

GENERAL PRODUCT CATALOG



www.hekpower.com

2023-2024

Hekpower

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 exteremly 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

Hekpower

PRODUCT GROUPS

Uninterruptible Power Supply (UPS)

Automatic Voltage Regulators

Static Transfer Switches

Medical Isolated Power Systems

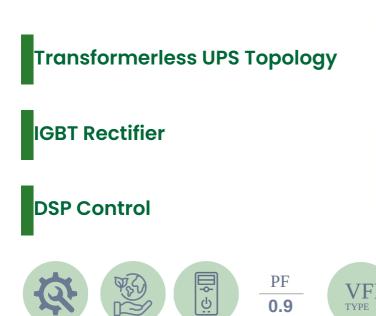
Inverter

Frequency Converters





3 : 3 PHASE **300 SERIES** 250 - 500 kVA





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

- 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 calender (battery supported)
- Automatic battery test,remaining battery time
 indicator
- Temperature compansated charge system (optional)
- 2 RS232 serial ports and 12 dry contact outputs
- 3 DSP controlled modular structure
- Optional SNMP and MODBUS adaptors
- Optional graphical panel
- 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
- Seperate DSP for inverter control
- Seperate DSP for the PFC
- 3 level battery protection
- High charge current capacity
- Charge/discharge current indicator
 - Advanced remote control features
- Manufactured according to EC Directive; EN62040

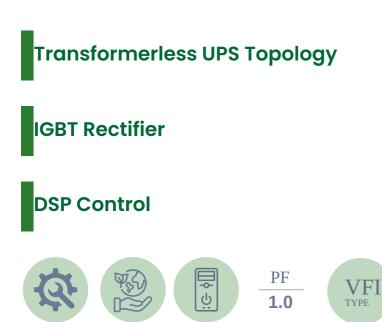


MODEL	DS3250	D\$3300	D\$3400	DS3500							
Power (kVA)	250	300	400	500							
INPUT											
Voltage		380/400 VAC 3P + N + G ± 20%	(415 VAC +15%, - 25% optional)								
Frequency		50Hz / 60	0Hz, ± 5%								
Power factor		≥ 0	.99								
(THDI) (*)			3%								
By-pass voltage			N , 4 Wires, ± 10%								
Protection			but power limit, Phase sequency indicator								
OUTPUT		·····, ······									
Power (kW)	225	270	360	450							
Power factor			,9								
Voltage			N , ± 1% (415 optional)								
Frequency			/ 60Hz								
Frequency tolerance			% / Free running: ± 0,1%								
Efficiency			95%								
Crest factor			:1								
Overload protection		-	. 1 0% load: 1 min, - > 150% load: by pass								
Other protections	μ۸		balance, Regenerative load, Current limit	ing							
Voltage THD	Au	-	% linear load)								
BATTERIES		< 3% (at 100									
			/ GEL / NiCd								
Type											
Number of batteries			60pcs								
Charge voltage			5 VDC								
End of discharge voltage			0 VDC								
Battery cabinet			ernal								
Battery ambient temperature			юС								
Protections	3 16		t limit, Temperature compensation (option	ial)							
Automatic testing		Standard every 72	hours (adjustable)								
GENERAL											
Standards			040-2, EN62040-3								
User interface		• •	or buttons, Buzzer								
Indicators			Crest Factor, Frequency, PF, Service Time								
Advanced	Self	-	s, Calibration over RS232, operating hour n	neter							
Communication			8 optional DRY contact alarm relays								
Inputs		EPO input, Interactive batte	ry panel input, Genset input								
Genset kit		Standard (pro	ogrammable)								
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											
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 a	8 units								
(*) Depending on power and inpu	t/output conditions										



Uninterruptible Power Supply (UPS)

3 : 3 PHASE **300 SERIES** 500 - 800 kVA





300 Series range Online UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impending 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.

- Low input current total harmonic distortion (THD)
- Output power factor 1.0 for 500-600kVA
- Transformerless UPS topology
- High input power factor
- High efficiency up to 95%
- Cold start function
- Static and maintenance by-pass switch
- Output short circuit and overload protection
- External REPO switch input
- 512 events memory (512 events 45000 alarms)
- Clock and calender (battery supported)
- Automatic battery test,remaining battery time indicator
- Temperature compansated charge system (optional)
- 2 RS232 serial ports and 12 dry contact outputs
- 3 DSP controlled modular structure
- Optional SNMP and MODBUS adaptors
- Optional graphical panel

- Full digital structure
- Small footprint
- Ecomode operation (optional)
- Fewer electronic components
- Output current limiting
- Advanced diagnostics for the input
- Selectable input/output voltage/frequency/range
- Split by-pass input (second input)
- Output DC leakage protection
- Seperate DSP for inverter control
- Seperate DSP for the PFC
- 3 level battery protection
- High charge current capacity
- Charge/discharge current indicator
- Advanced remote control features
- Manufactured according to EC Directive; EN62040
- 2 years warranty



MODEL	DS3500	DS3600	DS3800						
Power (kVA)	500	600	800						
INPUT									
Voltage	380	/400 VAC 3P + N + G ± 20%(415 VAC +15%, - 25% optio	nal)						
Frequency		50Hz / 60Hz, ± 10%							
Power factor (@100% load)		≥ 0.99							
THDI (*)		≤ 3%							
By-pass voltage		380/400 VAC 3P + N, ± 10%							
Protection	Fuses, Voltag	e & Frequency tolerance, Input power limit, Phase seque	ncy indicator						
OUTPUT									
Power (kW)	500	600	720						
Power factor (**)	1.	0	0.9						
Voltage		380/400 VAC 3 Phase + N, ± 1% (415 VAC optional)							
Frequency		50Hz / 60Hz							
Frequency tolerance		Line synchronized: \pm 2% / Free running: \pm 0.1%							
Efficiency (@100% load)		up to 95%							
Crest factor		3:1							
Overload capacity	100% - 12	5% load: 10 min, 125% - 150% load: 1 min, - > 150% loa	d: by pass						
Other protections	Advanced short of	ircuit, Voltage tolerance, DC balance, Regenerative load	, Current limiting						
Voltage THD		≤ 2% (at 100% linear load)							
BATTERIES									
Туре		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℃							
Protections	3 level alarms, Ba	ttery fuses, Charging current limit, Temperature comper	isation (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,op	erating hour meter						
Communication	2xRS232	serial ports, 4 standard and 8 optional DRY contact alar	m 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 ma	anagement)						
Alarm logging		Standard: with time & date 512 events							
Protections	Power n	nodule over-temperature, Over current, Temperature hig	Jh 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)	14	52	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 inpu	t/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** PF -0d 0.9





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

- Transformerless UPS topology
- 3 DSP controlled modular structure
- Separate main control board advantage for rectifier and inverter
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THDi)
- High input power factor
- High efficiency up to 95%
- Selectable input/output voltage/frequency range
- Static and maintenance by-pass switch
- High charge current capacity
- Eco Mode operation (optional)
- Split by-pass input (dual input)
- Advanced TFT front panel (40-100kVA)
- Optional 0.8 and 1.0 output power factor (PF)
- Cold start function
- Compliant with IEC EN62040 directive

- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production
- Advanced control at the input
- 3 level battery protection
- Output current limitation
- Output DC leakage protection
- External REPO input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator .
- 2 RS232 serial ports and 4 programmable dry contact outputs
- Optional 12 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service password-protected security
- 2 years warranty



MODEL	DS310H	DS315H	DS320H	DS330H	DS340H	DS360H	DS380H	DS3100H					
Power (kVA)	10	15	20	30	40	60	80	100					
INPUT						·	·						
Voltage		380/400 VAC 3P + N + G ± 20% (at 100% load) / - 40% (at 70% load)											
Frequency		50Hz / 60Hz, ± 10%											
Power factor		≥ 0.99 (at 100% load)											
THDI (*)				≤3	3%								
By-pass voltage				380/400 VAC 3 P	hase + N, ± 10%								
Voltage distortion				≤1	0%								
Protection			Fuses, Voltage & Free	quency tolerance, Inp	out power limit, Phase	e sequency indicator							
OUTPUT			. 5										
Power (kW)	9	13,5	18	27	36	54	72	90					
Power factor (**)			1	0.	.9	1							
Voltage				380/400 VAC	3F + N, ± %1								
Frequency				50Hz /	/ 60Hz								
Frequency tolerance			Line synd	chronized: ± 2% (adju	ustable) / Free running	g: ± 0.1%							
Efficiency				up to									
Crest factor				3:									
Overload protection			100% - 125% loa	d: 10 min, 125% - 150		0% load: by pass							
Other protections		Ac	lvanced short circuit,				ting						
Voltage THD				≤ 2% (at 100	% linear load)								
BATTERIES													
Туре				VRLA AGM /	/ GEL / NiCd								
Number of batteries				2x30 (±30)	: 60 pieces								
Charge voltage				2x405									
End of discharge voltage				2x300) VDC								
Battery cabinet			Inte				Exte	rnal					
Battery ambient temperature				25	°C								
Protections		3	evel alarms, Battery fu	ises, Charging curren	t limit, Temperature c	compensation (optio	nal)						
Automatic testing				Standard every 72	hours (adjustable)								
GENERAL													
Standards		EN62040-1, EN62040-2, EN62040-3											
User interface	4 lines	4 lines LCD panel, Mimic leds, 5 vector buttons, Buzzer TFT panel, 5 vector buttons, Buzzer											
Indicators			P-N voltage, P-P vol	tage, Current, Power,	Crest Factor, Frequer	ncy, 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				IP:	20								
Relative humidity				90% max. (nor	n-condensing)								
Altitude				< 1000m abo	ove sea level								
Acoustic noise		< 57	7dBA			< 62dBA		< 65dBA					
Weight (kg)	87	87	91	100	173	197	209	220					
Dimensions (mm) HxWxD		1040x4	100x815			1440x5	515x855						
OPTIONS													
Different input / output voltage				Pleas	e ask								
Transformer			Galvanic i	solation transformer	at the input & output	: (internal)							
Software		T-M	Ion Admin Multi UPS				ents						
Adaptors			mote monitoring par										
Parallel operation		. , , , ,	51	Up to 8		,							



