



HekPower

Reliable Power Endless Potential

GENERAL PRODUCT CATALOG



www.hekpower.com

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ABOUT US

Hekpower stands as a pioneer in the energy sector, providing reliable and uninterrupted energy solutions to its customers. With a successful export strategy reaching beyond Turkey, Hekpower has made a name for itself on the global stage. Our company prioritizes customer satisfaction by committing to providing uninterrupted energy anytime, anywhere.

Hekpower's product range includes state-of-the-art uninterruptible power supplies designed with high technology and excellence. Our solutions, which go beyond energy security for modern businesses and organizations, enhance efficiency and ensure operational continuity. Hekpower makes a difference in the industry with its customer-centric approach and robust after-sales support services.

Among the key advantages of our company are energy efficiency, environmentally friendly products, customizable solutions, and a competitive pricing strategy.

We prioritize sustainable energy and environmental protection in every project we undertake.

ABOUT US

We are always here to meet the needs of our valued customers with our expert sales team who speak English, French and Arabic and are experienced in their field.

Customer satisfaction is our main principle and our aim is to make quality sustainable at every stage. As an open minded company, especially for export we are always ready to be your solution partner with our experienced team. Our aim is to make revolutionary changes in some subjects which are standard. We are extremely confident as a staff and infrastructure.

As we HekPower aims to be a global leader in the energy sector. In order to realize this, we continue to advance in the market without compromising quality with our experienced staff. In this way, we believe that sustainable business partnerships based on trust can be established by getting the appreciation of our foreign business partners.

Reliable Power Endless Potential



PRODUCT GROUPS

Uninterruptible Power Supply (UPS)

Automatic Voltage Regulators

Static Transfer Switches

Medical Isolated Power Systems

Inverter

Frequency Converters

Uninterruptible Power Supply (UPS)

3 : 3 PHASE

300 SERIES

250 – 500 kVA

Transformerless UPS Topology

IGBT Rectifier

DSP Control



The 300 Series Online UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impeding its performance. With the 300 Series 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

- Transformerless UPS topology
- Low input current total harmonic distortion (THD)
- 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 calendar (battery supported)
- Automatic battery test, remaining battery time indicator
- Temperature compensated 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
- Optional usb flash memory
- 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
- Separate DSP for inverter control
- Separate 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

TECHNICAL SPECIFICATIONS

MODEL	DS3250	DS3300	DS3400	DS3500
Power (kVA)	250	300	400	500
INPUT				
Voltage	380/400 VAC 3P + N + G ± 20% (415 VAC +15%, - 25% optional)			
Frequency	50Hz / 60Hz, ± 5%			
Power factor	≥ 0.99			
(THDI) (*)	≤ 3%			
By-pass voltage	380/400 VAC 3P + N , 4 Wires, ± 10%			
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator			
OUTPUT				
Power (kW)	225	270	360	450
Power factor	0,9			
Voltage	380/400 VAC 3 Phase + N , ± 1% (415 optional)			
Frequency	50Hz / 60Hz			
Frequency tolerance	Line synchronized: ± 2% / 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	< 3% (at 100% linear load)			
BATTERIES				
Type	VRLA AGM / GEL / NiCd			
Number of batteries	2x30: 60pcs			
Charge voltage	2x405 VDC			
End of discharge voltage	2x300 VDC			
Battery cabinet	External			
Battery ambient temperature	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, Over current, 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		< 72 dBA	
Weight without batteries (kg)	550	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				

Uninterruptible Power Supply (UPS)

3 : 3 PHASE

300 SERIES

500 – 800 kVA

Transformerless UPS Topology

IGBT Rectifier

DSP Control



300 Series range Online UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impeding its performance. With the 300 Series 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 calendar (battery supported)
- Automatic battery test, remaining battery time indicator
- Temperature compensated 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
- Separate DSP for inverter control
- Separate 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 $\pm 20\%$ (415 VAC +15%, - 25% optional)		
Frequency	50Hz / 60Hz, $\pm 10\%$		
Power factor (@100% load)	≥ 0.99		
THDI (*)	$\leq 3\%$		
By-pass voltage	380/400 VAC 3P + N, $\pm 10\%$		
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, $\pm 1\%$ (415 VAC optional)		
Frequency	50Hz / 60Hz		
Frequency tolerance	Line synchronized: $\pm 2\%$ / Free running: $\pm 0.1\%$		
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	$\leq 2\%$ (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		
Battery ambient temperature	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, Over current, Temperature high alarm		
Temperature range	0°C - 40°C		
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			

Uninterruptible Power Supply (UPS)

3 : 3 PHASE

H SERIES

10 – 100 kVA

3-Level Technology

IGBT Rectifier

DSP Control



H Series Online UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impeding 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 calendar (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 \pm 20% (at 100% load) / - 40% (at 70% load)							
Frequency	50Hz / 60Hz, \pm 10%							
Power factor	\geq 0.99 (at 100% load)							
THDI (*)	\leq 3%							
By-pass voltage	380/400 VAC 3 Phase + N, \pm 10%							
Voltage distortion	\leq 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, \pm %1							
Frequency	50Hz / 60Hz							
Frequency tolerance	Line synchronized: \pm 2% (adjustable) / Free running: \pm 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	\leq 2% (at 100% linear load)							
BATTERIES								
Type	VRLA AGM / GEL / NiCd							
Number of batteries	2x30 (\pm 30): 60 pieces							
Charge voltage	2x405 VDC							
End of discharge voltage	2x300 VDC							
Battery cabinet	Internal						External	
Battery ambient temperature	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	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	0°C - 40°C							
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

Uninterruptible Power Supply (UPS)

