

Silcon

DP300E Series

Due to the unique delta conversion technology the DP300E series offers the highest efficiency on the market - and thus the lowest operating costs. A unique internal powerfactor control which, always provides PF ~ 1, makes an external phase compensation unit unnecessary.

Other advantages are: no mains repercussion, low heat and noise emission, and of course the utmost security against power failure and the capacity to handle extreme high overload. The DP300E Series is efficient green technology which also copes with environmental protection requirements of tomorrow.

The DP300E has the load capacity to serve a broad range of electrical equipment - from mainframe computers to enterprise wide EDP installations, production lines, electronic control systems and telecommunication equipment. Up to nine DP300E systems can be paralleled to serve special demands for power upgrading or redundancy. Communication via bus provides an intelligent load distribution to save power in periods with smaller load.

User defined controls

The DP300E Series is characterized by its advanced microprocessor and digital technology. The controller - the very heart of the DP300E Series - controls every single operation in the system and displays a variety of important parameters/values on the front display panel and/or through the serial RS232 communication port.

With the standard built-in communication facilities, the controller also opens up a comprehensive remote dialogue and control. Programming of parameters takes place via the keypad on the front.

Minimizing environmental impact

All DP300E systems are almost made entirely by recyclable materials and contain no PVC or other harmful plastics.

Moreover, all packaging material is made by recyclable materials to conserve natural resources.

Advanced battery management

The DP300E controller features battery monitoring and temperature compensated battery charging. This ensures control of the battery capacity in cyclic intervals and charging under optimized conditions. The result is a higher system reliability and prolonged battery lifetime.

Fan surveillance

A built-in fan monitor ensures constant monitoring of fans. Any irregularity is automatically displayed.

Green Power

The Silcon DP300E series saves money and protects the environment

Over a five-year period, the savings you'll enjoy with a DP300E are quite amazing. Changing to the DP300E series saves enough in yearly power consumption, to pay your new UPS within 5 years!

If you are buying your first UPS the advantages are obvious- the DP300E savings on the power bill will generate return on investment from day one.

The environmental benefit

The money you save on your electric bill means you charge nature with less pollution as you use less power and reduce the CO2 emitted from the power plant. Furthermore, the DP300E systems are made of PVC free materials. In the event of fire it does not generate halogen gases, and all components are recyclable.

Input corrected power factor, plus no mains repercussion, and high efficiency - all add up to green power

The Silcon DP300E power factor

The DP300E has a power factor corrected input side ensuring that the input power factor is always 1 regardless of load and mains voltage. A power factor of 1 minimizes installation costs by using smaller cables and smaller fuses.

No mains repercussions

In more and more countries, power distributors are setting new restrictions on mains distortion. Exceeding those standards can be very costly. Most UPS systems have a problem with distortion of the utility mains. The distortion is caused by the 6-pulse thyristor rectifier in the mains input circuit. This distortion has to be eliminated (EMC requirements) by large filters, which causes further decrease in efficiency. DP300E technology which maintains a sinusoidal mains current, eliminates this problem and meets the EMC requirements.

Small heat losses

DP300E offers massive savings not only in operating costs for the unit itself, but also in air conditioning costs due to the very low heat losses from DP300E. Lloyds Bank in London, for example, installed a 2.7 MW DP300E system. The annual power savings from using a DP300E instead of an ordinary UPS was estimated at \$160,000. That figure will be even higher because of additional savings in air conditioning.

The Silcon DP300E extends battery lifetime

APC has long been recognized as a leader in providing extended battery life. A unique process called "float voltage compensation" achieves maximum battery life. Charge voltage is regulated to compensate for battery temperature. With no compensation, battery life decreases, as temperature increases, as shown with the red curve in the graph at right. By adjusting the charging voltage by very small amounts (typical compensation levels range from 2.20 to 2.36 volts/cell), battery life is extended as seen in the green curve.

Extra safety with Advanced Battery Monitoring (ABM)

Batteries are an extremely important part of the UPS. ABM continuously compares actual battery data to preprogrammed data in the monitoring software to ensure DP300E batteries are healthy and ready. Any reduction in battery capacity triggers alarms automatically.

Power Control

The Silcon DP300E integrates seamlessly with generators

When extended back-up time is required (more than 1-2 hours), a diesel generator combined with a UPS having 5-10 min. back-up power often provides the optimal solution. In the event of mains failure, DP300E pulls power from the battery while the diesel generator is started and stabilized. As soon as the supply is re-established by the diesel generator, the DP300E provides the load with conditioned generator-supplied power.

