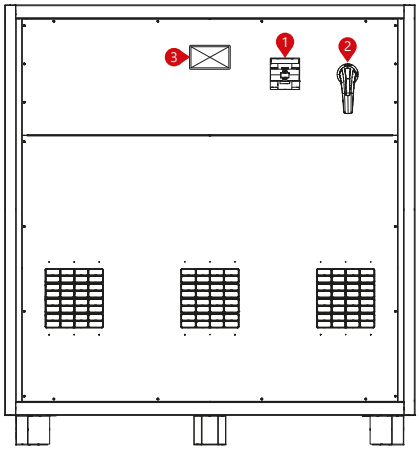




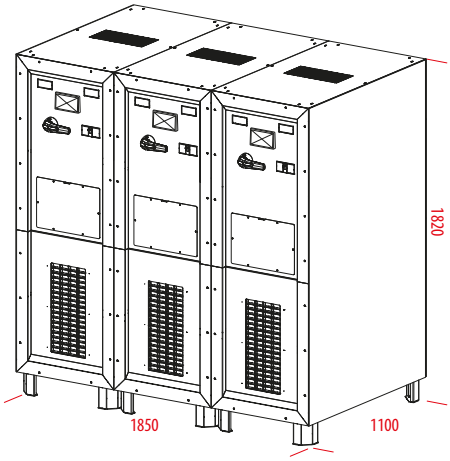
DETAILS

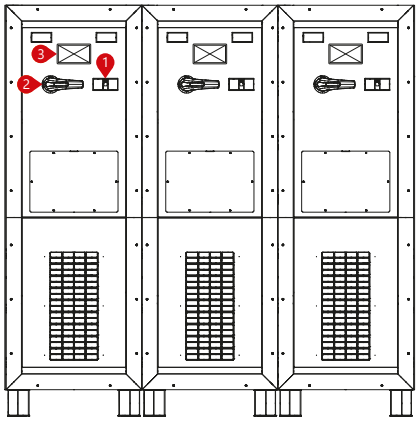
RIGEL SR SERIES
200-250-300 kVA 3:3F



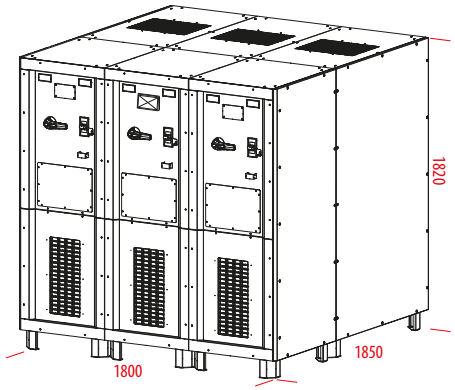


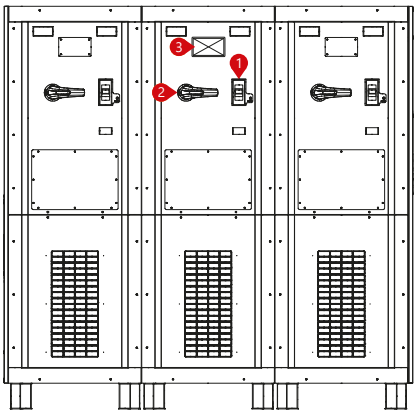
RIGEL SR SERIES
400-500-600 kVA 3:3F



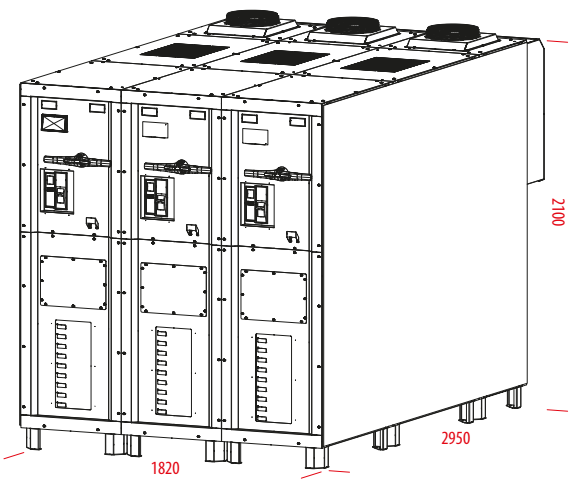


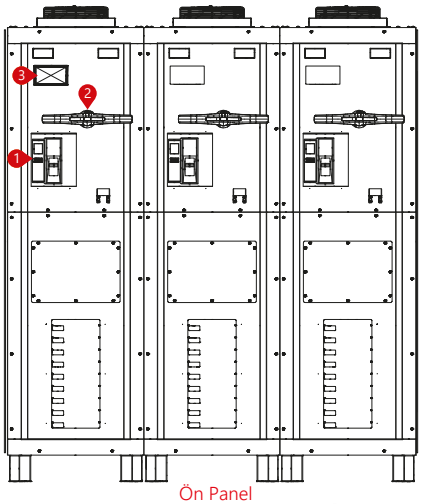
RIGEL SR SERIES
800-1000-1250 kVA 3:3F





RIGEL SR SERIES 1600-2000 kVA 3:3F





1. Input Switch
2. Bypass Switch
3. User Panel
4. Optional Card Slot
5. Connection Terminal (Rear Panel)

MODEL (3:3 Phase)																							
Capacity (kVA)		6	10,5	15	22,5	30	45	60	75	100	120	150	200	250	300	400	500	600	800	1000	1250	1600	2000
DIMENSIONS & WEIGHT																							
Cabinet Dimensions (mm)	Width	400						560			620		1500			1850			1800			610	
	Depth	650						950			1000		780			1100			1850			2890	
	Height	1135						1385			1700		1610			1820			1820			2080	
Net Weight (Kg)		65	120	135	154	183	237	330	356	456	545	565	1050	1150	1250	1500	2000	2500	2750	3500	3750	4500	5500
Noise Level		<50 dB																					

MODEL (1:1 Phase)													
Capacity (kVA)		1	2	3,5	5	7,5	10	15	20	25	30	40	50
BOYUTLAR & AĞIRLIK													
Cabinet Dimensions (mm)	Width	480				530			500				
	Depth	340				350			600				
	Height	250				250			935				
Net Weight (Kg)		15	20	29	40	47	55	75	90	110	130	165	185
Noise Level		<50 dB						<54 dB					

INPUT	
In. Vol. Correction Interval	**1:1 Phase:** 160~260 VAC • **3:3 Phase:** 275~450 VAC (Standard), 215~415 VAC (Optional)
Operation Frequency	47~65 Hz
Line Input Protection	Overcurrent, Low and High Voltage Protection (Optional)
OUTPUT	
Output Voltage	**1:1 Phase:** 220 VAC RMS ±2% • **3:3 Phase:** 380 VAC RMS ±1%
Overloading	At 100%-125% Load 1min, At Above 125% Load 10sec
Correction Speed	~90 Volt/sec
Upturn Period	~90 Volt/sec (160 VAC~250 VAC)
Output Protection	Short Circuit - Overcurrent Protection, Overvoltage Protection (Optional)
WORKING PRINCIPLE	Servo Motor, Microprocessor Controlled, Full Automatic
GENERAL	
Cooling	Smart Fan System
Measured Value Monitor	Monitoring Input Voltage, Output Voltage-Current,% Load and Transformer Temperature Values via MSR Panel
Total Efficiency	**1:1 Faz:** >96% • **3:3 Faz:** >96%
Mechanical Bypass	"Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On/Off
Protection Level	IP 20
ENVIRONMENTAL	
Operating Temperature	-10°C~50°C
Storage Temperature	-25°C~60°C
Relative Humidity	<90%, DIN (40040)
Altitude	<2000m

VEGA MF