3 : 3 PHASE

H SERIES

300 - 500 kVA

3-Level Technology

IGBT Rectifier

DSP Control



H Series Online UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impeding 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 calendar (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 \pm 20% (at 100% load) / - 40% (at 70% load)		
Frequency	50Hz / 60Hz, \pm 10%		
Power factor	\geq 0.99 (at 100% load)		
THDI (*)	\leq 3%		
By-pass voltage	380/400 VAC 3 Phase + N, \pm 10%		
Voltage distortion	\leq 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, \pm %1		
Frequency	50Hz / 60Hz		
Frequency tolerance	Line synchronized: \pm 2% (adjustable) / Free running: \pm 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	\leq 2% (at 100% linear load)		
BATTERIES			
Type	VRLA AGM / GEL / NiCd		
Number of batteries	2x30 (\pm 30): 60 pieces		
Charge voltage	2x405 VDC		
End of discharge voltage	2x300 VDC		
Battery cabinet	External		
Battery ambient temperature	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	< 68dBA		
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

Uninterruptible Power Supply (UPS)

3 : 3 PHASE

HT SERIES

10 – 500 kVA

Inverter Isolation Transformer

IGBT Rectifier

DSP Control



HT Series Online UPS uses the latest DSP technology, which can be programmed to suit a wide variety of electrical environments without impeding 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 calendar (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	DS310HT	DS315HT	DS320HT	DS330HT	DS340HT	DS360HT	DS380HT	DS3100HT	DS3120HT	DS3160HT	DS3200HT	DS3250HT	DS3300HT	DS3400HT	DS3500HT		
Power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300	400	500		
INPUT																	
Voltage	380/400 VAC 3F + N + Toprak, \pm %20																
Frequency	50Hz / 60Hz, \pm 10%																
Power factor	\geq 0.99																
(THDI) (*)	\leq 3%																
By-pass voltage	380/400 VAC 3 Phase + N, 4 Wires, \pm 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																
Voltage	380/400 VAC 3F + N, \pm %1																
Frequency	50Hz / 60Hz																
Frequency tolerance	Line synchronized: \pm 2% / Free running: \pm 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	\leq 2% (at 100% linear load)																
BATTERIES																	
Type	VRLA AGM / GEL / NiCd																
Nominal voltage	\pm 336 VDC																
Number of batteries	2x28 batteries																
Float charge voltage	\pm 378 VDC																
End of discharge voltage	\pm 280 VDC																
Battery cabinet	External																
Battery 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	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	0°C - 40°C																
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

Uninterruptible Power Supply (UPS)

3 : 3 PHASE

SH SERIES

10- 30 kVA

3-Level Technology

3-Level Technology

IGBT Rectifier



SH Series Online UPS has emerged as an affordable alternative to the 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	DS330SH
Power (kVA)	10	15	20	30
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%			
Voltage distortion	≤ 10%			
Protection	Fuses, Voltage & Frequency Tolerance			
OUTPUT				
Power (kW)	9	13.5	18	24
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 (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% (at 100% 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)			
Battery ambient temperature	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	53
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



Uninterruptible Power Supply (UPS)

3 : 3 PHASE

X SERIES

100- 400 kVA

Output Power Factor (PF) 1.0

3-Level Technology

DSP Control



X Series Online UPS uses the latest DSP technology, which can be programmed to suit a wide variety of electrical environments without impeding 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	DX3300 (soon)	DX3400 (soon)
Power (kVA)	100	120	160	200	250	300	400
INPUT							
Voltage	380/400 VAC 3P + N + G \pm 20% (at 100% load) / - 40% (at 70% load)						
Frequency	50Hz / 60Hz, \pm 10%						
Power factor	\geq 0.99						
THDI (*)	\leq 3%						
By-pass voltage	380/400 VAC 3 Phase + N, \pm 10 (adjustable)						
Voltage distortion	\leq 10%						
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator						
OUTPUT							
Power (kW)	100	120	160	200	225	300	400
Power factor (**)	1.0			0.9		1.0	
Voltage	380/400 VAC 3F + N, \pm %1						
Frequency	50Hz / 60Hz						
Frequency tolerance	Line synchronized: \pm 2% (adjustable) / Free running: \pm 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	\leq 2% (at 100% linear load)						
BATTERIES							
Type	VRLA AGM / GEL / NiCd						
Nominal voltage	\pm 360 VDC						
Float / End of discharge voltage	\pm 405 VDC / \pm 300 VDC						
Battery cabinet	External						
Battery ambient temperature	25°C						
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	0°C - 40°C						
Protection degree	IP20						
Relative humidity	90% max. (non-condensing)						
Altitude	< 1000m above sea level						
Acoustic noise	< 62dBA		< 65 dBA			< 67 dBA	
Weight (kg)	210	220	262	270	295	655	
Dimensions (mm) HxWxD	1440x475x890					1900x1250x775	
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							

Uninterruptible Power Supply (UPS)

3 : 3 PHASE

XT SERIES

10- 80 kVA

Output Isolation Transformer

Microprocessor Controlled

IGBT Technology



XT Series 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
- Parallel operation up to 4 devices
- Manufactured according to EC Directive; EN62040
- 2 years warranty

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 \pm 15%						
By-pass voltage	220/380 (230/400 VAC) 3P + N \pm 10%						
Input frequency	50Hz (60Hz on request) \pm 10%						
OUTPUT							
Power (kW)	8	12	16	24	32	48	64
Power factor	0,8						
Voltage	380/400 VAC 3P + N						
Voltage tolerance	Static: \pm 1%, Dynamic: \pm 5%						
Voltage recovery time	Max. 25ms						
Frequency	50Hz/60Hz						
Frequency tolerance	Line synchronized: \pm 2%, free running: \pm 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	25°C						
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						
Parallel operation (please ask)	Up to 4 units						
Battery temperature compensation	Optional						

Uninterruptible Power Supply (UPS)