Uninterruptible Power Supply (UPS)

3 : 3 PHASE **H SERIES** 300 - 500 kVA





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

 $\mathbf{V}\mathbf{F}$

- Transformerless UPS topology
- 3 DSP controlled modular structure
- Separate main control board advantage for rectifier and inverter
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THDi)
- High input power factor
- High efficiency up to 95%
- Selectable input/output voltage/frequency range
- Static and maintenance by-pass switch
- High charge current capacity
- Eco Mode operation (optional)
- Split by-pass input (dual input)
- Advanced TFT front panel
- Optional 0.8 and 1.0 output power factor (PF)
- Cold start function
- Compliant with IEC EN62040 directive

- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production
- Advanced control at the input
- 3 level battery protection
- Output current limitation
- Output DC leakage protection
- External REPO input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator
- 2 RS232 serial ports and 4 programmable dry contact outputs
- Optional 12 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service password-protected security
- 2 years warranty



MODEL	D\$3300H	DS3400H	DS3500H										
Power (kVA)	300	400	500										
INPUT	·												
Voltage	380/400 VAC 3P + N + G ± 20% (at 100% load) / - 40% (at 70% load)												
Frequency	50Hz / 60Hz, ± 10%												
Power factor		≥ 0.99 (at 100% load)											
THDI (*)		≤ 3%											
By-pass voltage		380/400 VAC 3 Phase + N, ± 10%											
Voltage distortion		≤ 10%											
Protection	Fuses, Voltag	e & Frequency tolerance, Input power limit, Phase seque	ncy indicator										
OUTPUT													
Power (kW)	270	360	450										
Power factor (**)		0.9											
Voltage		380/400 VAC 3F + N, ± %1											
Frequency		50Hz / 60Hz											
Frequency tolerance	Li	ne synchronized: \pm 2% (adjustable) / Free running: \pm 0.19	%										
Efficiency		up to 95%											
Crest factor		3:1											
Overload protection	100% - 12	25% load: 10 min, 125% - 150% load: 1 min, - > 150% load	l: by pass										
Other protections	Advanced short	circuit, Voltage tolerance, DC balance, Regenerative load,	Current limiting										
Voltage THD		≤ 2% (at 100% linear load)											
BATTERIES													
Туре		VRLA AGM / GEL / NiCd											
Number of batteries		2x30 (±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, Ba	ittery fuses, Charging current limit, Temperature compen	sation (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, S	Service Time										
Advanced	Self diagnostics, 3	maintenance time indicators, Calibration over RS232,ope	rating hour meter										
Communication	2xRS232	2 serial ports, 4 standard and 8 optional DRY contact alar	n 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 Mu	Iti UPS monitoring 10-50-100-200 clients, T-Mon Server 5	0-100-200 clients										
Adaptors	SNMP, RS485, Remote monitor	ing panel, MODBUS (RS485 or TCP/IP), TCP/IP, GSM/GPRS	Modem, Comport multiplexer										
Parallel operation		Up to 8 units											
(*) Depending on power and input	t/output conditions / (**) Please ask for PF 0.8 and 1.0												





3 : 3 PHASE **HT SERIES** 10 - 500 kVA





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

- Inverter isolation transformer
- 3 DSP controlled modular structure
- Separate main control board advantage for rectifier and inverter
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THD)
- High input power factor
- High efficiency up to 94%
- Selectable input/output voltage/frequency range
- Static and maintenance by-pass switch
- High charge current capacity
- Eco Mode operation (optional)
- Split by-pass input (dual input)
- Advanced TFT front panel (40-500kVA)
- Cold start function
- Compliant with IEC EN62040 directive
- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production

- Advanced control at the input
- 3 level battery protection
- Temperature compensated charge system
- Output current limitation
- Output DC leakage protection
- · Output short circuit and overload protection
- External REPO input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator
- 2 RS232 serial ports and 4 programmable dry contact outputs
- Optional 12 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service password-protected security
- 2 years warranty



MODEL	DS310HT														
Power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300	400	500
INPUT		· · · · · · · · · · · · · · · · · · ·				1									
Voltage		380/400 VAC 3F + N + Toprak, ± %20													
Frequency							50H	lz / 60Hz, ±	10%						
Power factor								≥ 0.99							
(THDI) (*)								≤ 3%							
By-pass voltage						38	0/400 VAC 3	8 Phase + N,	4 Wires, ± 10	0%					
Protection				l	Fuses, Volta	ge & Freque	ncy toleran	ce, Input po	wer limit, Pł	nase sequen	icy indicato	r			
OUTPUT															
Power (kW)	9	13,5	18	27	36	54	72	90	108	144	180	225	270	360	400
Power factor							C	.9							0.8
Voltage							380/40	00 VAC 3F + I	N, ± %1						
Frequency								50Hz / 60Hz	:						
Frequency tolerance						Line s	ynchronize	d: ± 2% / Fre	e running: ±	0.1%					
Efficiency								up to 94%							
Crest factor								3:1							
Overload protection					100% - 1	25% load: 1	0 min, 125	% - 150% loa	ad: 1 min, - >	• 150% load	: by pass				
Other protections				Adv	anced short	t circuit, Volt	age tolerar	ice, DC balar	nce, Regene	rative load,	Current limi	iting			
Voltage THD							≤ 2% (at 100% line	ar load)						
BATTERIES															
Туре							VRLA	AGM / GEL /	/ NiCd						
Nominal voltage								\pm 336 VDC							
Number of batteries							2	2x28 batterie	S						
Float charge voltage								\pm 378 VDC							
End of discharge voltage								\pm 280 VDC							
Battery cabinet								External							
Battery ambient temp.								25°C							
Protections				3 lev	vel alarms, B	Battery fuses	, Charging	current limit	, Temperatu	re compens	ation (optio	onal)			
Automatic testing						S	tandard ev	ery 72 hours	(adjustable)					
GENERAL															
Standards							EN62040-1	, EN62040-2,	EN62040-3						
User interface		nes LCD par 5 vector but							TFT panel, 5	vector butt	tons, Buzzer				
Indicators					P-N voltage	e, P-P voltag	e, Current, I	Power, Crest	Factor, Freq	uency, PF, S	ervice Time				
Advanced				Self di	agnostics, 3	8 maintenan	ce time ind	icators, Calik	pration over	RS232, ope	rating hour	meter			
Communication					2xRS23	32 serial por	ts, 4 standa	rd and 8 opt	ional DRY co	ontact alarm	n relays				
Inputs						EPO input,	Interactive	battery par	el input, Ge	nset input					
Genset kit							Standa	rd (program	mable)						
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		1040x4	00x815		1	440x515x85	5		1770x8	25x855		19	00x1250x10	55	2020x2250x770
OPTIONS															
Different input/output voltage								Please ask							
Transformer						Galvan	ic isolation	transformer	at input (op	tional)					
Software				T-Mo	n Admin M	ulti UPS mo	nitoring 10-	50-100-200	clients, T-Mo	on Server 50	0-100-200 cl	lients			
Adaptors			SNMP,	RS485, Rem	note monito	oring panel,	MODBUS (R	S485 or TCP	/IP), TCP/IP,	GSM/GPRS I	Modem, Co	mport mult	iplexer		
Parallel operation								Up to 8 unit	5						





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.

- 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

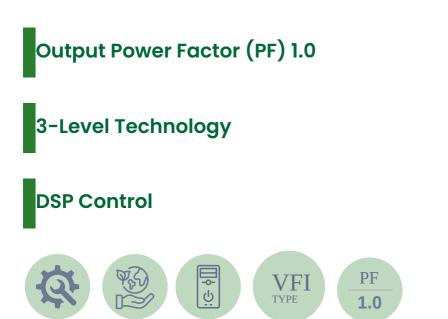


MODEL	DS310SH	DS315SH	DS320SH	DS330SH									
Power (kVA)	10	15	20	30									
INPUT													
Voltage		380/400 VAC 3P + N + G ± 20%											
Frequency	50Hz / 60Hz, ± 10%												
Power factor (at 100% load)		≥ 0.99											
THDI (at 100% load)		≤ 4% (depends on mai	ns input conditions)										
By-pass voltage		380/400 VAC 3P + 1											
Voltage distortion		≤ 10											
Protection		Fuses, Voltage & Fre	quency Tolerance										
OUTPUT													
Power (kW)	9	13.5	18	24									
Power factor (*)		0.9		0.8									
Voltage		380/400 VAC 3	SP + N, ± 1%										
Frequency		50Hz /	60Hz										
Frequency tolerance		Line synchronized: ± 2%	/ Free running: ± 0.1%										
Efficiency (at 100% load)		949	6										
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 l	imiting									
Voltage THD		≤ 2% (at 100%	linear load)										
BATTERIES													
Туре		VRLA AGM /	GEL / NiCd										
Number of batteries		60 (± 30) k	oatteries										
Float charging voltage		± 405 VDC (a											
End of discharge voltage		± 300 VDC (a											
Battery cabinet		External (attached cabine	t at the bottom of UPS)										
Battery ambient temperature		25°	c										
Battery protection	3 le	vel alarms, Battery fuses, Charging current	limit, Temperature compensation (optic	onal)									
Automatic battery test		Standard: every 72 h	nours (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.) / 11	70x300x800 (with 7-9ah batt.)										
OPTIONS													
Different input / output voltage	Please ask												
Adaptors	SNMP, MODBUS, RS485, Remote panel												
Software	T-Mo	on Admin Multi UPS monitoring 10-50-100	-200 clients, T-Mon Server 50-100-200 cl	ients									
(*) Ask for 0.8 and 1.0 power factor													