MONOPHASE VOLTAGE REGULATORS

daTRofel
energy & technology

Product Description

Servo-controlled microprocessor voltage regulator is one of the most widely used regulation methods. More than 200 standard models are manufactured, between 3.5 KVA and 50 KVA, as single-phase. Servo control voltage adjustment system consists of electronic circuits that completely control the system, including toroidal transformer (Variac), servo motor controlling variac, auxiliary transformer and servo motor driver. The servo-controlled microprocessor voltage regulator is based on feedback and comparison. With the fast-response control system, even small voltage variations at the input are quickly corrected thanks to the DC motor mechanism with high starting torque. When the input voltage goes out of the working area, the motor is de-energized by sensitive micro switches used as limit switches. The output is fully sinusoidal and there are no distortions such as distortion or interference. It does not disturb the network frequency and does not fluctuate in voltage changes under load.

FULL AUTOMATIC
SERVO VOLTAGE
REGULATOR
1KVA-50KVA

Product Detail

- Microprocessor protected
- 90 V/s. Voltage regulation speed
- Ability to drive non-linear loads
- Wide power and voltage range
- High efficiency, quiet operation
- Manual By-Pass feature
- Over current and short circuit protection
- Over and under voltage protection (optional)
- Aesthetic ergonomic design, small size, long life
- Reliable use for all electrical devices
- 2 Years warranty against factory defects
- 15 Years spare parts warranty

Usage Areas

- Uninterruptible Power Supplies
- CNC Machines
- Automation Equipment
- Elevator
- Computer Systems
- Air Conditioners
- Coolers
- Photo-Printing Press Machines
- Ships
- Electric Motors
- Image and Sound Production Stations
- TV– Radio Transmitter Stations
- GSM Base Stations
- Fuel Pump Stations
- Bank Branches
- Business-Shopping Centers
- Medical Devices-Hospitals
- Factories

daTRofel
energy & technology

Monophase Voltage Regulator
Technicial Specifications

Input	
VOLTAGE CORRECTION RANGE	1:1 Phase: 160~250 VAC (Standart), 120~230 VAC (Optional)
VOLTAGE WORKING RANGE	1:1 Phase 90~285 VAC
WORKING FREQUENCY	47~65 Hz
MAINS INPUT PROTECTION	Over Current, Low and High Voltage Protection (Optional)

Output	
VOLTAGE	1:1 Phase: 220 VAC RMS ±%2
CORRECTION SPEED	~90 Volt/sn
RECOVERY TIME	~90 Volt/sn (160 VAC~250 VAC)
OUTPUT PROTECTION	Short Circuit - Overcurrent Protection, High Voltage Protection (Optional)