3 : 3 PHASE

XT SERIES

100- 300 kVA

Output Isolation Transformer

Microprocessor Controlled

IGBT Technology



XT Series 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 events alarm memory (4000 alarms)
- RS232 and relay contacts
- Custom input and output voltage ranges
- SNMP compatible communication
- T-MON remote monitoring software
- Parallel operation up to 4 devices
- 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 \pm 15%					
By-pass voltage	220/380 VAC (230/400 VAC) 3P + N \pm 10%					
Input frequency	50Hz/60Hz \pm 10%					
OUTPUT						
Power (kW)	80	96	128	160	200	240
Power factor	0.8					
Voltage	380/400 VAC 3P + N					
Voltage stability	Static: \pm 1%, Dynamic: \pm 5%					
Voltage recovery time	Max. 25ms					
Frequency	50Hz/60Hz					
Frequency tolerance	Line synchronized: \pm 2%, free running: \pm 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	25°C					
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	0°C - 40°C					
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					
Parallel operation (please ask)	Up to 4 units					
Battery temperature compensation	Optional					

PRODUCT GROUPS

Uninterruptible Power Supply (UPS)

Automatic Voltage Regulators

Static Transfer Switches

Medical Isolated Power Systems

Inverter

Frequency Converters

FULL AUTOMATIC VOLTAGE REGULATOR

3 : 3 PHASE

33 SERIES

10,5 – 2000 kVA

Microprocessor Control

Wide Voltage Range

High Protection



PF
1.0

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.

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

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	285 - 440 VAC (Optional: 190-415 VAC)										
Operation frequency	47...65 Hz										
Line input protection	Overcurrent, Low and High voltage protection										
Current at input	16.8	24	36	48	72	96	120	161	192	240	
OUTPUT											
Output voltage	380 VAC RMS \pm 1%										
Overloading	10 Sec. 200% Yük										
Correction speed	~ 90 Volt / Sec.										
Upturn period	~ 90 Volt / Sec. (275 - 430VAC)										
Output protection	Protects load by opening the circuit when overburden, short circuit occurs.										
Current at output	12.6	18	27	36	54	72	90	121	144	180	
GENERAL											
Working principle	Servo Motor, Microprocessor Controlled, Full Automatic										
Cooling	Smart Fan System										
Measured Value Monitor.	TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization										
Total efficiency	> 96 %										
Mechanic By-pass	Available										
Protection level	IP 20 // IP54 (Optional)										
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											
WxDxH (cm)	38x60x66			51x68x129			60x99x159			60x93x171	
Weight (kg)	110	135	160	170	200	222	280	310	400	425	
Optional 0.8 output power factor (PF) option											

TECHNICAL SPECIFICATIONS

MODEL	TVR 33200	TVR 33250	TVR 33300	TVR 33400	TVR 33500	TVR 33600	TVR 33800	TVR 331000	TVR 331250	TVR 331500	TVR 332000	TVR 332500	TVR 333000
Power (kVA)	200	250	300	400	500	600	800	1000	1250	1500	2000	2500	3000
INPUT													
In. vol. correct. interval	285 - 440 VAC (Optional: 190-415 VAC)												
Operation frequency	47...65 Hz												
Line input protection	Overcurrent, Low and High voltage protection												
Current at input	323	404	484	646	808	968	1292	1616	2020	2424	3232	4040	4848
OUTPUT													
Output voltage	380 / 400 / 415 VAC RMS \pm 1%												
Overloading	10 Sec. 200 % Load												
Correction speed	~ 90 Volt / Sec.												
Upturn period	~ 90 Volt / Sec. (160 VAC - 250 VAC)												
Output protection	Protects load by opening the circuit when overburden, short circuit occurs.												
Current at output	243	303	363	484	606	729	972	1215	1515	1818	2430	3030	3645
GENERAL													
Working principle	Servo Motor, Microprocessor Controlled, Full Automatic												
Cooling	Smart Fan System												
Measured value monitor	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	< 55 dB (1m ²)												
Standards	CE / ISO 9001												
DIMENSIONS													
WxDxH (cm)	139x66x177			175x80x200	180x122x175		210x144x208	210x214x185	240x214x208	240x264x188	240x264x208	please ask	
Weight (kg)	1050	1100	1200	1650	2000	2100	2900	3450	3900	4300	6000	please ask	
Optional 0.8 output power factor (PF) option													

FULL AUTOMATIC VOLTAGE REGULATOR

1 : 1 PHASE

11 SERIES

3-50 kVA

Microprocessor Control

Wide Voltage Range

High Protection



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.

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 change 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 \pm 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										
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.	TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization										
Total efficiency	> 96%										
Mechanic By-pass	Available										
Protection level	IP 20 // IP 54 (Optional)										
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											
WxDxH (cm)	56x39x32					52x65x68			50x62x85		
Weight (kg)	28	30	34	47	55	95	110	130	155	180	

FULL AUTOMATIC VOLTAGE REGULATOR

1 : 1 PHASE

11 SERIES

3-50 kVA

Microprocessor Control

Wide Voltage Range

High Protection



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.

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 change switch
- Safe and economic usage
- Overcurrent and overload protection
- Digitally displayed status, input & output measurements
- Optional 1.0 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	16	24	36	48	72	96	120	144	192	240	
OUTPUT											
Output voltage	220 / 230 / 240 VAC RMS \pm 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										
Current at output	11	18	27	36	54	72	90	108	144	180	
GENERAL											
Working principle	Servo Motor, Microprocessor Controlled, Full Automatic										
Cooling	Smart fan system										
Measured value monitor.	TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization										
Total efficiency	> 96%										
Mechanic By-pass	Available										
Protection level	IP 20 // IP 54 (Optional)										
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											
WxDxH (cm)	56x39x32					52x65x68			50x62x85		
Weight (kg)	28	30	34	47	55	95	110	130	155	180	

PRODUCT GROUPS

Uninterruptible Power Supply (UPS)