Uninterruptible Power Supply (UPS)

3 : 3 PHASE **X SERIES** 100- 400 kVA





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

- 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



MODEL	DX3100	DX3100 DX3120 DX3160 DX3200 DX3250 DX3300 (soon) DX3400 (soon) 100 120 160 200 250 300 400											
Power (kVA)	100	120	160	200	250	300	400						
INPUT				·		·							
Voltage		380/400 VAC 3P + N + G ± 20% (at 100% load) / - 40% (at 70% load)											
Frequency				50Hz / 60Hz, ± 10%									
Power factor				≥ 0.99									
THDI (*)				≤ 3%									
By-pass voltage			380/400	/AC 3 Phase + N, ± 10 (a	djustable)								
Voltage distortion				≤ 10%									
Protection		Fuses	, Voltage & Frequency to	olerance, Input power lir	nit, Phase sequency ind	icator							
OUTPUT													
Power (kW)	100	120	160	200	225	300	400						
Power factor (**)		1.	0	1	0.9	1	0						
Voltage				380/400 VAC 3F + N, ± %	1	1							
Frequency				50Hz / 60Hz									
Frequency tolerance			Line synchronized	d: ± 2% (adjustable) / Fre	e running: ± 0.1%								
Efficiency	up to	95.5%			up to 96.0%								
Crest factor			· · · · · · · · · · · · · · · · · · ·	3:1									
Overload protection		10	00% - 125% load: 10 mir	n, 125% - 150% load: 1 m	in, - > 150% load: by pa	SS							
Other protections		Advance	d short circuit, Voltage t	olerance, DC balance, Re	egenerative load, Curren	t limiting							
Voltage THD				2% (at 100% linear load									
BATTERIES													
Туре				VRLA AGM / GEL / NiCd									
Nominal voltage				± 360 VDC									
Float / End of discharge voltage				± 405 VDC / ± 300 VDC									
Battery cabinet				External									
Battery ambient temperature				25°C									
Protections		3 level al	arms, Battery fuses, Cha	rging current limit, Temp	perature compensation (optional)							
Automatic testing			Stand	ard every 72 hours (adju	stable)								
GENERAL													
User interface			TFT touc	h panel, 5 vector buttor	is, Buzzer								
Indicators		P-N v	voltage, P-P voltage, Cui	rent, Power, Crest Facto	r, Frequency, PF, Service	Time							
Advanced		Self diagno	stics, 3 maintenance tin	ne indicators, Calibratior	over RS232, Operating	hour meter							
Communication			2xRS232 serial ports, 4 s	tandard and 8 optional	DRY contact alarm relays	5							
Inputs			EPO input, Inter	active battery panel inp	ut, 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	0% max. (non-condensir	ig)								
Altitude	< 1000m above sea level												
Acoustic noise	< 62dBA < 65 dBA < 67 dBA												
Weight (kg)	210	220	262	270	295	6	55						
Dimensions (mm) HxWxD			1440x475x890			1900x1	250x775						
OPTIONS													
Different input / output voltage				Please ask									
Transformer			Galvanic isolation	ransformer at the input	& output (external)								
Software		T-Mon Ad	min Multi UPS monitori	ng 10-50-100-200 client	s, T-Mon Server 50-100-2	200 clients							
Adaptors		SNMP, RS485, Remote	monitoring panel, MOD	BUS (RS485 or TCP/IP), T	CP/IP, GSM/GPRS Moden	n, Comport multiplexer							
Parallel operation				up to 8									
(*) Depending on power and inpu	t/output conditions												
(**) Please ask for PF 0.8 and 0.9													





3 : 3 PHASE **XT SERIES** 10- 80 kVA



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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.

- 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 warrantly



MODEL	XT310	XT315	XT320	XT330	XT340	XT360	XT380					
Power (kVA)	10	15	20	30	40	60	80					
INPUT	·											
Voltage	220/380 (230/400 VAC) 3P + N + G ± 15%											
By-pass voltage	220/380 (230/400 VAC) 3P + N ± 10%											
Input frequency			50H	z (60Hz on request) ±	10%							
OUTPUT												
Power (kW)	8	12	16	24	32	48	64					
Power factor			·	0,8								
Voltage				380/400 VAC 3P + N								
Voltage tolerance			St	atic: ± 1%, Dynamic: ±	5%							
Voltage recovery time				Max. 25ms								
Frequency				50Hz/60Hz								
Frequency tolerance			Line synch	ronized: \pm 2%, free run	ning: ± 0.1%							
Efficiency (at 100% load)		89-91%			90-9	92%						
Crest factor				3:1								
Overload protection		1	00%-125% load: 10 mir	n., 125%-150% load: 1 n	nin., >150% load: by pas	is						
Short circuit protection			Elect	ronic short circuit prote	ection							
Voltage THD			Linear lo	oad: < 2%, Non linear lo	ad: < 5%							
BATTERIES												
Туре			Sealed	Lead Acid - Maintenan	ce Free							
Number of batteries				30								
Float charging voltage				405 VDC								
End of discharge voltage				300 VDC								
Battery ambient temperature				25°C								
Battery protection			P	utomatic circuit break	er							
Battery test				Automatic/Manuel								
GENERAL												
Standards				EN 62040-1,EN62040-2	!							
Serial communication				Dry contacts & RS232								
Software			Т-Мо	n UPS Management Sol	ftware							
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	220 260 284 305 404 496 580										
Dimensions (mm) HxWxD		1150x505x655 1390x575x820 1450x720x820										
OPTIONS												
Different input / output voltage				Please ask								
Input transformer			Galvanic isolation tr	ansformer 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 rec	tifier)							
Communication			SNMP, MO	DBUS, Remote Mon. Pa	inel, 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





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.

- Output isolation transformer
- Up to 92% efficiency
- Static by-pass
- LCD front panel
- 128 elevents alarm memory (4000 alarms)
- RS232 and relay contacts
- Custom input and output voltage ranges

- SNMP compatible communication
- T-MON remote monitoring software
- 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



MODEL	XT3100	XT3120	XT3160	XT3200	XT3250	XT3300						
Power (kVA)	100	120	160	200	250	300						
INPUT												
Voltage		220/380 VAC (230/400 VAC) 3P + N + G ± 15%										
By-pass voltage		220/380 VAC (230/400 VAC) 3P + N ± 10%										
Input frequency		50Hz/60Hz ± 10%										
OUTPUT												
Power (kW)	80	96	128	160	200	240						
Power factor			0.	8								
Voltage			380/400 V	AC 3P + N								
Voltage stability			Static: ± 1%, D	ynamic: ± 5%								
Voltage recovery time			Max.2	25ms								
Frequency			50Hz/	60Hz								
Frequency tolerance			Line synchronized: $\pm 2^{\circ}$	%, free running: \pm 0.1%								
Efficiency (at 100% load)			90-	92%								
Crest factor			3:	1								
Overload protection		100%-12	5% load: 10 min., 125%-150	% load: 1 min., >150% load	l: by pass							
Short circuit protection			Electronic short o	ircuit protection								
Voltage THD			Linear load: < 2%, N	on linear load: < 5%								
BATTERIES												
Туре			Sealed Lead Acid -	Maintenance Free								
Number of batteries		3	0		3	32						
Float charging voltage		405	VDC		432	VDC						
End of discharge voltage		300	VDC		320	VDC						
Battery ambient temperature			25	PC								
Battery protection			Automatic ci	rcuit breaker								
Battery test			Automatio	c/Manuel								
GENERAL												
Standards			EN 62040-1,	EN62040-2								
Serial communication			Dry contac	ts & RS232								
Software			T-Mon UPS Manag	gement Software								
Over temperature protection			Electi	ronic								
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			Pleas	e ask								
Input transformer		Galv	anic isolation transformer a	t the input (in external cab	inet)							
Input THD	10	% (with 12 Pulse or 18 Pulse	e rectifier, according to UPS	range), 5% (with 18 Pulse r	ectifier, + filter), up to 100k	(VA						
Input power factor			0.95 - 0.98 (with 18 Pulse	rectifier), up to 100kVA								
Communication			SNMP, MODBUS, Remo	ote Mon. Panel, RS485								
Parallel operation (please ask)			Up to 4	units								
Battery temperature compensation			Opti	onal								

Hekpower

PRODUCT GROUPS

Uninterruptible Power Supply (UPS)

Automatic Voltage Regulators

Static Transfer Switches

Medical Isolated Power Systems

Inverter

Frequency Converters





3:3 PHASE **33 SERIES**



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.

