UNINTERRUPTIBLE POWER SUPPLIES

Tescom

INDEX

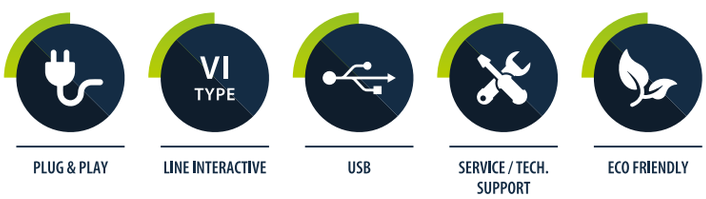
LEO+

UNINTERRUPTIBLE POWER SUPPLIES

650-2200VA

LINE INTERACTIVE

- LED/LCD DISPLAY OPTION
- MICROPROCESSOR CONTROL
- COMPACT SIZE



LEO+ Line Interactive UPS is an uninterruptible power supply with microprocessor control and smart battery management system that can offer solutions especially for your home and office applications. It is available for your use with its small volume and stylish design, LED/LCD screen options, USB and RJ11 connection. It provides a safe usage opportunity thanks to high current, short circuit, overload, high battery charge/discharge protections.

GENERAL SPECIFICATIONS

- Microprocessor-based digital control
- Boost and buck AVR for voltage stabilization
- Power-on self test
- Cold start
- Auto track mains phase to ensure that inverter output voltage has same phase with utility voltage, reducing transfer time and peak surge
- Auto restart when mains power is restored
- Short circuit, battery overcharge / overdischarge, overload, surge protections
- Intelligent battery management: battery temperature compensation to extend the battery life; three-stage charging to shorten recharge time
- Automatic charging in OFF mode
- Optional no-load shutdown
- Optional RS232 / USB communication port and RJ11 / RJ45 protection
- Unattended safety shutdown: system alarm and auto Power-On / Off by RS232 or USB interface communicating with PC

TECHNICAL SPECIFICATIONS

MODEL	Leo+ 650VA	Leo+ 850VA	Leo+ 1200VA	Leo+ 1500VA	Leo+ 2200VA
Capacity	650VA / 390W	850VA / 510W	1200VA / 720W	1500VA / 900W	2200VA / 1200W
INPUT					
Voltage	100 / 110 / 120 V: 80 ~ 150 Vac; 220 / 230 / 240 V: 162 ~ 295 Vac (145 ~ 295 Vac optional)				
Frequency	50 / 60 Hz ± 10% (auto-sensing)				
OUTPUT					
Voltage	100 / 110 / 120 Vac ± 10% or 220 / 230 / 240 Vac ± 10%				
Frequency	50 / 60 Hz ± 1% (auto-sensing)				
Waveform	Mains mode: pure sine wave; Battery mode: simulated sine wave				
Protection	Typical 8 ms, 10 ms max.				
BATTERIES					
DC voltage	12V		24V		
Configuration	12V/7.0Ah x 1	12V/9.0Ah x 1	12V/7.0Ah x 2	12V/9.0Ah x 2	12V/9.0Ah x 2
Recharge time	6 ~ 8 h				
GENERAL					
Protections	Short circuit - battery overcharge - overdischarge - overload - surge				
Communication	USB / RJ45 Modem protect				
Humidity	20 ~ 90% RH @ 0 ~ 40°C (non-condensing)				
Noise level	≤ 45 dB (1 m)				
Plastic case Net / Gross weight (kg)	4.3 / 4.6	5.2 / 5.5	8.6 / 9.0	10.1 / 10.5	/
Plastic case Dimensions (HxWxD) (mm)	140x100x290		170x140x345		/
Plastic case Packaged dimensions (HxWxD) (mm)	210x139x335		210x139x335		/
Metal case Net / Gross weight (kg)	/	/	/	/	12.9 / 13.3
Metal case Dimensions (HxWxD) (mm)	/		/		225x125x380
Metal case Packaged dimensions (HxWxD) (mm)	/		/		295x180x450

LEO+ LIFT

UNINTERRUPTIBLE POWER SUPPLIES

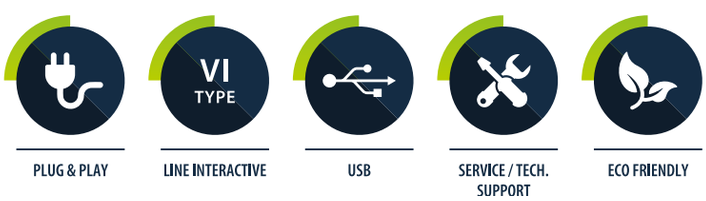
1500VA

LINE INTERACTIVE

SPECIALLY DEVELOPED FOR LIFT APPLICATIONS

- AUTOMATIC SHUTDOWN IN 6 MINUTES
- MICROPROCESSOR CONTROL
- IEC SOCKET

REAR PANEL



GENERAL SPECIFICATIONS

- LED Display
- Optional LCD Display (pls. ask)
- Microprocessor-based digital control
- Boost and buck AVR for voltage stabilization
- Auto sensing frequency
- Wide input voltage range
- Power-on selft test
- Cold start
- Auto track mains phase to ensure that inverter output voltage has same phase with utility voltage, reducing transfer time and peak surge
- Auto restart when mains power is restored
- Intelligent battery management: battery temperature compensation to extend the battery life; three-stage charging to shorten recharge time
- Short circuit, battery overcharge / overdischarge, overload, surge protections
- Automatic charging in OFF mode
- Optional no-load shutdown
- Optional RS232 / USB communication port and RJ11 / RJ45 protection (pls. ask)
- Unattended safety shutdown: system alarm and auto Power-On / Off by RS232 or USB interface communicating with PC (optional / pls. ask)

TECHNICAL SPECIFICATIONS

MODEL	LEO+ 1500L / 1500LM
Capacity	1500 VA 900W
INPUT	
Voltage	100/110/120 V : 80 ~150VAC; 220/230/240 V: 162 ~295 VAC (145 ~ 295 VAC optional)
Frequency	50Hz / 60Hz ± 10% (auto sensing)
OUTPUT	
Voltage	100/110/120 VAC ± 10% or 220/230/240 VAC ± 10%
Frequency	50Hz / 60Hz ± 1% (auto sensing)
Waveform	Mains mode: pure sinewave; Battery mode: simulated sine wave
Tranfer time	Typical 8 ms, 10 ms max.
BATTERIES	
DC Voltage	24V
Configuration	12V 9.0Ah x 2
Recharge time	6 ~ 8h
GENERAL	
Protections	Short circuit, battery overcharge, overdischarge, overload, surge
Communications	USB/RS232 (optional / pls. ask)
Humidity	20 ~ 90% RH @ 0 ~ 40ºC (non condensing)
Acoustic noise	≤ 45dBA (1m)
Net/Gross weight (kg)	11.3 / 11.7
Dimensions (HxWxD) (mm)	225x125x320
Packaged dimensions (HxWxD) (mm)	295x180x390
Quantity / 20ft	1000 pcs

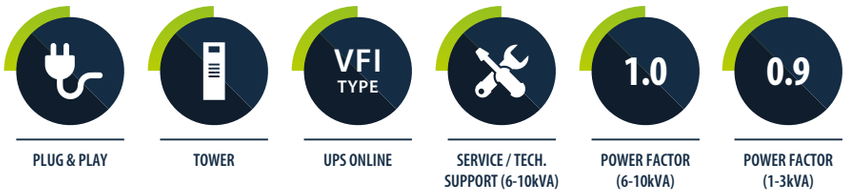
TEOS+ 100

UNINTERRUPTIBLE POWER SUPPLIES

1-10kVA

1 PHASE IN / 1 PHASE OUT

- COMPACT DESIGN
- DSP CONTROL
- FLEXIBLE BATTERY CONFIGURATION



TEOS+ 100 Online UPS is an uninterruptible power supply designed with true double conversion technology and DSP (Digital signal processors) controlled processor. High efficiency is achieved with output power factor (PF) 0.9 (1-3kVA) and (PF) 1.0 (6-10kVA) and input power factor ≥ 0.99. Thanks to its plug-and-play feature and silent operation, it is especially preferred for use in home and office applications. Efficiency with Active Power Factor Correction (APFC) feature, flexibility with wide voltage/frequency range is provided.

GENERAL SPECIFICATIONS

- Advanced DSP and 3-Level technology
- Output power factor (PF) 0.9 (1-3kVA) and (PF) 1.0 (6-10kVA)
- Active power factor correction (APFC), input power factor ≥ 0.99
- High efficiency 94% (98% in Eco mode)
- Advanced digital parallel technology
- Wide input voltage range (110 V~300 Vac) and frequency range (40~70 Hz) (1-3kVA)
- Wide input voltage range (110~288 Vac) and frequency range (40~70 Hz) (6-10kVA)
- 50/60Hz frequency auto-sensing
- Two modes of frequency conversion: 50Hz input / 60Hz output or 60Hz input / 50Hz output
- Dual input design, independent bypass support (6-10kVA)
- Flexible battery configuration
- Adjustable battery group (16 - 20 pieces) (6-10kVA)
- Digitally controlled charger
- High capacity charging current (max. 12 A for long-term model) (6-10kVA)
- Adjustable charging current (6-10kVA)
- Cold start
- Increase battery life by 50% with intelligent battery management system
- Adjustable delayed start (on mains or generator feed-in)
- Automatically changing fan speed according to temperature
- Small and compact design for a smaller footprint
- LCD+LED display, multi-functional switching, user-friendly design
- Advanced multi-platform communications: RS232, USB, RS485, SNMP and dry contacts communication interfaces
- Advanced event logging and diagnostic coding
- Intelligent slot for optional communication options (6-10kVA)
- Emergency shutdown function (EPO) (6/10kVA standard, 1-3kVA optional)
- Maintenance bypass feature (6/10kVA tower models)

TECHNICAL SPECIFICATIONS

MODEL	Teos+ 101			Teos+ 102			Teos+ 103			Teos+ 106	Teos+ 110
Capacity	1 kVA/900 W			2 kVA/1800 W			3 kVA/2700 W			6 kVA / 6000 W	10 kVA / 10000 W
INPUT											
Input wiring	1 faz (1Φ + N + PE)										
Gerilim	208 / 220 / 230 / 240 Vac										
Gerilim aralığı	110 ~ 176 Vac (linear derating between 50% and 100% load); 176 ~ 280 Vac (no derating); 280 ~ 300 Vac (derating 50%)									110 ~ 176 Vac (linear derating between 50% and 100% load); 176 ~ 288 Vac (no derating)	
Rated frequency	50/60Hz										
Frequency range	40 ~ 70 Hz (automatic)										
Power factor	≥ 0.99										
Bypass voltage range	– 25% ~ +15% (adjustable)									– 40% ~ +15% (adjustable)	
THDi	≤ 6%									≤ 5%	
OUTPUT											
Output wiring	1 faz (1Φ + N + PE)										
Rated voltage	208 / 220 / 230 / 240 Vac (adjustable via LCD)									208 (PF=0.9) / 220 / 230 / 240 Vac	
Voltage regulation	± 1%										
Frequency	45 ~ 55Hz or 55 ~ 65Hz (synchronized range); 50/60Hz ± 0.1 Hz (battery mode)										
Waveform	Sinusoidal										
Power factor	0.9									1.0	
Voltage THD	≤ 2% (linear load), ≤ 5% (non-linear load)									≤ 1% (linear load), ≤ 4% (non-linear load)	
Crest factor	3:1										
Overload	105% ~ 125% for 1 min, 125% ~ 150% for 30 s, > 150% for 300 ms									105% ~ 110% for 10 min, 110% ~ 125% for 1 min, 126% ~ 150% for 30s	
BATTERY											
DC voltage	24V (S)	36V (S)	36V (XL)	48V (S)	72V (S)	72V (XL)	72V (S)	96V (S)	96V (XL)	192 Vdc (192 ~ 240 Vdc adjustable)	
Number of battery	2	3	/	4	6	/	6	8	/	16 pcs (16 ~ 20 adjustable)	
Internal battery	2x9Ah	3x7Ah	/	4x9Ah	6x7Ah	/	6x9Ah	8x7Ah	/	12 V / 7Ahx16	12 V / 9Ahx16
Charging current (max.)	1A		6A	1A		6A	1A		6A	Standard model: 1A; Long time model: 5A (default), 1 ~ 5A settable; 12A (optional)	
Recharge time	Standard model: 90% capacity restored in 3 hours; Long time model: depend on the capacity of battery									Standard model: 90% capacity restored in 8 hours; Long time model: depend on the capacity of battery	
SYSTEM											
Efficiency	≥ 90% (mains mode)			≥ 91% (mains mode)			≥ 92% (mains mode)			≥ 94% at 100% load, max. 95% at 60% load (mains mode)	
	≥ 85% (battery mode)			≥ 86% (battery mode)			≥ 87% (battery mode)			≥ 93.5% at 100% load, max. 94.5% at 60% load (batt. mode)	
	≥ 95% (ECO mode)			≥ 96% (ECO mode)			≥ 97% (ECO mode)			≥ 98% (ECO mode)	
Transfer time	Mains mode to battery mode: 0 ms, Inverter mode to bypass mode: 4 ms (typical)									0 ms	
Protections	Short-circuit, overload, overtemperature, battery discharge protection and fan testing protection										
Communications	RS232 (standard), USB / RS485 / dry contacts / SNMP (optional)									RS232 (standard), USB / RS485 / dry contacts / SNMP / battery temperature compensation (optional)	
Display	LCD									LCD + LED	
Paralleling	/									4	
Standards	EN IEC 62040-1, EN IEC 62040-2, EN IEC 62040-3										
ENVIRONMENT											
Operating temp.	0°C ~ 40°C										
Storage temp.	– 25°C ~ 55°C (without battery)										
Relative humidity	0 ~ %95 (non-condensing)										
Altitude	≤ 1000m, derating 1% for each additional 100m										
Protection class	IP 20										
Noise level	≤ 50 dB									≤ 55 dB	≤ 58 dB
Dimensions (HxWxD) (mm)	214x144x336	214x144x414	214x144x336	335x191x418			335x191x464	335x191x418		711x191x46 (S), 350x191x465 (XL)	711x191x495 (S), 350x191x495 (XL)
Packaged dimensions (HxWxD) (mm)	318x232x417	320x230x492	318x232x417	471x318x533			472x320x573	471x318x533		941x310x654 (S), 475x318x595 (XL)	941 x310x685 (S), 475x318x617 (XL)
Net weight (kg)	9.5	13	6	18	25.7	10.5	27.2	32	11	53 (S), 14.5 (XL)	62 (S), 16.5 (XL)
Gross weight (kg)	10.5	14.2	7	19.5	27.4	12	29	34	12.5	61 (S), 16 (XL)	70 (S), 18 (XL)

* S means standard model; XL means long time model.

• DATA CENTER • • HOME & OFFICE • • MALLS •

TEOS+ 100RT

UNINTERRUPTIBLE POWER SUPPLIES

1-10kVA

1 PHASE IN / 1 PHASE OUT

- EPO FEATURE
- DSP CONTROL
- LCD DISPLAY

PLUG & PLAY (1-3kVA) | TOWER / RACK | VFI TYPE UPS ONLINE | 1.0 POWER FACTOR (6-10kVA) | 0.9 POWER FACTOR (1-3kVA) | ECO FRIENDLY

TEOS+ 100RT Online UPS is a DSP controlled uninterruptible power supply designed with true double conversion technology. It is Efficient with output power factor (PF) 0.9 (1-3kVA) - (PF) 1.0 (6-10kVA) and input power factor correction. It is especially suitable for use in home-office applications and data centers. It offers flexibility of use with its prominent features such as frequency converter mode, wide voltage/frequency range, rack and tower usage option and multiple communication options.

GENERAL SPECIFICATIONS

- Advanced DSP and 3-Level technology
- Output power factor (PF) 0.9 (1-3kVA) and (PF) 1.0 (6-10kVA)
- Active power factor correction (APFC), input power factor up to 0.99
- High efficiency 95% (up to 98% in ECO mode)
- Advanced digital parallel technology (6-10kVA)
- Wide input voltage (110 - 300 Vac) and frequency range (40 - 70Hz) (1-3kVA)
- Wide input voltage (110 - 288 Vac) and frequency range (40 - 70Hz) (6-10kVA)
- 50/60 Hz frequency auto sensing
- Two modes of frequency conversion: 50Hz input / 60Hz output or 60Hz input / 50Hz output
- Hot-swappable battery
- Flexible battery configuration
- Adjustable battery group (16 - 20 adjustable) (6-10kVA)
- Dijital kontrollü şarjer (6-10kVA)
- High charging current available (Maximum 5A for long run model)
- Charging current configured by demands (6-10kVA)
- Smart battery management and heat compensation that extends battery life
- Cold start
- Optional delayed start when the main returns to normal
- Temperature-dependent speed adjustable fans that extend service life and minimize sound
- Co-aging feature (6-10kVA)
- Compact and space-saving design
- Multifunctional LCD+LED display and user-friendly interface
- Advanced multiple communication options (Standard RS232, USB / RS485 / dry contacts / SNMP / temperature compensation)
- Advanced event logging and diagnostic coding
- Intelligent slot (6-10kVA) for optional communication options
- Emergency shutdown function (EPO) (6-10kVA standard, 1-3kVA optional)
- Maintenance bypass feature (6-10kVA tower models)

TECHNICAL SPECIFICATIONS

MODEL	Teos+ 101RT	Teos+ 102RT	Teos+ 103RT	Teos+ 106RT	Teos+ 110RT
Capacity	1 kVA / 900 W	2 kVA / 1800 W	3 kVA / 2700 W	6 kVA / 6 kW	10kVA / 10kW
INPUT					
Input wiring	1F- 3 Cable (1Φ + N + G)				
Rated voltage	208 / 220 / 230 / 240 Vac				
Voltage range	110 ~ 176 Vac (linear derating between 50% and 100% load); 176 ~ 280 Vac (no derating); 280 ~ 300 Vac (derating 50%)			110 ~ 176 Vac (linear derating between 50% and 100% load); 176 ~ 280 Vac (no derating)	
Frequency	40 ~ 70Hz (auto-sensing)				
Power factor	≥ 0.99				
Bypass voltage range	-25% ~ +15% (adjustable)			– 40% ~ +15% (adjustable)	
THDi	≤ 6%			≤ 5%	
OUTPUT					
Voltage	208/220/230/240 Vac			208 (pf:0,9)/220/230/240 Vac	
Voltage regulation	± %1				
Frequency	45 ~ 55 Hz or 55 ~ 65Hz (synchronized range); 50 / 60 Hz ± 0.1 Hz (battery mode)				
Waveform	Sinusoidal				
Power factor	0.9			1.0	
THDv	≤ 2% (linear load); ≤ 5% (non-linear load)			≤ 1% (linear load); ≤ 4% (non-linear load)	
Crest factor	3:1				
Overload	105% ~ 125% for 1 min, 125% ~ 150% for 30 s, > 150% for 300 ms			105% ~ 110% for 10 min, 110% ~ 125% for 1 min, 126% ~ 150% for 30 s	
BATTERIES					
DC voltage	24V	48V	72V	192 Vdc (192 ~ 240 Vdc adjustable)	
Number of battery	2	4	6	16 pcs (16 ~ 20 adjustable)	
Internal battery	2x12V/9Ah	4x12V/9Ah	6x12V/9Ah	16x12V/7Ah	16x12V/9Ah
Charging current (max.)	1A			Standard model: 1A; Long time model (XL): 5A (default), 1 ~ 5A settable; 12A (optional pf:0,9)	
Recharge time	Standard model: 90% capacity restored in 3 hours Long time model: depend on the capacity of battery			Standard model: 90% capacity restored in 8 hours; Long time model: depend on the capacity of battery	
SYSTEM					
Efficiency	≥ 90% (mains mode)	≥ 91% (mains mode)	≥ 92% (mains mode)	≥ 94 at 100% load, max. 95% at 60% load (mains mode)	
	≥ 85% (battery mode)	≥ 86% (battery mode)	≥ 87% (battery mode)	≥ 93.5 at 100% load, max. 94.5% at 60% load (battery mode)	
	≥ 95% (ECO mode)	≥ 96% (ECO mode)	≥ 97% (ECO mode)	≥ 98% (ECO mode)	
Transfer time	Mains mode to battery mode: 0 ms, Inverter mode to bypass mode: 4 ms (typical)			0 ms	
Protections	Short-circuit, overload, overtemperature, battery discharge protection and fan testing protection			Short-circuit, overload, overtemperature, battery low voltage, overvoltage, undervoltage and fan failure	
Max. number of parallel connections	/			4	
Communications	RS232 (standard), USB / RS485 / dry contacts / SNMP (optional)			RS232 (standard), USB / RS485 / dry contacts / SNMP / battery temperature compensation (optional)	
Display	LCD + LED				
Standards	EN IEC 62040-1, EN IEC 62040-2, EN IEC 62040-3				
GENERAL					
Operating temp.	0°C ~ 40°C				
Storage temp.	-25°C ~ 55°C (without battery)				
Relative humidity	0 - 95% (non-condensing)				
Altitude	≤ 1000 m, derating 1% for each additional 100 m				
IP class	IP 20				
Noise level at 1m	≤ 50 dB			≤ 55 dB	≤ 58 dB
Dimensions (HxWxD) (mm)	88x440x338	88x440x728		88 × 440 × 580 (H), 176 × 440 × 660(S)	
Packaged dimensions (HxWxD) (mm)	201x545x485	201x545x852		168 x 514 x 696 (H), 418 x 554 x 792 (S)	
Net weight (kg)	12.3	27.2	30.6	12 (H), 58 (S)	14 (H), 63 (S)
Gross weight (kg)	14.3	31.3	34.0	14 (H), 68 (S)	16 (H), 73 (S)

• SECURITY • • TRANSPORT • • HOME & OFFICE •

CL101 ONLINE UPS

UNINTERRUPTIBLE POWER SUPPLIES

1kVA

1 PHASE IN / 1 PHASE OUT

- ADVANCED BATTERY MANAGEMENT
- AUTOMATIC FREQUENCY DETECTION
- DSP CONTROL TECHNOLOGY

PLUG & PLAY | TOWER | UPS ONLINE | POWER FACTOR | ECO FRIENDLY

CL101 (1kVA) Online UPS is an uninterruptible power supply designed with true double conversion technology and DSP (Digital signal processors) controlled processor. Thanks to True Double Conversion technology, UPS works independent from mains voltage and frequency. By converting the energy AC to DC energy, keeps your batteries constant charge. After converting it back to AC energy and applies filtration process before supply your loads. Efficiency with Active Power Factor Correction (APFC) feature and flexibility with wide voltage/frequency range is avaliable. It provides high-level protection for your data center, control systems and other critical loads.

GENERAL SPECIFICATIONS

- High frequency on-line double conversion technology
- DSP (Digital signal processors)
- Active power factor correction
- Ouput PF: 0.9
- Wide voltage and frequency range
- Active Harmonic Correction <3%
- Automatic frequency detection
- 50/60Hz frequency range
- Cold start
- Rear panel ventilated design and variable fan speed
- Effective software and hardware protection
- Fast and durable battery charge, 90% in 4 hours
- Adjustable delay start when mains power is restored
- The ability to charge the battery even when it is in the off position.
- Uninterruptible transfer
- Load sensitive intelligent fan control
- Easy fault diagnosis with smart alarm warning system and diagnostic coding
- Advanced battery management
- Configuring settings via LCD screen
- Multi communication: RS232, (standard), USB, RS485/ SNMP / Dry contact (optional)

TECHNICAL SPECIFICATIONS

MODEL	CL101
Capacity	1 kVA/900 W
INPUT	
Voltage	208/220/230/240 VAC
Voltage range	110 ~ 300 VAC (@ 50% load); 160 ~ 300 VAC (@ 100% load); ±5VAC
Frequency	40 ~ 70 Hz (automatic)
Power factor	≥ 0.99
Bypass voltage range	– 25% ~ + 15% (adjustable)
THDi	≤ 3%
ECO Mode range	208/220/230/240 VAC (± 10%)
Genset	Compatible
OUTPUT	
Voltage	208 / 220 / 230 / 240 VAC (Selectable)
Voltage regulation	± 1%
Frequency	45 ~ 55Hz or 55 ~ 65Hz (synchronized range); 50/60Hz ± 0.2 Hz (battery mode)
Waveform	Pure sinewave
Power factor	0.9
Voltage THD	≤ 2% (linear load), ≤ 5% (non-linear load)
Crest factor	3:1
Overload	at 105% ~ 125% load 1min, at 125% ~ 150% load 30 sec, at > 150% load 300 ms
BATTERY	
DC voltage	36 VDC
Internal battery pack	3x9Ah (12V)
Charge current (max.)	1A (6A long time model)
Battry charge time	Standard model: 90% capacity in 4 hours; XL model: connected to battery pack
SYSTEM FEATURES	
Efficiency	≥ 90% (mains mode)
	≥ 92% (battery mode)
	≥ 94% (ECO mode)
Transfer time	Mains mode to battery mode: 0 ms, Inverter mode to bypass mode: 4 ms
Protection	Short circuit, Overload, Battery charge/discharge protection
Display	LCD, LED
Communication	RS232 (standard), USB/SNMP (optional)
Emergency shutdown	Optional
Software	Supports Windows 98/200/2003/XP/Vista/2008/Windows 7/8
Smart alarm system	Standard
Safety	CE LVD
EMC	CE EMC
Standards	EN IEC 62040-1, EN IEC 62040-2, EN IEC 62040-3
OTHER FEATURES	
Operation temperature	0°C ~ 40°C
Storage temperature	– 25°C ~ 55°C (without battery)
Humidity	0 ~ 90% (non-condensing)
Altitude	≤ 1000 m, derating 1% for each additional 100m
Protection degree	IP 20
Acoustic noise	≤ 45 dB
Dimensions (HxWxD) (mm)	245x144x356
Packaged dimensions (HxWxD) (mm)	316x231x492
Net weight (kg)	13,0
Gross weight (kg)	14,5

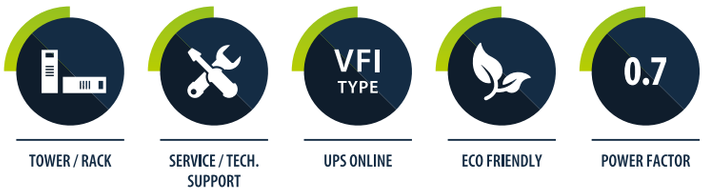
CL100D ONLINE UPS

UNINTERRUPTIBLE POWER SUPPLIES

6-15kVA

1 PHASE IN / 1 PHASE OUT

- RACK AND TOWER DESIGN
- IGBT RECTIFIER
- DSP CONTROL



Tescom CL100 DSP Series UPS are single phase in/single phase out, IGBT rectifier, Intelligent Power Module technology based, high input power factor, low THDI and DSP controlled.

