



**Continuous Energy**  
**Uninterruptible Life**

UPS / AVR / STS

 [www.deltaups.com](http://www.deltaups.com)



ALL DELTA PRODUCTS ARE CERTIFIED WITH

<p>ISO 14001</p>	<p>ISO 9001</p>	<p>CE</p>	<p>ROHS</p>	<p>OHSAS 18001</p>	<p>ISO 27001</p>	<p>EAC</p>	<p>Soncap</p>	<p>TSE</p>
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[www.deltaregulator.com](http://www.deltaregulator.com)



## ABOUT US

In parallel of developing technology, every electric/electronic equipment which we use in our daily life; need stable and clean energy. DELTA UPS&Voltage Stabilizers Inc., provides solutions to confront this demand.

Since 1991, situated in state of art production plants in Turkey on a total covered area of 10.000m<sup>2</sup> with more than 150 employees, DELTA Inc. producing diverse power electronic solutions, and is one of the few companies in the world which could manage to combine quiet different product ranges, in it's manufacturing portofolio.

Our manufactured products are getting incessantly developed and upgraded, thanks to our highly advanced R&D team skills, studies and works, held in firm cooperation with the Scientific and Technologic Research Council of Turkey. This enables Delta Inc. to clinch it's domestic and worldwide leader title in AVR's and get a highly respected position in World UPS market. Also it ensures highest flexibility in our production, to answer different customers requirements from the World, according to different mains and electrical conditions across the globe.

Special production lines:

STS, Frequency converters, Isolation transformers, Toroidal Variacs, Dry and Gel type SLA Batteries

In order to provide better and reliable solutions, and increase product quality; we obtained TSEK, ISO9001, CE quality certifications in the 90's. The quality management principles and unconditional customer satisfaction; compose the base of our production philosophy.

Our manufactured products have been exported worldwide, in 85 countries such as Russia, Portugal, UK, France, Poland, Italy, Ukraine, Serbia, Albania, Macedonia, Georgia, Romania, UAE, Pakistan, Afghanistan, Nigeria, Ghana, Cameroon, Egypt, Senegal, Algeria, Libya, Iraq, Iran, Tajikistan, Turkmenistan, Kazakhstan, Lebanon, Jordan, Angola, South Africa, Malaysia, Indonesia, Bangladesh, Peru, Kenya, Tanzania, Uganda, Ethiopia...etc

DELTA Inc. offers complete power protection solutions "

**"Continuous Energy, Uninterruptible Life...**

# Crystal Serie

Uninterruptible Power Supply  
1-10kVA



CL Crystal series HF online  
UPS Singlephase for Centralized  
server center, mainframe,  
network control center,  
computing center

**True On-line**  
**1 Phase in**  
**1 Phase out**

## Technical Specifications

- High frequency and dual conversion on-line technology ·
- Wide input voltage range ·
- Advanced PFC technology ·
- True sine wave output with less than 3% THD ·
- Self-diagnosis at UPS startup ·
- Advanced battery management (ABM) ·
- Cold start Feature (DC power on) ·
- Automatically charging batteries in UPS off mode ·
- Lightning and surge protections (surge energy rating 1050 J) ·
- Short circuit and overload protections ·
- Fan speed automatically changes as load varies ·
- Optional external battery pack ·
- EMI / RFI noise filter ·
- R5232 (SNMP Optional) ·
- Shutdown & Restart schedule ·

# Specifications

Model	CL1000	CL2000	CL3000	CL6000	CL10000
Capacity	1KVA	2KVA	3KVA	6KVA	10KVA
<b>Input</b>					
Rated input voltage	220 VAC or 230 VAC				
Rated input frequency	50Hz/60Hz (self-adaption)				
Input voltage Range	110 – 295 ± 5VAC (50% load); 140 – 295 ± 5VAC (100% load) or 50/60/70/80 – 150 ± 5VAC (60%/70%/80%/100% load)				
Input frequency Range	45–55Hz +/-0.5% 50Hz; 55–65Hz +/-0.5% 60Hz				
Phase	single phase+N+GND				
Power factor	≥0.98				
Input current (liner full load)	4.0A	8.1A or 20A	12.1A	24.2A	40.4A
THD	< 6%				
ByPass voltage range	186VAC–252VAC or 90VAC–140VAC				
<b>Output</b>					
Rated voltage	208VAC/220VAC/230VAC/240VAC can be set on LCD				
Power factor	0.9				
Voltage distortion	± 1%				
DC component voltage	≤200mv				
Output current crest factor	3:1				
<b>Rated frequency</b>					
AC mode	same as input frequency				
Battery mode	50/60 ± 0.2Hz				
Phase lock speed	≤ 1Hz/s				
Wave distortion	100% linear load <3%; 100% nonlinear load <5%				
<b>Transfer time</b>					
From Mains mode to battery mode	0ms				
From battery mode to Mains mode	0ms				
From Mains mode to bypass mode	< 4ms				
From bypass mode to Mains mode	< 4ms				
From normal mode to ECO mode	< 10ms				
System Efficiency	Full load	≥90%			≥94%
	ECO mode				≥92%
Inverter overload capacity	105% – 150% 30s transfer to bypass mode giving alarm; > 150% 300ms transfer to bypass mode giving alarm;			105% - 125% 10min transfer to bypass mode giving alarm 125% - 150% 30s transfer to bypass mode giving alarm > 150% 100ms transfer to bypass mode giving alarm;	
<b>Battery</b>					
Battery type	Lead Acid maintenance free battery				
DC voltage	24V DC	48V DC	72V DC	192V DC	192V DC
Inbuilt battery	9AH/12V	9AH/12V	9AH/12V	9AH/12V	9AH/12V
Battery quantity	2	4	6	16	16
Charge	Three-stage charging				
Output voltage	27.5 ± 0.4V	55 ± 0.6V	82.5 ± 0.9V	193.7 ± 0.9V	193.7 ± 0.9V
<b>Charge method</b>					
Input voltage range	80VAC~300VAC or 40VAC~150VAC			150VAC~300VAC	
Charge current	Standard model:1A; Long time model: 6A(Optional12A)			Standard model:1A; Long time model: 8	
Protection	Over-temp protection; Fan testing protection ; AC L and N connect wrong protection; Output short circuit protection				
Control	Silence; cold start; AC restart; Auto restart.				
Communication	RS232, SNMP card , USB				
Display	Software function; Statue analyze; Switch on/off UPS system, Monitor UPS working state ,store histor				
<b>System Operating Environment</b>					
Operating environment	Operation tem.	0 ~ 40°C			
	Store tem.	-25°C ~ 55°C			
	Humidity	20 – 90% ( non-condensing )			
	Altitude	0m < altitude < 1500m, over 1500m, used with power derated			
Noise	< 50db				< 55db
UPS Dimension ( W*D*H ) mm	144x357x215	191x452x341		262x514x455(Long time mode) 262x514x735(Standard model)	
Packing Dimension ( W*D*H ) mm	(Long time mode) (Standard model)	230x445x315	320x564x462		360x650x540 360x650x795
Net/Gross Weight ( Kg )	(Long time mode)	6.0/7.0	12.0/13.3	12.5/13.8	26.0/28.0
	(Standard model)	10.0/11.1	20.0/21.3	24.0/25.3	62.0/70.0

- ◆ All specifications subject to change without notice.
- ◆ Custom-made specifications are acceptable.

# DLT-100 Serie

Uninterruptible Power Supply  
2-15kVA



DELTA 100 Series UPS's are, PWM (Plus width modulation) and IGBT technology, microcontroller controlled, sinus waveform output, ONLINE, parallel configurable UPS group.

