Sinexcel

Protect your production lines and processes

Sinexcel AVC-RTS

(Active Voltage Conditioner -Real Time Strategy)

Voltage sag is the main problem to cause the losses of industrial production.

Unpredictable power outage rarely happen in many high automated process control industries who have the good power supplies.

Voltage sag is mostly caused by thunder , but it also has other reasons.

Power system cause: starting of heavy mashine and short circuit fault.

Unpredictable accident: traffic accident, construction accident, animals invasion.

Losses by voltage sag

- Product material be scrapped.
- The life time of production equipment be shorten.
- Production line need long time to be recovered.
- Delivery time be influenced.

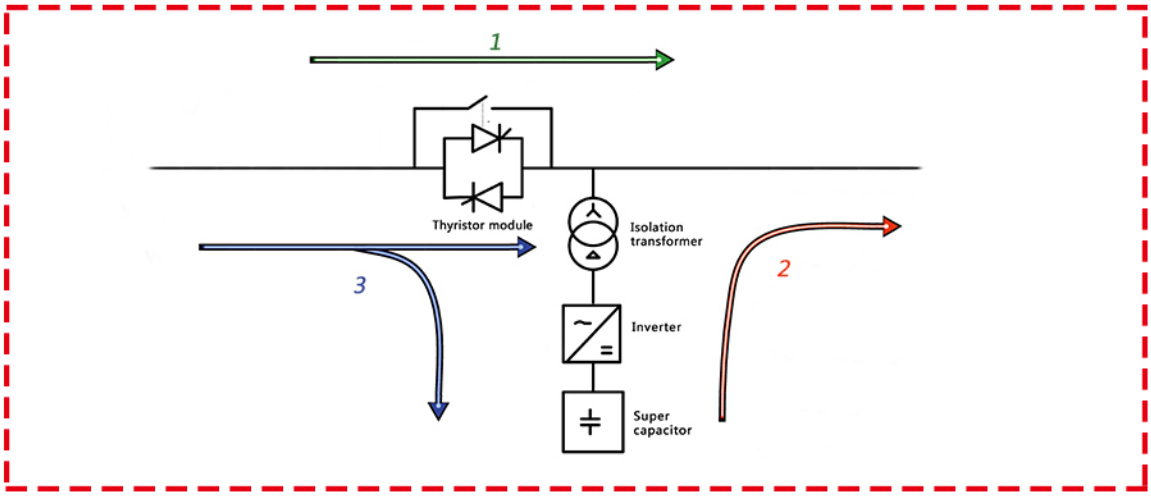
Sinexcel solution

Sinexcel AVC-RTS is an ideal solution for the deep and short term voltage sags to maintain power reliability and avoid facility shutdowns. Inverter paralled in the system and supper capacitor as energy storage, this combination technology leading to .

- High reliability
- Low operation cost
- Maintenance-free

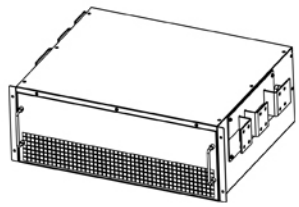
SINGLE LINE DIAGRAM

Sinexcel AVC-RTS equipment includes energy storage unit and host inverter unit. When voltage sag happens, the 3-phase thyristor module which in the host inverter unit rapidly separates the inverter from the grid to prevent the supper capacitors from delivering energy to the grid, the inverter module converts the energy of super capacitor and outputs it to the load.



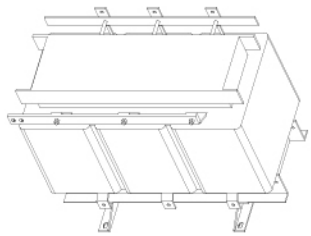
Thyristor module

The thyristor module ensures fast switching of the system and prevents the super capacitor output voltage from returning to the grid side.



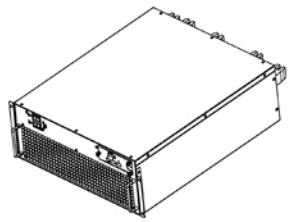
Isolation transformer

The isolation transformer stabilize the output side voltage and cover more voltage levels.