GENERAL SPECIFICATIONS

- Transformerless UPS topology
- IPM power module
- High input power factor > 0,98
- DSP controlled system
- Full digital control system
- Tower and rack type options (6kVA/10kVA)
- PID control system
- Low input current value (THDI < 5%)
- High efficiency
- Cold start function
- Static by-pass system
- Maintenance by-pass switch
- Optional split by-pass system
- VAT transfer (voltage adaptive transfer)
- Output overload and short circuit protection
- External REPO input
- 128 events (5000 alarms) memory
- Clock, calender and operating hourmeter
- Advanced automatic battery test
- Boost charge system
- Temperature compansated charge system
- RS232 port and dry contact relays
- Easy output voltage and frequency selection
- Optional SNMP adaptor
- 2 years warranty
- 5 years spare parts support
- Manufactured according to EC Directive; EN62040

TECHNICAL SPECIFICATIONS

MODEL	CL106D	CL106DL	CL106DR	CL110D	CL110DR	CL115D
Power (kVA)		6		10		15
INPUT						
Voltage	220/230 VAC 1P + N + G					
Input voltage range	170 - 275 VAC					
Frequency	50Hz / 60Hz					
Frequency tolerance	40Hz - 65Hz					
Power factor (at 100% load)	> 0.98					
THDI (at 100% load)	< 5%					
By-pass voltage / frequency	220/230 VAC , ± 10% / 50Hz or 60Hz					
By-pass frequency tolerance	Adjustable (for synchronization)					
Maintenance by-pass connection	Please ask	Standard	Please ask	Standard	Please ask	Standard
OUTPUT						
Power (kW)		4,2		7		10,5
Voltage	220/230 VAC 1Phase + N, ± 1%					
Frequency	50Hz / 60Hz					
Frequency tolerance	Line synchronized: ± 1% / Free running: ± 0,1%					
Efficiency	Up to 92%					
Crest factor	3:1					
Voltage THD	< 3% (linear load)					
	< 5% (non-linear load)					
Overload protection	100% - 125% load 10 min, 126%-150% load 1 min, >150% load: by pass					
BATTERIES						
Type	Sealed Lead Acid-Maintenance free					
Number of batteries	20x12V standard (16-24 selectable)					
Number of internal batteries	20x12V 4,5Ah/5Ah	20x12V 7Ah/9Ah	20x12V 4,5Ah/5Ah	20x12V 7Ah/9Ah	-	-
Float charging voltage (adjustable)	270 VDC (20x12V for battery)					
End of discharge voltage (adjustable)	200 VDC (20x12V for battery)					
Boost charge	Available					
Battery test	Automatic or Manual, available					
GENERAL						
Standards	EN 62040-1, EN62040-2					
Communication	RS232 standart-RS485 optional					
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)					
Alarm relays	3 standard (+2 programmable optional)					
Remote EPO input	Available as standard					
Operating temperature	0°C - 40°C					
Storege temperature	-10°C to 50°C					
Protection degree	IP20					
Relative humidity	95% max (non-condensing)					
Altitude	< 2000m above sea level					
Acoustic noise	< 50 dBA					
Weight without batteries (kg)	23	39	23	39	27	40
Dimensions (mm) HxWxD	430x215x600	590x215x780	430x600x215 (19" rack version)	590x215x780	430x600x215 (19" rack version)	590x215x780
OPTIONS						
Different input / output voltage	Please ask					
Heat compensation system	Please ask					
Galvanic isolation transformer	Please ask					
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 veya TCP/IP)					

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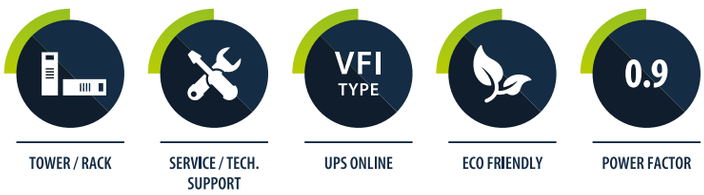
DS100RT / DS200RT

UNINTERRUPTIBLE POWER SUPPLIES

6-10kVA / 10-20kVA

3 PHASE IN / 1 PHASE OUT

- RACK AND TOWER DESIGN
- IGBT RECTIFIER
- DSP CONTROL



TOWER / RACK | SERVICE / TECH. SUPPORT | UPS ONLINE | ECO FRIENDLY | POWER FACTOR

DS Power 200RT Online UPS has DSP technology that can operate in a wide variety of electrical environments. Its compact design allows Rack and Tower operation with a reversible display for flexibility. With DSP control, efficiency, reliability and functionality have been increased to levels that could not be reached with the old analog technology. It offers solutions for your long-term applications with high charging current and parallel battery connection outputs. It is offered with 10-15-20kVA options.

GENERAL SPECIFICATIONS

- DSP control technology and fully digital structure
- IGBT technology and high efficiency
- Design that allows the use of Racks and Towers
- Suitable for parallel operation
- High input power factor
- ±340VDC battery voltage
- High output efficiency up to 93%
- Selectable input/output voltage/frequency range
- Maintenance bypass switch
- High charging current capacity
- LCD Panel and mimic led diagram
- Reversible display
- Conforms to IEC EN62040
- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production
- Advanced control at the input
- 3 level battery protection
- Heat compensated charging
- Output current limitation
- Output DC leakage protection
- Output short circuit and overload protection
- External REPO input
- 128 events memory (5.000 alarm)
- Clock and calendar (battery supported)
- Automatic battery test, remaining battery time indicator
- 1 RS232 serial port and standard dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service password-protected security
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	DS106RT	DS110RT	DS210RT	DS215RT	DS220RT
Power (kVA)	6	10	10	15	20
INPUT					
Voltage	220/230 VAC 1P + N + G ± 15% (@ 100% load)		380/400 VAC 3P + N + G ± 15% (@ 100% load)		
Frequency	50Hz / 60Hz, ± 10%				
Power factor (100% load)	≥ 0.96				
THDI (*)	≤ 25%				
By-pass voltage	220/230 VAC 1 Phase + N, ± 10				
Bypass Frequency	50Hz ± 5%				
Protection	Fuses, High Voltage (Surge Arrester) Protection, Voltage and Frequency tolerance, Input power limitation, Phase reverse protection				
OUTPUT					
Power (kW)	5.4	9.0	9	13.5	18
Power factor	0.9				
Voltage	220/2300 VAC 1P + N, ± 1%				
Frequency	50Hz / 60Hz				
Frequency tolerance	Synchronized to the network: ± 2% / Free operation: ± 0.1%				
Efficiency (100 load%)	up to 93%				
Crest factor	3:1				
Overload protection (**)	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass				
Other protections	Intelligent short circuit protection, Voltage tolerance protection, DC balance, Regenerative load, Current limiting protections				
Voltage THD	≤ 2% (100% linear load)				
BATTERIES					
Type	Maintenance-free dry type				
Number of batteries	20 piece (20-28 adjustable)				
Charge voltage	± 270 VDC				
End of discharge voltage	± 210 VDC				
Charging current (Independent of output load)	2A DC	3A DC	3A DC	4A DC	5A DC
Battery cabinet	External				
External battery inputs	Standard (Up to 4 pcs-Socket Type)				
Batt. ambient temperature	25ºC				
Protections	3-level alarm, Battery fuses, Charging current limitation (standard) Heat compensated battery charging system (optional)				
Battery testing	Standard (Automatic or Manual)				
GENERAL					
Standards	EN62040-1, EN62040-2, EN62040-3				
User interface	User Interface 2x16 lines LCD panel, Mimic led panel, 5 vector buttons, Buzer				
Indicators	Phase-N voltage, Phase-Phase voltage, Current, Power, Crest Factor, Frequency, PF, Service time				
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232,operating hour meter				
Communication	RS232 serial port, 4 standard NO/NC dry contacts				
Inputs	EPO (emergency shutdown) input				
Software	Standard T-Mon UPS Management software (3 users + 1 server management)				
Alarm recording	Standard: time & date 128 events (5000 Alarms)				
Protector	Power module over-heat protection, Over-current, Heat high alarm				
Temperature range	0ºC - 40ºC				
Protection degree	IP20				
Power connections	Klemens				
Insurance and breakers	Inlet, Outlet, Battery and Maintenance Bypass Insurance (Standard)				
Relative humidity	90% max. (non-condensing)				
Altitude	< 2000m. above sea level (at nominal power)				
Acoustic level	< 55 dBA				
Weight (kg)	34	36	36	48	56
Dimensions (mm) HxWxD	585x215x775		133x430x685		
OPTIONS					
Different input / output voltage	Please ask				
Transformer	Galvanic isolation transformer at the input & output				
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 10-50-100-200 clients				
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer				
Parallel operation	2 Pcs (please ask)				

(*) Depends on Input/Output voltage conditions and power.

(**) The waiting times for excessive loads vary depending on the ambient temperature.

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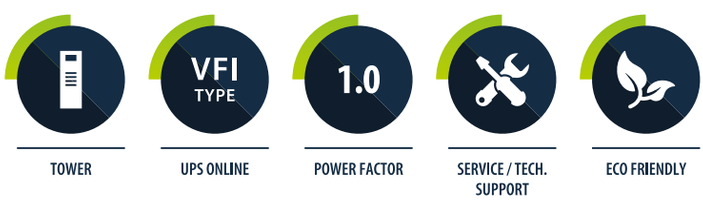
TEOS+ 200

UNINTERRUPTIBLE POWER SUPPLIES

10-20kVA

3 PHASE IN / 1 PHASE OUT

- ADVANCED DSP TECHNOLOGY
- 3-LEVEL TECHNOLOGY
- HIGH EFFICIENCY



TEOS+ 200 Online UPS is a DSP controlled uninterruptible power supply designed as 3-level with true double conversion technology. It stands out with its high output power factor (PF:1) and input power factor correction, high charging current power and maximum efficiency design. It is especially suitable for use in home-office applications and data centers. It offers flexibility of use with its prominent features such as frequency converter mode, wide voltage/frequency range and multiple communication options.

GENERAL SPECIFICATIONS

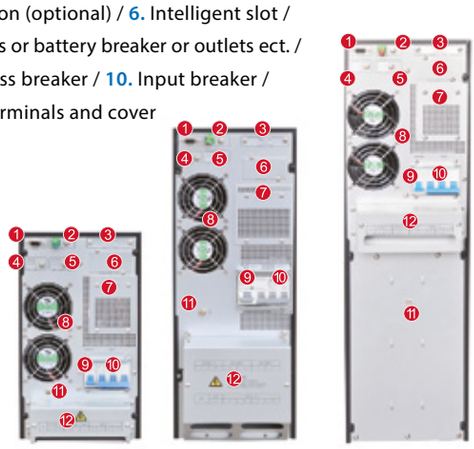
- Active power factor correction (APFC), input power factor up to 0.99
- Advanced digital parallel technology
- 3:1 to 1:1 model settable
- Frequency conversion: 50Hz input / 60Hz output or 60Hz input / 50Hz output
- Dual-input design, supporting independent bypass
- Digitally controlled charger
- High charging current available (Max. 10A)
- Charging voltage and current configured by demands
- Linear derating in low voltage input reducing battery discharging times, extending the service life of battery
- Intelligent battery management, automatic floating / equalizing charge control, charger dormancy control, increasing battery life by 50%
- Ability to switch on the UPS with batteries
- Equipped with self-aging function
- Compact internal layout, miniaturized the complete unit for small footprint
- Settable delayed start time when mains power is restored, reducing the impact on power grid or generator
- Fan speed varies intelligently with temperature, reducing noise and extending its service life
- LCD+LED display, multi-functional keys operation, friendly human-machine interface
- Powerful background software for parameters configuration
- Effective software and hardware protection function, robust an self-diagnostic function, and abundant event log for check

AVAILABLE OPTIONS

- RS232 ve akıllı kart yuvası dahildir
- Opsiyonel paralel fonksiyon, akü sıcaklık kompanzasyonu, SNMP kartı, USB, RS485 kartı, kuru kontaklar, EMD ve SMS alarmları

REAR PANEL

1. RS232 / **2.** EPO / **3.** Parallel port (optional) / **4.** USB (optional) / **5.** Temp. detection (optional) / **6.** Intelligent slot / **7.** Manual bypass or battery breaker or outlets ect. / **8.** Fans / **9.** Bypass breaker / **10.** Input breaker / **11.** GND / **12.** Terminals and cover



10 kVA (H) 15/20 kVA (H) 10 kVA (S)

TECHNICAL SPECIFICATIONS

MODEL	Teos+ 210	Teos+ 215	Teos+ 220
Capacity	10 kVA / 10 kW	15 kVA / 15 kW	20 kVA / 20 kW
INPUT			
Input wiring	Three-phase five-wire (3Φ + N + PE)		
Rated voltage	380/400/415 Vac		
Voltage range	190 - 305 Vac (linear derating between 50% and 100% load); 305 - 499 Vac (no derating)		
Rated frequency	50/60 Hz (auto-sensing)		
Frequency range	40 ~ 70 Hz		
Power factor	≥ 0.99		
Bypass voltage range	- 40% ~ +15% (settable)		
THDi	≤ 5%		
OUTPUT			
Output wiring	Single-phase three-wire (1Φ + N + PE)		
Rated voltage	208 (PF=0.9)/220/230/240 Vac		
Voltage regulation	± 1%		
Frequency	Synchronized to bypass in mains mode; 50/60Hz + 0.1% Hz in battery mode		
Waveform	Sinusoidal		
Power factor	1.0		
Voltage THD	≤ 1% (linear load); ≤ 3% (non-linear load)		
Crest factor	3:1		
Overload	105% - 110% for 10 min, 110% - 125% for 1 min, 126% - 150% for 30s		
BATTERIES			
DC voltage	192 Vdc (192 - 240 Vdc settable)		
Number of battery	16 pcs (16 - 20 settable)		
Inbuilt battery (standard model)	12 V / 9Ah x 16	/	12 V / 7Ah x 40
Charging current	Standard model: 1A; Long time model: 5A (default), 1 - 5A settable; 10A (optional)		
Recharge time	Standard model: 90% capacity restored in 8 hours; Long time model: depend on the capacity of battery		
SYSTEM			
Efficiency	≥ 94% at 100% load, max. 95% at 60% load, ≥ 98% in ECO mode		
Transfer time	0 ms		
Protections	Short-circuit, overload, overtemperature, battery low voltage, overvoltage, undervoltage and fan failure		
Max. number of parallel connections	4		
Communications	RS232 (standard), USB / RS485 / dry contacts / SNMP/ battery temperature compensation (optional)		
Display	LCD + LED		
GENERAL			
Operating temperature	0°C ~ 40°C		
Storage temperature	-25°C ~ 55°C (without battery)		
Relative humidity	0 - 95% (non-condensing)		
Altitude	≤ 1000 m, derating 1% for each additional 100 m		
IP rating	IP 20		
Noise level at 1m	≤ 58 dB		
Dimensions (HxWxD) (mm) (*)	711x191x495 (S) 350x191x495 (H)	515x191x495 (H)	731x262x942,5 (S)
Packaged dimensions (HxWxD) (mm) (*)	941X310X685 (S) 475x318x617 (H)	618x285x593 (H)	990x353x860 (S)
Net weight (kg) (*)	18.5 (H), 64 (S)	26.5 (H)	236 (S)
Gross weight (kg) (*)	20 (H), 72 (S)	28 (H)	240 (S)

(*) S means standard model; H means long time model.

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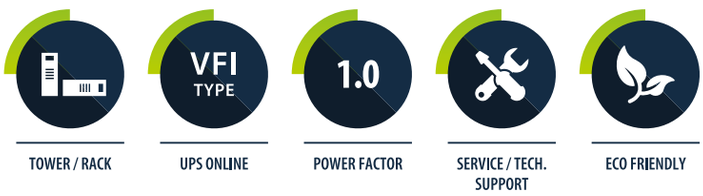
TEOS+ 200RT

UNINTERRUPTIBLE POWER SUPPLIES

10-20kVA

3 PHASE IN / 1 PHASE OUT

- ADVANCED DSP TECHNOLOGY
- 3-LEVEL TECHNOLOGY
- HIGH EFFICIENCY



TEOS+ 200RT Online UPS is a DSP controlled uninterruptible power supply designed as 3-level with true double conversion technology. It stands out with its high output power factor (PF:1) and input power factor correction, high charging current power and maximum efficiency design. It is especially suitable for use in home-office applications and data centers. It offers flexibility of use with its prominent features such as frequency converter mode, wide voltage / frequency range, rack and tower usage option and multiple communication options.

GENERAL SPECIFICATIONS

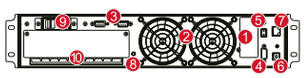
- Active power factor correction (APFC), input power factor up to 0.99
- Advanced digital parallel technology
- 3:1 to 1:1 model settable
- Frequency conversion: 50Hz input / 60Hz output or 60Hz input / 50Hz output
- Dual-input design, supporting independent bypass
- Hot-swappable battery (10kVA)
- Digitally controlled charger
- High charging current available (Max. 10A)
- Charging voltage and current configured by demands
- Linear debating in low voltage input reducing battery discharging times, extending the service life of battery
- Intelligent battery management, automatic floating / equalizing charge control, charger dormancy control, increasing battery life by 50%
- Ability to switch on the UPS with batteries
- Settable delayed start time when mains power is restored, reducing the impact on power grid or generator
- Fan speed varies intelligently with temperature, reducing noise and extending its service life
- Equipped with self-aging function
- Compact internal layout, miniaturized the complete unit for small footprint
- Powerful background software for parameters configuration
- Effective software and hardware protection function, robust and self-diagnostic function, and abundant event log for check
- LCD+LED display, multi-functional keys operation, friendly human-machine interface

AVAILABLE OPTIONS

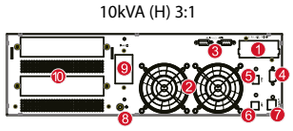
- RS232 and smart card slot included
- Optional parallel function, battery temperature compensation, SNMP card, USB, RS485 card, dry contacts, EMD, and SMS alarms

REAR PANEL

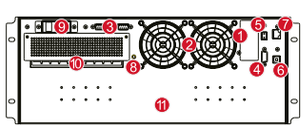
1. Intelligent slot
2. Fans
3. Parallel port (optional)
4. RS232
5. EPO
6. USB (optional)
7. Temp. detection (optional)
8. GND
9. Bypass breaker
10. Terminal and cover
11. Battery pack



10kVA (H) 3:1



15-20kVA (H) 3:1



10kVA (S) 3:1

TECHNICAL SPECIFICATIONS

MODEL	Teos+ 210RT	Teos+ 215RT	Teos+ 220RT
Capacity	10 kVA / 10 kW	15 kVA / 15 kW	20 kVA / 20 kW
INPUT			
Input wiring	Three-phase five-wire (3Φ + N + PE)		
Rated voltage	380/400/415 Vac		
Voltage range	190 - 304 Vac (linear derating between 50% and 100% load); 304 - 478 Vac (no derating)		
Rated frequency	50/60 Hz (auto-sensing)		
Frequency range	40 ~ 70 Hz		
Power factor	≥ 0.99		
Bypass voltage range	- 40% ~ +15% (settable)		
THDi	≤ 5%		
OUTPUT			
Output wiring	Single-phase (L-N)		
Rated voltage	208 (PF=0.9)/220/230/240 Vac		
Voltage regulation	± 1%		
Frequency	Synchronized to bypass in mains mode; 50/60Hz + 0.1% Hz in battery mode		
Waveform	Sinusoidal		
Power factor	1.0		
Voltage THD	≤ 1% (linear load); ≤ 3% (non-linear load)		
Crest factor	3:1		
Overload	105% - 110% for 10 min, 110% - 125% for 1 min, 126% - 150% for 30s		
BATTERIES			
DC voltage	192 Vdc (192 - 240 Vdc settable)		
Number of battery	16 pcs (16 - 20 settable)		
Inbuilt battery (standard model)	12 V / 9Ah x 16	/	/
Charging current	Standard model: 1A; Long time model: 5A (default), 1 - 5A settable; 10A (optional)		
Recharge time	Standard model: 90% capacity restored in 8 hours; Long time model: depend on the capacity of battery		
SYSTEM			
Efficiency	≥ 94% at 100% load, max. 95% at 60% load, ≥ 98% in ECO mode		
Transfer time	0 ms		
Protections	Short-circuit, overload, overtemperature, battery low voltage, overvoltage, undervoltage and fan failure		
Max. number of parallel connections	4		
Communications	RS232 (standard), USB / RS485 / dry contacts / SNMP/ battery temperature compensation (optional)		
Display	LCD + LED		
GENERAL			
Operating temperature	0°C ~ 40°C		
Storage temperature	-25°C ~ 55°C (without battery)		
Relative humidity	0 - 95% (non-condensing)		
Altitude	≤ 1000 m, derating 1% for each additional 100 m		
IP rating	IP 20		
Noise level at 1m	≤ 58 dB		
Dimensions (HxWxD) (mm) (*)	88x440x650 (H) 176x440x660 (S)	132x440x780	
Packaged dimensions (HxWxD) (mm) (*)	168x514x696 (H) 418x554x792 (S)	400x554x792	
Net weight (kg) (*)	17 (H), 67 (S)	25.5	
Gross weight (kg) (*)	19 (H), 77 (S)	28	

(*) S means standard model; H means long time model.

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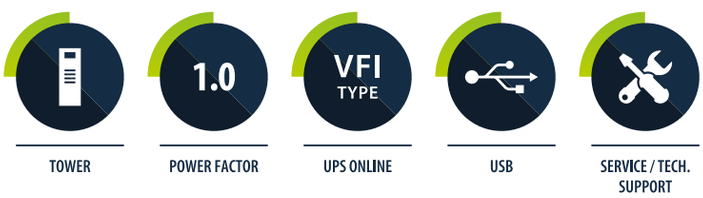
TEOS 300

UNINTERRUPTIBLE POWER SUPPLIES

10-80kVA

3 PHASE IN / 3 PHASE OUT

- DSP TECHNOLOGY
- 3-LEVEL TECHNOLOGY
- SPLIT BY-PASS



TEOS 300 Online UPS is an uninterruptible power supply that guarantees high performance with its true double conversion technology and DSP controlled processor (Digital Signal Processor). Thanks to its silent operation, it is especially preferred for use in home-office applications. It offers flexibility of use with its prominent features such as frequency converter mode, wide voltage/frequency range and multiple communication options. Long backup time with powerful charger option, touchscreen graphic panel application, splitt dual input, voice and speaking notifications are the features that differentiate the product.