Working Technique	Servo Motor, Microprocessor Controlled, Fully Automatic

General	
COOLING SYSTEM	Intelligent Fan System (Optional)
MONITORING THE MEASURED VALUES	Voltmeter (74x74mm) Monitoring the Output Voltage and Mains Voltage
MECHANICAL BYPASS	"Manually Operated Mains - Voltage Regulator Selector Switch" On/Off Switch
LEVEL OF PROTECTION	IP 20

Environment	
OPERATING TEMPERATURE	-10°C~50°C
STORAGE TEMPERATURE	-25°C~60°C
RELATIVE HUMIDITY	<%90, DIN (40040)
WORKING HEIGHT	<2000m
NOISE LEVEL	<50 dB (1 square meter)

Power	Height	Deep	Widht	Weight
3,5 KVA	30 CM	40 CM	34 CM	22 KG
5 KVA	30 CM	40 CM	34 CM	25 KG
7.5 KVA	30 CM	43 CM	55 CM	50 KG
10 KVA	30 CM	43 CM	55 CM	56 KG
15 KVA	30 CM	43 CM	55 CM	66 KG
20 KVA	85 CM	58 CM	50 CM	110 KG
25 KVA	85 CM	58 CM	50 CM	112 KG
30 KVA	85 CM	58 CM	50 CM	145 KG
40 KVA	85 CM	58 CM	50 CM	160 KG
50 KVA	85 CM	58 CM	50 CM	174 KG

VEGA TF

TRIPHASE VOLTAGE RAGULATORS

daTRofel
energy & technology

FULL AUTOMATIC SERVO VOLTAGE REGULATOR 6KVA-5000KVA

Product Description

Servo-controlled microprocessor voltage regulator is one of the most widely used regulation methods. More than 200 standards, three-phase from 3 KVA to 5,000 KVA model is produced. Servocontrol voltage The adjustment system consists of electronic circuits that completely control the system, including the toroidal transformer (Varyac), the servo motor controlling the variac, the auxiliary transformer and the servo motor driver. The servo-controlled microprocessor voltage regulator is based on feedback and comparison. With the fast-response control system, even small voltage variations at the input are quickly corrected thanks to the DC motor mechanism with high starting torque. When the input voltage goes out of the working area, the motor is de-energized by the sensitive microswitches used as limit switches. The output is fully sinusoidal and distortions such as distortion or interference-interference are not seen. It does not disturb the mains frequency and does not fluctuate in voltage changes under load.

Product Detail

- Microprocessor protected
- 90 V/s. Voltage regulation speed
- Ability to drive non-linear loads
- Wide power and voltage range
- High efficiency, quiet operation
- Manual By-Pass feature
- Over current and short circuit protection
- Over and under voltage protection (optional)
- Aesthetic ergonomic design, small size, long life
- Reliable use for all electrical devices
- 2 Years warranty against factory defects
- 15 Years spare parts warranty

Usage Areas

- Uninterruptible Power Supplies
- CNC Machines
- Automation Equipment
- Elevator
- Computer Systems
- Air Conditioners
- Coolers
- Photo-Printing Press Machines
- Ships
- Electric Motors
- Image and Sound Production Stations
- TV– Radio Transmitter Stations
- GSM Base Stations
- Fuel Pump Stations
- Bank Branches
- Business-Shopping Centers
- Medical Devices-Hospitals
- Factories

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energy & technology

Triphase Voltage Regulator
Technicial Specifications

Input	
VOLTAGE CORRECTION RANGE	• 3:3 Phase: 275~430 VAC (Standart), 200~400 VAC (Optional)
VOLTAGE WORKING RANGE	3:3 Phase: 155~490 VAC
WORKING FREQUENCY	47~65 Hz
MAINS INPUT PROTECTION	Overcurrent, Low and High Voltage Protection (Optional)

Output	
VOLTAGE	• 3:3 Phase: 380 VAC RMS ±%1
CORRECTION SPEED	~90 Volt/sn
RECOVERY TIME	~90 Volt/sn (160 VAC~250 VAC)
OUTPUT PROTECTION	Short Circuit - Overcurrent Protection, High Voltage Protection (Optional)

Working Technique	Servo Motor, Microprocessor Controlled, Fully Automatic

General	
COOLING SYSTEM	Intelligent Fan System (Optional)
MONITORING THE MEASURED VALUES	Voltmeter (74x74mm) Monitoring the Output Voltage and Mains Voltage
MECHANICAL BYPASS	"Manually Operated Mains - Voltage Regulator Selector Switch" On/Off Switch
LEVEL OF PROTECTION	IP 20

Environment	
OPERATING TEMPERATURE	-10°C~50°C
STORAGE TEMPERATURE	-25°C~60°C
RELATIVE HUMIDITY	<%90, DIN (40040)
WORKING HEIGHT	<2000m
NOISE LEVEL	<50 dB (1 square meter)