Automatic Voltage Regulators

Static Transfer Switches

Medical Isolated Power Systems

Inverter

Frequency Converters

STATIC TRANSFER SWITCH

1 PHASE OUT 2 POLES

2000 SERIES

Compact and Rack Type Design

Microprocessor Control

Hot-Swappable

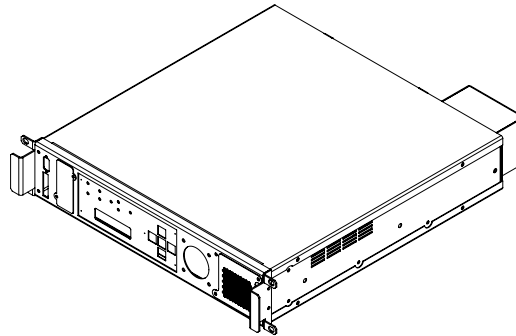
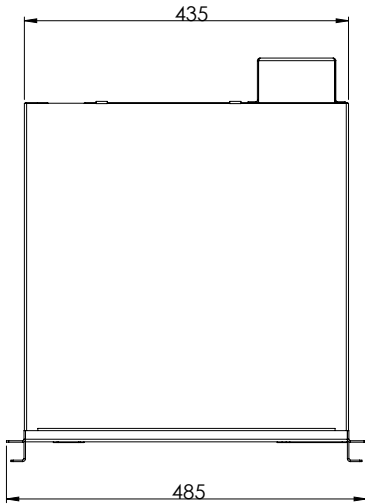
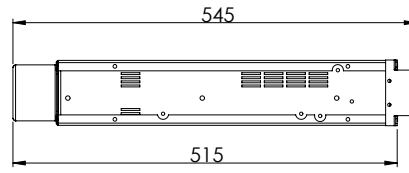
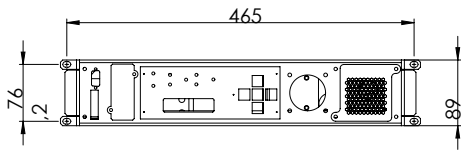


2000 Series 1 phase, 2 pole static transfer switch transfers uninterruptedly critical loads to either of two independent AC power lines. The system monitors two AC inputs. If any of them goes out of the specified tolerance, it transfers the critical load to the other. By increasing the energy quality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

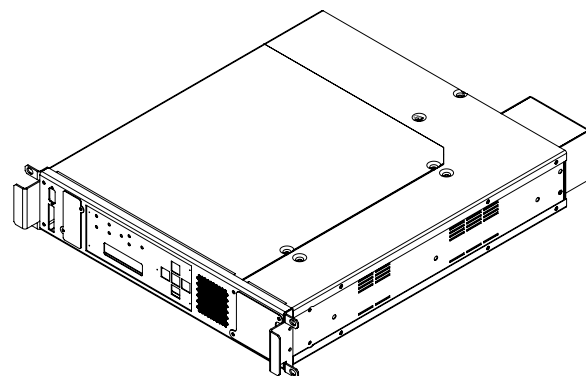
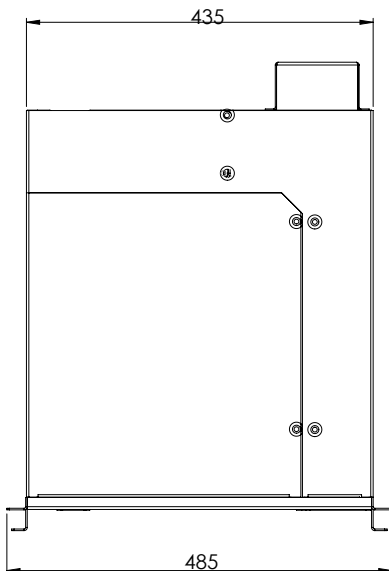
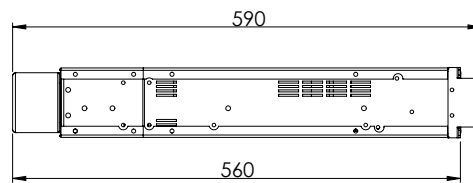
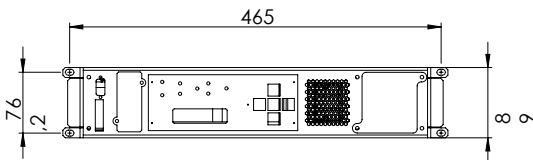
General Specifications

- Full digital control with microprocessor controlled structure
- 2 AC inputs with 1 phase and neutral switching
- Easy installation and maintenance
- Compact and rack type design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure ($\leq 4\text{ms}$ for synchronized sources)
- Selectable preferred 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

STS2032 - STS2063 STANDARD



STS2032 - STS2063 HOT-SWAP



TECHNICAL SPECIFICATIONS

MODEL	STS2032	STS2063	STS2120
Nominal current	32 A	63 A	120 A
ELECTRICAL DATA			
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 DATA			
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 DATA			
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)		



STATIC TRANSFER SWITCH

3 PHASE OUT 2 POLES

3000 SERIES

Very Fast Uninterrupted Transfer

Advanced Communication

Microprocessor Control



3000 Series 3 phase, 3 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 3000 Series, 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 maintenance
- Compact design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure ($\leq 4\text{ms}$ for synchronized sources)
- Selectable preferred 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	STS3100	STS3150	STS3200	STS3250	STS3300	STS3400	STS3600	STS3800
Nominal current	50 A	100 A	150 A	200 A	250 A	300 A	400 A	600 A	800 A
ELECTRICAL DATA									
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 phase 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 DATA									
Cooling	Forced cooling (redundant fans)								
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								
Acoustic noise	< 52 dBA			< 55 dBA			< 60 dBA		
MECHANICAL DATA									
Weight (kg)	139	145	165	195	205	230	240	340	520
Dimensions (mm) HxWxD	1500x680x540			1770x680x585			1905x915x725		1900x1250x850



STATIC TRANSFER SWITCH

3 PHASE OUT 4 POLES

4000 SERIES

Very Fast Uninterrupted Transfer

Advanced Communication

Microprocessor Control



4000 Series 3 phase, 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 4000 Series, 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 and neutral switching
- Easy installation and maintenance
- Compact design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure ($\leq 4\text{ms}$ for synchronized sources)
- Selectable preferred 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
- Optional external AC power supply socket outlet
- Optional SNMP adaptor.