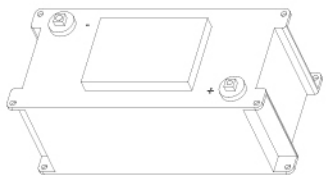
Inverter

The converter module can provide bi-directional energy flow and ensure fast discharge time.



Super capacitor

The super capacitor as energy storage module supplies energy for load side and ensure the energy be quickly restored and released.



USER BENEFITS

High reliability solution

0～100% voltage sag perfect regulation.
Fast voltage regulation within 5ms respond time.
Redundancy design of inverter, 300kVA AVC be equipped with 150kVA*3pcs modules.
Energy return protection and downstream fault removal capabilities.

Low operation cost solution

The structure of parallel and standby design makes the system efficiency to 99%.
High power density of super capacitor ensure small footprint.
Super capacitoris no cooling cost to guarantee the low working temperature.

Maintenance-free solution

Super capacitor with charge and discharge times to 1 million times.
Super capacitor does not require annual maintenance.
The inverter is in standby mode and real-time monitoring the power grid information, only act in the event of a voltage sag.

Specification

System parameter	
Rated input voltage range	208V/220V/380V/400V/ 415V/460V/480V
Input voltage range	-20%~+20%
Frequency	50/60Hz(45Hz~65Hz)
Efficiency	>99%
Network structure	3P3L/3P4L
Topology design	3-level
Performance index	
System capacity	150/300/600/900/1200/1500/1800
Compensation capability	Standard module compensate 0~125% voltage to 100%voltage lasting 1s. Advanced module and increasing capacity of super capacitor can be longer
Target voltage	-40%~+20%
Switch voltage value	Continuously adjustable，gradient 0.1V
Quick response time	<100μs
Whole response time	<5ms
Voltage sag compensation	enable
Voltage swell compensation	enable
Breakdown bypass	enable
Maintain bypass	Can be selected
Noise level	<70db
The cooling way	Fans cooling