## Technical Specifications

- Output isolation transformer
- 91% efficiency
- Static by-pass
- LCD front panel
- 64 events memory
- RS232 port provides remote monitoring, remote shutdown
- Custom input and output voltage ranges
- 2 years warranty
- 10 years spare parts support
- CE, TUV, ISO9001, ISO14001 certificates

**True On-line**  
**1 Phase in**  
**1 Phase out**  
**2-15 kVA**

## Specifications

MODEL	DLT 102	DLT 103	DLT 105	DLT 107	DLT 110	DLT 115
<b>Power</b>	2 kVA	3 kVA	5 kVA	7 kVA	10 kVA	15 kVA
<b>INPUT</b>						
<b>Voltage</b>	220/230 VAC Phase+Neutral + Earth,+/-15%					
<b>By-pass Voltage</b>	220/230 VAC, +/- 10%					
<b>Frequency</b>	50Hz/60 Hz, +/- 5%					
<b>EMI</b>	EN62040-2					
<b>Current</b>	13 A	19 A	30 A	44 A	58 A	87 A
<b>Input Frequency</b>	50 Hz(60Hz special product), +/- %5					
<b>Input Voltage Protection</b>	electronic input voltage out of tolerant protection					
<b>OUTPUT</b>						
<b>Power (kW)</b>	1.3	1.95	3.25	4.55	7	10.5
<b>Power Factor</b>	0.65			0.7		
<b>Voltage</b>	220/230 VAC ,Phase+Neutral					
<b>Voltage Tolerance</b>	+/- 1 %					
<b>Frequency</b>	50 Hz (60 Hz special product)					
<b>Frequency Tolerance</b>	+/-2% (synchron) +/- 0,2% (free running)					
<b>Efficiency 100% Load</b>	85-87%			86-90%		
<b>THD (Total Harmonic Distortion)</b>	<3% (linear load) <5% (non linear load)					
<b>Crest Factor</b>	3:1					
<b>Overload Protection</b>	100%125% load :10 mins. 126%150% load :1 min >150% load : by-pass					
<b>Short Circuit Protection</b>	electronic short circuit protection					
<b>Output Voltage Protection</b>	electronic output voltage out of tolerant protection					
<b>BATTERY</b>						
<b>Type</b>	Maintenance free sealed lead acid					
<b>Batteries</b>	14	14	16	18	20	20
<b>Charge Voltage</b>	189VDC	189VDC	216VDC	243VDC	270VDC	270VDC
<b>Discharge End Voltage</b>	140VDC	140VDC	160VDC	180VDC	200VDC	200VDC
<b>Battery Cabinet</b>	internal					external
<b>Ambient Temperature</b>	25 C					
<b>Battery Protection</b>	Battery fuse, battery voltage low and high protection (3 levels)					
<b>Battery Test</b>	Available as option					
<b>Temperature Compansation</b>	Available as option					
<b>GENERAL</b>						
<b>Operating Temperature</b>	0 C - 40 C					
<b>Noise Level</b>	< 42 dBA		< 45 dBA		< 50 dBA	< 55 dBA
<b>Protection</b>	IP20					
<b>Operating Altitude</b>	< 2000 m					
<b>Humidity (Non Condensed)</b>	< 90%					
<b>Weight (Without Batteries) (Kg)</b>	50	55	60	75	85	112
<b>Dimensions (mm) WxDxH</b>	265x585x505		265x600x590		265x660x640	265x740x720 300x810x720
<b>Interface</b>	Alphanumeric LCD panel, mimic lamps and control buttons					
<b>Communication</b>	RS232+dry contact					
<b>Software</b>	T-Mon UPS software(3 clients)					
<b>Overtemperature Protection</b>	Electronic overtemperature protection					

# CYCLONE 100D Serie

Uninterruptible Power Supply  
6-15kVA



Delta Cyclone CL-100D Uninterruptible Power Supplies are single phase transformerless with IGBT rectifier advanced technology designed UPS.

## True On-line / 1 Phase Input / 1 Phase Output / 6-15 kVA

### Technical Specifications

- Rack and tower case options
- Power factor corrected input
- REPO input (NO or NC programmable)
- Static bypass system, VAT transfer system
- Output voltage regulation, low output THD
- Optional battery temperature compensation
- Online technology, advanced self diagnostics
- Battery options for longer battery backup time
- Fully digital DSP controlled system, PID control
- User selectable easy voltage, frequency and setting
- Cold start from batteries
- 128 log event records (5000 alarms)
- LCD alphanumeric display, mimic lamps, 5 control buttons
- Output short circuit protection (isolated from bypass input)
- Output overload protection, 150% overload capacity
- Automatic battery test, Front panel lamp test system
- Deep battery discharge protection, Boost charge
- Battery capacity and battery remaining time indicator
- Maintenance bypass switch
- RS232 communication interface, management software, SNMP, MODBUS
- Dry contact outputs (NO or NC programmable) 3 relays standard, 2 option
- IPM power module, Output current limit, Operation mode selection (Online or Offline)



# Specifications

MODEL	CL 106 D	CL 110 D	CL 115 D
Type	Tower		
<b>INPUT</b>			
Power Factor	>0.99 (full load)		
Input Voltage Range	220-230 volts AC (+/- 25%) selectable(1phase+neutral)		
Input THD	<5% at full load		
Input Frequency	50Hz (40-65Hz operation)		
RFI Level	EN62040		
Indicators	Voltage ,Current ,Frequency		
Protection	Input fuse ,input high and line failure alarm		
Bypass Voltage	220-230 volts AC (+/- 10%) selectable		
Bypass Frequency	50Hz (Adjustable from +/-1 to 3 Hz)		
Manual Bypass	Standard		
Maintenance Bypass	Optional		
Split Bypass	input Optional		
Transfer System	VAT Transfer (voltage adaptive transfer) built in		
<b>OUTPUT</b>			
Power	6 kVA /4.2kW	10 kVA / 7kW	15 kVA / 10,5 kW
Power / Crest factor	0,7 - 3:1		
Voltage	220-230 volts AC (+/- 1%) selectable(1phase+neutral)		
Current (100%load)	19 Amps	32 Amps	47 Amps
Frequency	50 Hz		
Frequency Tolerance	Free running:0.01% ,synchron lock adjustable(+/-1 to 3Hz)		
Indicators	Voltage , Load , Current , Frequency		
Overload Protection	100%-125% 10 mins,126%-150% 1 min		
Protections	Voltage low ,high ,short circuit,waveform error,DC leakage		
THD	<3% (at 100% Load)		
Output connections	Hardwired+2xIEC sockets on the rear side		
<b>BATTERY</b>			
Type	Sealed Lead Acid		
Battery number	20x12V Standard		
Cabinet	internal		external
Battery test	Available (automatic or manual)		
Boost charge	Available adjustable(288V for 20x12V batteries)		
Protection	Battery low shutdown ,low warning ,high alarm Average battery high alarm , fuse protection		
Charge current	Limited (adjustable from 1 to 3 amps.)		
End of discharge	Adjustable(192V for 20 batteries) Deep discharge protection		
Float charge voltage	Adjustable(272V for 20x12V batteries at 25C)		
<b>GENERAL</b>			
Communication	REPO input , 3 relays and RS232 standard ,SNMP and MODBUS optional		
Options	2 relay outputs ,1 automation input,remote panel,RS232 port multiplexer		
Front panel	2x16 LCD panel , 3 Leds and 5 buttons		
Dimensions	430x215x600	590x215x780	
Weight	23kgs	39kgs	40kgs
Acoustic noise	<50dB		
Temperature range	0 C - 40 C		
Relative humidity	<90% (non condensed)		
Ventilation	Forced air cooling		
Altitude	2000 m. At nominal power		
Protection degree	IP20		

# DLT-200 Serie

3:1 Phase Uninterruptible  
Power Supply 6-30kVa



DELTA 200 Series UPS's are, PWM (Plus width modulation) and IGBT technology, microcontroller controlled, sinus waveform output, ONLINE, parallel configurable UPS group.

## Technical Specifications

- Output isolation transformer
- 91% efficiency
- Static by-pass
- LCD front panel
- 128 events memory with RTC
- RS232 port provides remote monitoring, remote shutdown
- Custom input and output voltage ranges
- 2 years warranty
- 10 years spare parts support
- CE, TUV, ISO9001, ISO14001 certificates

**True On-line  
3 Phase Input  
1 Phase Output  
6-30 kVA**

## Specifications

MODEL	DLT 206	DLT 207	DLT 210	DLT 215	DLT 220	DLT 230
<b>Power</b>	6 kVA	7.5 kVA	10 kVA	15 kVA	20 kVA	30 kVA
<b>INPUT</b>						
<b>Voltage</b>	220/380 Vac (230/400 Vac) 3 phase + Neutral + Earth ,+/-15%					
<b>By-pass Voltage</b>	220 Vac, +/- 10%					
<b>Frequency</b>	50 Hz/60 Hz +/- 5%					
<b>EMI</b>	EN62040-2					
<b>Current</b>	3 x 13A	3 X 16A	3 X 21A	3 X 31A	3 X 42A	3 X 62A
<b>Input Voltage Protection</b>	electronic input voltage out of tolerant protection					
<b>OUTPUT</b>						
<b>Power (kW)</b>	4.2	5.25	7	10.5	14	21
<b>Power Factor</b>	0.7					
<b>Voltage</b>	220 Vac (230 Vac) ,Phase + Neutral					
<b>Voltage Tolerance</b>	+/- 1%					
<b>Frequency</b>	50 Hz (60 Hz special product)					
<b>Frequency Tolerance</b>	+/-2% (synchron) +/- 0,2% (free running)					
<b>Efficiency 100% Load</b>	86% (full load)					
<b>THD (Total Harmonic Distortion)</b>	< 3% (linear load) < 5% (non linear load)					
<b>Crest Factor</b>	3:1					
<b>Overload Protection</b>	100%125% load :10 dk 126%150% load :1 dk >;150% load : by-pass					
<b>Short Circuit Protection</b>	electronic protection					
<b>Output Voltage Protection</b>	electronic output voltage out of tolerant protection					
<b>BATTERY</b>						
<b>Type</b>	Maintenance free sealed lead acid					
<b>Batteries</b>	20			30		
<b>Charge Voltage</b>	270 VDC			405 VDC		
<b>Discharge End Voltage</b>	200 VDC			300 VDC		
<b>Battery Cabinet</b>	Standard backup time internal (others external)					
<b>Ambient Temperature</b>	25 C					
<b>Battery Protection</b>	Battery fuse , battery voltage low and high alarm (3 levels)					
<b>Battery Test</b>	Optional			standard automatic every 72 hours		
<b>GENERAL</b>						
<b>Operating Temperature</b>	0 C - 40 C					
<b>Noise Level</b>	< 45 dBA			< 55 dBA		
<b>Protection</b>	IP20					
<b>Altitude</b>	< 2000 m					
<b>Humidity (Non Condensed)</b>	< 90%					
<b>Weight (Without Batteries) (Kg)</b>	106	110	125	130	195	217
<b>Dimensions (mm) HxWxD</b>	950x265x740			1220x500x 650		
<b>Interface</b>	Alphanumeric LCD panel, mimic lamps and control buttons					
<b>Communication</b>	RS232+dry contact					
<b>Software</b>	T-Mon UPS Software(3 clients)					
<b>Overtemperature Protection</b>	Electronic overtemperature protection					