TECHNICAL SPECIFICATIONS

MODEL	STS4050	STS4100	STS4150	STS4200	STS4250	STS4300	STS4400	STS4600	STS4800	
Nominal current	50 A	100 A	150 A	200 A	250 A	300 A	400 A	600 A	800 A	
ELECTRICAL DATA										
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 phase + 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 DATA										
Cooling	Forced cooling (redundant fans)									
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									
Acoustic noise	< 52 dBA			< 55 dBA				< 60 dBA		
MECHANICAL DATA										
Weight (kg)	160	175	190	205	235	240	255	375	560	
Dimensions (mm) HxWxD	1500x680x540			1770x680x585				1905x915x725	1900x1250x850	

PRODUCT GROUPS

Uninterruptible Power Supply (UPS)

Automatic Voltage Regulators

Static Transfer Switches

Medical Isolated Power Systems

Inverter

Frequency Converters

MEDICAL ISOLATED POWER SYSTEMS

Medical Isolated Power System

Electrical power supply of the medical field, are selected according to the ambient electrical safety. TSE, IEC and IEE standards divide medical locations into 3 group as Group 0, Group 1, Group 2 according to patient safety. Group 2 including operation room, cardiac area, intensive care unit is most critical part

for electricity sustainability and insulation. Electrical devices in group 2 save patients life. When there are any failure of the devices in this environment without harming the people in the medical location, devices are required to work without interruption. For this reason, IT isolated power system is used in the Group 2 area.



Microprocessor Controlled

Network installation regulations distinguishes three families of earthing arrangements, using the twoletter codes TN, TT, and IT. The first letter indicates the connection between earth and the power-supply equipment (generator or transformer):

“T” – Direct connection of a point with earth,

“I” – No point is connected with earth (isolation), except perhaps via a high impedance.

The second letter indicates the connection between earth and the electrical device being supplied:

“T” – Direct connection of a point with earth,

“N” – Direct connection to neutral at the origin of installation, which is connected to the earth.

The next letter (If it exist) indicates the regulations of neutra and protection conductor:

“S” – Provide protection function with separate conductor from neutral or earthed line conductor,

“C” – Combining neutral and protection safety on single conductor (PEN conductor).

All live parts are separated from the ground or from a point connected to ground via a high impedance.

The exposed conductive parts of the electrical installation is grounded separately or combined or connected to the system ground.

IGBT Technology

At the IT systems used in group 2 rooms in medical environments, isolation transformer is used to separate the grounding of the neutral conductor and phase conductor. The grounding plug is connected to the equipotential bus. In isolated power systems, grounding are insulated against both lines. If a low resistance short circuit touches the ground or a leakage occurs, continue to the function of the circuit breaker and do not open and medical electrical equipment is continue to their functionality. Also because of grounding network is isolated as create a very high resistance to earth will pass current level will not harm even through touching people. In isolated power systems, insulation levels, transformer temperature and the load current is continuously monitored and a possible case of failure alarm signal is generated. The alarm signal is provided the necessary interventions by transmitted to related panels.

Environments that use of isolated power systems in hospitals

- Operation Rooms
- Cardiac Catheterization Rooms
- Surgery Preparation Room
- Angiographic Surgery Rooms
- Intensive Care Units
- Premature Baby Rooms
- Anesthesia Room

PRODUCT GROUPS

Uninterruptible Power Supply (UPS)

Automatic Voltage Regulators

Static Transfer Switches

Medical Isolated Power Systems

Inverter

Frequency Converters

INVERTERS

Microprocessor Control

High Reliability

Special Products



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.

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
- Separate battery supported clock and calendar
- RS232 or DRY contact relays
- Customized input voltage and frequency ranges
- Three phase or single phase options
- Advance communication
- SNMP compatible
- 2 years warranty

TECHNICAL SPECIFICATIONS

INPUT	
Voltage	48 VDC - 400 VDC
OUTPUT	
Power (kW)	10kVA - 300kVA
Voltage	120/208 V, 60/400 Hz - 230/400V, 50Hz / 60Hz (other voltage ranges available)
Voltage regulation	+ 1% (balanced load) +2% (unbalanced load)
Frequency	50Hz / 60Hz / 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 linear 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

PRODUCT GROUPS

Uninterruptible Power Supply (UPS)

Automatic Voltage Regulators

Static Transfer Switches

Medical Isolated Power Systems

Inverter

Frequency Converters

FREQUENCY CONVERTERS

3 : 3 PHASE

C SERIES

10-250kVA

50Hz, 60Hz, 400Hz

High Reliability

DSP Control



PF
1.0

C Series 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.

Next pages of this catalog, you will find the technical specifications of 380VAC-60Hz converters, 208VAC-60Hz and 400Hz converters with inverter galvanic isolation transformers within 10-250KVA power range and 3/3 phase systems. Please contact with your sales representative for your different requests and questions.

General Specifications

- DSP control
- 3-Level technology and fully digital structure (*)
- Less electronic components and SMD technology
- Low input current harmonic 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 limitation at output, DC leakage, short circuit and overload protection
- Advanced TFT front panel (For 40kVA and above) (*)
- Advanced diagnostic, 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 compliant production
- 2 years warranty

(*) For detailed product specs, please check the specification tables.