Power	Height	Deep	Width	Weight
6 KVA	31 CM	53 CM	74 CM	67 KG
10.5 KVA	31 CM	53 CM	74 CM	75 KG
155 KVA	31 CM	53 CM	74 CM	85 KG
22,5 KVA	111 CM	47 CM	55 CM	153 KG
30 KVA	111 CM	47 CM	55 CM	176 KG
45 KVA	111 CM	47 CM	55 CM	215 KG
60 KVA	120 CM	62 CM	74 CM	292 KG
75 KVA	120 CM	62 CM	74 CM	303 KG
100 KVA	150 CM	67 CM	94 CM	460 KG
120 KVA	150 CM	67 CM	94 CM	500 KG
150 KVA	150 CM	67 CM	94 CM	540 KG

ENERGY BOX

CUSTOMIZED POWER SOLUTIONS

OUTDOOR TRANSPORT INDUSTRY EMERGENCY

A full range of custom and rugged AC&DC Power Solutions to meet with your specific requirements and where a standard UPS will not be suitable.

SOLUTIONS

- Containerised Power Systems
- Outdoor AC&DC Power Systems
- Marine/Offshore AC&DC Power Systems
- Defence Power Systems
- Custom DC Systems/Chargers
- Standalone or Modular Design Tailored to the Requirements

CONTAINERISED POWER SYSTEMS

• Datrofel's containerised solutions integrates Datrofel UPS and Generator together where the UPS supports critical loads without interruption until the generator kicks in. With the "True no break power solution", business continuity without costly downtime is ensured.

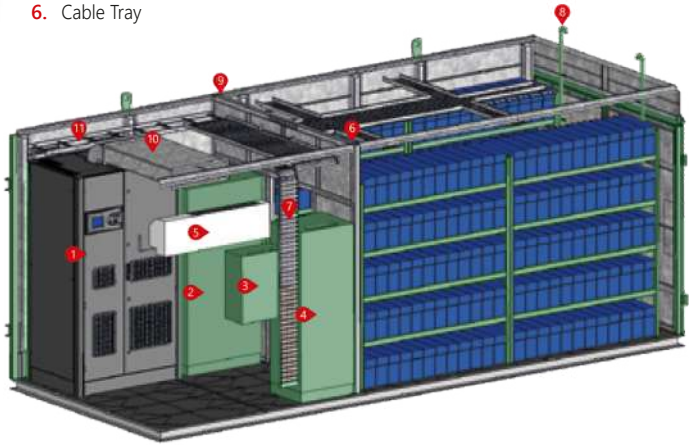
• Cost effective and energy saving - all in one solution. It features high reliability and security, fast deployment, best mobility, energy saving and is suitable for a wide variety of applications and also applicable to special mobile scenarios.

Power Distribution | Railway | Telecom | Marine | ITS Traffic | Alternative Power | Oil and Gas | Military/Defence

Features

- Complete containerised UPS system up to 1000kVA 3Phase
- Up to 96% efficiency
- Integrated transfer and bypass switches
- Fully bunded ISO container
- Personnel and maintenance access doors
- Digital controls for UPS and switchgear
- Fire detection and protection
- Air conditioned UPS and battery compartments
- Environment control system.

1. Active Power Unit: UPS/ Power Converter/Freq. Converter etc.
2. Main AC In/Out Electrical Panel
3. Internal AC Distribution Electrical Panel
4. Battery Breaker Panel
5. AC Aircon
6. Cable Tray
7. Cable Tray
8. Hyrdojen Gas Release
9. Active Power Unit/ Battery Compartments Seperation
10. Air Baffle
11. Cables Conduit



