



Active Voltage Conditioner

Voltage Sag Correction, Surge Correction ,Continuous Voltage Regulation and Load Voltage Compensation.



Active Voltage Conditioner (AVC) is an electronic device that regulates and stabilizes the voltage of an electrical power system. AVC is used to control the reactive power in an electrical system, but it also provides additional functionality to regulate the system's voltage.

AVC uses advanced control algorithms and digital signal processing technology to detect voltage fluctuations and harmonics in the system and respond quickly to correct them. They can also provide voltage regulation and power factor correction, reducing energy consumption and improving the efficiency of the system.

AVC is commonly used in applications where a stable and reliable power supply is critical, such as data centers, hospitals, and industrial facilities. They can also be used in renewable energy systems to improve the stability and efficiency of the power supply.

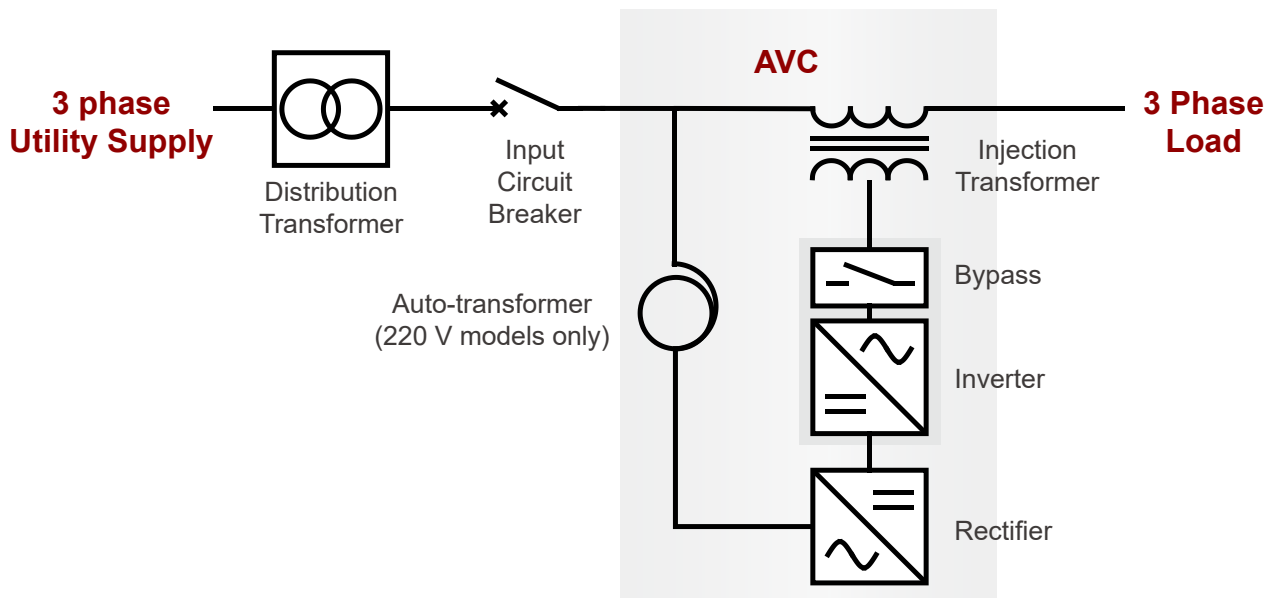
Overall, an Active Voltage Conditioner is a high-performance solution for regulating and stabilizing the voltage of an electrical power system, providing several benefits such as improved voltage stability, reduced power losses, improved power factor, and harmonic filtering.

• Working Principle

AVC consists of two converters that are not on the current path between the load and the utility. Instead, the corrective voltage injection is achieved by means of a transformer winding between the utility and the sensitive load. This configuration results in a very efficient and effective method to provide voltage correction with reduced risk of negative impacts on the load.

AVC requires no batteries as it draws the additional energy required during sag to make up the correction voltage from the utility supply. With no ongoing maintenance costs typically associated with batteries the cost of ownership for AVC systems is very small.

Furthermore, AVC contains a redundant internal bypass system that, in the event of overload or internal fault condition, ensures that the load is continued to be supplied from the utility.