TECHNICAL SPECIFICATION COMPARISION TABLE

	DS300HC-60		DS300HTC-60		DS300TC-400	
	60Hz 380-400VAC		60Hz 208VAC		400Hz 208VAC	
	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	✓	✓				

DS300HC-60 TECHNICAL SPECIFICATIONS

MODEL	DS310HC-60	DS315HC-60	DS320HC-60	DS330HC-60	DS340HC-60	DS360HC-60	DS380HC-60
Power (kVA)	10	15	20	30	40	60	80
INPUT							
Voltage (ui/Ui)*	220/380 VAC 3P + N + G ± 20%						
Frequency**	50Hz ± 10%						
Power factor (@100% load)	≥ 0,99						
THDI	≤ 3%						
Rectifier soft start time	Minimum 3 sec.						
Protections	Fuses, Voltage and Frequency tolerance, Input power limit, Phase sequency indicator, Input contactor						
OUTPUT							
Power (kW)	10	15	20	30	40	60	80
Power factor	1,0 (0,8 and 0,9 Optional)						
Voltage (uo/Uo)*	220/380 VAC 3P + N + G						
Voltage THD	≤ 3% (linear load)						
Frequency**	60Hz ± 0.25%						
Voltage tolerance	± 1% (linear load) ± 5% (dynamic load)						
Recovery time (Dynamic load)	< 50 ms						
Efficiency (@100% load input voltage tolerance ± 1,5% transformer excluded)	≥ 93,0%		≥ 93,5%			≥ 94,8%	
Crest factor (@100% load)	3:1						
Overload capacity	5 min. at 125% load, 40ms at 150% load					10 min. at 125% load, 60sec. at 150% load, 40ms at 200% load	
Protections	Advanced short circuit, Voltage tolerance protection, DC balance, Regenerative load, Current limiting protections						
GENERAL							
Standards	EN62040-1, EN62040-2, EN62040-3						
User interface	4 lines LCD panel, Mimic led panel, 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 port, 4 standard and 8 optional dry contacts						
Inputs	EPO input, Interactive battery breaker input, Genset input						
Software	Standard T-Mon software (3 clients + 1 server management)						
Alarm logging	Standard: with time & date 512 events						
Other protections	Load protection in case of failure, Power module overheat, Overcurrent, Overheat, Input voltage and frequency, Output voltage and frequency, Phase loss protection, Output DC leakage, Short circuit, DC high, DC low Protections						
Temperature range	0°C +40°C (operation) / -15°C +45°C (storage)						
Protection degree*	IP20						
Relative humidity	20% - 90%						
Altitude	≤ 1000m: 100%; > 1000m: Maximum 0.6% derating per 100m (3000m: 88% rated power with 12% derating)						
Acoustic noise	< 57dBA				< 62dBA		
Net weight (kg)	< 87	< 87	< 91	< 100	< 173	< 197	< 209
Dimensions (mm) HxWxD	1040x400x815				1440x515x855		
OPTIONS							
Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree	Please ask						
Galvanic isolation transformer at input/output	Optional as external						
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer						
(*) Please ask for different options.							
(**) DS300HC-60 series 50Hz input -> 60Hz output converters can also be used as 60Hz input -> 50Hz output by adjusting parameters.							

DS300XC-60 TECHNICAL SPECIFICATIONS

MODEL	DS3100XC-60	DS3120XC-60	DS3160XC-60	DS3200XC-60
Power (kVA)	100	120	160	200
INPUT				
Voltage (ui/Ui)*	220/380 VAC 3P + N + G \pm 20% (@ 100% load) / - 40% (@ 70% load)			
Frequency**	50Hz \pm 10%			
Power factor (@ 100% load)	\geq 0.99			
THDI	\leq 3%			
Rectifier soft start time	Minumum 3 sec.			
Protections	Fuses, Voltage and Frequency tolerance, Input power limit, Phase sequency indicator			
OUTPUT				
Power (kW)	100	120	160	200
Power factor	1,0 (0,8 and 0,9 Optional)			
Output current rated value	152	182	243	304
Voltage (uo/Uo)*	220/380VAC 3P + N + G			
Voltage THD	\leq 2% (linear load)			
Frequency**	60Hz \pm 0.1%			
Output voltage tolerance	\pm 1% (linear load) \pm %5 (dynamic load)			
Recovery time (Dynamic load)	< 50 ms			
Efficiency (@100% load input voltage tolerance \pm 1,5% transformer excluded)	up to 95.5%		up to 96%	
Crest factor	3:1			
Overload capacity	10 min. @125% load: 1 min. @150% load			
Protections	Advanced short circuit, Voltage tolerance protection, DC balance, Regenerative load, Current limiting protections			
GENERAL				
Standards	EN62040-1, EN62040-2, EN62040-3			
User interface	TFT panel, 5 vector buttons,			
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Buzzer			
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, Operating hour meter			
Communication	2xRS232 serial port, 4 standard and 8 optional dry contacts			
Inputs	EPO input, Interactive battery breaker input, Genset input			
Software	Standard T-Mon software (3 clients + 1 server management)			
Alarm logging	Standard: with time & date 512 events			
Other protections	Load protection in case of failure, Power module overheat, Overcurrent, Overheat, Input voltage and frequency, Output voltage and frequency, Phase loss protection, Output DC leakage, Short circuit, DC high, DC low Protections			
Temperature range	0°C +40°C (operation) / -15°C +45°C (storage)			
Protection degree*	IP20			
Relative humidity	90% max. (non-condensing)			
Altitude	\leq 1000m: 100%; > 1000m: Maximum 0.6% derating per 100m (3000m: 88% rated power with 12% derating)			
Acoustic noise	< 62 dBA		< 65 dBA	
Net weight (kg)	210	220	262	270
Dimensions (mm) HxWxD	1440x475x890			
OPTIONS				
Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree	Please ask			
Galvanic isolation transformer at input/output	Optional as external			
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer			
(*) Please ask for different options.				
(**) DS300XC-60 series 50Hz input -> 60Hz output converters can also be used as 60Hz input -> 50Hz output by adjusting parameters.				