- 3 phase input 3 phase output
- Wide power and voltage interval
- High reliability thanks to Microprocessor and
 Overcurrent and overload protection Smart Driver
- Fast Regulation
- High efficiency

- Load transfer to Bypass via pole charge switch
- Safe and economic usage
- Digitally displayed status, input & output measurements
- Optional 0.8 output power factor (PF) option



ni, nak arana ki na ki n	MODEL	T\/D 22010	T\/D 22015	T\/D 22022	TVD 33030				T\/D 22100	T\/D22120	TVD 22150	
a set of the se												
na charance hine and in a constrained in a second of the analysis of the analy	Power (kVA)	10,5	15	22,5	30	45	60	75	100	120	150	
A.G.S VICEUne require for query of to protection16.82436487296120161192240Correct at input on a first on	GİRİŞ											
Line input protection16.82436487296120161192240OUTPUTOutput voltageISSE USE USE USE USE USE USE USE USE USE	In. vol. correct. interval				28	35 - 440 VAC (Opt	ional: 190-415 VA	.C)				
Internation of the second se	Operation frequency					476	55 Hz					
OutputOutput voltage380 VAC RMS ± 1%Overloading	Line input protection				Overc	urrent, Low and H	ligh voltage prot	ection				
Output voltage Output voltage	Current at input	16.8	24	36	48	72	96	120	161	192	240	
OverlaadingCorrection speed $$	OUTPUT											
Correction speed Image: Second S	Output voltage					380 VAC I	RMS ± 1%					
Interview of the circuit is interview of the circuit is interview. Operating of the circuit is interview of the circuit is interview. Operating of the circuit is interview of the circuit is interview. Operating of the circuit is interview of the circuit is interview. Operating of the circuit is interview of the circuit is interview. Operating of the circuit is interview. Operating of the circuit is interview. Operating of the circuit is interview. Operating of the circuit is interview. Operating of the circuit is interview. Operating of the circuit is interview. Operating the preature t is interview. t is interview. Operating th	Overloading					10 Sec. 2	00% Yük					
Output protection Protection by open field by open fi	Correction speed					~ 90 Va	lt / Sec.					
Current at output12.6182736547290121144180GENERALWorking principleCoolingGenerationServo Motor, Kiroprocessor Controlled, Full AutomaticCoolingMeasured Value Monitor.TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorizationTotal efficiencyProtection levelIP 20 // IP54 (Optional)Protection level	Upturn period					~ 90 Volt / Sec.	(275 - 430VAC)					
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 -10°C / 50°C Storage temperature -25°C / 60°C Relative humidity <%90, DIN (40040)	Output protection			Prot	tects load by ope	ning the circuit v	vhen overburden	, short circuit occ	curs.			
Working principle Servo Motor, Microprocessor Controlled, Full Automatic Cooling Smart Fan System Measured Value Monitor. TRUE RMS Panel Voltmeter (74x74mm) output voltage monitorization Total efficiency >96 % Mechanic By-pass Available Protection level IP 20 // IP54 (Optional) ENVIRONMENTAL Cooring Operating temperature -10°C / 50°C Relative humidity <99, DIN (40040)	Current at output	12.6	18	27	36	54	72	90	121	144	180	
Coling Measured Value Monitor. Measured Value Monitor. TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization Total efficiency >96 % Mechanic By-pass Available Protection level Image: Coling Coli	GENERAL											
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 Operating temperature -25°C / 60°C Relative humidity <<000 m.	Working principle				Servo Moto	or, Microprocesso	or Controlled, Full	Automatic				
Total efficiency >96 % Mechanic By-pass Available Protection level IP 20 // IP 54 (Optional) ENVIRONMENTAL -10°C / 50°C Operating temperature -10°C / 50°C Storage temperature -25°C / 60°C Relative humidity <%900, DIN (40040)	Cooling					Smart Fa	n System					
Mechanic By-pass Available Protection level IP 20 // IP54 (Optional) ENVIRONMENTAL Protection level Operating temperature -10°C / 50°C Storage temperature -25°C / 60°C Relative humidity <<<>>900 JIN (40040) Atitude <2000 m.	Measured Value Monitor.			TRUE RMS	5 Panel Voltmeter	r (74x74mm) outj	put voltage and l	ine voltage moni	torization			
Protection level IP 20 // IP54 (Optional) ENVIRONMENTAL Operating temperature -10°C / 50°C Storage temperature -25°C / 60°C Relative humidity <	Total efficiency					> 9	6 %					
ENVIRONMENTAL Operating temperature Storage temperature Relative humidity Altitude Acoustic level	Mechanic By-pass					Avai	lable					
Operating temperature -10°C / 50°C Storage temperature -25°C / 60°C Relative humidity <9%90, DIN (40040)	Protection level					IP 20 // IP54	4 (Optional)					
Storage temperature -25°C / 60°C Relative humidity <%90, DIN (40040)	ENVIRONMENTAL											
Relative humidity < %90, DIN (40040)	Operating temperature					-10°C	/ 50°C					
Altitude < 2000 m.	Storage temperature					-25°C	/ 60°C					
Acoustic level < 50 dB (1m ²)	Relative humidity					< %90, DI	N (40040)					
	Altitude					< 200	00 m.					
Standards CE / ISO 9001	Acoustic level					< 50 dl	B (1m²)					
	Standards					CE / IS	O 9001					
DIMENSIONS												
WxDxH (cm) 38x60x66 51x68x129 60x99x159 60x93x171	WxDxH (cm)		38x60x66		51x68	8x129		60x99x159		60x9	3x171	
Weight (kg) 110 135 160 170 200 222 280 310 400 425	Weight (kg)	110	135	160	170	200	222	280	310	400	425	
Optional 0.8 output power factor (PF) option												



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 VA	AC (Optional: 1	90-415 VAC)					
Operation frequency							4765 Hz						
Line input protection					٥v	vercurrent, Lo	w and High vo	ltage protect	ion				
Current at input	323	404	484	646	808	968	1292	1616	2020	2424	3232	4040	4848
OUTPUT													
Output voltage						380 / 40	00 / 415 VAC R/	MS ± 1%					
Overloading						10) Sec. 200 % Lo	ad					
Correction speed							~ 90 Volt / Sec						
Upturn period						~ 90 Volt /	′ Sec. (160 VAC	- 250 VAC)					
Output protection				Pro	tects load by	opening the	circuit when o	verburden, sh	ort circuit occ	urs.			
Current at ouput	243	303	363	484	606	729	972	1215	1515	1818	2430	3030	3645
GENERAL													
Working principle					Servo M	Notor, Microp	rocessor Conti	rolled, Full Au	tomatic				
Cooling						Si	mart Fan Syste	m					
Measured value monitor				TRUE RM:	5 Panel Voltm	eter (74x74m	ım) output vol	tage and line	voltage moni	torization			
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 (4004	40)					
Altitude							< 2000 m.						
Acoustic level							< 55 dB (1m ²)						
Standards							CE / ISO 9001						
DIMENSIONS													
WxDxH (cm)		139x66x177		175x80x200	180x12	22x175	210x144x208	210x214x185	240x214x208	240x264x188	240x264x208	pleas	e ask
Weight (kg)	1050	1100	1200	1650	2000	2100	2900	3450	3900	4300	6000	pleas	e ask
Optional 0.8 output po	wer factor (F	PF) option											



FULL AUTOMATIC VOLTAGE REGULATOR

1:1PHASE **11 SERIES**



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.

- 1 phase input 1 phase output
- Wide power and voltage interval
- High reliability thanks to Microprocessor and
 Overcurrent and overload protection Smart Driver
- Fast Regulation
- High efficiency

- Load transfer to Bypass via pole charge switch
- Safe and economic usage
- Digitally displayed status, input & output measurements
- Optional 0.8 output power factor (PF) option



MODEL TVR 1103 TVR 1105 TVR 1110 TVR 1110 TVR 1120 <	50 50 303										
INPUT In vol. correct. interval In vol. correct. interval vol. correct. interval vol. correct. in vol. correct. in vol. vol. / Sec. interval											
In, vol. correct. IntervalIntervalIn, vol. correct. Interval155 - 265 VAC (Optional)Operation frequency155 - 265 VACOperation frequency47_65 HzLine input protectionOvercurrent. Low and High voltage protectionCurrent at input1830466191121152182242Output voltage2000000000000000000000000000000000000	303										
In. vol. operating. interval155 - 265 VACOperation frequency4765 HzLine input protectionOvercurrent, Low and High voltage protectionCurrent at input1830466191121152182242242OUTPUTOutput voltage200 / 230 / 240 VAC RMS ± 1%OverloadingCorrection speed	303										
Operation frequency 47_65 Hz Une input protection Verture tow and High voltage protection Current at input 18 30 46 61 91 121 152 182 242 242 Output voltage	303										
Line input protectionOvercurrent, Low and High voltage protectionCurrent at input1830466191121152182242242OUTPUTOutput voltage2 20 / 230 / 240 VAC RMS \pm 1%OverloadingCorrection speed- 90 Volt / Sec.Output protectionProtects load by opening the circuit view overloaden, short circuit occursCurrent at output142334466891114136182GenerationFortects load by opening the circuit view overloaden, short circuit occursCorrectionCenterationCorrectionProtects load by opening the circuit view overloaden, short circuit occursCurrent at output142334466891114136182CoolingServo Motry Microprocessor Controlled, Full AutomaticCoolingMeasured value monitor.TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorizationTotal efficiency> 96%Mechanic By-pass	303										
Current at input1830466191121152182242OUTPUTOutput voltage $220/230/240$ VAC RMS \pm 1%Overloading 10 Sec. 200% Load 10 Sec. 200% LoadCorrection speed -90 Volt / Sec.Upturn period -90 Volt / Sec. (160 VAC - 260 VAC)Output protectionProtects load by opening the circuit when overburden, short circuit occursCurrent at output142334466891114136182GENERALWorking principleServo Motor, Microprocessor Controlled, Full AutomaticCoolingTRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorizationTotal efficiency $> 96\%$ Mechanic By-pass $Vailable$	303										
OUTPUT Output voltage 220/230/240 VAC RMS ± 1% Overloading 10 Sec. 200% Load Correction speed 90 Volt / Sec. Upturn period 90 Volt / Sec. (160 VAC - 260 VAC) Output protection Protects load by opening the circuit when overburden, short circuit occurs Current at output 14 23 34 46 68 91 114 136 182 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	303										
Output voltage 220 / 230 / 240 VAC RMS ± 1% Overloading 10 Sec. 200% Load Correction speed ~ 90 Volt / Sec. Upturn period ~ 90 Volt / Sec. (160 VAC - 260 VAC) Output protection Protects load by opening the circuit when overburden, short circuit occurs Current at output 14 23 34 46 68 91 114 136 182 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											
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Correction speedCorrection speed $\sim \circ 90 \text{ Volt / Sec.}$ Upturn period $\sim \circ 90 \text{ Volt / Sec.}$ (160 VAC - 260 VAC)Output protectionProtects load by opening the circuit when overburden, short circuit occursCurrent at output142334466891114136182GENERALWorking principleServo Motor, Microprocessor Controlled, Full AutomaticCoolingTRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorizationTotal efficiency> 96%Mechanic By-passLine Voltage Intervention											
Uptum 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 GENERAL Working principle Servo Motor, Microprocessor Controlled, Full Automatic Cooling Servo Motor, Microprocessor Controlled, Full Automatic Measured value monitor. TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization Total efficiency > 96% Mechanic By-pass Hermiter Serve Motor Serve Motor											
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 GENERAL Working principle Servo Motor, Microprocessor Controlled, Full Automatic Cooling Servo Motor, Microprocessor Controlled, Full Automatic Measured value monitor. TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization Total efficiency Available Mechanic By-pass Available											
Current at output142334466891114136182GENERALWorking principleServo Motor, Microprocessor Controlled, Full AutomaticCoolingSmart fan systemMeasured value monitor.TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorizationTotal efficiency>Mechanic By-pass											
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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	227										
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											
Measured value monitor. TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization Total efficiency > 96% Mechanic By-pass Available											
Total efficiency > 96% Mechanic By-pass Available											
Mechanic By-pass Available											
Protection level IP 30 // IP 54 (Octional)											
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 50x62x8											
Weight (kg) 28 30 34 47 55 95 110 130 155	5										