GENERAL SPECIFICATIONS

- DSP technology guarantees high performance
- Output power factor 1.0
- Active power factor correction in all phases
- Dual Inputs
- 50Hz/60Hz frequency converter mode
- ECO mode operation for energy saving
- Emergency power off function (EPO)
- Adjustable charging current
- IGBT rectifier and EMI/RFI filtering feature
- Very powerful charger
- Optional parallel operation with common battery
- High overload capability
- Adjustable battery design
- Optional 4.3"touch LCD

TECHNICAL SPECIFICATIONS

MODEL	Teos 310	Teos 320	Teos 330XL	Teos 340XL	Teos 360XL	Teos 380XL
Phase	3 phase in / 3 phase out					
Capacity	10kVA / 10kW	20kVA / 20kW	30kVA / 30kW	40kVA / 40kW	60kVA / 60kW	80kVA / 80kW
Parallel capability	up to 4 units in parallel					
INPUT						
Nominal voltage	3x400VAC (3P+N)					
Input voltage range	110-300VAC ± 3% @ 50% load 176-276VAC ± 3% @ 100% load					
Frequency range	46~54Hz or 56~64Hz					
Harmonic distortion	≤ 4% THD (100% Linear Load)					
Power factor	≥ 0.99 @ 100% load					
THDi	≤ 4%					
OUTPUT						
Voltage	3 x 360/380/400/415 VAC (3P+N)					
AC Voltage regulation	± 1% (batt.mode)					
Frequency range (synchronized range)	46~54Hz or 56~64Hz					
Frequency range (batt. mode)	50Hz ± 0.1Hz or 60Hz ± 0.1Hz					
Crest factor	3:1					
Harmonic distortion	≤ 2% THD (Linear Load) ≤ 5% THD (Non-linear load)					
Transfer time – AC mode to batt. mode	Zero					
Transfer time – Inverter to bypass	Zero					
Waveform (batt. mode)	Pure sinewave					
Overload – AC mode	100-110% for 60 min,110-125%for 10 min, 125%~150% 1 min, >150%immediately					
Overload – Battery mode	100-110% for 60 min,110-125%for 10 min, 125%~150% 1 min, >150%immediately					
BYPASS						
Nominal voltage	3 x 360/380/400/415 VAC (3P+N)					
Voltage range	-30% ~ +20% (Adjustable)					
Frequency range (synchronized range)	46~54Hz or 56~64Hz					
Overload	> 130% 1 minute (default); continuosly working until breaker protection (optional)					
EFFICIENCY						
AC mode	95.5%					
Eco mode	98.5%					
Battery mode	94.5%					
BATTERIES						
Battery type	Depends on the application					
Number of batteries	20 pcs internal	32 pcs (can be extended with external cabinet)	32-40 pcs (adjustable)			
Charge current (max.)	1-12A (adjustable)				2-24A (adjustable)	
Charging voltage	± 136.5 VDC ± %10	± 218 VDC ± %10	±13.65VxN (N = 16~20)			
INDICATORS						
LCD panel	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions					
PHYSICAL						
Dimension HxWxD (mm)	630x250x826		1000x300x815		1010x360x790	
Net weight (kg)	124 (with internal batt.)	139 (with internal batt.)	60	61	108	113
ENVIRONMENT						
Operating temperature	0ºC - 40ºC					
Operating humidity	< 95% (non-condensing)					
Acoustic noise	< 60dBA @ 1 Meter	< 63dBA @ 1 Meter	< 65dBA @ 1 Meter	< 70dBA @ 1 Meter		< 75dBA @ 1 Meter
MANAGEMENT						
Smart RS-232/USB	Supports Windows® 2000/2003/XP/Vista/2008, 7/8, Linux and MAC					
Optional SNMP	Power management from SNMP manager and web browser					

(*) If the output voltage is set to 3x360 VAC, the output power of the unit will be reduced to 90%

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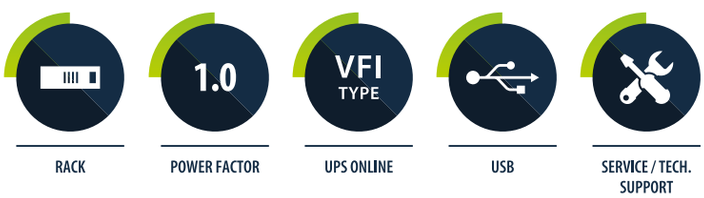
TEOS 300RT

UNINTERRUPTIBLE POWER SUPPLIES

10-60kVA

3 PHASE IN / 3 PHASE OUT

- OUTPUT POWER FACTOR (PF) 1.0
- LCD COLORFUL TOUCHSCREEN
- DSP TECHNOLOGY



The Teos 300RT online UPS features a superior output power factor of 1.0 and provides high performance and efficiency through DSP (Digital Signal Processing) technology. With an adjustable current charge current (up to a maximum of 18A), it enhances the flexibility of your power distribution.

GENERAL SPECIFICATIONS

- True double-conversion
- LCD screen auto-rotation with Rack position (only for 10K-40K models)
- DSP technology guarantees high performance
- Output power factor 1.0
- Active power factor correction in all phases
- 50Hz/60Hz frequency converter mode
- ECO mode operation for energy saving (ECO)
- Emergency power off function (EPO)
- Generator compatible
- Supports dual AC inputs
- Adjustable battery numbers
- Parallel operation with common battery
- Optional isolation transformer offers full isolation and complete common mode noise rejection

TECHNICAL SPECIFICATIONS

MODEL		Teos 310RT	Teos 315RT	Teos 320RT	Teos 330RT	Teos 340RT	Teos 360RT
Phase		3-phase in / 3-phase out					
Capacity		10 kVA / 10 kW	15 kVA / 15 kW	20 kVA / 20 kW	30 kVA / 30 kW	40 kVA / 40kW	60 kVA / 60kW
Parallel capability		4					
INPUT							
Nominal voltage		3 x 400 VAC (3Ph+N) or 208*/220/230/240 VAC (Ph-N)					
Voltage range		190-520 VAC (3-phase) @ 50% load ; 305-478 VAC (3-phase) @ 100% load					
Frequency		46~54 Hz or 56~64Hz					
Power factor		≥ 0.99 @ 100% load					
OUTPUT							
Output voltage		3 x 360*/380/400/415 VAC (3Ph+N) or 208*/220/230/240 VAC (Ph-N)				3 x 360*/380/400/415 VAC (3Ph+N)	
AC Voltage regulation (batt. mode)		± 1%					
Frequency range (synchronized range)		46~54Hz or 56~64Hz					
Frequency range (batt. mode)		50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz					
Current crest ratio		3:1 (max.)					
Harmonic distortion		≤ 2% THD (Linear Load) ; ≤ 5% THD (Non-linear Load)					
Transfer Time	AC mode to batt. mode	Zero					
	Inverter to bypass	Zero					
Waveform (batt. mode)		Pure Sinewave					
Overload	AC mode	100-110% for 60 min, 110-125% for 10 min, 125%~150% for 1 min; >150% immediately					
	Battery mode	100-110% for 60 min, 110-125% for 10 min, 125%~150% for 1 min; >150% immediately					
EFFICIENCY							
AC mode		95.5%					
ECO mode		98.5%					
Battery mode		94.5%					
BATTERY							
Battery type		Depending on the applications					
Battery numbers		20 pcs	32~40 pcs (Adjustable)				
Charging current (max.)		1A~12A (Adjustable)				1A~16A (Adjustable)	1A~18A (Adjustable)
Charging voltage		± 13.65 VDC x N (N=10)	± 13.65 VDC x N (N=16~20)				
PHYSICAL							
Dimension, HxWxD (mm)		[3U] 133x438x680					[4U] 176x438x797
Net weight (kg)		27	30	30	32	34	45
ENVIRONMENT							
Operating temperature		0-40°C					
Operating humidity		< 95% and non-condensing					
Noise level		Less than 62dBA @ 1 Meter	Less than 65dB @ 1 Meter	Less than 65dB @ 1 Meter	Less than 65dB @ 1 Meter	Less than 70dB @ 1 Meter	
MANAGEMENT							
Smart RS-232/USB		Supports Windows® family, Linux and MAC					
Optional SNMP		Power management from SNMP manager and web browser					

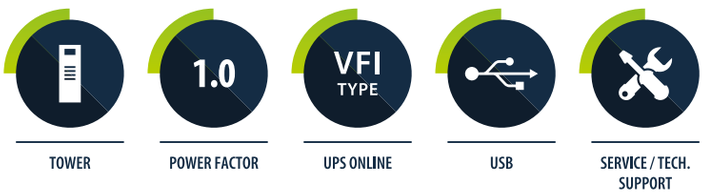
TEOS+ 300

UNINTERRUPTIBLE POWER SUPPLIES

10-30kVA

3 PHASE IN / 3 PHASE OUT

- 5 INCHES LCD COLORFUL TOUCHSCREEN
- OUTPUT POWER FACTOR (PF) 1.0
- DSP TECHNOLOGY



TEOS+ 300 Online UPS is a DSP controlled uninterruptible power supply designed as 3-level with true double conversion technology. It stands out with its high output power factor (PF:1) and input power factor correction, high charging current power and maximum efficiency design. It is especially preferred for use in home-office applications and data centers. It offers flexibility of use with its prominent features such as color and touch screen, frequency converter mode, wide voltage/frequency range, high charging current capacity and multiple communication options.

GENERAL SPECIFICATIONS

- Advanced dual-core DSP control technology and 3-level technology
- Active power factor correction (APFC), input power factor up to 0.99
- System efficiency is improved to 95%, energy saving rate is doubled
- Output power factor 1.0
- Dual input design, supporting independent bypass
- Advanced digital and parallel technology, providing higher reliability than single system
- Wide input voltage range
- 50 / 60 Hz auto-sensing frequency
- 50 / 60 Hz frequency conversion mode
- Work efficiency up to 98% in ECO mode
- Fan speed varies intelligently with load, reducing noise and extending its service life
- Conformal coating technology to make UPS operate in harsh environment for a long time
- Digitally controlled charger (Max.10 A & 20% output power)
- Ability to switch on the UPS by battery in the absence of mains power (Cold start)
- Flexible battery configuration setting, selectable battery numbers: 32~ 40 pcs
- Compact internal layout, small footprint
- Zero switching time for UPS power supply mode when the mains power is unstable, ensuring the output is uninterrupted
- 5 inches LCD colorful touch screen, friendly human & machine interface
- Advanced multi-platform communication for UPS monitoring: RS232, USB, RS485, dry contacts, SNMP card,Wi-Fi card and GPRS card
- Linear derating in low voltage input, reducing battery discharging times, extending the service life of battery
- Intelligent battery management, automatic equalized and float charging control, charger dormancy control, improving the reliability of charger and extending the battery life
- Effective hardware and software protection, robust self-diagnosis function, abundant event log for future check
- Standard RS232, USB, RS485, EPO, Dry contacts, Parallel port
- Optional SNMP card,WI-FI card,GPRS card, SMS alarms
- Powerful background software for parameters configuration and online upgrade

TECHNICAL SPECIFICATIONS

MODEL	Teos+ 310	Teos+ 315	Teos+ 320	Teos+ 330
Capacity	10kVA / 10kW	15kVA / 15kW	20kVA / 20kW	30kVA / 30kW
INPUT				
Rated voltage	380/400/415 VAC (L-L)			
Input voltage range	304~478Vac (L-L), full load 228V~304Vac (L-L), load decrease linearly according to the min phase voltage			
Rated frequency	50~60Hz (auto-sensing)			
Frequency range	40~70Hz			
Power factor	≥ 0.99			
Bypass voltage range	Selectable, default -20%~+15% Up limited: +10%, +15%, +20%, +25%; Down limited: -10%, -15%, -20%, -30%, -40%			
Bypass frequency range	Selectable, ±1Hz, ±3Hz, ±5Hz			
THDi	< 3% (full Linear Load)			
Bypass overload	125%: Long term operation; 125%~130%: 10min; 130%~150%: 1min; 150%~400%: 1s; >400%, less than 200ms			
OUTPUT				
Rated voltage	380/400/415 VAC (L-L)			
Voltage regulation	± 1% (full Linear Load)			
Frequency	Synchronized with utility in mains mode, 50/60 Hz ±0.1% in battery mode			
Waveform	Sinusoidal			
Power factor	1.0			
Voltage THD	< 1% (full Linear Load) <3% (full non-linear load according to IEC/EN62040-3)			
Crest factor	3:1			
Overload	< 110%, 60min; 110%~125%,10min; 125%~150%,1min; >150%, 200ms			
BATTERIES				
DC voltage	± 240 VDC (Selectable, 32 - 40pcs)			
Inbuilt battery (standard model)	(10+10)x 9AH	(20+20) x 7AH	(20+20) x 9AH	(15+15) x 9AH x 2 strings
Charging current	10A max.			
Charger voltage precision	1%			
Recharge time	Standard model: 90% capacity restored in 8 hours; Long time model: depend on the capacity of battery			
SYSTEM				
Efficiency	95% max.			
Transfer time	0ms			
Max. number of parallel connections	4			
Protections	Short-circuit, overload, overtemperature, battery low voltage, overvoltage, undervoltage and fan failure			
Communications	RS232, USB, RS485, EPO, Dry contacts, Parallel port (Standard), SNMP card, WI-FI card, GPRS card, SMS alarms (Optional)			
Display	LED + 5 inches LCD touch screen			
OTHERS				
Operating temperature	0°C - 40°C			
Storage temperature	40°C - 70°C			
Relative humidity	0-95% max. (non-condensing)			
Altitude	< 1000m, Load derated 1% per 100m from 1000 ~ 2000m			
IP rating	IP20			
Noise level @ 1m	55dB @ 100% load, 52dB @ 50% load		58dB @ 100% load, 55dB @ 50% load	
Dimensions (HxWxD) (mm)	560x250x720 (S) 560x250x720 (H)	700x250x800 (S) 560x250x720 (H)		930x250x840 (S) 650x250x840 (H)
Packaged dimensions (HxWxD) (mm)	722x350x800 (S) 718x350x800 (H)	862x350x800 (S) 718x350x800 (H)		1102x350x950 (S) 810x350x980 (H)
Net weight (kg)	82 (S) 31 (H)	131 (S) 33 (H)	145 (S) 33 (H)	215 (S) 42 (H)
Gross weight (kg)	93 (S) 40 (H)	142 (S) 42 (H)	156 (S) 42 (H)	227 (S) 52 (H)

S means standard model, H means long time model.

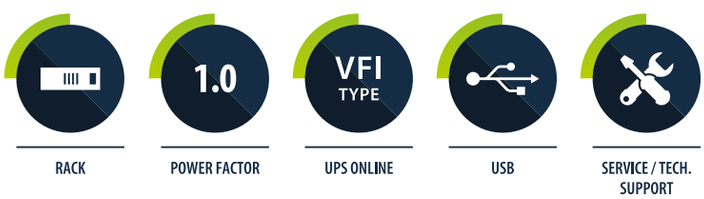
TEOS+ 300RT

UNINTERRUPTIBLE POWER SUPPLIES

10-60kVA

3 PHASE IN / 3 PHASE OUT

- 5 INCHES LCD COLORFUL TOUCHSCREEN
- OUTPUT POWER FACTOR (PF) 1.0
- DSP TECHNOLOGY

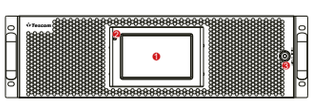


GENERAL SPECIFICATIONS

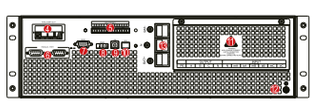
- High frequency on-line double conversion technology
- Advanced dual-core DSP control technology and 3-level technology
- Active power factor correction (APFC), input power factorup to 0.99
- System efficiency is improved to 96%, energy saving rate is doubled
- Output power factor 1.0
- Dual input design, supporting independent bypass
- Advanced digital and parallel technology, providing higher reliability than single system
- Wide input voltage range
- 50/60Hz auto-sensing frequency
- 50/60Hz frequency conversion mode
- Work efficiency up to 98% in ECO mode
- Fan speed varies intelligently with load, reducing noise and extending its service life
- Conformal coating technology to make UPS operate in harsh environment for a long time
- Flexible battery configuration setting, selectable battery numbers: 32~ 40 pcs
- Digitally controlled charger (Max. 20 A)
- Ability to switch on the UPS by battery in the absence of mains power (Cold start)
- Zero switching time for UPS power supply mode when the mains power is unstable, ensuring the output is uninterrupted
- Compact internal layout, small footprint
- 5 inches LCD colorful touch screen, friendly human & machine interface
- Powerful background software for parameters configuration and online upgrade
- Advanced multi-platform communication for UPS monitoring: RS232, USB, RS485, dry contacts, SNMP card,Wi-Fi card and GPRS card
- Linear derating in low voltage input, reducing battery discharging times, extending the service life of battery
- Intelligent battery management, automatic equalized and float charging control, charger dormancy control, improving the reliability of charger and extending the battery life
- Effective hardware and software protection, robust self-diagnosis function, abundant event log for future check
- Standard RS232, USB, RS485, EPO, Dry contacts, Parallel port
- Optional SNMP card, WI-FI card, GPRS card, SMS alarms

REAR PANEL

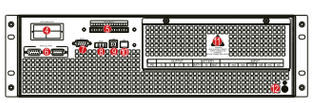
1.The touch screen LCD	6. Parallel port	11. Terminal block
2. LED	7. RS232	12. GND
3. Battery start button	8. RS485	13. Battery connectors for 30kVA
4. SNMP card (optional)	9. USB	
5. Dry contacts	10. EPO	



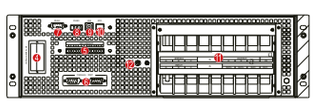
10-60kVA front appearance



30kVA back appearance



10-20kVA back appearance



40-60kVA back appearance

TECHNICAL SPECIFICATIONS

MODEL	Teos+ 310RT	Teos+ 315RT	Teos+ 320RT	Teos+ 330RT	Teos+ 340RT	Teos+ 360RT
Capacity	10 kVA / 10 kW	15 kVA / 15 kW	20 kVA / 20 kW	30 kVA / 30 kW	40 kVA / 40 kW	60 kVA / 60 kW
INPUT						
Rated voltage	380/400/415 Vac (3Φ+N+PE)					
Voltage range	304~478 Vac, full load 228V~304 Vac (L-L), load decrease linearly according to the min phase voltage					
Rated frequency	50/60Hz (auto-sensing)					
Frequency range	40 - 70 Hz					
Power factor	> 0.99					
Bypas s voltage range	Selectable default ~ 20% + 15% Up limited: + 10%, + 15%, + 20%, + 25%; Down limited: - 10%, - 15%, - 20%, - 30%, - 40%					
Bypass frequency range	Selectable, ± 1Hz, ± 3Hz, ± 5Hz					
THDi	< 3% (full Linear Load)					
Bypass overload	125%: Long term operation; 125%~130%: 10min; 130%~150%: 1min; 150%~400%: 1s; > 400%, less than 200ms					
OUTPUT						
Rated voltage	380/400/415 Vac (3Φ+N+PE)					
Voltage regulation	± 1% (full Linear Load)					
Frequency	Synchronized with utility in mains mode, 50/60 Hz ± 0.1% in battery mode					
Waveform	Sinusoidal					
Power factor	1.0					
Voltage THD	< 1% (full Linear Load), < 3% (full non-linear load according to IEC / EN62040-3)					
Crest factor	3:1					
Overload	< 110%, 60min; 110%~125%,10min; 125%~150%,1min; >150%, 200ms					
BATTERIES						
DC voltage	± 240 VDC (Selectable, 32 - 40pcs)					
Charging current	10A max				15A	20A
Charger voltage precision	1%					
Recharge time	Long time model: depend on the capacity of battery					
SYSTEM						
Efficiency	95% Max				96% Max	
Transfer time	0 ms					
Max. number of parallel connections	4					
Protections	Short-circuit, overload, overtemperature, battery low voltage, overvoltage, undervoltage and fan failure					
Communications	RS232, USB / RS485 / EPO / Dry contacts / Parallel port (standard) / SNMP Card / WI-FI Card / GPRS Card / SMS Alarms (optional)					
Display	LED + 5 inches LCD touch screen					
OTHERS						
Operating temperature	0°C ~ 40°C					
Storage temperature	-40°C ~ 70°C					
Relative humidity	0 - 95% (non-condensing)					
Altitude	< 1000m, Load derated 1% per 100m from 1000 ~ 2000m					
IP rating	IP 20					
Noise level at 1 m	< 60dBA				< 65dBA	
Dimensions (HxWxD) (mm)	130x440x660			130x440x750	130x440x730	130x440x800
Packaged dimensions (HxWxD) (mm)	204x532x800			204x532x890	226x535x865	226x535x930
Net weight (kg)	22	24		29	33	39
Gross weight (kg)	24	26		31	36	42

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DS POWER SH

UNINTERRUPTIBLE POWER SUPPLIES

10-20kVA

3 PHASE IN / 3 PHASE OUT

- 3-LEVEL TECHNOLOGY
- IGBT RECTIFIER
- DSP CONTROL

TOWER | UPS ONLINE | POWER FACTOR | SERVICE / TECH. SUPPORT | ECO FRIENDLY

DS Power SH Online UPS has emerged as an affordable alternative to the DS Power H model with its compact and small-footprint design. It stands out with its ergonomic design that occupies less space with the same power as the battery cabinet that can be positioned one above the other with the UPS. It features the latest DSP technology, which is programmed to suit a wide variety of electrical environments without impending performance. With the 3-Level topology, efficiency, reliability and functionality are elevated to levels unattainable with legacy analog technology. This technology does not only create significant increase in MTBF, but the capability of DSP to accurately process signals at very high speed permits all the UPS subsystems to be controlled with greatly increased precision.

GENERAL SPECIFICATIONS

- Small footprint
- Transformerless UPS topology
- 3 DSP controlled modular structure
- Separate main control board advantage for rectifier and inverter
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THDi)
- High input power factor
- High efficiency up to 94%
- Selectable input/output voltage/frequency range
- Static and maintenance by-pass switch
- Optional 0.8 and 1.0 output power factor (PF) option
- Cold start function
- Compliant with IEC EN62040 directive
- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production
- Advanced control at the input
- 3 level battery protection
- Temperature compensated charge system
- Output current limitation
- Output DC leakage protection
- Output short circuit and overload protection
- External REPO switch input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator
- 1 RS232 serial port and 3 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service passwords protected security
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	DS310SH	DS315SH	DS320SH
Power (kVA)	10	15	20
INPUT			
Voltage	380/400 VAC 3P + N + G ± 20%		
Frequency	50Hz / 60Hz, ± 10%		
Power factor (at 100% load)	≥ 0.99		
THDI (at 100% load)	≤ 4% (depends on mains input conditions)		
By-pass voltage	380/400 VAC 3P + N, 4 Wires, ± 10%		
Protection	Fuses, Voltage & Frequency Tolerance		
OUTPUT			
Power (kW)	9	13.5	18
Power factor (*)	0.9		
Voltage	380/400 VAC 3P + N, ± 1%		
Frequency	50Hz / 60Hz		
Frequency tolerance	Line synchronized: ± 2% / Free running: ± 0.1%		
Efficiency (at 100% load)	94%		
Crest factor	3:1		
Overload protection (**)	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass		
Protection	Fuses,Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting		
Voltage THD	≤ 2% (linear load), ≤ 5% (non-linear load)		
BATTERIES			
Type	VRLA AGM / GEL / NiCd		
Number of batteries	60 (± 30) batteries		
Float charging voltage	± 405 VDC (adjustable)		
End of discharge voltage	± 300 VDC (adjustable)		
Battery cabinet	External (attached cabinet at the bottom of UPS)		
Batt. ambient temp.	25°C		
Battery protection	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)		
Automatic battery test	Standard: every 72 hours (adjustable)		
GENERAL			
Standards	EN62040-1, EN62040-2, EN62040-3		
User interface	4 lines LCD panel, Mimic leds, 5 vector buttons, buzzer		
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time		
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232,operating hour meter		
Communication	RS232 serial port, 3 programmable dry contact outputs		
Inputs	EPO input		
Genset kit	Standard (programmable)		
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)		
Alarm logging	Standard: with time & date 512 events		
Protection	Power module over temperature, Over current, Temperature high alarms		
Operating temperature	0°C - 40°C		
Protection degree	IP20		
Relative humidity	90% max. (non-condensing)		
Altitude	< 1000m. above sea level		
Acoustic noise	< 55 dBA	< 57 dBA	
Weight (kg)	47.5	49.5	51
Dimensions (mm) HxWxD	700x300x770 (without batt.) / 1170x300x800 (with 7-9ah batt.)		
OPTIONS			
Different input / output voltage	Please ask		
Adaptors	SNMP, MODBUS, RS485, Remote panel		
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients		

(*) Ask for 0.8 and 1.0 power factor.

(**) The waiting times for excessive loads vary depending on the ambient temperature.

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DS POWER H

UNINTERRUPTIBLE POWER SUPPLIES

10-100kVA

3 PHASE IN / 3 PHASE OUT

- 3-LEVEL TECHNOLOGY
- IGBT RECTIFIER
- DSP CONTROL

DS Power H Online UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impending its performance. With the 3-Level topology, efficiency, reliability and functionality have been raised to levels unattainable with legacy analog technology. This technology not only creates a significant increase in MTBF, but the DSP's ability to accurately process signals at very high speed allows all UPS subsystems to be controlled with greatly increased precision.