• Technical Specifications (European Standard)

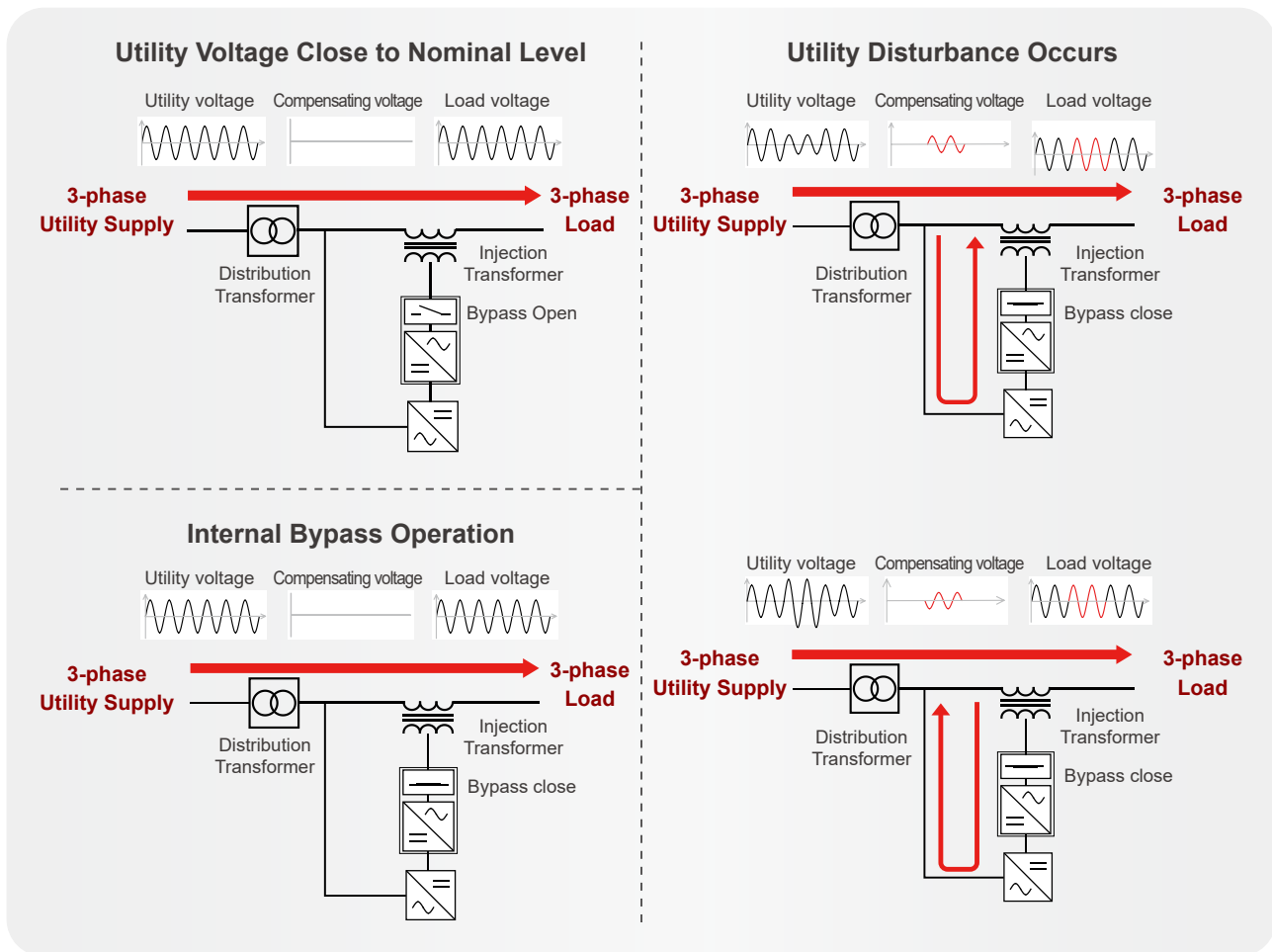
Item	Specification		
Capacity	Single Phase	15-50KVA	60KVA-1800KVA (RND)
	Three Phase	30KVA-500KVA	600KVA-3600KVA (RND)
Input	Power System	Three Phase 380V+N(3 Phase 4 Wire) Center ground referenced (TN-S)	
	Range	220V-application range 176-264V 380V-application range 304-456V	
	Max Supply Voltage	130%	
	Frequency	50Hz/60Hz \pm 5Hz	
	Outage-Control Ride Through	10ms	
	Harmonics	THDv<3%	
Output	Voltage	220V/380V	
	Regulation Mode	Contactless	
	Equivalent Impedance	< 4%(model specific)	
	Control model	independent control on each phase	
	Partial Correction Derating conditions	1.0 PF at 80% load, 0.8 PF at 100% load	
	Power Factor	0 lagging to 0.9 leading	
	Crest Factor	300%	
	Overload Capacity from 100% supply Voltage	150% for 21s, once every 500s	
Performance	Efficiency	Typically > 95%	
	Sag Correction Response	Initial <250ps Complete <1/2 cycle	
	Voltage Regulation Accuracy	<+0.5% typical, \pm 2% max	
	Sag Correction Accuracy	\pm 4%	
	Continuous Regulation Range	\pm 10%	
	Sag correction performance	60% to 100% for 30s	
	Three phase sags	50% to 90% for 10s	
	Single phase	40% to 100% for 10s	
Overload Protection	Partial correction derating conditions	1.0 PF at 80% load / 0.8 PF at 100% load	
	Bypass	Manual bypass, Automatic bypass	
	Capacity	100% of model rating (Kva)	
	Maximum Overload	120% for 60 s 150% for 15 s 1500% for 1s	
	Transfer Time	To Bypass < 0.5 ms / To Bypass < 250 ms	
Injection Transformer	Equivalent Series Impedance	Bypass < 2.5% typical	
	Transformer Type	Dry	
	Insulation	IEC 60085 Thermal class 200	
	Frequency	50Hz / 60Hz	
Protection	Vector Group	Diii (delta + 3 independent windings)	
	Input over/low voltage protection/output over/low voltage protection, input over current protection, TX over heat protection, overload protectcn	Internal	
Display	7 inch Touch Screen	Parameter control, power info, display, fault log, history curve line, etc.	
Environment	Operating Temperature Range	0°C to 50° C (32° F to 122° F)	
	Temperature Derating	Above 40°C, derate at 2% load per °C to a maximum of 50°C	
	Operating Altitude	< 1000 m without derating	
	Derating with Altitude	1% every 100m above 1500m. 2000m max	
	Inverter Cooling	Forced ventilation	
	Transformer Cooling	Natural convection	
	Humidity	<95%, non-condensing	
	Pollution Degree Rating	200%	
	Noise	<75dBA@1 m	
	Working Temperature	-25~+45°C	
	Storage Temperature	-30~+70°C	
	Protection Grade	IP54	