FULL AUTOMATIC VOLTAGE REGULATOR

1:1PHASE **11 SERIES**



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 withincertain 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 variacto which it is mechanically connected. This suppliedvoltage is transferred to the differential auxiliary transformer (booster transformer). As a result, electronically controlled stable voltage is provided in the output voltage againstvoltage 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.

- 1 phase input 1 phase output
- Wide power and voltage interval
- High reliability thanks to Microprocessor and
 Overcurrent and overload protection Smart Driver
- Fast Regulation
- High efficiency

- Load transfer to Bypass via pole charge switch
- Safe and economic usage
- Digitally displayed status, input & output measurements
- Optional 1.0 output power factor (PF) option



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	4765 Hz									
Line input protection	Overcurrent, Low and High voltage protection									
Current at input	16	24	36	48	72	96	120	144	192	240
ουτρυτ										
Output voltage	220 / 230 / 240 VAC RMS ± 1%									
Overloading	10 Sec. 200% Load									
Correction speed	~ 90 Volt / Sec.									
Upturn period	~ 90 Volt / Sec. (160 VAC - 260 VAC)									
Output protection	Protects load by opening the circuit when overburden, short circuit occurs									
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

Hekpower

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



Hot-Swappable

Microprocessor Control

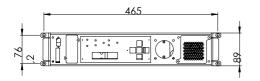
2000 Series 1 phase, 2 pole static transfer switch transfers uninterruptedly critical loads to either of two independent AC power lines. The system monitors two AC inputs. If any of them goes out of the specified tolerance, it transfers the critical load to the other. By increasing the energy quality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

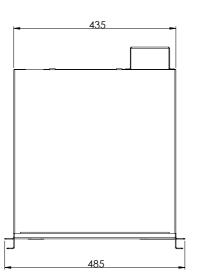
- Full digital control with microprocessor controlled structure
- 2 AC inputs with 1 phase and neutral switching
- Easy installation and maintanance
- Compact and rack type design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure (≤4ms- for sencronised sources)
- Selectable preffered source
- Fuse-free construction with a robust, high reliability SCR
- · Digitally controlled system set points
- Programmable synchronized an unsynchronized transfers

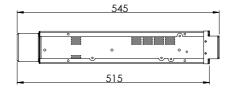
- Isolation protection between sources with switched neutral
- Convenient and multifunctional front panel and diagnostic codes
- Transfer inhibit system over a certain current value
- Overload, over temperature and short circuit protections
- Convenience during maintenance and repair with Isolated
- Maintenance Bypass
- Remote monitoring of energy resources
- TCP / IP, SNMP, MODBUS and RS232 infrastructure for communication
- and Dry-contact interface
 - Internal cooling fans
 - Hot-swap feature (Optional)
 - Optional external AC power supply socket outlet
 - Optional SNMP adaptor

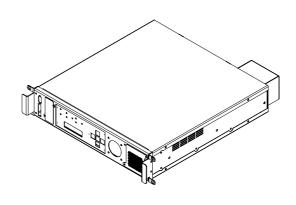


STS2032 - STS2063 STANDARD

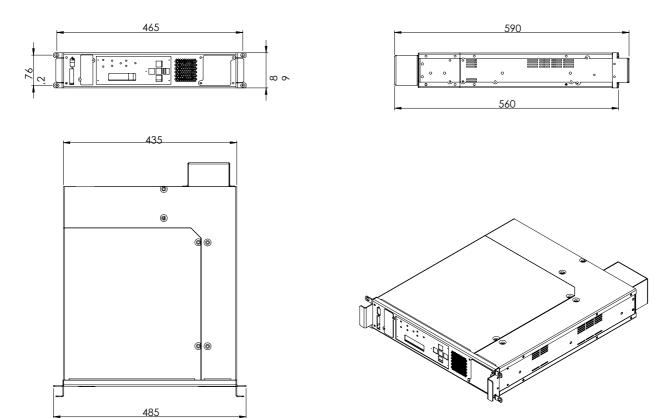








STS2032 - STS2063 HOT-SWAP





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							
	synchron							
Transfer control	with adjustable delay (non synchron)							
	zero current (non synchron)							
T ()	≤ 4 msec for synchronous sources							
Transfer time	≤ 10 msec for non-synchronous sources							
Switching type	1 phase + Neutral switching (2-Poles)							
Output current crest factor	3:1							
	0-100% continuous							
	101-150% 1 minute							
Admissible overload	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					
	2U (19"rack), Width = 4	3U (19"rack), Width = 485, Depth = 605mm						
Dimensions	2U (19"rack), Width = 44 (hot-	3U (19"rack), Width = 485, Depth = 645mm (hot-swap)						
Power cables connection	Clip-on terminals (on the rear panel)							









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.

- Full digital control with microprocessor controlled structure
- 2 AC inputs with 3 phase switching
- Easy installation and maintanance
- Compact design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure (≤4ms- for sencronised sources)
- Selectable preffered source
- Fuse-free construction with a robust, high reliability SCR
- · Digitally controlled system set points

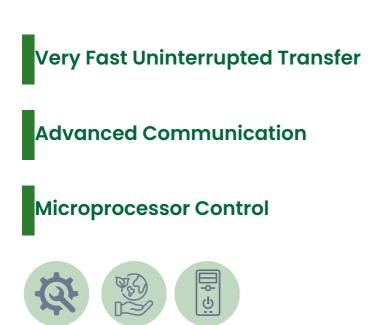
- Programmable synchronized and unsynchronized transfers
- Convenient and multifunctional front panel and diagnostic codes
- Transfer inhibit system over a certain current value
- Overload, over temperature and short circuit protections
- Convenience during maintenance and repair with Isolated Maintenance Bypass
- Remote monitoring of energy resources
- TCP / IP, SNMP, MODBUS and RS232 infrastructure for communication
- Dry-contact interface
- Internal cooling fans
- Optional external AC power supply socket outlet
- Optional SNMP adaptor



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			1						
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								
	synchron								
Transfer control	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				
		0% - 100% continuous							
Admissible overload	101% - 150% 1 min.								
Aumssible overload	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			1770x6	80x585		1905x915x725	1900x1250x850









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 maintanance
- Compact design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure (≤4ms- for sencronised sources)
- Selectable preffered source
- Fuse-free construction with a robust, high reliability SCR
- Digitally controlled system set points
- Programmable synchronized c
 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
- and 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'	I			
Transfer methods available				Auto	matic / Manual / Re	mote			
					synchron				
Transfer control				with adj	ustable delay (non s	ynchron)			
				zero	current (non synch	ron)			
Transfer time				< 4 ms	n for synchronous s	ources			
				< 10 msn	for non-synchronou	us sources			
Switching type				3 pł	ase + Neutral switc	hing			
Output current crest factor					3:1				
					0% - 100% continuc	ous			
Admissible overload					101% - 150% 1 min				
				15	1% - 200% 10 secor	nds			
					> 200% 250 msec				
Protections		Output ov	erload and short ci	rcuit protection, Ov	ertemperature prot	ection, Backfeed pr	otection, SCR fault	protection	
LCD panel and mimic					Standard				
Communication				RS232 standa	rd, RS485 optional, S	SNMP optional			
TCP/IP connection					Optional				
Dry contacts				4 pro	grammable relay ou	itputs			
Two serial ports					Optional				
Temperature sensor				Standard fo	or internal cabinet te	emperature			
ENVIRONMENTAL DATA									
Cooling				Forced	d cooling (redundan	t fans)			
Operating temperature					0°C - 40°C				
Storage temperature					-10°C up to +50°C				
Relative humidity				90%	max. (non condens	sing)			
Protection degree					IP20				
Standards				E	N62310-1, 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			1770x6	80x585		1905x915x725	1900x1250x850

Hekpower

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 is 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
- Surgery Preparation Room
- Intensice Care Units
- Anesthesia Room

- Cardiac Catheterization Rooms
- Angiographic Surgery Rooms
- Premature Baby Rooms

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PRODUCT GROUPS

Uninterruptible Power Supply (UPS) Automatic Voltage Regulators Static Transfer Switches Medical Isolated Power Systems Inverter

