

Product Brochure

LV Power Converter Products PCS100 AVC, 160 kVA to 30 MVA Active Voltage Conditioner

Power and productivity
for a better world™



Protects sensitive industrial and commercial loads from voltage disturbances

Product overview

The ABB PCS100 AVC is an inverter based system that protects sensitive industrial and commercial loads from voltage disturbances. Providing fast, accurate voltage sag and surge correction as well as continuous voltage regulation and load voltage compensation, the PCS100 AVC has been optimally designed to give required equipment immunity from the level of voltage sags expected on the AC supply network.

Available in load capacities of 160 kVA - 30 MVA the PCS100 AVC has an operating efficiency exceeding 98%. It offers full correction and extremely fast response to three phase sags down to 70%, and single-phase sags down to 55% on the AC supply network.

Standard models offer enhanced performance allowing correction of voltage sags and surges. All PCS100 AVC models will regulate back to 100% continuously, +/- 10% when the main is between 90-110% nominal, and also remove voltage unbalance from the supply.



PCS100 Active Voltage Conditioner (AVC)

User benefits

- Fast (sub-cyclic) response
- Simple user controls
- Rugged overload capability
- Short circuit protected
- Extensive diagnostics
- Fault log and voltage event data logging
- Ethernet connectivity
- Modular construction

Features

- Full correction, three-phase sags down to 70% remaining voltage; single-phase sags down to 55% remaining voltage
- Partial correction, three-phase sags down to 30% remaining voltage
- Partial correction, single-phase sags down to 0% remaining voltage
- Continuous "ONLINE" regulation
- Correction for voltage vector phase angle errors created by faults in the supply
- Voltage unbalance correction

Options

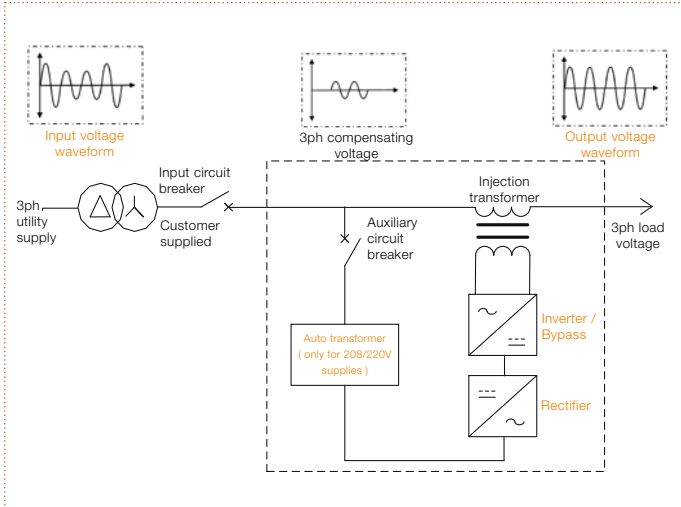
- Flicker correction
- Medium voltage systems
- Custom cabinet design
- Transformer mounted externally
- Customized transformer enclosure for indoor or outdoor installation
- 40% correction

SAG correction capability

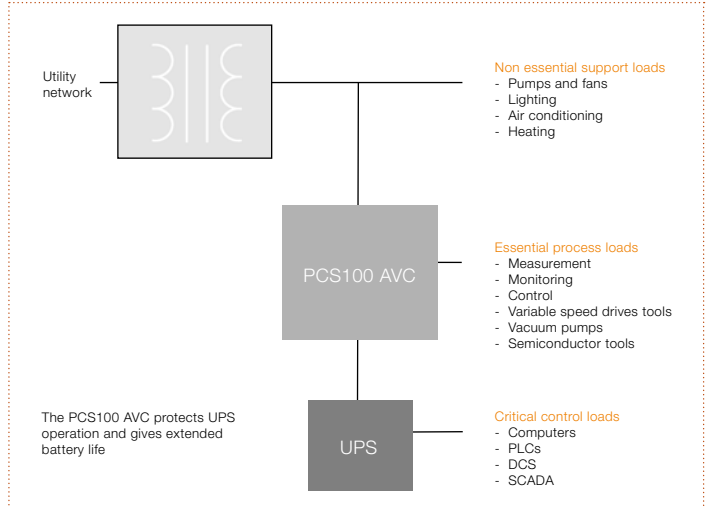
Phases	Supply (input)	Load (output)	Duration
3	90-110%	100%	continuous
3	70%	100%	30 sec
3	50%	80%	10 sec
1	85-115%	100%	continuous
1	55%	100%	30 sec
1	25%	85%	10 sec