## DLT 300 LO Serie

Uninterruptible Power Supply  
10-80kVA



DELTA 300 Lo series UPS, PWM controlled, IGBT technology, Microcontroller controlled, Sinusoidal wavetform, ONLINE topology and parallel configurable devices. Advanced communication system supports many communication protocols and brings remote control advantage of the UPS.

### True On-line / 3 Phase Input / 3 Phase Output / 10-80 kVA

#### Technical Specifications

- 3 phase in / 3 phase out
- Output isolation transformer
- Up to 91% efficiency
- Static by-pass
- External REPO switch input
- 5 control buttons LCD alphanumeric display brings detailed monitoring of measured parameters.
- 128 events alarm memory (4000 alarms)
- Clock and calender (battery supported)
- Advanced battery management controls charge system battery test
- High performance at non-linear loads
- Dry contact simulation function
- Dial-up modem connection and setup
- Custom input voltage and frequency ranges
- Parallel operation up to 4 devices
- According to EC Directive; EN62040
- SNMP communication
- 2 years warranty
- 10 years spare parts support
- ISO9001, ISO14001, CE certification
- Optional MODBUS adaptor

## Specifications

MODEL	DLT 310	DLT 315	DLT 320	DLT 330	DLT 340	DLT 360	DLT 380	
Power	10 kVA	15 kVA	20 kVA	30 kVA	40 kVA	60 kVA	80 kVA	
<b>INPUT</b>								
Voltage	380/400 VAC 3 phase + neutral + earth , +/-15%							
By-pass voltage	380/400 VAC 3 phase + neutral +/- 10%							
Frequency	50 Hz (60 Hz optional), +/- 5%							
MAX RFI	EN62040-2							
Input voltage protection	Electronic Input out of tolerant protection							
<b>OUTPUT</b>								
Power (kW)	8	12	16	24	32	48	64	
Power factor	0,8							
Voltage	380/400 VAC 3 phase, + Neutral							
Voltage tolerance	+/- 1%							
Voltage regulation time	max 25 msec							
Frequency	50Hz / 60Hz							
Frequency tolerant	synchron: +/-2% free running: +/-0,2%							
Efficiency (100% load)	88-90%			90%				
Crest factor	3:1							
Overload protection	100%-125% load :10 mins 126%-150% load :1 min >150% load :by pass							
Short circuit protection	electronic protection							
THD (Total harmonic distortion)	Linear load: < 3% Non linear load: < 5%							
Output voltage protection	Electronic out of tolerant protection							
<b>MODEL</b>								
Type	Maintenance free ,sealed lead acid							
Batteries	30							
Charge voltage	405 VDC							
Discharge end voltage	300 VDC							
Ambient temperature	25 C							
Battery protection	Battery fuse ,battery voltage low and high alarm (3 levels)							
Battery test	standard automatic every 72 hours or manual							
Temperature Compansation	Available as option							
<b>GENERAL</b>								
Human interface	Alphanumeric LCD panel, mimic lamps and control buttons							
Communication	Dry contact and RS232							
Software	T-Mon UPS Software (3 clients)							
Operating temperature	0 C - 55 C							
Cooling	air cooling							
Humidity (non condensed)	< 90%							
Protection	IP20							
Altitude	< 2000 m							
Noise level	< 56dBA				< 60 dBA			
Weight without batteries (kg)	220	260	260	290	415	465	595	
Dimensions (mm) HxWxD	1150x505x655			1390x575x820			1450x720x820	
Overttemperature protection	electronic protection							

## DLT 300 HI Serie

Uninterruptible Power Supply  
100-300kVA



DELTA 300 Hi series UPS, PWM controlled, IGBT technology, microcontroller controlled, sinusoidal waveform, ONLINE topology and parallel configurable devices. Advanced communication system supports many communication protocols and brings remote control advantage of the UPS.

### True On-line / 3 Phase Input / 3 Phase Output / 100-300 kVA

#### Technical Specifications

- 3 phase in / 3 phase out
- Output isolation transformer
- Up to 91% efficiency
- Static by-pass
- External REPO switch input
- 5 control buttons LCD alphanumeric display brings detailed monitoring of measured parameters.
- 128 events alarm memory (4000 alarms)
- Clock and calendar (battery supported)
- Advanced battery management controls charge system battery test
- High performance at non-linear loads
- Dry contact simulation function
- Dial-up modem connection and setup
- Custom input voltage and frequency ranges
- Parallel operation up to 4 devices
- According to EC Directive; EN62040
- SNMP communication
- 2 years warranty
- 10 years spare parts support
- ISO9001, ISO14001, CE certification
- Optional MODBUS adaptor

## Specifications

MODEL	DLT 3100	DLT 3120	DLT 3160	DLT 3200	DLT 3250	DLT 3300
Power	100 kVA	120 kVA	160 kVA	200 kVA	250 kVA	300 kVA
<b>INPUT</b>						
Voltage	220 / 400 Vac 3 Phase +N, +/-% 15					
By-Pass Voltage	220 / 400 Vac 3 Phase +N, +/-% 10					
Input Frequency	50 Hz, +/- %5					
EMI	EN50091-2 Class A					
Input out of Tolerant Protection	Electronic input out of tolerant protection					
<b>OUTPUT</b>						
Power (kW)	80	96	128	160	200	240
Power Factor	0,8					
Voltage	220 / 400 Vac 3 Phase +N					
Frequency	50 Hz. (60Hz On Request )					
Frequency Tolerance	+/-2% (Line Synchronized) • +/-0,2% (Free Running)					
Efficiency at 100% Load	%90-92					
Crest Factor	3:1					
Overload Protection	100 % 125% Load : 10 min	•	125 % 150% Load : 1 min	•	< 150 % Load : By-Pass	
Short Circuit Protection	Electronic short circuit protection					
Voltage out of Tolerant Protection	Electronic out of tolerant protection					
Total Harmonic Distortion	< 3 %					
THD	Non Linear Load <%5					
<b>BATTERIES</b>						
Battery Type	Sealed Lead Acid - Maintenance Free					
Number of Batteries	30			32		
Float Charging Voltage	405 VDC			432 VDC		
End of Discharge Voltage	300 VDC			320 VDC		
Ambient Temperature C	25 C°					
Battery Voltage Protection	Electronic Battery out of tolerant protection					
Battery Protection	Automatic circuit breaker					
Battery Test	Automatic every 72 hours					
<b>GENERAL</b>						
Communication	RS232 + Dry Contacts					
Temperature Range	0 C° - 40 C°					
Humidity (Non Condensed)	90 % (Non condensed)					
Protection Degree	IP20					
Altitude	< 1000 m. above sea level					
Noise level	< 65 dBA			< 70 dBA		
Weight without batteries (kg)	750	765	810	970	1330	1370
Dimensions (mm) HxWxD	1650x1100x800		1730x1195x870		1880x1565x925	
Ventilation	Forced air cooling					
<b>OPTIONS</b>				<b>ACCESSORIES</b>		
Input Transformers	Galvanic isolation transformer at the input (in the external cabinet)			Monitoring and Control Software	T-MON 3 client standart	
Input THD	<10% (with 18 Pulse Rectifier ,according to UPS range			Multiserver Shutdown Unit	Available as option	
	5% (with 18 Pulse rectifier, + filter) upto 80 kVA			SNMP Communication Adaptor	Available as option	
Parallel Operation	1+3 Systems (N+1 redundant, redundant, symetric parallel)			Serial Port Enhancer	Available as option	
MBS	Maintenance by-pass switch for complete isolation (For 206,207 & 210)			ModBus Communication Adaptor	Available as option (over RS485 or over TCP/IP)	

# DS-300 Serie

Uninterruptible Power Supply  
10-160kVA



Cold Start High Input Power Factor High efficiency up to 94% External REPO switch input  
IGBT Transformerless Technology DSP Control.