GENERAL SPECIFICATIONS

- Transformerless UPS topology
- 3 DSP controlled modular structure
- Separate main control board advantage for rectifier and inverter
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THDi)
- High input power factor
- High efficiency up to 95%
- Selectable input/output voltage/frequency range
- Static and maintenance by-pass switch
- High charge current capacity
- Eco Mode operation (optional)
- Split by-pass input (dual input)
- Advanced TFT front panel (40-100kVA)
- Optional 0.8 and 1.0 output power factor (PF)
- Cold start function
- Compliant with IEC EN62040 directive
- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production
- Advanced control at the input
- 3 level battery protection
- Output current limitation
- Output DC leakage protection
- External REPO input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator
- 2 RS232 serial ports and 4 programmable dry contact outputs
- Optional 12 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service password-protected security
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	DS310H	DS315H	DS320H	DS330H	DS340H	DS360H	DS380H	DS3100H
Power (kVA)	10	15	20	30	40	60	80	100
INPUT								
Voltage	380/400 VAC 3P + N + G ± 20% (at 100% load) / - 40% (at 70% load)							
Frequency	50Hz / 60Hz, ± 10%							
Power factor	≥ 0.99 (at 100% load)							
THDI (*)	≤ 3%							
By-pass voltage	380/400 VAC 3 Phase + N, ± 10%							
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator							
OUTPUT								
Power (kW)	9	13,5	18	27	36	54	72	90
Power factor (**)	0.9							
Voltage	380/400 VAC 3F + N, ± %1							
Frequency	50Hz / 60Hz							
Frequency tolerance	Line synchronized: ± 2% (adjustable) / Free running: ± 0.1%							
Efficiency	up to 95%							
Crest factor	3:1							
Overload protection (***)	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass							
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting							
Voltage THD	≤ 2% (linear load), ≤ 5% (non-linear load)							
BATTERIES								
Type	VRLA AGM / GEL / NiCd							
Number of batteries	2x30 (± 30): 60 pieces							
Charge voltage	2x405 VDC							
End of discharge voltage	2x300 VDC							
Battery cabinet	Internal						External	
Batt. ambient temp.	25ºC							
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)							
Automatic testing	Standard every 72 hours (adjustable)							
GENERAL								
Standards	EN62040-1, EN62040-2, EN62040-3							
User interface	4 lines LCD panel, Mimic leds, 5 vector buttons, Buzzer				TFT panel, 5 vector buttons, Buzzer			
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time							
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232,operating hour meter							
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays							
Inputs	EPO input, Interactive battery panel input, Genset input							
Genset kit	Standard (programmable)							
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)							
Alarm logging	Standard:with time & date 512 events							
Protections	Power module over-temperature, Overcurrent, Temperature high alarm							
Temperature range	0ºC - 40ºC							
Protection degree	IP20							
Relative humidity	90% max. (non-condensing)							
Altitude	< 1000m above sea level							
Acoustic noise	< 57dBA				< 62dBA			< 65dBA
Weight (kg)	87	87	91	100	173	197	209	220
Dimensions (mm) HxWxD	1040x400x815				1440x515x855			
OPTIONS								
Different input / output voltage	Please ask							
Transformer	Galvanic isolation transformer at the input & output (internal)							
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients							
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer							
Parallel operation	Up to 8 units							

(*) Depending on power and input/output conditions.

(**) Please ask for PF 0.8 and 1.0

(***) The waiting times for excessive loads vary depending on the ambient temperature.

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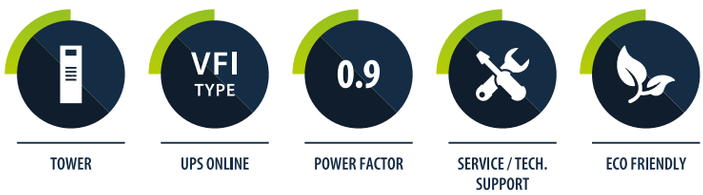
DS POWER H

UNINTERRUPTIBLE POWER SUPPLIES

300-500kVA

3 PHASE IN / 3 PHASE OUT

- 3-LEVEL TECHNOLOGY
- IGBT RECTIFIER
- DSP CONTROL



DS Power H Online UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impending its performance. With the 3-Level topology, efficiency, reliability and functionality have been raised to levels unattainable with legacy analog technology. This technology not only creates a significant increase in MTBF, but the DSP's ability to accurately process signals at very high speed allows all UPS subsystems to be controlled with greatly increased precision.

GENERAL SPECIFICATIONS

- Transformerless UPS topology
- 3 DSP controlled modular structure
- Separate main control board advantage for rectifier and inverter
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THDi)
- High input power factor
- High efficiency up to 95%
- Selectable input/output voltage/frequency range
- Static and maintenance by-pass switch
- High charge current capacity
- Eco Mode operation (optional)
- Split by-pass input (dual input)
- Advanced TFT front panel
- Optional 0.8 and 1.0 output power factor (PF)
- Cold start function
- Compliant with IEC EN62040 directive
- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production
- Advanced control at the input
- 3 level battery protection
- Output current limitation
- Output DC leakage protection
- External REPO input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator
- 2 RS232 serial ports and 4 programmable dry contact outputs
- Optional 12 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service password-protected security
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	DS3300H	DS3400H	DS3500H
Power (kVA)	300	400	500
INPUT			
Voltage	380/400 VAC 3P + N + G ± 20% (at 100% load) / - 40% (at 70% load)		
Frequency	50Hz / 60Hz, ± 10%		
Power factor	≥ 0.99 (at 100% load)		
THDI (*)	≤ 3%		
By-pass voltage	380/400 VAC 3 Phase + N, ± 10%		
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator		
OUTPUT			
Power (kW)	270	360	450
Power factor (**)	0.9		
Voltage	380/400 VAC 3F + N, ± %1		
Frequency	50Hz / 60Hz		
Frequency tolerance	Line synchronized: ± 2% (adjustable) / Free running: ± 0.1%		
Efficiency	up to 95%		
Crest factor	3:1		
Overload protection (***)	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass		
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting		
Voltage THD	≤ 2% (linear load), ≤ 5% (non-linear load)		
BATTERIES			
Type	VRLA AGM / GEL / NiCd		
Number of batteries	2x30 (± 30): 60 pieces		
Charge voltage	2x405 VDC		
End of discharge voltage	2x300 VDC		
Battery cabinet	External		
Batt. ambient temp.	25°C		
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)		
Automatic testing	Standard every 72 hours (adjustable)		
GENERAL			
Standards	EN62040-1, EN62040-2, EN62040-3		
User interface	TFT panel, 5 vector buttons, Buzzer		
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time		
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232,operating hour meter		
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays		
Inputs	EPO input, Interactive battery panel input, Genset input		
Genset kit	Standard (programmable)		
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)		
Alarm logging	Standard:with time & date 512 events		
Protections	Power module over-temperature, Overcurrent, Temperature high alarm		
Temperature range	0°C - 40°C		
Protection degree	IP20		
Relative humidity	90% max. (non-condensing)		
Altitude	< 1000m above sea level		
Acoustic noise	< 68 dBA		
Weight (kg)	635	680	890
Dimensions (mm) HxWxD	1975x880x848	2000x1243x874	
OPTIONS			
Different input / output voltage	Please ask		
Transformer	Galvanic isolation transformer at the input & output		
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients		
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer		
Parallel operation	Up to 8 units		

(*) Depending on power and input/output conditions.

(**) Please ask for PF 0.8 and 1.0

(***) The waiting times for excessive loads vary depending on the ambient temperature.

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DS POWER X

UNINTERRUPTIBLE POWER SUPPLIES

100-250kVA

3 PHASE IN / 3 PHASE OUT

- IGBT RECTIFIER / INVERTER
- 3-LEVEL TECHNOLOGY
- DSP CONTROL

TOWER | POWER FACTOR (1.0) | UPS ONLINE (VFI TYPE) | SERVICE / TECH. SUPPORT | ECO FRIENDLY

DS Power X Online UPS uses the latest DSP technology, which can be programmed to suit a wide variety of electrical environments without impending its performance. It stands out with its stylish design, high power density (250KVA in less than 0.5m2 area) and less noisy operation than its counterparts.As a state-of-the-art product, the input and output side have been designed as 3-Level to maximize efficiency, reliability and functionality. This technology not only creates a significant increase in MTBF, but the DSP's ability to accurately process signals at very high speed allows all UPS subsystems to be controlled with greatly increased precision.

GENERAL SPECIFICATIONS

- kVA = kW (Output PF = 1.0)
- Transformerless ups technology
- 3 DSP controlled modular structure
- High power density
- Separate main control board program for rectifier and inverter
- 3-Level rectifier, inverter technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THDi)
- High input power factor
- High efficiency up to 96.0%
- Selectable input/output voltage/frequency/range
- Static and maintenance by-pass switch
- High charge current capacity
- Ecomode operation (optional)
- Split by-pass input (dual input)
- Advanced TFT front panel
- Optional 0.8 and 0.9 output power factor (PF) option
- Cold start function
- ISO9001, ISO14001 compliant production
- Advanced diagnostics for the input
- 3 level battery protection
- Temperature compensated charge system
- Output current limitation
- Output DC leakage protection
- Output short circuit and overload protection
- External REPO input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator
- Static and maintenance by-pass switch
- 2 RS232 serial ports and 4 programmable dry contact outputs
- Optional 12 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- View device operating parameters
- Advanced remote control features
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	DX3100	DX3120	DX3160	DX3200	DX3250
Power (kVA)	100	120	160	200	250
INPUT					
Voltage	380/400 VAC 3P + N + G ± 20% (at 100% load) / - 40% (at 70% load)				
Frequency	50Hz / 60Hz, ± 10%				
Power factor (@ 100% load)	≥ 0.99				
THDI (*)	≤ 3%				
By-pass voltage	380/400 VAC 3 Phase + N, ± 10 (adjustable)				
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator				
OUTPUT					
Power (kW)	100	120	160	200	200
Power factor (**)	1.0				0.8
Voltage	380/400 VAC 3P + N, ± 1%				
Frequency	50Hz / 60Hz				
Frequency tolerance	Line synchronized: ± 2% (adjustable) / Free running: ± 0.1%				
Efficiency	up to 95.5%		up to 96.0%		
Crest factor	3:1				
Overload protection	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass				
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting				
Voltage THD	≤ 2% (linear load), ≤ 5% (non-linear load)				
BATTERIES					
Type	VRLA AGM / GEL / NiCd				
Nominal voltage	± 360 VDC				
Float / End of discharge voltage	± 405 VDC / ± 300 VDC				
Battery cabinet	External				
Battery ambient temperature	25ºC				
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)				
Automatic testing	Standard every 72 hours (adjustable)				
GENERAL					
User interface	TFT touch panel, 5 vector buttons, Buzzer				
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time				
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, Operating hour meter				
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays				
Inputs	EPO input, Interactive battery panel input, Genset input				
Genset kit	Standard (programmable)				
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)				
Alarm logging	Standard: with time & date 512 events				
Protections	Power module over-temperature, Overcurrent, Temperature high alarm				
Temperature range	0ºC - 40ºC				
Protection degree	IP20				
Relative humidity	90% max. (non-condensing)				
Altitude	< 1000m above sea level				
Acoustic noise	< 62dBA		< 65 dBA		
Weight (kg)	210	220	262	270	295
Dimensions (mm) HxWxD	1440x475x890				
OPTIONS					
Different input / output voltage	Please ask				
Transformer	Galvanic isolation transformer at the input & output (external)				
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients				
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer				
Parallel operation	up to 8				

(*) Depending on power and input/output conditions

(**) Please ask for PF 0.8 and 0.9

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DS POWER

UNINTERRUPTIBLE POWER SUPPLIES

500-800kVA

3 PHASE IN / 3 PHASE OUT

- TRANSFORMERLESS UPS TECHNOLOGY
- IGBT RECTIFIER
- DSP CONTROL

TOWER | POWER FACTOR | UPS ONLINE | SERVICE / TECH. SUPPORT | ECO FRIENDLY

DS Power range UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impending its performance. With the DS Power range, efficiency, reliability and functionality are enhanced to levels unattainable with the old analogue technology. This technology does not only create significant increase in MTBF, but the capability of DSP to accurately manipulate signals at very high speed permits all the UPS subsystems to be controlled with greatly increased precision.

GENERAL SPECIFICATIONS

- Low input current total harmonic distortion (THD)
- Output power factor 1.0 for 500-600kVA
- Transformerless UPS topology
- High input power factor
- High efficiency up to 95%
- Cold start function
- Static and maintenance by-pass switch
- Output short circuit and overload protection
- External REPO switch input
- 512 events memory (512 events 45000 alarms)
- Clock and calender (battery supported)
- Automatic battery test,remaining battery time indicator
- Temperature compansated charge system (optional)
- 2 RS232 serial ports and 12 dry contact outputs
- 3 DSP controlled modular structure
- Optional SNMP and MODBUS adaptors
- Optional graphical panel
- Full digital structure
- Small footprint
- Ecomode operation (optional)
- Fewer electronic components
- Output current limiting
- Advanced diagnostics for the input
- Selectable input/output voltage/frequency/range
- Split by-pass input (second input)
- Output DC leakage protection
- Seperate DSP for inverter control
- Seperate DSP for the PFC
- 3 level battery protection
- High charge current capacity
- Charge/discharge current indicator
- Advanced remote control features
- Manufactured according to EC Directive; EN62040
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	DS3500	DS3600	DS3800
Power (kVA)	500	600	800
INPUT			
Voltage	380/400 VAC 3P + N + G ± 20% (415 VAC +15%, - 25% optional)		
Frequency	50Hz / 60Hz, ± 10%		
Power factor (@100% load)	≥ 0.99		
THDI (*)	≤ 3%		
By-pass voltage	380/400 VAC 3P + N, ± 10%		
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator		
OUTPUT			
Power (kW)	500	600	720
Power factor (**)	1.0		0.9
Voltage	380/400 VAC 3 Phase + N, ± 1% (415 VAC optional)		
Frequency	50Hz / 60Hz		
Frequency tolerance	Line synchronized: ± 2% / Free running: ± 0.1%		
Efficiency (@100% load)	up to 95%		
Crest factor	3:1		
Overload capacity (***)	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass		
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting		
Voltage THD	≤ 2% (at 100% linear load)		
BATTERIES			
Type	VRLA AGM / GEL / NiCd		
Nominal voltage	2x30 (±30): 60 pieces		
Float / End of discharge voltage	± 405 VDC / ± 300 VDC		
Battery cabinet	External		
Batt. ambient temp.	25ºC		
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)		
Automatic testing	Standard every 72 hours (adjustable)		
GENERAL			
Standards	EN62040-1, EN62040-2, EN62040-3		
User interface	TFT panel, 5 vector buttons, Buzzer		
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time		
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232,operating hour meter		
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays		
Inputs	EPO input, Interactive battery panel input, Genset input		
Genset kit	Standard (programmable)		
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)		
Alarm logging	Standard: with time & date 512 events		
Protections	Power module over-temperature, Over current, Temperature high alarm		
Temperature range	0ºC - 40ºC		
Protection class	IP20		
Relative humidity	90% max. (non-condensing)		
Altitude	< 1000m. above sea level		
Acoustic noise	< 72 dBA		
Net weight (kg)	1452		1630
Dimensions (mm) HxWxD	1940x1610x1050		
OPTIONS			
Different input / output voltage	Please ask		
Transformer	Galvanic isolation transformer at the input & output		
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients		
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer		
Parallel operation	up to 8 units		

(*) Depending on power and input/output conditions

(**) Please ask for different output power factors

(***) The waiting times for excessive loads vary depending on the ambient temperature.

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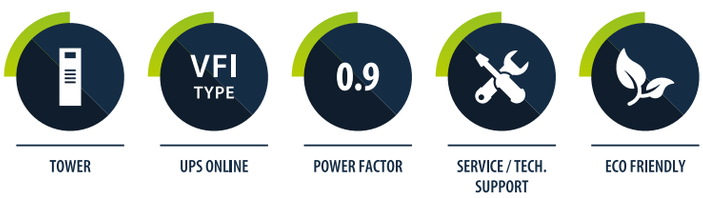
DS POWER 300HT

UNINTERRUPTIBLE POWER SUPPLIES

10-500kVA

3 PHASE IN / 3 PHASE OUT

- INVERTER ISOLATION TRANSFORMER
- IGBT RECTIFIER
- DSP CONTROL



DS Power 300HT Online UPS uses the latest DSP technology, which can be programmed to suit a wide variety of electrical environments without impending its performance. With the 3-Level topology, efficiency, reliability and functionality have been raised to levels unattainable with old analog technology. This technology not only creates a significant increase in MTBF, but the DSP's ability to accurately process signals at very high speed allows all UPS subsystems to be controlled with greatly increased precision. Thanks to its built-in inverter isolation transformer, it guarantees safe operation and provides uninterrupted energy for local networks, communication systems, sensitive medical devices, smart engineering measurement devices and industrial automation systems.

GENERAL SPECIFICATIONS

- Inverter isolation transformer
- 3 DSP controlled modular structure
- Separate main control board advantage for rectifier and inverter
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THD)
- High input power factor
- High efficiency up to 94%
- Selectable input/output voltage/frequency range
- Static and maintenance by-pass switch
- High charge current capacity
- Eco Mode operation (optional)
- Split by-pass input (dual input)
- Advanced TFT front panel (40-500kVA)
- Cold start function
- Compliant with IEC EN62040 directive
- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production
- Advanced control at the input
- 3 level battery protection
- Temperature compensated charge system
- Output current limitation
- Output DC leakage protection
- Output short circuit and overload protection
- External REPO input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator
- 2 RS232 serial ports and 4 programmable dry contact outputs
- Optional 12 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service password-protected security
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	DS310 HT	DS315 HT	DS320 HT	DS330 HT	DS340 HT	DS360 HT	DS380 HT	DS3100 HT	DS3120 HT	DS3160 HT	DS3200 HT	DS3250 HT	DS3300 HT	DS3400 HT	DS3500 HT
Power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300	400	500
INPUT															
Voltage	380/400 VAC 3P + N + G, ± 20%														
Frequency	50Hz / 60Hz, ± 10%														
Power factor (@ 100% load)	≥ 0.99														
(THDI) (*)	≤ 3%														
By-pass voltage	380/400 VAC 3 Phase + N, 4 Wires, ± 10%														
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator														
OUTPUT															
Power (kW)	9	13,5	18	27	36	54	72	90	108	144	180	225	270	360	400
Power factor	0.9														0.8
Voltage	380/400 VAC 3P + N, ± 1%														
Frequency	50Hz / 60Hz														
Frequency tolerance	Line synchronized: ± 2% / Free running: ± 0.1%														
Efficiency	up to 94%														
Crest factor	3:1														
Overload protection (**)	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass														
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting														
Voltage THD	≤ 2% (at 100% linear load)														
BATTERIES															
Type	VRLA AGM / GEL / NiCd														
Nominal voltage	± 336 VDC														
Number of batteries	2x28 batteries														
Float charge voltage	± 378 VDC														
End of discharge voltage	± 280 VDC														
Battery cabinet	External														
Batt. ambient temp.	25ºC														
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)														
Automatic testing	Standard every 72 hours (adjustable)														
GENERAL															
Standards	EN62040-1, EN62040-2, EN62040-3														
User interface	4 lines LCD panel, Mimic leds, 5 vector buttons, Buzzer					TFT panel, 5 vector buttons, Buzzer									
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time														
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, operating hour meter														
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays														
Inputs	EPO input, Interactive battery panel input, Genset input														
Genset kit	Standard (programmable)														
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)														
Alarm logging	Standard: with time & date 512 events														
Protections	Power module over-temperature, Over current, Temperature high alarm														
Temperature range	0ºC - 40ºC														
Protection degree	IP20														
Relative humidity	90% max. (non-condensing)														
Altitude	< 1000m above sea level														
Acoustic noise	< 57dBA		< 62 dBA			< 64 dBA		< 68 dBA				72 dBA			
Net weight (kg)	187	198,5	244	270	393	457	536	539	595	647	910,5	1150	1283	1497	2402
Dimensions (mm) HxWxD	1040x400x815				1440x515x855			1770x825x855				1900x1250x1055			2020x2250x770
OPTIONS															
Different input/output voltage	Please ask														
Transformer	Galvanic isolation transformer at input (optional)														
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients														
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer														
Parallel operation	Up to 8 units														

(*) Depending on power and input/output conditions.

(**) The waiting times for excessive loads vary depending on the ambient temperature.

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XT100

UNINTERRUPTIBLE POWER SUPPLIES

3-15kVA

1 PHASE IN / 1 PHASE OUT

- OUTPUT ISOLATION TRANSFORMER
- MICROPROCESSOR CONTROLLED
- IGBT RECTIFIER

XT 100 Online UPS are microprocessor controlled, full sine output uninterruptible power supplies produced with PWM (Pulse width modulation) and IGBT technologies.It provides uninterrupted energy for local networks, communication systems, sensitive medical devices, smart engineering measuring devices and industrial automation systems by guaranteeing safe operation thanks to its built-in inverter isolation transformer.

GENERAL SPECIFICATIONS

- Output isolation transformer
- Up to 91% efficiency
- Static by-pass
- LCD front panel
- 64 events memory
- RS232 and relay contacts
- Custom input and output voltage ranges
- SNMP compatible communication
- T-MON remote monitoring software
- Parallel operation
- Manufactured according to EC Directive; EN62040
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	XT103	XT105	XT107	XT110	XT115
Power (kVA)	3	5	7	10	15
INPUT					
Voltage	220/230 VAC P + N + G ± 15%				
By-pass voltage	220/230 VAC P + N ± 10%				
Frequency	50Hz / 60Hz ± 10%				
OUTPUT					
Power (kW)	2.1	3.25	4.55	7	10.5
Power factor	0.7	0.65		0.7	
Voltage	220/230 VAC P + N				
Voltage tolerance	± 1%				
Frequency	50Hz/60Hz				
Frequency tolerance	Line synchronized: ± 2% , free running: ± 0.1%				
Efficiency (at 100% load)	up to 90%			up to 91%	
Crest factor	3:1				
Overload protection	100%-125% load: 10 min., 125%-150% load: 1 min., > 150% load: by pass				
Short circuit protection	Electronic short circuit protection				
Voltage THD	< 2%				
BATTERIES					
Type	Sealed Lead Acid - Maintenance Free				
Number of batteries	14	16	18	20	
Float charging voltage	189 VDC	216 VDC	243 VDC	270 VDC	
End of discharge voltage	140 VDC	160 VDC	180 VDC	200 VDC	
Battery cabinet	Internal (standard time)			External	
Battery ambient temperature	25°C				
Battery protection	Automatic circuit breaker				
Battery test	Optional				
GENERAL					
Standards	EN 62040-1, EN62040-2				
Serial communication	Dry contacts & RS232				
Software	T-Mon UPS Management Software (3 clients, +1 server management std.)				
Temperature range	0°C - 40°C				
Ventilation	Forced air cooling				
Relative humidity	< 90% (non-condensing)				
Protection degree	IP20				
Altitude	< 2000m.				
Acoustic noise	< 45 dBA				
Weight without batteries (kg)	55	60	75	82	107
Dimensions (mm) HxWxD	585x265x505	595x265x600	645x265x670	720x265x740	775x300x800
OPTIONS					
Different input / output voltage	Please ask				
Input transformer	Galvanic isolation transformer at the input (in external cabinet)				
External maintenance by-pass switch	Optional				
Parallel operation (please ask)	Up to 4 units				
Communication	SNMP, MODBUS, Remote Mon. Panel, RS485				
Battery temperature compensation	Optional				

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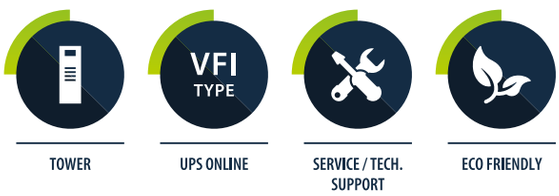
XT200

UNINTERRUPTIBLE POWER SUPPLIES

6-40kVA

3 PHASE IN / 1 PHASE OUT

- OUTPUT ISOLATION TRANSFORMER
- MICROPROCESSOR CONTROLLED
- IGBT RECTIFIER



XT200 Online UPS are microprocessor controlled, full sine output uninterruptible power supplies produced with PWM (Pulse width modulation) and IGBT technologies. It provides uninterrupted energy for local networks, communication systems, sensitive medical devices, smart engineering measuring devices and industrial automation systems by guaranteeing safe operation thanks to its built-in inverter isolation transformer.

GENERAL SPECIFICATIONS

- Output isolation transformer
- Up to 90% efficiency
- Static by-pass
- LCD front panel
- 64 events memory
- RS232 and relay contacts
- Custom input and output voltage ranges
- SNMP compatible communication
- T-MON remote monitoring software
- Parallel operation up to 4 devices
- Manufactured according to EC Directive; EN62040
- 2 years warrantly

TECHNICAL SPECIFICATIONS

MODEL	XT206*	XT207*	XT210	XT215	XT220	XT230	XT240
Power (kVA)	6 kVA	7,5 kVA	10 kVA	15 kVA	20 kVA	30 kVA	40 kVA
INPUT							
Voltage	220/380 VAC (230/400 VAC) 3P + N + G ± 15%						
By-pass voltage	220/230 VAC + P + N ± 10%						
Frequency	50Hz / 60Hz ± 10%						
OUTPUT							
Power (kW)	4.2	5.25	7	10.5	14	21	28
Power factor	0.7						
Voltage	220/230 VAC + P + N						
Voltage tolerance	±1%						
Frequency	50Hz (60Hz on request)						
Frequency tolerance	Line synchronized: ± 2%, free running: ± 0.1%						
Efficiency (at 100% load)	up to 90%						
Voltage THD	Linear load: < 2%, Non linear load: < 5%						
Crest factor	3:1						
Overload protection	100%-125% load: 10 min., 125%-150% load: 1 min., > 150% load: by pass						
Short circuit protection	Electronic short circuit protection						
BATTERIES							
Type	Sealed Lead Acid - Maintenance Free						
Number of batteries	20			30			
Float charging voltage	270 VDC			405 VDC			
End of discharge voltage	200 VDC			300 VDC			
Batt. ambient temp.	25°C						
Battery protection	Automatic circuit breaker						
Battery test	Optional			Standard			
GENERAL							
Standards	EN 62040-1, EN62040-2						
Maintenance bypass switch	Standard						
Serial communication	Dry contacts & RS232						
Software	T-Mon UPS Management Software						
Temperature range	0°C - 40°C						
Ventilation	Forced air cooling						
Relative humidity	< 90% (non-condensing)						
Protection degree	IP20						
Altitude	< 2000m						
Acoustic noise	< 50 dBA			< 55 dBA			
Weight without batteries (kg)	106	110	125	130	195	217	335
Dimensions (mm) HxWxD	950x265x740			1220x500x650			1390x575x820
OPTIONS							
Different input / output voltage	Please ask						
Input transformer	Galvanic isolation transformer at the input (in external cabinet)						
Input power factor	Input power factor corrector (> 0.97)						
Communication	SNMP, MODBUS, Remote Mon. Panel, RS485						
Parallel operation (please ask)	Up to 4 units						
Battery temperature compensation	Optional						

(*) It can be produced based on the project. Please ask.