DS300HTC-60 TECHNICAL SPECIFICATIONS

MODEL	DS310HTC-60 208V	DS315HTC-60 208V	DS320HTC-60 208V	DS330HTC-60 208V	DS340HTC-60 208V	DS360HTC-60 208V	DS380HTC-60 208V
Power (kVA)	10	15	20	30	40	60	80
INPUT							
Voltage (ui/Ui)*	220/380 VAC 3P + N + G ± 20%						
Frequency**	50Hz ± 10%						
Power factor (@ 100% load)	≥ 0,99						
THDI	≤ 3%						
Rectifier soft start time	Minimum 3 sec.						
Protections	Fuses, Voltage and Frequency tolerance, Input power limit, Phase sequency indicator, Input contactor						
OUTPUT							
Power (kW)	10	15	20	30	40	60	80
Power factor	1,0 (0,8 and 0,9 Optional)						
Voltage (uo/Uo)*	120/208 VAC 3P + N + G						
Voltage THD	≤ 3% (linear load)						
Frequency	60Hz ± 0.25%						
Voltage tolerance	± 1% (linear load) ± 5% (dynamic load)						
Recovery time (Dynamic load)	< 50 ms						
Output isolation transformer	Galvanic isolation transformer integrated into the internal inverter						
Efficiency (@100% load input voltage tolerance ± 1,5% transformer included)	≥ 91,1%		≥ 91,6%			≥ 92,6%	
Crest factor (@ %100 load)	3:1						
Overload capacity	5 min. @125%, 40ms @150% load					10 min. at 125% load, 60sec. at 150% load, 40ms at 200% load	
Protections	Advanced short circuit, Voltage tolerance protection, DC balance, Regenerative load, Current limiting protections						
GENERAL							
Standards	EN62040-1, EN62040-2, EN62040-3						
User interface	4 line LCD panel, Mimic led panel, 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 port, 4 standard and 8 optional dry contacts						
Inputs	EPO input, Interactive battery breaker input, Genset input						
Software	Standard T-Mon software (3 clients + 1 server management)						
Alarm logging	Standard: with time & date 512 events						
Other protections	Load protection in case of failure, Power module overheat, Overcurrent, Overheat, Input voltage and frequency, Output voltage and frequency, Phase loss protection, Output DC leakage, Short circuit, DC high, DC low Protections						
Temperature range	0°C +40°C (operation) / -15°C +45°C (storage)						
Protection degree*	IP20						
Relative humidity	20% - 90%						
Altitude	≤ 1000m: 100%; > 1000m: Maximum 0.6% derating per 100m (3000m: 88% rated power with 12% derating)						
Acoustic noise	< 55dBA		< 60dBA			< 62dBA	
Net weight (kg)	187	198,5	244	270	393	457	536
Dimensions (mm) HxWxD	1040x400x815				1440x515x855		
OPTIONS							
Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree	Please ask						
Transformer	Galvanic isolation transformer at the input (external)						
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer						
(*) Please ask for different options.							

DS300HTC-60 TECHNICAL SPECIFICATIONS

MODEL	DS3100HTC-60 208V	DS3120HTC-60 208V	DS3160HTC-60 208V	DS3200HTC-60 208V	DS3250HTC-60 208V
Power (kVA)	100	120	160	200	250
INPUT					
Voltage (ui/Ui)*	220/380 VAC 3P + N + G \pm 20%				
Frequency**	50Hz \pm 10%				
Power factor (@ 100% load)	\geq 0,99				
THDI	\leq 3%				
Rectifier soft start time	Minimum 3 sec.				
Protections	Fuses, Voltage and Frequency tolerance, Input power limit, Phase sequency indicator, Input contactor				
OUTPUT					
Power (kW)	100	120	160	200	250
Power factor	1,0 (0,8 and 0,9 Optional)				
Voltage (uo/Uo)*	120/208 VAC 3P + N + G				
Voltage THD	\leq 3% (linear load)				
Frequency	60Hz \pm 0.25%				
Voltage tolerance	\pm 1% (linear load) \pm 5% (dynamic load)				
Recovery time (Dynamic load)	< 50 ms				
Output isolation transformer	Galvanic isolation transformer integrated into the internal inverter				
Efficiency (@100% load input voltage tolerance \pm 1,5% transformer included)	\geq 92,6%		\geq 93,0%		
Crest factor (@ 100% load)	3:1				
Overload capacity	10 min. @125% load, 60sec. @150% load, 40ms @200% load				
Protections	Advanced short circuit, Voltage tolerance protection, DC balance, Regenerative load, Current limiting protections				
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	22xRS232 serial port, 4 standard and 8 optional dry contacts				
Inputs	EPO input, Interactive battery breaker input, Genset input				
Software	Standard T-Mon software (3 clients + 1 server management)				
Alarm logging	Standard: with time & date 512 events				
Other protections	Load protection in case of failure, Power module overheat, Overcurrent, Overheat, Input voltage and frequency, Output voltage and frequency, Phase loss protection, Output DC leakage, Short circuit, DC high, DC low Protections				
Temperature range	0°C +40°C (operation) / -15°C +45°C (storage)				
Protection degree*	IP20				
Relative humidity	20% - 90 %				
Altitude	\leq 1000m: 100%; > 1000m: Maximum 0.6% derating per 100m (3000m: 88% rated power with 12% derating)				
Acoustic noise	< 67 dBA				< 71 dBA
Net weight (kg)	539	595	647	910,5	1150
Dimensions (mm) HxWxD	1770x825x855			1900x1250x1055	
OPTIONS					
Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree	Please ask				
Transformer	Galvanic isolation transformer at the input (external)				
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer				
(*) Please ask for different options.					