## Technical Specifications

- Low input current total harmonic distortion (THD)
- Static and maintenance bypass switch
- Output and by-pass short circuit and overload protection
- 192 events memory (192 events 4500 alarms)
- Clock and calendar (battery supported)
- Automatic battery test, remaining battery time indicator
- Temperature compensated charge system
- Regenerative backfeed function
- 2 RS232 serial port and 12 dry contact outputs
- 3 DSP controlled modular structure
- Optional Graphical and touch panel
- CE, ISO9001, ISO14001 certification
- 2 years warranty
- 10 years spare parts support

**Pf: 0,9**  
**True On-line**  
**3:3 Phase UPS**  
**10-160 kVA**



# Specifications

MODEL	DS310	DS315	DS320	DS330	DS340	DS360	DS380	DS3100	DS3120	DS3160
Power(kVA)	10	15	20	30	40	60	80	100	120	160
<b>INPUT</b>										
Power factor	> 0.98									
Voltage	380-400 VAC 3F, 4N+Earth, +/-%20 (240/415 VAC + %15 -%25 optional)									
Input THD	< 5%									
Input frequency	50Hz / 60Hz +/- 5% selectable									
Input frequency protection	2 levels protection (minimum and maximum)									
Regenerative backfeed	Standard									
Input power limiting	Standard									
EMI	EN62040-2									
Input voltage protection	2 levels protection									
Power walk in	Standard Adjustable									
Startup delay	Standard Adjustable									
Control system	seperate DSP controller for PFC rectifier module									
Rectifier input fuses	Standard									
Rectifier input switch	Standard									
Rectifier input CB	Standard									
<b>OUTPUT</b>										
Power (kW)	9	13,5	18	27	36	54	72	90	108	144
Power factor	0,9									
Voltage	380-400 VAC 3F, 4N+Earth, +/-%1(240/415 optional)									
Frequency	50Hz / 60Hz selectable									
Frequency tolerant	+/- 2% (synchron) +/- 0,2% (free running)									
Frequency stability (free running)	0,005%									
Efficiency	up to 94%									
Crest factor	3:1									
Overload protection	100% - 125% load: 10 min.125% - 150% load: 1 min..> 150% load: by-pass									
Output current limiting	Standard									
Short circuit protection	Direct IGBT saturation protection and advanced short circuit protection									
Output voltage protection	2 levels electronic protection									
THD (%100 linear load)	< 3%									
Control system	seperate DSP controller for Inverter module									
<b>BATTERY</b>										
Type	Maintenance free ,sealed lead acid									
Batteries	2X30=60 batteries									
Charge voltage	2x405 Vdc									
Discharge end voltage	2x300 Vdc									
Battery cabinet	Internal					External				
Ambient temperature	25 °C									
Battery protection	Fuses ,charging current limiting									
Battery voltage protection	electronic 3 level alarms									
Battery test system	automatic every 72 hours									
Temperature compansiation	Standard									
Battery remaining time indicator	Standard									
Battery fuses	Standard									
Deep discharge protection	Standard									
<b>FRONT PANEL</b>										
Front panel control	Seperate DSP controller for panel and communication functions									
Human interface	Alphanumeric LCD panel, mimic lamps and control buttons standard									
Alarm log memory	192 events (4500 alarms)									
Communication	Dry contact and 2 RS232 serial ports									
Phase to phase measurements	Rectifier input ,By-pass input ,Inverter output and UPS output voltages									
Phase to neutral measurements	Rectifier input ,By-pass input ,Inverter output and UPS output voltages									
Power measurements	Output Watts ,output VA ,Load crest factor ,output power factor ,load percentage									
Current measurements	Rectifier input currents ,battery charge and discharge currents ,output load currents									
Frequency measurements	Rectifier input frequency ,by-pass input frequency ,output frequency									
Temperature measurements	Cabinet inside ,battery ambient temperature and optional sensors									
Maintenance indicators	Seperate Operating ,General ,battery ,Fan maintenance and optional hourmeters and warnings									
Overtemperature protection	2 electronic temperature sensors and thermal contacts									
Failure memory	Standard (records all measured parametres during failures)									
Factory settings memory	Standard (settings backup memory)									
Module communication	CAN interface									
Free software	T-Mon UPS Software (3 clients)									
Operating temperature	0 C - 40° C									
Protection	IP20									
Humidity (non condensed)	90% max									
Operating height	< 1000 m below sea level									
Noise level	<50 dBA									
Calibration over RS232	Available (Device calibrator software)									
Log download over RS232	Available (DLOG software)									
Weight (kgs) (without batteries)	87	87	91	100	173	197	209	220	232	265
Dimensions (HxWxD)	1040x400x810					1440x515x850				

# DS-300 Power Serie

Uninterruptible Power Supply  
200-800kVA



Cold Start **High Input Power Factor** High efficiency up to 94% **External REPO switch input**  
IGBT Transformerless Technology DSP Control.

## Technical Specifications

- Low input current total harmonic distortion (THD)
- Static and maintenance bypass switch
- Output and by-pass short circuit and overload protection
- 192 events memory (192 events 4500 alarms)
- Clock and calendar (battery supported)
- Automatic battery test, remaining battery time indicator
- Temperature compensated charge system
- Regenerative backfeed function
- 2 RS232 serial port and 12 dry contact outputs
- 3 DSP controlled modular structure
- Optional Graphical and touch panel
- CE, ISO9001, ISO14001 certification
- 2 years warranty
- 10 years spare parts support

**Pf: 0,9**  
**True On-line**  
**3:3 Phase UPS**  
**200-800 kVA**

# Specifications

MODEL	DS3200	DS3250	DS3300	DS3350	DS3400	DS3450	DS3500	DS3600	DS3800
Power (kVA)	200	250	300	350	400	450	500	600	800
<b>INPUT</b>									
Voltage	380/400 VAC 3P + N + G, ± 20% (optional 415 VAC (+15%, -25%))								
Frequency	50Hz / 60Hz adjustable, ± 5%								
Power factor (at 100% load)	≥ 0.99								
THDI	≤ 3%								
By-pass voltage	380/400 VAC 3P + N, ± 20%								
By-pass protection	Short circuit, Voltage & Frequency tolerance, VAT transfer system								
Voltage distortion	< 10%								
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequence indicator								
<b>OUTPUT</b>									
Power (kW)	180	225	270	315	360	405	450	540	720
Power factor	0,9								
Voltage	380-400 VAC 3P + N + G, ± %1								
Frequency	50Hz / 60Hz (adjustable)								
Frequency tolerance	Line synchronized: ± 1% / Free running: ± 0,2% (adjustable)								
Efficiency (at 100% load)	up to 94%								
Crest factor	3:1								
Overload capacity	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass (adjustable)								
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting								
Voltage THD	< 3% (at 100% linear load)								
<b>BATTERIES</b>									
Type	VRLA AGM / GEL / NiCd								
Number of batteries	2x30: 60 pcs								
Charge voltage	2x405 VDC								
End of discharge voltage	2x300 VDC								
Battery cabinet	External								
Battery ambient temperature	25°C								
Protection	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)								
Battery test	Standard every 72 hours (adjustable)								
<b>GENERAL</b>									
Standards	EN62040-1, EN62040-2, EN62040-3								
User interface	TFT panel, 5 vector buttons, Buzzer								
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time								
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, operating hour meter								
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays								
Inputs	EPO input, Interactive battery panel input, Genset input								
Genset kit	Standard (programmable)								
Software	Standard T-Mon UPS Management (3 users + 1 server management)								
Alarm logging	Standard: with time & date 512 events								
Protection	Power module over-temperature, Over current, Temperature high alarm								
Working temperature range	0°C - 40°C								
Protection class	IP20								
Relative humidity	%90 max. (non-condensing)								
Altitude	< 1000m. above sea level								
Acoustic noise	< 68 dBA			< 72 dBA			< 73 dBA		
Net weight (kg)	482	550	638	737	780	1050	1250	1450	
Dimensions (mm) WxDxH	880x775x1900		1250x775x1900		1250x840x2040		1600x1020x1900		
Input/Output	110/208 VAC (up to 200 kVA)								
Transformer	Galvanic isolation transformer at the input & output								
Software	T-Mon Admin Multi UPS monitoring, T-Mon Server 50-100-200 clients iDLOG log loader								
Adaptors	SNMP, MODBUS, RS485, Remote monitoring								
Parallel operation	up to 8								
Memory	USB log memory								