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XT300

UNINTERRUPTIBLE POWER SUPPLIES

10-80kVA

3 PHASE IN / 3 PHASE OUT

- OUTPUT ISOLATION TRANSFORMER
- MICROPROCESSOR CONTROLLED
- IGBT RECTIFIER

XT 300 Online UPS are microprocessor controlled, full sine output uninterruptible power supplies produced with PWM (Pulse width modulation) and IGBT technologies. It provides uninterrupted energy for local networks, communication systems, sensitive medical devices, smart engineering measuring devices and industrial automation systems by guaranteeing safe operation thanks to its built-in inverter isolation transformer.

GENERAL SPECIFICATIONS

- Output isolation transformer
- Up to 92% efficiency
- Static by-pass
- LCD front panel
- 64 events memory
- RS232 and relay contacts
- Custom input and output voltage ranges
- SNMP compatible communication
- T-MON remote monitoring software
- Manufactured according to EC Directive; EN62040
- 2 years warrantly

TECHNICAL SPECIFICATIONS

MODEL	XT310	XT315	XT320	XT330	XT340	XT360	XT380
Power (kVA)	10	15	20	30	40	60	80
INPUT							
Voltage	220/380 (230/400 VAC) 3P + N + G ± 15%						
By-pass voltage	220/380 (230/400 VAC) 3P + N ± 10%						
Input frequency	50Hz (60Hz on request) ± 10%						
OUTPUT							
Power (kW)	8	12	16	24	32	48	64
Power factor	0,8						
Voltage	380/400 VAC 3P + N						
Voltage tolerance	Static: ± 1%, Dynamic: ± 5%						
Voltage recovery time	Max. 25ms						
Frequency	50Hz/60Hz						
Frequency tolerance	Line synchronized: ± 2%, free running: ± 0.1%						
Efficiency (at 100% load)	89-91%			90-92%			
Crest factor	3:1						
Overload protection	100%-125% load: 10 min., 125%-150% load: 1 min., >150% load: by pass						
Short circuit protection	Electronic short circuit protection						
Voltage THD	Linear load: < 2%, Non linear load: < 5%						
BATTERIES							
Type	Sealed Lead Acid - Maintenance Free						
Number of batteries	30						
Float charging voltage	405 VDC						
End of discharge voltage	300 VDC						
Battery ambient temperature	25ºC						
Battery protection	Automatic circuit breaker						
Battery test	Automatic/Manuel						
GENERAL							
Standards	EN 62040-1, EN62040-2						
Serial communication	Dry contacts & RS232						
Software	T-Mon UPS Management Software						
Temperature range	0°C - 40°C						
Ventilation	Forced air cooling						
Relative humidity	< 90% (non-condensing)						
Protection degree	IP20						
Altitude	< 2000m						
Acoustic noise	< 56 dBA					< 60 dBA	
Weight without batteries (kg)	220	260	284	305	404	496	580
Dimensions (mm) HxWxD	1150x505x655				1390x575x820		1450x720x820
OPTIONS							
Different input / output voltage	Please ask						
Input transformer	Galvanic isolation transformer at the input (in external cabinet)						
Input THD	10% (with 12 pulse or 18 pulse rectifier, according to UPS range), %5 (with 18 pulse rectifier, + filter), up to 100kVA						
Input power factor	0.95 - 0.98 (with 18 pulse rectifier)						
Communication	SNMP, MODBUS, Remote Mon. Panel, RS485						
Battery temperature compensation	Optional						

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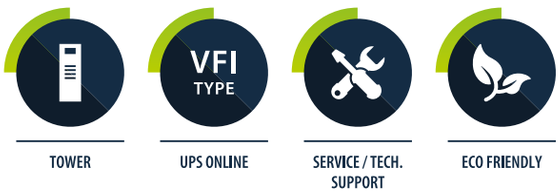
XT300

UNINTERRUPTIBLE POWER SUPPLIES

100-300kVA

3 PHASE IN / 3 PHASE OUT

- OUTPUT ISOLATION TRANSFORMER
- MICROPROCESSOR CONTROLLED
- IGBT RECTIFIER



XT 300 Online UPS are microprocessor controlled, full sine output uninterruptible power supplies produced with PWM (Pulse width modulation) and IGBT technologies. It provides uninterrupted energy for local networks, communication systems, sensitive medical devices, smart engineering measuring devices and industrial automation systems by guaranteeing safe operation thanks to its built-in inverter isolation transformer.

GENERAL SPECIFICATIONS

- Output isolation transformer
- Up to 92% efficiency
- Static by-pass
- LCD front panel
- 128 elevents alarm memory (4000 alarms)
- RS232 and relay contacts
- Custom input and output voltage ranges
- SNMP compatible communication
- T-MON remote monitoring software
- High performance at nonlinear loads
- Custom input voltage and frequency ranges
- Manufactured according to EC Directive; EN62040
- 2 years warranty

TECHNICAL SPECIFICATIONS

MODEL	XT3100	XT3120	XT3160	XT3200	XT3250	XT3300
Power (kVA)	100	120	160	200	250	300
INPUT						
Voltage	220/380 VAC (230/400 VAC) 3P + N + G ± 15%					
By-pass voltage	220/380 VAC (230/400 VAC) 3P + N ± 10%					
Input frequency	50Hz/60Hz ± 10%					
OUTPUT						
Power (kW)	80	96	128	160	200	240
Power factor	0.8					
Voltage	380/400 VAC 3P + N					
Voltage stability	Static: ± 1%, Dynamic: ± 5%					
Voltage recovery time	Max. 25ms					
Frequency	50Hz/60Hz					
Frequency tolerance	Line synchronized: ± 2%, free running: ± 0.1%					
Efficiency (at 100% load)	90-92%					
Crest factor	3:1					
Overload protection	100%-125% load: 10 min., 125%-150% load: 1 min., >150% load: by pass					
Short circuit protection	Electronic short circuit protection					
Voltage THD	Linear load: < 2%, Non linear load: < 5%					
BATTERIES						
Type	Sealed Lead Acid - Maintenance Free					
Number of batteries	30				32	
Float charging voltage	405 VDC				432 VDC	
End of discharge voltage	300 VDC				320 VDC	
Battery ambient temperature	25ºC					
Battery protection	Automatic circuit breaker					
Battery test	Automatic/Manuel					
GENERAL						
Standards	EN 62040-1,EN62040-2					
Serial communication	Dry contacts & RS232					
Software	T-Mon UPS Management Software					
Over temperature protection	Electronic					
Temperature range	0ºC - 40ºC					
Ventilation	Forced air cooling					
Relative humidity	< %90 (non-condensing)					
Protection degree	IP20					
Altitude	< 2000m above sea level					
Acoustic noise	65 dBA		70 dBA			
Weight without batteries (kg)	750	765	802	970	1328	1370
Dimensions (mm) HxWxD	1650x1110x810		1730x1195x870		1880x1565x925	
OPTIONS						
Different input / output voltage	Please ask					
Input transformer	Galvanic isolation transformer at the input (in external cabinet)					
Input THD	10% (with 12 Pulse or 18 Pulse rectifier, according to UPS range), 5% (with 18 Pulse rectifier, + filter), up to 100kVA					
Input power factor	0.95 - 0.98 (with 18 Pulse rectifier), up to 100kVA					
Communication	SNMP, MODBUS, Remote Mon. Panel, RS485					
Battery temperature compensation	Optional					

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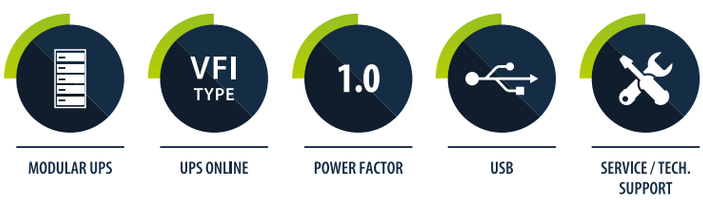
MTR MODULAR UPS

UNINTERRUPTIBLE POWER SUPPLIES

10-90kVA

1-1, 3-1, 3-3 PHASE INPUT - OUTPUT

- FLEXIBLE CONFIGURATION
- SMART SLEEP FUNCTION
- GRAPHIC LCD DISPLAY



MTR Modular UPS are online devices produced with 3-level and DSP technology that provide low THD with high input power factor designed for sensitive loads. Thanks to its hot-swappable modular structure, it has the flexibility to operate at powers between 10 and 90kVA with a single cabinet. With its rack type design, flexible phase configuration option, high power density, user-friendly interface, smart sleep function, self-agigng and smart charge management, it offers a perfect solution especially for data centers.

GENERAL SPECIFICATIONS

RACK MODULAR DESIGN

Modular design, compatible with 19" standard rackcabinet, convenient to be integrated with servers

HIGH POWER DENSITY

10/15kVA (10/15kW) power module in 2U height, saving great amount of space, easy for capacity expansion

INTEGRATED SOLUTION FOR DATA CENTER

UPS can be integrated with battery cabinet, PDU and external maintenance bypass, offering excellent choice for data center

INTELLIGENT CHARGING MANAGEMENT

The system intelligently control the whole process of the charging and discharging, effectively improving the life time of the battery

FLEXIBLE CONFIGURATION

The system can be configured to 3/3, 3/1 and 1/1 without derating

FRIENDLY INTERFACE

7" touch color LCD with graphic display, more information displayed and easier for customer to operate

SMART SLEEP FUNCTION

System can intelligently shutdown some power modules to increase total load rate, achieving higher efficiency

SELF-AGING MODE

Energy internal circle technology, system can run with full load, saving more than 90% energy

TECHNICAL SPECIFICATIONS

MODEL	MTR-020/10X	*MTR-030/10X	MTR-040/10X	MTR-060/10X	MTR-030/15X	*MTR-045/15X	MTR-090/15X
Power (kVA)	20kVA/20kW	*30kVA/30kW	40kVA/40kW	60kVA/60kW	30kVA/30kW	*45kVA/45kW	90kVA/90kW
Power module type	TPM10X (10kVA/10kW)				TPM15X (15kVA/15kW)		
INPUT							
Phase	(1/1P - 3/1P - 3/3P) 3P+ N + G (380/400/415V) ~ 1P + N + G (220/230/240V)				3P+ N +G (380/400/415V)		
Voltage range	304-478Vac (line-line),100% load;						
	228-304Vac load derated from 100% - %75 linearly						
Frequency range	40Hz-70Hz						
Power factor	> 0.99						
THDi	** THDi < 4% @ 100% linear load						
OUTPUT							
Voltage	(1/1P - 3/1P - 3/3P) 3P+ N + G (380/400/415V) ~ 1P + N + G (220/230/240V)				3P+ N +G (380/400/415V)		
Voltage regulation	1.5%						
Power factor	1						
THDu	THD < 1% (linear load), THD < 5.5% (non-linear load)						
Crest factor	3:1						
Overload capacity	110% for 1 hour; 125% for 10 min; 150% for 1 min ; 150% for 200 ms						
BATTERY							
Voltage	± 240 VDC for 40 batteries (selectable battery number 36-44)						
Charge power	20%* System power						
Charge voltage precision	±1%						
SYSTEM							
System efficiency	Normal mode: 95%; ECO mode: 98%; Battery mode: 94.5%						
Display	7.0" Color touch screen LCD + LED + Keyboard						
IP Class	IP20						
Interface	Standart: RS232, RS485, dry contacts						
	Optional: Expansion dry contact card						
Operation / Storage temperature	0-40°C / -25-70°C						
Relative humidity	0-95% (non-condensing)						
Noise level	56dB (1 meter away)				58dBA (1 meter away)		
Options	Parallel operation, Battery compansated battery charging, Movable cabinet with castors						
PHYSICAL							
Weight (kg) – Cabinet	42	55	51	85	42	55	85
Weight (kg) – Power module	15.3				15.5		
Dimension (mm) HxWxD – Cabinet	398x485x697	575x485x751	575x485x697	1033x485x751	398x485x697	575x485x751	1033x485x751
Dimension (mm) HxWxD – Height	7U	11U	11U	21U	7U	11U	21U
Dimension (mm) HxWxD – Power module	(2U) 85x436x590						

(*) Parallel operation

(**) Only for 3/3 phase

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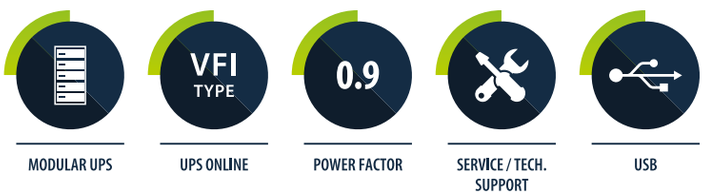
MTI200 MODULAR UPS

UNINTERRUPTIBLE POWER SUPPLIES

20-200kVA

3 PHASE IN / 3 PHASE OUT

- HOT-SWAP BATTERY SYSTEM
- SMART SLEEP FUNCTION
- GRAPHIC LCD DISPLAY



MTI200 Modular UPS are online devices produced with 3-level and DSP technology that provide low THD with high input power factor designed for sensitive loads. Thanks to its hot-swappable modular structure, it has the flexibility to operate at powers between 20 and 200kVA with a single cabinet. Cold start, self-agigg mode using only 10% of its capacity, independent battery charging and smart battery management and advanced graphic touch screen are its outstanding features.

GENERAL SPECIFICATIONS

MODULAR DESIGN

Up to 20 power modules in parallel online hot-swappable N+X redundancy

INDEPENDENT CHARGER

Independent charger for each module and intelligently control the whole charging process, prolong the life time of the battery

EASY CONNECTION ACCESS

Top and bottom cable entry connection are supported, more convenient for site installation

MODULAR DESIGN WITH TRANSFORMER

Modular UPS up to 60kVA with in-built isolation transformer, meeting different requirement for customers

BATTERY COLD START

UPS can be powered on from the battery without utility

HIGH POWER DENSITY

200kVA with footprints of about 0.5m^2, saving valuable data center space

INTEGRATED IGBT DESIGN

Integrated IGBT in one module, less failure points with higher performance and reliability

FRIENDLY INTERFACE

Touch LCD display with abundant information

INDEPENDENT AIR CHANNEL

Cooling air runs in isolated channel, keeping PCB free of dust

TECHNICAL SPECIFICATIONS

MODEL		MTI2060/20	MTI2120/20	MTI2200/20	*MTI2060/20B
Capacity		60kVA	120kVA	200kVA	60kVA
Power module type		TPM20 (20kVA/18kW)			
INPUT					
Dual input		Optional			
Phase		3P + N + G, 380V/400V/415V (line-line)			
Voltage range		304~478 Vac (line-line), full load; 228V~304Vac (line-line), load decreases linearly according to the min phase voltage			
Frequency		50Hz / 60Hz			
Frequency range		40Hz~70Hz			
Power factor		> 0.99			
THDI		< 3% @100% linear load			
BYPASS					
Voltage		380/400/415 Vac (line-line)			
Frequency		50Hz / 60Hz			
Voltage range		Settable, -40%~+25%			
Frequency range		Settable, ±1Hz, ±3Hz, ±5Hz			
Overload		125% long term operation; 130% for 1 hour ;150% for 6 mins; 1000% for 100ms			
OUTPUT					
Voltage		380V/400V/415V (line-line)			
Voltage regulation		±1% (Balance load); ± 1.5% (unbalance load)			
Frequency		50Hz / 60Hz			
Frequency precision		0.1%			
Power factor		0.9			
Voltage THD		< 1.0% (linear load), < 5.5% (none linear load)			
Crest factor		3:1			
Inverter overload		110% for 1 hour; 125% for 10 mins ;150% for 1 min; >150% for 200 ms			
BATTERY					
Voltage		± 240 VDC			
Battery number		40pcs (Settable: even number from 32 to 44)			
Voltage precision		±1%			
Charge power		up to 20% * Output active power			
Battery cold start		Standard			
SYSTEM					
System efficiency	AC mode	95%			
	ECO mode	99%			
	Batt. mode	95%			
Display		5.7" touch screen LCD + LED + keyboard			
IP class		IP20			
Interface		RS232,RS485, Programmable Dry Contact			
Option		SNMP Card, Parallel kit, SPD, LBS, Dust filter			
Temperature		Operation: 0~40°C Storage: -40~70°C			
Relative humidity		0~95% Non-condensing			
Altitude		<1000m. Within 1000m to 2000m, 1% power derating for every 100m rise			
Acoustic noise		55dB @ 50% load			
Applicable standards		Safety: IEC/EN 62040-1 EMC: IEC/EN 62040-2 Performance: IEC/EN 62040-3			
PHYSICAL					
Weight (kg)	Cabinet	105	150	180	205
	Power module	TPM20: 22			
	Battery pack	–			10 (without battery)
Dimension (mm) HxWxD	Cabinet	1100x600x900	1600x600x900	2000x600x900	2000x600x1020
	Power module	TPM20:134x440x590			
	Battery pack	–			177x120x824

(*) Single cabinet with internal batteries

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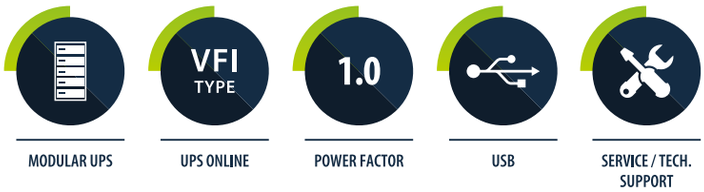
MTI250 MODULAR UPS

UNINTERRUPTIBLE POWER SUPPLIES

25-200kVA

3 PHASE IN / 3 PHASE OUT

- HIGH POWER DENSITY
- GRAPHIC LCD DISPLAY
- kVA = kW



The MTI250 Modular Ups Series Rack Mounted Modular UPS is scalable, hot-swappable, online double conversion. The power capacity is from 25 to 200kVA/kW, it's the ideal choice for modern data center. With the latest IGBT three-level and full DSP control technology, the new MTI250 series delivers the best combination of reliability and flexibility.

GENERAL SPECIFICATIONS

HIGH POWER DENSITY

25kVA power module in 2U height, saving great amount of space, easy for capacity expansion

RACK MODULAR DESIGN

Module design, compatible with 19" standard rack cabinet, convenient to be integrated with servers

BATTERY COLD START

UPS can be powered on from the battery without utility

FRIENDLY INTERFACE

Touch LCD display with abundant information

APPLICATIONS

IDC (Internet Data Center), network servers and workstation, control system, communication system, office, PC etc.

TECHNICAL SPECIFICATIONS

MODEL		MTI150/25C	MTI200/25C
Capacity		150kVA/150kW	200KVA/200kW
Power module capacity		TPM25C (25kVA/25kW)	
INPUT			
Dual input		Optional	Standard
Phase		3 Phase + Neutral + Ground, 380V/400V/415V(line-line)	
Input voltage range		304~478Vac (line-line),full load; 228V~304Vac (line-line),load decreases linearly according to the min phase voltage	
Frequency		50Hz / 60Hz	
Frequency range		40Hz ~ 70Hz	
Power factor		> 0.99	
THDI		< 3% @100% linear load	
BYPASS			
Voltage		380/400/415Vac (line-line)	
Frequency		50Hz / 60Hz	
Voltage range		Settable, -40% ~ +25%	
Frequency range		Settable, ± 1Hz, ± 3Hz, ± 5Hz	
Overload		110% long term operation; 125% for 5 mins ;150% for 1 min; >150% for 1s	
OUTPUT			
Voltage		380V/400V/415V (line-line)	
Voltage regulation		±1 (0~100% linear load)	
Frequency		50Hz / 60Hz	
Frequency precision		0.1%	
Power factor		1.0	
Voltage THD		< 1.0% (linear load), < 5.5% (none linear load)	
Crest factor		3:1	
Inverter overload		110% for 1 hour; 125% for 10 mins ;150% for 1 min; >150% for 200 ms	
BATTERY			
Voltage		± 240 VDC	
Battery number		40pcs (Settable: even number from 32 to 44)	
Voltage precision		± 1%	
Charge power		up to 20% * Output active power	
Battery cold start		Standard	
Efficiency	AC mode	96%	
	ECO mode	98%	
	Batt. mode	95.5%	
SYSTEM			
Display		7.0″ color touch screen LCD + LED + keyboard	
IP Class		IP20	
Interface		RS232, RS485, Programmable Dry Contact	
Option		PDU for RM150/25C,SNMP Card, Parallel kit,SPD, LBS	
Temperature		Operation: 0~40°C Storge: -40~70°C	
Relative humidity		0~95% Non-condensing	
Altitude		<1000m. Within 1000m to 2000m, power derate 1% for every 100m rise	
Acoustic noise		65dB @ 100% load, 62dB @ 45% load	
Applicable standards		Safety: IEC/EN 62040-1-1 EMC: IEC/EN 62040-2 Performance: IEC/EN 62040-3	
PHYSICAL			
Weight (kg)	Cabinet	140	160
	Power module	18	
Dimension (mm) HxWxD	Cabinet	931x482x916	1550x482x916
	Power module	85x436x677	

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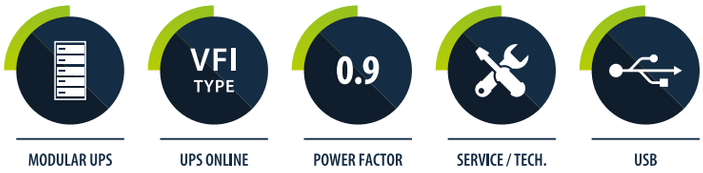
MTI300 MODULAR UPS

UNINTERRUPTIBLE POWER SUPPLIES

30-900kVA

3 PHASE IN / 3 PHASE OUT

- SMART SLEEP FUNCTION
- GRAPHIC LCD DISPLAY
- DSP CONTROL



MTI300 Modular UPS are online devices produced with 3-level and DSP technology that provide low THD with high input power factor designed for sensitive loads. Thanks to its hot-swappable modular structure, it has the flexibility to operate at powers between 20 and 600kVA with a single cabinet. It offers the most suitable power solutions for large data centers and sensitive electronic devices. Thanks to its parallelizable design, which takes up less space, it provides the opportunity to reach 900kVA in an area of less than 2 m². It stands out with its rack type design, high power density, user-friendly interface, independent LCD for each power module in addition to 10.4 inch graphical touchscreen, smart sleep function, self-agigng, and smart charge management.

GENERAL SPECIFICATIONS

- 3 Level topology
- Modular design with N+X redundancy
- Online hot swapping, by-pass and power module feature
- Optional dual input
- High power density with footprints of less than 2m² up to 900kVA in parallel, 30kVA power module with only 3U height
- High power density of 600kVA in one single cabinet, 30kVA power module with only 3U height
- Green and energy saving: AC/AC efficiency > 95%, input power factor > 0.99 while input THDi < 3%
- Smart Sleeping mode for energy saving and prolong the life time of the system
- Full DSP control of high stability, reliability and safety
- Integrated IGBT module with improved performance and reduced size
- Excellent input performances for complete compatibility with input PF of 99% and wide range of voltage
- Self-Aging mode for full load test with less than 10% of the total power capacity needed
- Optimized battery management, intelligently control the whole process of the charging and discharging, effectively improve the life time of the battery
- Battery cold start, UPS can be powered on from the battery without utility
- Automatically record the critical wave information when fault happens, easy for trouble shooting
- Independent LCD display for each power module with self-starting function
- Programmable dry contacts, the function of each port can be defined by users
- Friendly human machine interface with colorful touch screen of 10.4 inches

TECHNICAL SPECIFICATIONS

MODEL		MTI3180/30	MTI3300/30	MTI3600/30
Capacity		30 - 900kVA	30 - 600kVA	
Power module type		TPM30 (30kVA/27kW)		
INPUT				
Phase		3 Phases + Neutral + Ground		
Voltage		380V/400V/415V (line to line)		
Frequency		50Hz / 60Hz		
Power factor		> 0.99		
THDI		THDi < 3% @ 100% linear load		
Voltage Range		304~478Vac (Line-Line),full load 228V~304Vac (Line-Line), load decrease linearly according to the min phase voltage		
Frequency range		40Hz~70Hz		
OUTPUT				
Voltage		380V/400V/415V		
Voltage regulation		1.5%		
THDu		THD < 1% (linear load), THD < 6% (none linear load)		
Power factor		0.9		
Crest factor		3:1		
Overload capability		1 hour for 110% load; 10 minutes for 125% load; 1 minutes for 150% load; 200ms for > 150% load		
BATTERY				
Voltage		± 240 VDC for 40 batteries (selectable battery number 36-44)		
Charge power		20%*System Power		
Charge voltage precision		± 1%		
SYSTEM				
Parallel (cabinet)		5	3	-
System efficiency		Normal mode: 95%; ECO mode: 99%; Battery mode: 95%		
Display		10.4" LCD + LED, Color touch screen + Keyboard		
IP class		IP20		
Interface (communication port)		Standard: RS232,RS485, Dry contacts, EPO / Optional: SNMP card		
Operation / storage temperature		0~40°C /-40~70°C		
Relative humidity		0~95% (non-condensing)		
Noise		65dB @100% load, 62dB @ 45% load (1m away)		72dB @100% load, 68dB @ 45% load (1m away)
PHYSICAL				
Net weight (kg)	Cabinet	6-Slot Cabinet: 165	10-Slot Cabinet: 220	10-Slot Cabinet: 660
	Power module	TPM30kVA: 34		
Dimension (mm) HxWxD	Cabinet	6-Slot Cabinet: 1600x600x1100	10-Slot Cabinet: 2000x600x1100	20-Slot cabinet: 2000x2000x1050
	Power module	TPM30kVA: (3U) 134x460x790		

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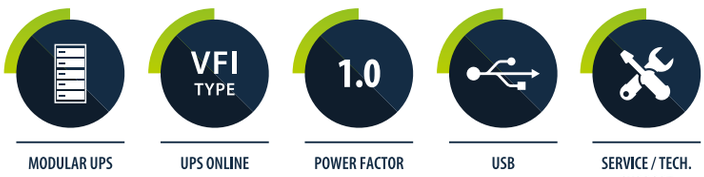
MTI500 MODULAR UPS

UNINTERRUPTIBLE POWER SUPPLIES

50-600kVA

3 PHASE IN / 3 PHASE OUT

- SMART SLEEP FUNCTION
- GRAPHIC LCD DISPLAY
- DSP CONTROL



MTI500 Modular UPS are online devices produced with 3-level and DSP technology that provide low THD with high input power factor designed for sensitive loads. Thanks to its hot-swappable modular structure, it has the flexibility to operate at powers between 40 and 500kVA with a single cabinet. It offers the most suitable power solutions for large data centers and sensitive electronic devices. Thanks to its parallelizable design, which takes up less space, it provides the opportunity to reach 1500kVA in an area of less than 4 m². It stands out with its rack type design, high power density, user-friendly interface, independent LCD for each power module in addition to 10.4 inch graphical touchscreen, smart sleep function, self-agigng, and smart charge management.