Frequency Converters







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

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



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 lineer load)
Load power factor	0.8
GENERAL	
Power module	IGBT or IPM module
Front panel	Alphanumeric LCD 2x16 characters
Control buttons	3 or 5 buttons
Bypass	Available as option
Bypass isolation	Available as option
Parallel operation	Available as option (up to 4 devices)
Alarm buzzer	Available
Remote REPO input	Available
RS232 interface	Available
Dry contact outputs	Available
DC input protection	3 level alarms

Hekpower

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





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 hormonic distortion (THDI)
- · High input power factor
- High efficiency up to %95
- Selectable input/output frequency range within 50-60Hz Optional SNMP, MODBUS and Remote Monitoring Panel (For only DS300HC-60 models)
- High output power factor (PF:1.0)
- Advanced control and protection at input
- Current limititation at output, DC leakage, short circuit and Conforms to CE, TSE and GOST standards overload protection
- Advanced TFT front panel (For 40kVA and above) (*)
- · Advanced diognostic, easy monitoring and service intervention

- 512 event logs (46.000 alarm) (*)
- Clock and calendar (battery supported)
- Advanced communication
- 2 RS232 serial ports and programmable 4 dry contact outputs (12 contacts optional) (*)
- External REPO input
- Advanced remote control features
- Security with user and centralized service password (OTP)
- Compliant with IEC EN62040 directive
- ISO9001, ISO14001 compilant production
- 2 years warranty

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



TECHNICAL SPECIFICATION COMPARISION TABLE

	DS30(00HC-60	DS30(0HTC-60	DS30(0TC-400
	60Hz 38	30-400VAC	60Hz	208VAC	400Hz	z 208VAC
	10-30kVA	40-200kVA	10-30kVA	40-200kVA	10-30kVA	40-200kVA
2 Line LCD Display					✓	✓
4 Line LCD Display	V		\checkmark			
4.3″ TFT Display		\checkmark		✓		
Mimic LED Diagram	✓		✓		✓	✓
Alarm Logging (512)	V	\checkmark	\checkmark	✓		
Alarm Logging (128)					✓	✓
RS232 Serial Port					V	✓
2xRS232 Serial Port	V	\checkmark	\checkmark	✓		
3 x Dry Contacts					✓	✓
4 x Dry Contacts	V	\checkmark	\checkmark	✓		
Galvanic Isolation (Inverter Transformer)			✓	✓	✓	✓
Optional SNMP MODBUS, GSM	~	\checkmark	\checkmark	✓	✓	✓
Optional + 8 Dry Contacts	V	\checkmark	✓	✓		
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)*			22	0/380 VAC 3P + N + G ± 2	20%			
Frequency**				50Hz ± 10%				
Power factor (@100% load)				≥ 0,99				
THDI				≤ 3%				
Rectifier soft start time				Minimum 3 sec.				
Protections		Fuses, Voltage	and Frequency toleran	ce, Input power limit, Pha	ase sequency indicator, li	nput 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% (dynam	iic load)			
Recovery time (Dynamic load)				< 50 ms				
Efficiency (@100% load input voltage tolerance \pm 1,5% transformer excluded)	≥ 93	8,0%		≥ 93	3,5%		≥ 94,8%	
Crest factor (@100% load)				3:1				
Overload capacity		5 min. a	t 125% load, 40ms at 1	50% load			, 60sec. at 150% load, 200% load	
Protections		Advanced short circu	uit, Voltage tolerance p	rotection, DC balance, Re	generative load, Current	limiting protections		
GENERAL								
Standards			EN63	2040-1, EN62040-2, EN62	040-3			
User interface	4 lines	s LCD panel, Mimic led p	oanel, 5 vector buttons,	Buzzer	TFT p	anel, 5 vector buttons, E	Buzzer	
Indicators		P-N	voltage, P-P voltage, Cu	irrent, Power, Crest Factor	r, Frequency, PF, Service	time		
Advanced		Self diagno	ostics, 3 maintenance ti	me indicators, Calibratior	over RS232, Operating	hour meter		
Communication			2xRS232 serial p	ort, 4 standard and 8 opt	ional dry contacts			
Inputs			EPO input, Inter	active battery breaker in	put, Genset input			
Software			Standard T-Mon	software (3 clients + 1 ser	rver management)			
Alarm logging			Stand	ard: with time & date 512	events			
Other protections	Load protec			Overcurrent, Overheat, I t DC leakage, Short circui			d frequency,	
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 (30	00m: 88% rated power v	vith 12% derating)		
Acoustic noise		< 57	'dBA			< 62dBA		
Net weight (kg)	< 87	< 87	< 91	< 100	< 173	< 197	< 209	
Dimensions (mm) HxWxD		1040x4	00x815			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, MOD	BUS (RS485 or TCP/IP), T	CP/IP, GSM/GPRS Modem	n, Comport multiplexer		
(*) Please ask for different options.								
(**) DS300HC-60 series 50Hz input	t -> 60Hz output conver	ters can also be used as	60Hz input -> 50Hz ou	tput by adjusting parame	eters.			