# DS-300T SERIES

Uninterruptible Power Supply  
10-500 kVA



## IGBT RECTIFIER DSP CONTROL WITH OUTPUT ISOLATION TRANSFORMER

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

## General Specifications

- Galvanic isolation at output
- External input isolation transformer (optional)
- Low input current total harmonic distortion (THD)
- High input power factor
- High efficiency up to 93%
- Cold start function
- Static and maintenance by-pass switch
- Output short circuit and overload protection
- External REPO switch input
- 512 events memory (512 events 45000 alarms)
- Clock and calendar (battery supported)
- Automatic battery test, remaining battery time indicator
- Temperature compensated charge system (optional)
- 2 RS232 serial ports and 12 dry contact outputs
- 3 DSP controlled modular structure
- Optional SNMP and MODBUS adaptors
- Optional graphical panel
- Optional usb flash memory
- Full digital structure
- Small footprint
- Ecomode operation (optional)
- Fewer electronic components
- Output current limiting
- Advanced diagnostics for the input
- Selectable input/ output voltage / frequency/range
- Split by-pass input (second input)
- Output DC leakage protection
- Separate DSP for inverter control
- Separate DSP for the PFC
- 3 level battery protection
- High charge current capacity
- Charge/discharge current indicator
- Advanced remote control
- Manufactured according to EC Directive; EN62040
- 10 years spare parts support
- 2 years warranty

## Specifications

MODEL	DS310T	DS315T	DS320T	DS330T	DS340T	DS360T	DS380T	DS3100T	DS3120T	DS3160T	DS3200T	DS3250T	DS3300T	DS3400T	DS3500T		
Power (kVa)	10	15	20	30	40	60	80	100	120	160	200	250	300	400	500		
<b>INPUT</b>																	
Voltage	380/400 VAC 3P + N+ G ± 20% (415 VAC + 15%, -25% optional)																
Frequency	50 Hz / 60 Hz, ± 5%																
Power factor	≥ 0.99																
(THDI)(*)	≤ 3%																
By-pass voltage	380 / 400 VAC 3 Phase + N, 4 Wires, ± 10%																
Voltage distortion	≤ 10%																
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator																
<b>OUTPUT</b>																	
Power(kW)	9	13,5	18	27	36	54	72	90	108	144	180	225	270	360	450		
Power Factor	0,9																
Voltage	380/400 VAC 3P + N, ± %1 (415 VAC optional)																
Frequency	50Hz/ 60 Hz																
Frequency tolerance	Line synchronized :± 2% / Free running :± 0,1%																
Efficiency	up to 93%																
Crest Factor	3:1																
Overload protection	100%-125% load: 10 min, 125% - 150% load 1 min, -> 150% load: by pass																
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting																
Voltage THD	< 3% (at 100% linear load)																
<b>BATTERIES</b>																	
Type	VRLA AGM /GEL /NiCd																
Nominal voltage	± 312 VDC (2x26 batts)																
Float /End of discharge voltage	± 351 VDC / ± 260 VDC																
Battery cabinet	External																
Battery ambient temperature	25°C																
Protections	3 level alarms, Battery fuses, charging current limit, Temperature compensation(optional)																
Automatic testing	Standard every 72 hours (adjustable)																
<b>GENERAL</b>																	
Standards	EN62040-1, EN62040-2, EN62040-3																
User interface	4 lines LCD panel, Mimic leds, 5 vector buttons, Buzzer, Optional TFT panel																
Indicators	P-N voltage P-P voltage, Current, Power, Crest factor, Frequency, PF, Service Time																
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, operating hour meter																
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays																
Inputs	EPO input, interactive battery panel input, Genset input																
Genset kit	Standard (programmable)																
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)																
Alarm logging	Standard: with time & date 512 events																
Protections	Power module over- temperature, Over current, Temperature high alarm																
Temperature range	0°C- 40°C																
Protection degree	IP20																
Relative humidity	90% max. (non-condensing)																
Altitude	< 1000m above sea level																
Acoustic noise	<57dBA		< 62dBA				< 64dBA				< 68dBA				< 72dBA		
Weight (kg)	187	198,5	244	270	393	457	536	539	595	647	910,5	1150	1283	1497	1702		
Dimensions (mm) HxWxD	1040x400x815				1440x515x855				1770x825x855				1900x1250x1055				
<b>OPTIONS</b>																	
Different input/output voltage	Please ask																
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( RS485or TCP/ IP), USB Alarm logger, TCP/IP, GSM/GPRS Modem, Com port multiplexer																
Parallel Operation	UP to 8																

# SUPERIOR<sup>plus</sup>

Uninterruptible Power Supply  
10-120kVA



III Level Technology High Efficiency up to 96%

## Technical Specifications

- High efficiency (96%) with IGBT rectifier and 3L Inverter
- High efficiency operation with Eco mode (98%)
- Active input power factor correction (Pf 1)
- Active input current harmonics correction (TH DI <4%)
- Low output voltage THD (<2%)
- Smart charger can increase battery life by 40%
- Parallel operation
- Temperature compensated battery charging system
- Generator-compatible operation, external by-pass feature (Optional)
- Easily synchronized with external sources
- Remote monitoring and management software, programmable dry contacts
- Output by-pass overload and short-circuit protection
- Standard non-maintenance by-pass
- Small footprint with compact dimensions
- Low installation and operating costs
- Smart fan control (depending on temperature and load)
- Wide input voltage range
- Real-time status memory

On-line  
3 Phase Input  
3 Phase Output

Power Factor: 1  
kVA=kWatt

# Specifications

	SP 10 kVA	SP 15 kVA	SP 20 kVA	SP 30 kVA	SP 40 kVA	SP 60 kVA
Model (3 Ph/ 3 Ph)						
Nominal Active Power (Watt)	10.000	15.000	20.000	30.000	40.000	60.000
<b>RECTIFIER INPUT</b>						
Nominal Voltage	380/400/415 V (Ph-Ph) 3Ph+N					
Input Voltage Range (VAC) (at 50% Load)	Min. -35% / Max +25%					
Input Voltage Range (VAC) (at full Load, with battery charging)	Min. -18% / Max +18%					
Frequency (Hz)	50 /60 ± % 5					
Input Current Distortion Rate	< 5%					
Power Factor	> 0.99					
<b>BYPASS</b>						
Nominal Voltage	380/400/415 V (Ph-Ph) 3Ph+N					
Voltage Tolerance	± 10%					
Frequency Tolerance (Hz)	± 10%					
Transfer Time (ms)	< 0.01					
<b>OUTPUT</b>						
Nominal Voltage (VAC) (Ph-Ph)	380/400/415 V (Ph-Ph - Adjustable)					
Power Factor	1					
Efficiency	Up to 96% (*)					
Wave Form	Sinusoidal					
Frequency (Hz)	50 or 60 (Adjustable)					
Frequency Tolerance (Battery Operation)	0.01%					
Voltage Regulation (Static)	±1%					
Output Voltage Change at unbalance load	< % 0.5					
Maximum phase angle variation	< 0.1°					
Crest Factor	3:1					
Overload Protection (sec)	60 sec (at 100-125% Load) / 10 sec (at 126-150% Load)					
Total Harmonic Distortion	Linear load < %3 / Non linear load <% 5					
<b>BATTERY</b>						
Battery Type	Maintenance-Free Lead Acid Batteries					
Battery String (Blocks)	20-30	30			40	
Protections	Overload Protection, High Temperature, Input Over Voltage, Input & Output Over Current, Back-Feed Protection, Intelligent Charging Algorithm – Deep Charge Protection – Battery Test (Automatic/ Manual), Short- Circuit Protection					
<b>COMMUNICATION</b>						
Standard Interface	RS232 – EPO – External cabinet temperature					
Options	Modbus - 4 Programmable Relay-Contacts - SNMP					
<b>ENVIRONMENT</b>						
Operating Temperature Range (°C)	0 - 40 °C					
Battery Temperature Range (°C)	20 C - 25 °C (Recommended For Longer Battery Life)					
Maximum Altitude without Derating (m)	1000					
Relative Humidity Range	% 20-95 (Non-Condensing)					
Acoustic Noise (dBA)	< 55 (at 1m)					
<b>PHYSICAL</b>						
Dimensions (HxWxD) (mm)	855 x 300 x 715		990x 300 x 865		1200x430x960	1000X450X900
Weight (kg) (without battery)	53 Kg Pallet 44 Kg net		70 Kg Pallet 62 Kg net	75 Kg Pallet 67 Kg net	90 Kg Pallet 80 Kg Net	105 Kg Pallet 95 Kg net
Paint	RAL 9005					
<b>STANDARDS</b>						
Safety	IEC/EN 62040-1					
EMC	IEC/EN 62040-2					
Performance	IEC/EN 62040-3					
Design	ISO 9001:2008 - ISO 14001:2004					
Protection Class	IP 20 (other IP as option)					

\*\*DELTA reserves the right to change the Technical Specifications and design without notice.