• Technical Specifications (American Standard)

Item	Specification		
Capacity	15KVA-100KVA		
Input	Power System	Single Phase	127V
		Dual Phase	120V/240V
		Three Phase	220V
	Range	±20%	
	Max Supply Voltage	130%	
	Frequency	50Hz/60Hz ±5Hz	
	Response Time	10ms	
Output	Harmonics	THDv<3%	
	Accuracy	±0.5%	
	Regulation Mode	Contactless	
	Equivalent Impedance	< 4%(model specific)	
	Control model	independent control on each phase	
	Partial Correction Derating conditions	1.0 PF at 80% load, 0.8 PF at 100% load	
	Power Factor	0 lagging to 0.9 leading	
Performance	Crest Factor	300%	
	Overload Capacity from 100% supply Voltage	150% for 21s, once every 500s	
	Efficiency	Typically > 95%	
	Sag Correction Response	Initial <250ps Complete <1/2 cycle	
	Voltage Regulation Accuracy	<+0.5% typical, ±2% max	
	Sag Correction Accuracy	±4%	
	Continuous Regulation Range	±10%	
Overload Protection	Sag correction performance Three phase sags Single phase	60% to 100% for 30s 50% to 90% for 10s 40% to 100% for 10s	
	Partial correction derating conditions	1.0 PF at 80% load / 0.8 PF at 100% load	
	Bypass	Manual bypass, Automatic bypass	
	Capacity	100% of model rating (Kva)	
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• Operational Detail



• Applications

• Electronics industry



• Continuous process



• Food and beverage



• Pharmaceutical industry



• Automotive



• Medical industry

