

PROTEK



特別なオプションで全ての日本製機械に適合可能。
3相交流380ボルト4線式を3相交流200／220
ボルト3線式にコンバート。

ALP Series 10-1000kVA

True On-Line Double Conversion

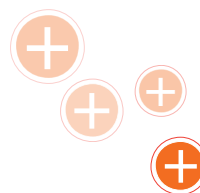
UPS / Inverter / Voltage-Frequency Converter

สำรองไฟ / เปลี่ยนไฟฟ้า DC-AC / ปรับแรงดัน-ความถี่ไฟฟ้า

Full Digitalized Intelligent Galvanic Isolation Design

Features

- Advanced Technology DSP, IGBT Components
- Wide Input Range, Robust Design For Harsh Environment
- Multi - CPU and Software / Hardware Cooperate Control
- True Galvanic Isolation Transformer Design
- Automatic & Manual Static Bypass Switch
- Each Phase with Individual Inverter Supporting, allow 100% unbalance load capabilities
- Eco Design with High Efficiency and Low THD
- Advanced Battery Charging Management
- Fully Protection Over & Under Voltage, Spike & Surge Suppression, Short Circuit Protection...etc.
- Modular Design for Easy Maintenance
- N+X Parallel Redundancy Operation (Optional)
- EPO - Emergency Power Off Function (Optional)



All Specification Can be Customized

- ① **Voltage** : 190/200/208/380/400Vac
415/440/480/600Vac
- ② **Phase** : 1P2W / Δ 3P3W / Y 3P4W
- ③ **Frequency** : 50/60/400Hz

* SPECIFICATIONS : True On-line Double Conversion With Isolated Transformer

ALP Series																
MODEL	Appearance	    ALP-10K-60kVA ALP-80K-160kVA ALP-200K-320kVA ALP-400kVA-1000kVA														
		ALP	3P Input / 1 P Output	10K	20K	30K	40K	50K	60K	80K	100K	120K	160K	200K		
ALP	3P Input / 3 P Output	10K	20K	30K	40K	50K	60K	80K	100K	120K	160K	200K	240K	320K	400K	
Power Rating	kVA	10	20	30	40	50	60	80	100	120	160	200	240	320	400	
	kW	8	16	24	32	40	48	64	80	96	128	160	192	256	320	
INPUT	-Rectifier															
Voltage (Vac)		190 / 200 / 208 / 380 / 400 / 415 / 440 / 480 / 600V (Y3P4W or Δ 3P3W)														
Input Range		± 20% (>± 20% is Available Upon Request)														
Frequency (Hz)		50 / 60 / 400Hz ± 5Hz														
Power Walk In		0% - 100% : 20 Secs														
Efficiency		> 98%														
OUTPUT	-Inverter															
Voltage (Vac)	3P Input / 1P Output	100 / 110 / 120 / 220 / 230 / 240V ± 1% (Y1P3W or Δ1P2W)														
	3P Input / 3P Output	190 / 200 / 208 / 380 / 400 / 415 / 440 / 480 / 600V ± 1% (Y3P4W or Δ3P3W)														
Wave Form		Pure Sine Wave														
Output Power Factor		0.8														
Frequency Lock Range		50 / 60 / 400Hz ± 3Hz														
Output Frequency (Free Running)		50 / 60 / 400Hz ± 0.1Hz														
Phase Shift Under 100% Unbalance Load		< 0.5														
THD (Linear Load)		< 2%														
Overload	< 110%	Continuous														
	110 - 125%	15 minutes														
	125 - 150%	10 minutes														
	> 150%	30 seconds														
Efficiency (100% Load)		95%			95.5%			96.5%			97%					
BATTERY																
Battery Type / Pcs		Maintenance Free Sealed Lead - Acid Batteries / 12V x 29pcs														
Maximum Charge Current Adc (Selectable)		5	10	15	20	25	30	40	50	60	80	100	120	160	200	
Battery Start		Yes, UPS Can be Started Without AC Source														
SYSTEM FEATURES																
Approval		FCC Class A, EN50091-1, -2, UL, ISO9001														
Automatic & Manual Bypass		0 msec (Mains ↔ Inverter by Static Transfer Switch)														
Maximum Heat Dissipation (kW)		1.1	1.3	1.9	2.6	3	3.5	4.6	5.4	6.5	8.7	11.5	13	17.4	21.7	
Audible Noise (dBA)		< 58dBA (At 1 M)						< 60dBA (At 1 M)					< 65dBA (At 1 M)			
Temperature		0 - 40°C; 32 - 104°F														
Humidity / Altitude		0% - 90% (Non - Condensing) / < 1500M Above Sea Level														
Short Circuit Protection		Rectifier, Reserve, and Bypass., True Galvanic Input - Output Isolation														
Protection System		Automatic Self - Diagnostics Test, Input Over & Under Voltage, Output Over & Low Voltage, Output Stabilizer, Overload, Low & End - Discharger Battery, MOV Surge & Short - Circuit, EMI & RFI Noise Filter, Over Temperature, **Reversed Energy Absorber														
Indicator & Alarm		LCD, LED, Mimic Display, Buzzer														
Remote Control / Communication Interface		Monitoring 1 - 99 UPS Simultaneously / Dry Contact, RS232, RS485 (USB / J-BUS / MODBUS / PROFIBUS / HTTP / SNMP are Optional)														
PHYSICAL																
Dimension (cm)		55 x 160 x 80						110 x 160 x 80				220 x 160 x 80				
(W x H x D)												330 x 160 x 80 (400k)				
Weight (Kg - Without Battery)		270	300	400	480	550	680	820	950	1180	1450	2500	2900	3100	3500	

* Specifications are subject to change without prior notice.