## MCU 8 Serie

Mini Smart Stabilizers  
0,5 - 20 kVA with Relay



Relay Type DELTA MCU 8 Series Single Phase Digital Stabilizers (0,5-20kVA) protect your home devices against voltage fluctuations, lengthens their life. They can be used for A/C, water boilers, DVD players, music centres, LCD & Plazma TV, Satellite receivers etc. to obtain much better efficiency.

### Technical Specifications

- Single phase
- Input: 130 VAC / 260 VAC, 100 VAC / 240 VAC
- Output: 220 VAC  $\pm$ 5%
- Efficiency: %96
- Regulation speed: 500 V/s
- Working conditions: -40°C / +60°C
- Protection: Low and high voltage protection, thermal protection
- Smart cooling fan

**For small home  
appliances  
0,5 - 20 kVA**



## Specifications

MODEL	MCU-8-500	MCU-8-1000	MCU-8-2000	MCU-8-3500	MCU-8-5000	MCU-8-10000	MCU-8-20000
Power kVA	0,5	1	2	3,5	5	10	20
<b>REGULATOR INPUT</b>							
In.Vol.Operating.Interval	130 - 260 Volt						
Operation Frequency	47...65 Hz						
Line Input Protection	Low,High Voltage Protection						
<b>REGULATOR OUTPUT</b>							
Output Voltage	220 VAC RMS $\pm$ 5 %						
Overloading	10 Seconds 150 % Load						
Correction Speed	500 Volt/Second						
Upturn Period	500 Volt/Second						
Output Protection	Protects load by opening the circuit when overload, short circuit occurs						
<b>WORKING PRINCIPLE</b>							
	Relay type						
<b>GENERAL</b>							
Cooling	Smart Fan System						
Measured Value Monitor	Input and Output Voltage Display Screen						
Total Harmonic Distortion	-						
Total Efficiency	> 96 %						
Mechanical By-Pass	Manually Controlled Line						
Protection Level	IP 20						
<b>ENVIRONMENTAL</b>							
Operation Temperature	-10 °C / 50 °C						
Storage Temperature	-25 °C / 60 °C						
Relative Humidity	< 90 %, DIN ( 40040 )						
Operation Altitude	< 2000 m.						
Acoustic Level	< 50 dB						
<b>BOYUTLAR</b>							
HxWxD (cm)	30 x 17 x 9		37 x 30 x 21			44 x 33 x 24	51 x 39 x 39
Weight (kg)	2,8	3,6	11	12,5	15	28	51

## DLT SRV SO-HO

Full Automatic Servo Voltage Stabilizers 8-10-15-20 kVA



Small Offices & Home Applications

### Technical Specifications

- DELTA SO-HO series are single phase voltage stabilizers regulate mains voltage and bring many advantages.
- Non-linear charges drive
- Fast regulation
- Toroidal transformer design
- Load transfer to bypass via pole change switch
- High efficiency
- Safe and economic usage
- Overcurrent and overload protection
- Digitally displayed status, input & output measurements
- 2 years warranty
- 10 years spare parts support

**Full Automatic  
Single Phase  
Stabilizers**

## Specifications

MODEL	SO-HO 1108	SO-HO 1110	SO-HO 1115	SO-HO 1120
Power kVA	8	10	15	20
<b>REGULATOR INPUT</b>				
In. Vol. Correct. Interval	160 - 255 / 120 - 240 VAC			
Operation Frequency	47...65 Hz			
Line Input Protection	Overcurrent, Low and high voltage protection, Temperature			
<b>REGULATOR OUTPUT</b>				
Output Voltage	220 / 230 VAC $\pm$ %1			
Overloading	10 sec. %200 load			
Correction Speed	~90 volt / sec.			
Upturn Period	~90 volt / sec. (155-260 VAC)			
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs.			
<b>WORKING PRINCIPLE</b>				
	Servo motor, Toroidal transformer, Microprocessor control, Full automatic			
<b>GENERAL</b>				
Working Temperature	-10 °C / 50 °C			
Storage Temperature	-25 °C / 60 °C			
Relative Humidity	< %95, DIN			
Working Altitude	< 2000 mt			
Acoustic Level	50 dB (sqm)			
Documents	CE, TUV Austria Hellas (ISO9001)			
<b>DIMENSIONS</b>				
HxWxD (cm)	56 x 30 x 36	56 x 30 x 36	61 x 38 x 41	66 x 40 x 43
Weight (kg)	35	43	72	81

## DLT SRV 11 Serie

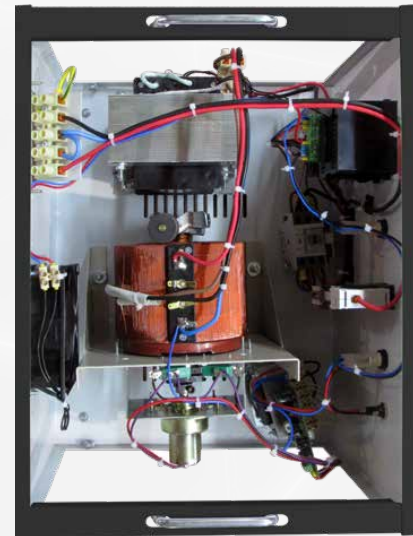
Full Automatic Single phase  
Servo Voltage Stabilizers  
1 - 50 kVA



DELTA Voltage regulators are servo drive structure, microcontroller controlled heavy duty devices which regulates mains voltage for critical loads.

### Technical Specifications

- DELTA SRV 11 series are Single Phase phase voltage stabilizers regulate mains voltage and bring many advantages.
- Non-linear charges drive
- 1 phase input 1 phase output
- Wide power and voltage interval
- Fast Regulation
- High reliability thanks to Microprocessor and Smart Driver
- High efficiency
- Load transfer to Bypass via pole charge switch
- Safe and economic usage
- Overload protection (Optional)
- Digitally displayed status, input & output measurements
- 2 years warranty
- 10 years spare parts support



**Full Automatic  
Single Phase  
1-50 kVA**

## Specifications

MODEL	1101	1102	1103	1105	1107	1110	1115	1120	1125	1130	1140	1150
Power kVA	1	2	3.5	5	7.5	10	15	20	25	30	40	50
<b>REGULATOR INPUT</b>												
In.Vol.Correct.Interval	165 - 255 / 110 - 240 VAC (Optional)											
In.Vol.Working Interval	90 - 285 VAC											
Operation Frequency	47...65 Hz											
Line Input Protection	Overcurrent, Low and High voltage protection											
Current at input	4.8	9.6	16.8	24	36	48	72	96	120	144	192	240
<b>REGULATOR OUTPUT</b>												
Output Voltage	220 / 230 / 240 VAC RMS $\pm$ %1											
Overloading	10 Sec. % 200 Load											
Correction Speed	~ 90 Volt / Sec.											
Upturn Period	~ 90 Volt / Sec. ( 160 VAC - 260 VAC )											
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs.											
Current at Output	3.6	7.2	12.6	18	27	36	54	72	90	108	144	180
<b>WORKING PRINCIPLE</b>												
	Servo Motor, Microprocessor Controlled, Full Automatic											
<b>GENERAL</b>												
Cooling	Smart Fan System											
Measured Value Monitor.	DELTA TRUE RMS Panel Voltmeter (74x74 mm) output voltage and line voltage monitorization											
Total Harmonic Distortion	-											
Total Efficiency	> % 96											
Mechanical By-Pass	"Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On / Off											
Protection Level	IP 20 // IP 54 (Optional)											
<b>ENVIRONMENTAL</b>												
Working Temperature	-10 °C / 50 °C											
Storage Temperature	- 25 °C / +60 °C											
Relative Humidity	< % 90, DIN ( 40040 )											
Working Altitude	< 2000 m.											
Acoustic Level	< 50 dB											
Documents	CE// TÜV Austria Hellas (ISO 9001)											
<b>DIMENSIONS (cm)</b>												
HxWxD (cm)	30 x 45 x 37			30 x 55 x 37			34x59x42	85x50x52			85x50x62	
Weight (kg)	25	28	29	30	34	47	55	95	110	130	155	180

## DLT SRV 33 Serie

Full Automatic Three Phase  
Servo Voltage Stabilizers  
3 - 150 kVA

DELTA Voltage regulators are servo drive structure, microcontroller controlled heavy duty devices which regulates mains voltage for critical loads.