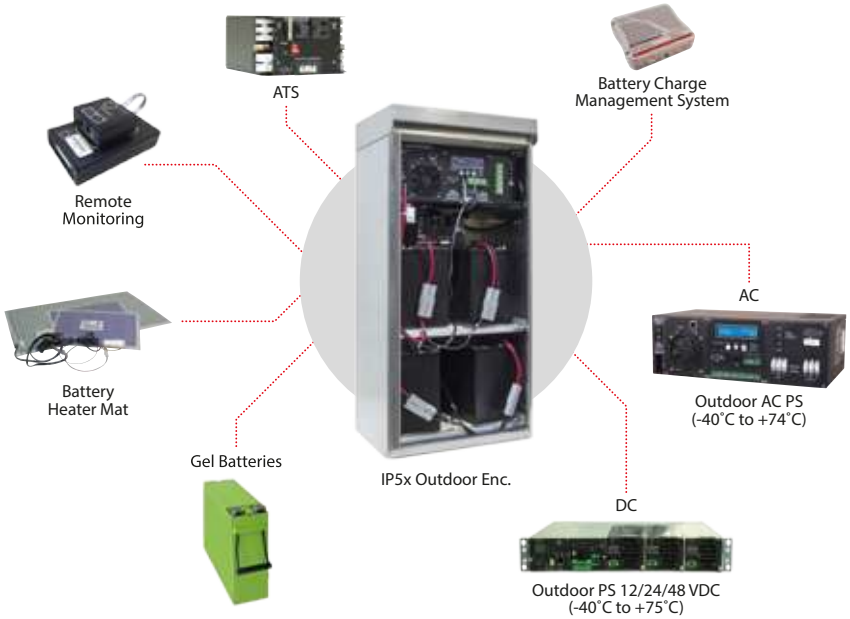
OUTDOOR AC&DC POWER SYSTEM S

Features

- Designed to operate under extreme temperature conditions (-40C to +74C)
- Made of rugged electric and electronic components
- Due to fact that the UPS is designed for extreme conditions, the elements that maket he UPS are also designed for extreme conditions
- Conformal coated PCB's protect against exposure to moisture and high humidity environment
- Thermostatically controlled battery heater mats available
- Temperature compensation utilized to effectively manage the battery charge voltage based on temperature
- Remote monitoring via SNMP web based communication
- Built in AVR (Automatic Voltage Regulation) allows for a wider input voltage range for World-wide use
- Enhanced surge protection capability (TVSS- Transient
- Voltage Surge Suppressor, LAP (Lighting Arrestor Protection)
- Enclosures meet specific ingress protection (IPXX) standard for extreme environments (Zone 4 earthquake, rain test, dust, impact test, etc)

Applications

- Intelligent Transportation Systems
- Security Applications (Sea/Land/Airport)
- Telecom Applications
- Defence/Military Backup Systems
- Railway Applications
- Marine/Offshore Applications
- Industrial Applications



Outdoor AC&DC UPS Systems for Intelligent Transportation/Traffic/Security Sytems

INDUSTRIAL TYPE AIR CONDITIONER

AIR CONDITIONING

Slimmest yet most powerful medium static pressure unit on the market

FHA100-140A9

› Slimmest unit in class, only 245mm (300mm built-in height) and therefore narrow ceiling voids are no longer a challenge
› Low operation sound level down to 25dBA
› Medium external static pressure up to 150Pa facilitates using flexible ducts of varying lengths
› Possibility to change ESP via wired remote control allows optimisation of the supply air volume
› Discretely concealed in the ceiling: only the suction and discharge grilles are visible
› Multi zoning kit allows multiple individually-controlled climate zones to be served by one indoor unit
› Optional fresh air intake
› Flexible installation: air suction direction can be altered from rear to bottom suction and choice between free use or connection to optional suction grilles
› Standard built-in drain pump with 625mm lift increases fexibility and installation speed

Efficiency data				**FBA + RZAG**	**35A9 + 35A**	**50A9 + 50A**	**60A9 + 60A**	**71A9 + 71NV1**	**100A + 100NV1**	**125A + 125NV1**	**140A + 140NV1**	**71A9 + 71NY1**	**100A + 100NY1**	**125A + 125NY1**	**140A + 140NY1**
Cooling capacity	Min./Nom./Max.			kW	1.6 /3.5 /5.0	1.7 /5.0 /6.0	1.7 /6.0 /7.0	-/6.80 /-	-/9.50 /-	-/12.1 /-	-/13.4 /-	-/6.80 /-	-/9.50 /-	-/12.1 /-	-/13.4 /-
Heating capacity	Min./Nom./Max.			kW	1.40/4.00/5.00	1.70/6.00/6.00	1.70/7.00/7.50	-/7.50 /-	-/10.8 /-	-/13.5 /-	-/15.5 /-	-/7.50 /-	-/10.8 /-	-/13.5 /-	-/15.5 /-
Space cooling	Energy efficiency class				A++			-		A++		-			
	Capacity		Pdesign	kW	3.50	5.00	6.00	6.80	9.50	12.1	13.4	6.80	9.50	12.1	13.4
	SEER				6.12	6.30	6.15	6.50	6.47	6.56	6.42	6.50	6.47	6.56	6.42
	ηs,c			%	-					259	254	-		259	254
	Annual energy consumption			kWh/a	200	278	341	366	514	1,107	1,252	366	514	1,107	1,252
Space heating (Average climate)	Energy efficiency class				A+			-		A+		-			
	Capacity		Pdesign	kW	4.20	4.30	4.50	4.70	7.80	9.52		4.70	7.80	9.52	
	SCOP/A				4.10			4.20	4.36	4.37	4.34	4.20	4.36	4.37	4.34
	ηs,h			%	-					172	171	-		172	171
	Annual energy consumption			kWh/a	1,434	1,469	1,537	1,566	2,505	3,050	3,070	1,566	2,505	3,050	3,070