GENERAL SPECIFICATIONS

COMPACT DESIGN

500kVA in one cabinet, footprint less than 1.5m², saving valuable room space

HIGH POWER DENSITY

50kVA power module in 4U height, easy for capacity expansion

HIGH EFFICIENCY

Advanced 3-level technology quarantees high efficiency operating in double conversion mode up to 96%

INTELLIGENT CHARGING MANAGEMENT

The system intelligently control the whole process of the charging and discharging, effectively improve the life time of the battery.

HIGH SCALABILITY

The system can be configured from 50kVA to 500kVA in one single cabinet, 3 units in parallel for a capacity up to 1500kVA

FRIENDLY HMI

10.4" touch color LCD with graphic display, independent LCD for each power module

SMART SLEEP FUNCTION

System can intelligently shutdown some power modules to increase total load rate, achieving higher efficiency

TECHNICAL SPECIFICATIONS

MODEL		MTI-5100/50	MTI-5200/50	MTI-5300/50	MTI-5500/50	MTI5600/50X1
System capacity		100kVA	200kVA	300kVA	500kVA	600kVA
Power module capacity		TPM50 (50kVA/50kW)				
INPUT						
Dual input		Standard		Optional	Standard	
Phase		3 Phases + Neutral + Ground, 380V/400V/415V (line-line)				
Voltage range		304~478VAC (line-line), full load; 228V~304VAC (line-line), load decreases linearly according to the min. phase voltage				
Rate frequency		50Hz/60Hz				
Frequency range		40Hz/70Hz				
Power factor		> 0.99				
THDi		< 3% @ 100% linear load				
BYPASS						
Rate voltage		380/400/415VAC (Line-Line)				
Rated frequency		50Hz/60Hz				
Input voltage range		Settable, -40% ~ +25%				
By-pass frequency range		Selectable, ±1Hz, ±3Hz, ±5Hz				
Bypass overload		125%, long time operation < 130% for 10 minutes < 150% for 1 minutes >150% for 300ms		110% long term operation < 130% for 10 minutes < 150% for 1 minutes >150% for 1 ms		110% long term operation 110% ~ 125% last for more than 5 min. 125% ~ 150% last for more than 1 min. >150% last for more than 1 s.
OUTPUT						
Rated inverter		380/400/415VAC (line-line)				
Voltage regulation		1% for balance load;1.5% for unbalance load				
Rated frequency		50Hz/60Hz				
Frequency precision		0.1%				
Output power factor		1.0				
Output THDu		< 1%, Linear load; < 5.5% Non-linear load				
Crest factor		3:1				
Inverter overload		110% for 1 hour; 125% for 10 mins; 150% for 1 min; >150% for 200 ms				
BATTERY						
Voltage		±240VDC				
Battery number		40pcs (Settable: even number from 32 to 44)				
Voltage precision		1%				
Charge power		Up to 20% Output active power				
Battery cold start		Optional		Standard		
SYSTEM						
System efficiency		AC Mode: 96.0% ECO Mode: 99.0% Battery Mode:96.0%				
Display		10.4" touch screen LCD+LED+keyboard				
IP class		IP20				
Interface		RS232, RS485, Programmable Dry Contact, USB				
Option		SNMP Card, Parallel kit, SPD, LBS, Dust filter				
Temperature		Operation: 0~40°C Storage: -40~70°C				
Relative humidity		0~95% (non-condensing)				
Altitude		< 1000. Within 1000m to 2000m, power derate 1% for every 100m rise				
Acoustic noise		72dB @ 100% load, 69dB @ 45% load				
Application standards		Safety: IEC/EN 62040-1, EMC:IEC/EN 62040-2, Performance: IEC/EN 62040-3				
PHYSICAL						
Net weight (kg)	Cabinet	120	170	220	450	1040
	Power module	45				
Dimension (mm) HxWxD	Cabinet	1150x600x980	1600x650x960	2000x650x1095	2000x1300x1100	
	Power module	178x510x700				

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MTI600 MODULAR UPS

UNINTERRUPTIBLE POWER SUPPLIES

600kVA

3 PHASE IN / 3 PHASE OUT

- HIGH EFFICIENCY, UP TO 97%
- SUPPORT LITHIUM BATTERY
- HIGH POWER DENSITY

MODULAR UPS | UPS ONLINE | POWER FACTOR | USB | SERVICE / TECH. SUPPORT

MTI600 series are modular online UPS with brand-new topology, a bidirectional DC-DC converter circuit, which greatly improve the system performance and guarantees high efficiency.

Its compact design ensures the power density, achieve this 600kW system occupies only an area of 0.9m2. RM series is considered to be an excellent power supply solution for large data centers and facilities.

GENERAL SPECIFICATIONS

- High efficiency, up to 97%
- Support Lithium battery
- Intelligent staggering power consumption, become more flexible and save more energy
- Double side DC-DC topology platform, support charging power reaching 30%
- High power density
- Standard TOP /REAR entry (Optional Bottom/ Rear entry)
- The system can be used as a frequency converter with 380VAC/50Hz input and 415VAC/60Hz output without power derate.
- BMS lithium battery data can be seen on the screen including the temperature and voltage of each cell
- Friendly interface with 10" touch color LCD with graphic display, intuitive information and easier to operate
- Modular design, up to 30 power modules in parallel online hot-swappable N+X redundancy

TECHNICAL SPECIFICATIONS

MODEL		MTI6600/60
System capacity		600kVA
Power module capacity		TPM60X1 (60kVA/60kW)
INPUT		
Dual input		Standard
Phase		3 Phases + Neutral + Ground, 380V/400V/415V (line-line)
Rate frequency		50Hz/60Hz
Voltage range		323~478Vac (line-line),full load 323V~138Vac (line-line), load decrease linearly from 100% to 30% according to the min phase voltage 323V~138Vac (line-line), battery combined power supply when load exceed the derated capacity
Frequency range		40Hz/70Hz
Power factor		> 0.99
THDi		< 3% @ 100% linear load
BYPASS		
Rate voltage		380/400/415VAC (Line-Line)
Rated frequency		50Hz/60Hz
Input voltage range		Settable, default -20%~+15% Up limit: +10%, +15%, +20%, +25% Down limit: -10%, -15%, -20%, -30%, -40%
By-pass frequency range		Selectable, ±1Hz, ±3Hz, ±5Hz
Bypass overload		110% for long term operation; 110%~125% for 10 mins; 125%~150% for 1 min; >150% for 200ms
OUTPUT		
Rate voltage		380/400/415VAC (line-line)
Rated frequency		50Hz/60Hz
Output power factor		1.0
Voltage regulation		±1%
Output THDu		< 1% Linear load; < 5%, Non-linear load
Inverter overload		< 110%, 1hour; 110%~125%, 10mins; 125%~150% for 1min; >150% for 200ms
Rate frequency		50Hz/60Hz
Frequency precision		± 0.1%
BATTERY		
Voltage		±180~264VDC 30pcs derate to 0.7; 32~34pcs derate to 0.8; 36~38pcs derate to 0.9; 40~44pcs
Voltage precision		1%
Charge power		Up to 30% * Output active power
SYSTEM		
Parallel operation		Max 30 power modules 3 cabinets in parallel
Efficiency	AC Mode	> 97%
	Battery Mode	> 96%
Display		LED+Color touch LCD
Interface		Standard: RS485, USB, CAN, Programmable Dry Contact, Intelligent card slot*2, Extendable dry contact slot
Option		SNMP card, AS400 card, Parallel kit, SPD, Dual input kit, LBS
Temperature		Operation: 0~40°C Storage: -40~70°C
Relative humidity		0~95% Non-condensing
Noise (1 meter)		75dB @ 100% load, 70dB @ 45% load
Altitude		<1000m. Within 1000m~2000m, 1% power derating for every 100m
Application standards		Safety: IEC/EN 62040-1 EMC: IEC/EN 62040-2 Performance: IEC/EN 62040-3
PHYSICAL		
Dimension (HxWxD)	Cabinet	2000x800x1100
	Power module	85x550x750
Net weight (kg)	Cabinet	443
	Power module	35.7

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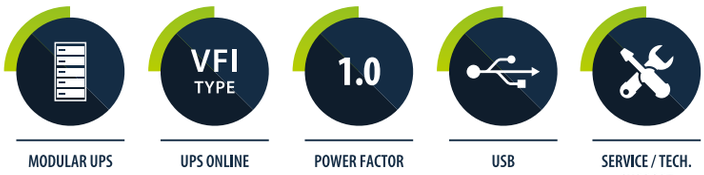
MTI1000 MODULAR UPS

UNINTERRUPTIBLE POWER SUPPLIES

600kVA

3 PHASE IN / 3 PHASE OUT

- HIGH EFFICIENCY, UP TO 96%
- SUPPORT LITHIUM BATTERY
- FULL DIGITAL CONTROL



The MTI Series modular online UPS the single cabinet power rating covers from 100kVA to 600kVA, provides the highest power density of 100kW power modules in 4U height, 5 units can be paralleled for capacity maximum up to 3MW.

With the communication of BMS system, the MTI series deliver the Lithium battery information of cell voltage and cell temperature.

GENERAL SPECIFICATIONS

- High efficiency, up to 96%
- Support Lithium battery
- Easy for power expansion and backup time expansion flexible and save more energy
- Modular design, up to 30 power modules in parallel online hot-swappable N+X redundancy
- High power density
- BMS lithium battery data can be seen on the screen of UPS after choosing the corresponding protocol
- Friendly interface with 10" touch color LCD with graphic display, intuitive information and easier to operate
- All round detection and monitoring system for safety

TECHNICAL SPECIFICATIONS

MODEL		MTI10600/100
System capacity		600kVA
Power module capacity		TPM100X1 (100kVA/100kW)
INPUT		
Dual input		Optional
Phase		3Phase+Neutral+Ground, 380/400/415VAC (line-line)
Rate frequency		50/60Hz
Voltage range		323~478Vac (line-line), full load;323V~138Vac (line-line), load decrease linearly according to the min. phase voltage
Frequency range		40Hz/70Hz
Power factor		> 0.99
THDi		< 3% @ 100% linear load
BYPASS		
Rate voltage		380/400/415VAC (Line-Line)
Rated frequency		50Hz/60Hz
Input voltage range		Settable, default -20% ~ +15% Up limit: +10%, +15%, +20%, +25% Down limit: -10%, -15%, -20%, -30%, -40%
By-pass frequency range		Settable, ±1Hz, ±3Hz, ±5Hz
Bypass overload		110% long term operation; 110% ~ 125% for 5 mins; 125% ~ 150% for 1 min; 150% ~ 400% for 1 s; >400% less than 200ms
OUTPUT		
Rate voltage		380/400/415VAC (line-line)
Rated frequency		50/60Hz
Output power factor		1.0
Voltage regulation		±1%
Output THDu		<1% , Linear load, <5% , Non-linear load
Inverter overload		<110% for 1 hour; 110%~125% for 10 mins; 125%~150% for 1 min; >150% for 200ms
Frequency precision		± 0.1%
BATTERY		
Voltage		±180 ~ 288VDC 30 ~ 32pcs derate to 0.7 34 ~ 36pcs derate to 0.8 38pcs derate to 0.9 40 ~ 48pcs
Voltage precision		±1%
Charge power		Up to 15% * Output active power
SYSTEM		
Efficiency	AC Mode	>96%
	Batt. Mode	>95%
Display		LED+ Color touch LCD screen
Interface		RS485, USB, CAN, Programmable Dry Contact, 2 Intelligent slots
Option		SNMP Card, AS400 Card, Parallel kit, dual input kit, SPD, LBS, GSM
Temperature		Operation: 0~40°C Storage: -40~70°C
Relative humidity		0~95% Non-condensing
Noise(1 meter)		75dB @ 100% load, 70dB @ 45% load
Altitude		<1000m. Within 1000~2000m, 1% power derating for every 100m rise
PHYSICAL		
Dimension (HxWxD)	Cabinet	2000x1000x1100
	Power module	174x440x795
Net weight (kg)	Cabinet	400
	Power module	53.5

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STS2000

STATIC TRANSFER SWITCH

1 PHASE OUT, 2 POLES

- COMPACT AND RACK TYPE DESIGN
- MICROPROCESSOR CONTROL
- OPTIONAL HOT-SWAP

RACK

SERVICE / TECH. SUPPORT

ECO FRIENDLY

STS 2000 1 phase, 2 pole static transfer switch transfers uninterruptedly critical loads to either of two independent AC power lines. The system monitors two AC inputs. If any of them goes out of the specified tolerance, it transfers the critical load to the other. By increasing the energy quality of the systems used with STS 2000, while reducing the effects of interference and short interruptions, a backup power system is gained.

GENERAL SPECIFICATIONS

- Full digital control with microprocessor controlled structure
- 2 AC inputs with 1 phase and neutral switching
- Easy installation and maintanance
- Compact and rack type design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure (≤4ms- for sencronised sources)
- Selectable preffered source
- Fuse-free construction with a robust, high reliability SCR
- Digitally controlled system set points
- Programmable synchronized and unsynchronized transfers
- Isolation protection between sources with switched neutral
- Convenient and multifunctional front panel and diagnostic codes
- Transfer inhibit system over a certain current value
- Overload, over temperature and short circuit protections
- Convenience during maintenance and repair with Isolated Maintenance Bypass
- Remote monitoring of energy resources
- TCP / IP, SNMP, MODBUS and RS232 infrastructure for communication
- Dry-contact interface
- Internal cooling fans
- Hot-swap feature (Optional)
- Optional external AC power supply socket outlet
- Optional SNMP adaptor

TECHNICAL SPECIFICATIONS

MODEL	STS2032	STS2063	STS2120
Nominal current	32 A	63 A	120 A
ELECTRICAL			
Input voltage	220/230/240 VAC 1P + N + G		
Input voltage range	180-264 VAC (Ph-N)		
Input frequency	50Hz. / 60Hz.		
Input frequency range (operation range adjustable)	46-54Hz (for 50Hz)		
	56-64Hz (for 60Hz)		
Transfer type	"Break before make"		
Transfer methods available	Automatic / Manual / Remote		
Transfer control	synchron		
	with adjustable delay (non synchron)		
	zero current (non synchron)		
Transfer time	≤ 4 msec for synchronous sources		
	≤ 10 msec for non-synchronous sources		
Switching type	1 phase + Neutral switching (2-Poles)		
Output current crest factor	3:1		
Admissible overload	0-100% continuous		
	101-150% 1 minute		
	151-200% 10 seconds		
	> 200% 250 msec		
Protections	Output overload and short circuit protection, Overtemperature protection, Backfeed protection		
LCD panel and mimic	Standard		
Communication	RS232 standard, RS485 optional, SNMP optional		
TCP/IP connection	Optional		
Dry contacts	3 programmable relay outputs		
Breaking current capacity (SW1,SW2)	10kA		
ENVIRONMENTAL			
Cooling	Forced cooling (redundant fans)		
Cooling air direction	From front to rear		
Operating temperature	0°C - 40°C		
Storage temperature	-10°C up to +50°C		
Relative humidity	90% max. (non-condensing)		
Protection degree	IP20		
Standards	EN62310-1, EN62310-2		
Max. operation height	1000m. at nominal current rating		
Acoustic noise	< 50 dBA		< 52 dBA
MECHANICAL			
Weight (kg)	12	13	20
Dimensions	2U (19"rack), Width = 485mm, Depth = 545mm		3U (19"rack), Width = 485, Depth = 605mm
	2U (19"rack), Width = 485mm, Depth = 590mm (hot-swap)		3U (19"rack), Width = 485, Depth = 645mm (hot-swap)
Power cables connection	Clip-on terminals (on the rear panel)		

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STS3000-4000

STATIC TRANSFER SWITCH

3 PHASE OUT, 3&4 POLE

- VERY FAST UNINTERRUPTED TRANSFER
- ADVANCED COMMUNICATION
- MICROPROCESSOR CONTROL

TOWER

SERVICE / TECH. SUPPORT

ECO FRIENDLY

STS 3000-4000 3 phase, 3&4 pole static transfer switch transfers uninterruptedly critical loads to either of two independent AC power lines. The system monitors two AC inputs. If any of them goes out of the specified tolerance, it transfers the critical load to the other. By increasing the energy quality of the systems used with STS 3000-4000, while reducing the effects of interference and short interruptions, a backup power system is gained.

GENERAL SPECIFICATIONS

- Full digital control with microprocessor controlled structure
- 2 AC inputs with 3 phase switching
- Easy installation and maintanance
- Compact design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure (≤4ms- for sencronised sources)
- Selectable preffered source
- Fuse-free construction with a robust, high reliability SCR
- Digitally controlled system set points
- Programmable synchronized and unsynchronized transfers
- Convenient and multifunctional front panel and diagnostic codes
- Transfer inhibit system over a certain current value
- Overload, over temperature and short circuit protections
- Convenience during maintenance and repair with Isolated Maintenance Bypass
- Remote monitoring of energy resources
- TCP / IP, SNMP, MODBUS and RS232 infrastructure for communication
- Dry-contact interface
- Internal cooling fans
- Optional external AC power supply socket outlet
- Optional SNMP adaptor

TECHNICAL SPECIFICATIONS

MODEL	STS3050 / STS4050	STS3100 / STS4100	STS3150 / STS4150	STS3200 / STS4200	STS3250 / STS4250	STS3300 / STS4300	STS3400 / STS4400	STS3600 / STS4600	STS3800 / STS4800	STS31000 / STS41000	STS31250 / STS41250
Nominal current	50 A	100 A	150 A	200 A	250 A	300 A	400 A	600 A	800 A	1000 A	1250A
ELECTRICAL											
Input voltage (Ph-Ph)	380/400/415 VAC 3P + N + G										
Input voltage tolerance	180-264 VAC (PH-N)										
Input frequency	50Hz. / 60Hz.										
Input frequency range	48-65Hz (upper and lower limits adjustable)										
Efficiency (at full load)	> 99%										
Input voltage THD	< 10%										
Transfer type	"Break before make"										
Transfer methods available	Automatic / Manual / Remote										
Transfer control	Synchron										
	With adjustable delay (non synchron)										
	Zero current (non synchron)										
Transfer time	< 4 msn for synchronous sources										
	< 10 msn for non-synchronous sources										
Switching type	**3-Pole:** 3-phase switching / **4-Pol**e: 3-phase switching + Neutral switching										
Output current crest factor	3:1										
Admissible overload	0% - 100% continuous										
	101% - 150% 1 min.										
	151% - 200% 10 seconds										
	> 200% 250 msec										
Protections	Output overload and short circuit protection, Overtemperature protection, Backfeed protection, SCR fault protection										
LCD panel and mimic	Standard										
Communication	RS232 standard, RS485 optional, SNMP optional										
TCP/IP connection	Optional										
Dry contacts	4 programmable relay outputs										
Two serial ports	Optional										
Temperature sensor	Standard for internal cabinet temperature										
ENVIRONMENTAL											
Max. installation altitude	1000 m at nominal current rate, (- 1% derate 100m above 1000m)										
Cooling	Forced cooling (redundant fans)										
Operating temp.	0°C - 40°C										
Storage temperature	-10ºC - +50ºC										
Relative humidity	90% max. (non condensing)										
Protection degree	IP20										
Standards	EN 62310-1, EN 62310-2										
Acoustic noise	< 52 dBA			< 55 dBA				< 60 dBA		< 62 dBA	< 68 dBA
PHYSICAL											
Net weight (STS3000)	139	145	165	195	205	230	240	340	520	565	610
Net weight (STS4000)	160	175	190	205	235	240	255	375	560	615	660
Dimensions (mm) HxWxD	1500x680x540			1775x680x585				1905x915x725	1905x1250x850		

DS200TD

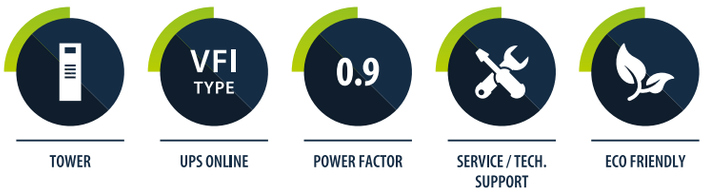
1-3 PHASE IN / 1 PHASE OUT (10 - 250kVA)

DS300TD

1-3 PHASE IN / 3 PHASE OUT (10 - 120kVA)

SPECIAL PRODUCTION UNINTERRUPTIBLE POWER SUPPLIES FOR RAILWAY APPLICATIONS

- OUTPUT ISOLATION TRANSFORMER
- 3-LEVEL IGBT RECTIFIER
- DSP CONTROL



Tescom DS200TD and DS300TD Series are devices developed especially for railway applications, use the latest DSP technology to be programmed to suit a wide variety of electrical environments without impending its performance. With the DS Power range, efficiency, reliability and functionality are enhanced to levels unattainable with the old analogue technology. This technology does not only create significant increase in MTBF, but the capability of DSP to accurately manipulate signals at very high speed permits all the UPS subsystems to be controlled with greatly increased precision.

GENERAL SPECIFICATIONS

- Output isolation transformer (integrated in inverter)
- Ability to work with 3 phase mains or 1 phase catenary voltage
- High charging current capacity
- Low current harmonic distortion at the input
- High input power factor
- High efficiency up to 94%
- Cold start
- Static and maintenance by-pass switch
- Output short circuit and overload protection
- External REPO switch input
- 512 events memory (512 events 45000 alarms)
- Clock and calender
- Automatic battery test,remaining battery time indicator
- Heat compensated charging system
- 2 RS232 serial ports and 12 dry contact outputs
- 3 DSP controlled modular structure
- Optional SNMP and MODBUS adaptors
- Optional graphical panel
- Optional usb memory
- Manufactured according to EC Directive; EN62040
- Full digital structure
- Small footprint
- Eco mode operation (optional)
- Fewer electronic components
- Output current limiting
- Advanced diagnostics for the input
- Selectable input/output voltage/frequency/range
- Split by-pass input (second input)
- Output DC leakage protection
- Seperate DSP for inverter control
- Seperate DSP for the PFC
- High charge current capacity
- Charge/discharge current indicator
- Advanced remote control features
- 2 years warranty

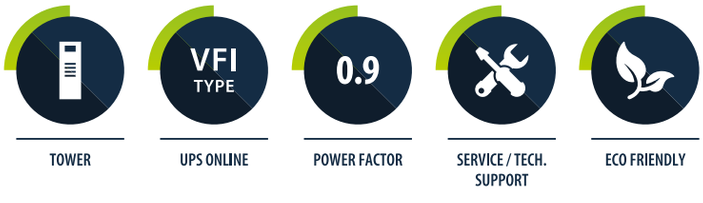
** Please ask for different powers and technical details*

DS300SD

AC-DC INPUT / 3 PHASE OUT (10 - 20kVA)

CUSTOM UNINTERRUPTIBLE POWER SUPPLIES FOR RAILWAY APPLICATIONS

- 1 OR 3 PHASE AC INPUT OPTION
- IGBT INVERTER
- DSP CONTROL



Tescom DS300SD series inverters are 3-phase AC devices using 3-phase AC voltage (catenary) or DC voltage from batteries. The main target area of application in railway applications is to drive 3-phase shear motors. These inverters are manufactured with the latest IGBT and DSP control technology, ensuring safe, efficient and trouble-free operation under difficult operating conditions.