** Optional of Specifications

*** Different specifications required are available.

Spec. STD.12-10-15



Total Power Solutions



Features & Advantages

Advanced technology DSP, IGBT and switching components:

To increase the reliability and efficiency.

True Galvanic isolation design:

An isolated transformer is put at the output, can solve the problem of poor input grounding, can accept a different ground between input and output and can avoid the annoying problem of ground leakage current. The user gets the bonus of attenuation of common mode noise from the output isolation transformer.

Multi-CPU design and software/hardware cooperate control:

Several CPUs are employed in the control circuit, critical functions are designed to parallel redundancy to improve reliability.

Redundant power supply:

An extra power supply is connected redundantly to supply power of the static switch, so that, there will be AC output no matter what happen to the UPS.

Plug & play modular design:

The power circuit is separated into several modules plugged into slots in the UPS, which is easy to pull out, permit quick maintenance and easier trouble-shooting. Therefore, it can be regarded plug and play modules.

Each phase with individual inverter supporting:

Characteristics will not be violated under 100% unbalance load.

Protection against detaching and floating of the neutral of input power supply:

MOV (surge protector) is added at the input, provide sufficient protection to both UPS and the load from any lighting or surge caused by neighboring large loads.

User friendly control design:

UPS is designed with breaker on/off sensor, power supply sensor etc.. Therefore, any operational mistake made by the user causes no harm to the UPS.

Intelligent charger with temperature compensation:

To improve the battery life expectancy.

Huge charging power (selectable):

The charge power is selectable (Lo/Me/Hi) according to Ah of the battery, and can charge up battery of more than 8 Hrs back-up time without adding extra charger.

Intelligent, safe battery test circuitry:

Battery is tested after every boost charge of battery (either initiated by battery discharge or by one month has elapsed) without stopping the rectifier. It prevents the risk of output AC failure in case of battery bad and can inform the user the battery condition.

Intelligent fan speed control:

Fans will slow down under light load, so that the life expectancy of the fans is longer than it is specified. MTBF of fans are extended.

ALP-Series

Three Phase UPS On-line 10~400KVA



Reasonable heat evacuation passage design:

Control circuitry and power circuitry are physically separated. Therefore, the UPS system can operate under harsh environment.

DC start function:

The UPS can be started without AC source, that is, can be started with battery only, because current limit circuitry is added. It can prevent the problem of many UPS that the big inrush current blow the battery fuse and hurts the DC capacitor when battery is connected to empty DC bus (before the DC bus is energized).

Various interface options:

Remote control panel, 3 phases software for PC monitoring, auto dialing module, battery monitoring module, 3 phases SNMP card, and emergent stop switch are available.

12-Pulse Full Controlled Rectifier (option):

In order to further improve the power factor and reduce harmonic current drawn by the rectifier, our UPS from 100KVA and above use the 12-pulse full controlled rectifier. The total current harmonic current can be reduced to around 10%, and power factor is improved to over 0.8. A phase shift transformer is added to achieve the performance. The input inductor is retained too to obtain the best result. Although the cost is higher, it is more reliable and rugged topology. The user needs not to increase the input breaker and cable, input KVA and harmonic current drawn is minimized to fulfill the worldwide energy saving requirements.

Parallel Operation (option):

To increase the capacity and reliability. Load is equally shared between paralleled units. When one of the units has problem, the other units continue running without output interruption. No site adjustment is required.

Options

UPSCAN™ - Remote Control Panel

A hand held display module with LCD and LED can monitor 1 - 99 UPSs with RS-485 connected in series from distance < 1000M.

UPSCOM™ - PC Monitoring Software

Can provide real-time three phases information of UPS connected on the line and monitor several UPSs with one PC.

DCMAN™ - Battery Monitoring Module

An intelligent module to keep watching each battery in a battery bank connected in series and can distinguish and repair the aged battery before it is seriously worn out.

SNMP/HTTP agent

Can monitor and manage the UPS through Web browser and Java applet, providing simultaneously three phases data acquisition.

Emergency Stop Switch

In case of hazard, for example, electric shock, fire or earthquake, the UPS can be shutdown (Will have no AC at the output) either through a switch (can be added upon request) or through smoke detector signal (can be added upon request) to prevent further injuries or destruction.