Indoor unit				**FBA**	**35A9**	**50A9**	**60A9**	**71A9**	**100A**	**125A**	**140A**	**71A9**	**100A**	**125A**	**140A**
Dimensions	Unit	HeightxWidthxDepth		mm	245x700x800		245x1,000x800		245x1,400x800			245x1,000x800	245x1,400x800		
Weight	Unit			kg	28.0		35.0		46.0			35.0	46.0		
Air filter	Type				Resin net										
Fan	Air flow rate	Cooling	Low/Medium/High	m^3/min	10.5/12.5/15.0		12.5/15.0/18.0		23.0/26.0/29.0	23.5/29.0/34.0		12.5/15.0/18.0	23.0/26.0/29.0	23.5/29.0/34.0	
		Heating	Low/Medium/High	m^3/min	10.5/12.5/15.0		12.5/15.0/18.0		23.0/26.0/29.0	23.5/29.0/34.0		12.5/15.0/18.0	23.0/26.0/29.0	23.5/29.0/34.0	
	External static pressure	Nom./High		Pa	30 /150				40 /150	50 /150		30 /150	40 /150	50 /150	
Sound power level	Cooling			dBA	60.0		56.0		58.0	62.0		56.0	58.0	62.0	
Sound pressure level	Cooling	Low/Medium/High		dBA	29.0/32.0/35.0		25.0/28.0/30.0		30.0/32.0/34.0	32.0/35.0/37.0		25.0/28.0/30.0	30.0/32.0/34.0	32.0/35.0/37.0	
	Heating	Low/Medium/High		dBA	29.0/34.0/37.0		25.0/28.0/31.0		30.0/33.0/36.0	32.0/35.0/38.0		25.0/28.0/31.0	30.0/33.0/36.0	32.0/35.0/38.0	
Control systems	Infrared remote control				BRC4C65 / BRC4C66										
	Wired remote control				BRC1H52W/S/K / BRC1E53A / BRC1E53B / BRC1E53C / BRC1D52										
Power supply	Phase/Frequency/Voltage			Hz/V	1~/50/60/220-240/220										

Outdoor unit				**RZAG**	**35A**	**50A**	**60A**	**71NV1**	**100NV1**	**125NV1**	**140NV1**	**71NY1**	**100NY1**	**125NY1**	**140NY1**
Dimensions	Unit	HeightxWidthxDepth		mm	734 x870 x373			870 x1,100 x460							
Weight	Unit			kg	52			81	85	95		81	85	94	
Sound power level	Cooling			dBA	62.0	63.0	64.0	64	66	69	70	64	66	69	70
	Heating			dBA	62.0	63.0	64.0	-		68	71	-		68	71
Sound pressure level	Cooling	Nom.		dBA	48.0	49.0	50.0	46	47	49	50	46	47	49	50
	Heating	Nom.		dBA	48.0	49.0	50.0	48	50	52		48	50	52	
Operation range	Cooling	Ambient	Min.~Max.	°CDB	-20~52			-20 ~52							
	Heating	Ambient	Min.~Max.	°CWB	-20~24			-20 ~18							
Refrigerant	Type/GWP				R-32/675.0			R-32/675							
	Charge			kg/TCO2Eq	1.55/1.05			3.20/2.16		3.70/2.50		3.20/2.16		3.70/2.50	
Piping connections	Liquid/Gas	OD		mm	6.35/9.50	6.35/12.7		9.52/15.9							
	Piping length	OU - IU	Max.	m	50			55		85		55		85	
		System	Equivalent	m	-			75		100		75		100	
			Chargeless	m	30			40							
	Additional refrigerant charge			kg/m	0.02 (for piping length exceeding 30m)			See installation manual							
	Level difference	IU - OU	Max.	m	30.0			30							
Power supply	Phase/Frequency/Voltage			Hz/V	1~/50 /220-240							3~/50 /380-415			
Current - 50Hz	Maximum fuse amps (MFA)			A	-			20		32		16			

Contains fluorinated greenhouse gases

ISOLATION TRANSFORMER

MEDICAL INDUSTRY TRANSPORT

SERIES

5-1200 kVA 3 PHASE

1-25 kVA 1 PHASE

Usage Areas:

- UPS Systems
- Medical Devices
- CNC Machines
- Ships and Boats
- Shipyards
- Metal Processing Plants
- Rectifier and Battery Chargers
- Industrial Machines Power Supply Units

HIGHLIGHTS

- Reliable, Electrical Isolation
- Suppresses Electrical Noise
- Ensures Complete Safety of Equipment

Excellent Protection & High Level of Isolation

- An Isolation Transformer is the best way to establish a new neutral-ground bond, in order to correct common mode and other grounding problems.

- Isolation Transformer provides excellent protection from all types of N-G disturbances (impulses, RMS voltage, and high frequency noise).

CE TSE TSE-HYB

ISOLATION TRANSFORMER SERIES

5-1200 kVA 3 PHASE 1-25 kVA 1 PHASE

FEATURES

- Input Voltage : 230 VAC Ph+N / 400 VAC Ph-Ph (Three Phase)*
  220 VAC Ph+N (Single Phase)*
- Output Voltage : 230 VAC Ph+N / 400 VAC Ph-Ph (Three Phase)*
  110 VAC Ph+N (Single Phase)*
- Frequency : 50 - 60 Hz
- Windings : Aluminum or Copper
- Connections : Star, Delta, Zig-Zag
- Protection Class : Standard**
- Isolation Class : Standard***
  Varnish Under Vacuum According to Isolation Class
- Cooling : Natural**
- Ambient Temparature : -10°C+40°C
- Storage Conditions : -20°C+70°C
- Connections : As Per to Customer Requirements:
  All Types of Terminals and Lugs

* It can be produced in different voltages and powers as requested.
** Can be changed upon request.
*** Can be produced in H (180°C) class upon request.