DS300XC-60 TECHNICAL SPECIFICATIONS

MODEL	DS3100XC-60	DS3120XC-60	DS3160XC-60	DS3200XC-60				
Power	100	120	160	200				
(kVA) INPUT								
Voltage (ui/Ui)*		220/380 VAC 3P + N + G ± 20% (6	@ 100% load) / - 40% (@ 70%					
Frequency**		load) 50Hz	± 10%					
Power factor (@ 100% load)		≥ 0	.99					
THDI		≤∃	3%					
Rectifier soft start time		Minumum 3 sec.						
Protections		Fuses, Voltage and Frequency tolerance, Ir	nput power limit, Phase sequency					
OUTPUT		indicator						
Power (kW)	100	120	160	200				
Power factor		1,0 (0,8 and 0	0,9 Optional)					
Output current rated value	152	182	243	304				
Voltage (uo/Uo)*	220/380VAC 3P + N +							
Voltage THD		G ≤ 2% (lin	ear load)					
Frequency**		60Hz :	± 0.1%					
Output voltage tolerance		± 1% (linear load) =	± %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	3:1					
Overload capacity		10 min. @125% load	: 1 min. @150% load					
Protections	Advanced sho	ort circuit, Voltage tolerance protection, DC	balance, Regenerative load, Current limit	ing				
GENERAL	protections							
Standards		EN62040-1, EN62	040-2, EN62040-3					
User interface		TFT panel, 5 vecto	or buttons,					
Indicators		Buzzer P-N voltage, P-P voltage, Current, Power	, Crest Factor, Frequency, PF, Service					
Advanced	Self	time diagnostics, 3 maintenance time indicators	, Calibration over RS232, Operating hour					
Communication	mete	er 2xRS232 serial port, 4 standar	d and 8 optional dry contacts					
Inputs		EPO input, Interactive batter	y breaker input, Genset input					
Software		Standard T-Mon software (3 cl						
Alarm logging		management) Standard: with time	e & date 512					
Other protections		events of failure, Power module overheat, Overcu iency, Phase loss protection, Output DC lea						
Temperature		0°C +40°C (operation)	/ -15°C +45°C					
range Protection degree*		(storage)	20					
Relative humidity		90% max. (noi	n-condensing)					
Altitude	≤ 1000m: 10	00%; > 1000m: Maximum 0.6% derating p	er 100m (3000m: 88% rated power with 12	2% derating)				
Acoustic noise	< 62	2 dBA	< 65	dBA				
Net weight (kg)	210	220	262	270				
Dimensions (mm) HxWxD		1440x4	75x890					
OPTIONS								
Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree		Pleas	e ask					
Galvanic isolation transformer at input/output		Optional a	is external					
Adaptors		emote monitoring panel, MODBUS (RS485 (or TCP/IP), TCP/IP, GSM/GPRS Modem, Con	nport				
(*) Please ask for different	multiplexer							
options. (**) DS300XC-60 series 50Hz inpu	t -> 60Hz output converters can also be u	sed as 60Hz input -> 50Hz output by adjus	ting 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 ± 2	0%				
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				$60Hz \pm 0.25\%$					
Voltage tolerance			± 1% (I	inear load) ± 5% (dynam	ic load)				
Recovery time (Dynamic load)				< 50 ms					
Output isolation transformer			Galvanic isolation tra	nsformer 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)			1	3:1			1		
Overload capacity		5 mi	n. @125%, 40ms @150%	load			l, 60sec. at 150% load, 200% load		
Protections		Advanced short circo	uit, Voltage tolerance pr	otection, DC balance, Re	generative load, Current	t limiting protections			
GENERAL									
Standards			EN62	040-1, EN62040-2, EN62	040-3				
Standards User interface	4 line	LCD panel, Mimic led p				anel, 5 vector buttons, I	Buzzer		
	4 line		anel, 5 vector buttons, E		TFT p		Buzzer		
User interface	4 line	P-N	anel, 5 vector buttons, E voltage, P-P voltage, Cu	uzzer	TFT p r, Frequency, PF, Service	time	Buzzer		
User interface Indicators	4 line	P-N	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin	uzzer rrent, Power, Crest Factor	TFT p , Frequency, PF, Service over RS232, Operating	time	Buzzer		
User interface Indicators Advanced	4 line	P-N	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po	uzzer rrent, Power, Crest Factor ne indicators, Calibration	TFT p , Frequency, PF, Service over RS232, Operating onal dry contacts	time	Buzzer		
User interface Indicators Advanced Communication	4 line	P-N	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial pc EPO input, Intera	uzzer rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti	TFT p , Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input	time	Buzzer		
User interface Indicators Advanced Communication Inputs		P-N Self diagno	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial pc EPO input, Intera Standard T-Mon s Standa	uzzer rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti nctive battery breaker inp oftware (3 clients + 1 ser rd: with time & date 512	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events	time hour meter			
User interface Indicators Advanced Communication Inputs Software		P-N Self diagno	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standa ower module overheat,	uzzer rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser	TFT p , Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque	time hour meter ency, Output voltage an			
User interface Indicators Advanced Communication Inputs Software Alarm logging		P-N Self diagno	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standa ower module overheat, loss protection, Output	uzzer rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser ord: with time & date 512 Overcurrent, Overheat, Iu	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote	time hour meter ency, Output voltage an			
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections		P-N Self diagno	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standa ower module overheat, loss protection, Output	uzzer rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, In DC leakage, Short circui	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote	time hour meter ency, Output voltage an			
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range		P-N Self diagno	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standa ower module overheat, loss protection, Output	Suzzer rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, In DC leakage, Short circui (operation) / -15°C +45°	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote	time hour meter ency, Output voltage an			
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range Protection degree*		P-N Self diagno ction in case of failure, P Phase	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standa ower module overheat, loss protection, Output 0°C +40°C	rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, In DC leakage, Short circui (operation) / -15°C +45° IP20	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote C (storage)	time hour meter ency, Output voltage an ections			
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range Protection degree* Relative humidity		P-N Self diagno ction in case of failure, P Phase ≤ 1000m: 100%; :	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standa ower module overheat, loss protection, Output 0°C +40°C	rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, lu DC leakage, Short circui (operation) / -15°C +45°C IP20 20% - 90%	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote C (storage)	time hour meter ency, Output voltage an ections with 12% derating)			
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise Net weight (kg)	Load protec	P-N Self diagno ction in case of failure, P Phase ≤ 1000m: 100%; : idBA 198,5	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standard T-Mon s Standard T-Mon s Standard T-Mon s Standard -Mon s > 1000m: Maximum 0.64 244	rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser oftware (3 clients + 1 ser ard: with time & date 512 Overcurrent, Overheat, In DC leakage, Short circui (operation) / -15°C +45° IP20 20% - 90% % derating per 100m (30	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote C (storage)	time hour meter ency, Output voltage an ections with 12% derating) < 6: 457	d frequency,		
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise	Load protect	P-N Self diagno ction in case of failure, P Phase ≤ 1000m: 100%; : idBA 198,5	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standard T-Mon s Standard ower module overheat, loss protection, Output 0°C +40°C	rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, II DC leakage, Short circui (operation) / -15°C +45°C IP20 20% - 90% % derating per 100m (30 < 60dBA	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote PC (storage) 00m: 88% rated power v	time hour meter ency, Output voltage an ections with 12% derating) < 62	d frequency,		
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise Net weight (kg)	Load protect	P-N Self diagno ction in case of failure, P Phase ≤ 1000m: 100%; : idBA 198,5	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standard T-Mon s Standard T-Mon s Standard T-Mon s Standard -Mon s > 1000m: Maximum 0.64 244	rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, II DC leakage, Short circui (operation) / -15°C +45°C IP20 20% - 90% % derating per 100m (30 < 60dBA	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote PC (storage) 00m: 88% rated power v	time hour meter ency, Output voltage an ections with 12% derating) < 6: 457	d frequency,		
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise Net weight (kg) Dimensions (mm) HxWxD	Load protect	P-N Self diagno ction in case of failure, P Phase ≤ 1000m: 100%; : idBA 198,5	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standard T-Mon s Standard T-Mon s Standard T-Mon s Standard -Mon s > 1000m: Maximum 0.64 244	rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, II DC leakage, Short circui (operation) / -15°C +45°C IP20 20% - 90% % derating per 100m (30 < 60dBA	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote PC (storage) 00m: 88% rated power v	time hour meter ency, Output voltage an ections with 12% derating) < 6: 457	d frequency,		
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise Net weight (kg) Dimensions (mm) HxWxD OPTIONS Different input/output voltage, Uninterruptible operation (battery included), Parallel	Load protect	P-N Self diagno ction in case of failure, P Phase ≤ 1000m: 100%; : idBA 198,5	anel, 5 vector buttons, E voltage, P-P voltage, Cu istics, 3 maintenance tin 2xRS232 serial pc EPO input, Intera Standard T-Mon s Standard T-M	rrent, Power, Crest Factor ne indicators, Calibration ort, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, lu DC leakage, Short circui (operation) / -15°C +45° IP20 20% - 90% % derating per 100m (30 < 60dBA 270	TFT p , Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote C (storage) 00m: 88% rated power w 393	time hour meter ency, Output voltage an ections with 12% derating) < 6: 457	d frequency,		
User interface Indicators Advanced Communication Inputs Software Alarm logging Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise Net weight (kg) Dimensions (mm) HxWxD OPTIONS Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree	Load protect	P-N Self diagno ction in case of failure, P Phase ≤ 1000m: 100%; : idBA 198,5 1040x4	anel, 5 vector buttons, E voltage, P-P voltage, Cu ostics, 3 maintenance tin 2xRS232 serial po EPO input, Intera Standard T-Mon s Standard T-Mon s Standard T-Mon s Standard T-Mon s Standard T-Mon s - 1000m: Maximum 0.64 244 00x815 Galvanic isola	rrent, Power, Crest Factor ne indicators, Calibration et, 4 standard and 8 opti active battery breaker inp oftware (3 clients + 1 ser oftware (3 clients + 1 ser rd: with time & date 512 Overcurrent, Overheat, In DC leakage, Short circui (operation) / -15°C +45° IP20 20% - 90% % derating per 100m (30 < 60dBA 270 Please ask	TFT p ; Frequency, PF, Service over RS232, Operating onal dry contacts out, Genset input ver management) events nput voltage and freque t, DC high, DC low Prote c (storage) 00m: 88% rated power v 393	time hour meter ency, Output voltage an ections with 12% derating) < 62 457 1440x515x855	d frequency, 2dBA 536		



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	100	120		200	230		
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 tol	erance, Input power limit, Phase se	equency indicator. Input contacto	r		
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			≤ 3% (linear load)				
Frequency			60Hz ± 0.25%				
Voltage tolerance		±	1% (linear load) ± 5% (dynamic loa	ad)			
Recovery time (Dynamic load)			< 50 ms				
Output isolation transformer		Galvanic isolatio	on transformer integrated into the	internal inverter			
Efficiency (@100% load input voltage tolerance \pm 1,5% transformer included)	Galvanic isolation transformer integrated into the internal inverter ≥ 92,6% ≥ 93,0%						
Crest factor (@ 100% load)			3:1				
Overload capacity		10 min. @12	5% load, 60sec. @150% load, 40ms	s @200% load			
Protections	Advar	nced short circuit, Voltage toleran	ce protection, DC balance, Regene	erative load, Current limiting prote	ections		
GENERAL							
Standards			EN62040-1, EN62040-2, EN62040-3	3			
User interface			TFT panel, 5 vector buttons, Buzze	r			
Indicators		P-N voltage, P-P voltag	e, Current, Power, Crest Factor, Free	quency, PF, Service time			
Advanced		Self diagnostics, 3 maintenan	ce time indicators, Calibration over	r RS232, Operating hour meter			
Communication		22xRS232 se	rial port, 4 standard and 8 optiona	l dry contacts			
Inputs		EPO input,	Interactive battery breaker input, C	Genset input			
Software		Standard T-N	Non software (3 clients + 1 server n	nanagement)			
Alarm logging		St	tandard: with time & date 512 ever	nts			
Other protections	Load protection in ca		heat, Overcurrent, Overheat, Input utput DC leakage, Short circuit, DC		oltage and frequency,		
Temperature range		0°C +-	40°C (operation) / -15°C +45°C (st	orage)			
Protection degree*			IP20				
Relative humidity			20% - 90 %				
Altitude	≤ 1	000m: 100%; > 1000m: Maximun	n 0.6% derating per 100m (3000m:	: 88% rated power with 12% derat	-		
Acoustic noise		< 67	7 dBA		< 71 dBA		
Net weight (kg)	539	595	647	910,5	1150		
Dimensions (mm) HxWxD		1770x825x855		1900x12	50x1055		
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, R	S485, Remote monitoring panel,	MODBUS (RS485 or TCP/IP), TCP/IP,	, GSM/GPRS Modem, Comport mu	ıltiplexer		
(*) Please ask for different options.							