Before the introduction of the innovative DP300E, combining UPS and generator power presented a serious problem, with a traditional UPS, the thyristor controlled rectifiers draw high inrush current to magnetize the rectifier input transformer when switching back to normal operation. They also cause a major distortion of the supply due to the commutation of the thyristors. The generator must be significantly over-sized to prevent the generator output voltage from being distorted, by commutation of the thyristors in a thyristor controlled rectifier.

With the DP300E series you can use diesel generators without over-sizing. In fact, you can size to the same rating, because the sinusoidal input current causes no distortion feedback to the generator.

For very sensitive diesel installations the DP300E series can even be programmed for soft start. When switching back to normal operation it slowly transfers the load from battery to generator.

Communications and Operations

User-friendly, multi-lingual (15 language), informative interface

Through the DP300E display panel, you can quickly and easily access key measurements. The information covers utility power, battery status, output volume, and percent of capacity.

When an alarm condition occurs, an audible alarm sounds, the red alarm light goes on, and the display shows the cause of the alarm. The DP300E monitors 38 separate functional values, each of which can activate an alarm.

DP300E also maintains a time-stamped log of all important power and UPS events. The log is accessible from the keypad for easy diagnostics.

Software integrates, monitors and manages your Silcon DP300E

Extended power outages can sometimes outlast your UPS battery power. If no one is there to shut your system down, you may end up with corrupted or lost data. DP300E offers unattended, safe, automatic shutdown as a standard part of your power protection solution. Two built-in RS232 ports and a relay port make connecting the unit to a monitoring station a breeze.

SmartMon

SmartMon communication software and all necessary cables are enclosed all DP300E units. This solution meets all your needs for UPS monitoring and management. You get a simple and easy

solution that operates very smoothly, and integrates seamlessly with your existing management strategy.

Network Power Protection

Real network power protection is achieved through a combination of the DP300E and SmartMon. True network protection means preventing keyboard lockups, hardware degradation, dramatic or complete data loss or burnt motherboards. The SmartMon from APC provides not only orderly shutdown, but also offers user notification in the event of power failure to give all connected users the time they need to save their files and close applications.

DPView™ SNMP Adapter

The SNMP Adapter provides you with the industry's most comprehensive set of tools for standardized monitoring of networked UPS systems. The compact DP-VIEW SNMP Adapter connects to the DP300E serial RS232C ports. It links your DP300E to the network, making it possible to monitor the unit from a NMS (Network Management System) anywhere on the network. This powerful solution gives you central control of important internetworking equipment like routers, servers, gateways, not to mention the UPS.

Parallel operation

The Silcon DP300E Series can be expanded - you can connect up to 9 units whenever you need more power protection.

Redundancy

Redundancy is used for complying with strict requirements for uninterrupted operation. Power systems consisting of several units must be sized to ensure that in the event one system is down, sufficient capacity remains to power the load. In practical terms this means that the individual systems never operate at full load.

Advanced Power Management

Installed in parallel the DP300E's intelligent control can also improve overall efficiency because only the systems needed to supply the load are "active." The other systems can be held in "stand by" mode, ready to start up without interruption when required.

Furthermore, to reduce stress and improve reliability, the load can be switched between the parallel systems in preprogrammed sequences.

Service

Power service optimizes performance and ensures peace of mind

Power Service solutions consist of a range of services custom-designed to meet customer needs and requirements.

Once installed, the DP300E pumps power, the life-blood of your connected load, continuously and reliably. Regular maintenance throughout the DP300E's long life prolongs the lifecycle and optimizes the performance of your UPS system.

We offer a variety of standard and custom-tailored service contracts, which ensure you get the maximum benefit of your DP300E. For example, our Power Installation Program offers service through the entire buying process and life cycle of the unit. From specification to installation to daily operation you receive premium service from a skilled specialist.

Another key feature of our Power Service Solutions is our Factory Acceptance Test (FAT); customers are invited to witness the rigorous tests at our test laboratory. You see for yourself just how tough and durable the DP300E really is.

Service response time is, of course, within 24 hours. Every service call is completed with a service report that details the condition of your DP300E.