3 PHASE ISOLATION TRANSFORMER				
Power	Chassis Dims. (WxHxD)	Chassis Weight	Connection	Wire
5kVA	630 x 715 x 332	70	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
10kVA	805 x 700 x 665	110	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
15kVA	650 x 459 x 564	120	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
20kVA	800 x 800 x 647	200	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
30kVA	800 x 800 x 647	240	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
40kVA	800 x 800 x 647	285	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
60kVA	905 x 1000 x 780	355	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
72kVA	905 x 1000 x 780	385	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
80kVA	905 x 1000 x 780	410	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
100kVA	905 x 1000 x 780	430	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
120kVA	905 x 1000 x 780	470	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
150kVA	905 x 1000 x 780	550	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
200kVA	1120 x 1000 x 842	690	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
250kVA	1120 x 1000 x 842	790	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
300kVA	1200 x 1100 x 800	900	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
450kVA	1200 x 1100 x 800	1100	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
500kVA	1200 x 1100 x 800	1280	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
720kVA	1285 x 1505 x 1070	1850	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
800kVA	1510 x 1690 x 1380	2100	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
1000kVA	1510 x 1690 x 1380	2500	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM
1200kVA	1510 x 1690 x 1380	2750	Y-Y/Δ-Y/Y-Δ/Δ-Δ	COPPER/ALUMINIUM

1 PHASE ISOLATION TRANSFORMER				
1kVA	306 x 290 x 340	20	1 Phase	COPPER/ALUMINIUM
2kVA	306 x 290 x 340	24	1 Phase	COPPER/ALUMINIUM
5kVA	625 x 800 x 495	75	1 Phase	COPPER/ALUMINIUM
10kVA	625 x 800 x 495	105	1 Phase	COPPER/ALUMINIUM
15kVA	625 x 800 x 495	120	1 Phase	COPPER/ALUMINIUM
25kVA	600 x 700 x 638	180	1 Phase	COPPER/ALUMINIUM

e-HYPER

SERIES

400-2000 kVA

DYNAMIC UPS

DATA CENTER | MEDICAL | TRANSPORT | INDUSTRY | EMERGENCY

96% Efficiency

UPS ROTARY TYPE | PF= 0.8 POWER FACTOR | Service SERVICE

HIGHLIGHTS

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

Robust Rotary Technology

- e-HYPER 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.
- e-HYPER 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.

CE UL

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 efects of rising energy costs in the future. Our e-HYPER 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 eciency at partial load with FULL critical load protection.
- 91% of all voltage interruptions last less than 1 second (European urban locations) the e-HYPER protects the load without generator starts*.

*This is configurable to maximize e-HYPER power output or compensate for short interruptions.

e-HYPER Range

TYPE		POWER	
50 Hz or 60 Hz		kVA	kW
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

eco

Normal Operation

- In normal operation the e-HYPER 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.

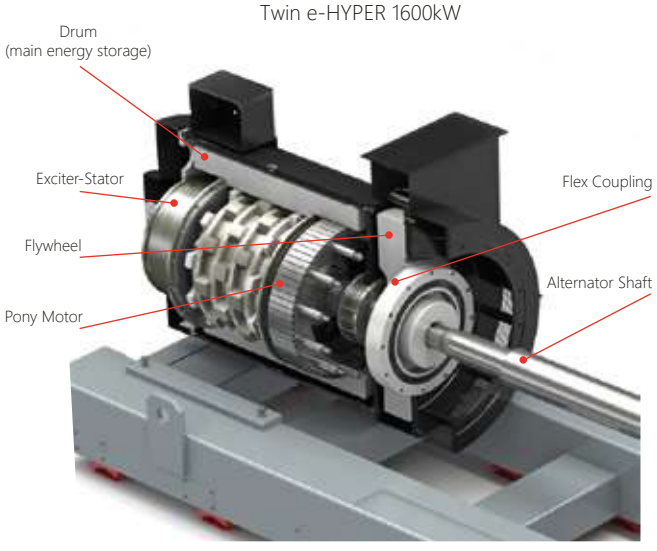
Mains Failure

- During mains failure the e-HYPER 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 e-HYPER will safely transfer the load back and be ready to act again.

Twin e-HYPER 1600kW



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.

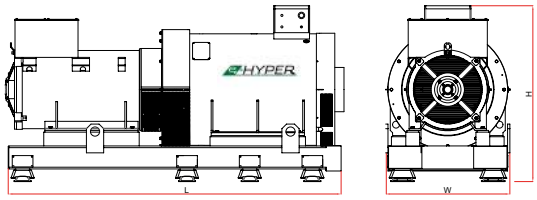
Features	Benefits
Outstanding voltage conditioning	• Protects equipment against mains voltage fluctuations, sags and microcuts • Naturally compensates power factor without need for PFC equipment • Filters load harmonics and voltage harmonics from mains • Eliminates flicker
Total power failure protection	• Sustainable continuous power supply • Ride-through mode covers 90% of mains failures without genset start • Flexible DRUPS solution when configured with standard genset
Robust rotary technology	• Conventional electrical / mechanical machine • High reliability • Low cost maintenance
High efficiency	• Energy saving • Unrivaled low Total Cost of Ownership (TCO) • Green technology
High short-circuit power	• Fast fault-clearing capacity ensuring protections selectivity • Suitable for high peak currents (motors and mechanical loads) • Suitable for high crest factors (non-linear loads)
Modular and resilient “Plug & Run” paralleling	• Flexibility from day one • Scalability for future extension • High resilience thanks to full redundancy without single point of failure • Ideal for Tier III / Tier IV applications (Uptime Institute)
Easy interfacing	• User-friendly digital display (HMI) • Basic interface via simple contacts • Powerful communication features : - SCADA / BMS interface via MODBUS RTU/TCP - Internet access - PC supervision - Remote monitoring, alarming and paging features
Low maintenance	• Simple maintenance operations • Unaffected up-time: no need to stop UPS during maintenance • Automatic Lubrication System for maximum reliability and lowest TCO

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.
- Datrofel 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 eciently throughout your building.