DS300TC-400 TECHNICAL SPECIFICATIONS

MODEL		DC215TC 400 2001	DE220TC 400-2001	DC220TC 400 2001	DC240TC 400 2001	DC2EATC 400 2001					
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 3F	2 + N + G ± 20%							
Frequency**			50Hz	± 10%							
Power factor (@ 100% load)			≥ 0	,99							
THDI			\leq 5% (depends on inp	ut voltage conditions)							
Protections		Fuses, Voltage and Free	quency tolerance, Input pow	er limit, Phase sequency inc	dicator, 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% (lin	ear load)							
Frequency			400Hz	± 0.2%							
Output voltage tolerance			± 1% (linear load), ±	- 5% (dynamic load)							
Recovery time (Dynamic load)			< 20) ms							
Output isolation transformer		lı	nternal, inverter integrated g	alvanic isolation transforme	er						
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 mir	n. @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, Cu	rrent limiting protections						
GENERAL											
Standards			EN62040-1, EN62	040-2, EN62040-3							
User interface		2	ine LCD panel, LED Mimic di	agram, control buttons, buz	zer	2 line LCD panel, LED Mimic diagram, control buttons, buzzer					
	Input/output P-N voltage, P-P voltage, Frequency, Load percentage, DC voltage, Input current										
Indicators		Input/output P-N v	voltage, P-P voltage, Frequen	cy, Load percentage, DC vol	ltage, Input current						
Indicators Diagnostic			voltage, P-P voltage, Frequen s recording system with 128								
		Error and statu		memory with real-time cloc	ck and calendar						
Diagnostic		Error and statu RS232 serial port (standard	s recording system with 128	memory with real-time cloc SNMP, Modbus, RS485, Mod	ck and calendar dem connections (optional)						
Diagnostic Communication		Error and statu RS232 serial port (standard 3 d	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan	memory with real-time cloc SNMP, Modbus, RS485, Moo mon alarm, Overtemperatu dard	ck and calendar dem connections (optional) ure)						
Diagnostic Communication Alarm relay contacts	Load protectio	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mc	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan	memory with real-time cloo SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an	ck and calendar dem connections (optional) ure) d frequency, Output voltage	e and frequency,					
Diagnostic Communication Alarm relay contacts EPO input	Load protectio	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mc	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent,	memory with real-time cloo SNMP, Modbus, RS485, Mod nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo	ck and calendar dem connections (optional) ure) d frequency, Output voltage	e and frequency,					
Diagnostic Communication Alarm relay contacts EPO input Other protections	Load protectio	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mc	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, stection, Output DC leakage,	memory with real-time cloc SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo	ck and calendar dem connections (optional) ure) d frequency, Output voltage	e and frequency,					
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range	Load protectio	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mc	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, stection, Output DC leakage, 0°C +40°C (operation)	memory with real-time cloc SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo / -15°C +45°C (storage)	ck and calendar dem connections (optional) ure) d frequency, Output voltage	e and frequency,					
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range Protection degree*	Load protectio	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mo Phase loss pro	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, tection, Output DC leakage, 0°C +40°C (operation)	memory with real-time cloc SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo 7 -15°C +45°C (storage) 20	ck and calendar dem connections (optional) ure) d frequency, Output voltage w Protections	e and frequency,					
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range Protection degree* Relative humidity		Error and statu RS232 serial port (standard 3 d n in case of failure, Power mo Phase loss pro	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, otection, Output DC leakage, 0°C +40°C (operation) IP: 20% -	memory with real-time cloc SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo 7 -15°C +45°C (storage) 20	ck and calendar dem connections (optional) ure) d frequency, Output voltage w Protections	e and frequency,					
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise		Error and statu RS232 serial port (standard 3 d n in case of failure, Power mo Phase loss pro ≤ 1000m: 100%; > 1000m	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, tection, Output DC leakage, 0°C +40°C (operation) IP: 20% - n: Maximum 0.6% derating p	memory with real-time cloc SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo 7 -15°C +45°C (storage) 20	ck and calendar dem connections (optional) ure) d frequency, Output voltage ow Protections power with 12% derating)	e and frequency,					
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise (1±5% m distance at 100% load)	< 60	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mc Phase loss pro ≤ 1000m: 100%; > 1000m 0dBA	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, tection, Output DC leakage, 0°C +40°C (operation) , IP: 20% - t: Maximum 0.6% derating p < 61 dBA	memory with real-time cloo SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo (-15°C +45°C (storage) 20 90% er 100m (3000m: 88% rated	ck and calendar dem connections (optional) ure) d frequency, Output voltage ow Protections power with 12% derating) < 63 dBA						
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise (1±5% m distance at 100% load) Net weight (kg)	< 60	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mo Phase loss pro ≤ 1000m: 100%; > 1000m 0dBA 200	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, tection, Output DC leakage, 0°C +40°C (operation) , IP: 20% - t: Maximum 0.6% derating p < 61 dBA	memory with real-time cloo SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo (-15°C +45°C (storage) 20 90% er 100m (3000m: 88% rated	ck and calendar dem connections (optional) ure) d frequency, Output voltage ow Protections power with 12% derating) < 63 dBA 250						
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise (1±5% m distance at 100% load) Net weight (kg) Dimensions (mm) HxWxD	< 60	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mo Phase loss pro ≤ 1000m: 100%; > 1000m 0dBA 200	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, tection, Output DC leakage, 0°C +40°C (operation) , IP: 20% - t: Maximum 0.6% derating p < 61 dBA	memory with real-time cloo SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo (-15°C +45°C (storage) 20 -90% er 100m (3000m: 88% rated 230	ck and calendar dem connections (optional) ure) d frequency, Output voltage ow Protections power with 12% derating) < 63 dBA 250						
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise (1±5% m distance at 100% load) Net weight (kg) Dimensions (mm) HxWxD OPTIONS Different input/output voltage, Uninterruptible operation (battery included), Parallel	< 60	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mo Phase loss pro ≤ 1000m: 100%; > 1000m 0dBA 200	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Com Stan odule overheat, Overcurrent, otection, Output DC leakage, 0°C +40°C (operation) / IP: 20% - the Maximum 0.6% derating p < 61 dBA 220	memory with real-time cloc SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo (-15°C +45°C (storage) 20 90% er 100m (3000m: 88% rated 230 e ask	ck and calendar dem connections (optional) ure) d frequency, Output voltage ow Protections power with 12% derating) < 63 dBA 250						
Diagnostic Communication Alarm relay contacts EPO input Other protections Temperature range Protection degree* Relative humidity Altitude Acoustic noise (1±5% m distance at 100% load) Net weight (kg) Dimensions (mm) HxWxD OPTIONS Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree	< 60	Error and statu RS232 serial port (standard 3 d n in case of failure, Power mo Phase loss pro ≤ 1000m: 100%; > 1000m 0dBA 200	s recording system with 128), Remote monitoring panel, ry contacts (Mains fault, Con Stan odule overheat, Overcurrent, tection, Output DC leakage, 0°C +40°C (operation) , IP: 20% - t: Maximum 0.6% derating p < 61 dBA 220 Pleas Optional a	memory with real-time cloc SNMP, Modbus, RS485, Moo nmon alarm, Overtemperatu dard Overheat, Input voltage an Short circuit, DC high, DC lo 7 -15°C +45°C (storage) 20 -90% er 100m (3000m: 88% rated 230 e ask s external	ck and calendar dem connections (optional) ure) d frequency, Output voltage ow Protections power with 12% derating) < 63 dBA 250 1190x515x830	280					



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 condition	tions)				
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)*		1,0 (0,8 and 0,9 Optional) 120/208 VAC 3P + N + G						
Voltage THD			$\leq 3\%$ (linear load)					
Frequency			400Hz ± 0.2%					
Output voltage tolerance		+ 1	% (linear load), ± 5% (dynamic load)	ad)				
Recovery time (Dynamic load)			< 20 ms					
Output isolation transformer		Internal, inv	erter integrated galvanic isolation	transformer				
Efficiency (@100% load input voltage tolerance \pm 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	Advar	nced short circuit, Voltage tolerand	e protection, DC balance, Regene	rative load, Current limiting prote	ctions			
GENERAL								
Standards		E	EN62040-1, EN62040-2, EN62040-3	3				
User interface		2 line LCD par	nel, LED Mimic diagram, control bu	uttons, buzzer				
Indicators		Input/output P-N voltage, P-P	voltage, Frequency, Load percent	age, DC voltage, Input current				
Diagnostic		Error and status recording	system with 128 memory with re-	al-time clock and calendar				
Communication	RS23	32 serial port (standard), Remote n	nonitoring panel, SNMP, Modbus,	RS485, Modem connections (option	onal)			
Alarm relay contacts		3 dry contacts	(Mains fault, Common alarm, Ove	ertemperature)				
EPO input			Standard					
Other protections	Load protection in ca	ase of failure, Power module overh Phase loss protection, Ou	eat, Overcurrent, Overheat, Input tput DC leakage, Short circuit, DC		oltage and frequency,			
Temperature range	0°C +40°C (operation) / -15°C +45°C (storage)							
Destaution 1 X	IP20							
Protection degree*								
Protection degree* Relative humidity								
	≤1	000m: 100%; > 1000m: Maximum	IP20 20% - 90%		ing)			
Relative humidity	≤ 1 < 68 dBA		IP20 20% - 90%					
Relative humidity Altitude Acoustic noise (at 100% load at 1±5% m			IP20 20% - 90% 0.6% derating per 100m (3000m:	88% rated power with 12% derat				
Relative humidity Altitude Acoustic noise (at 100% load at 1±5% m distance)	< 68 dBA	< 71	IP20 20% - 90% 0.6% derating per 100m (3000m: dBA	88% rated power with 12% derat	dBA 1200			
Relative humidity Altitude Acoustic noise (at 100% load at 1±5% m distance) Net weight (kg)	< 68 dBA	600	IP20 20% - 90% 0.6% derating per 100m (3000m: dBA	88% rated power with 12% derat < 73 1050	dBA 1200			
Relative humidity Altitude Acoustic noise (at 100% load at 1±5% m distance) Net weight (kg) Dimensons (mm) HxWxD	< 68 dBA	600	IP20 20% - 90% 0.6% derating per 100m (3000m: dBA	88% rated power with 12% derat < 73 1050	dBA 1200			
Relative humidity Altitude Acoustic noise (at 100% load at 1±5% m distance) Net weight (kg) Dimensons (mm) HxWxD OPTIONS Different input/output voltage, Uninterruptible operation (battery included), Parallel	< 68 dBA	600	IP20 20% - 90% 0.6% derating per 100m (3000m: dBA 650	88% rated power with 12% derat < 73 1050	dBA 1200			
Relative humidity Altitude Acoustic noise (at 100% load at 1±5% m distance) Net weight (kg) Dimensons (mm) HxWxD OPTIONS Different input/output voltage, Uninterruptible operation (battery included), Parallel operation, IP degree Galvanic isolation transformer	< 68 dBA 510	600	IP20 20% - 90% 0.6% derating per 100m (3000m: dBA 650 Please ask Optional as external	88% rated power with 12% derat < 73 1050 1900x12	dBA 1200 50x1055			



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