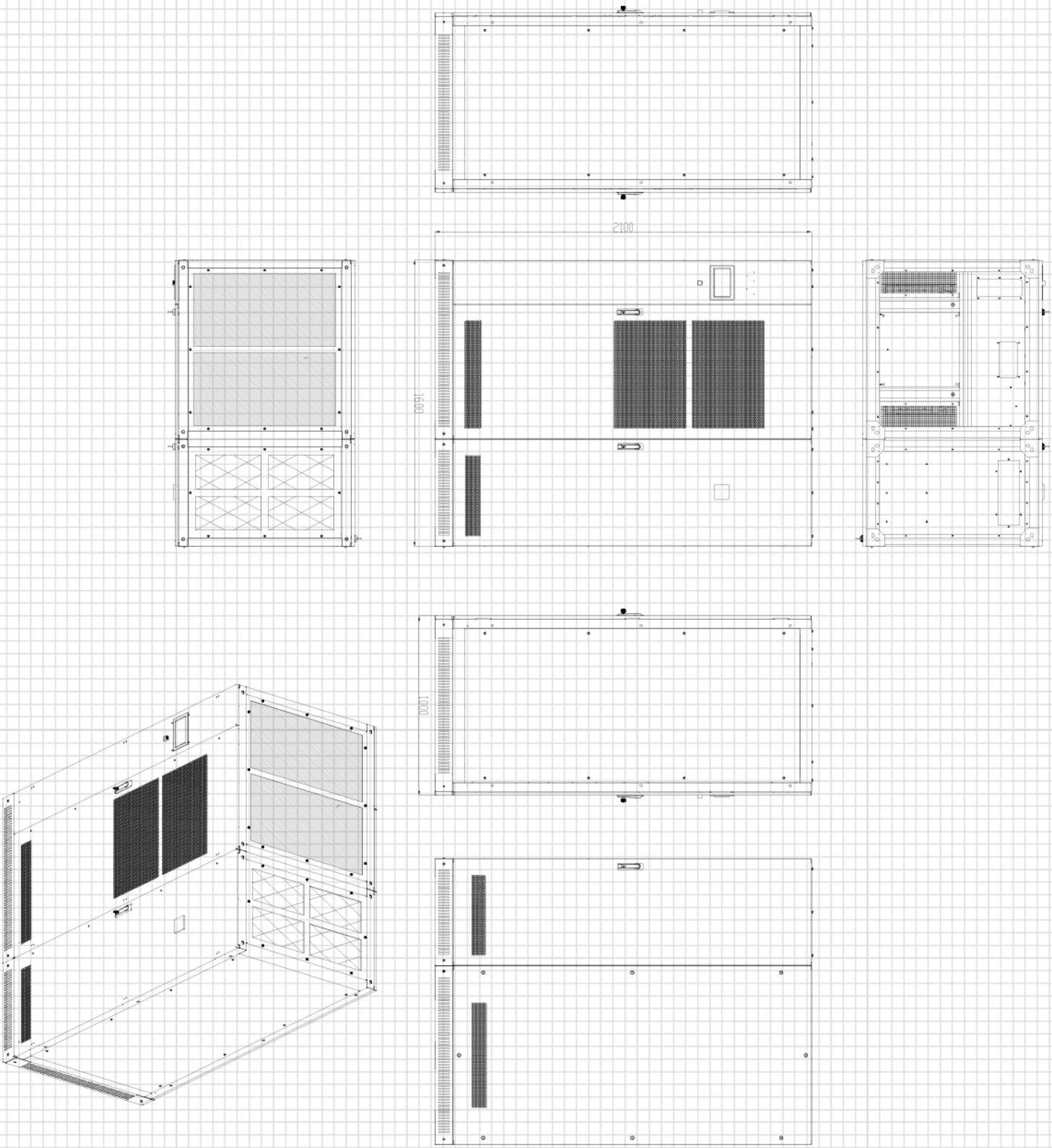
Communication capability	
Screen	7-inch full color touch screen
Language	Chinese/English
Parameter setting and data display	Running status display/ The main wiring diagram, analog display/ Power semiconductor devices or converter state information display/ The critical part of converter module temperature / Cooling system operation state display
The event log and data records	enbile
Wave record and display function	Optional
interface	RS485/Ethernet
Communication protocol	Modbus、TCP/IP
Dry contact	Working status and breakdown points
Protection function	Short-circuit protection inverter bridge reverse protection
Mechanical properties	
Fixed way	cabinet
Cable entry way	Bottom entry/can be customized
color	Light grey(7035) or can be customized
Environmental conditions	
Altitude	<1500m, Derating 1%/100m
Ambient temperature	-10~40℃
Relative humidity	5%~95%，non-condensing
Protection class	IP20，can be customized
Reference technical standards	
Standards	DL/T12292013
	Q/GDW681—2011
	En50178. CISPR11
	C-Tick. CE
	Semi F47

Voltage sag condition	Voltage remaining amount	Output voltage	Compensation time	
			Standard	Advanced
3-phase	90%	100%	3s	customized
3-phase	50%	100%	3s	customized
3-phase	0%	100%	3s	customized
Single phase	90%	100%	3s	customized
Single phase	50%	100%	3s	customized
Single phase	0%	100%	3s	customized

(Note: Compensation time can be longer by increasing super capacitors or adding charger unit.)

Sinexcel AVC-RTS			
Capacity (KVA)	208,220V 50/60Hz 3p3w/3p4w	380,400,415V 50/60Hz 3p3w/3p4w	460，480V 50/60Hz 3p3w/3p4w
150	Yes	Yes	Yes
300	Yes	Yes	Yes
600	Yes	Yes	Yes
900	Yes	Yes	Yes
1200	Yes	Yes	Yes
1500	Yes	Yes	Yes
1800	Yes	Yes	Yes
2400	Can be customized	Yes	Yes

AVC-RTS Dimension



COMPENSATION PERFORMENCE

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AVC-RTS