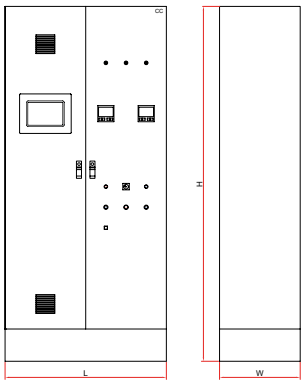
DETAILS

e-HYPER SERIES 400 kVA



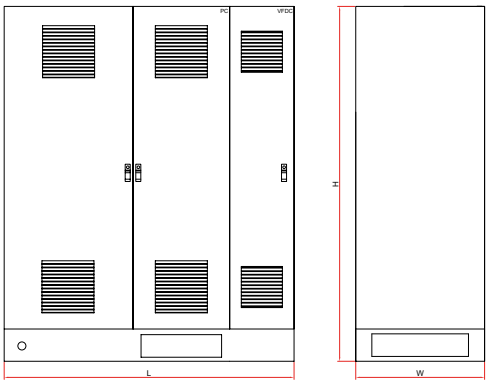
L x W x H 2895 x 1080 x 1529 mm
Net weight 7850 kg
Protection IP23

Control Cabinet



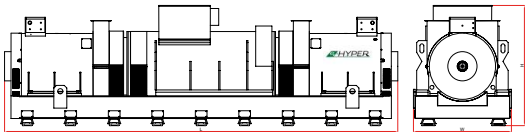
L x W x H 1000 x 500 x 2200 mm
Net weight 305 kg
Protection IP43

Power Cabinet



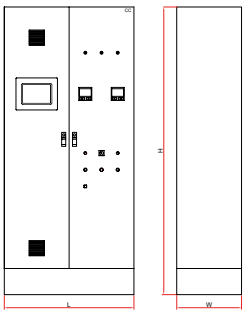
L x W x H 1800 x 800 x 2200 mm
Net weight 1575 kg
Protection IP43

e-HYPER SERIES 2000 kVA



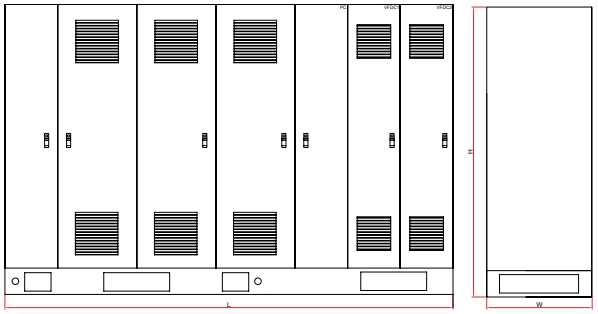
L x W x H 6058 x 1510 x 1852 mm
Net weight 22340 kg
Protection IP23

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 Characterisitics

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%									

EM

SERIES

12V 7Ah-200Ah

AGM VRLA BATTERY

FEATURES

- AGM-VRLA (Valve Regulated Lead Acid) 12V
- Ease of Shipment
- Maintenance Free Operation
- Cycle or Float Service
- Heavy Duty Grids
- Compact Design
- Low Self Discharge
- Wide Operating Temperature
- High Impact Case
- 10 yrs Design Life
- EUROBAT (Optional)

APPLICATIONS

- Uninterruptible Power Supplies
- Emergency Lighting Systems
- Test and Measuring Instruments
- Telephone Switchboards
- Cable Televisions
- Communications Equipment
- Fire Alarm Systems
- Railways
- Vessels and Traffic
- Electronic Cash Register
- Telecommunications Systems
- Electronic Devices
- Electric Toys and Wheelchairs
- ATM Machines
- Maritime Equipment
- Solar Energy Systems
- Wind Energy Systems

Model	Nominal Voltage	Capacity
6-EM-7	12	7Ah
6-EM-9	12	9Ah
6-EM-10	12	10Ah
6-EM-12	12	12Ah
6-EM-17	12	17Ah
6-EM-18	12	18Ah
6-EM-24	12	24Ah
6-EM-38	12	38Ah
6-EM-50	12	50Ah
6-EM-65	12	65Ah
6-EM-80	12	80Ah
6-EM-100	12	100Ah
6-EM-120	12	120Ah
6-EM-150	12	150Ah
6-EM-200	12	200Ah

CERTIFICATES

CE TSE TSE-HYB

POWER WITH YOU

daTRofel
energy & technology

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