GENERAL SPECIFICATIONS

- Operation with AC or DC input voltage
- 1 phase or 3 phase AC input
- 3-phase bypass input independent of AC input
- Low input current total harmonic distortion (THD)
- High input power factor
- High efficiency (AC/AC up to 94.5%, DC/AC 96.5%)
- Static and maintenance by-pass switch
- Output short circuit and overload protection
- Output current limiting
- 3 level topology
- 512 events memory (512 events 45.000 alarms)
- Clock and calender
- 1 RS232 serial port and 3 dry contact outputs
- 3 DSP controlled modular structure
- Optional SNMP and MODBUS adaptors
- Smaller footprint
- Fulldigital structure
- Advanced diagnostics for the input
- Selectable input/output voltage/frequency range
- Output DC leakage protection
- 2 years warranty

** Please ask for different powers and technical details*

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DS POWER 110L

CUSTOMIZED POWER SOLUTIONS

MONOPHASE UPS WITH EXTENDED BACKUP TIME

1 PHASE IN / 1 PHASE OUT (10kVA)

- TOWER DESIGN
- IGBT RECTIFIER
- DSP CONTROL

The Online UPS 10kVA is equipped with DSP (Digital Signal Processing) technology, allowing it to operate in a wide range of electrical environments. Efficiency, reliability, and functionality are enhanced to levels that were unattainable with older analog technology. With features like high charge current and parallel battery connection outputs, it provides solutions for long-duration applications.

•TRANSPORT•

DS POWER 200FD

CUSTOMIZED POWER SOLUTIONS

SOLUTIONS SUITABLE FOR RAILWAY APPLICATIONS

1-3 PHASE IN / 1 PHASE OUT (10-120kVA)

- 3-LEVEL TECHNOLOGY
- IGBT RECTIFIER
- DSP CONTROL

Tescom DS200FD Series has been specially developed for railway applications. The new DS Power range UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impending its performance. With the DS200FD Series, efficiency, reliability and functionality are enhanced to levels unattainable with the old analogue technology. This technology does not only create significant increase in MTBF, but the capability of DSP to accurately manipulate signals at very high speed permits all the UPS subsystems to be controlled with greatly increased precision.

** For detailed information about the products, please visit our WEB Site.*

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ES300D

CUSTOMIZED POWER SOLUTIONS

EMERGENCY LIGHTING INVERTER

3 PHASE IN / 3 PHASE OUT (10-160kVA)

- UNINTERRUPTIBLE LIGHTING
- EN50171 STANDARD
- HIGH RELIABILITY

TESCOM ES300D Series are static inverter systems used for emergency lighting such as open area, escape route and high risk task area. It provides flexibility in your applications with its product range up to 160kVA and multiple control mode applications allow lighting to be controlled in various ways. With over 40 years of experience and expertise in the field, TESCOM ES300D Emergency Lighting Systems offers all kinds of lighting applications as a reliable and all-inclusive system.

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DS POWER U1

CUSTOMIZED POWER SOLUTIONS

SOLUTIONS SUITABLE FOR AMERICAN CONTINENT

3 PHASE IN / 3 PHASE OUT (15-250kVA)

- 3-LEVEL TECHNOLOGY
- IGBT RECTIFIER
- DSP CONTROL

DS Power U1 On-Line UPS is designed for 110VAC - 60Hz systems. It uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impending its performance. With the 3-Level topology, efficiency, reliability and functionality have been raised to levels unattainable with legacy. This technology does not only create significant increase in MTBF, but the DSP's ability to accurately procces signals at very to accurately manipulate signals at very high speed allows all the UPS subsystems to be controlled with greatly increased precision.

** For detailed information about the products, please visit our WEB Site.*

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DS 300T-IS1

CUSTOMIZED POWER SOLUTIONS

INDUSTRIAL UPS

3 PHASE IN / 3 PHASE OUT (30-100kVA)

- WORKING WITH LESS AND FLEXIBLE BATTERY NUMBER
- INTERNAL INVERTER TRANSFORMER
- BI-DIRECTIONAL RECTIFIER

Specially rainforced and designed as a complete system for industrial applications. With DSP technology, efficiency, reliability and functionality have been reaised to levels unattainable with old analog technology. This technology not only creates a significant increase in MTBF, but the DSP's ability to accurately process signals at very high speed allows all UPS subsystems to be controlled with greatly increased precision. It provides safe operation for critical loads, especially for industrial applications, with its internal inverter isolation transformer and Bi-directional rectifier offered as standard. With the less number of batteries and flexible configuration provide significant savings in your system ownership costs.

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DS POWER T-HF1

CUSTOMIZED POWER SOLUTIONS

SOLUTIONS SUITABLE FOR METRO APPLICATIONS

3 PHASE IN / 3 PHASE OUT (10-80kVA)

- IGBT RECTIFIER AND DSP CONTROL
- INVERTER ISOLATION TRANSFORMER
- 40 PIECES BATTERY

DS Power T-HF1 Online UPS is designed for harsh working conditions. With the latest DSP technology, which can be programmed to suit a wide variety of electrical environments, efficiency, reliability and functionality have been raised to levels unattainable with legacy analog technology. This technology not only creates a significant increase in MTBF, but the DSP's ability to accurately process signals at very high speed allows all UPS subsystems to be controlled with greatly increased precision. It provides additional protection for your loads with the galvanic inverter isolation transformer. Thanks to its low battery working structure (40 pcs.), it ensures that your total costs of ownership costs such as storage, commissioning, laboring and maintenance are minimized.

** For detailed information about the products, please visit our WEB Site.*

• INDUSTRY • • MARINE • • AIRLINE •

DS POWER M

CUSTOMIZED POWER SOLUTIONS

ONLINE UPS COMPLIANT WITH MILITARY STANDARDS

3 PHASE IN / 3 PHASE OUT (150-300kVA)

- MIL-STD 461G
- IGBT RECTIFIER
- DSP CONTROL

Tescom DS Power M Online UPS, manufactured in accordance with military standards (MIL-STD 461G), can work in harsh terrain and site conditions. It is designed to work the desired conditions in terms of appropriate and Electromagnetic Compatibility (EMC) at the maximum level. It has the latest DSP technology that can be programmed to suit a wide variety of electrical environments withput impending its performance. Tescom continues to offer reliable solutions to the needs of our country, especially the defense industry, with its examplary projects.

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DSVR-SVS 100/200

CUSTOMIZED POWER SOLUTIONS

ULTRA WIDEBAND STATIC VOLTAGE-FREQUENCY REGULATORS

DSVR 1P:1P (10 - 20kVA) / SVS 3P:1P (10-25kVA)

- WIDE INPUT VOLTAGE AND FREQUENCY RANGE
- HIGH RELIABILITY
- DSP AND IGBT TECHNOLOGY

TESCOM DSVR/SVS Series Wide Range Voltage-Frequency Regulators are high efficiency voltage-frequency protection and management devices with DSP control and IGBT technology. It is user-friendly with its compact and small footprinted design, advanced communication options and modular structure. With its wide input voltage and frequency tolerance, especially in areas where the mains or supply voltage is very bad, it offers a definite solution to the protection of your systems by providing the high quality and reliable energy needed by your critical loads. In 3:1 phase systems, even if any of the input phases are interrupted, the continuity of your loads is ensured by working safely. In addition to electronic protections such as overload and short circuit, it guarantees high reliability operation with mechanical protections such as fuses and surge arresters.

** For detailed information about the products, please visit our WEB Site.*

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DS300C

SPECIAL PRODUCTION FREQUENCY CONVERTERS

10-800kVA

3 PHASE IN / 3 PHASE OUT

- 50Hz, 60Hz, 400Hz
- HIGH RELIABILITY
- DSP CONTROL

Tescom DS300C Frequency Converters are produced to provide the energy for your devices, which are powered by AC voltage and requires different frequency ranges. Our converters, which have many usage areas, mainly in maritime, aviation, industrial equipments and military applications, are designed for continuous operation with PWM and IGBT technology and convert 50Hz or 60Hz mains energy to 50Hz, 60Hz or 400Hz energy to supply your critical loads.

GENERAL SPECIFICATIONS

- DSP control
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current hormonic distortion (THDI)
- High input power factor
- High efficiency up to 95%
- Selectable input/output frequency range within 50/60Hz (For only DS300HC-60 models)
- High output power factor (PF:1.0)
- Advanced control and protection at input
- Current limititation at output, DC leakage, short circuit and overload protection
- Advanced TFT front panel (For 40kVA and above) (*)
- Advanced diognostic, easy monitoring and service intervention
- 512 event logs (46.000 alarm) (*)
- Clock and calendar (battery supported)
- Advanced communication
- 2 RS232 serial ports and programmable 4 dry contact outputs (12 contacts optional) (*)
- External REPO input
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Advanced remote control features
- Security with user and centralized service password (OTP)
- Compliant with IEC EN62040 directive
- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compilant production
- 2 years warranty

** Please check the technical tables for detailed product specifications.*

TECHNICAL SPECIFICATION COMPARISION TABLE

MODEL	DS300HC-60		DS300HTC-60		DS300TC-400	
	60Hz 380-400VAC		60Hz 208VAC		400Hz 208VAC	
POWER	10-30kVA	40-200kVA	10-30kVA	40-200kVA	10-30kVA	40-200kVA
2 Line LCD Display					✓	✓
4 Line LCD Display	✓		✓			
4.3″TFT Display		✓		✓		
Mimic LED Diagram	✓		✓		✓	✓
Alarm Logging (512)	✓	✓	✓	✓		
Alarm Logging (128)					✓	✓
RS232 Serial Port					✓	✓
2xRS232 Serial Port	✓	✓	✓	✓		
3 x Dry Contacts					✓	✓
4 x Dry Contacts	✓	✓	✓	✓		
Galvanic Isolation (Inverter Transformer)			✓	✓	✓	✓
Optional SNMP MODBUS, GSM	✓	✓	✓	✓	✓	✓
Optional + 8 Dry Contacts	✓	✓	✓	✓		
Optional External Input Isolation Transformer	✓	✓	✓	✓	✓	✓
Optional External Output Isolation Transformer	✓	✓				

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DC/AC INVERTERS

SPECIAL PRODUCTION INVERTERS

3-300kVA

- MİKROİŞLEMCİ KONTROLÜ
- YÜKSEK GÜVENİLİRLİK
- ÖZEL ÜRETİM

TOWER

SERVICE / TECH. SUPPORT

ECO FRIENDLY

Tescom DC/AC Inverters are devices with low distortion, sine wave output, high performance and superior protection. Today, they are used in many different fields, from computers, uninterruptible power supplies and large systems that power electrical distribution systems. Special production device with special input/output values can be made upon your request.

Tescom DC/AC Inverters with IGBT and IPM technology provide quality energy for your critical loads by converting the voltage in the wide input voltage range (192-400V DC) to the desired voltage and frequency values.

GENERAL SPECIFICATIONS

- Detailed monitoring by alphanumeric LCD panel
- Microprocessor control
- 128 detailed event recording with RTC
- Seperate battery supported clock and calender
- RS232 or DRY contact relays
- Customized input voltage and frequency ranges
- Three phase or single phase options
- Advance communication
- SNMP coptatible
- 2 years warranty

TECHNICAL SPECIFICATIONS

INPUT	
Voltage	48 VDC - 400 VDC
OUTPUT	
Power (kW)	3kVA - 300kVA
Voltage	120/208V, 60/400 Hz - 230/400V, 50Hz / 60Hz (other voltage ranges available)
Voltage regulation	+ 1% (balanced load) +2% (unbalanced load)
Frequency	50/60/400Hz
Frequency stability	+ 0,2Hz (free running)
Efficiency	85% - 90%
Overcurrent protection	Electronic protection
Voltage protection	AC voltage low and high protection
Output waveform	Sinusoidal (THD < 3% for lineer load)
Load power factor	0.8
GENERAL	
Power module	IGBT or IPM module
Front panel	Alphanumeric LCD 2x16 characters
Control buttons	3 or 5 buttons
Bypass	Available as option
Bypass isolation	Available as option
Parallel operation	Available as option (up to 4 devices)
Alarm buzzer	Available
Remote REPO input	Available
RS232 interface	Available
Dry contact outputs	Available
DC input protection	3 level alarms
SNMP interface	Available as option

TVR 11

FULL AUTOMATIC VOLTAGE REGULATOR

3-50kVA

1 PHASE IN / 1 PHASE OUT

- MICROPROCESSOR CONTROL
- WIDE VOLTAGE RANGE
- HIGH PROTECTION

Tescom TVR 11 Series Servo Voltage Regulators provide safe energy for your loads in sites where your mains is irregular or where the power supply voltage is unstable, such as a generator. By keeping the voltage within certain tolerances, it offers full protection against the risk of damage caused by excessive fluctuations in voltage.

With microprocessor control, the necessary signals for the desired regulation are transmitted to the DC motor. The DC motor provides movement in the direction of adding or subtracting voltage for regulation on the variac to which it is mechanically connected. This supplied voltage is transferred to the differential auxiliary transformer (booster transformer). As a result, electronically controlled stable voltage is provided in the output voltage against voltage changes.

TVR 11 series with high correction speed, fully mechanical and electronic protection are offered in the power range of 3-50kVA with 1 phase input and 1 phase output.

GENERAL SPECIFICATIONS

- 1 phase input 1 phase output
- Wide power and voltage interval
- High reliability thanks to Microprocessor and Smart Driver
- Fast Regulation
- High efficiency
- Load transfer to bypass via pole charge switch
- Safe and economic usage
- Overcurrent and overload protection
- Digitally displayed status, input & output measurements
- Optional 0.8 output power factor (PF) option

TECHNICAL SPECIFICATIONS

MODEL	TVR 1103	TVR 1105	TVR 1107	TVR 1110	TVR 1115	TVR 1120	TVR 1125	TVR 1130	TVR 1140	TVR 1150
Power (kVA)	3	5	7,5	10	15	20	25	30	40	50
INPUT										
In. vol. correct. interval	160 - 260 / 90 - 285 VAC (Optional)									
In. vol. operating. interval	155 - 265 VAC									
Operation frequency	47...65 Hz									
Line input protection	Overcurrent, Low and High voltage protection									
Current at input	18	30	46	61	91	121	152	182	242	303
OUTPUT										
Output voltage	220 / 230 / 240 VAC RMS ± 1%									
Overloading	10 Sec. 200% Load									
Correction speed	~ 90 Volt / Sec.									
Upturn period	~ 90 Volt / Sec. (160 VAC - 260 VAC)									
Output protection	Protects load by opening the circuit when overburden, short circuit occurs (optional)									
Current at output	14	23	34	46	68	91	114	136	182	227
GENERAL										
Working principle	Servo Motor, Microprocessor Controlled, Full Automatic									
Cooling	Smart fan system									
Measured value monitor	TESCOM TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization									
Total efficiency	> 96%									
Mechanic By-pass	Available									
Protection level (*)	IP 20									
ENVIRONMENTAL										
Operating temperature	-10°C / 50°C									
Storage temperature	-25°C / 60°C									
Relative humidity	< 90%, DIN (40040)									
Altitude	< 2000 m.									
Acoustic level	< 50 dB ($1m^2$)									
Standards	CE / ISO 9001									
DIMENSIONS										
HxWxD (mm)	320x560x390					680x520x650			850x500x620	
Weight (kg)	28	30	34	47	55	95	110	130	155	180

(*) Optional different protection class option

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TVR 33

FULL AUTOMATIC VOLTAGE REGULATOR

10,5-3000kVA

3 PHASE IN / 3 PHASE OUT

- MICROPROCESSOR CONTROL
- WIDE VOLTAGE RANGE
- HIGH PROTECTION

Tescom TVR 33 Series Servo Voltage Regulators provide safe energy for your loads in sites where your mains is irregular or where the power supply voltage is unstable, such as a generator. By keeping the voltage within certain tolerances, it offers full protection against the risk of damage caused by excessive fluctuations in voltage.

With separate microprocessor control for each phase, the necessary signals for the desired regulation are transmitted to the dc motor. The DC motor provides movement in the direction of adding or subtracting voltage for regulation on the variac to which it is mechanically connected. This supplied voltage is transferred to the differential auxiliary transformer (booster transformer). As a result, electronically controlled stable voltage is provided in the output voltage against voltage changes.

TVR 33 series with high correction speed, fully mechanical and electronic protection are offered in the power range of 10.5-250kVA with 3 phase input and 3 phase output.

GENERAL SPECIFICATIONS

- 3 phase input 3 phase output
- Wide power and voltage interval
- High reliability thanks to Microprocessor and Smart Driver
- Fast Regulation
- High efficiency
- Load transfer to Bypass via pole charge switch
- Safe and economic usage
- Overcurrent and overload protection
- Digitally displayed status, input & output measurements
- Optional 0.8 output power factor (PF) option

** For detailed information about the products, please visit our WEB Site.*

TECHNICAL SPECIFICATIONS

MODEL	TVR 33010	TVR 33015	TVR 33022	TVR 33030	TVR 33045	TVR 33060	TVR 33075	TVR 33100	TVR33120	TVR 33150
Power (kVA)	10,5	15	22,5	30	45	60	75	100	120	150
GİRİŞ										
In. vol. correct. interval	275 - 460 VAC (Optional: 200-460 VAC)									
Operation frequency	47...65 Hz									
Line input protection	Overcurrent, Low and High voltage protection									
Current at input	21	30	45	61	91	121	152	202	242	303
OUTPUT										
Output voltage	380 VAC RMS ± 1%									
Overloading	10 Sec. 200% Yük									
Correction speed	~ 90 Volt / Sec.									
Upturn period	~ 90 Volt / Sec. (275 - 460VAC)									
Output protection	Protects load by opening the circuit when overburden, short circuit occurs. (optional)									
Current at output	16	23	34	45	68	91	114	152	182	227
GENERAL										
Working principle	Servo Motor, Microprocessor Controlled, Full Automatic									
Cooling	Smart Fan System									
Measured value monitor.	TESCOM TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization									
Total efficiency	> 97 %									
Mechanic By-pass	Available									
Protection level (*)	IP 20									
ENVIRONMENTAL										
Operating temperature	-10°C / 50°C									
Storage temperature	-25°C / 60°C									
Relative humidity	< %90, DIN (40040)									
Altitude	< 2000 m.									
Acoustic level	< 50 dB ($1m^2$)									
Standards	CE / ISO 9001									
DIMENSIONS										
HxWxD (mm)	660x380x600		1290x510x680			1590x600x990			1710x600x930	
Weight (kg)	110	135	160	170	200	222	280	310	400	425

Optional 0.8 output power factor (PF) option

(*) Optional different protection class option

** Please visit our website for technical information on powers above 150kVA.*

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TSVR

STATIC VOLTAGE REGULATORS

1-3200kVA

3 PHASE IN / 3 PHASE OUT

1 PHASE IN / 1 PHASE OUT

- THYRISTOR TECHNOLOGY
- WIDE VOLTAGE RANGE
- FULL PROTECTION

SERVICE / TECH. SUPPORT	ECO FRIENDLY	RESPONSE TIME	EFFICIENCY
		20 ms	>%97 Typical

GENERAL SPECIFICATIONS

- Automatic AC voltage regulator
- Maintenance-free thyristor technology
- 1kVA – 3.200kVA power range
- 1 Phase – 2 Phase – 3 Phase production
- Production at all industrial voltages
- Up to 60% undervoltage correction
- Up to 45% high voltage correction
- Response time: 20 ms
- Correction time: 100 ms – 200 ms
- 100% unbalanced voltage and load capacity
- Continuous protection against voltage fluctuations
- Independent voltage management on each phase
- Efficiency >97%
- Standard operator panel with 4x20 LCD display
- Electronic overload, overtemperature protection
- Low voltage / high voltage protection
- Design suitable for industrial environmental conditions
- TS EN ISO 9001: 2015 Quality certified

OPTIONS

- 7" Touch Operator Panel
- Ethernet Web Server and Mod-Bus RTU
- Galvanic Isolation Transformer
- Lightning and High voltage Protection
- Automatic By-Pass Unit
- Maintenance Bypass Switch

TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS		
Power (kVA)	1kVA - 3.200kVA power range	
Technology	Thyristor Technology, High-speed Voltage regulation, Maintenance-free design	
Thyristor configuration	6 Thyristors / 8 Thyristors / 10 Thyristors	
INPUT		
Nominal input voltage	3 Phase Model: 400VAC 3Phase+Neutral+Ground (Different voltages are optional)	1 Phase Model: 230VAC 1Phase+Neutral+Ground (Different voltages are optional)
Voltage tolerance	S model -25%, +15% Optional: -15%, +15% / -35%, +15% / -50%, +15%	
Frequency	50 Hz. ± 5% (60 Hz. optional)	
OUTPUT		
Nominal output voltage	3 Faz Model: 400VAC 3Faz+Nötr+Toprak (Different voltages are optional)	1 Phase Model: 230VAC 1Phase+Neutral+Ground (Different voltages are optional)
Voltage tolerance	Between ± 1% and ± 5% (optional)	
Frequency	50 Hz. ± 5%	
Overload capacity	25% 1 minute, 150% 10 seconds, 151% and above 0.2 seconds	
Response time	20 ms	
Correction time	100 ms - 200 ms	
Efficiency	> %97 typic	
MANAGEMENT MONITORING AND COMMUNICATION INTERFACES		
With LCD Display operator pane	4x20 LCD display and mimic diagram Input voltage, Output voltage, Load percentage, Frequency, Status and Fault information, Parameter settings	
Touch screen operator panel (optional)	7" Touch Color Screen, Input voltage, Output voltage, Load percentage, Frequency, Status and Fault information, Parameter settings	
Remote management interface (optional)	Browser-based remote management via Ethernet connection MOD-BUS RTU with RS485 connection	
PROTECTION FUNCTIONS		
Voltage protection	Electronic protection for low voltage and high voltage	
Current protection	Input circuit breaker (Output circuit breaker optional)	
Overload protection	1 minute at 125% overload, 10 seconds at 150% overload, At >151% overload, the power supplied to the load is cut off after 0.2 seconds	
Over temperature protection	Fan cooling works at 50 °C. The power supplied to the load is cut off at 80 °C.	
Overvoltage / Lightning protection	Surge arrester for Class-I or Class-II (optional)	
ENVIRONMENTAL CONDITIONS		
Operating temperature	-10 °C ~ +40 °C	
Altitude	1.500m	
Humidity	90% uncondensed	
Acoustic noise	< 55dB (at a distance of 1m and with covers closed)	
CABINET FEATURES		
Type - Protection class	Freestanding Modular Cabinet, IP21 Internal type (IP54 and higher protection class external Type Cabinets are optional)	
Paint - Color	Epoxy-Polyester Powder Coating - RAL-7035	
Cooling	Air cooling with thermostat controlled fan	

TRD SERIES

RECTIFIER

1 PHASE IN & 3 PHASE IN

- FULLY CONTROLLED CONVENTIONAL RECTIFIER
- 12VDC-600VDC WIDE OUTPUT OPTIONS
- INTERNAL ISOLATION TRANSFORMER AT THE INPUT

OPTIONS

- Battery temperature compensation
- Ability to monitor batteries and battery low alarm, even when the AC input fails
- Active parallel (current sharing) operation up to 4 devices
- Easy observation via analog gauges
- Battery test with adjustable voltage and duration
- Transducers for input / output voltage(s) / current(s) (4-20mA and 0-10V)
- 12 pulse option to limit input current distortion
- Earth leakage monitoring
- Input Power / kVA / kW measurement
- Internal cabinet light / anticondensation heater
- Touch screen

GENERAL SPECIFICATIONS

- Internal isolation transformer at input
- Full controlled conventional rectifier
- Smart control and high reliability with DSP
- Float charge, equalizing charge and boost charge modes
- Automatic and manual charge modes
- Low output voltage ripple and high reliability
- 2x16 character LCD display, showing measurements, status and alarm messages
- Soft start
- Led displays for easy observation of rectifier status
- Audible alarm
- Programmable current limitation
- Operation as voltage source or current source
- Calibration of measurements from front panel
- Language selection from front panel (English / German / Turkish / Dutch / Portuguese)
- DC Low / High, Line Failure, Over Temperature, Short Circuit protections
- Ability to program all operation parameters (Password protected)
- Programmable alarm relay contact outputs (4 standart, up to 16 relays as option)
- Possibility of monitor and control over RS232-RS485
- Modbus communication
- Log records with date and time stamp up to 200 events.
- 12/ 24V / 48V / 110V / 125V / 220V output options

TECHNICAL SPECIFICATIONS

MODEL	1 PHASE IN	3 PHASE IN
INPUT		
Voltage	110VAC - 275VAC ± 15% VAC	190VAC - 480VAC ± 15% VAC
Frequency	50, 60Hz or 400Hz ± %10	
Rectifier type	Half Bridge / Full Bridge	6 pulse / 12 pulse
Input THDI	35%	32% (6p) / 10-12%(12p) / 6% (Filtered)
OUTPUT		
Voltage	12 - 600VDC	
Output current	10 - 1000A	10 - 5000A
Efficiency	78% - 85%	85% - 93%
Voltage regulation	< 1%	
Overload	Continuous @110% - 10min @110-125% - 1min @125-150%	
Ripple	< 4%	< 1%
Battery type	VRLA / OPzV / OPzS / NiCad	
Battery charge voltage	VRLA / OPzV / OPzS : 2.25 (Float) Per Cell NiCad : 1.42 (Float) - 1.5 to 1.7	
Battery charge current	VRLA / OPzV / OPzS: 10-15% of Battery Capacity (adjustable) NiCad : 20% of Battery Capacity (adjustable)	
Boost charge	0-20 hours adjustable	
Voltage adjustment range	80% - 140% of Nominal Voltage	
Isolation	Chassis with 1500, 2000 or 3000VAC Input-Output	
PHYSICAL		
Protection class	Standard: IP20, (Optional: IP21 to IP66)	
Cooling type	Fan Forced (Optional: Natural Cooling, Water Cooling, Smart Fan)	
Cable entry	Standard: Bottom (Optional: Top, Back, Sides)	
Cabinet color	Standard: RAL7032, RAL7035 (Optional: Others)	
ENVIRONMENTAL		
Operation temperature	0 - 50°C	
Storage temperature	-25 - 70°C	
Humidity	up to 90% (non-condensing)	
Altitude	Sea Level up to 1000 meters (1% decrease every 100 meters after 1000 meters)	
Noise level	50 - 73 dBA (depending on capacity)	
COMMUNICATION		
Standard communication	RS232, Dry Contact x4 - x16 (Optional: RS485, TCP, SNMP and IEC61850)	
Parallel operation	Passive: Infinite Number (Active: Up to 3)	
Control panel	LED/LCD Display (Optional: Touch Screen, Mimic Panel)	
PROTECTIONS		
Battery protection	Temperature Compensating Charging / LVD (Low Voltage Disconnect)	
Input/Output protection	Auxiliary Trip Contacts / TMS or LS/G Breakers AC or DC Earth Leakage / Voltage Chopper (Dropper or DC/DC Inverter)	
Internal protection	Phase Sequence Protection / SCR Protection Fast Fuses	
STANDARDS		
IEC 60146-1-1:2009	Semiconductor inverters - General rules and line-switching inverters	
IEC 60335	Safety rules - For household and similar electrical appliances	
IEC 61204	Low voltage power supplies, d.a. output-Performance characteristics and safety rules	

TDJ SERIES

DIESEL GENERATORS

17-1650kVA

Tescom TDJ Series Diesel generator set is a fully integrated power generation system, providing optimum performance, reliability, and versatility for stationary standby, prime power and continuous duty applications.