SINGLE PHASE 110-115-120-127-220-230-240 VAC  
THREE PHASE 220-230 240-380-400-415-440 VAC  
IP20, IP21, IP54, Versions Available



### Technical Specifications

- DELTA SRV33 series are three phase voltage stabilizers regulate mains voltage and bring many advantages.
- Non-linear charges drive
- 3 phase input 3 phase output
- Independent phase regulation
- Wide power and voltage interval
- Fast Regulation
- High reliability thanks to Microprocessor and Smart Driver
- High efficiency
- Load transfer to Bypass via pole charge switch
- Safe and economic usage
- Overload protection
- Digitally displayed status, input & output measurements
- 2 years warranty
- 10 years spare parts support



## Specifications

MODEL	33003	33006	33010	33015	33020	33030	33045	33060	33075	330100	330120	330150	
Power kVA	3	6	10,5	15	22,5	30	45	60	75	100	120	150	
<b>REGULATOR INPUT</b>													
In.Vol.Correct.Interval	285 - 440 VAC (Optional: 190-415VAC)												
Operation Frequency	47...65 Hz												
Line Input Protection	Overcurrent, Low and High voltage protection												
Current at Input	4.8	9.6	16.8	24	36	48	72	96	120	161	192	240	
<b>REGULATOR OUTPUT</b>													
Output Voltage	380 / 400 / 415 VAC RMS $\pm$ %1												
Overloading	10 Sec. % 200 Load												
Correction Speed	~ 90 Volt / Sec.												
Upturn Period	~ 90 Volt / Sec. ( 160 VAC - 250 VAC )												
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs.												
Current at Output	3.6	7.2	12.6	18	27	36	54	72	90	121	144	180	
<b>WORKING PRINCIPLE</b>													
Servo Motor, Microprocessor Controlled, Full Automatic													
<b>GENERAL</b>													
Cooling	Smart Fan System												
Measured Value Monitor.	DELTA TRUE RMS Panel Voltmeter (74x74 mm) output voltage and line voltage monitorization												
Total Harmonic Distortion	-												
Total Efficiency	> % 96												
Mechanical By-Pass	"Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On / Off												
Protection Level	IP 20 / IP 54 (Optional)												
<b>ENVIRONMENTAL</b>													
Working Temperature	-10 °C / 50 °C												
Storage Temperature	- 25 °C / +60 °C												
Relative Humidity	< % 90, DIN ( 40040 )												
Working Altitude	< 2000 m.												
Acoustic Level	< 50 dB												
Documents	CE// TÜV Austria Hellas (ISO 9001)												
<b>DIMENSIONS (cm)</b>													
HxWxD (cm)	117x40x64				127x40x64			140 x 88 x 60			165x94x66		
Weight (kg)	75	85	95	105	125	145	165	260	280	310	400	425	

# DLT SRV 33 HI Serie

Full Automatic Three phase Servo  
Voltage Stabilizers  
200-3000 kVA

DELTA Voltage regulators are servo drive structure, microcontroller controlled heavy duty devices which regulates mains voltage for critical loads.



SINGLE PHASE 110-115-120-127-220-230-240 VAC  
THREE PHASE 220-230 240-380-400-415-440 VAC  
IP20, IP21, IP54, Versions Available

## Technical Specifications

- DELTA SRV33 series are three phase voltage stabilizers regulate mains voltage and bring many advantages.
- Non-linear charges drive
- 3 phase input 3 phase output
- Independent phase control
- Wide power and voltage interval
- Fast Regulation
- High reliability thanks to Microprocessor and Smart Driver
- High efficiency
- Load transfer to Bypass via pole charge switch
- Safe and economic usage
- Overload protection
- Digitally displayed status, input & output measurements
- 2 years warranty
- 10 years spare parts support





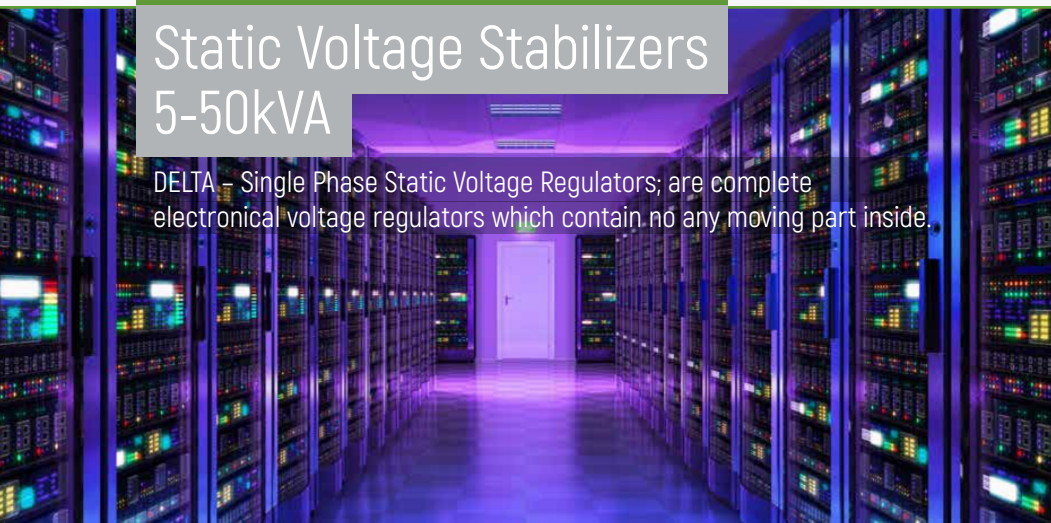
## Specifications

MODEL	330200	330250	330300	330400	330500	330600	330800	331000	331250	331500	332000	332500	333000											
Power kVA	200	250	300	400	500	600	800	1000	1250	1500	2000	2500	3000											
<b>REGULATOR INPUT</b>																								
In.Vol.Correct.Interval	285 - 440 VAC (Optional: 190-415VAC)																							
Operation Frequency	47..65 Hz																							
Line Input Protection	Overcurrent, Low and High voltage protection																							
Current at Input	323	404	484	646	808	968	1292	1616	2020	2424	3232	4040	4848											
<b>REGULATOR OUTPUT</b>																								
Output Voltage	380 / 400 / 415 VAC RMS $\pm$ %1																							
Overloading	10 Sec. % 200 Load																							
Correction Speed	~ 90 Volt / Sec.																							
Upturn Period	~ 90 Volt / Sec. ( 160 VAC - 250 VAC )																							
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs.																							
Current at Output	243	303	363	484	606	729	972	1215	1515	1818	2430	3030	3645											
<b>WORKING PRINCIPLE</b>																								
	Servo Motor, Microprocessor Controlled, Full Automatic																							
<b>GENERAL</b>																								
Cooling	Smart Fan System																							
Measured Value Monitor.	DELTA TRUE RMS Panel Voltmeter (74x74 mm) output voltage and line voltage monitorization																							
Total Harmonic Distortion	-																							
Total Efficiency	> % 97																							
Mechanical By-Pass	"Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On / Off																							
Protection Level	IP 20																							
<b>ENVIRONMENTAL</b>																								
Working Temperature	-10 °C / 50 °C																							
Storage Temperature	- 25 °C / +60 °C																							
Relative Humidity	< % 90, DIN ( 40040 )																							
Working Altitude	< 2000 m.																							
Acoustic Level	< 55 dB																							
Documents	CE // TÜV Austria Hellas (ISO 9001)																							
<b>DIMENSIONS (cm)</b>																								
HxWxD (cm)	200x120x80		200x175x80		175 x 180 x 122		208x210x144		185x210x214		208x240x214		188x240x264		208x240x264		SPECIAL							
Weight (kg)	1050		1100		1200		1650		2000		2100		2900		3450		3900		4300		6000		SPECIAL	

# DLT STK 11 Serie

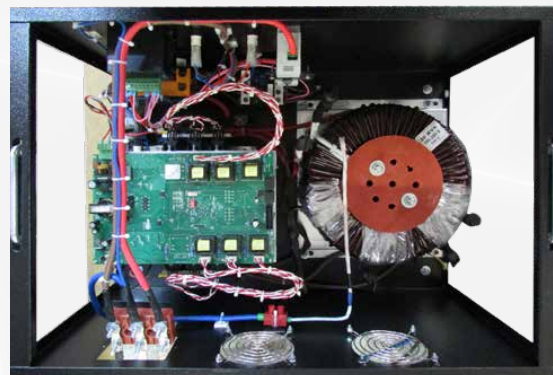
## Static Voltage Stabilizers 5-50kVA

DELTA – Single Phase Static Voltage Regulators; are complete electronical voltage regulators which contain no any moving part inside.