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Silcon DP300E

Technical Specifications

Input Specifications (208V/480V)

	DP310E	DP315E	DP320E	DP330E	DP340E
Input Voltage			3x208V/3x480V		
Voltage tolerance					
Mains operation			± 15%		
Bypass operation			± 10% (standard)		
Input Frequency			60 Hz		
			±6% (standard)		
			±0.5-8% (programmable)		
Input RF			load 25% mni. 0.97		
			load 100% min. 0.99		

Output Specifications (208V/480V)

	DP310E	DP315E	DP320E	DP330E	DP340E
Output voltage			3x208V/3x480V		
Voltage tolerance			±1% static, sym. load		
			±3% static, asym. load		
			±5% 1-100% load step		
Voltage distortion			max 3%, linear load		
			max 5%, non-linear load		
Load power factor			0.9 lead to 0.8 lag		
Output frequency			60Hz (mains synchronized)		
			±0.1% free running		
Overload capacity					
Mains operation			200% - 60% secs		
Mains operation			125% - 10mins.		
Battery operation			150% - 30 secs.		
Bypass operation			125% - cont.		
Bypass operation			1000% - 500 ms		

General Specifications (208V/480V)

	DP310E	DP315E	DP320E	DP330E	DP340E
Static bypass switch			Built-in		
Communication interface			Built-in		
Backfeed protection			Built-in		
Ambient temperature	0-40°C (Above 25°C the battery lifetime is reduced)				
Humidity	Max 95%, non condensing				
Protection class	IP30				
Safety	UL 1778 EN50091-1 EN50091-2				
Emission and Immunity					
Advanced Battery Monitoring	Programmable				
Auto restart	Programmable				

Options and Accessories

	DP310E	DP315E	DP320E	DP330E	DP340E
Options	Parallel operation board IP31 enclosure Terminals for external batteries Alarm relay board				
Accessories	Transformer for galvanic isolation Service bypass panel Remote display				

Network Interface Included is Silcon SmartMon software with support for RS-232C and/or relay. The software provides management and shutdown facilities to the most common operating systems, including Novell, OS/2, DEC OSF/1, HP-UX, SCO UNIX, IBM RS6000 AIX, Windows 3.1, Windows 95, Windows NT and many more. DP300E is of course SNMP compatible.

208V

	DP310E	DP315E	DP320E	DP330E	DP340E
Output power	10kW/10kVA	15kW/15kVA	20kW/20kVA	30kW/30kVA	40kW/40kVA
Full load output current	27.8A	41.6A	55.5A	83.3A	110.0A
Max. input current	37.5A	56.3A	75.0A	113.0A	150.0A
Efficiency AC to AC					

100% Load	93.6%	93.6%	94.5%	94.7%	95.0%
50% Load	91.9%	90.0%	92.0%	92.1%	93.8%
Typical losses, nominal load	0.7kW	1.0kW	1.2kW	1.7kW	2.1kW
Audible noise 70-100% load	55/55db(A)	55/65db(A)	55/65db(A)	55/65db(A)	55/65db(A)
Back/up time with built-in batteries (PF 0.7)	22 min.	13 min.	8 min.	13 min.	8 min.
Dimensions (inches)	55.12h x 23.62w x 31.5d	55.12h x 39.37w x 31.5d	55.12h x 39.37w x 31.5d	55.12h x 39.37w x 31.5d	55.12h x 39.37w x 31.5d
Weight (lbs.)	803	902	902	1430	1430

480V

	DP310E	DP315E	DP320E	DP330E	DP340E
Output power	10kW/10kVA	15kW/15kVA	20kW/20kVA	30kW/30kVA	40kW/40kVA
Full load output current	12.0A	18.0A	24.1A	36.1A	48.1A
Max. input current	37.5A	56.3A	75.0A	113.0A	150.0A
Efficiency AC to AC					
100% Load	94.3%	94.3%	94.9%	94.3%	95.0%
50% Load	91.3%	91.5%	93.3%	90.8%	92.9%
Typical losses, nominal load	0.6kW	0.9kW	1.1kW	1.8kW	2.1kW
Audible noise 70-100% load	55/55db(A)	55/65db(A)	55/65db(A)	55/65db(A)	55/65db(A)
Back/up time with built-in batteries (PF 0.7)	22 min.	13 min.	8 min.	13 min.	8 min.
Dimensions (inches)	55.12h x 23.62w x 31.5d	55.12h x 39.37w x 31.5d	55.12h x 39.37w x 31.5d	55.12h x 39.37w x 31.5d	55.12h x 39.37w x 31.5d
Weight (lbs.)	869	990	990	1606	1606