ENGINE FEATURES

- Heavy duty generator engine
- 4-stroke, water cooling, natural suction system
- Mechanical governor system
- 12/24 volt starter motor and charge alternator
- Replaceable; with air, fuel and oil filters
- With flexible fuel hose
- Oil drain valve and extension hose/oil drain pump
- Industrial capacity muffler and exhaust spiral or compensator
- Maintenance-free type starter battery
- Engine block water heater (avaliable for automatic models)
- Diesel generator maintenance and operation manual and electrical diagrams

ALTERNATOR FEATURES

- Brushless, single bearing, flexible disc 4-pole synchronous alternator
- H Insulation class
- IP21-23 protection class
- Shunt excitation
- Electronic voltage regulator
- Stator winding 2/3 step against harmonic distortions
- Alternator windings are protected with isolation varnishagainst oil and acid

QUALITY CERTIFICATES

Our generators are produced in accordance with integrated management systems such as ISO900, ISO14001, ISO 27001 and CE and TSE standards within the framework of Quality Assurance requirements, and we have full qualification certificates for our after-sales services.

CANOPY STANDART FEATURES

- Compact design connection with non-welded nuts and bolts.
- Integrated canopy,generator set,exhaust system fuel tank.
- Body made from steel components treated with polyester powder coating
- Easy access to all service points
- Exhaust system inside canopy
- Large doors on each side
- Control panel viewing window in a lockable access door
- Emergency stop push button mounted on cabin exterior
- Fuel fill and battery can only be reached via lockable access doors.
- Customer options available to meet your applications needs.
- TESCOM makes its generating sets noise level tests in accordance with directive 2000/14/EC validation of the noise level test has been aproved by the notified body Szutest (CE conformity assessment body).

CONTROL PANEL FEATURES

- The cable group we use in our generators is fireproof cable class. Cable sheaths form the defense line of cables against various chemicals and flame.

- The use of Halogen-free materials in the outer sheath of the cables prevents the spread of toxic gases during a fire. At the same time, fireproof cable sheaths have low smoke density and flame retardant properties. This feature of fireproof cable sheaths prevents the spread of fire and minimizes possible damages.

- Schneider Electric breaker group is used in generator control panels. As a standard, all our products have a 4-pole MCCB (Molded Case Circuit Breaker)

ATS (AUTOMATIC TRANSFER SWITCH)

- The SQ5 Dual Power Automatic Transfer Switch Series is a kind of automatic transfer switch that combines the switch and the logic controller, enabling the mechanical and electrical to become an inseparable whole.
- Superior electromagnetic compatibility, high resistance to interference.
- It has zero-time transfer technology with high reliability.
- It cuts the dual circuit power simultaneously.
- In addition to PLC remote control, it has a multi - circuit input / output interface that can automate the system.

ATS MODEL	GENERATOR POWER RANGE
100 A Transfer Panel With Transfer Switch	0-70 kVA
160 A Transfer Panel With Transfer Switch	82-124 kVA
250 A Transfer Panel With Transfer Switch	125-165 kVA
400 A Transfer Panel With Transfer Switch	220-275 kVA
630 A Transfer Panel With Transfer Switch	300-440 kVA
800 A Transfer Panel With Transfer Switch	500-550 kVA
1000 A Transfer Panel With Transfer Switch	660-715 kVA
1250 A Transfer Panel With Transfer Switch	750-825 kVA
1600 A Transfer Panel With Transfer Switch	900-1100 kVA
2000 A Transfer Panel With Transfer Switch	1250kVA
2500 A Transfer Panel With Transfer Switch	1400-1600 kVA

TDJ SERIES

DIESEL GENERATORS

17-1650kVA

CONTROL SYSTEM

The new Tescom TCM01 genset controllers are a cost effective modular genset controller ready for internet monitoring through plug-in modules. Its main advantages are multifunctionality, support for multiple topologies, harmonic analysis and detailed power measurements.

Different brand controller can be offered upon request. (DEIF AGC 150, DEIF SGC 120/12, DEIF SGC 420/421, Datakom D500, DEEPSEA 6120, DEEPSEA 7320, ComAp AMF25)

Software features are complete with easy firmware upgrade through USB port. The Windows based PC software allows monitoring and programming through USB, RS-485, RS-232, Ethernet and GPRS. The Rainbow Scada web service allows monitoring and control of an unlimited number of gensets from a single central location.

TESCOM TCM01


DEIF AGC 150

DEIF SGC 120


DEIF SGC 420

DATAKOM D500

DEEPSEA 6120

DEEPSEA 7320

ComAp AMF25

MAJOR FEATURES

- Diesel and gas genset support
- 400Hz operation support
- 400 event logs, full snapshot
- All parameters front panel editable
- 3 level configuration password
- 128x64 graphical LCD display
- Downloadable languages
- Waveform display of V & I
- Harmonic analysis of V & I
- 16Amp MCB & GCB outputs
- 8 configurable digital inputs
- 6 configurable digital outputs
- 3 configurable analog inputs
- Both CANBUS-J1939 & MPU
- 3 configurable service alarms
- Multiple automatic exerciser
- Weekly operation schedule
- Dual mutual standby with equal aging of gensets
- Manual "speed fine adjust" on selected ECUs
- Automatic fuel pump control
- Disable protections feature
- Excess power protection
- Reverse power protection
- Overload IDMT protection
- Load shedding, dummy load
- Multiple load management
- Current unbalance protection
- Voltage unbalance protection
- Fuel filling & fuel theft alarm
- Battery back-up real time clock
- Idle speed control
- Battery charge run enabled
- Combat mode support
- Multiple nominal conditions
- Contactor & MCB drive
- 4 quadrant genset power counters
- Mains power counters
- Fuel filling counter
- Fuel consumption counter
- Modem diagnostics display
- Configurable through USB, RS-485, Ethernet and GPRS
- Free configuration program
- Allows SMS controls
- Ready for central monitoring
- Mobile genset support
- Automatic GSM geo-location
- Easy USB firmware upgrade
- -40°C operation with optional display heater
- IP65 rating with optional gasket

PLUG-IN MODULES

- GSM Modem (2G-3G-4G)
- Ethernet 100Mbps
- Wi-Fi (802.11 b/g/n)
- RS-485 (2400-57600baud)
- RS-232 (2400-57600baud)

TOPOLOGIES

- 3 ph 4 w, star & delta
- 3 ph 3 w, 2 CTs
- 2 ph 3 w
- 1 phase 2 wires

COMMUNICATION

- USB Device
- J1939-CANBUS
- Geo-locating through GSM
- Internet Central Monitoring
- SMS message sending
- E-mail sending
- Free PC software: Rainbow Plus
- Modbus RTU (2400-57600baud)
- Modbus TCP/IP

MEASUREMENTS

- Mains & genset PN/PP voltages
- Mains & genset frequency
- Mains & genset phase currents
- Mains & genset neutral currents
- Mains & genset, phase & total, kW, kVA, kVAr, pf
- Engine speed
- Battery voltage

FUNCTIONALITIES

- AMF unit
- ATS unit
- Remote start controller
- Manual start controller
- Engine controller

ACCESSORIES

I-COM SERIES UPS ACCESSORIES

MODEL: RMP-X1

UPS Remote Monitoring Panel

- Touchscreen TFT display
- RS485 input port (for long distance)
- RS232 input port
- RS232 output port + dry contact port
- Emergency stop input
- Functional desktop and wall-mount design

MODEL: SNMP

External SNMP Adaptor for UPS

- WEB based monitoring & management
- SNMP management
- Multi server shutdown
- Multi UPS monitoring

MODEL: US-4 & US-8

UPS Multiserver Shutdown Unit

- RS232 giriş portu
- RS232 çıkış
- 4 veya 8 çoğaltılmış kuru kontak çıkışı

MODEL: RSX24

External RS232 to RS485 Converter for UPS and STS

- For long distance communication
- Bi-directional operation
- 4 wire RS485 output (Half & full duplex)

MODEL: ML100

Serial Port Multiplexer for UPS and STS

- RS232 input port
- 2 x DB9 type socket RS232 outputs
- External or internal

MODEL: RS-NET

External RS232 to TCP/IP Converter for UPS and STS

- Monitoring & management over TCP/IP

MODEL: ML200

Internal Serial port multiplexer for UPS and STS

- RS232 input port
- DB9 type socket RS232 output
- RJ45 Ethernet output (TCP/IP)

ACCESSORIES

I-COM SERIES UPS ACCESSORIES

MODEL: MDX2

External MODBUS over RS485 adaptor for UPS and STS

- For SCADA and BMS connection
- MODBUS RTU protocol
- 2 wire RS485 output
- 8 bit hardware addressable

MODEL: GM-2

UPS için Harici GSM / GPRS Modem

- SMS option
- Monitoring & management via GPRS and SMS
- Directly UPS connection
- Smart modem
- Push-push SIM card installation
- Easy configuration by the Utility PC software

MODEL: MDX-NET

External MODBUS over TCP/IP Adaptor for UPS and STS

- For SCADA and BMS connection
- MODBUS TCP protocol
- RJ45 Ethernet output
- 8 bit hardware addressable

MODEL: GM3

External GSM / GPRS Modem for UPS with Internal Battery Unit

- SMS option
- Monitoring & management via GPRS and SMS
- Directly UPS connection
- Smart modem
- Push-push SIM card installation
- Easy configuration by the Utility PC software
- Uninterruptible communication with internal battery

MODEL: GM-1

External GSM modem for UPS

- For SMS option
- SNMP compability
- Control via AT commands
- Configuration by the SNMP web interface
- Push-push SIM card installation

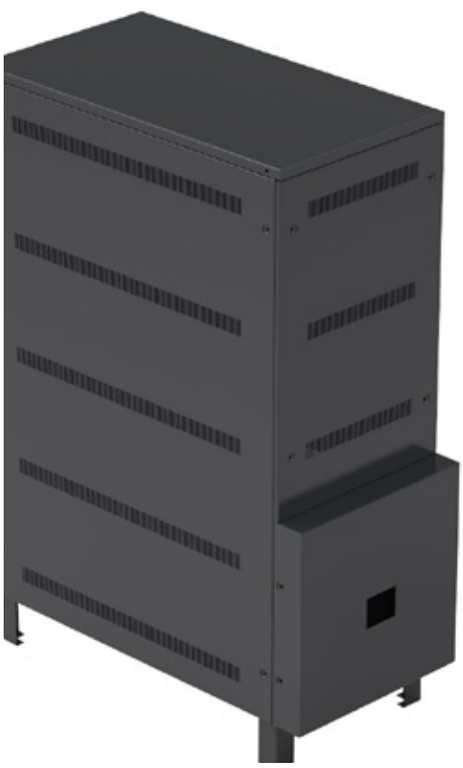
MODEL: GMB1

External Battery Unit for GM-2 Modem

This unit is the external battery bank for GM-2 modem

TBC SERIES

BATTERY CABINETS

MODEL: TBC_6012N	MODEL: TBC_6020N
	

GENERAL SPECIFICATIONS

- Tescom new design 6 different size battery cabinets offers solutions for all types of batteries suitable for its configuration table.
- Battery cabinets are compatible with all our UPS series and all types of batteries.
- The cabinets are made of suitable resistant sheet metal on the weight of the maximum battery group to be used in them.
- Appropriate shelf spacing for easy mounting of all types of battery terminal type is designed.
- Cabinets can be easily disassembled and reassembled.
- The cabinet is suitable for all types of breakers, different usage preferences and possible flexibility in revisions.
- Cabinets are painted in RAL7016 color that resistant to environmental conditions.
- The maximum battery capacities of the cabinets are presented in the table on the next page.

** For detailed information about the products, please visit our WEB Site.*

TBC SERIES BATTERY CABINETS SPECIFICATION

BATTERY CABINETS		TESCOM BATTERY CABINETS												
		DIMENSIONS (HxWxD)		COMPATIBLE BATTERY TYPES										
EXPLANATION	STOCK CODE	BATTERY CABINET	BCB INCLUDED*	4,5-5Ah	7-9Ah	12Ah	17-20Ah	24-28Ah	38-45Ah	56-65Ah	70-80Ah	90-105Ah	120Ah	150Ah
BATTERY CABINET TBC_2009N	851318492	400x251x550x	400x251x650	40	20									
BATTERY CABINET TBC_3209	851318402	500x286x550x	500x286x610	-	32	20	14	-	-	-	-	-	-	-
BATTERY CABINET TBC_6009N	851318487	1171x337x685x	1171x337x790		64	44	36							
BATTERY CABINET TBC_6012N	851318489	1151x406x755x	1151x406x900		96	64	32	32						
BATTERY CABINET TBC_6020N	851318486	1171x370x1026	1171x370x1131		96	72	64	32						
BATTERY CABINET TBC_6020	851318399	1361x415x955	1361x415x1100	-	120	96	60	40	32	16	16	16	-	-
BATTERY CABINET TBC_3245N	851318491	1361x406x945	1361x406x1050		144	96	80	40	32	20	16	16		
BATTERY CABINET TBC_4845N	851318485	1171x402x1482	1171x402x1632				128	64	48					
BATTERY CABINET TBC_6045N	851318490	1171x370x2029	1171x370x2179		224	144	160	64						
BATTERY CABINET TBC_6045	851318401	1361x415x1906	1361x415x2051	-	-	-	-	80	64	32	32	32	-	-
BATTERY CABINET TBC_6445N	851318493	1361x406x1900	1361x406x2050		288	186	160	80	64	40	32	32		
BATTERY CABINET TBC_44105	851318404	1230x637x1927	1230x637x1991					90	60	44	44	44		
BATTERY CABINET TBC_60105	851318394	1500x642x1931	1500x642x2076	-	-	-	-	120	80	60	60	60	-	-
BATTERY CABINET TBC_60120	851318403	1701x637x2203	1701x637x2345	-	-	-	-	-	-	-	-	-	60	48

** For detailed information about the products, please visit our WEB Site.*

MEDICAL ISOLATED POWER SYSTEMS

The electrical power supply of medical environments is selected according to the electrical safety of the environment. TSE, IEC and IEE standards divide medical environments into 3 groups in terms of patient safety: Group 0, Group 1 and Group 2.

The most critical of these groups in terms of continuity and insulation of electrical energy is Group 2, which includes operating rooms, cardiac areas and intensive care units. Electrical devices in environments that fall into the second group are devices that will functionally keep the patient alive or save his life.

Devices in these environments should operate continuously in the event of any malfunction and people in the environment should not be damaged. For this reason, IT isolated power systems are used in Group 2 settlements.

Isolated Power Systems, consist of isolated power panels and auxiliary devices and test combinations such as isolation transformers, isolation monitoring devices, alarm indicator panels.

USAGE AREAS

- Operating rooms
- Dental operating rooms
- Caesarean section rooms
- Intensive care rooms
- Anesthesia rooms
- Premature baby rooms
- Surgery preparation rooms
- Cardiac catheterization rooms
- Angiographic examination rooms

FAYDALARI

- Increases personnel safety.
- Reduces the risk of fire or explosion.
- Increases process uptime.
- Makes maintenance easier.

STANDARDS

- IEC 60364-7-710
- IEC 61558-2-15

** For detailed information about the products, please visit our WEB Site.*

MEDICAL ISOLATED POWER SYSTEMS PRODUCTS

MEDICAL ISOLATED POWER PANELS

Medical isolated power panels with transfer unit and insulation fault detection device have also test signal generator, insulation fault evaluators and toroidal transformer in apart from other isolated panels. When any fault exist, this fault is detected by insulation monitoring device and test signal generator produce a test signal, after that fault detected according to response of system to this signal. Insulation fault evaluator send signal to alarm monitoring devices.

OPERATING ROOM CONTROL PANEL

Touch screen operating room control panel offers comfort for medical personel in order to operate in operating room and also enable to control environment conditions and medical devices. Surgical team can control medical devices easily and communicate with other rooms by using hands-free phone with high voice quality. Operating room panel consist of one smart electronic card and one touch screen Android operating system.

ISOLATION MONITORING

Isolation monitoring device continuously monitoring isolation resistance level and detect any possible insulation faults. Device is set to alarm when insulation of whole network is below than set value. Moreover, device monitor temperature of transformer and load current. If this values exceed limits, it generate alarm signal.

MEDICAL ISOLATING TRANSFORMER

Medical isolating transformer is produced comply with IEC 61558-2-15 standards for supplying critical loads. With a static screen placed between the primary and secondary windings is isolated from the fixedangle transformer core. With built-in PTC thermistor, temperature measurement can be performed.

** For detailed information about the products, please visit our WEB Site.*

GALVANIC ISOLATION TRANSFORMER

MONOPHASE (2-40kVA) / THREE-PHASE(10-600kVA)

Galvanic isolation transformers ensure that the network and the load are isolated from each other. It is used to prevent electric shock within the framework of occupational safety and to minimize the impact of network problems on devices. Our monophase & three phase isolation transformers, using high quality materials, solutions are offered to suit the needs

It has a wide capacity range as open type without enclosure (without cabinet) and as protected type with IP23 enclosure (with cabinet).

GENERAL SPECIFICATIONS

- Galvanic isolation transformers are used for healthier operation of devices used for industrial purposes. It prevents the reflection of magnetic noises in the network to sensitive industrial devices, as well as it also prevents the reflection of electrical pollution caused by non-linear devices to the network.

- Galvanic isolated transformers reduce electric shocks and minimize damage to machinery in the industrial area. It prevents the load from being damaged, especially incase of a card failure that may occur on the UPS output floor.

USAGE AREAS

- UPS Systems
- Medical Devices
- CNC Machines
- Ships and Boats
- Shipyards
- Metal Processing Facilities
- Rectifier and Battery Chargers
- Industrial Machinery Electrical Supply Devices

** For detailed information about the products, please visit our WEB Site.*

TECHNICAL SPECIFICATIONS

THREE-PHASE ISOLATION TRANSFORMER WITHOUT CABINET								
POWER (kVA)	CABIN TYPE DIMENSION (HxWxD) mm	CABIN TYPE WEIGHT (KG)	CABIN TYPE PROTECTION CLASS	OPEN TYPE DIMENSION (HxWxD) mm	OPEN TYPE WEIGHT (KG)	OPEN TYPE PROTECTION CLASS	CONNECTION	WINDING WIRE
10	500x350x400	90	IP23	390x160x420	70	IP00	Yy0	Aluminum (optionally copper)
20	500x390x490	150		470x200x520	110			
30	550x400x570	190		510x210x520	140			
40	550x400x630	230		550x240x500	200			
50	600x450x630	280		550x280x520	220			
60	600x450x650	340		550x280x520	240			
70	650x500x700	370		570x310x540	275			
80	650x570x770	400		570x320x550	300			
90	750x600x800	420		570x350x560	330			
100	700x600x850	450		580x400x600	360			
120	800x800x950	470		600x450x650	375			
135	800x800x950	490		600x450x700	400			
150	800x800x950	510		600x460x700	420			
200	900x800x1100	650		610x450x800	580			
250	1000x800x1100	740		720x480x800	660			
300	900x800x1100	840		730x500x800	740			
400	1000x800x1100	950		780x500x820	850			
500	1200x800x1200	1100		850x600x900	1000			
600	1200x800x1200	1300		900x690x1000	1200			

MONO-PHASE ISOLATION TRANSFORMER								
POWER (kVA)	CABIN TYPE DIMENSION (HxWxD) mm	CABIN TYPE WEIGHT (KG)	CABIN TYPE PROTECTION CLASS	OPEN TYPE DIMENSION (HxWxD) mm	OPEN TYPE WEIGHT (KG)	OPEN TYPE PROTECTION CLASS	CONNECTION	WINDING WIRE
2	220x290x220	40	IP23	190x170x200	25	IP00	1 Faz	Aluminum (optionally copper)
3	320x320x320	50		250x200x250	35			
5	400x320x350	70		270x230x250	60			
6	400x320x350	80		270x230x280	70			
10	450x350x400	90		280x260x300	80			
12	450x350x400	95		290x290x300	85			
15	470x350x400	105		300x290x330	95			
20	500x400x450	120		430x300x340	110			
25	550x410x520	130		450x300x350	120			
30	600x450x600	160		500x310x380	140			
40	650x500x600	180		550x320x400	160			

CNC MODULE

DC BRAKE UNIT FOR RE-GENERATIVE LOAD

- CONTACTOR AND IGBT CONTROLLED STRUCTURE
- MAX. PROTECTION IN REGENERATIVE LOADS
- IN-BUILT COOLING FANS

They are braking resistor modules that aim to ensure maximum protection of your critical loads by increasing the operating performance of the device in re-generative loads such as CNC Machines, Electric motor loads, and to reduce your cost of ownership by extending the working life of durable materials such as batteries and capacitors. TESCOM offers solutions for all types of UPS with different braking modules according to the appropriate UPS power.

WHAT IS RE-GENERATIVE LOAD

An example of such loads is electric motors. Electric motors draw current from the network while rotating, but in case of a sudden force (braking effect) they start to produce electricity themselves, this energy is sent back to the source they are fed.

If the electric motor is supllied by the UPS, in the braking mode, the UPS applies extra energy to the DC Bus through the reverse diodes of the output power transistors, which causes the DC Bus voltage to rise.

WORKING PRINCIPLE

By connecting to the DC Bus of the UPS, when the allowable limit value in DC rises is exceeded, it activates the resistor loads with the help of contactors driven by a transistor on it, providing the necessary voltage drop and converting the excess energy into heat energy.

In regenerative load applications (CNC Machines, Electric Motor Loads), it is recommended to use a DC Brake Unit in order to absorb the DC voltage that is pressed back into the mains (UPS) during braking.

UPS POWER	XT SERIES STOCK CODE	CHASIS	DS-DX SERIES STOCK CODE	CHASIS	
15kVA	sorunuz	BU-1	854010000	BU-1	HxWxD (mm): 790x655x315
30kVA	854010018	BU-1	854010010	BU-1	HxWxD (mm): 790x655x315
40kVA	854010017	BU-1	854010001	BU-1	HxWxD (mm): 790x655x315
60kVA	854010014	BU-1	854010002	BU-1	HxWxD (mm): 790x655x315
80kVA	854010015	BU-1	854010012	BU-1	HxWxD (mm): 790x655x315
100kVA	854010019	BU-1	854010003	BU-1	HxWxD (mm): 790x655x315
120kVA	854010016	BU-1	854010004	BU-1	HxWxD (mm): 790x655x315
160kVA	854010020	BU-1	854010005	BU-1	HxWxD (mm): 790x655x315
200kVA	854010021	BU-1	854010006	BU-1	HxWxD (mm): 790x655x315
250kVA	854010009	BU-2	854010013	BU-2	HxWxD (mm): 790x860x315
300kVA	Please ask		854010007	BU-2	HxWxD (mm): 790x860x315
400kVA	Please ask		854010008	BU-2	HxWxD (mm): 790x860x315
500kVA	Please ask		2 x 854010013	BU-2	HxWxD (mm): 790x860x315
600kVA	Please ask		2 x 854010007	BU-2	HxWxD (mm): 790x860x315

* Height measurements include the wheels.

** For detailed information about the products, please visit our WEB Site.*

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