DS300TC-400 TECHNICAL SPECIFICATIONS

MODEL	DS310TC-400 208V	DS315TC-400 208V	DS320TC-400 208V	DS330TC-400 208V	DS340TC-400 208V	DS350TC-400 208V
Güç (kVA)	10	15	20	30	40	50
INPUT						
Voltage (ui/Ui)*	220/380 VAC 3P + N + G ± 20%					
Frequency**	50Hz ± 10%					
Power factor (@ 100% load)	≥ 0,99					
THDI	≤ 5% (depends on input voltage conditions)					
Protections	Fuses, Voltage and Frequency tolerance, Input power limit, Phase sequency indicator, Input contactor					
OUTPUT						
Power (kW)	10	15	20	30	40	50
Power factor	1,0 (0,8 and 0,9 Optional)					
Voltage (uo/Uo)*	120/208 VAC 3P + N + G					
Voltage THD	≤ 3% (linear load)					
Frequency	400Hz ± 0.2%					
Output voltage tolerance	± 1% (linear load), ± 5% (dynamic load)					
Recovery time (Dynamic load)	< 20 ms					
Output isolation transformer	Internal, inverter integrated galvanic isolation transformer					
Efficiency (@100% load input voltage tolerance ± 1,5% transformer included)	≥ 88,0%	≥ 88,5%	≥ 88,8%	≥ 89,0%	≥ 89,5%	
Crest factor (@ 100% load)	3:1					
Overload capacity	5 min. @125% load, 40ms @150% load					10 min. @ 125% load, 60 sec. @150% load, 40 ms @ 200% load
Protections	Short circuit protection, Phase and voltage tolerance protection, DC balance, Current limiting protections					
GENERAL						
Standards	EN62040-1, EN62040-2, EN62040-3					
User interface	2 line LCD panel, LED Mimic diagram, control buttons, buzzer					
Indicators	Input/output P-N voltage, P-P voltage, Frequency, Load percentage, DC voltage, Input current					
Diagnostic	Error and status recording system with 128 memory with real-time clock and calendar					
Communication	RS232 serial port (standard), Remote monitoring panel, SNMP, Modbus, RS485, Modem connections (optional)					
Alarm relay contacts	3 dry contacts (Mains fault, Common alarm, Overtemperature)					
EPO input	Standard					
Other protections	Load protection in case of failure, Power module overheat, Overcurrent, Overheat, Input voltage and frequency, Output voltage and frequency, Phase loss protection, Output DC leakage, Short circuit, DC high, DC low Protections					
Temperature range	0°C +40°C (operation) / -15°C +45°C (storage)					
Protection degree*	IP20					
Relative humidity	20% - 90%					
Altitude	≤ 1000m: 100%; > 1000m: Maximum 0.6% derating per 100m (3000m: 88% rated power with 12% derating)					
Acoustic noise (1±5% m distance at 100% load)	< 60dBA		< 61 dBA		< 63 dBA	
Net weight (kg)	190	200	220	230	250	280
Dimensions (mm) HxWxD	1040x425x805			1190x515x830		
OPTIONS						
Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree	Please ask					
Transformer	Optional as external					
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer					
(*) Please ask for different options.						

DS300TC-400 TECHNICAL SPECIFICATIONS

MODEL	DS375TC-400 208V	DS3100TC-400 208V	DS3125TC-400 208V	DS3150TC-400 208V	DS3200TC-400 208V
Power (kVA)	75	100	125	150	200
INPUT					
Voltage (ui/Ui)*	220/380 VAC 3P + N + G ± 20%				
Frequency	50Hz ± 10%				
Power factor (@100% load)	≥ 0,99				
THDI	≤ 5% (depends on input voltage conditions)				
Protections	Fuses, Voltage and Frequency tolerance, Input power limit, Phase sequency indicator, Input contactor				
OUTPUT					
Power (kW)	75	100	125	150	200
Power factor	1,0 (0,8 and 0,9 Optional)				
Voltage (uo/Uo)*	120/208 VAC 3P + N + G				
Voltage THD	≤ 3% (linear load)				
Frequency	400Hz ± 0.2%				
Output voltage tolerance	± 1% (linear load), ± 5% (dynamic load)				
Recovery time (Dynamic load)	< 20 ms				
Output isolation transformer	Internal, inverter integrated galvanic isolation transformer				
Efficiency (@100% load input voltage tolerance ± 1,5% transformer included)	≥ %91,0		≥ %92,0	≥ %92,8	≥ %93,5
Crest factor (@100% load)	3:1				
Overload capacity	10 min. @125% load, 60sec. @ %150 load, 40ms @ 200% load				
Protections	Advanced short circuit, Voltage tolerance protection, DC balance, Regenerative load, Current limiting protections				
GENERAL					
Standards	EN62040-1, EN62040-2, EN62040-3				
User interface	2 line LCD panel, LED Mimic diagram, control buttons, buzzer				
Indicators	Input/output P-N voltage, P-P voltage, Frequency, Load percentage, DC voltage, Input current				
Diagnostic	Error and status recording system with 128 memory with real-time clock and calendar				
Communication	RS232 serial port (standard), Remote monitoring panel, SNMP, Modbus, RS485, Modem connections (optional)				
Alarm relay contacts	3 dry contacts (Mains fault, Common alarm, Overtemperature)				
EPO input	Standard				
Other protections	Load protection in case of failure, Power module overheat, Overcurrent, Overheat, Input voltage and frequency, Output voltage and frequency, Phase loss protection, Output DC leakage, Short circuit, DC high, DC low Protections				
Temperature range	0°C +40°C (operation) / -15°C +45°C (storage)				
Protection degree*	IP20				
Relative humidity	20% - 90%				
Altitude	≤ 1000m: 100%; > 1000m: Maximum 0.6% derating per 100m (3000m: 88% rated power with 12% derating)				
Acoustic noise (at 100% load at 1±5% m distance)	< 68 dBA	< 71 dBA		< 73 dBA	
Net weight (kg)	510	600	650	1050	1200
Dimensons (mm) HxWxD	1880x860x880			1900x1250x1055	
OPTIONS					
Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree	Please ask				
Galvanic isolation transformer at the input	Optional as external				
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS Modem, Comport multiplexer				
(*) Please ask for different options.					

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