### Technical Specifications

- 1000 Volt / Second
- RISC Microprocessor Control,
- Excellent Dynamic, Static Regulation,
- Large Input Voltage Working Range, 130-260 VAC
- Electronic Protection against overload and short circuit,
- 220 VAC  $\pm$ 3% Regulation,
- Load level, Output ve Input Display
- Excessive voltage protection up-down limits.
- DELTA Static stabiliser is used when the speed of operation represents a critical load issue
- The voltage stabiliser does not provide galvanic separation between input and output.
- High Efficiency



## Specifications

MODEL	1105	117,5	1110	1115	1120	1125	1130	1140	1150
Power kVA	5	7,5	10	15	20	25	30	40	50
<b>REGULATOR INPUT</b>									
In.Vol.Correct.Interval	160 - 250 VAC								
Operation Frequency	47...65 Hz								
Line Input Protection	Overcurrent thermic fuse and sudden overburden protection								
Current at Input	24	36	48	72	96	120	144	192	240
<b>REGULATOR OUTPUT</b>									
Output Voltage	220 VAC RMS $\pm$ % 3								
Overloading	10 Sec. % 200 Load				% 500 Load 20 ms				
Correction Speed	~ 1000 Volt / Sec.								
Upturn Period	20 ms								
Output Protection	Short circuit, overburden, overcurrent electronic protection, protects load via opening control								
Current at Output	18	27	36	54	72	90	108	144	180
<b>WORKING PRINCIPLE</b>									
	Microprocessor controlled, full automatic, static, semi conductor electronic structure maintenance free								
<b>CONTROL PANEL</b>									
Display and Buttons	Display Screen								
Alert Message	Input Low / Hi, Output Low / Hi, Over temperature (Smart Fan System)								
Meas.Value Monitorization	Output Voltage, Network Voltage								
Out. Up. Protect.limit	Standard								
Out. Sub Protect.limit	Standard								
Regulation Voltage	Standard								
<b>GENERAL</b>									
Total Efficiency	> % 97 ( Full Load )								
Mechanical ByBass	"Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On / Off								
Protection Level	IP 20								
<b>ENVIRONMENTAL</b>									
Working Temperature	-10 °C / 50 °C								
Storage Temperature	- 25 °C / +60 °C								
Relative Humidity	< % 90, DIN ( 40040 )								
Working Altitude	< 2000 m.								
Noise Level	< 50 dB								
Documents	ISO 9001 // CE // TÜV Austria Hellas								
Dimensions (HxWxD)	54 x 26 x 39			35 x 59 x 42			86 x 50 x 52		
Weight	30	33	38	50	55	63	65	80	85

## DLT STK 33 Serie

Static Voltage Stabilizers  
30-2000 kVA

DELTA Threephase Static Voltage Stabilisers are:  
Multi-tap autotransformer;  
Microprocessor control system.



### Technical Specifications

- 3 phase in / 3 phase out
- Sensitive and fast TRUE RMS reading modul
- In 20 mili second reading
- Independent phase control
- Fast regulation module
- Improvable output regulation structure
- Reading power parameters
- Modular card structure
- Maintenance free structure
- Ability to work under whatever with  $\cos \mu$  load
- Ability to discriminate Non-Linear load and short circuit
- In the case of short circuit It prevents blowing of fuse
- Reoperating from short circuit
- 2 years warranty
- 10 years spare parts support



## Specifications

MODEL	3330	3345	3360	3375	33100	33120	33150	33200	33250	33300	33400	33500	33600	33800	331000	331250	331500	331600	332000
Power kVA	30	45	60	75	100	120	150	200	250	300	400	500	600	800	1000	1250	1500	1600	2000
<b>REGULATOR INPUT</b>																			
In.Vol.Correct.Interval	285 - 440 VAC																		
Operation Frequency	47...65 Hz																		
Line Input Protection	Overcurrent thermic fuse and sudden overburden protection																		
Current at Input	48	72	96	120	161	192	240	322	404	480	646	808	960	1292	1616	2020	2424	2584	3232
<b>REGULATOR OUTPUT</b>																			
Output Voltage	380 / 400 / 415 VAC RMS $\pm$ %3																		
Overloading	10 Sec. % 200 Load									% 500 Load 20 ms									
Correction Speed	~ 1000 Volt / Sec.																		
Upturn Period	20 ms																		
Output Protection	Short circuit, overburden, overcurrent electronic protection, protects load via opening control																		
Current at Input	36	54	72	90	121	144	180	242	303	360	484	606	720	968	1212	1515	1818	1940	2424
<b>WORKING PRINCIPLE</b>																			
Microprocessor controlled, full automatic, static, semi conductor electronic structure maintenance free																			
<b>CONTROL PANEL</b>																			
Display and Buttons	Display Screen																		
Alert Message	Input Low / Hi, Output Low / Hi, Over temperature (Smart Fan System)																		
Meas.Value Monitorization	Output Voltage, Line Voltage																		
Out. Up. Protect.limit	Standard																		
Out. Sub Protect.limit	Standard																		
Regulation Voltage	Standard																		
<b>GENERAL</b>																			
Total Efficiency	> % 97 ( Full Load )																		
Mechanical ByBass	"Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On / Off																		
Protection Level	IP20 / IP54 (Optional)																		
<b>ENVIRONMENTAL</b>																			
Working Temperature	-10 °C / 50 °C																		
Storage Temperature	- 25 °C / +60 °C																		
Relative Humidity	< % 90, DIN ( 40040 )																		
Working Altitude	< 2000 m.																		
Noise Level	< 50 dB																		
Documents	ISO 9001 // CE // TÜV Austria Hellas																		
Dimensions (HxWxD)	117x41x64	127x41x64	138x51x68		140x61x89			147x120x95			160x140x120			175x180x120		195x240x155			
Weight	130	170	210	230	250	270	300	760	830	900	1000	1100	1150	1650	2850	3100	3400	3500	4000

# DLT FC 300 Serie

Frequency Converter  
10-200 kVA



The device may also change the voltage, but if it does, that is incidental to its principal purpose 3 Phase Frequency Converters PWM Controlled

## Technical Specifications

- LCD alphanumeric front panel
- 2 microcontrollers
- 128 event records with RTC
- Clock and calendar (battery supported)
- Remote control from RS232 port
- Custom input voltage and frequency ranges
- Three phase or Single phase options
- SNMP communication
- 2 years warranty
- 10 years spare parts support
- 50 Hertz in / 60 Hertz out
- 60 Hertz in / 50 Hertz out
- 50 Hertz in / 400 Hertz out
- 60 Hertz in / 400 Hertz out

## Specifications

DELTA DLT FC300 Series, 3 phase frequency converters PWM controlled, IGBT technology and system is controlled from a microprocessor.

Frequency changer or frequency converter refers to an electronic device that converts alternating current (AC) of one frequency to alternating current of another frequency. The device may also change the voltage, but if it does, that is incidental to its principal purpose.

Why We Need to Use An Frequency Converter ?

Your national electricity voltage and frequency is not suitable for your equipment in this case you need a frequency and voltage changer device, transformers can change only voltage not the frequency.

Common frequency ranges are 50 Hertz,60 Hertz and 400 Hertz values

MODEL SELECTION TABLE

Model	Output power	Input frequency	Output frequency
FC310	10 kVA	50/60 Hz	50/60/400 Hz
FC315	15 kVA	50/60 Hz	50/60/400 Hz
FC320	20 kVA	50/60 Hz	50/60/400 Hz
FC330	30 kVA	50/60 Hz	50/60/400 Hz
FC340	40 kVA	50/60 Hz	50/60/400 Hz
FC360	60 kVA	50/60 Hz	50/60/400 Hz
FC380	80 kVA	50/60 Hz	50/60/400 Hz
FC3100	100 kVA	50/60 Hz	50/60/400 Hz
FC3120	120 kVA	50/60 Hz	50/60 Hz
FC3160	160 kVA	50/60 Hz	50/60 Hz
FC3200	200 kVA	50/60 Hz	50/60 Hz

Voltage	230/400 VAC 3 phase, 4 cable, +/-20%
Frequency	See model selection table
Voltage THD	<10%
EMI	EN50091-2 Class A
Protections	Input fuse, voltage low and high alarm
<b>OUTPUT</b>	
Power (Kw)	10-200 kVA range
Power factor	Standard 0,8 or special product
Voltage / frequency	See model selection table
Frequency tolerant	+/- 0,2%
Protections	Overload, short circuit, voltage low and high alarm
Crest factor	3:1
Overload	100-125% load 10 mins, 125-150% 1 min, > 150% output inhibit
THD (full load)	<3%
<b>GENERAL</b>	
Human interface	Alphanumeric LCD panel, mimic lamps, control buttons
Parallel	Available as option
Alarm memor	128 events, 4000 alarms with time and date
Clock and calendar	Standard
Communication	RS232 serial port
Protections	Overtemperature and overload protection
Ambient temperature	0-40 C
Protection degree	IP20
Humidity / altitude	%90 (non condensed) / <1000 m below sea level



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