

WATTERIES



3:3 PHASE 10-1000 kVA

3:1 PHASE 10-30 kVA

ONLINE UPS



WATTERIES

TiATo S E R I E S

Innovative 3 Level Technology

TiAto 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 TiAto 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

True Three Level Rectifier and Inverter Technology

Ultra High Energy Efficiency

Full Rated Power Factor kW=kVA



UPS ONLINE



TOWER



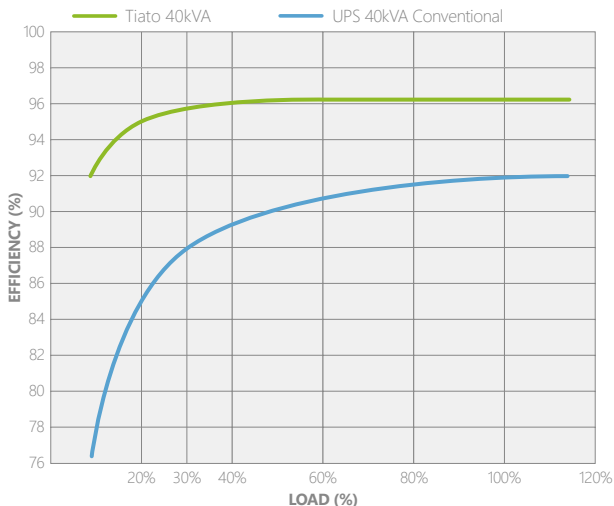
POWER FACTOR



SERVICE

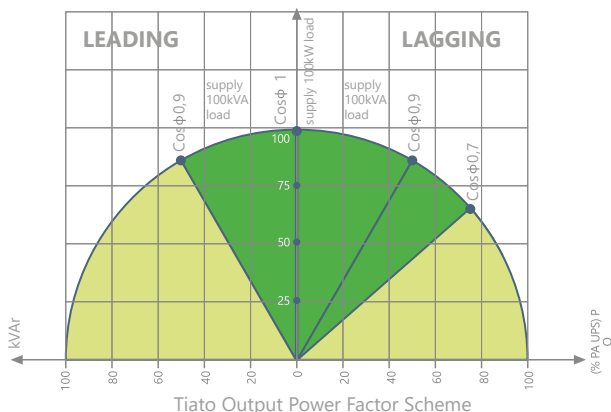
High Efficiency & Low Total Cost of Ownership

- 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 ($\geq 0,99$). 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.



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 interrupted.

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.

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		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		←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 Accredited 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					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					361	383	398

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

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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 Accredited 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.
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