PCS100 AVC, 160 kVA to 30 MVA

Single line diagram



Typical configuration



Technical specifications

Input	
Supply voltage 50Hz	208V to 480V
Supply voltage 60Hz	208V to 480V
	Any LV and MV by special option
Grounding arrangement	TN-S (IEC)
Maximum supply voltage	110 % of nominal supply voltage
Over voltage category	III (IEC)
Fault capacity	> 40 kA (model specific)
Outage	> 500ms - control ride through
Output	
Nominal output voltage	To match nominal supply voltage
Voltage regulation accuracy	+/- 1% typical to +/- 2% max
Sag correction response	Initial <250us
	Complete < 0.5 cycle
Equivalent series impedance	< 4% (model specific)
Efficiency	>98% (typically 99%)
Correction	30% standard, 40% option
Voltage regulation	+/- 1% typical
Load	
Capacity	160 – 2400 kVA (to 30 MVA options)
Displacement power factor	0 lagging to 0.9 leading
Crest factor	3 at 100% of rated current
Overload capability	150% for 30 sec, once per 500s
Bypass	
Capacity of model rating	100% (kVA)
Overload capacity	125% for 10 minutes
	150% for 1 minute
	500% for 1 second
	2000% for 200ms
Transfer time inverter	to bypass < 0.5 ms
Transfer time bypass	to inverter < 250 ms
Equip series impedance	bypass < 2.5% typical

Injection transformer	
Transformer type	Dry
Insulation	UL class N, 200°C
Finish	Dipped for moisture proofing
Vector group	Diii
Serial comms	
Access protocol	Ethernet connectivity
	Modbus-TCP
Controls	
210mm color LCD display	All adjustments and monitoring in English alphanumeric
Touch panel	Full parameter control
Voltage set point	Adjustable in 0.1% steps
Environmental	
Minimum operating temp	0°C, 32°F
Maximum operating temp	40°C, 104°F (50°C, 122°F derated)
Cooling inverter	Forced ventilation
Cooling transformer	Fan assisted ventilation
Humidity	< 95%, non-condensing
Noise	<75dBA @ 2m
Enclosure rating	IP20 or IP21, NEMA 1
Pollution degree rating	2
Standards	
	AS/NZ 3100
	CISPR 11 class A
	IEC 62103
Certifications	
Safety, EMC	C-Tick, CE pending
UL	Pending
Semi F47	By test
Quality	ISO 9001

PCS100 AVC ratings and dimensions

Model	30% PCS100 AVC kVA ratings				Cabinet dimensions
	50Hz		50/60Hz		
	380V	400V	415V	208/480V	H 84.4in / 2154mm
0.5B	160	165	175	200	D 31.7in / 804mm
0.75B	240	250	260	300	W 31.9in / 809mm
1B	315	330	345	400	
1.5B	475	500	520	600	D 63.3in / 1608mm
2B	630	650	690	800	W 31.9in / 809mm
2.5B	790	830	865	1000	D 71.9in / 2008mm
3B	950	1000	1035	1200	W 31.9in / 809mm
4B	1190	1250	1300	1500	D 79.1in / 2008mm
5B	1585	1650	1729	2000	W 63.3in / 1609mm
6B	1900	2000	2075	2400	
7B	2215	2330	2420	2800	D 94.8in / 2408mm
8B	2530	2660	2765	3200	W 94.8in / 2409mm
9B	2850	3000	3110	3600	

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